

GE Energy Connections

Redline Modular DIN-rail devices and residential enclosures

Just feel protected



ex.geindustrial.com



Modular DIN-rail devices and residential enclosures

Circuit Protection **A**

People Protection **B**

Add-on Devices **C**







Comfort Functions **D**

Busbars **E**

Enclosures **F**

Product overview **G**

Numerical index **X**

A.2	Selection table of Miniature Circuit Breakers (MCBs)
A.6	Technical data
A.10	Short-circuit capacity
A.16	Back-up protection (association) between MCBs, MCCBs and Fuses
A.18	Selectivity between MCBs, MCCBs and Fuses
A.20	3kA MCBs - Series G30
A.22	4.5kA MCBs - Series G45
A.24	6kA MCBs - Series G60
A.26	6kA MCBs with K characteristic - Series EP60
A.28	10kA MCBs - Series G100
 A.30	10kA MCBs with Z, K characteristic - Series EP100
A.32	10kA MCBs - Series GT10
A.34	25kA MCBs - Series GT25
 A.36	MCBs for <u>DC applications</u> - Series EP100 UC
A.38	10kA MCBs - Series Hti
 A.44	16kA, 25kA, 36kA and 50kA MCBs - Series Hti+
 A.62	MCBs UL range for GLOBAL OEMs - Series EP100 ULH
A.66	Series EP100 UL
A.68	Series EP60 UL
A.70	MCBs for <u>rail applications</u> - Series EP100R
A.72	Series EP100UCR
MCBs with ring terminals	
A.74	MCBs for rail applications - Series EP100T
A.76	Series EP100UCT
A.78	Accessories
Unibis* - Compact MCBs	
A.80	Advantages
A.84	Technical data
A.88	4.5kA Compact 1P+N MCBs - Series EPC 451N
A.89	6kA Compact 1P+N MCBs - Series EPC 61N
A.91	6kA Compact 1P+1P MCBs - Series EPC 611
A.92	3kA Compact MCBs - Series EPC 30
A.94	4.5kA Compact MCBs - Series EPC 45
A.96	6kA Compact MCBs - Series EPC 60
 A.98	6kA Compact MCBs - Series EPC 62R
Fixwell* - Screwless MCBs	
A.100	Advantages
A.104	Technical data
A.108	6kA Screwless MCBs - Series EPP60
A.110	10kA Screwless MCBs - Series EPP100
Fuseholders	
 A.112	Fuseholders for GLOBAL OEMs - Series SF
A.122	Dimensional drawings

Circuit Protection



People Protection

B

Add-on Devices

C

Comfort Functions

D

Busbars

E

Enclosures

F

Product overview

G

Numerical index

X



Selection table of MCBs

Circuit protection

A

B

C

D

E

F

G

X

Page	Series	Applications	Poles	Add-on devices	Tripping characteristic	Rating current (A)	Short-circuit capacity (kA)		
A.20	G30		1, 2, 3, 4	yes	B	6 - 40	3	5	10
				yes	C	2 - 40	3	5	10
A.22	G45		1, 2, 3, 4	yes	B	6 - 40	4.5	6	14
				yes	C	2 - 40	4.5	6	14
A.24	G60	 	1, 1+N, 2, 3, 4	yes	B	6 - 63	6	10 ⁽¹⁾	20
				yes	C	0.5 - 63	6	10 ⁽¹⁾	20
				yes	D	0.5 - 63	6	10 ⁽¹⁾	20
A.26	EP60	 	1, 2, 3, 4	yes	K	0.5 - 63	6	10 ⁽¹⁾	20
A.28	G100	 	1, 1+N, 2, 3, 4	yes	B	6 - 63	10 ⁽¹⁾	15 ⁽²⁾	30
				yes	C	0.5 - 63	10 ⁽¹⁾	15 ⁽²⁾	30
				yes	D	0.5 - 63	10 ⁽¹⁾	15 ⁽²⁾	30
A.30	EP100	 	1, 2, 3, 4	yes	K, Z	0.5 - 63	10 ⁽¹⁾	15 ⁽²⁾	30
A.32	GT10	 	1, 2, 3, 4	yes	B	6 - 63	10 ⁽¹⁾	30	
A.34	GT25		1, 2, 3, 4	yes	B	6 - 63	15 ⁽²⁾	20 ⁽²⁾	25 ⁽²⁾
				yes	C	0.5 - 63	15 ⁽²⁾	20 ⁽²⁾	25 ⁽²⁾
				yes	D	0.5 - 63	15 ⁽²⁾	20 ⁽²⁾	25 ⁽²⁾
A.36	EP100 UC		1, 2	yes	B	6 - 63	6	10	
				yes	C	0.5 - 63	6	10	
				yes	Z	0.5 - 63	6	10	

- domestic
- commercial
- industrial
- motors
- railways
- B: 3-5 In
- C: 5-10 In
- K: 8-12 In
- Z: 2-3 In
- EN/IEC 60898-1
- EN/IEC 60947-2
- NEMA AB1
- UL 489
- UL 1077
- (1) Ics = 75% Icu
- (2) Ics = 50% Icu
- (3) Icn1 = 6kA

* Indicates a trademark of the General Electric Company. All other trademarks are the property of their respective owners. © 2017 General Electric Company.



Selection table of MCBs

Page	Series	Applications	Poles	Add-on devices	Tripping characteristic	Rating current (A)	Short-circuit capacity (kA)
A.38	Hti		1, 2, 3, 4	yes	B	80 -125	10
					C	80 -125	10
					D	80 -125	7.5 > 10
A.44	Hti+16		1, 2, 3, 4	yes	B	80 -125	10 > 16
					C	80 -125	10 > 16
					D	80 -125	10 > 16
A.46	Hti+25		1, 2, 3, 4	yes	B	80 -125	15 > 25
					C	80 -125	15 > 25
					D	80 -125	15 > 25
A.48	Hti+36		1, 2, 3, 4	yes	B	80-125 ⁽⁴⁾	20 > 36
					C	80-125 ⁽⁴⁾	20 > 36
					D	80-125 ⁽⁴⁾	20 > 36
A.50	Hti+50		1, 2, 3, 4	yes	B	80-125 ⁽⁴⁾	25 > 50
					C	80-125 ⁽⁴⁾	25 > 50
					D	80-125 ⁽⁴⁾	25 > 50

domestic	B: 3-5 In	EN/IEC 60898-1	(1) Ics = 75% Icu
commercial	C: 5-10 In	EN/IEC 60947-2	(2) Ics = 50% Icu
industrial	K: 8-12 In	NEMA AB1	(3) Icn1 = 6kA
motors	Z: 2-3 In	UL 489	(4) 60898-1 only for 80A
railways		UL 1077	

MCBs

A

B

C

D

E

F

G

X



Selection table of MCBs - Global range

Circuit protection

A

B

C

D

E

F

G

X

Page	Series	Applications	Poles	Add-on devices	Tripping characteristic	Rating current (A)	Short-circuit capacity (kA)		
A.62	EP100 ULH 277Y/480V		1, 2, 3	yes	B	5 - 40	10	15 ⁽²⁾	
					C	0.5 - 40	10	15 ⁽²⁾	
					D	0.5 - 40	10	15 ⁽²⁾	
A.64	EP100 ULH 120/240V		1, 2, 3	yes	B	5 - 63	10	15 ⁽²⁾	
					C	0.5 - 63	10	15 ⁽²⁾	
					D	0.5 - 63	10	15 ⁽²⁾	
A.66	EP100 UL 277Y/480V		1, 2, 3, 4	yes	B	6 - 63	10	10	15 ⁽¹⁾
					C	0.5 - 63	10	10	15 ⁽¹⁾
					D	0.5 - 63	10	10	15 ⁽¹⁾
A.68	EP60 UL 277Y/480V		1, 2, 3, 4	yes	B	6 - 63	6	6	10 ⁽¹⁾
					C	0.5 - 63	6	6	10 ⁽¹⁾
					D	0.5 - 63	6	6	10 ⁽¹⁾

- domestic
 - commercial
 - industrial
 - motors
 - railways
- B: 3-5 In
 - C: 5-10 In
 - K: 8-12 In
 - Z: 2-3 In
- EN/IEC 60898-1
 - EN/IEC 60947-2
 - NEMA AB1
 - UL 489
 - UL 1077
- (1) Ics = 75% Icu
 - (2) Ics = 50% Icu
 - (3) Icn1 = 6kA

Selection table of MCBs - Transportation

Page	Series	Applications	Poles	Add-on devices	Tripping characteristic	Rating current (A)	Short-circuit capacity (kA)
A.70	EP100R		3	yes	B	0.5 - 63	10 → 15
				yes	C	0.5 - 63	10 → 15
A.72	EP100 UCR		1, 2	yes	B	2 - 63	6 → 10
				yes	C	0.5 - 63	6 → 10
				yes	K	0.5 - 63	6 → 10
A.74	EP100T		1, 2, 3, 4	yes	Z	0.5 - 63	10 → 15
				yes	B	6 - 63	10 → 15
				yes	C	0.5 - 63	10 → 15
				yes	K	0.5 - 63	10 → 15
A.76	EP100 UCT		1, 2	yes	Z	0.5 - 63	6 → 10
				yes	B	6 - 63	6 → 10
				yes	C	0.5 - 63	6 → 10
				yes	K	0.5 - 63	6 → 10

Selection table of compact MCBs - Unibis*

Page	Series	Applications	Poles	Add-on devices	Tripping characteristic	Rating current (A)	Short-circuit capacity (kA)
A.88	EPC 451N		1+N (1 mod)	yes	B-C	2 - 40	4.5 → 6
A.89	EPC 61N		1+N (1 mod)	yes	B-C	2 - 40	6 → 10 ⁽³⁾
A.91	EPC 611		1P+1P (1 mod)	yes	B-C	2 - 20	6 → 6
A.92	EPC 30		2	yes	C	2 - 40	3 → 6
			3, 4	yes	C	2 - 32	3 → 6
A.94	EPC 45		2	yes	B-C	2 - 40	4.5 → 6
			3, 4	yes	B-C	2 - 32	4.5 → 6
A.96	EPC 60/62R		2	yes	B-C	2 - 40	6 → 10
A.98			3, 4	yes	B-C	2 - 32	6 → 6

Selection table of screwless MCBs - Fixwell*

Page	Series	Applications	Poles	Add-on devices	Tripping characteristic	Rating current (A)	Short-circuit capacity (kA)
A.108	EPP60		1, 1+N, 2, 3, 3+N, 4	yes	C	2 - 40	6 ⁽¹⁾ → 10
A.110	EPP100		1, 2, 3, 3+N, 4	yes	B-C	2 - 40	10 ⁽¹⁾ → 15 ⁽²⁾

- domestic
- commercial
- industrial
- motors
- railways

- B: 3-5 In
- C: 5-10 In
- K: 8-12 In
- Z: 2-3 In

- EN/IEC 60898-1
- EN/IEC 60947-2
- NEMA AB1
- UL 489
- UL 1077

- (1) Ics = 75% Icu
- (2) Ics = 50% Icu
- (3) Icn1 = 6kA



Technical data of compact MCBs

Circuit protection

A

B

C

D

E

F

G

X

Series		G30 / G45	G60 / EP60 char. K
Standards		EN/IEC 60898-1	EN/IEC 60898-1
Tripping characteristics		B, C	B, C, D, K ⁽²⁾
Nominal current	(In)	2-40	B(6-63), C/D/K(0.5-63)
Calibration temperature	(°C)	30	30
Number of poles (# mod.)		1/2/3/4	1/1+N/2/3/4 ⁽²⁾
Neutral pole protected		-	yes
Nominal voltage Un AC	1P (V)	240/415	240/415
	1P+N (V)	240	-
	2P (V)	415	415
	3P/3P+N/4P (V)	415	415
Nominal voltage Un DC	1P (1) (V)	-	48
	2P (in series) ⁽¹⁾ (V=)	-	110
Frequency	(Hz)	50/60	50/60
	in DC for 400Hz	DC: magn.trip +40% 400: magn.trip +50%	DC: magn.trip +40% 400: magn.trip +50%
Maximum service voltage UBmax between two wires	(V)	250/440; 53/120 =	250/440; 53/120 =
Minimum service voltage UBmin	(V)	12; 12 =	12; 12 =
Energy limiting class (EN 60898-1)		3	3
Isolator application		yes	yes
Rated insulation voltage	Pollution degree 2 (V)	500	500
	Pollution degree 3 (V)	440	440
Impulse withstand test voltage	(kV)	6	6
Insulation resistance	(MΩ)	10000	10000
Dielectric rigidity	(kV)	2.5	2.5
Vibration resistance (in x, y, z direction) (IEC 77/16.3)	(g)	3g	3g
Endurance	Electrical at Un, In	10000	10000
	Mechanical	20000	20000
Utilisation category (EN 60947-2)		A	A
Mounting position (for all devices): any except upside down		any	any
Incoming top or bottom		yes	yes
Protection degree (outside/inside enclosure with door)		IP20/IP40	IP20/IP40
Selfextinguish degree (according to UL94)		V2	V2
Tropicalisation (acc. EN 60068-2/DIN 40046)	(°C/RH)	+55°C/95% RH	+55°C/95% RH
Operating temperature	(°C)	-25/+70	-25/+70
Storage temperature	(°C)	-55/+70	-55/+70
Terminal capacity	Rigid cable min/max (top) (mm ²)	1/35	1/35
	Flexible cable min ^(*) /max (top) (mm ²)	0.75/25	0.75/25
	Rigid cable min/max (bottom) (mm ²)	1/35	1/35
	Flexible cable min ^(*) /max (bottom) (mm ²)	0.75/25	0.75/25
(* Flexible cable 0.75/1/1.5mm ² with cable lug)			
Torque	(Nm)	4.5	4.5
Add-on devices	Contacts CA/CB	yes	yes
	Tele U	yes	yes
	Tele L	yes	yes
	Tele MP	yes	yes
PBS		yes	yes
Busbar systems	Pin (top/bottom)	yes/yes	yes/yes
	Fork (top/bottom)	-/yes	-/yes
Accessories		yes	yes
Dimensions	(HxDxW) 86 x 68 x W (mm) /mod	18	18
Weight per mod.	(g)	120	120
Package		12	12
Approvals		KEMA	KEMA
CE-marking		yes	yes
Page		A.20/A.22	A.24/A.26 ⁽²⁾

(1) Preferred values of rated control supply voltage (EN/IEC 60947-2): 24V, 48V, 110V, 125V, 220V, 250V



G100 / EP100 char. K, Z	GT10 / GT25	EP100 UC	EP100R / EP100T	EP100UCR / EP100UCT
EN/IEC 60947-2	EN/IEC 60947-2	(3)	EN/IEC 60898-1	EN/IEC 60947-2(3)
Z, B, C, K, D	3-5In/5-10In/10-20In	B, C, Z	Z, B, C, D, K(5)	Z, B, C, K(4)
0.5-63	0.5-63	B(6-63), C(0.5-63)	B(6-63), C/D/K(0.5-63)	0.5 - 63
40	40	30	30	30
1/2/3/4	1/2/3/4	1/2/4	1/2/3/4(6)	1/2
-	-	-	yes	-
240/415	240/415	240/415	240/415	240/415
-	-	-	-	-
415	415	415	415	415
415	415	415	415	415
48	48	250	48	250
110	110	500	110	500
50/60	50/60	50/60	50/60	50/60
DC: magn.trip +40%	DC: magn.trip +40%	DC: magn.trip +40%	DC: magn.trip +40%	DC: magn.trip +40%
400: magn.trip +50%	400: magn.trip +50%	400: magn.trip +50%	400: magn.trip +50%	400: magn.trip +50%
250/440; 53/120 ==	250/440; 53/120 ==	250/440; 250/500 ==	250/440; 53/120 ==	250/440; 250/500 ==
12; 12 ==	12; 12 ==	12; 12 ==	12; 12 ==	12; 12 ==
-	-	3	3	3
yes	yes	yes	yes	yes
500	500	500	500	500
440	440	440	440	440
6	6	6	6	6
10000	10000	10000	10000	10000
2.5	2.5	2.5	2.5	2.5
3g	3g	5g	5g	5g
4000	4000	1000	10000	1000
20000	20000	20000	20000	20000
A	A	A	A	A
any	any	any	any	any
yes	yes	follow polarity	yes	follow polarity
IP20/IP40	IP20/IP40	IP20/IP40	IP20/IP40	IP20/IP40
V2	V2	V2	V2	V2
+55°C/95% RH	+55°C/95% RH	+55°C/95% RH	+55°C/95% RH	+55°C/95% RH
-25/+70	-25/+70	-25/+70	-40/+70	-40/+70
-55/+70	-55/+70	-55/+70	-40/+70	-40/+70
1/35	1/35	1/35	1/35	1/35
0.75/25	0.75/25	0.75/25	0.75/25	0.75/25
1/35	1/35	1/35	1/35	1/35
0.75/25	0.75/25	0.75/25	0.75/25	0.75/25
4.5	4.5	4.5	4.5	4.5
yes	yes	yes	yes	yes
yes	yes	yes	yes	yes
yes	yes	yes	yes	yes
yes	yes	yes	yes	yes
yes	yes	yes	yes	yes
yes/yes	yes/yes	yes/yes	yes/yes	yes/yes
-/yes	-/yes	yes/yes	-/yes	yes/yes
yes	yes	yes	yes	yes
18	18	18	18	18
120	120	125	120	125
12	12	12	12	12
-	-	-	KEMA	-
yes	yes	yes	yes	yes
A.28/A.30	A.32/A.34	A.36	A.70/A.74	A.72/A.76

MCBS

A

B

C

D

E

F

G

X

(2) Motor lines application no 1+N execution in K curve EP60K in page A.26 EP100K in page A.30

(3) EN/IEC 60898-2 and VDE 0641-2/3
 (4) For EP100 UCR no K curve
 (5) For EP100 R only B-C curves
 (6) For EP100 R only 3



Technical data of compact MCBs

Circuit protection

A

B

C

D

E

F

G

X

Series			Hti
Standards			EN/IEC 60947-2
Tripping characteristics			3-5In/5-10In/10-20In
Nominal current	(In)		80 up to 125
Calibration temperature	(°C)		40
Number of poles (# mod.)			1/2/3/4
Neutral pole protected			-
Nominal voltage Un AC	1P	(V)	230/400
	2P	(V)	415
	3P/3P+N/4P	(V)	415
Nominal voltage Un DC	1P (1)	(V)	48
	2P (in series) ⁽¹⁾	(V=)	110
Frequency		(Hz)	50/60
		in DC	DC: magn.trip +40%
		for 400Hz	400: magn.trip +50%
Maximum service voltage U _{Bmax} between two wires			(V) 250/440; 53/120 =
Minimum service voltage U _{Bmin}			(V) 12; 12 =
Energy limiting class (EN 60898-1)			-
Isolator application			yes
Rated insulation voltage	Pollution degree 2	(V)	500
	Pollution degree 3	(V)	440
Impulse withstand test voltage			(kV) 6
Insulation resistance			(MΩ) 10000
Dielectric rigidity			(kV) 2.5
Vibration resistance (in x, y, z direction) (IEC 77/16.3)			(g) 3g
Endurance	Electrical at Un,In		4000
	Mechanical		10000
Utilisation category (EN 60947-2)			A
Mounting position (for all devices): any except upside down			any
Incoming top or bottom			yes
Protection degree (outside/inside enclosure with door)			IP20/IP40
Selfextinguish degree (according to UL94)			V2
Tropicalisation (acc. EN 60068-2/DIN 40046)			(°C/RH) +55°C/95% RH
Operating temperature			(°C) -25/+55
Storage temperature			(°C) -55/+55
Terminal capacity	Rigid cable min/max (top)	(mm ²)	70
	Flexible cable min*/max (top)	(mm ²)	-
	Rigid cable min/max (bottom)	(mm ²)	70
	Flexible cable min*/max (bottom)	(mm ²)	-
	Torque	(Nm)	5
Add-on devices	Contacts CA/CB		HTI+ H H/S
	Tele U		-
	Tele L		TELE L 110/24
	Tele MP		-
	PBS		no
Busbar systems	Pin (top/bottom)		-
	Fork (top/bottom)		-
Accessories			-
Dimensions (HxDxW) 86 x 68 x W			(mm) /mod 27
Weight per mod.			(g) 210
Package			1/4/8
Approvals			-
CE-marking			yes
Page			A.38

(1) Preferred values of rated control supply voltage (EN/IEC 60947-2): 24V, 48V, 110V, 125V, 220V, 250V



Hti+16	Hti+25	Hti+36	Hti+50
EN/IEC 60898-1 EN/IEC 60898-1	EN/IEC 60898-1 EN/IEC 60898-2	EN/IEC 60898-1 EN/IEC 60898-2	EN/IEC 60898-1 EN/IEC 60898-3
B,C,D	B,C,D	B,C,D	B,C,D
80-125A	80-125A	80-125A	80-125A
30	30	30	30
1/2/3/4	1/2/3/4	1/2/3/4	1/2/3/4
-	-	-	-
230/400	240/415	240/415	240/415
400	415	415	415
400	415	415	415
-	125	125	125
-	250	250	250
50/60	50/60	50/60	50/60
-	-	-	-
-	-	-	-
244/424	254/440Vac	400/690Vac	400/690Vac
12Vac	12Vdc	12Vdc	12Vdc
-	-	-	-
yes	yes	yes	yes
500	500	690	690
440	440	440	440
6	8	8	8
10000	10000	10000	10000
2.5	2.5	2.5	2.5
3g	3g	3g	3g
1500/1000	6000/4000	6000/4000	6000/4000
10000/8000	10000	10000	10000
A	A	A	A
any	any	any	any
yes	yes	yes	yes
IP20/IP40	IP20/IP40	IP20/IP40	IP20/IP40
V2	V2	V2	V2
+55°C/95% RH	+55°C/95% RH	+55°C/95% RH	+55°C/95% RH
-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60
-40...+70	-40...+70	-40...+70	-40...+70
1...50	1...50	1...50	1...50
1...70	1...70	1...70	1...70
1...50	1...50	1...50	1...50
1...70	1...70	1...70	1...70
3.5	3.5	3.5	3.5
HTI+ H H/S	HTI+ H H/S	HTI+ H H/S	HTI+ H H/S
HTI+TELE U	HTI+TELE U	HTI+TELE U	HTI+TELE U
HTI+TELE L	HTI+TELE L	HTI+TELE L	HTI+TELE L
no	no	no	no
no	no	no	no
-	-	-	-
-	-	-	-
yes	yes	yes	yes
82.5 x 95 x 26.5	82.5 x 95 x 26.5	82.5 x 95 x 26.5	82.5 x 95 x 26.5
240	240	240	240
-	-	-	-
-	-	-	-
yes	yes	yes	yes
A.44	A.46	A.48	A.50

Circuit protection

A

B

C

D

E

F

G

X



Short-circuit capacity of MCBs

Series			G30	G45	G60 / EP60 char. K	
Short-circuit capacity AC						
EN/IEC 60898-1	I_{cn}	1P	230/400V	3	4.5	6
		1P+N	230V	3	4.5	6
		2P	230/400V	3	4.5	6
		3P/3P+N/4P	230/400V	3	4.5	6
	I_{cs} (service)		100% I _{cn}	100% I _{cn}	100% I _{cn}	100% I _{cn}
Short-circuit capacity DC						
EN/IEC 60947-2	I_{cu} (ultimate)	1 P	127V	-	-	20
			240V	5	6	10
			415V	3	3	3
		1+N /2P	127V	-	15	30
			240V	10	10	20
			415V	5	6	10
		415V	5	6	10	
		440V	-	-	6	
	I_{cs} (service)			75% I _{cu}	75% I _{cu}	75% I _{cu}
	EN/IEC 60947-2	I_{cu} (ultimate)	1P	≤ 60V ≡	20	-
			≤ 220V ≡	-	-	-
			≤ 220V ≡	25	-	25
2P			≤ 125V ≡	-	-	-
I_{cs} (service)			≤ 440V ≡	100% I _{cu}	-	100% I _{cu}
			A.20	A.22	A.24/A.26	

Circuit protection

A

B

C

D

E

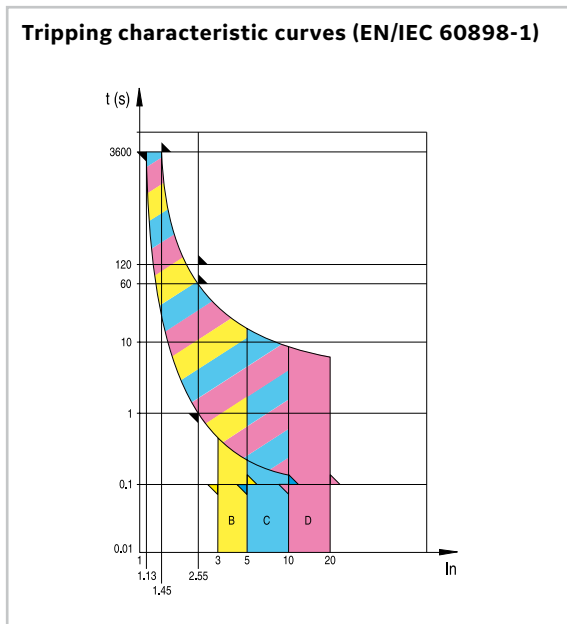
F

G

X

Characteristics according to EN/IEC 60898-1

Miniature Circuit Breakers (MCB) are intended for the protection of wiring installations against both overloads and short-circuits in domestic or commercial wiring installations where operation is possible by uninstructed people.



Magnetic release

An electromagnet with plunger ensures instantaneous tripping in the event of short-circuit. The standard distinguishes three different types, following the current for instantaneous release: type B,C,D.

I _{cn} (A)	Test current	Tripping time	Applications
B	3 x I _n	0.1 < t < 45s (I _n ≤ 32A) 0.1 < t < 90s (I _n > 32A)	Only for resistive loads such as: - electrical heating - water heater - stoves
	5 x I _n	t < 0.1s	
C	5 x I _n	0.1 < t < 15s (I _n ≤ 32A) 0.1 < t < 30s (I _n > 32A)	Usual loads such as: - lighting - socket-outlets - small motors
	10 x I _n	t < 0.1s	
D	10 x I _n	0.1 < t < 4s ⁽¹⁾ (I _n ≤ 32A) 0.1 < t < 8s (I _n > 32A)	Control and protection of circuits having important transient inrush currents
	20 x I _n	t < 0.1s	

(1) If I_n ≤ 10A, t < 8s

Thermal release

The release is initiated by a bimetal strip in case of overload. The standard defines the range of releases for specific overload values. Reference ambient temperature is 30°C.

Test current	Tripping time
1.13 x I _n	t ≥ 1h (I _n ≤ 63A) t ≥ 2h (I _n > 63A)
1.45 x I _n	t < 1h (I _n ≤ 63A) t < 2h (I _n > 63A)
2.55 x I _n	1s < t < 60s (I _n ≤ 32A) 1s < t < 120s (I _n > 32A)

G100 / EP100 char. K, Z EP100R / EP100T	GT10	GT25	EP100 UC / EP100 UCR	Hti
10	-	-	6 (220V DC) ⁽²⁾	-
10	-	-	-	-
10	-	-	6 (440V DC) ⁽³⁾	-
10	-	-	-	-
75% Icn	-	-	100% Icn	-
30	25	50	-	-
15	10	50/25/20/15 ⁽¹⁾	6 ⁽⁵⁾	B/C 10; D 7.5
4	-	-	-	4.5
40	30	-	-	-
30	20	50/50/40/30 ⁽¹⁾	-	B/C 15
15	10	50/25/20/15 ⁽¹⁾	6 ⁽⁵⁾	B/C 10; D 7.5
30	20	50/50/40/30 ⁽¹⁾	-	B/C 15
15	10	50/25/20/15 ⁽¹⁾	-	B/C 10; D 7.5
10	-	50/20/15/10 ⁽¹⁾	-	-
50% Icu	75% Icu	50% Icu	-	100% Icu
25	20	25	-	10
-	-	-	10 ⁽⁴⁾	-
30	25	30	20 ⁽⁴⁾	15
-	-	-	10 ⁽⁴⁾	-
100% Icu	100% Icu	100% Icu	-	100% Icu
A.28/A.30/A.70/A.74	A.32	A.34	A.36/A.72	A.38

(1) 0.5-4A/6-25A/32-40A/50-63A, (2) 10 (125V DC), (3) 10 (250V DC), (4) T = 4ms, (5) 4.5kA for 50A and 63A

Characteristics according to EN/IEC 60947-2

Magnetic release

An electromagnet with plunger ensures instantaneous tripping in the event of short-circuit. The standard leaves the calibration of magnetic release to the manufacturer's discretion.

GE offers instantaneous tripping ranges:

- B: 4 I_n
- C: 8.5 I_n (7.5 I_n for 63A)
- D and M: 14 I_n
- K: 10 I_n (6 I_n ≥ 2s.)

Thermal release

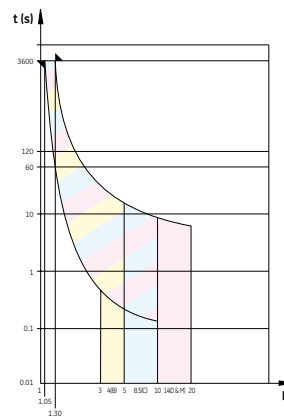
The release is initiated by a bimetal strip in case of overload. The standard defines the range of releases for two special overload values.

Reference ambient temperature is:

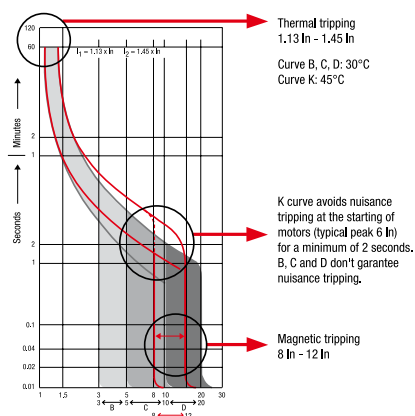
- 40°C for GT10 and GT25
- 50°C for G60 and G100, except for K: 45°C

Test current		Tripping time
B - C - D	K	
1.05 x I _n	1.13 x I _n	t ≥ 1h (I _n ≤ 63A) t ≥ 2h (I _n > 63A)
1.30 x I _n	1.45 x I _n	t < 1h (I _n ≤ 63A) t < 2h (I _n > 63A)

Tripping characteristic curves (EN/IEC 60947-2)



Curve K (EN/IEC 60947-2) versus B, C, D (EN/IEC 60898-1)





Short-circuit capacity of MCBs

Circuit protection

A

B

C

D

E

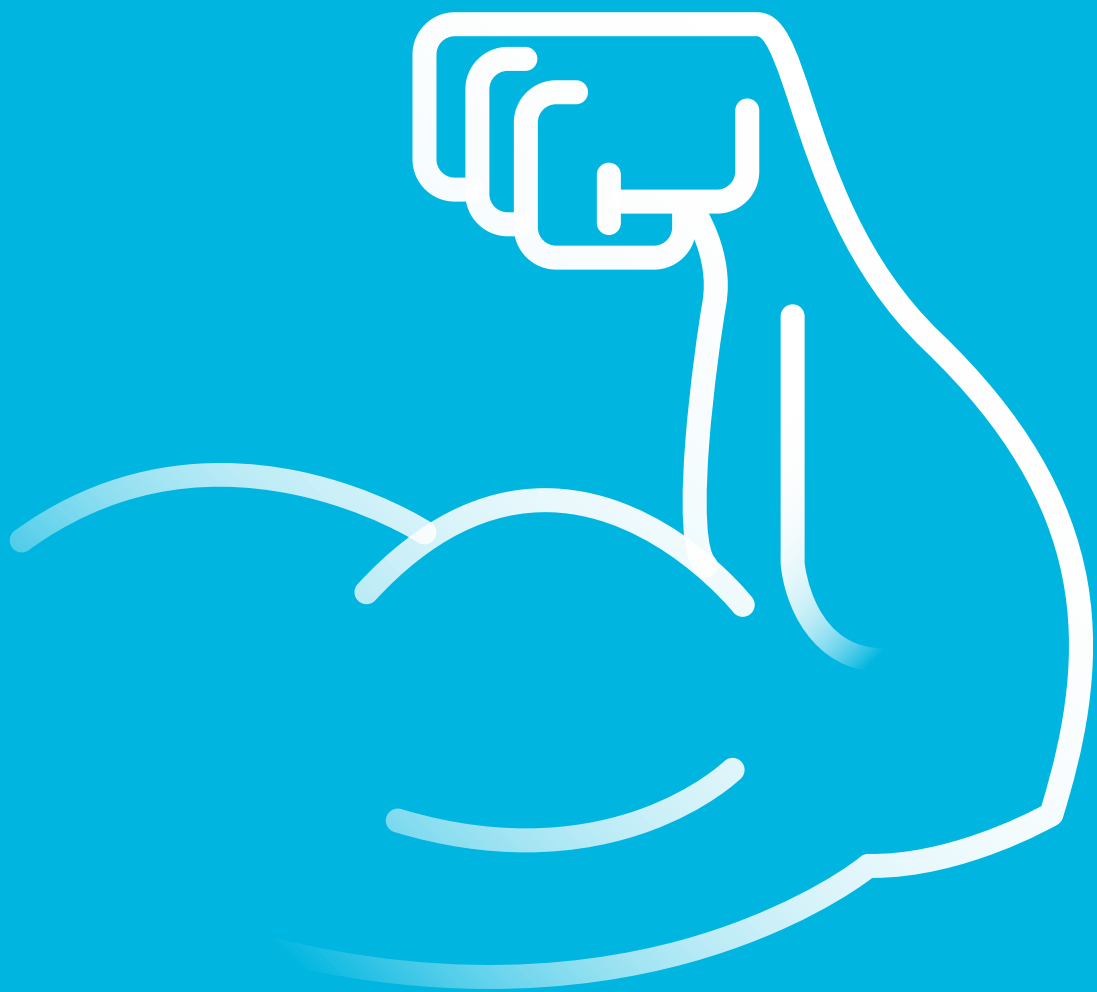
F

G

X

Series	Hti+16	Hti+25	Hti+36	Hti+50	
Short-circuit capacity AC					
EN/IEC 60898-1	Icn	230/400 V= 10 kA	230/400 V= 15 kA	230/400 V= 20 kA ⁽¹⁾	230/400 V = 25 kA ⁽¹⁾
	Ics (service)	230/400 V= 7.5 kA	230/400 V= 7.5 kA	230/400 V = 10 kA	230/400 V = 12.5 kA
Short-circuit capacity AC					
EN/IEC 60947-2	Icu (ultimate)	230/400 V=16kA	240/415 V = 25 kA	240/415 V = 36 kA	240/415 V = 50 kA
			254/440 V = 15kA	254/440 V = 20 kA	254/440 V = 30 kA
			400/690 V = 4.5 kA	400/690 V (80 A) = 6 kA	400/690 V (100 ... 125 A) = 4.5 kA
	Short-circuit capacity DC		125 V (1-pole) = 10 kA	125 V (1-pole) = 20 kA	125 V (1-pole) = 30 kA
		250 V (2-pole) = 10 kA	250 V (2-pole) = 20 kA	250 V (2-pole) = 30 kA	
		375 V (3-pole) = 10 kA	375 V (3-pole) = 20 kA	375 V (3-pole) = 30 kA	
		500 V (4-pole) = 10 kA	500 V (4-pole) = 20 kA	500 V (4-pole) = 30 kA	
Short-circuit capacity AC					
EN/IEC 60947-2	Icu (ultimate)	230/400 V=10kA	240/415 V = 18 kA	240/415 V = 30 kA	240/415 V = 40 kA
			254/440 V = 10 kA	289/500 V = 5 kA	254/440 V (80 A) = 22.5 kA
			400/690 V = 3 kA	400/690 V (up to 80 A) = 4 kA	254/440 V (100 ... 125 A) = 15 kA
	Short-circuit capacity DC		125 V (1-pole) = 10 kA	125 V (1-pole) = 20 kA	125 V (1-pole) = 30 kA
		250 V (2-pole) = 10 kA	250 V (2-pole) = 20 kA	250 V (2-pole) = 30 kA	
		375 V (3-pole) = 10 kA	375 V (3-pole) = 20 kA	375 V (3-pole) = 30 kA	
		500 V (4-pole) = 10 kA	500 V (4-pole) = 20 kA	500 V (4-pole) = 30 kA	
	A.44	A.46	A.48	A.50	

(1) Only for 80A





Line protection devices: technical data

Circuit protection

A

B

C

D

E

F

G

X

Series		EP100ULH34	EP100ULH12	EP100UL	EP60UL
Standards UL489 (listed) & CSA c22.2 No.5-02		yes	yes	-	-
Standards UL1077 (recognized) & CSA C22.2 No.235		-	-	yes	yes
Certifications UL489 (listed) & CSA c22.2 No.5-02		E256870	E256870	-	-
Certifications UL1077 (recognized) & CSA c22.2 No.235		-	-	E151139/235-04	E151139/235-04
Nominal voltage acc. UL & CSA AC/DC	1P	277AC/60DC	120AC/60DC	277AC/50DC	277AC/50DC
	2P	480AC/125DC	240AC/125DC	480AC/110DC	480AC/110DC
	3P	480AC	240AC	480AC	480AC
	4P	-	-	480AC	480AC
Rated current at 77°F (25°C)		B: 5-40, C,D: 0.5-40	B: 5-40, C,D: 0.5-63	B: 5-40, C,D: 0.5-63	B: 5-40, C,D: 0.5-63
Number of poles		1,2,3	1,2,3	1,2,3,4	1,2,3,4
Reference temperature °F/°C		77/25	77/25	77/25	77/25
UL486 Standard compliance-connection terminals		UL486A and B	UL486A and B	UL486E	UL486E
Terminal capacity 60/75°C		14-2 AWG	14-2 AWG	14-2 AWG	14-2 AWG
Torque N.m/lbs.in		4/30	4/30	4.5/39.9	4.5/39.9
Handle end position selectable		yes	yes	yes	yes
Mounting		35 mm DIN-rail	35 mm DIN-rail	35 mm DIN-rail	35 mm DIN-rail
Nomenclature		Circuit breaker	Circuit breaker	Supplementary protectors	Supplementary protectors
Frequency Hz		50/60	50/60	50/60	50/60
Standards EN/IEC 60947-2		yes	yes	yes	yes
Calibration temperature °C 60947-2		50	50	50	50
Number of modules		1, 2, 3	1, 2, 3	1, 2, 3, 4	1, 2, 3, 4
Nominal voltage Un 60947-2					
	AC	1P V	240/415	240/415	240/415
		2P V	415	415	415
		3P V	415	415	415
		4P V	-	-	415
	DC 1P ⁽¹⁾ VDC		60	60	50
	2P (in series) ⁽¹⁾ VDC		125	125	110
Minimum service voltage U _{bin}	V	12	12	12	12
Selectivity class (IEC 60898-1)		-	-	3	3
Isolator application IEC 60947-2		yes	yes	yes	yes
Rated insulation voltage	Pollution degree 2	V	500	500	500
	Pollution degree 3	V	440	440	440
Impulse withstand test voltage	kV	6	6	6	6
Insulation resistance	MOhm	10000	10000	10000	10000
Dielectric rigidity	kV	2.5	2.5	2.5	2.5
Mounting position		Any	Any	Any	Any
Incoming top or bottom		Any	Any	Any	Any
Vibrations resistance (in x, y, z direction) (IEC 77/16.3)		3g	3g	3g	3g
Endurance	electrical at Un, In	10000	10000	10000	10000
	mechanical	20000	20000	20000	20000
Utilisation category (IEC 60947-2)		A	A	A	A
Protection distance (IEC 60947-2)	mm	12	12	12	12
Protection degree (outside / inside enclosure with door)		IP20/IP40	IP20/IP40	IP20/IP40	IP20/IP40
Self-extinguish degree (according to UL94)		V0	V0	V0	V0
Tropicalisation (according to IEC 60068-2 / DIN 40046)	°C/RH	+55°C(131°F)/95%RH	+55°C(131°F)/95%RH	+55°C(131°F)/95%RH	+55°C(131°F)/95%RH
Operating temperature	°C(°F)	-40(-40)/+55(131)	-40(-40)/+55(131)	-25(-13)/+55(131)	-25(-13)/+55(131)
Storage temperature	°C(°F)	-55(-67)/+55(131)	-55(-67)/+55(131)	-55(-67)/+55(131)	-55(-67)/+55(131)
Terminal capacity (combined at both ends)					
Rigid cable min/max (top)	mm ²	1/35	1/35	1/35	1/35
Flexible cable min*/max (top)	mm ²	0.75/25	0.75/25	0.75/25	0.75/25
Rigid cable min/max (bottom)	mm ²	1/35	1/35	1/35	1/35
Flexible cable min*/max (bottom)	mm ²	0.75/25	0.75/25	0.75/25	0.75/25
(* Flexible cable 0.75/1/1.5 mm ² with cable lug)					
Torque	Nm/lbs.in	max 4.5/39.9	max 4.5/39.9	max 4.5/39.9	max 4.5/39.9
Add-on devices auxiliary contacts		yes	yes	yes	yes
(side add-on) Tele L		yes	yes	yes	yes
Tele MP		yes	yes	yes	yes
Dimensions, weights, packaging (HxDxW)					
86(3,4)x68(2,7)xW ⁽²⁾	in/mm/mod.	0.71/18	0.71/18	0.71/18	0.71/18
Weight/mod.	oz./g.	4.2/130	4.2/130	4.2/130	4.2/130
Approvals		UL Listed, CEBC, CSA, EAC	UL Listed, CEBC, CSA, EAC	UL, VDE, CSA, EAC	UL, VDE, CSA, EAC
CE-marking		yes	yes	yes	yes
ROHS		yes	yes	yes	yes
Page		A.62	A.64	A.66	A.68

(1) Preferred values of rated control supply voltage (IEC 60947-2): 24V DC, 48V DC, 110V DC, 125V DC, 220V DC, 250V DC

(2) EP100ULH executions 1P, 2P & 3P: H = 116mm (4,6 in.)

MCBs Short-circuit capacity

Series	EP100ULH34	EP100ULH12	EP100UL	EP60UL
Interrupting capacity acc. to kA				
	UL489	UL489	UL1077	UL1077
UL	1P/2P 277V AC	10	-	10
	3P 480V AC	10	-	10
	1P 120V AC	10	10	10
	2P/3P 240V AC	10	10	10
	1P 60V DC (50V DC: EP.UL34)	10	10	10
	2P 125V DC (110V DC: EP.UL34)	10	10	10
Interrupting capacity acc. to kA				
EN/IEC 60947-2	Icu (ultimate) kA			
	1 P 127V	30	30	30
	240V	15	15	15
	415V	4	4	4
	2P 127V	40	40	40
	240V	30	30	30
	2 P 415V	15	15	15
	3/4P 240V	30	30	30
	415V	15	15	15
	440V	10	10	10
Ics (service)	50% Icu	50% Icu	50% Icu	75% Icu
Short-circuit capacity DC				
EN/IEC 60947-2	Icu (ultimate) kA			
	1 P ≤ 60V	25	25	25
	≤ 220V	-	-	-
	2 P ≤ 125V	30	30	30
	≤ 440V	-	-	-
	Ics (service)	10% Icu	10% Icu	100% Icu

Characteristics according to EN/IEC 60947-2

Magnetic release

An electromagnet with plunger ensures instantaneous tripping in the event of short-circuit. The standard leaves the calibration of magnetic release to the manufacturer's discretion.

GE offers instantaneous tripping ranges:

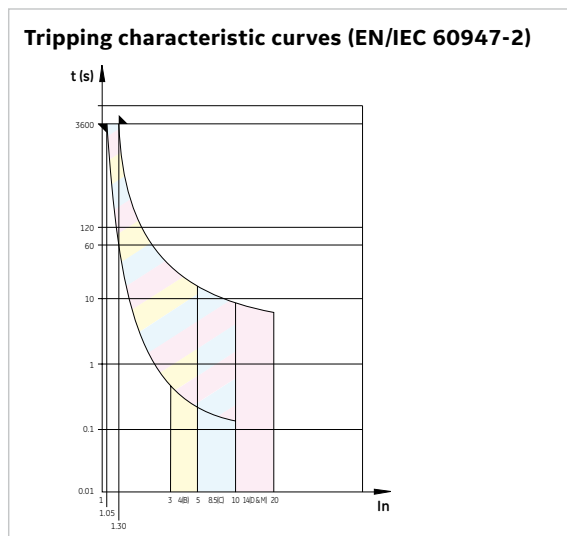
- B: 4 I_n
- C: 8.5 I_n (7.5 I_n for 63A)
- D: 14 I_n

Thermal release

The release is initiated by a bimetal strip in case of overload. The standard defines the range of releases for two special overload values.

Reference ambient temperature is 50°C

Test current B - C - D	Tripping time
1.05 x I _n	t ≥ 1h (I _n ≤ 63A) t ≥ 2h (I _n > 63A)
1.30 x I _n	t < 1h (I _n ≤ 63A) t < 2h (I _n > 63A)





Back-up protection (association)

Downstream: MCBs - Upstream: MCBs

Redline		Upstream MCB (kA)						U 230V	
Downstream MCB		G60 and EPP60		G100 and EPP100		GT25	GT25	Hti	
Types	In (A)	0.5-63		0.5-63		< 32	32-40	50-63	80-125
EPC 451N - EPC45	2-40	22	25	25	30	25	25	25	-
EPC 61N - EPC60	2-10	25	30	30	30	30	30	30	-
	16-20	25	30	30	30	30	30	30	-
	25-40	25	30	30	30	30	30	30	-
DM60	4-10	15	15	15	15	15	15	15	-
	16-20	15	15	15	15	15	15	15	-
	25-40	15	15	15	15	15	15	15	-
DM100	4-10	15	15	15	15	15	15	15	-
	16-20	15	20	20	20	20	20	20	-
	25-40	15	20	22	22	22	22	22	-
G45	6-40	15	20	22	22	22	22	22	16
G60	0.5-63	-	20	22	22	22	22	22	-
G100	0.5-63	-	-	50	35	30	30	30	-

Record Plus* MCCBs at 220/240V AC

Upstream		MCCBs Record Plus*																												
Downstream	Icu In (kA)	FD160/160C	FD160/160E	FD160/160S	FD160/160N	FD160/160H	FD160/160L	FE160N	FE160H	FE160L	FE150V	FE250N	FE250H	FE250L	FG400N	FG400H	FG400L	FG630N	FG630H	FG630L	FK800N	FK800H	FK800L	FK1250N	FK1250H	FK1250L	FK1600N	FK1600H		
		25	40	50	85	100	200	85	100	200	65	85	100	200	85	100	200	85	100	200	80	100	170	80	100	170	80	100	100	
		Icu of the combination (kA)																												
Redline																														
EPC 451N / EPC 45	6	15	18	18	18	18	18	15	15	15	12	12	12	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
DP45	6	15	18	22	22	22	22	18	18	18	15	15	15	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
EPC 61N / EPC 60	10	16	20	23	23	23	23	20	20	20	16	16	16	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
DP(A) 60	10	22	25	30	36	85	85	36	85	85	30	36	65	65	16	16	16	14	14	14	-	-	-	-	-	-	-	-	-	
DPE100 / EPC 101N	10	18	22	25	25	25	25	22	22	22	18	18	18	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
DP(A)100 & DPT 100	15	25	36	42	50	100	100	42	100	100	30	36	65	65	18	18	18	16	16	16	-	-	-	-	-	-	-	-	-	
G60 and EPP60	20	25	36	42	50	100	100	50	100	100	36	42	85	85	22	22	22	18	18	18	-	-	-	-	-	-	-	-	-	
G100 and EPP100	30	-	42	50	65	100	100	65	100	100	42	50	85	85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
GT25 <25A	50	-	-	-	65	100	100	65	100	100	-	65	100	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
GT25, 32 and 40A	40	-	-	50	65	100	100	65	100	100	42	50	85	85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
GT25, 50 and 63A	30	-	42	50	65	100	100	65	100	100	42	50	85	85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Series Hti	15	22	36	42	50	100	100	50	100	100	36	42	80	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Series S90	25	-	36	42	85	100	100	85	100	100	36	50	85	85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Surion																														
GPS1BS <16A	100	-	-	-	-	150	-	-	150	-	-	-	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
GPS1BS >16A	50	-	-	-	85	100	150	-	100	150	-	-	100	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
GPS1BH all	100	-	-	-	-	150	-	-	150	-	-	-	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
GPS2BS <16A	100	-	-	-	-	150	-	-	150	-	-	-	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
GPS2BS >16A	50	-	-	-	85	100	150	-	100	150	-	-	100	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
GPS2BH all	100	-	-	-	-	150	-	-	150	-	-	-	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Record Plus*																														
FD160/160C	18	-	30	36	42	50	65	42	50	65	36	42	50	65	42	50	65	42	50	65	-	-	-	-	-	-	-	-	-	-
FD160/160E	36	-	-	50	65	85	100	65	85	100	50	65	85	100	65	85	100	65	85	100	-	-	-	-	-	-	-	-	-	-
FD160/160S	50	-	-	-	85	100	-	85	100	-	-	85	100	-	85	100	-	85	100	-	-	-	-	-	-	-	-	-	-	-
FD160/160N	85	-	-	-	-	100	200	-	100	200	-	-	100	200	-	100	200	-	100	200	80	100	150	80	100	150	80	100	150	80
FD160/160H	100	-	-	-	-	200	-	200	-	-	200	-	200	-	200	-	200	-	200	-	200	80	100	150	80	100	150	80	100	150
FE160N	85	-	-	-	-	-	-	100	200	-	-	100	200	-	100	200	-	100	200	-	100	200	80	100	150	80	100	150	80	100
FE160H	100	-	-	-	-	-	-	200	-	-	200	-	200	-	200	-	200	-	200	-	200	80	100	150	80	100	150	80	100	150
FE250N	85	-	-	-	-	-	-	-	-	-	-	100	200	-	100	200	-	100	200	-	100	200	80	100	150	80	100	150	80	100
FE250H	100	-	-	-	-	-	-	-	-	-	-	-	200	-	200	-	200	-	200	-	200	80	100	150	80	100	150	80	100	150
FG400N	85	-	-	-	-	-	-	-	-	-	-	-	-	-	100	200	-	100	200	-	100	200	80	100	150	80	100	150	80	100
FG400H	100	-	-	-	-	-	-	-	-	-	-	-	-	-	200	-	200	-	200	-	200	80	100	150	80	100	150	80	100	150
FG630N	85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	200	80	100	150	80	100	150	80	100	150	80	100
FG630H	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	-	200	80	100	150	80	100	150	80	100	150
FK800N	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	100	150	80	100	150	80	100	150	80
FK800H	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	170	-	100	170	-	100	170	-	100
FK1250N	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	100	170	80	100	170	80	100	170	80
FK1250H	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	170	-	100	170	-	100	170	-	100

Circuit protection

A

B

C

D

E

F

G

X



Record Plus* MCCBs at 400/415V AC

Upstream / Downstream		MCCBs Record Plus*																												
		Icu In (kA)	FD160/160C	FD160/160E	FD160/160S	FD160/160N	FD160/160H	FD160/160L	FE160N	FE160H	FE160L	FE250V	FE250N	FE250H	FE250L	FG400N	FG400H	FG400L	FG630N	FG630H	FG630L	FK800N	FK800H	FK800L	FK1250N	FK1250H	FK1250L	FK1600N	FK1600H	
		Icu of the combination (kA)																												
Redline																														
EPC 452, 453 and 454	6	15	18	22	25	30	36	25	30	36	18	22	25	30	12	12	12	10	10	10	-	-	-	-	-	-	-	-	-	-
EPC60	10	16	20	23	25	34	40	28	34	40	20	25	30	32	15	15	15	10	10	10	-	-	-	-	-	-	-	-	-	-
G60	10	18	22	25	30	36	42	30	36	42	22	30	36	36	16	16	16	16	12	12	12	-	-	-	-	-	-	-	-	-
G100	15	18	25	30	36	42	50	36	42	50	25	30	36	36	22	22	22	16	16	16	-	-	-	-	-	-	-	-	-	
GT25 <25A	25	-	-	36	42	50	65	42	50	65	-	36	42	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
GT25, 32 and 40A	20	-	-	30	36	42	50	36	42	50	-	36	42	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
GT25, 50 and 63A	15	18	25	30	36	42	50	36	42	50	25	30	36	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Series Hti	10	15	18	25	30	36	42	30	36	42	18	22	25	30	12	12	12	10	10	10	-	-	-	-	-	-	-	-	-	
Series S90	15	18	25	30	36	42	50	36	42	50	25	30	36	42	12	12	12	10	10	10	-	-	-	-	-	-	-	-	-	
Surion																														
GPS1B/MS ≤10A	100	-	-	-	-	-	150	-	-	150	-	-	-	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GPS1B/MS 12.5A	50	-	-	-	-	80	150	-	80	150	-	-	80	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GPS1B/MS ≥16A	25	-	-	-	42	50	65	42	50	65	-	42	50	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GPS1B/MH ≤12.5A	100	-	-	-	-	-	150	-	-	150	-	-	-	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GPS1B/MH >12.5A	50	-	-	-	-	80	150	-	80	150	-	-	80	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GPS2B/MS 10A	100	-	-	-	-	-	150	-	-	150	-	-	-	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GPS2B/MS >10A	25	-	-	-	42	50	65	42	50	65	-	42	50	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GPS2B/MH 10A	100	-	-	-	-	-	150	-	-	150	-	-	-	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GPS2B/MH >10A	50	-	-	-	-	80	150	-	80	150	-	-	80	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Record Plus*																														
FD160/160C	18	-	22	25	30	36	42	30	36	42	22	30	36	42	30	36	42	30	36	42	-	-	-	-	-	-	-	-	-	-
FD160/160E	25	-	-	30	36	42	50	36	42	50	-	36	42	50	36	42	50	36	42	50	-	-	-	-	-	-	-	-	-	-
FD160/160S	36	-	-	-	42	50	65	42	50	65	-	42	50	65	42	50	65	42	50	65	-	-	-	-	-	-	-	-	-	-
FD160/160N	50	-	-	-	-	80	150	-	80	150	-	-	80	150	-	80	150	-	80	150	-	80	100	-	80	100	-	80	100	-
FD160/160H	80	-	-	-	-	-	150	-	-	150	-	-	-	150	-	-	150	-	-	150	-	100	-	100	-	100	-	100	-	-
FE160N	50	-	-	-	-	-	-	-	80	150	-	-	80	150	-	80	150	-	80	150	-	80	100	-	80	100	-	80	100	-
FE160H	80	-	-	-	-	-	-	-	-	150	-	-	-	150	-	-	150	-	-	150	-	100	-	100	-	100	-	100	-	-
FE250N	50	-	-	-	-	-	-	-	-	-	-	-	80	150	-	80	150	-	80	150	-	80	100	-	80	100	-	80	100	-
FE250H	80	-	-	-	-	-	-	-	-	-	-	-	-	150	-	-	150	-	-	150	-	100	-	100	-	100	-	100	-	-
FG400N	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	150	-	80	150	-	80	100	-	80	100	-	80	100	-
FG400H	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	-	-	150	-	100	-	100	-	100	-	100	-	-
FG630N	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	150	-	80	100	-	80	100	-	80	100	-
FG630H	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	-	100	-	100	-	100	-	100	-	-
FK800N	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	100	-	80	100	-	80	100	-	
FK800H	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-	100	-	100	-	100	-	-
FK1250N	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	100	-	80	100	-	80	100	-	
FK1250H	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-	100	-	100	-	100	-	-

MCCBs / MCCBs

A

B

C

D

E

F

G

X



Selectivity

Record Plus* MCCBs

Circuit protection

A

B

C

D

E

F

G

X

Upstream	Downstream	In (A)	MCCBs Record Plus*																	
			FDC and FDE 160 LTM					FDS 160 LTMD					FDN, H and L 160 LTMD							
			40	50	63	80	100	125	40	50	63	80	100	125	40	50	63	80	100	125
			Selectivity limit (kA) ⁽¹⁾																	
Redline EPC45 B/C curve	≤16	0.6	2.5	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	20	0.6	2.5	3	T	T	T	T	3.5	T	T	T	T	T	3.5	T	T	T	T	T
	25	-	0.8	1.2	T	T	T	T	1.6	3.5	T	T	T	T	1.6	3.5	T	T	T	T
	32	-	-	1.2	3	T	T	T	-	-	T	T	T	T	-	-	T	T	T	T
	40	-	-	-	3	4	T	T	-	-	T	T	T	T	-	-	T	T	T	T
Redline EPC60 and DME60 B/C curve	≥16	0.6	2.5	6	6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	20	0.6	2.5	3	6	T	T	T	3.5	T	T	T	T	T	3.5	T	T	T	T	T
	25	-	0.8	1.2	6	6	T	T	1.6	3.5	T	T	T	T	1.6	3.5	T	T	T	T
	32	-	-	1.2	3	6	T	T	-	-	T	T	T	T	-	-	T	T	T	T
	40	-	-	-	3	4	6	T	T	-	-	T	T	T	-	-	T	T	T	T
Redline DM60 DME100 B/C curve	≤16	0.6	2.5	6	6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	20	0.6	2.5	3	6	8	T	T	3.5	T	T	T	T	T	3.5	T	T	T	T	T
	25	-	0.8	1.2	6	6	T	T	1.6	3.5	T	T	T	T	1.6	3.5	T	T	T	T
	32	-	-	1.2	3	6	8	T	-	-	10	T	T	T	-	-	10	T	T	T
	40	-	-	-	3	4	6	T	-	-	-	T	T	T	-	-	-	T	T	T
Redline G60 EPC 101N DM100 B/C curve	≤16	0.6	2.5	6	6	10	T	T	10	10	T	T	T	T	10	10	T	T	T	T
	20	0.6	2.5	3	6	8	T	T	3.5	10	T	T	T	T	3.5	10	T	T	T	T
	25	-	0.8	1.2	6	6	T	T	1.6	3.5	T	T	T	T	1.6	3.5	T	T	T	T
	32	-	-	1.2	3	6	8	T	-	-	10	T	T	T	-	-	10	10	T	T
	40	-	-	-	3	4	6	T	-	-	10	T	T	T	-	-	10	10	T	T
Redline G100 GT25 B/C curve	≤16	0.6	2.5	6	6	10	T	T	10	10	T	T	T	T	10	10	T	T	T	T
	20	0.6	2.5	3	6	8	T	T	3.5	10	T	T	T	T	3.5	10	T	T	T	T
	25	-	0.8	1.2	6	6	T	T	1.6	3.5	15	T	T	T	1.6	3.5	15	T	T	T
	32	-	-	1.2	3	6	8	T	-	6	10	T	T	T	-	-	6	10	T	T
	40	-	-	-	3	4	6	T	-	-	10	15	T	T	-	-	10	15	T	T
Hti C curve S90 C curve	≤25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Surion GPS1BS and GPS1MS GPS2BS and GPS2MS	≤20	0.6	2.5	6	6	10	T	T	10	10	T	T	T	T	10	10	T	T	T	T
	25	-	1	1.2	6	6	T	T	-	3.5	15	15	T	T	-	3.5	15	15	T	T
	32	-	-	1.2	3	6	10	T	-	6	6	T	T	-	-	6	6	T	T	T
	40	-	-	-	3	4	6	T	-	-	6	T	T	-	-	6	6	T	T	T
	50	-	-	-	1.2	1.6	6	T	-	-	3.5	T	T	-	-	3.5	T	T	T	T
Surion GPS1BH and GPS1MH GPS2BH and GPS2MH	≤20	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	25	-	2.5	15	15	T	T	T	-	3.5	T	T	T	T	-	3.5	T	T	T	T
	32	-	-	6	6	8	T	T	-	-	T	T	T	T	-	-	T	T	T	T
	40	-	-	-	6	8	T	T	-	-	T	T	T	T	-	-	T	T	T	T
	50	-	-	-	-	6	T	T	-	-	3.5	T	T	T	-	-	3.5	T	T	T
Record Plus* FD160/160E LTM	≤25	0.4	0.5	0.6	0.8	1	1.3	0.6	0.8	0.9	1.2	1.5	3.5	0.6	0.8	0.9	1.2	1.5	3.5	3.5
	32	-	0.5	0.6	0.8	1	1.3	-	0.8	0.9	1.2	1.5	3.5	-	0.8	0.9	1.2	1.5	3.5	3.5
	40	-	-	-	0.8	1	1.3	-	-	-	1.2	1.5	3.5	-	-	-	1.2	1.5	3.5	3.5
	50	-	-	-	0.8	1	1.3	-	-	-	1.2	1.5	3.5	-	-	-	1.2	1.5	3.5	3.5
	63	-	-	-	-	1	1.3	-	-	-	-	1.5	3.5	-	-	-	-	1.5	3.5	3.5
80	-	-	-	-	-	1.3	-	-	-	-	-	3.5	-	-	-	-	-	-	3.5	3.5

(1) T = Full selectivity until the Icu of the downstream device.
 Remark: for MCCBs with D curve assume a C curve type with a one step higher rating.
 Example: selectivity FD160 80Amp LTM with downstream C curve 40A MCB = 3kA, for D curve 40A, take the value mentioned for 50A C curve, here 1.2kA.



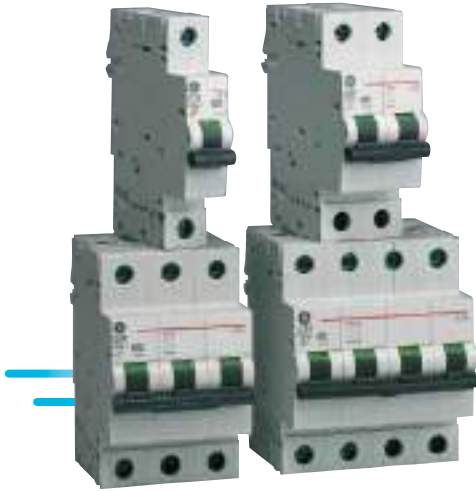


Miniature Circuit Breakers

Series G30

EN/IEC 60898-1	3000
	3
EN/IEC 61009-1	5kA

Circuit protection



Application

A



Approval / Marking

B

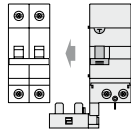


Add-on devices

C

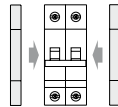
D

Add-on RCD



E

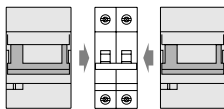
Auxiliaries



F

G

Motor operator



X


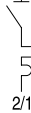



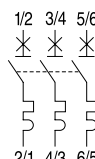

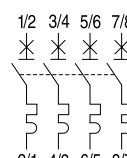
Performance

Thermal setting In	(A)	2-40
Rated voltage AC Un	(V)	240/415
Minimum operating voltage UB min	(V)	12
Tripping characteristics		B-C
Energy limiting class		3
Mechanical/electrical endurance		20000/10000
Tropicalisation acc.to EN/IEC 60068-2		95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	25-35
Poles		1, 2, 3, 4
Weight	(g/pole)	120

Short-circuit capacity

AC acc. to EN/IEC 60898-1		
Poles	V	Icn/Ics (kA)
1-4	230/400	3
AC acc. to EN/IEC 60898-1		
Poles	V	Icu (kA)
1	240	5
2	127	-
	240	10
	415	5
3, 4	240	10
	415	5

Series G30 - 3kA - characteristics B-C

	In (A)	B		C		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	
 <p>1P 1 mod.</p> <p>1/2</p>  <p>2/1</p>	2	-	-	G31C02	674381	12
	4	-	-	G31C04	674383	12
	6	G31B06	674443	G31C06	674384	12
	10	G31B10	674445	G31C10	674386	12
	16	G31B16	674447	G31C16	674388	12
	20	G31B20	674448	G31C20	674389	12
	25	G31B25	674449	G31C25	674390	12
	32	G31B32	674450	G31C32	674391	12
	40	G31B40	674451	G31C40	674392	12
	 <p>2P 2 mod.</p> <p>1/2 3/4</p>  <p>2/1 4/3</p>	2	-	-	G32C02	674397
4		-	-	G32C04	674399	6
6		G32B06	674454	G32C06	674400	6
10		G32B10	674456	G32C10	674402	6
16		G32B16	674458	G32C16	674404	6
20		G32B20	674459	G32C20	674405	6
25		G32B25	674460	G32C25	674406	6
32		G32B32	674461	G32C32	674407	6
40		G32B40	674462	G32C40	674408	6
 <p>3P 3 mod.</p> <p>1/2 3/4 5/6</p>  <p>2/1 4/3 6/5</p>		2	-	-	G33C02	674413
	4	-	-	G33C04	674415	4
	6	G33B06	674466	G33C06	674416	4
	10	G33B10	674468	G33C10	674418	4
	16	G33B16	674470	G33C16	674420	4
	20	G33B20	674471	G33C20	674421	4
	25	G33B25	674472	G33C25	674422	4
	32	G33B32	674473	G33C32	674423	4
	40	G33B40	674474	G33C40	674424	4
	 <p>4P 4 mod.</p> <p>1/2 3/4 5/6 7/8</p>  <p>2/1 4/3 6/5 8/7</p>	2	-	-	G34C02	674429
4		-	-	G34C04	674431	3
6		G34B06	674477	G34C06	674432	3
10		G34B10	674479	G34C10	674434	3
16		G34B16	674481	G34C16	674436	3
20		G34B20	674482	G34C20	674437	3
25		G34B25	674483	G34C25	674438	3
32		G34B32	674484	G34C32	674439	3
40		G34B40	674485	G34C40	674440	3

Series G30

A

B

C

D

E

F

G

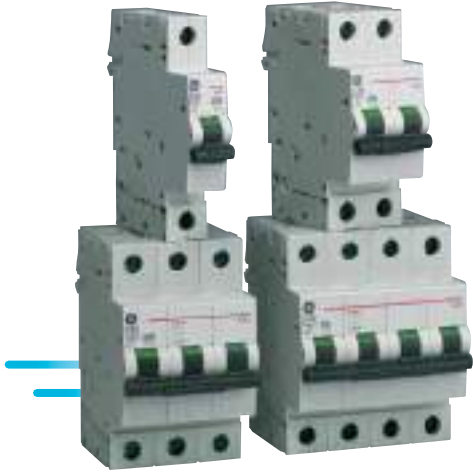
X



Series G45

EN/IEC 60898-1	4500
	3
EN/IEC 61009-1	6kA

Circuit protection



A

Application



B

Approval / Marking

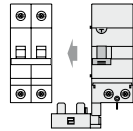


C

Add-on devices

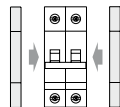
D

Add-on RCD



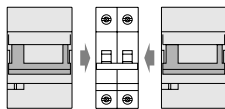
E

Auxiliaries



F

Motor operator



G

X


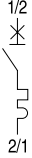

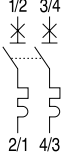

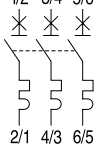

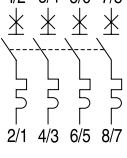
Performance

Thermal setting In	(A) 2-40
Rated voltage AC Un	(V) 240/415
Minimum operating voltage UB min	(V) 12
Tripping characteristics	B-C
Energy limiting class	3
Mechanical/electrical endurance	20000/10000
Tropicalisation acc.to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) 25-35
Poles	1, 2, 3, 4
Weight	(g/pole) 120

Short-circuit capacity

AC acc. to EN/IEC 60898-1		
Poles	V	Icn/Ics (kA)
1-4	230/400	4.5
AC acc. to EN/IEC 60898-1		
Poles	V	Icu (kA)
1	240	6
2	127	15
	240	10
	415	6
3, 4	240	10
	415	6

Series G45 - 4.5kA - characteristics B-C

	In (A)	B		C		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	
 <p>1P 1 mod.</p> <p>1/2</p>  <p>2/1</p>	2	-	-	G41C02	674490	12
	4	-	-	G41C04	674492	12
	6	G41B06	674552	G41C06	674493	12
	10	G41B10	674554	G41C10	674495	12
	16	G41B16	674556	G41C16	674497	12
	20	G41B20	674557	G41C20	674498	12
	25	G41B25	674558	G41C25	674499	12
	32	G41B32	674559	G41C32	674500	12
	40	G41B40	674560	G41C40	674501	12
	 <p>1P+N 2 mod.</p> <p>1/2 3/4</p>  <p>2/1 4/3</p>	2	-	-	G42C02	674506
4		-	-	G42C04	674508	6
6		G42B06	674563	G42C06	674509	6
10		G42B10	674565	G42C10	674511	6
16		G42B16	674567	G42C16	674513	6
20		G42B20	674568	G42C20	674514	6
25		G42B25	674569	G42C25	674515	6
32		G42B32	674570	G42C32	674516	6
40		G42B40	674571	G42C40	674517	6
 <p>2P 2 mod.</p> <p>1/2 3/4 5/6</p>  <p>2/1 4/3 6/5</p>		2	-	-	G43C02	674522
	4	-	-	G43C04	674524	6
	6	G43B06	674574	G43C06	674525	6
	10	G43B10	674576	G43C10	674527	6
	16	G43B16	674578	G43C16	674529	6
	20	G43B20	674579	G43C20	674530	6
	25	G43B25	674580	G43C25	674531	6
	32	G43B32	674581	G43C32	674532	6
	40	G43B40	674582	G43C40	674533	6
	 <p>3P 3 mod.</p> <p>1/2 3/4 5/6 7/8</p>  <p>2/1 4/3 6/5 8/7</p>	2	-	-	G44C02	674538
4		-	-	G44C04	674540	4
6		G44B06	674585	G44C06	674541	4
10		G44B10	674587	G44C10	674543	4
16		G44B16	674589	G44C16	674545	4
20		G44B20	674590	G44C20	674546	4
25		G44B25	674591	G44C25	674547	4
32		G44B32	674592	G44C32	674548	4
40		G44B40	674593	G44C40	674549	4

Series G45

A

B

C

D

E

F

G

X



Miniature Circuit Breakers

Series G60

EN/IEC 60898-1

6000

3

EN/IEC 61009-1

10kA



Special executions G60S for Shipping application in separate document with BV, RINA, LR and GL approval.

Circuit protection

A

Applications



B

Approvals / Marking

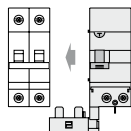


C

Add-on devices

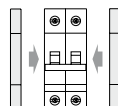
D

Add-on RCD



E

Auxiliaries



F

G

Motor operator



X

Performance

Thermal setting In	(A)	2-63
Rated voltage AC Un	(V)	240/415
Minimum operating voltage UB min	(V)	12
Tripping characteristics		B-C-D
Energy limiting class		3
Mechanical/electrical endurance		20000/10000
Tropicalisation acc.to EN/IEC 60068-2		95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	25-35
Poles		1, 1+N, 2, 3, 4
Weight	(g/pole)	120

Short-circuit capacity

AC acc. to EN/IEC 60898-1

Poles	V	Icn/Ics (kA)
1-4	230/400	6

AC acc. to EN/IEC 60947-2

Poles	V	Icu (kA) ⁽¹⁾
1	240	20
1+N, 2	127	30
	240	20
2	415	10
3, 4	240	20
	415	10










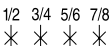
DC acc. to EN/IEC 60947-2

Poles	V ⁼⁼ (2)	Icu (kA)
1	60	20
2 (in series)	125	25

(1) Ics = 75% Icu

(2) Nominal and Maximum V DC on page A.4-A.5

Series G60 - 6kA - characteristics B-C-D

	In (A)	B		C		D		Pack.	
		Cat. No.	Ref. No.	Cat. No.	Ref. No.				
 <p>1P 1 mod.</p> <p>1/2</p>  <p>2/1</p>	2	-	-	G61C02	674598	G61D02	674760	12	
	4	-	-	G61C04	674600	G61D04	674762	12	
	6	G61B06	674692	G61C06	674601	G61D06	674763	12	
	10	G61B10	674694	G61C10	674603	G61D10	674765	12	
	16	G61B16	674696	G61C16	674605	G61D16	674767	12	
	20	G61B20	674697	G61C20	674606	G61D20	674768	12	
	25	G61B25	674698	G61C25	674607	G61D25	674769	12	
	32	G61B32	674699	G61C32	674608	G61D32	674770	12	
	40	G61B40	674700	G61C40	674609	G61D40	674771	12	
	50	G61B50	674701	G61C50	674610	G61D50	674772	12	
	63	G61B63	674702	G61C63	674611	G61D63	674773	12	
	 <p>1P+N 2 mod.</p> <p>1/2 N</p>  <p>2/1 N</p>	2	-	-	G61NC02	674614	G61ND02	674776	6
		4	-	-	G61NC04	674616	G61ND04	674778	6
6		G61NB06	674703	G61NC06	674617	G61ND06	674779	6	
10		G61NB10	674705	G61NC10	674619	G61ND10	674781	6	
16		G61NB16	674707	G61NC16	674621	G61ND16	674783	6	
20		G61NB20	674708	G61NC20	674622	G61ND20	674784	6	
25		G61NB25	674709	G61NC25	674623	G61ND25	674785	6	
32		G61NB32	674710	G61NC32	674624	G61ND32	674786	6	
40		G61NB40	674711	G61NC40	674625	G61ND40	674787	6	
50		G61NB50	674712	G61NC50	674626	G61ND50	674788	6	
63		G61NB63	674713	G61NC63	674627	G61ND63	674789	6	
 <p>2P 2 mod.</p> <p>1/2 3/4</p>  <p>2/1 4/3</p>		2	-	-	G62C02	674630	G62D02	674792	6
		4	-	-	G62C04	674632	G62D04	674794	6
	6	G62B06	674714	G62C06	674633	G62D06	674795	6	
	10	G62B10	674716	G62C10	674635	G62D10	674797	6	
	16	G62B16	674718	G62C16	674637	G62D16	674799	6	
	20	G62B20	674719	G62C20	674638	G62D20	674800	6	
	25	G62B25	674720	G62C25	674639	G62D25	674801	6	
	32	G62B32	674721	G62C32	674640	G62D32	674802	6	
	40	G62B40	674722	G62C40	674641	G62D40	674803	6	
	50	G62B50	674723	G62C50	674642	G62D50	674804	6	
	63	G62B63	674724	G62C63	674643	G62D63	674805	6	
	 <p>3P 3 mod.</p> <p>1/2 3/4 5/6</p>  <p>2/1 4/3 6/5</p>	2	-	-	G63C02	674646	G63D02	674808	4
		4	-	-	G63C04	674648	G63D04	674810	4
6		G63B06	674725	G63C06	674649	G63D06	674811	4	
10		G63B10	674727	G63C10	674651	G63D10	674813	4	
16		G63B16	674729	G63C16	674653	G63D16	674815	4	
20		G63B20	674730	G63C20	674654	G63D20	674816	4	
25		G63B25	674731	G63C25	674655	G63D25	674817	4	
32		G63B32	674732	G63C32	674656	G63D32	674818	4	
40		G63B40	674733	G63C40	674657	G63D40	674819	4	
50		G63B50	674734	G63C50	674658	G63D50	674820	4	
63		G63B63	674735	G63C63	674659	G63D63	674821	4	
 <p>4P 4 mod.</p> <p>1/2 3/4 5/6 7/8</p>  <p>2/1 4/3 6/5 8/7</p>		0.5	-	-	G64C0.5	674660	-	-	3
		2	-	-	G64C02	674662	G64D02	674824	3
	4	-	-	G64C04	674664	G64D04	674826	3	
	6	G64B06	674736	G64C06	674665	G64D06	674827	3	
	10	G64B10	674738	G64C10	674667	G64D10	674829	3	
	16	G64B16	674740	G64C16	674669	G64D16	674831	3	
	20	G64B20	674741	G64C20	674670	G64D20	674832	3	
	25	G64B25	674742	G64C25	674671	G64D25	674833	3	
	32	G64B32	674743	G64C32	674672	G64D32	674834	3	
	40	G64B40	674744	G64C40	674673	G64D40	674835	3	
	50	G64B50	674745	G64C50	674674	G64D50	674836	3	
	63	G64B63	674746	G64C63	674675	G64D63	674837	3	

Series G60

A

B

C

D

E

F

G

X

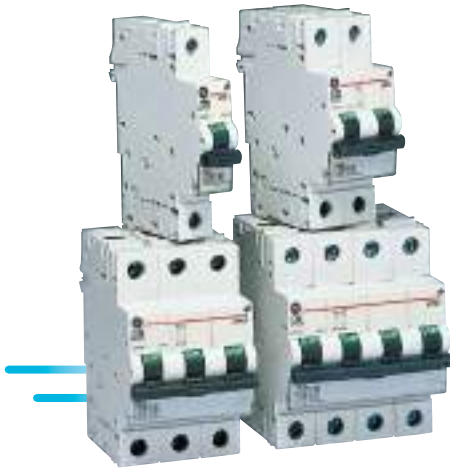


Miniature Circuit Breakers

Series EP60

EN/IEC 60898-1 **6000**

EN/IEC 60947-2 **10kA**



Circuit protection

A

Applications



B

Marking

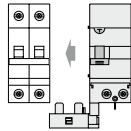


C

Add-on devices

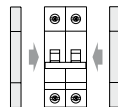
D

Add-on RCD



E

Auxiliaries



F

Motor operator



G

X

Performance

Thermal setting In	(A) 2-63
Rated voltage AC Un	(V) 240/415
Minimum operating voltage UB min	(V) 12
Tripping characteristics	8-12 In (K) and 6 in non tripping ≤ 2 sec
Mechanical/electrical endurance	20000/10000
Tropicalisation acc.to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) 25-35
Poles	1, 2, 3, 4
Weight	(g/pole) 120











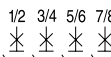

Short-circuit capacity

AC acc. to EN/IEC 60947-2		
Poles	V	Icu (kA) ⁽¹⁾
1	240	10
1+N, 2	127	30
	240	20
2	415	10
3, 4	240	20
	415	10
DC acc. to EN/IEC 60947-2		
Poles	V _{DC} ⁽²⁾	Icu/Ics (kA)
1	60	20
2 (in series)	125	25

(1) Ics = 75% Icu

(2) Nominal and Maximum VDC on page A.4-A.5

Series EP60 - 6kA - characteristic K

		K			
	In (A)	Cat. No.	Ref. No.		Pack.
	1P 1 mod.	0.5	EP61K0.5	681600	12
		1	EP61K01	681601	12
		1.6	EP61K1.6	681602	12
		2	EP61K02	681603	12
		3	EP61K03	681604	12
		4	EP61K04	681605	12
		6	EP61K06	681606	12
		8	EP61K08	681607	12
		10	EP61K10	681608	12
		16	EP61K16	681609	12
		20	EP61K20	681610	12
		25	EP61K25	681611	12
		32	EP61K32	681612	12
		40	EP61K40	681613	12
		50	EP61K50	681614	12
		63	EP61K63	681615	12
	1/2				
					
	2/1				
					
	2P 2 mod.	0.5	EP62K0.5	681616	6
		1	EP62K01	681617	6
		1.6	EP62K1.6	681618	6
		2	EP62K02	681619	6
		3	EP62K03	681620	6
		4	EP62K04	681621	6
		6	EP62K06	681622	6
		8	EP62K08	681623	6
		10	EP62K10	681624	6
		16	EP62K16	681625	6
		20	EP62K20	681626	6
		25	EP62K25	681627	6
		32	EP62K32	681628	6
		40	EP62K40	681629	6
		50	EP62K50	681630	6
		63	EP62K63	681631	6
	1/2 3/4				
					
	2/1 4/3				
					
	3P 3 mod.	0.5	EP63K0.5	681632	6
		1	EP63K01	681633	6
		1.6	EP63K1.6	681634	6
		2	EP63K02	681635	6
		3	EP63K03	681636	6
		4	EP63K04	681637	6
		6	EP63K06	681638	6
		8	EP63K08	681639	6
		10	EP63K10	681640	6
		16	EP63K16	681641	6
		20	EP63K20	681642	6
		25	EP63K25	681643	6
		32	EP63K32	681644	6
		40	EP63K40	681645	6
		50	EP63K50	681646	6
		63	EP63K63	681647	6
	1/2 3/4 5/6				
					
	2/1 4/3 6/5				
					
	3P 3 mod.	0.5	EP64K0.5	681648	3
		1	EP64K01	681649	3
		1.6	EP64K1.6	681650	3
		2	EP64K02	681651	3
		3	EP64K03	681652	3
		4	EP64K04	681653	3
		6	EP64K06	681654	3
		8	EP64K08	681655	3
		10	EP64K10	681656	3
		16	EP64K16	681657	3
		20	EP64K20	681658	3
		25	EP64K25	681659	3
		32	EP64K32	681660	3
		40	EP64K40	681661	3
		50	EP64K50	681662	3
		63	EP64K63	681663	3
	1/2 3/4 5/6 7/8				
					
	2/1 4/3 6/5 8/7				
					

Series EP60

A

B

C

D

E

F

G

X



Miniature Circuit Breakers

Series G100



EN/IEC 60898-1

10000
3

EN/IEC 60947-2

15kA

Special executions G100S for Shipping application with BV, LR GL approval.

Circuit protection

A

Applications



B

Approvals / Marking

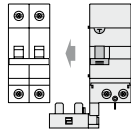


C

Add-on devices

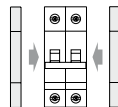
D

Add-on RCD



E

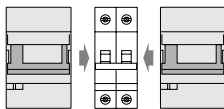
Auxiliaries



F

G

Motor operator



X

Performance

Thermal setting I_n	(A)	0.5-63
Rated voltage AC U_n	(V)	240/415
Minimum operating voltage U_B min	(V)	12
Tripping characteristics		B-C-D
Energy limiting class		3
Mechanical/electrical endurance		20000/10000
Tropicalisation acc.to EN/IEC 60068-2		95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	25-35
Poles		1, 1+N, 2, 3, 4
Weight	(g/pole)	120

Short-circuit capacity

AC acc. to EN/IEC 60898-1		
Poles	V	I _{cn} (kA) ⁽¹⁾
1-4	230/400	10
AC acc. to EN/IEC 60947-2		
Poles	V	I _{cu} (kA) ⁽²⁾
1	240	15
1+N, 2	127	40
	240	30
2	415	15
3, 4	240	30
	415	10
DC acc. to EN/IEC 60947-2		
Poles	V _{DC} ⁽³⁾	I _{cu} (kA)
1	60	25
2 (in series)	125	30

(1) I_{cs} = 75% I_{cu}

(2) I_{cs} = 50% I_{cu}

(3) Nominal and Maximum V DC on page A.4-A.5

Series G100 - 10kA - characteristics B-C-D

	In (A)	B		C		D		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.			
 <p>1P 1 mod.</p> <p>1/2</p>  <p>2/1</p>	0.5	-	-	G101C0.5	674854	G101D0.5	675016	12
	1	-	-	G101C01	674855	G101D01	675017	12
	2	-	-	G101C02	674856	G101D02	675018	12
	3	-	-	G101C03	674857	G101D03	675019	12
	4	-	-	G101C04	674858	G101D04	675020	12
	6	G101B06	674950	G101C06	674859	G101D06	675021	12
	10	G101B10	674952	G101C10	674861	G101D10	675023	12
	13	G101B13	674953	G101C13	674862	G101D13	675024	12
	16	G101B16	674954	G101C16	674863	G101D16	675025	12
	20	G101B20	674955	G101C20	674864	G101D20	675026	12
	25	G101B25	674956	G101C25	674865	G101D25	675027	12
	32	G101B32	674957	G101C32	674866	G101D32	675028	12
	40	G101B40	674958	G101C40	674867	G101D40	675029	12
	50	G101B50	674959	G101C50	674868	G101D50	675030	12
63	G101B63	674960	G101C63	674869	G101D63	675031	12	
 <p>1P+N 2 mod.</p> <p>1/2 N</p>  <p>2/1 N</p>	0.5	-	-	-	-	G101ND0.5	675032	6
	1	-	-	-	-	G101ND01	675033	6
	2	-	-	G101NC02	674872	G101ND02	675034	6
	3	-	-	G101NC03	674873	G101ND03	675035	6
	4	-	-	G101NC04	674874	G101ND04	675036	6
	6	G101NB06	674961	G101NC06	674875	G101ND06	675037	6
	10	G101NB10	674963	G101NC10	674877	G101ND10	675039	6
	13	G101NB13	674964	G101NC13	674878	G101ND13	675040	6
	16	G101NB16	674965	G101NC16	674879	G101ND16	675041	6
	20	G101NB20	674966	G101NC20	674880	G101ND20	675042	6
	25	G101NB25	674967	G101NC25	674881	G101ND25	675043	6
	32	G101NB32	674968	G101NC32	674882	G101ND32	675044	6
	40	G101NB40	674969	G101NC40	674883	G101ND40	675045	6
	50	G101NB50	674970	G101NC50	674884	G101ND50	675046	6
63	G101NB63	674971	G101NC63	674885	G101ND63	675047	6	
 <p>2P 2 mod.</p> <p>1/2 3/4</p>  <p>2/1 4/3</p>	0.5	-	-	G102C0.5	674886	G102D0.5	675048	6
	1	-	-	G102C01	674887	G102D01	675049	6
	2	-	-	G102C02	674888	G102D02	675050	6
	3	-	-	G102C03	674889	G102D03	675051	6
	4	-	-	G102C04	674890	G102D04	675052	6
	6	G102B06	674972	G102C06	674891	G102D06	675053	6
	10	G102B10	674974	G102C10	674893	G102D10	675055	6
	13	G102B13	674975	G102C13	674894	G102D13	675056	6
	16	G102B16	674976	G102C16	674895	G102D16	675057	6
	20	G102B20	674977	G102C20	674896	G102D20	675058	6
	25	G102B25	674978	G102C25	674897	G102D25	675059	6
	32	G102B32	674979	G102C32	674898	G102D32	675060	6
	40	G102B40	674980	G102C40	674899	G102D40	675061	6
	50	G102B50	674981	G102C50	674900	G102D50	675062	6
63	G102B63	674982	G102C63	674901	G102D63	675063	6	
 <p>3P 3 mod.</p> <p>1/2 3/4 5/6</p>  <p>2/1 4/3 6/5</p>	0.5	-	-	G103C0.5	674902	G103D0.5	675064	4
	1	-	-	G103C01	674903	G103D01	675065	4
	2	-	-	G103C02	674904	G103D02	675066	4
	3	-	-	G103C03	674905	G103D03	675067	4
	4	-	-	G103C04	674906	G103D04	675068	4
	6	G103B06	674983	G103C06	674907	G103D06	675069	4
	10	G103B10	674985	G103C10	674909	G103D10	675071	4
	13	G103B13	674986	G103C13	674910	G103D13	675072	4
	16	G103B16	674987	G103C16	674911	G103D16	675073	4
	20	G103B20	674988	G103C20	674912	G103D20	675074	4
	25	G103B25	674989	G103C25	674913	G103D25	675075	4
	32	G103B32	674990	G103C32	674914	G103D32	675076	4
	40	G103B40	674991	G103C40	674915	G103D40	675077	4
	50	G103B50	674992	G103C50	674916	G103D50	675078	4
63	G103B63	674993	G103C63	674917	G103D63	675079	4	
 <p>4P 4 mod.</p> <p>1/2 3/4 5/6 7/8</p>  <p>2/1 4/3 6/5 8/7</p>	0.5	-	-	G104C0.5	674918	G104D0.5	675080	3
	1	-	-	G104C01	674919	G104D01	675081	3
	2	-	-	G104C02	674920	G104D02	675082	3
	3	-	-	G104C03	674921	G104D03	675083	3
	4	-	-	G104C04	674922	G104D04	675084	3
	6	G104B06	674994	G104C06	674923	G104D06	675085	3
	10	G104B10	674996	G104C10	674925	G104D10	675087	3
	13	G104B13	674997	G104C13	674926	G104D13	675088	3
	16	G104B16	674998	G104C16	674927	G104D16	675089	3
	20	G104B20	674999	G104C20	674928	G104D20	675090	3
	25	G104B25	675000	G104C25	674929	G104D25	675091	3
	32	G104B32	675001	G104C32	674930	G104D32	675092	3
	40	G104B40	675002	G104C40	674931	G104D40	675093	3
	50	G104B50	675003	G104C50	674932	G104D50	675094	3
63	G104B63	675004	G104C63	674933	G104D63	675095	3	

Series G100

A

B

C

D

E

F

G

X



Miniature Circuit Breakers

Series EP100

EN/IEC 60898-1 **10000**

EN/IEC 60947-2 **15kA**



Circuit protection

A

Applications



B

Marking

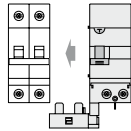


C

Add-on devices

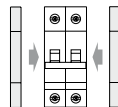
D

Add-on RCD



E

Auxiliaries



F

G

Motor operator



X

Performance

Thermal setting In	(A) 0.5-63
Rated voltage AC Un	(V) 240/415
Minimum operating voltage UB min	(V) 12
Tripping characteristics	8-12 In (K) and 6 In non tripping ≤ 2 sec., Z
Mechanical/electrical endurance	20000/10000
Tropicalisation acc.to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) 25-35
Poles	1, 2, 3, 4
Weight	(g/pole) 120

Short-circuit capacity




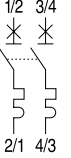

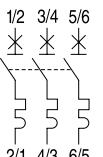

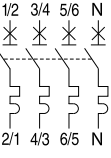

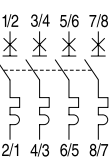
AC acc. to EN/IEC 60947-2		
Poles	V	Icu (kA) ⁽¹⁾
1	240	15
1+N, 2	127	40
	240	30
2	415	15
3, 4	240	30
	415	15
DC acc. to EN/IEC 60947-2		
Poles	V _{DC} ⁽²⁾	Icu/Ics (kA)
1	60	25
2 (in series)	125	30

(1) Ics = 75% Icu

(2) Nominal and Maximum VDC on page A.4-A.5



Series EP100 - 10kA - characteristics K-Z

	In (A)	K		Z		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	
1P 1 mod.  	0.5	EP101K0.5	672402	EP101Z0.5	682775	12
	1	EP101K01	672403	EP101Z01	682776	12
	1.6	EP101K1.6	681588	EP101Z1.6	682777	12
	2	EP101K02	672404	EP101Z02	682778	12
	3	EP101K03	672405	EP101Z03	682779	12
	4	EP101K04	672406	EP101Z04	682780	12
	6	EP101K06	672407	EP101Z06	682781	12
	8	EP101K08	672408	EP101Z08	682782	12
	10	EP101K10	672409	EP101Z10	682783	12
	16	EP101K16	672411	EP101Z16	682784	12
	20	EP101K20	672412	EP101Z20	682785	12
	25	EP101K25	672413	EP101Z25	682786	12
	32	EP101K32	672414	EP101Z32	682787	12
	40	EP101K40	672415	EP101Z40	682788	12
	50	EP101K50	672416	EP101Z50	682789	12
	63	EP101K63	672417	EP101Z63	682790	12
2P 2 mod.  	0.5	EP102K0.5	672434	EP102Z0.5	682791	6
	1	EP102K01	672435	EP102Z01	682792	6
	1.6	EP102K1.6	681591	EP102Z1.6	682793	6
	2	EP102K02	672436	EP102Z02	682794	6
	3	EP102K03	672437	EP102Z03	682795	6
	4	EP102K04	672438	EP102Z04	682796	6
	6	EP102K06	672439	EP102Z06	682797	6
	8	EP102K08	672440	EP102Z08	682798	6
	10	EP102K10	672441	EP102Z10	682799	6
	16	EP102K16	672443	EP102Z16	682800	6
	20	EP102K20	672444	EP102Z20	682801	6
	25	EP102K25	672445	EP102Z25	682802	6
	32	EP102K32	672446	EP102Z32	682803	6
	40	EP102K40	672447	EP102Z40	682804	6
	50	EP102K50	672448	EP102Z50	682805	6
	63	EP102K63	672449	EP102Z63	682806	6
3P 3 mod.  	0.5	EP103K0.5	672450	EP103Z0.5	682807	4
	1	EP103K01	672451	EP103Z01	682808	4
	1.6	EP103K1.6	681594	EP103Z1.6	682809	4
	2	EP103K02	672452	EP103Z02	682810	4
	3	EP103K03	672453	EP103Z03	682811	4
	4	EP103K04	672454	EP103Z04	682812	4
	6	EP103K06	672455	EP103Z06	682813	4
	8	EP103K08	672456	EP103Z08	682814	4
	10	EP103K10	672457	EP103Z10	682815	4
	16	EP103K16	672459	EP103Z16	682816	4
	20	EP103K20	672460	EP103Z20	682817	4
	25	EP103K25	672461	EP103Z25	682818	4
	32	EP103K32	672462	EP103Z32	682819	4
	40	EP103K40	672463	EP103Z40	682820	4
	50	EP103K50	672464	EP103Z50	682821	4
	63	EP103K63	672465	EP103Z63	682822	4
3P+N 3 mod.  	0.5	-	-	EP103Z0.5N	682823	4
	1	-	-	EP103Z01N	682824	4
	1.6	-	-	EP103Z1.6N	682825	4
	2	-	-	EP103Z02N	682826	4
	3	-	-	EP103Z03N	682827	4
	4	-	-	EP103Z04N	682828	4
	6	-	-	EP103Z06N	682829	4
	8	-	-	EP103Z08N	682830	4
	10	-	-	EP103Z10N	682831	4
	16	-	-	EP103Z16N	682832	4
	20	-	-	EP103Z20N	682833	4
	25	-	-	EP103Z25N	682834	4
	32	-	-	EP103Z32N	682835	4
	40	-	-	EP103Z40N	682836	4
	50	-	-	EP103Z50N	682837	4
	63	-	-	EP103Z63N	682838	4
4P 4 mod.  	0.5	EP104K0.5	672466	EP104Z0.5	682839	3
	1	EP104K01	672467	EP104Z01	682840	3
	1.6	EP104K1.6	681597	EP104Z1.6	682841	3
	2	EP104K02	672468	EP104Z02	682842	3
	3	EP104K03	672469	EP104Z03	682843	3
	4	EP104K04	672470	EP104Z04	682844	3
	6	EP104K06	672471	EP104Z06	682845	3
	8	EP104K08	672472	EP104Z08	682846	3
	10	EP104K10	672473	EP104Z10	682847	3
	16	EP104K16	672475	EP104Z16	682848	3
	20	EP104K20	672476	EP104Z20	682849	3
	25	EP104K25	672477	EP104Z25	682850	3
	32	EP104K32	672478	EP104Z32	682851	3
	40	EP104K40	672479	EP104Z40	682852	3
	50	EP104K50	672480	EP104Z50	682853	3
	63	EP104K63	672481	EP104Z63	682854	3

Series EP100

A

B

C

D

E

F

G

X

New



Series GT10

EN/IEC 60947-2 10kA

Circuit protection



A

Applications



B

Marking

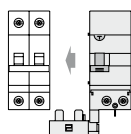


C

Add-on devices

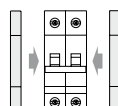
D

Add-on RCD



E

Auxiliaries



F

Motor operator



G

X

Performance

Thermal setting In	(A) 0.5-63
Rated voltage AC Un	(V) 240/415
Minimum operating voltage UB min	(V) 12
Tripping characteristics	3-5In (B) 5-10In (C) 10-20In (D)
Mechanical/electrical endurance	20000/10000
Tropicalisation acc.to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) 25-35
Poles	1, 2, 3, 4
Weight	(g/pole) 120

Short-circuit capacity




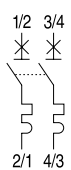

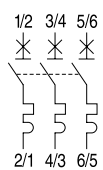

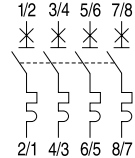
AC acc. to EN/IEC 60947-2		
Poles	V	Icu (kA) ⁽¹⁾
1	240	10
2	127	30
	240	20
	415	10
3, 4	240	20
	415	10

DC acc. to EN/IEC 60947-2		
Poles	V ⁼⁼ (2)	Icu (kA)
1	60	20
2 (in series)	125	25

(1) Ics = 75% Icu

(2) Nominal and Maximum V DC on page A.4-A.5

Series GT10 - 10kA - 3-5In (B), 5-10In (C), 10-20In (D)

	In (A)	3-5In (B)		5-10In (C)		10-20In (D)		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.			
 1P 1 mod.	0.5	-	-	GT101C0.5	675112	GT101D0.5	675220	12
	1	-	-	GT101C01	675113	GT101D01	675221	12
	2	-	-	GT101C02	675114	GT101D02	675222	12
	3	-	-	GT101C03	675115	GT101D03	675223	12
	4	-	-	GT101C04	675116	GT101D04	675224	12
	6	GT101B06	675176	GT101C06	675117	GT101D06	675225	12
	10	GT101B10	675178	GT101C10	675119	GT101D10	675227	12
	13	GT101B13	675179	GT101C13	675120	GT101D13	675228	12
	16	GT101B16	675180	GT101C16	675121	GT101D16	675229	12
	20	GT101B20	675181	GT101C20	675122	GT101D20	675230	12
	25	GT101B25	675182	GT101C25	675123	GT101D25	675231	12
	32	GT101B32	675183	GT101C32	675124	GT101D32	675232	12
	40	GT101B40	675184	GT101C40	675125	GT101D40	675233	12
	50	GT101B50	675185	GT101C50	675126	GT101D50	675234	12
	63	GT101B63	675186	GT101C63	675127	GT101D63	675235	12
 1/2 2/1								
 2P 2 mod.	0.5	-	-	GT102C0.5	675128	GT102D0.5	675236	6
	1	-	-	GT102C01	675129	GT102D01	675237	6
	2	-	-	GT102C02	675130	GT102D02	675238	6
	3	-	-	GT102C03	675131	GT102D03	675239	6
	4	-	-	GT102C04	675132	GT102D04	675240	6
	6	GT102B06	675187	GT102C06	675133	GT102D06	675241	6
	10	GT102B10	675189	GT102C10	675135	GT102D10	675243	6
	13	GT102B13	675190	GT102C13	675136	GT102D13	675244	6
	16	GT102B16	675191	GT102C16	675137	GT102D16	675245	6
	20	GT102B20	675192	GT102C20	675138	GT102D20	675246	6
	25	GT102B25	675193	GT102C25	675139	GT102D25	675247	6
	32	GT102B32	675194	GT102C32	675140	GT102D32	675248	6
	40	GT102B40	675195	GT102C40	675141	GT102D40	675249	6
	50	GT102B50	675196	GT102C50	675142	GT102D50	675250	6
	63	GT102B63	675197	GT102C63	675143	GT102D63	675251	6
 1/2 3/4 2/1 4/3								
 3P 3 mod.	0.5	-	-	GT103C0.5	675144	GT103D0.5	675252	4
	1	-	-	GT103C01	675145	GT103D01	675253	4
	2	-	-	GT103C02	675146	GT103D02	675254	4
	3	-	-	GT103C03	675147	GT103D03	675255	4
	4	-	-	GT103C04	675148	GT103D04	675256	4
	6	GT103B06	675198	GT103C06	675149	GT103D06	675257	4
	10	GT103B10	675200	GT103C10	675151	GT103D10	675259	4
	13	GT103B13	675201	GT103C13	675152	GT103D13	675260	4
	16	GT103B16	675202	GT103C16	675153	GT103D16	675261	4
	20	GT103B20	675203	GT103C20	675154	GT103D20	675262	4
	25	GT103B25	675204	GT103C25	675155	GT103D25	675263	4
	32	GT103B32	675205	GT103C32	675156	GT103D32	675264	4
	40	GT103B40	675206	GT103C40	675157	GT103D40	675265	4
	50	GT103B50	675207	GT103C50	675158	GT103D50	675266	4
	63	GT103B63	675208	GT103C63	675159	GT103D63	675267	4
 1/2 3/4 5/6 2/1 4/3 6/5								
 4P 4 mod.	0.5	-	-	GT104C0.5	675160	GT104D0.5	675268	3
	1	-	-	GT104C01	675161	GT104D01	675269	3
	2	-	-	GT104C02	675162	GT104D02	675270	3
	3	-	-	GT104C03	675163	GT104D03	675271	3
	4	-	-	GT104C04	675164	GT104D04	675272	3
	6	GT104B06	675209	GT104C06	675165	GT104D06	675273	3
	10	GT104B10	675211	GT104C10	675167	GT104D10	675275	3
	13	GT104B13	675212	GT104C13	675168	GT104D13	675276	3
	16	GT104B16	675213	GT104C16	675169	GT104D16	675277	3
	20	GT104B20	675214	GT104C20	675170	GT104D20	675278	3
	25	GT104B25	675215	GT104C25	675171	GT104D25	675279	3
	32	GT104B32	675216	GT104C32	675172	GT104D32	675280	3
	40	GT104B40	675217	GT104C40	675173	GT104D40	675281	3
	50	GT104B50	675218	GT104C50	675174	GT104D50	675282	3
	63	GT104B63	675219	GT104C63	675175	GT104D63	675283	3
 1/2 3/4 5/6 7/8 2/1 4/3 6/5 8/7								

Series GT10

A

B

C

D

E

F

G

X

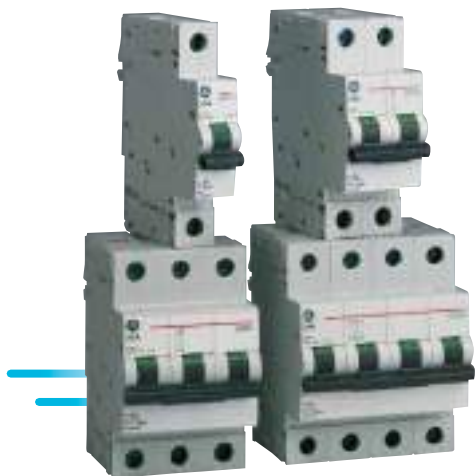


Miniature Circuit Breakers

Series GT25

EN/IEC 60947-2	100kA
	25kA
	20kA
	15kA

Circuit protection



A

Application



B

Marking

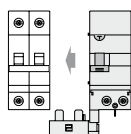


C

Add-on devices

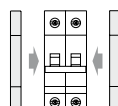
D

Add-on RCD



E

Auxiliaries



F

Motor operator



G

X

Performance

Thermal setting In	(A) 0.5-63
Rated voltage AC Un	(V) 240/415
Minimum operating voltage UB min	(V) 12
Tripping characteristics	3-5In (B) 5-10In (C) 10-20In (D)
Mechanical/electrical endurance	20000/10000
Tropicalisation acc.to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) 25-35
Poles	1, 2, 3, 4
Weight	(g/pole) 120

Short-circuit capacity

AC acc. to EN/IEC 60947-2

In (A)	Poles	V	Icu (kA) ⁽¹⁾
0.5-4	0.5-4	240	100
	2-4	415	100
6-25	1	240	25
	2-4	240	50
32-40	2-4	415	25
		240	20
		240	40
50-63	2-4	415	20
		240	15
		240	30
		415	15


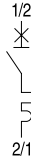

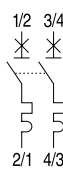

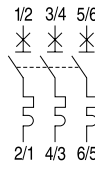

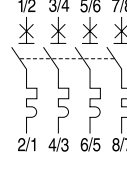
DC acc. to EN/IEC 60947-2

Poles	V _{DC} ⁽²⁾	Icu (kA)
1	60	25
2 (in series)	125	30

(1) Ics = 75% Icu

(2) Nominal and Maximum VDC on page A.4-A.5

Series GT25 - 25kA - 3-5In (B), 5-10In (C), 10-20In (D)

	In (A)	3-5In (B)		5-10In (C)		10-20In (D)		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
 <p>1P 1 mod.</p> 	0.5	-	-	GT251C0.5	675284	GT251D0.5	675392	12
	1	-	-	GT251C01	675285	GT251D01	675393	12
	2	-	-	GT251C02	675286	GT251D02	675394	12
	4	-	-	GT251C04	675288	GT251D04	675396	12
	6	GT251B06	675348	GT251C06	675289	GT251D06	675397	12
	10	GT251B10	675350	GT251C10	675291	GT251D10	675399	12
	16	GT251B16	675352	GT251C16	675293	GT251D16	675401	12
	20	GT251B20	675353	GT251C20	675294	GT251D20	675402	12
	25	GT251B25	675354	GT251C25	675295	GT251D25	675403	12
	32	GT251B32	675355	GT251C32	675296	GT251D32	675404	12
	40	GT251B40	675356	GT251C40	675297	GT251D40	675405	12
	50	GT251B50	675357	GT251C50	675298	GT251D50	675406	12
	63	GT251B63	675358	GT251C63	675299	GT251D63	675407	12
	 <p>2P 2 mod.</p> 	0.5	-	-	GT252C0.5	675300	GT252D0.5	675408
1		-	-	GT252C01	675301	GT252D01	675409	6
2		-	-	GT252C02	675302	GT252D02	675410	6
4		-	-	GT252C04	675304	GT252D04	675412	6
6		GT252B06	675359	GT252C06	675305	GT252D06	675413	6
10		GT252B10	675361	GT252C10	675307	GT252D10	675415	6
16		GT252B16	675363	GT252C16	675309	GT252D16	675417	6
20		GT252B20	675364	GT252C20	675310	GT252D20	675418	6
25		GT252B25	675365	GT252C25	675311	GT252D25	675419	6
32		GT252B32	675366	GT252C32	675312	GT252D32	675420	6
40		GT252B40	675367	GT252C40	675313	GT252D40	675421	6
50		GT252B50	675368	GT252C50	675314	GT252D50	675422	6
63		GT252B63	675369	GT252C63	675315	GT252D63	675423	6
 <p>3P 3 mod.</p> 		0.5	-	-	GT253C0.5	675316	GT253D0.5	675424
	1	-	-	GT253C01	675317	GT253D01	675425	4
	2	-	-	GT253C02	675318	GT253D02	675426	4
	4	-	-	GT253C04	675320	GT253D04	675428	4
	6	GT253B06	675370	GT253C06	675321	GT253D06	675429	4
	10	GT253B10	675372	GT253C10	675323	GT253D10	675431	4
	16	GT253B16	675374	GT253C16	675325	GT253D16	675433	4
	20	GT253B20	675375	GT253C20	675326	GT253D20	675434	4
	25	GT253B25	675376	GT253C25	675327	GT253D25	675435	4
	32	GT253B32	675377	GT253C32	675328	GT253D32	675436	4
	40	GT253B40	675378	GT253C40	675329	GT253D40	675437	4
	50	GT253B50	675379	GT253C50	675330	GT253D50	675438	4
	63	GT253B63	675380	GT253C63	675331	GT253D63	675439	4
	 <p>4P 4 mod.</p> 	0.5	-	-	GT254C0.5	675332	GT254D0.5	675440
1		-	-	GT254C01	675333	GT254D01	675441	3
2		-	-	GT254C02	675334	GT254D02	675442	3
4		-	-	GT254C04	675336	GT254D04	675444	3
6		GT254B06	675381	GT254C06	675337	GT254D06	675445	3
10		GT254B10	675383	GT254C10	675339	GT254D10	675447	3
16		GT254B16	675385	GT254C16	675341	GT254D16	675449	3
20		GT254B20	675386	GT254C20	675342	GT254D20	675450	3
25		GT254B25	675387	GT254C25	675343	GT254D25	675451	3
32		GT254B32	675388	GT254C32	675344	GT254D32	675452	3
40		GT254B40	675389	GT254C40	675345	GT254D40	675453	3
50		GT254B50	675390	GT254C50	675346	GT254D50	675454	3
63		GT254B63	675391	GT254C63	675347	GT254D63	675455	3

Series GT25

A

B

C

D

E

F

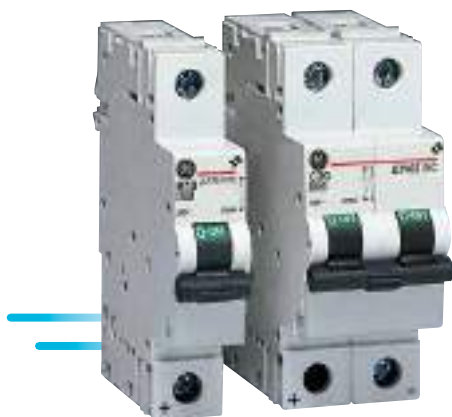
G

X



Series EP100 UC

Circuit protection



EN/IEC 60898-2

6000 | T15

DIN VDE 0641

EN/IEC 60947-2

10kA

Applications



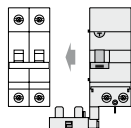
Standards / Marking

EN/IEC 60898-2, DIN VDE 0641

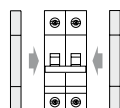


Add-on devices

Add-on RCD



Auxiliaries



Motor operator



Performance

Thermal setting In	(A) 0.5-63
Rated voltage AC Un	(V) 230/400 250/500/880 \equiv
Minimum operating voltage UB min	(V) 12 12 \equiv
Tripping characteristics	B-C-Z
Mechanical/electrical endurance	20000/10000
Tropicalisation acc.to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) 25-35
Poles	1, 2, 4 ⁽²⁾
Weight	(g/pole) 120

Short-circuit capacity

AC/DC acc. to EN/IEC 60898-2⁽⁵⁾

Poles	V	Icn=Ics (kA)
1	125 DC	10
	250 DC	6
	230/400 AC	6
2	250 DC	10
	500 DC	6
	400 AC	6
4	800 DC	6

AC/DC acc. to EN/IEC 60947-2

Poles	V	Icu (kA)
1	220 DC	10 ⁽³⁾
2	440 DC	10 ⁽³⁾
2	125 DC	25 ⁽³⁾
1	230 AC	6 ⁽⁴⁾
2	400 AC	6 ⁽⁴⁾

(1) Polarity labeling to be respected due to the permanent magnet in the MCB

(2) For 4P execution open circuit voltage Uco = 1000 \equiv




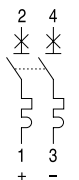

(3) T = 4ms

(4) 4.5kA for 50A and 63A

(5) After a switching of the net with more than 6kA in AC it should not be used in DC

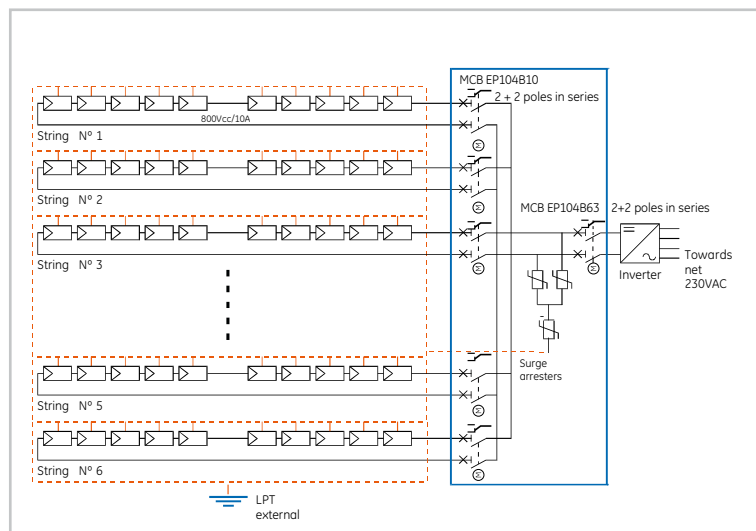
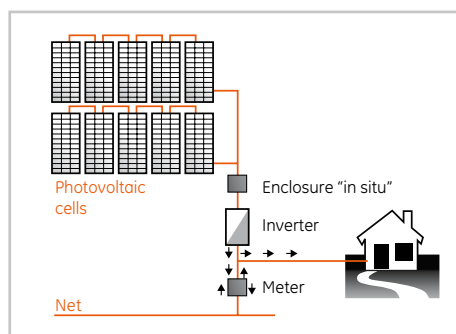


Series EP100 UC - 10kA - characteristics B-C-Z

	In (A)	B		C		Z		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
 <p>1P 1 mod.</p> 	0.5	-	-	EP101UCC0.5	673301	EP101UCZ0.5	682935	12
	1	-	-	EP101UCC01	673302	EP101UCZ01	682936	12
	1.6	-	-	-	-	EP101UCZ1.6	682937	12
	2	-	-	EP101UCC02	673303	EP101UCZ02	682938	12
	3	-	-	-	-	EP101UCZ03	682939	12
	4	-	-	EP101UCC04	673305	EP101UCZ04	682940	12
	6	EP101UCB06	673333	EP101UCC06	673306	EP101UCZ06	682941	12
	8	-	-	-	-	EP101UCZ08	682942	12
	10	EP101UCB10	673334	EP101UCC10	673308	EP101UCZ10	682943	12
	16	EP101UCB16	673335	EP101UCC16	673310	EP101UCZ16	682944	12
	20	EP101UCB20	673336	EP101UCC20	673311	EP101UCZ20	682945	12
	25	EP101UCB25	673337	EP101UCC25	673312	EP101UCZ25	682946	12
	32	EP101UCB32	673338	EP101UCC32	673313	EP101UCZ32	682947	12
	40	EP101UCB40	673339	EP101UCC40	673314	EP101UCZ40	682948	12
50	EP101UCB50	673340	EP101UCC50	673315	EP101UCZ50	682949	12	
63	EP101UCB63	673341	EP101UCC63	673316	EP101UCZ63	682950	12	
 <p>2P 2 mod.</p> 	0.5	-	-	EP102UCC0.5	673317	EP102UCZ0.5	682951	6
	1	-	-	EP102UCC01	673318	EP102UCZ01	682952	6
	1.6	-	-	-	-	EP102UCZ1.6	682953	6
	2	-	-	EP102UCC02	673319	EP102UCZ02	682954	6
	3	-	-	-	-	EP102UCZ03	682955	6
	4	-	-	EP102UCC04	673321	EP102UCZ04	682956	6
	6	EP102UCB06	673342	EP102UCC06	673322	EP102UCZ06	682957	6
	8	-	-	-	-	EP102UCZ08	682958	6
	10	EP102UCB10	673343	EP102UCC10	673324	EP102UCZ10	682959	6
	16	EP102UCB16	673344	EP102UCC16	673326	EP102UCZ16	682960	6
	20	EP102UCB20	673345	EP121UCC20	673327	EP102UCZ20	682961	6
	25	EP102UCB25	673346	EP102UCC25	673328	EP102UCZ25	682962	6
	32	EP102UCB32	673347	EP102UCC32	673329	EP102UCZ32	682963	6
	40	EP102UCB40	673348	EP102UCC40	673330	EP102UCZ40	682964	6
50	EP102UCB50	673349	EP102UCC50	673331	EP102UCZ50	682965	6	
63	EP102UCB63	673350	EP102UCC63	673332	EP102UCZ63	682966	6	
 <p>4P 4.5 mod.⁽¹⁾</p> 	10	EP104UCB10	690200					3
	16	EP104UCB16	688029					3
	20	EP104UCB20	688026					3
	25	EP104UCB25	691580					3
	32	EP104UCB32	691581					3
	40	EP104UCB40	688027					3
	63	EP104UCB63	688028					3

(1) Including auxiliary contact CAH (central half module)
Line to be connected to bottom terminals 1, 7 load to 3, 5.

Example of the wiring in a Photovoltaic application



Example of installation in enclosure "in situ"

Series EP100 UC

A

B

C

D

E

F

G

X

New



Miniature Circuit Breakers

Series Hti

EN/IEC 60947-2 10kA



Circuit protection

A

Applications



B

Standards / Marking

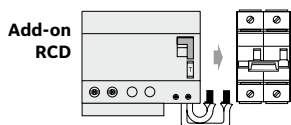
EN/IEC 60947-2



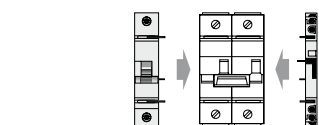
C

Add-on devices

D



E



F

G

X

Performance

Thermal setting In	(A) 80-100-125
Rated voltage AC Un	(V) 230/400
Tripping characteristics	3-5 In (B) 5-10 In (C) 10-20 In (D)
Mechanical/electrical endurance	10000/4000
Operating temperature	-25°C up to 55°C
Terminal capacity flexible/rigid cable	(mm ²) 70
Poles	1, 2, 3, 4
Weight	(g/pole) 210

Short-circuit capacity

AC acc. to EN/IEC 60947-2 (B, C)		
Poles	V	Icu (kA) ⁽¹⁾
1	230/400	10 ⁽²⁾
2	230	15 ⁽³⁾
3, 4	230	15 ⁽³⁾
3, 4	400	10 ⁽²⁾

Add-on RCD - technical performances

Standard	EN/IEC 60947-2
Nominal current In	(A) 80-125
Residual current IΔn	(mA) 30, 300
Rated voltage AC Un	(V) 2P: 230/400 3P-4P: 400
Resistance against unwanted tripping	Type A, AC: 250A 8/20 μs Type S: 3000A 8/20 μs
Terminal capacity flexible/rigid cable	(mm ²) 70
Poles	2, 3, 4

(1) Only for 3-5 In (B) and 5-10 In (C)
 (2) 7.5kA for 10-20 In (D)
 (3) 10kA for 10-20 In (D)

Series Hti - 10kA - characteristics B-C-D

	In (A)	3-5In (B)		5-10In (C)		10-20In (D)		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.			
 <p>1P 1.5 mod.</p> 	80	Hti 101 B080	671504	Hti 101 C080	671528	Hti 101 D080	671552	8
	100	Hti 101 B100	671505	Hti 101 C100	671529	Hti 101 D100	671553	1
	125	Hti 101 B125	671506	Hti 101 C125	671530	Hti 101 D125	671554	1
 <p>2P 3 mod.</p> 	80	Hti 102 B080	671510	Hti 102 C080	671534	Hti 102 D080	671558	4
	100	Hti 102 B100	671511	Hti 102 C100	671535	Hti 102 D100	671559	1
	125	Hti 102 B125	671512	Hti 102 C125	671536	Hti 102 D125	671560	1
 <p>3P 4.5 mod.</p> 	80	Hti 103 B080	671516	Hti 103 C080	671540	Hti 103 D080	671564	1
	100	Hti 103 B100	671517	Hti 103 C100	671541	Hti 103 D100	671565	1
	125	Hti 103 B125	671518	Hti 103 C125	671542	Hti 103 D125	671566	1
 <p>4P 6 mod.</p> 	80	Hti 104 B80	671522	Hti 104 C080	671546	Hti 104 D080	671570	1
	100	Hti 104 B100	671523	Hti 104 C100	671547	Hti 104 D100	671571	1
	125	Hti 104 B125	671524	Hti 104 C125	671548	Hti 104 D125	671572	1

Series Hti

A

B

C

D

E

F

G

X




Only for 3-5 In (B) and 5-10 In (C)
For D see page A.38



Series Hti - Add-on RCD - Type AC

Circuit protection

A

	In (A)	30 mA		300 mA		Pack.
		Cat. No.	Ref. No.			
 2P 6 mod.	80-125	DOC 2125/030	671574	DOC 2125/300	671576	1
 3P 6 mod.	80-125	DOC 3125/030	671582	DOC 3125/300	671584	1
 4P 6 mod.	80-125	DOC 4125/030	671590	DOC 4125/300	671592	1

Series Hti - Add-on RCD - Type A



B

C

D

E



F

	In (A)	30 mA		300 mA		Pack.
		Cat. No.	Ref. No.			
 3P 6 mod.	80-125	DOCA 3125/030	671581	DOCA 3125/300	671583	1
 4P 6 mod.	80-125	DOCA 4125/030	671589	DOCA 4125/300	671591	1

Series Hti - Add-on RCD - Type S

G

X

	In (A)	30 mA		300 mA		Pack.
		Cat. No.	Ref. No.			
 3P 6 mod.	80-125	-	-	DOCS 3125/300	671585	1
 4P 6 mod.	80-125	-	-	DOCS 4125/300	671585	1

On demand: 2P type A and S

Series Hti - Auxiliary contacts (right side)

	Description	Functions	Mod.	Cat. No.	Ref. No.	Pack.
	Auxiliary contact	H	1/2	Hti H	671597	1
	Signal contact S + test + reset	S	1/2	Hti S	671598	12
	Changeable auxiliary/signal contact	H/S	1/2	Hti H/S	671599	1
	Auxiliary contact and changeable auxiliary/signal contact	H+H/S	1/2	Hti HH/HS	671600	1
	Auxiliary contact and signal contact H + S + test + reset	H+S	1/2	Hti HSR	671602	1

Series Hti - Shunt trip (left or right side)

	Rated voltage	Closing current	Operating time	Coil impedance at 50Hz	Cat. No.	Ref. No.	Pack.
	110 to 415V	0.5A at 110V	10 ms	ca. 29 Ohm	TELE L 110	624945	8
	110 to 125V DC	0.6A at 230V	4ms	ca. 29 Ohm			
		1A at 400V	2ms	ca. 29 Ohm			
	24 to 48V DC	1A at 24V DC	10ms	ca. 24 Ohm	TELE L 24	624946	8
	24 to 60V	2A at 48V DC	4ms	ca. 24 Ohm			

Series Hti

A

B

C

D

E

F

G

X



Redline

Hti+ For space saving. For more power.



The Hti+ range offers the right High Performance MCB with high-rated breaking capacities and various tripping characteristics. The Hti+ 36 is the ideal solution for applications of up to 36kA; of course, also for current ratings of between 80 and 125A. The high-rated breaking capacities of Hti+50 up to 50kA allow electrical distribution systems to be configured and operated safely in an uncomplicated manner.

Compact dimensions ensure that energy distribution systems can be set up in a space-saving way.

The Hti+



Circuit protection

A

B

C

D

E

F

G

X

- Space saving. Reduce the side of the distribution board to the minimum.
- More power. The highest breaking capacity in modular MCB format: 50kA.
- High nominal current range of up to 125A.
- More safety. Convincing selectivity and back-up properties up to 50kA.
- More comfort. Compact and modular with plastic tongue in IP20 terminals.
- More flexibility. Thanks to the large product portfolio for a multitude of applications.
- More accessories. Add on RCDs, RCBOs, Auxiliaries, Shunt trip, under voltage and rotary handle.

Applications

Public buildings

Schools, hospitals, office buildings: Wherever there are large numbers of people coming and going, reliable power supplies are of importance. High Performance MCBs, such as the Hti+ ensure that personal injury and damage to property are avoided in the event of short-circuits.

Airports

Millions of people take off here. Day in, day out. High Performance MCBs, such as the Hti+ ensure that personal injury and damage to property are avoided in the event of short-circuits.

Alternative energies

Simply inexhaustible: more and more power stations operating on the based on renewable energy, such as solar power, are being built around the world. High Performance MCBs, such as the Hti+ ensure safer operations.

Power stations

Virtually nothing runs without electricity. With a total of more than 3 400 000 megawatts of power, power stations around the globe ensure that the world keeps moving. High Performance MCBs, such as the Hti+, will protect your infrastructure and therefore all your staff and machines involved in the production of electricity.

The petrochemical industry

The chemical and petrochemical industry contributes significantly to everyday modern life. Whether you are talking about health, nutrition, clothing or mobility – their products ensure quality of life and jobs. Over 2 million in the European Union alone. High Performance MCBs, such as the Hti+, safeguard production on oil platforms in the sea as well as in production sites on land.

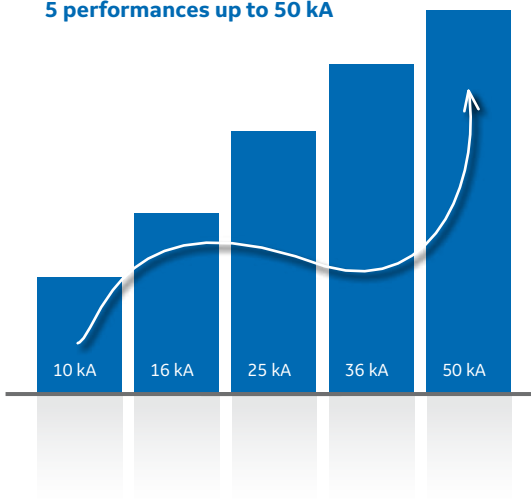
The steel industry

From kilometre-long bridges, through power station turbines subject to extreme loads to elegant high-rise buildings and stainless steel salad bowls: steel plays a major role in modern industry; its possible uses are boundless. High Performance MCBs, such as the Hti+ , play an important role here.

Full functionality

Add on RCDs, auxiliary contact, Shunt trip and under voltage add on devices to the complete functionality of the Hti+.

5 performances up to 50 kA





Circuit protection



Series Hti+ 16

EN/IEC 60898-1 10.000

EN/IEC 60947-2 16kA

A

Application



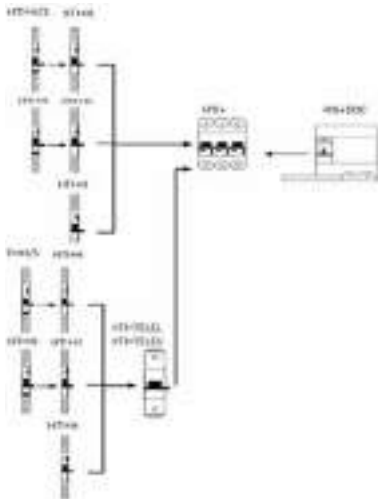
B

Marking



C

Add-on devices



D

E

F

G

X

Performance

Thermal setting In	(A) 80-125A
Rated voltage AC Un	(V) AC 230/400
Tripping characteristics	B-C-D
Mechanical/electrical endurance	80-100A: 10.000/1.500 125A: 8.000/1.000
Operating temperature	(°C) -25°C up to 60°C
Terminal capacity flexible/stranded cable	(mm²) 70-50
Minimum operating voltage U_{bmin}	12 AC
Rated Frequency	(Hz) 50/60
Poles	1, 2, 3, 4
Weight/pole	(g) 240

Short-circuit capacity

According to EN/IEC 60898

Poles	I _{cn} /I _{cs} (kA)
1P	10
2P	10
3P	10
4P	10

I_{cs} = 7.5kA

According to EN/IEC 60947-2 - AC 230/400

Poles	I _{cu} (kA)
1P	16
2P	16
3P	16
4P	16



Series Hti+ 16 - 16kA - characteristics B-C-D



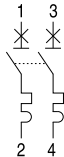
**1P
1.5 mod.**

In (A)	B		C		D		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
80	HTI+161B80	671143	HTI+161C80	671107	HTI+161D80	671179	1
100	HTI+161B100	671142	HTI+161C100	671106	HTI+161D100	671178	1
125	HTI+161B125	671141	HTI+161C125	671105	HTI+161D125	671177	1



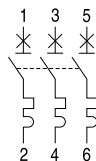
**2P
3 mod.**

80	HTI+162B80	671140	HTI+162C80	671104	HTI+162D80	671176	1
100	HTI+162B100	671139	HTI+162C100	671103	HTI+162D100	671175	1
125	HTI+162B125	671138	HTI+162C125	671102	HTI+162D125	671174	1



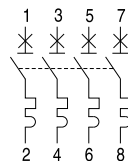
**4P
4.5 mod.**

80	HTI+163B80	671137	HTI+163C80	671101	HTI+163D80	671173	1
100	HTI+163B100	671136	HTI+163C100	671100	HTI+163D100	671172	1
125	HTI+163B125	671135	HTI+163C125	671099	HTI+163D125	671171	1



**4P
6 mod.**

80	HTI+164B80	671134	HTI+164C80	671098	HTI+164D80	671170	1
100	HTI+164B100	671133	HTI+164C100	671097	HTI+164D100	671169	1
125	HTI+164B125	671132	HTI+164C125	671096	HTI+164D125	671168	1



Series Hti+ 16

A

B

C

D

E

F

G

X





Miniature Circuit Breakers

Series Hti+ 25

EN/IEC 60898-1 15.000

EN/IEC 60947-2 25kA



Circuit protection

A

Application



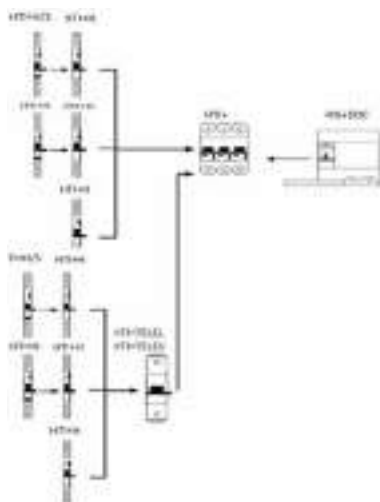
B

Marking



C

Add-on devices



D

E

F

G

X

Performance

Thermal setting In	(A) 80-125A
Rated voltage AC Un	(V) AC 240/415
Tripping characteristics	B-C-D
Mechanical/electrical endurance	80-100A: 10.000/6.000 125A: 10.000/4.000
Operating temperature	(°C) -25°C up to 60°C
Terminal capacity flexible/stranded cable	(mm ²) 70-50
Minimum operating voltage U_{bmin}	12 AC/DC
Rated Frequency	(Hz) 50/60
Poles	1, 2, 3, 4
Weight/pole	(g) 240

Short-circuit capacity

According to EN/IEC 60898 - AC 230/400

Poles	I _{cn} /I _{cs} (kA)
1P, 2P, 3P, 4P	15

I_{cs} = 7.5kA

According to EN/IEC 60947-2 - AC 240/415

Poles	I _{cu} (kA)
1P, 2P, 3P, 4P	25

I_{cs} = 18kA

According to EN/IEC 60947-2 - AC 254/440

Poles	I _{cu} (kA)
1P, 2P, 3P, 4P	15

I_{cs} = 10kA

According to EN/IEC 60947-2 - DC

Poles	V _{dc}	I _{cu} (kA)
1P	125	10
2P	250	10
3P	375	10
4P	500	10

I_{cs} = 10kA



Series Hti+ 25 - 25kA - characteristics B-C-D



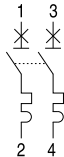
**1P
1.5 mod.**

In (A)	B		C		D		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
80	HTI+251B80	671131	HTI+251C80	671095	HTI+251D80	671167	1
100	HTI+251B100	671130	HTI+251C100	671094	HTI+251D100	671166	1
125	HTI+251B125	671129	HTI+251C125	671093	HTI+251D125	671165	1



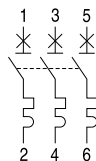
**2P
3 mod.**

80	HTI+252B80	671128	HTI+252C80	671092	HTI+252D80	671164	1
100	HTI+252B100	671127	HTI+252C100	671091	HTI+252D100	671163	1
125	HTI+252B125	671126	HTI+252C125	671090	HTI+252D125	671162	1



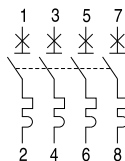
**4P
4.5 mod.**

80	HTI+253B80	671125	HTI+253C80	671089	HTI+253D80	671161	1
100	HTI+253B100	671124	HTI+253C100	671088	HTI+253D100	671160	1
125	HTI+253B125	671123	HTI+253C125	671087	HTI+253D125	671159	1



**4P
6 mod.**

80	HTI+254B80	671122	HTI+254C80	671086	HTI+254D80	671158	1
100	HTI+254B100	671121	HTI+254C100	671085	HTI+254D100	671157	1
125	HTI+254B125	671120	HTI+254C125	671084	HTI+254D125	671156	1



Series Hti+ 25

A

B

C

D

E

F

G

X





Miniature Circuit Breakers

Series Hti+ 36

EN/IEC 60898-1⁽¹⁾ 20.000

EN/IEC 60947-2 36kA

⁽¹⁾ Only for 80A

Circuit protection



A

Application



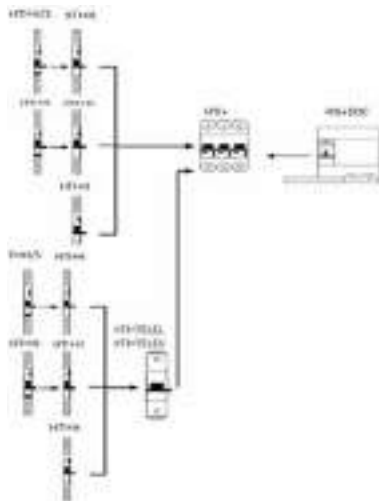
B

Marking



C

Add-on devices



D

E

F

G

X

Performance

Thermal setting In	(A) 80-125A
Rated voltage AC Un	(V) AC 240/415
Tripping characteristics	B-C-D
Mechanical/electrical endurance	80-100A: 10.000/6.000 125A: 10.000/4.000
Operating temperature	(°C) -25°C up to 60°C
Terminal capacity flexible/stranded cable	(mm ²) 70-50
Minimum operating voltage U_{min}	12 AC/DC
Rated Frequency	(Hz) 50/60
Poles	1, 2, 3, 4
Weight/pole	(g) 240

Short-circuit capacity

According to EN/IEC 60898 - AC 230/400

Poles	I _{cn} /I _{cs} (kA)
1P, 2P, 3P, 4P - 80A	20

I_{cs} = 10kA

According to EN/IEC 60947-2 - AC 240/415

Poles	I _{cu} (kA)
1P, 2P, 3P, 4P	36

I_{cs} = 30kA

According to EN/IEC 60947-2 - AC 254/440

Poles	I _{cu} (kA)
1P, 2P, 3P, 4P	20

I_{cs} = 10kA

According to EN/IEC 60947-2 - DC

Poles	V _{dc}	I _{cu} (kA)
1P	125	20
2P	250	20
3P	375	20
4P	500	20

I_{cs} = 20kA



Series Hti+ 36 - 36kA - characteristics B-C-D



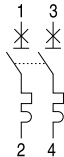
**1P
1.5 mod.**

In (A)	B		C		D		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
80	HTI+361B80	671047	HTI+361C80	671035	HTI+361D80	671059	1
100	HTI+361B100	671046	HTI+361C100	671034	HTI+361D100	671058	1
125	HTI+361B125	671045	HTI+361C125	671033	HTI+361D125	671057	1



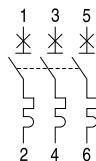
**2P
3 mod.**

80	HTI+362B80	671044	HTI+362C80	671032	HTI+362D80	671056	1
100	HTI+362B100	671043	HTI+362C100	671031	HTI+362D100	671055	1
125	HTI+362B125	671042	HTI+362C125	671030	HTI+362D125	671054	1



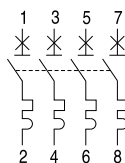
**4P
4.5 mod.**

80	HTI+363B80	671041	HTI+363C80	671029	HTI+363D80	671053	1
100	HTI+363B100	671040	HTI+363C100	671028	HTI+363D100	671052	1
125	HTI+363B125	671039	HTI+363C125	671027	HTI+363D125	671051	1



**4P
6 mod.**

80	HTI+364B80	671038	HTI+364C80	671026	HTI+364D80	671050	1
100	HTI+364B100	671037	HTI+364C100	671025	HTI+364D100	671049	1
125	HTI+364B125	671036	HTI+364C125	671024	HTI+364D125	671048	1



Series Hti+ 36

A

B

C

D

E

F

G

X





Miniature Circuit Breakers

Series Hti+ 50

EN/IEC 60898-1⁽¹⁾ 25.000

EN/IEC 60947-2 50kA

(1) Only for 80A

Circuit protection



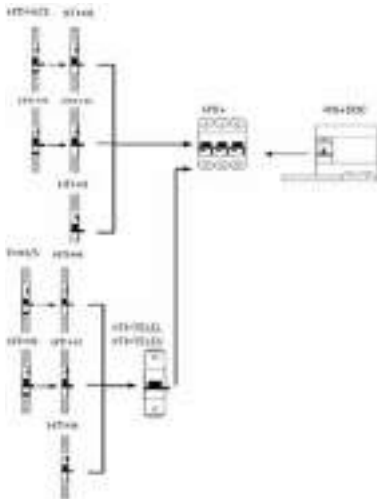
Application



Marking



Add-on devices



Performance

Thermal setting In	(A) 80-125A
Rated voltage AC Un	(V) AC 240/415
Tripping characteristics	B-C-D
Mechanical/electrical endurance	80-100A: 10.000/6.000 125A: 10.000/4.000
Operating temperature	(°C) -25°C up to 60°C
Terminal capacity flexible/stranded cable	(mm ²) 70-50
Minimum operating voltage U_{bmin}	12 AC/DC
Rated Frequency	(Hz) 50/60
Poles	1, 2, 3, 4
Weight/pole	(g) 240

Short-circuit capacity

According to EN/IEC 60898 - AC 230/400

Poles	In	I _{cn} /I _{cs} (kA)
1P, 2P, 3P, 4P	80A	25

I_{cs} = 12.5kA

According to EN/IEC 60947-2 - AC 240/415

Poles	I _{cu} (kA)
1P, 2P, 3P, 4P	50

I_{cs} = 40kA

According to EN/IEC 60947-2 - AC 254/440

Poles	I _{cu} (kA)
1P, 2P, 3P, 4P	30

I_{cs} = 22.5kA (80A); I_{cs} = 15kA (100A, 125A)

According to EN/IEC 60947-2 - AC 400/690

Poles	In	I _{cu} (kA)
1P, 2P, 3P, 4P	80A	6
1P, 2P, 3P, 4P	100A, 125A	4.5

I_{cs} = 4kA (80A); I_{cs} = 3kA (100A, 125A)

According to EN/IEC 60947-2 - DC

Poles	V _{dc}	I _{cu} (kA)
1P	125	30
3P	250	30
3P	375	30
4P	500	30

I_{cs} = 30kA

A

B

C

D

E




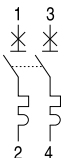
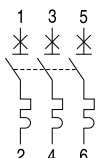

F

G

X



Series Hti+ 50 - 50kA - characteristics B-C-D

	In (A)	B		C		D		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
 <p>1P 1.5 mod.</p>	80	HTI+501B80	671119	HTI+501C80	671083	HTI+501D80	671155	1
	100	HTI+501B100	671118	HTI+501C100	671082	HTI+501D100	671154	1
	125	HTI+501B125	671117	HTI+501C125	671081	HTI+501D125	671153	1
								
 <p>2P 3 mod.</p>	80	HTI+502B80	671116	HTI+502C80	671080	HTI+502D125	671150	1
	100	HTI+502B100	671115	HTI+502C100	671079	HTI+502D100	671151	1
	125	HTI+502B125	671114	HTI+502C125	671078	HTI+502D80	671152	1
								
 <p>4P 4.5 mod.</p>	80	HTI+503B80	671113	HTI+503C80	671077	HTI+503D80	671149	1
	100	HTI+503B100	671112	HTI+503C100	671076	HTI+503D100	671148	1
	125	HTI+503B125	671111	HTI+503C125	671075	HTI+503D125	671147	1
								
 <p>4P 6 mod.</p>	80	HTI+504B80	671110	HTI+504C80	671074	HTI+504D80	671146	1
	100	HTI+504B100	671109	HTI+504C100	671073	HTI+504D100	671145	1
	125	HTI+504B125	671108	HTI+504C125	671072	HTI+504D125	671144	1
								

Series Hti+ 50

A

B

C

D

E

F

G

X

New



Series DOCHti+ - Add-on RCD

Circuit protection



EN/IEC 60947-2

Type A, Ai



Type S



A

Applications



B

Marking



C

D

E

F

G

X

Performance

Thermal setting I_n	(A)	80A, 100A
Residual current I_{Δn}	(mA)	30, 300, 500, 1000
Rated maximum voltage AC U_n	(V)	230/400; 240/415; 400/690
Maximum operating voltage U_{Bmax}	(V)	690
Minimum operating voltage U_{Bmin}	(V)	195
Mechanical/electrical endurance		Depends on associat. MCBs
Rated impulse withstand voltage U_{imp} Impulse (1.2/50)	(kV)	6
Max Torque	(Nm)	3.5
Terminal capacity flexible/stranded cable	(mm ²)	70-50
Poles		2, 3, 4
Nuisance tripping resistance		A: 250A 8/20μs S: 5000 8/20μs
Ambient temperature	(°C)	-25°C up to 60°C
Weight	(g)	2P: 420, 3P: 640, 4P: 770

Short-circuit capacity

Depends on the associated MCB				
	Hti+ 16	Hti+ 25	Hti+ 36	Hti+ 50
Rated ultimate short-circuit breaking capacity I _{cu} compliant to IEC 60947-2	16	25	36	50
Short-circuit capacity according to IEC 60898	10	15	20	25



Series DOCHti+ - Add-on RCD - Type A

	In (A)	30mA		300mA		500mA		1000mA		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
2P, 2 mod.	<100	DOCAHTI+2100/030	671543	DOCAHTI+2100/300	671544	DOCAHTI+2100/500	671545	-	-	1
	<100	DOCAHTI+2100/030	671543	DOCAHTI+2100/300	671544	DOCAHTI+2100/500	671545	-	-	1
3P, 3 mod. 4P, 4 mod.	<100	DOCAHTI+3100/030	671551	DOCAHTI+3100/300	671555	DOCAHTI+3100/500	671556	-	-	1
	<100	DOCAHTI+4100/030	671563	DOCAHTI+4100/300	671567	DOCAHTI+4100/500	671568	-	-	1

Series DOCHti+ - Add-on RCD - Type S

	In (A)	30mA		300mA		500mA		1000mA		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
2P, 2 mod.	<100	-	-	DOCSHTI+2100/300	671549	-	-	DOCSHTI+2100/1000	671550	1
	<100	-	-	DOCSHTI+2100/300	671549	-	-	DOCSHTI+2100/1000	671550	1
3P, 3 mod. 4P, 4 mod.	<100	-	-	DOCSHTI+3100/300	671557	DOCSHTI+3100/500	671561	DOCSHTI+3100/1000	671562	1
	<100	-	-	DOCSHTI+4100/300	671569	DOCSHTI+4100/500	671579	DOCSHTI+4100/1000	671580	1

Series DOCHti+

A

B

C

D

E

F

G

X





Residual Current Circuit Breakers
Overcurrent Protection RCBOs

Series Hti+ 5ODOC

EN/IEC 60947-2

Type A, Ai



Circuit protection



A

Application



B

Marking



C

D

E

F

G

X

Performance

Thermal setting I_n	(A)	125A
Residual current I_{Δn}	(mA)	30, 300
Rated maximum voltage AC U_n	(V)	230/400; 240/415; 400/690
Maximum operating voltage U_{Bmax}	(V)	690
Minimum operating voltage U_{Bmin}	(V)	195
Mechanical/electrical endurance		6000/4000
Rated impulse withstand voltage		
U_{imp} Impulse (1.2/50)	(kV)	6
Max Torque	(Nm)	3.5
Terminal capacity flexible/stranded cable	(mm ²)	70-50
Poles		2, 3, 4
Nuisance tripping resistance		A: 250A 8/20μs Ai: 3000 8/20μs
Ambient temperature	(°C)	-25°C up to 60°C
Weight	(g)	2P: 790, 3P: 1140, 4P: 1440

Short-circuit capacity

Rated ultimate short-circuit breaking capacity I_{cu} compliant to IEC 60947-2

	I_{cu}(kA)
(AC) 50/60 Hz 240/450V	50
(AC) 50/60 Hz 254/440V	30
(AC) 50/60 Hz 400/690V	4.5

Rated ultimate short-circuit breaking capacity I_{cs} compliant to IEC 60947-2

	I_{cs}(kA)
(AC) 50/60 Hz 240/450V	40
(AC) 50/60 Hz 254/440V	15
(AC) 50/60 Hz 400/690V	3





Series Hti+ 50DOC- Type Ai

	In (A)	30mA						Pack.
		B		C		D		
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
2P, 8 mod.	125	HTI+502B125Ai/030	671507	HTI+502C125Ai/030	671508	HTI+502D125Ai/030	671509	1
3P, 11 mod.	125	HTI+503B125Ai/030	671519	HTI+503C125Ai/030	671520	HTI+503D125Ai/030	671521	1
4P, 12.5 mod.	125	HTI+504B125Ai/030	671531	HTI+504C125Ai/030	671532	HTI+504D125Ai/030	671533	1

Series Hti+ 50DOC- Type A

	In (A)	300mA						Pack.
		B		C		D		
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
2P, 8 mod.	125	HTI+502B125A/300	671513	HTI+502C125A/300	671514	HTI+502D125A/300	671515	1
3P, 11 mod.	125	HTI+503B125A/300	671525	HTI+503C125A/300	671526	HTI+503D125A/300	671527	1
4P, 12.5 mod.	125	HTI+504B125A/300	671537	HTI+504C125A/300	671538	HTI+504D125A/300	671539	1

Series Hti+ 50DOC

A

B

C

D

E

F

G

X





Auxiliary switches

Series Hti+ H

IEC 60947-5-1

Features

Auxiliary contact for external display.

The HTI+H auxiliary contact is for electrical display of the operating state of the high performance Hti+. Both changeover contacts always switch simultaneously with the live conductor contact and detect the following operating states:

- Manual tripping
- Tripping due to thermal overload
- Tripping due to magnetic overload (short-circuit)

Mode of function of the test button

Mode of function of the two changeover contacts

- Off position of the high performance MCB contacts 11-12 and 21-22 closed
- On position of the high performance MCB contacts 11-14 and 21-24 closed

Mounting ability of the auxiliary contact

- Two Hti+H aux. contacts can be mounted by the user at the left on the Hti+ MCB.



Circuit protection

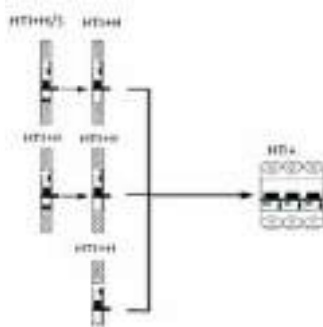
Application



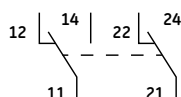
Marking



Add-on devices



Wiring scheme



Performance

Utilisation categories

compliant to IEC 60947-5-1

AC15 400/2A - AC15 240/6A

DC13 250/0.55A - DC13 125 V/1.1A

DC13 60 V/2A - DC13 24 V/4A

Conventional free air therm. current Ith

A 6

Minimum operational current Imin

mA 3

Minimum operational voltage Umin

V 24

Rated insulation voltage Ui

A 690

Number of contacts

2

Rated impulse withstand voltage Uimp

kV 6

Pollution degree

3

Standard

IEC 60947-5-1

Contact function

Changeover contact

Connection Cu

mm² 1 x 2.5

2 x 1.5

Tightening torque

Nm 1

AC/DC feed

any

Mounting on DIN top hat rail

EN 60715

Protection category

IP20

Permissible operating ambient temp.

°C -25 ... +60

Storage temperature

°C -40 ... +70

Mech. lifetime of device

6000 switching cycles

Icu

A 1000

Vibration resistance

IEC 60068-2-6; EN 61373 Cat.1/Class B

5 g, 20 frequency cycle 5 ... 150 ...

5 Hz at 24 V AC/DC,

5 mA short-term interruption <10 ms

Series Hti+ H

	Function	Contacts	Cat. No.	Ref. No.	Pack.
1/2 mod.	H	2 COM	HTI+H	678082	1



Auxiliary switches

Series Hti+ H/S

IEC 60947-5-1

Features

Combined auxiliary and signal contact for the external display

The HTI+H/S combined auxiliary and signal contact is used for electrical signaling of the operating state of the high performance Hti+.

The **H auxiliary contact** always switches simultaneously with the live conductor contact and detect the following forms of tripping:

- Manual switch on/off
- Tripping due to thermal overload
- Tripping due to magnetic overload (short-circuit)
- Tripping by Shunt trip or Undervoltage

The **S signal contact** detects the following forms of tripping of the high performance MCB:

- Tripping due to thermal overload
- Tripping due to magnetic overload (short-circuit)
- Tripping by Shunt trip or Undervoltage

Mode of function of the S reset button

The reset button, which can be used at will, resets the S signal contact after a tripping. The high performance MCB is switched on independent of the state of the S signal contact.

Mode of function of the H changeover contact

- Off position of the high performance MCB Contact 11-12 closed
- On position of the high performance MCB Contact 11-14 closed

Mode of function of the S changeover contact

- No S tripping Contact 95-96 closed
- S tripping Contact 95-98 closed

Performance

Utilisation categories compliant to IEC 60947-5-1

AC15 400/2A - AC15 240/6A
DC13 250/0.55A - DC13 125 V/1.1A
DC13 60 V/2A - DC13 24 V/4A

Conventional free air therm. current I_{th}

A 6

Minimum operational current I_{min}

mA 3

Minimum operational voltage U_{min}

V 24

Rated insulation voltage U_i

A 690

Number of contacts

2 (1x AUX, 1x AUX/ALT)

Rated impulse withstand voltage U_{imp}

kV 6

Pollution degree

3

Standard

IEC 60947-5-1

Contact function

Changeover contact

Connection Cu

mm² 1 x 2.5
2 x 1.5

Tightening torque

Nm 1

AC/DC feed

any

Mounting on DIN top hat rail

EN 60715

Protection category

IP20

Permissible operating ambient temp.

°C -25 ... +60

Storage temperature

°C -40 ... +70

Mech. lifetime of device

6000 switching cycles

I_{cu}

A 1000

Vibration resistance

IEC 60068-2-6; EN 61373 Cat.1/Class B
5 g, 20 frequency cycle 5 ... 150 ...
5 Hz at 24 V AC/DC,
5 mA short-term interruption <10 ms



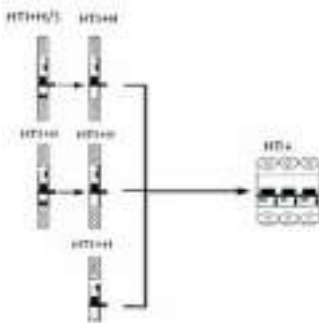
Application



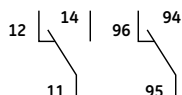
Marking



Add-on devices



Wiring scheme



Series Hti+ H/S

	Function	Contacts	Cat. No.	Ref. No.	Pack.
1/2 mod.	S/H	2 COM	HTI+H/S	678083	1



Shunt Trip Release

Series Hti+ Tele L

IEC 60947-2

Circuit protection



Features

Shunt opening release

The Hti+ Tele L shunt opening release is for remote release of the Hti+- high performance MCB using an electrical impulse. Operation of the trigger is guaranteed at a voltage between 70 % and 110 % of the rated mains voltage Un both for AC and DC.

Mounting ability of the Hti+ Tele L operating current release

- The Hti+ Tele L can be mounted by the user at the left side of the high performance MCB Hti+.

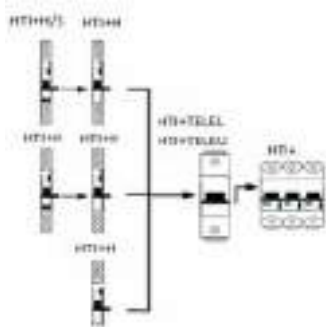
Application



Marking



Coupling



Wiring scheme



Performances

Rated operational voltage Ue

Operating range

Rated insulation voltage Ui

Coil pull in consumption

Rated frequency

Pollution degree

Standard

Connection Cu

Max. torque

AC/DC supply

Mounting on DIN top hat rail

Protection category

Ambient Temperature

Storage temperature

Vibration resistance

Weight

	HTI+ Tele L 48	HTI+ Tele L 110	HTI+ Tele L 220
VAC/DC	48 ... 130	110...250	220 ... 400
% Ue	70 ... 110	70 ... 110	70 ... 110
V	690	690	690
W/VA	41.9 ... 307.3	23 ... 119	45 ... 148.1
	42 ... 310*	20 ... 105*	
Hz		DC; 50/60	
		3	
		IEC 60947-2	
mm ²		1 ... 25 strand	
mm ²		1 ... 35 cable	
Nm		3.5	
		any	
		EN 60715	
		IP20 IP40 (actuating end only)	
°C		-25 ... +60	
°C		-40 ... +70	
		IEC 60068-2-6;	
		EN 61373 Cat.1/Class B	
g		150	

Series Hti+ Tele L

	Function	Cat. No.	Ref. No.	Pack.
1 mod.	Shunt operat. release			
	220...400 VAC/DC	HTI+TELEL220	678085	1
	110...250 VAC/DC	HTI+TELEL110	678089	1
	48...130 VAC/DC	HTI+TELEL48	678090	1



Under Voltage Release



Series Hti+ Tele U

IEC 60947-2

Features

The Hti+ Tele U undervoltage release can be used as an emergency-stop cut-as by use of suitable emergency stop buttons. The undervoltage release switches the power supply to the high performance MCB off in case of a failure or if the value falls below $0.7 \times U_n$. After tripping, the high performance MCB can be switched back on as soon as the voltage is over $0.85 \times U_n$.
Mounting ability of the Hti+Tele U undervoltage release
– The Hti+ Tele U can be mounted by the user at the left side of the high performance MCB Hti+.

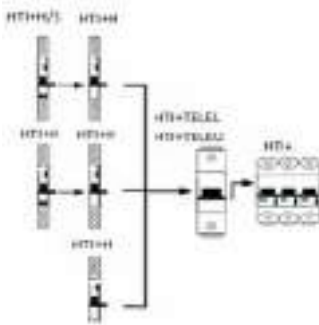
Application



Marking



Coupling



Wiring scheme



Performances

	HTI+ Tele U 24	HTI+ Tele U 48	HTI+ Tele U 220
Rated operational voltage Ue	24 ... 36	48 ... 60	220 ... 250
open	35 ... 70	35 ... 70	35 ... 70
closed	85	85	85
Rated insulation voltage Ui	690	690	690
Power loss of coil when attracted	1.11 ... 1.14/1.2	1.3 ... 1.41/1.4	1.71 ... 1.91/1.9
Rated frequency	Hz DC; 50/60		
Pollution degree	3		
Standard	IEC 60947-2		
Connection Cu	mm ² 1 ... 25 strand 1 ... 35 cable		
Maximum Torque	Nm 3.5		
AC/DC supply	any		
Mounting on DIN top hat rail	EN 60715		
Protection category	IP20 IP40 (actuating end only)		
Ambient Temperature	°C -25 ... +60		
Storage temperature	°C -40 ... +70		
Vibration resistance	IEC 60068-2-6; EN 61373 Cat.1/Class B		



Serie Hti+ Tele U

	Function	Cat. No.	Ref. No.	Pack.
1 mod.	Undervoltage release			
	220...250 VAC/DC	HTI+TELEU220	678086	1
	48...60 VAC/DC	HTI+TELEU48	678091	1
	24...36 VAC/DC	HTI+TELEU24	678092	1

A

B

C

D

E

F

G

X





Rotary Handle

Series Hti+ RH



Features

The Hti+ can be installed in different ways:

- Together with other breakers in the same DIN rail horizontally or vertically
- As an individual breaker in a single fixed compartment where the breaker is switched on/off with a **rotary handle from the door**, and the breaker is mounted on the wall of the panel

The rotary drive for 2-4 pole devices HTI+RH-DRIVE can be delivered for assembly on the switching field door. Switching is effortless due to the ergonomic design of the swivel lever. It is equipped with a lock for the OFF position that prevents switching on of the Hti+ high performance MCB.

The slot hole of the lock can accept up to 3 padlocks with lug diameters of 7 mm (not included in delivery). Operation of the trigger and a view of the characteristics are not prevented. Additionally, a rotary drive can also be supplied to switch machines; it has a red grip on a yellow background. The rotary drive on the switching field door is comprised of the following three components:

- Rotary handle Hti+ RH-RED, Hti+ RH-BLACK
- Axle (500 mm) Hti+ RH-A500

Padlocking

Serie Hti+ KS

Features

The Hti+ KS padlock device safely prevents unintentional switching on and off. Simply insert the lug of the padlock device through the borehole on the high performance MCB Hti+ and lock with a padlock with lug diameter Ø 4 mm (not included in delivery). Even when the high performance Hti+ MCB is secured with an padlock device against unintentional switching off, tripping remains possible in case of overload or short-circuit by the Hti+ Tele L, Hti+Tele U and Hti+ DOC.

Application



Marking



Application



Marking



Series Hti+ Accessories



Function	Cat. No.	Ref. No.	Pack
Axial extension 500 mm for rotary handle	HTI+RH-A500	678093	1
Drive from 2P to 4P for rotary handle	HTI+RH-DRIVE	678094	1
IP54 Kit for rotary handle for door mounting	HTI+RH-IP54	678095	1
Rotary handle Hti+RH-RED	HTI+RH-RED	678087	1
Rotary handle Hti+RH-BLACK	HTI+RH-BLACK	678088	1
Padlock device	HTI+KS	678084	1

Accessories

A

B

C

D

E

F

G

X





UL Listed 489 **10kA**
CSA c22.2 No.5-02
EN/IEC 60947-2 **10kA**

UL Listed 489 performances

UL FILE	E256870
Ampere rating In (A) 0.5-63	0.5-40A
Reference temperature	°C/F 25/77
Terminal capacity flexible/rigid cable	14-2 AWG
Max. Torque N.m/lbs.in	4.5/39.9

Rated voltage Un (V)

Poles	V AC	V DC
1	277	60
2, 3	480	125

Short-circuit capacity

Poles	V	Icc (kA)
1	277	10
2, 3	480	10

DC short-circuit capacity

Poles	V DC	Icc
1	60	10
2	125	10

IEC performances

Thermal setting In	0.5-40A
Rated voltage AC Un	(V) 240/415V
Weight/pole	(g) 130
Terminal capacity flexible/rigid cable	(mm ²) 0.75/1- 25/35

Short-circuit capacity according to IEC 60947-2

Poles	V AC	Icu (kA)
1	127	30
	240	15
	415	4
2	127	40
	240	30
	415	15
3	240	30
	415	15
	440	10

DC short-circuit capacity according to IEC 60497-2

Poles	V	Icc(kA)
1	60	25
2	125	30

General performance

Minimum operating voltage U_{Bmin}	12
Tripping characteristics	B-C-D
Rated frequency	(Hz) 50/60
Mechanical/electrical endurance	20000/10000
Tropicalisation acc. to IEC 60068-2-28/2-30	95% RH at 55°C
Poles	1, 2, 3
Instantaneous tripping ranges acc. to IEC 60898-1	
	B characteristic 3 to 5 times Ampere rating
	C characteristic 5 to 10 times Ampere rating
	D characteristic 10 to 20 times Ampere rating

Application

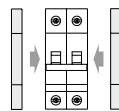


Approvals / Marking

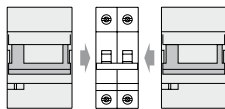


Add-on devices

Auxiliaries contacts



Motor operator



(1) Ask for availability. Under homologation.

A

B

C

D

E

F




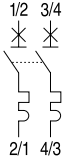

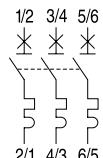
G

X





UL489 - Series EP100 ULH - 10kA - characteristics B-C-D

	In (A)	B curve		C curve		D curve		Pack.	
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.		
 	1P	0.5	-	-	EP101ULH3C0.5	682298	EP101ULH3D0.5	682352	6
	1	-	-	-	EP101ULH3C01	682299	EP101ULH3D01	682353	6
	2	-	-	-	EP101ULH3C02	682300	EP101ULH3D02	682354	6
	3	-	-	-	EP101ULH3C03	682301	EP101ULH3D03	682355	6
	4	-	-	-	EP101ULH3C04	682302	EP101ULH3D04	682356	6
	5	EP101ULH3B05	682259	-	EP101ULH3C05	682303	EP101ULH3D05	682357	6
	6	EP101ULH3B06	682260	-	EP101ULH3C06	682304	EP101ULH3D06	682358	6
	8	EP101ULH3B08	682261	-	EP101ULH3C08	682305	EP101ULH3D08	682359	6
	10	EP101ULH3B10	682262	-	EP101ULH3C10	682306	EP101ULH3D10	682360	6
	13	EP101ULH3B13	682263	-	EP101ULH3C13	682307	EP101ULH3D13	682361	6
	15	EP101ULH3B15	682264	-	EP101ULH3C15	682308	EP101ULH3D15	682362	6
	16	EP101ULH3B16	682265	-	EP101ULH3C16	682309	EP101ULH3D16	682363	6
	20	EP101ULH3B20	682266	-	EP101ULH3C20	682310	EP101ULH3D20	682364	6
	25	EP101ULH3B25	682267	-	EP101ULH3C25	682311	EP101ULH3D25	682365	6
	30	EP101ULH3B30	682268	-	EP101ULH3C30	682312	EP101ULH3D30	682366	6
	32	EP101ULH3B32	682269	-	EP101ULH3C32	682313	EP101ULH3D32	682367	6
35	EP101ULH3B35	682270	-	EP101ULH3C35	682314	EP101ULH3D35	682368	6	
40	EP101ULH3B40	682271	-	EP101ULH3C40	682315	EP101ULH3D40	682369	6	
 	2P	0.5	-	-	EP102ULH4C0.5	682316	EP102ULH4D0.5	682370	3
	1	-	-	-	EP102ULH4C01	682317	EP102ULH4D01	682371	3
	2	-	-	-	EP102ULH4C02	682318	EP102ULH4D02	682372	3
	3	-	-	-	EP102ULH4C03	682319	EP102ULH4D03	682373	3
	4	-	-	-	EP102ULH4C04	682320	EP102ULH4D04	682374	3
	5	EP102ULH4B05	682272	-	EP102ULH4C05	682321	EP102ULH4D05	682375	3
	6	EP102ULH4B06	682273	-	EP102ULH4C06	682322	EP102ULH4D06	682376	3
	8	EP102ULH4B08	682274	-	EP102ULH4C08	682323	EP102ULH4D08	682377	3
	10	EP102ULH4B10	682275	-	EP102ULH4C10	682324	EP102ULH4D10	682378	3
	13	EP102ULH4B13	682276	-	EP102ULH4C13	682325	EP102ULH4D13	682379	3
	15	EP102ULH4B15	682277	-	EP102ULH4C15	682326	EP102ULH4D15	682380	3
	16	EP102ULH4B16	682278	-	EP102ULH4C16	682327	EP102ULH4D16	682381	3
	20	EP102ULH4B20	682279	-	EP102ULH4C20	682328	EP102ULH4D20	682382	3
	25	EP102ULH4B25	682280	-	EP102ULH4C25	682329	EP102ULH4D25	682383	3
	30	EP102ULH4B30	682281	-	EP102ULH4C30	682330	EP102ULH4D30	682384	3
	32	EP102ULH4B32	682282	-	EP102ULH4C32	682331	EP102ULH4D32	682385	3
35	EP102ULH4B35	682283	-	EP102ULH4C35	682332	EP102ULH4D35	682386	3	
40	EP102ULH4B40	682284	-	EP102ULH4C40	682333	EP102ULH4D40	682387	3	
 	3P	0.5	-	-	EP103ULH4C0.5	682334	EP103ULH4D0.5	682388	2
	1	-	-	-	EP103ULH4C01	682335	EP103ULH4D01	682389	2
	2	-	-	-	EP103ULH4C02	682336	EP103ULH4D02	682390	2
	3	-	-	-	EP103ULH4C03	682337	EP103ULH4D03	682391	2
	4	-	-	-	EP103ULH4C04	682338	EP103ULH4D04	682392	2
	5	EP103ULH4B05	682285	-	EP103ULH4C05	682339	EP103ULH4D05	682393	2
	6	EP103ULH4B06	682286	-	EP103ULH4C06	682340	EP103ULH4D06	682394	2
	8	EP103ULH4B08	682287	-	EP103ULH4C08	682341	EP103ULH4D08	682395	2
	10	EP103ULH4B10	682288	-	EP103ULH4C10	682342	EP103ULH4D10	682396	2
	13	EP103ULH4B13	682289	-	EP103ULH4C13	682343	EP103ULH4D13	682397	2
	15	EP103ULH4B15	682290	-	EP103ULH4C15	682344	EP103ULH4D15	682398	2
	16	EP103ULH4B16	682291	-	EP103ULH4C16	682345	EP103ULH4D16	682399	2
	20	EP103ULH4B20	682292	-	EP103ULH4C20	682346	EP103ULH4D20	682400	2
	25	EP103ULH4B25	682293	-	EP103ULH4C25	682347	EP103ULH4D25	682401	2
	30	EP103ULH4B30	682294	-	EP103ULH4C30	682348	EP103ULH4D30	682402	2
	32	EP103ULH4B32	682295	-	EP103ULH4C32	682349	EP103ULH4D32	682403	2
35	EP103ULH4B35	682296	-	EP103ULH4C35	682350	EP103ULH4D35	682404	2	
40	EP103ULH4B40	682297	-	EP103ULH4C40	682351	EP103ULH4D40	682405	2	

Series EP100 ULH

A

B

C

D

E

F

G

X





UL Listed 489 **10kA**
CSA c22.2 No.5-02
EN/IEC 60947-2 **15kA**

EP100 ULH

UL Listed 489 performances

UL FILE	E256870
Ampere rating In (A) 0.5-63	0.5-63A
Reference temperature	°C/F 25/77
Terminal capacity flexible/rigid cable	14-2 AWG
Max. Torque N.m/lbs.in	4.5/39.9

Rated voltage Un (V)

Poles	V AC	V DC
1	120	60
2, 3	240	125

Short-circuit capacity

Poles	V	Icc (kA)
1	120	10
2, 3	240	10

DC short-circuit capacity

Poles	V DC	Icc
1	60	10
2	125	10

IEC performances

Thermal setting In	0.5-63A
Rated voltage AC Un	(V) 240/415V
Weight/pole	(g) 130
Terminal capacity flexible/rigid cable	(mm ²) 0.75/1 - 25/35

Short-circuit capacity according to IEC 60947-2

Poles	V AC	Icu (kA)
1	127	30
	240	15
	415	4
2	127	40
	240	30
	415	15
3	240	30
	415	15
	440	10

DC short-circuit capacity according to IEC 60497-2

Poles	V	Icu (kA)
1	60	25
2	125	30

General performance

Minimum operating voltage U_{Bmin}	12
Tripping characteristics	B-C-D
Rated frequency	(Hz) 50/60
Mechanical/electrical endurance	20000/10000
Tropicalisation acc. to IEC 60068-2-28/2-30	95% RH at 55°C
Poles	1, 2, 3
Instantaneous tripping ranges acc. to IEC 60898-1	
	B characteristic 3 to 5 times Ampere rating
	C characteristic 5 to 10 times Ampere rating
	D characteristic 10 to 20 times Ampere rating

A

Application



B

Standards

UL489, CSA c22.2 No.5-02
 IEC 60947-2, IEC 60898-1

C

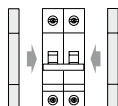
Approvals / Marking



D

Add-on devices

Auxiliaries contacts



Motor operator



(1) Ask for availability. Under homologation.










G

X





UL489 - Series EP100 ULH - 10kA - characteristics B-C-D

	In (A)	B curve		C curve		D curve		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
	0.5	-	-	EP101ULH1C0.5	690265	EP101ULH1D0.5	690313	6
	1	-	-	EP101ULH1C01	690266	EP101ULH1D01	690314	6
	2	-	-	EP101ULH1C02	690267	EP101ULH1D02	690315	6
	3	-	-	EP101ULH1C03	690268	EP101ULH1D03	690316	6
	4	-	-	EP101ULH1C04	690269	EP101ULH1D04	690317	6
	5	EP101ULH1B05	690214	EP101ULH1C05	690270	EP101ULH1D05	690318	6
	6	EP101ULH1B06	690215	EP101ULH1C06	690271	EP101ULH1D06	690319	6
	8	EP101ULH1B08	682211	EP101ULH1C08	690272	EP101ULH1D08	690320	6
	10	EP101ULH1B10	690216	EP101ULH1C10	690273	EP101ULH1D10	690321	6
	13	EP101ULH1B13	690217	EP101ULH1C13	690274	EP101ULH1D13	690322	6
	15	EP101ULH1B15	690218	EP101ULH1C15	690275	EP101ULH1D15	690323	6
	16	EP101ULH1B16	690219	EP101ULH1C16	690276	EP101ULH1D16	690324	6
	20	EP101ULH1B20	690220	EP101ULH1C20	690277	EP101ULH1D20	690325	6
	25	EP101ULH1B25	690221	EP101ULH1C25	690278	EP101ULH1D25	690326	6
	30	EP101ULH1B30	690222	EP101ULH1C30	690279	EP101ULH1D30	690327	6
	32	EP101ULH1B32	690223	EP101ULH1C32	690280	EP101ULH1D32	690328	6
	35	EP101ULH1B35	682214	EP101ULH1C35	682229	EP101ULH1D35	682244	6
	40	EP101ULH1B40	682215	EP101ULH1C40	682230	EP101ULH1D40	682245	6
50	EP101ULH1B50	682216	EP101ULH1C50	682231	EP101ULH1D50	682246	6	
60	EP101ULH1B60	682217	EP101ULH1C60	682232	EP101ULH1D60	682247	6	
63	EP101ULH1B63	682218	EP101ULH1C63	682233	EP101ULH1D63	682248	6	
	1/2							
	2/1							
	0.5	-	-	EP102ULH2C0.5	690281	EP102ULH2D0.5	690329	3
	1	-	-	EP102ULH2C01	690282	EP102ULH2D01	690330	3
	2	-	-	EP102ULH2C02	690283	EP102ULH2D02	690331	3
	3	-	-	EP102ULH2C03	690284	EP102ULH2D03	690332	3
	4	-	-	EP102ULH2C04	690285	EP102ULH2D04	690333	3
	5	EP102ULH2B05	690224	EP102ULH2C05	690286	EP102ULH2D05	690334	3
	6	EP102ULH2B06	690225	EP102ULH2C06	690287	EP102ULH2D06	690335	3
	8	EP102ULH2B08	682212	EP102ULH2C08	690288	EP102ULH2D08	690336	3
	10	EP102ULH2B10	690226	EP102ULH2C10	690289	EP102ULH2D10	690337	3
	13	EP102ULH2B13	690227	EP102ULH2C13	690290	EP102ULH2D13	690338	3
	15	EP102ULH2B15	690228	EP102ULH2C15	690291	EP102ULH2D15	690339	3
	16	EP102ULH2B16	690229	EP102ULH2C16	690292	EP102ULH2D16	690340	3
	20	EP102ULH2B20	690230	EP102ULH2C20	690293	EP102ULH2D20	690341	3
	25	EP102ULH2B25	690231	EP102ULH2C25	690294	EP102ULH2D25	690342	3
	30	EP102ULH2B30	690232	EP102ULH2C30	690295	EP102ULH2D30	690343	3
	32	EP102ULH2B32	690233	EP102ULH2C32	690296	EP102ULH2D32	690344	3
	35	EP102ULH2B35	682219	EP102ULH2C35	682234	EP102ULH2D35	682249	3
	40	EP102ULH2B40	682220	EP102ULH2C40	682235	EP102ULH2D40	682250	3
50	EP102ULH2B50	682221	EP102ULH2C50	682236	EP102ULH2D50	682251	3	
60	EP102ULH2B60	682222	EP102ULH2C60	682237	EP102ULH2D60	682252	3	
63	EP102ULH2B63	682223	EP102ULH2C63	682238	EP102ULH2D63	682253	3	
	1/2 3/4							
	2/1 4/3							
	0.5	-	-	EP103ULH2C0.5	690297	EP103ULH2D0.5	690345	2
	1	-	-	EP103ULH2C01	690298	EP103ULH2D01	690346	2
	2	-	-	EP103ULH2C02	690299	EP103ULH2D02	690347	2
	3	-	-	EP103ULH2C03	690300	EP103ULH2D03	690348	2
	4	-	-	EP103ULH2C04	690301	EP103ULH2D04	690349	2
	5	EP103ULH2B05	690234	EP103ULH2C05	690302	EP103ULH2D05	690350	2
	6	EP103ULH2B06	690235	EP103ULH2C06	690303	EP103ULH2D06	690351	2
	8	EP103ULH2B08	682213	EP103ULH2C08	690304	EP103ULH2D08	690352	2
	10	EP103ULH2B10	690236	EP103ULH2C10	690305	EP103ULH2D10	690353	2
	13	EP103ULH2B13	290237	EP103ULH2C13	690306	EP103ULH2D13	690354	2
	15	EP103ULH2B15	290238	EP103ULH2C15	690307	EP103ULH2D15	690355	2
	16	EP103ULH2B16	690239	EP103ULH2C16	690308	EP103ULH2D16	690356	2
	20	EP103ULH2B20	690240	EP103ULH2C20	690309	EP103ULH2D20	690357	2
	25	EP103ULH2B25	690241	EP103ULH2C25	690310	EP103ULH2D25	690358	2
	30	EP103ULH2B30	690242	EP103ULH2C30	690311	EP103ULH2D30	690359	2
	32	EP103ULH2B32	690243	EP103ULH2C32	690312	EP103ULH2D32	690360	2
	35	EP103ULH2B35	682224	EP103ULH2C35	682239	EP103ULH2D35	682254	2
	40	EP103ULH2B40	682225	EP103ULH2C40	682240	EP103ULH2D40	682255	2
50	EP103ULH2B50	682226	EP103ULH2C50	682241	EP103ULH2D50	682256	2	
60	EP103ULH2B60	682227	EP103ULH2C60	682242	EP103ULH2D60	682257	2	
63	EP103ULH2B63	682228	EP103ULH2C63	682243	EP103ULH2D63	682258	2	
	1/2 3/4 5/6							
	2/1 4/3 6/5							

Series EP100 ULH

A

B

C

D

E

F

G

X

New



Supplementary protection

EP100 UL

Circuit protection



Recognized UL1077 10kA

CSA c22.2 No. 23

EN/IEC 60898-1

EN/IEC 60947-2

10000
3

15kA

UL1077 performances

UL FILE	E151139
Ampere rating I_n (A) 0.5-63	0.5-63A
Reference temperature	°C/F 25/77
Terminal capacity flexible/rigid cable	14-2 AWG
Max. Torque N.m/lbs.in	4.5/39.9

Rated voltage U_n (V)

Poles	V AC	V DC
1	277	50
2, 3, 4	480	110

Short-circuit capacity

Poles	V	I_{cc} (kA)
1, 2	277	10
3, 4	277/480	10
1	120	10
2, 3	240	10

DC short-circuit capacity

Poles	V DC	I_{cc}
1	50	10
2	110	10

IEC performances

Thermal setting I_n	0.5-63A
Rated voltage AC U_n	(V) 240/415V
Weight/pole	(g) 125
Terminal capacity flexible/rigid cable	(mm ²) 0.75/1 - 25/35

Short-circuit capacity according to IEC 60898-1

Poles	V AC	I_{cn} (kA)
1	230/400	10
2, 3, 4	400	10

Short-circuit capacity according to IEC 60497-2

Poles	V AC	I_{cu} (kA)
1	127	30
	240	15
	415	4
2	127	40
	240	30
	415	15
2, 3, 4	240	30
	440	10

DC short-circuit capacity according to IEC 60497-2

Poles	V	I_{cu} (kA)
1	60	25
2	125	30

General performance

Minimum operating voltage U_{Bmin}	12
Tripping characteristics	B-C-D ⁽¹⁾
Rated frequency	(Hz) 50/60
Energy limiting class	3
Mechanical/electrical endurance	20000/10000
Tropicalisation acc. to IEC 60068-2-28/2-30	95% RH at 55°C
Poles	1, 2, 3, 4
Instantaneous tripping ranges acc. to IEC 60898-1	

Application



Standards

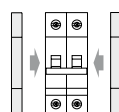
UL1077
IEC 898-1
IEC 947-2

Approvals / Marking



Add-on devices

Auxiliary contacts







Motor operator



(1) B characteristic 3 to 5 times Ampere rating
C characteristic 5 to 10 times Ampere rating
D characteristic 10 to 20 times Ampere rating



UL1077 - Series EP100 UL - 10kA - characteristics B-C-D

	In (A)	B curve		C curve		D curve		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
	0.5	-	-	EP101ULC0.5	686864	EP101ULD0.5	686940	12
	1	-	-	EP101ULC01	686865	EP101ULD01	686941	12
	2	-	-	EP101ULC02	686866	EP101ULD02	686942	12
	3	-	-	EP101ULC03	686867	EP101ULD03	686943	12
	4	-	-	EP101ULC04	686868	EP101ULD04	686944	12
	5	EP101ULB05	686808	EP101ULC05	686869	EP101ULD05	686945	12
	6	EP101ULB06	686809	EP101ULC06	686870	EP101ULD06	686946	12
	8	-	-	-	-	-	-	-
	10	EP101ULB10	686810	EP101ULC10	686871	EP101ULD10	686947	12
	13	EP101ULB13	686811	EP101ULC13	686872	EP101ULD13	686948	12
	15	EP101ULB15	686812	EP101ULC15	686873	EP101ULD15	686949	12
	16	EP101ULB16	686813	EP101ULC16	686874	EP101ULD16	686950	12
	20	EP101ULB20	686814	EP101ULC20	686875	EP101ULD20	686951	12
	25	EP101ULB25	686815	EP101ULC25	686876	EP101ULD25	686952	12
	30	EP101ULB30	686816	EP101ULC30	686877	EP101ULD30	686953	12
	32	EP101ULB32	686817	EP101ULC32	686878	EP101ULD32	686954	12
40	EP101ULB40	686818	EP101ULC40	686879	EP101ULD40	686955	12	
50	EP101ULB50	686819	EP101ULC50	686880	EP101ULD50	686956	12	
60	EP101ULB60	686820	EP101ULC60	686881	EP101ULD60	686957	12	
63	EP101ULB63	686821	EP101ULC63	686882	EP101ULD63	686958	12	
	0.5	-	-	EP102ULC0.5	686883	EP102ULD0.5	686959	6
	1	-	-	EP102ULC01	686884	EP102ULD01	686960	6
	2	-	-	EP102ULC02	686885	EP102ULD02	686961	6
	3	-	-	EP102ULC03	686886	EP102ULD03	686962	6
	4	-	-	EP102ULC04	686887	EP102ULD04	686963	6
	5	EP102ULB05	686822	EP102ULC05	686888	EP102ULD05	686964	6
	6	EP102ULB06	686823	EP102ULC06	686889	EP102ULD06	686965	6
	8	-	-	-	-	-	-	-
	10	EP102ULB10	686824	EP102ULC10	686890	EP102ULD10	686966	6
	13	EP102ULB13	686825	EP102ULC13	686891	EP102ULD13	686967	6
	15	EP102ULB15	686826	EP102ULC15	686892	EP102ULD15	686968	6
	16	EP102ULB16	686827	EP102ULC16	686893	EP102ULD16	686969	6
	20	EP102ULB20	686828	EP102ULC20	686894	EP102ULD20	686970	6
	25	EP102ULB25	686829	EP102ULC25	686895	EP102ULD25	686971	6
	30	EP102ULB30	686830	EP102ULC30	686896	EP102ULD30	686972	6
	32	EP102ULB32	686831	EP102ULC32	686897	EP102ULD32	686973	6
40	EP102ULB40	686832	EP102ULC40	686898	EP102ULD40	686974	6	
50	EP102ULB50	686833	EP102ULC50	686899	EP102ULD50	686975	6	
60	EP102ULB60	686834	EP102ULC60	686900	EP102ULD60	686976	6	
63	EP102ULB63	686835	EP102ULC63	686901	EP102ULD63	686977	6	
	0.5	-	-	EP103ULC0.5	686902	EP103ULD0.5	686978	4
	1	-	-	EP103ULC01	686903	EP103ULD01	686979	4
	2	-	-	EP103ULC02	686904	EP103ULD02	686980	4
	3	-	-	EP103ULC03	686905	EP103ULD03	686981	4
	4	-	-	EP103ULC04	686906	EP103ULD04	686982	4
	5	EP103ULB05	686836	EP103ULC05	686907	EP103ULD05	686983	4
	6	EP103ULB06	686837	EP103ULC06	686908	EP103ULD06	686984	4
	8	-	-	-	-	-	-	-
	10	EP103ULB10	686838	EP103ULC10	686909	EP103ULD10	686985	4
	13	EP103ULB13	686839	EP103ULC13	686910	EP103ULD13	686986	4
	15	EP103ULB15	686840	EP103ULC15	686911	EP103ULD15	686987	4
	16	EP103ULB16	686841	EP103ULC16	686912	EP103ULD16	686988	4
	20	EP103ULB20	686842	EP103ULC20	686913	EP103ULD20	686989	4
	25	EP103ULB25	686843	EP103ULC25	686914	EP103ULD25	686990	4
	30	EP103ULB30	686844	EP103ULC30	686915	EP103ULD30	686991	4
	32	EP103ULB32	686845	EP103ULC32	686916	EP103ULD32	686992	4
40	EP103ULB40	686846	EP103ULC40	686917	EP103ULD40	686993	4	
50	EP103ULB50	686847	EP103ULC50	686918	EP103ULD50	686994	4	
60	EP103ULB60	686848	EP103ULC60	686919	EP103ULD60	686995	4	
63	EP103ULB63	686849	EP103ULC63	686920	EP103ULD63	686996	4	
	0.5	-	-	EP104ULC0.5	686921	EP104ULD0.5	686997	3
	1	-	-	EP104ULC01	686922	EP104ULD01	686998	3
	2	-	-	EP104ULC02	686923	EP104ULD02	686999	3
	3	-	-	EP104ULC03	686924	EP104ULD03	687000	3
	4	-	-	EP104ULC04	686925	EP104ULD04	687001	3
	5	EP104ULB05	686850	EP104ULC05	686926	EP104ULD05	687002	3
	6	EP104ULB06	686851	EP104ULC06	686927	EP104ULD06	687003	3
	8	-	-	-	-	-	-	-
	10	EP104ULB10	686852	EP104ULC10	686928	EP104ULD10	687004	3
	13	EP104ULB13	686853	EP104ULC13	686929	EP104ULD13	687005	3
	15	EP104ULB15	686854	EP104ULC15	686930	EP104ULD15	687006	3
	16	EP104ULB16	686855	EP104ULC16	686931	EP104ULD16	687007	3
	20	EP104ULB20	686856	EP104ULC20	686932	EP104ULD20	687008	3
	25	EP104ULB25	686857	EP104ULC25	686933	EP104ULD25	687009	3
	30	EP104ULB30	686858	EP104ULC30	686934	EP104ULD30	687010	3
	32	EP104ULB32	686859	EP104ULC32	686935	EP104ULD32	687011	3
40	EP104ULB40	686860	EP104ULC40	686936	EP104ULD40	687012	3	
50	EP104ULB50	686861	EP104ULC50	686937	EP104ULD50	687013	3	
60	EP104ULB60	686862	EP104ULC60	686938	EP104ULD60	687014	3	
63	EP104ULB63	686863	EP104ULC63	686939	EP104ULD63	687015	3	

Series EP100 UL

A

B

C

D

E

F

G

X



Supplementary protection

EP60 UL

Circuit protection



Recognized UL1077 6kA

CSA c22.2 No.235

EN/IEC 60898

EN/IEC 60947-2

6000
3

10kA

UL1077 performances

UL FILE	E151139
Ampere rating In (A) 0.5-63	0.5-63A
Reference temperature	°C/F 25/77
Terminal capacity flexible/rigid cable	14-2 AWG
Max. Torque N.m/lbs.in	4.5/39.9

Rated voltage Un (V)

Poles	V AC	V DC
1	277	50
2, 3, 4	480	110

Short-circuit capacity

Poles	V	Icc (kA)
1, 2	277	6
3, 4	277/480	6
1	120	6
2, 3	240	6

DC short-circuit capacity

Poles	V DC	Icc
1	50	6
2	110	6

IEC performances

Thermal setting In	0.5-63A
Rated voltage AC Un	(V) 240/415V
Weight/pole	(g) 125
Terminal capacity flexible/rigid cable	(mm ²) 0.75/1 - 25/35

Short-circuit capacity according to IEC 60898-1

Poles	V AC	Icn (kA)
1	230/400	6
2, 3, 4	400	6

Short-circuit capacity according to IEC 60497-2

Poles	V AC	Icn (kA)
1	127	20
	240	10
	415	3
2	127	30
	240	20
	415	10
2, 3, 4	440	6

DC short-circuit capacity according to IEC 60497-2

Poles	V	Icn (kA)
1	60	20
2	125	25

General performance

Minimum operating voltage U _{Bmin}	12
Tripping characteristics	B-C-D ⁽¹⁾
Rated frequency (Hz)	50/60
Energy limiting class	3
Mechanical/electrical endurance	20000/10000
Tropicalisation acc. to IEC 60068-2-28/2-30	95% RH at 55°C
Poles	1, 2, 3, 4
Instantaneous tripping ranges acc. to IEC 60898-1	

Applications



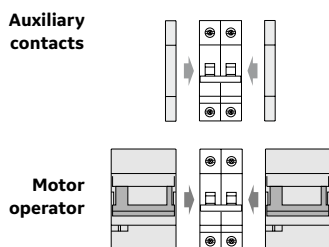
Standards

UL1077
IEC 898-1
IEC 947-2

Approvals / Marking







Add-on devices



(1) B characteristic 3 to 5 times Ampere rating
C characteristic 5 to 10 times Ampere rating
D characteristic 10 to 20 times Ampere rating



UL1077-Series EP60 UL - 6kA - characteristics B-C-D

	In (A)	B curve		C curve		D curve		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
	0.5	-	-	EP61ULC0.5	686656	EP61ULD0.5	686732	12
	1	-	-	EP61ULC01	686657	EP61ULD01	686733	12
	2	-	-	EP61ULC02	686658	EP61ULD02	686734	12
	3	-	-	EP61ULC03	686659	EP61ULD03	686735	12
	4	-	-	EP61ULC04	686660	EP61ULD04	686736	12
	5	EP61ULB05	686600	EP61ULC05	686661	EP61ULD05	686737	12
	6	EP61ULB06	686601	EP61ULC06	686662	EP61ULD06	686738	12
	8	-	-	-	-	-	-	-
	10	EP61ULB10	686602	EP61ULC10	686663	EP61ULD10	686739	12
	13	EP61ULB13	686603	EP61ULC13	686664	EP61ULD13	686740	12
	15	EP61ULB15	686604	EP61ULC15	686665	EP61ULD15	686741	12
	16	EP61ULB16	686605	EP61ULC16	686666	EP61ULD16	686742	12
	20	EP61ULB20	686606	EP61ULC20	686667	EP61ULD20	686743	12
	25	EP61ULB25	686607	EP61ULC25	686668	EP61ULD25	686744	12
	30	EP61ULB30	686608	EP61ULC30	686669	EP61ULD30	686745	12
	32	EP61ULB32	686609	EP61ULC32	686670	EP61ULD32	686746	12
40	EP61ULB40	686610	EP61ULC40	686671	EP61ULD40	686747	12	
50	EP61ULB50	686611	EP61ULC50	686672	EP61ULD50	686748	12	
60	EP61ULB60	686612	EP61ULC60	686673	EP61ULD60	686749	12	
63	EP61ULB63	686613	EP61ULC63	686674	EP61ULD63	686750	12	
	0.5	-	-	EP62ULC0.5	686675	EP62ULD0.5	686751	6
	1	-	-	EP62ULC01	686676	EP62ULD01	686752	6
	2	-	-	EP62ULC02	686677	EP62ULD02	686753	6
	3	-	-	EP62ULC03	686678	EP62ULD03	686754	6
	4	-	-	EP62ULC04	686679	EP62ULD04	686755	6
	5	EP62ULB05	686614	EP62ULC05	686680	EP62ULD05	686756	6
	6	EP62ULB06	686615	EP62ULC06	686681	EP62ULD06	686757	6
	8	-	-	-	-	-	-	-
	10	EP62ULB10	686616	EP62ULC10	686682	EP62ULD10	686758	6
	13	EP62ULB13	686617	EP62ULC13	686683	EP62ULD13	686759	6
	15	EP62ULB15	686618	EP62ULC15	686684	EP62ULD15	686760	6
	16	EP62ULB16	686619	EP62ULC16	686685	EP62ULD16	686761	6
	20	EP62ULB20	686620	EP62ULC20	686686	EP62ULD20	686762	6
	25	EP62ULB25	686621	EP62ULC25	686687	EP62ULD25	686763	6
	30	EP62ULB30	686622	EP62ULC30	686688	EP62ULD30	686764	6
	32	EP62ULB32	686623	EP62ULC32	686689	EP62ULD32	686765	6
40	EP62ULB40	686624	EP62ULC40	686690	EP62ULD40	686766	6	
50	EP62ULB50	686625	EP62ULC50	686691	EP62ULD50	686767	6	
60	EP62ULB60	686626	EP62ULC60	686692	EP62ULD60	686768	6	
63	EP62ULB63	686627	EP62ULC63	686693	EP62ULD63	686769	6	
	0.5	-	-	EP63ULC0.5	686694	EP63ULD0.5	686770	4
	1	-	-	EP63ULC01	686695	EP63ULD01	686771	4
	2	-	-	EP63ULC02	686696	EP63ULD02	686772	4
	3	-	-	EP63ULC03	686697	EP63ULD03	686773	4
	4	-	-	EP63ULC04	686698	EP63ULD04	686774	4
	5	EP63ULB05	686628	EP63ULC05	686699	EP63ULD05	686775	4
	6	EP63ULB06	686629	EP63ULC06	686700	EP63ULD06	686776	4
	8	-	-	-	-	-	-	-
	10	EP63ULB10	686630	EP63ULC10	686701	EP63ULD10	686777	4
	13	EP63ULB13	686631	EP63ULC13	686702	EP63ULD13	686778	4
	15	EP63ULB15	686632	EP63ULC15	686703	EP63ULD15	686779	4
	16	EP63ULB16	686633	EP63ULC16	686704	EP63ULD16	686780	4
	20	EP63ULB20	686634	EP63ULC20	686705	EP63ULD20	686781	4
	25	EP63ULB25	686635	EP63ULC25	686706	EP63ULD25	686782	4
	30	EP63ULB30	686636	EP63ULC30	686707	EP63ULD30	686783	4
	32	EP63ULB32	686637	EP63ULC32	686708	EP63ULD32	686784	4
40	EP63ULB40	686638	EP63ULC40	686709	EP63ULD40	686785	4	
50	EP63ULB50	686639	EP63ULC50	686710	EP63ULD50	686786	4	
60	EP63ULB60	686640	EP63ULC60	686711	EP63ULD60	686787	4	
63	EP63ULB63	686641	EP63ULC63	686712	EP63ULD63	686788	4	
	0.5	-	-	EP64ULC0.5	686713	EP64ULD0.5	686789	3
	1	-	-	EP64ULC01	686714	EP64ULD01	686790	3
	2	-	-	EP64ULC02	686715	EP64ULD02	686791	3
	3	-	-	EP64ULC03	686716	EP64ULD03	686792	3
	4	-	-	EP64ULC04	686717	EP64ULD04	686793	3
	5	EP64ULB05	686642	EP64ULC05	686718	EP64ULD05	686794	3
	6	EP64ULB06	686643	EP64ULC06	686719	EP64ULD06	686795	3
	8	-	-	-	-	-	-	-
	10	EP64ULB10	686644	EP64ULC10	686720	EP64ULD10	686796	3
	13	EP64ULB13	686645	EP64ULC13	686721	EP64ULD13	686797	3
	15	EP64ULB15	686646	EP64ULC15	686722	EP64ULD15	686798	3
	16	EP64ULB16	686647	EP64ULC16	686723	EP64ULD16	686799	3
	20	EP64ULB20	686648	EP64ULC20	686724	EP64ULD20	686800	3
	25	EP64ULB25	686649	EP64ULC25	686725	EP64ULD25	686801	3
	30	EP64ULB30	686650	EP64ULC30	686726	EP64ULD30	686802	3
	32	EP64ULB32	686651	EP64ULC32	686727	EP64ULD32	686803	3
40	EP64ULB40	686652	EP64ULC40	686728	EP64ULD40	686804	3	
50	EP64ULB50	686653	EP64ULC50	686729	EP64ULD50	686805	3	
60	EP64ULB60	686654	EP64ULC60	686730	EP64ULD60	686806	3	
63	EP64ULB63	686655	EP64ULC63	686731	EP64ULD63	686807	3	

Series EP60 UL

A

B

C

D

E

F

G

X



Series EP100 R

EN/IEC 60898-1

10000
3

EN/IEC 60947-2

15kA



Circuit protection

A

Applications



B

Approval / Marking

Bombardier Transportation Approval
acc. to EN50155

C

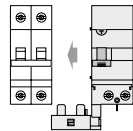


D

Add-on devices

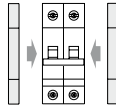
E

Add-on
RCD



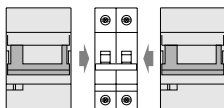
F

Auxiliary
contacts



G

Motor
operator



X

Performance

Thermal setting I_n	(A)	0.5 - 63
Rated voltage AC U_n	(V)	230/400
Minimum operating voltage U_{Bmin}	(V)	12
Tripping characteristics		B-C
Energy limiting class		3
Mechanical/electrical endurance		20000/10000
Tropicalisation acc. to EN/IEC 60068-2		95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	25-35
Poles		3
Weight/pole	(g)	125

Short-circuit capacity

AC/DC acc. to EN/IEC 60947-2

Poles	V	I _{cu} (kA) ⁽¹⁾
3	240 DC	30
2	415 DC	15
1	440 AC	10

AC/DC acc. to EN/IEC 60898-2

Poles	V	I _{cn} =I _{cs} (kA)
3	400 DC	10 ⁽²⁾

(1) I_{cs} = 50% I_{cu}

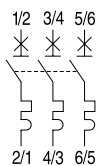
(2) Grid distance of 60mm for B-C and D; I_{cs} = 75% I_{cu}



Series EP100 R - 10kA - characteristics B-C



**3P
3 mod.**



In (A)	B		C		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
0.5	-	-	EP103C0.5RAIL	681461	4
1	-	-	EP103C01RAIL	681462	4
2	-	-	EP103C02RAIL	681463	4
3	-	-	EP103C03RAIL	681464	4
4	-	-	EP103C04RAIL	681465	4
6	EP103B06RAIL	681452	EP103C06RAIL	681466	4
10	EP103B10RAIL	681453	EP103C10RAIL	681467	4
16	EP103B16RAIL	681454	EP103C16RAIL	681468	4
20	EP103B20RAIL	681455	EP103C20RAIL	681469	4
25	EP103B25RAIL	681456	EP103C25RAIL	681470	4
32	EP103B32RAIL	681457	EP103C32RAIL	681471	4
40	EP103B40RAIL	681458	EP103C40RAIL	681472	4
50	EP103B50RAIL	681459	EP103C50RAIL	681473	4
63	EP103B63RAIL	681460	EP103C63RAIL	681474	4

Series EP100 R

A

B

C

D

E

F

G

X



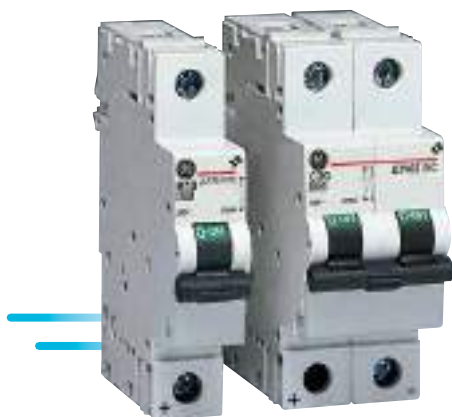
Miniature Circuit Breakers for railway applications Universal currents

Series EP100 UCR

EN/IEC 60898-2 **6000 | T15**

DIN VDE 0641

EN/IEC 60947-2 10kA



Circuit protection

A

Applications



B

Approval / Marking

Bombardier Transportation Approval
acc. to EN50155

C

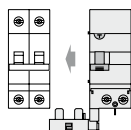


D

Add-on devices

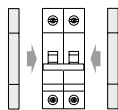
E

Add-on
RCD



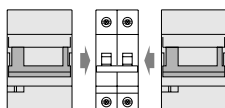
F

Auxiliary
contacts



G

Motor
operator



X

Performance

Thermal setting In	(A) 0.5 -63
Rated voltage AC Un	(V) 230/400 250/500 \equiv
Minimum operating voltage UBmin	(V) 12 12 \equiv
Tripping characteristics	B-C-K
Mechanical/electrical endurance	20000/10000
Tropicalisation acc. to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) 25-35
Poles⁽¹⁾	1, 2
Weight	(g/pole) 125

Short-circuit capacity

AC/DC acc. to EN/IEC 60947-2

Poles	V	Icu (kA)
1	230 DC	10 ⁽²⁾
2	440 DC	10 ⁽²⁾
1	230 AC	6 ⁽³⁾
2	400 AC	6 ⁽³⁾

AC/DC acc. to EN/IEC 60898-2⁽⁴⁾

Poles	V	Icn=Ics (kA)
1	125 DC	10
	220 DC	6
	230/400 AC	6
2	250 DC	10
	440 DC	6
	400 AC	6

(1) Polarity labeling to be respected due to the permanent magnet in the MCB

(2) T = 4ms

(3) 4.5kA for 50A and 63A

(4) After a switching of the net with more than 6kA in AC it should not be used in DC



Series EP100 UCR - 10kA - characteristics B-C-K

	In (A)	B		C		K		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
 <p>(1) (2)</p> <p>2</p> <p>(3)</p> <p>1</p> <p>+</p>	0.5	-	-	EP101RucC0.5	681493	EP101UCRK0.5	673267	12
	1	-	-	EP101RucC01	681494	EP101UCRK01	673268	12
	1.6	-	-	-	-	EP101UCRK1.6	673269	12
	2	-	-	EP101RucC02	681495	EP101UCRK02	673270	12
	3	-	-	-	-	EP101UCRK03	673271	12
	4	-	-	EP101RucC04	681496	EP101UCRK04	673272	12
	6	EP101RucB06	681475	EP101RucC06	681497	EP101UCRK06	673273	12
	8	-	-	-	-	EP101UCRK08	673274	12
	10	EP101RucB10	681476	EP101RucC10	681498	EP101UCRK10	673275	12
	13	-	-	-	-	EP101UCRK13	673276	12
	16	EP101RucB16	681477	EP101RucC16	681499	EP101UCRK16	673277	12
	20	EP101RucB20	681478	EP101RucC20	681500	EP101UCRK20	673278	12
	25	EP101RucB25	681479	EP101RucC25	681501	EP101UCRK25	673279	12
	32	EP101RucB32	681480	EP101RucC32	681502	EP101UCRK32	673280	12
	40	EP101RucB40	681481	EP101RucC40	681503	EP101UCRK40	673281	12
	50	EP101RucB50	681482	EP101RucC50	681504	EP101UCRK50	673282	12
63	EP101RucB63	681483	EP101RucC63	681505	EP101UCRK63	673283	12	
 <p>(1) (2)</p> <p>2 4</p> <p>1 3</p> <p>+</p> <p>-</p>	0.5	-	-	EP102RucC0.5	681506	-	-	6
	1	-	-	EP102RucC01	681507	-	-	6
	1.6	-	-	-	-	-	-	6
	2	-	-	EP102RucC02	681508	-	-	6
	3	-	-	-	-	-	-	6
	4	-	-	EP102RucC04	681509	-	-	6
	6	EP102RucB06	681484	EP102RucC06	681510	-	-	6
	8	-	-	-	-	-	-	6
	10	EP102RucB10	681485	EP102RucC10	681511	-	-	6
	13	-	-	-	-	-	-	6
	16	EP102RucB16	681486	EP102RucC16	681512	-	-	6
	20	EP102RucB20	681487	EP102RucC20	681513	-	-	6
	25	EP102RucB25	681488	EP102RucC25	681514	-	-	6
	32	EP102RucB32	681489	EP102RucC32	681515	-	-	6
	40	EP102RucB40	681490	EP102RucC40	681516	-	-	6
	50	EP102RucB50	681491	EP102RucC50	681517	-	-	6
63	EP102RucB63	681492	EP102RucC63	681518	-	-	6	
 <p>(1) (2)</p> <p>1 3</p> <p>2 4</p>	0.5	-	-	EP102UCRC0.5	680565	EP102UCRK0.5	673284	6
	1	-	-	EP102UCRC01	680566	EP102UCRK01	673285	6
	1.6	-	-	-	-	EP102UCRK1.6	673286	6
	2	-	-	EP102UCRC02	680567	EP102UCRK02	673287	6
	3	-	-	-	-	EP102UCRK03	673288	6
	4	-	-	EP102UCRC04	680568	EP102UCRK04	673289	6
	6	-	-	EP102UCRC06	680569	EP102UCRK06	673290	6
	8	-	-	-	-	EP102UCRK08	673291	6
	10	-	-	EP102UCRC10	680570	EP102UCRK10	673292	6
	13	-	-	-	-	EP102UCRK13	673293	6
	16	-	-	EP102UCRC16	680571	EP102UCRK16	673294	6
	20	-	-	EP102UCRC20	680572	EP102UCRK20	673295	6
	25	-	-	EP102UCRC25	680573	EP102UCRK25	673296	6
	32	-	-	EP102UCRC32	680574	EP102UCRK32	673297	6
	40	-	-	EP102UCRC40	680575	EP102UCRK40	673298	6
	50	-	-	EP102UCRC50	680576	EP102UCRK50	673299	6
63	-	-	EP102UCRC63	680577	EP102UCRK63	673300	6	

(1) Always respect the polarities
 (2) Characteristics are in DC:
 B (DC) 3 up to 7.5 In
 C (DC) 5 up to 15 In
 K (DC) 8 up to 12 In
 (3) Marking EP101UCRK:

Series EP100 UCR

A

B

C

D

E

F

G

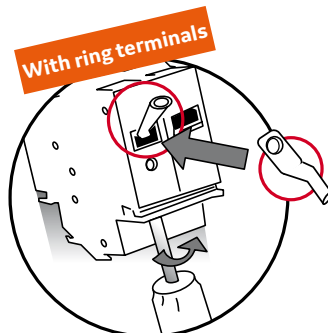
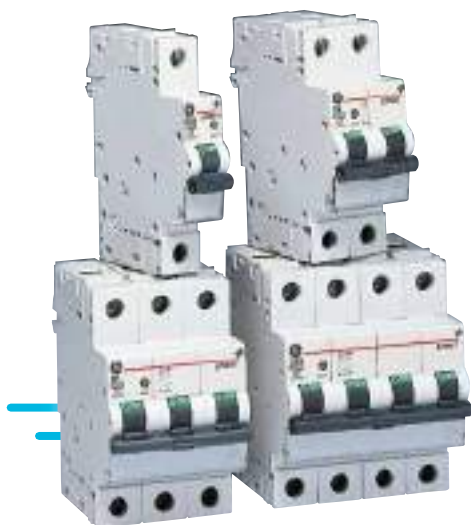
X



Miniature Circuit Breakers with ring terminals

Series EP100T

Circuit protection



The miniature circuit breakers in RAIL-design have been developed with regard to shakes, shocks and vibrations

Applications



Standards

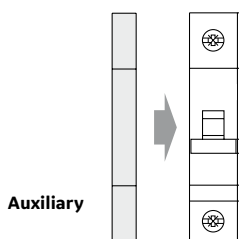
- Certified acc. new CEI UNI 11170 (higher protection against fires)
- Certified acc. to NF 16-101, smoke index F
- Shock and vibrations tests acc. to IEC 61373

Approval / Marking



Trenitalia n° 371441.01

Add-on devices



Auxiliary

Auxiliary contacts series CBT
Shunt trip Tele LT

Performance

Thermal setting In	(A)	0.5 to 63 at 45°C
Rated voltage AC Un	(V)	240/440
Operating temperature	(°C)	-40/+70
Tripping characteristics		Z-B-C-K
Energy limiting class		3
Mechanical/electrical endurance		20000/10000
Tropicalisation acc. IEC 60068-2-28/2-30		95% RH at 55°C
Capacity of ring terminal	(mm ²)	16 (x2 connections)
Torque	(Nm)	2
Poles		1, 2, 3, 4
Self-extinguish degree		according UNI CEI 11170
Smoke index acc. UNI CEI 11170, NF 16-102		F1
Maximum working altitude	(m)	2000

Short-circuit capacity

AC acc. to EN 60947-2 (minimum value)		
Poles	V _~	I _{cu} (kA)
1	230	15
	133	20
2	440/380	15
	230/133	20
3, 4	440	10
	380	15
	230	20




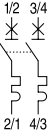

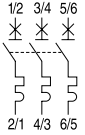

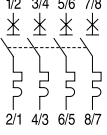
DC acc. to EN 60947-2		
Poles	V ₋₋₋	I _{cu} (kA)/I _{cs} (kA)
1	60	25/15 ms
2	110	30/15 ms

AC acc. to EN/IEC 60898		
Poles	V _~	I _{cn} (kA)
1-4	230/400	10





Series EP100T - 10kA - characteristics Z-B-C-K

	In (A)	2-3 In (Z)		3-5 In (B)		8-12 In (C)		8-12 In (K)		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
 1/2 	0.5	EP101TZ0.5	691277	-	-	EP101TC0.5	691245	EP101TK0.5	691261	12
	1	EP101TZ01	691278	-	-	EP101TC01	691246	EP101TK1	691267	12
	1.6	EP101TZ1.6	691284	-	-	EP101TC1.6	691252	EP101TK1.6	691268	12
	2	EP101TZ02	691279	-	-	EP101TC02	691247	EP101TK02	691262	12
	3	EP101TZ03	691280	-	-	EP101TC03	691248	EP101TK03	691263	12
	4	EP101TZ04	691281	-	-	EP101TC04	691249	EP101TK04	691264	12
	6	EP101TZ06	691282	EP101TB6	691234	EP101TC06	691250	EP101TK06	691265	12
	8	EP101TZ08	691283	EP101TB8	691235	EP101TC08	691251	EP101TK08	691266	12
	10	EP101TZ10	691285	EP101TB10	691236	EP101TC10	691253	EP101TK10	691269	12
	13	-	-	EP101TB13	691237	EP101TC13	691254	-	-	12
	16	EP101TZ16	691286	EP101TB16	691238	EP101TC16	691255	EP101TK16	691270	12
	20	EP101TZ20	691287	EP101TB20	691239	EP101TC20	691256	EP101TK20	691271	12
	25	EP101TZ25	691288	EP101TB25	691240	EP101TC25	667248	EP101TK25	691272	12
	32	EP101TZ32	691289	EP101TB32	691241	EP101TC32	691257	EP101TK32	691273	12
	40	EP101TZ40	691290	EP101TB40	691242	EP101TC40	691258	EP101TK40	691274	12
50	EP101TZ50	691291	EP101TB50	691243	EP101TC50	691259	EP101TK50	691275	12	
63	EP101TZ63	691292	EP101TB63	691244	EP101TC63	691260	EP101TK63	691276	12	
 1/2 3/4 	0.5	EP102TZ0.5	691337	-	-	EP102TC0.5	691304	EP102TK0.5	691321	6
	1	EP102TZ01	691338	-	-	EP102TC01	691305	EP102TK01	691322	6
	1.6	EP102TZ1.6	691344	-	-	EP102TC1.6	691311	EP102TK1.6	691328	6
	2	EP102TZ02	691339	-	-	EP102TC02	691306	EP102TK02	691323	6
	3	EP102TZ03	691340	-	-	EP102TC03	691307	EP102TK03	691324	6
	4	EP102TZ04	691341	-	-	EP102TC04	691308	EP102TK04	691325	6
	6	EP102TZ06	691342	EP102TB06	691293	EP102TC06	691309	EP102TK06	691326	6
	8	EP102TZ08	691343	EP102TB08	691294	EP102TC08	691310	EP102TK08	691327	6
	10	EP102TZ10	691345	EP102TB10	691295	EP102TC10	691312	EP102TK10	691329	6
	13	-	-	EP102TB13	691296	EP102TC13	691313	-	-	6
	16	EP102TZ16	691346	EP102TB16	691297	EP102TC16	691314	EP102TK16	691330	6
	20	EP102TZ20	691347	EP102TB20	691298	EP102TC20	691315	EP102TK20	691331	6
	25	EP102TZ25	691348	EP102TB25	691299	EP102TC25	691316	EP102TK25	691332	6
	32	EP102TZ32	691349	EP102TB32	691300	EP102TC32	691317	EP102TK32	691333	6
	40	EP102TZ40	691350	EP102TB40	691301	EP102TC40	691318	EP102TK40	691334	6
50	EP102TZ50	691351	EP102TB50	691302	EP102TC50	691319	EP102TK50	691335	6	
63	EP102TZ63	691352	EP102TB63	691303	EP102TC63	691320	EP102TK63	691336	6	
 1/2 3/4 5/6 	0.5	-	-	-	-	EP103TC0.5	691364	EP103TK0.5	691381	4
	1	-	-	-	-	EP103TC01	691365	EP103TK01	691382	4
	1.6	-	-	-	-	EP103TC1.6	691371	EP103TK1.6	691388	4
	2	-	-	-	-	EP103TC02	691366	EP103TK02	691383	4
	3	-	-	-	-	EP103TC03	691367	EP103TK03	691384	4
	4	-	-	-	-	EP103TC04	691368	EP103TK04	691385	4
	6	-	-	EP103TB06	691353	EP103TC06	691369	EP103TK06	691386	4
	8	-	-	EP103TB08	691354	EP103TC08	691370	EP103TK08	691387	4
	10	-	-	EP103TB10	691355	EP103TC10	691372	EP103TK10	691389	4
	13	-	-	EP103TB13	691356	EP103TC13	691373	-	-	4
	16	-	-	EP103TB16	691357	EP103TC16	691374	EP103TK16	691390	4
	20	-	-	EP103TB20	691358	EP103TC20	691375	EP103TK20	691391	4
	25	-	-	EP103TB25	691359	EP103TC25	691376	EP103TK25	691392	4
	32	-	-	EP103TB32	691360	EP103TC32	691377	EP103TK32	691393	4
	40	-	-	EP103TB40	691361	EP103TC40	691378	EP103TK40	691394	4
50	-	-	EP103TB50	691362	EP103TC50	691379	EP103TK50	691395	4	
63	-	-	EP103TB63	691363	EP103TC63	691380	EP103TK63	691396	4	
 1/2 3/4 5/6 7/8 	0.5	-	-	-	-	EP104TC0.5	691407	EP104TK0.5	691424	3
	1	-	-	-	-	EP104TC01	691408	EP104TK01	691425	3
	1.6	-	-	-	-	EP104TC1.6	691414	EP104TK1.6	691431	3
	2	-	-	-	-	EP104TC02	691409	EP104TK02	691426	3
	3	-	-	-	-	EP104TC03	691410	EP104TK03	691427	3
	4	-	-	-	-	EP104TC04	691411	EP104TK04	691428	3
	6	-	-	EP104TB06	691397	EP104TC06	691412	EP104TK06	691429	3
	8	-	-	EP104TB08	691398	EP104TC08	691413	EP104TK08	691430	3
	10	-	-	EP104TB10	691399	EP104TC10	691415	EP104TK10	691432	3
	13	-	-	EP104TB13	691400	EP104TC13	691416	-	-	3
	16	-	-	EP104TB16	667247	EP104TC16	691417	EP104TK16	691433	3
	20	-	-	EP104TB20	691401	EP104TC20	691418	EP104TK20	691434	3
	25	-	-	EP104TB25	691402	EP104TC25	691419	EP104TK25	691435	3
	32	-	-	EP104TB32	691403	EP104TC32	691420	EP104TK32	691436	3
	40	-	-	EP104TB40	691404	EP104TC40	691421	EP104TK40	691437	3
50	-	-	EP104TB50	691405	EP104TC50	691422	EP104TK50	691438	3	
63	-	-	EP104TB63	691406	EP104TC63	691423	EP104TK63	691439	3	

Series EP100T

A

B

C

D

E

F

G

X

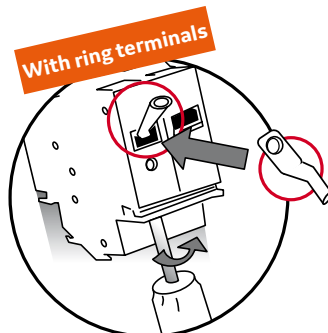
New



Miniature Circuit Breakers for railway applications Universal currents

Series EP100 UCT

Circuit protection



The miniature circuit breakers in RAIL-design have been developed with regard to shakes, shocks and vibrations

Applications



Standards

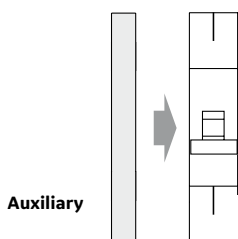
- Certified acc. new CEI UNI 11170 (higher protection against fires)
- Certified acc. to NF 16-101, smoke index F
- Shock and vibrations tests acc. to IEC 61373

Approval / Marking



Trenitalia n° 371441.01

Add-on devices



Performance



Thermal setting In	(A)	0.5 to 63 at 45°C
Rated voltage AC Un	(V)	250/440
Operating temperature	(°C)	-40/+70
Tripping characteristics		Z-B-C-K
Energy limiting class		3
Mechanical/electrical endurance		20000/10000
Tropicalisation acc. IEC 60068-2-28/2-30		95% RH at 55°C
Capacity of ring terminal	(mm ²)	16 (x2 connections)
Torque	(Nm)	2
Poles		1, 2
Self-extinguish degree		according to UNI CEI 11170
Smoke index acc. UNI CEI 11170, NF 16-102		F1
Maximum working altitude	(m)	2000

Short-circuit capacity

DC acc. to EN/IEC 60947-2		
Poles	V _{DC}	I _{cu} (kA)/I _{cs} (kA)
1	24	25/15 ms
	60	25/15 ms
	110	20/10 ms
	250	10/5 ms
2	24	30/15 ms
	60	30/15 ms
	110	25/15 ms
	250	10/5 ms



Series EP100 UCT - 10kA - characteristics Z-B-C-K

	In (A)	2-3 In (Z)		3-5 In (B)		8-12 In (C)		8-12 In (K)		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
 <p>1P 1 mod.</p>	0.5	EP101UCTZ0.5	691484	-	-	EP101UCTC0.5	691451	EP101UCTK0.5	691468	12
	1	EP101UCTZ01	691485	-	-	EP101UCTC01	691452	EP101UCTK01	691469	12
	1.6	EP101UCTZ1.6	691491	-	-	EP101UCTC1.6	691458	EP101UCTK1.6	691475	12
	2	EP101UCTZ02	691486	-	-	EP101UCTC02	691453	EP101UCTK02	691470	12
	3	EP101UCTZ03	691487	-	-	EP101UCTC03	691454	EP101UCTK03	691471	12
	4	EP101UCTZ04	691488	-	-	EP101UCTC04	691455	EP101UCTK04	691472	12
	6	EP101UCTZ06	691489	EP101UCTB06	691440	EP101UCTC06	691456	EP101UCTK06	691473	12
	8	EP101UCTZ08	691490	EP101UCTB08	691441	EP101UCTC08	691457	EP101UCTK08	691474	12
	10	EP101UCTZ10	691492	EP101UCTB10	691442	EP101UCTC10	691459	EP101UCTK10	691476	12
	13	-	-	EP101UCTB13	691443	EP101UCTC13	691460	-	-	12
	16	EP101UCTZ16	691493	EP101UCTB16	691444	EP101UCTC16	691461	EP101UCTK16	691477	12
	20	EP101UCTZ20	691494	EP101UCTB20	691445	EP101UCTC20	691462	EP101UCTK20	691478	12
	25	EP101UCTZ25	691495	EP101UCTB25	691446	EP101UCTC25	691463	EP101UCTK25	691479	12
	32	EP101UCTZ32	691496	EP101UCTB32	691447	EP101UCTC32	691464	EP101UCTK32	691480	12
	40	EP101UCTZ40	691497	EP101UCTB40	691448	EP101UCTC40	691465	EP101UCTK40	691481	12
	50	EP101UCTZ50	691498	EP101UCTB50	691449	EP101UCTC50	691466	EP101UCTK50	691482	12
63	EP101UCTZ63	691499	EP101UCTB63	691450	EP101UCTC63	691467	EP101UCTK63	691483	12	
 <p>2P 2 mod.</p>	0.5	EP102UCTZ0.5	691544	-	-	EP102UCTC0.5	691511	EP102UCTK0.5	691528	6
	1	EP102UCTZ01	691545	-	-	EP102UCTC01	691512	EP102UCTK01	691529	6
	1.6	EP102UCTZ1.6	691546	-	-	EP102UCTC1.6	691518	EP102UCTK1.6	691535	6
	2	EP102UCTZ02	691551	-	-	EP102UCTC02	691513	EP102UCTK02	691530	6
	3	EP102UCTZ03	691547	-	-	EP102UCTC03	691514	EP102UCTK03	691531	6
	4	EP102UCTZ04	691548	-	-	EP102UCTC04	691515	EP102UCTK04	691532	6
	6	EP102UCTZ06	691549	EP102UCTB06	691500	EP102UCTC06	691516	EP102UCTK06	691533	6
	8	EP102UCTZ08	691550	EP102UCTB08	691501	EP102UCTC08	691517	EP102UCTK08	691534	6
	10	EP102UCTZ10	691552	EP102UCTB10	691502	EP102UCTC10	691519	EP102UCTK10	691536	6
	13	-	-	EP102UCTB13	691503	EP102UCTC13	691520	-	-	6
	16	EP102UCTZ16	691553	EP102UCTB16	691504	EP102UCTC16	691521	EP102UCTK16	691537	6
	20	EP102UCTZ20	691554	EP102UCTB20	691505	EP102UCTC20	691522	EP102UCTK20	691538	6
	25	EP102UCTZ25	691555	EP102UCTB25	691506	EP102UCTC25	691523	EP102UCTK25	691539	6
	32	EP102UCTZ32	691556	EP102UCTB32	691507	EP102UCTC32	691524	EP102UCTK32	691540	6
	40	EP102UCTZ40	691557	EP102UCTB40	691508	EP102UCTC40	691525	EP102UCTK40	691541	6
	50	EP102UCTZ50	691558	EP102UCTB50	691509	EP102UCTC50	691526	EP102UCTK50	691542	6
63	EP102UCTZ63	691559	EP102UCTB63	691510	EP102UCTC63	691527	EP102UCTK63	691543	6	

Series EP100 UCT

A

B

C

D

E

F

G

X



Accessories for MCBs Series G, GT and EP

Circuit protection

A

B

C



D

E

F

G

X

	Function	Cat. No	Ref. No.	Pack.
 Sealing plate for 4P	Cut off the number of poles needed for Series G, GT	EPP	669486	100
 Padlocking bracket	Allows padlocking in ON and OFF position Ø padlock 5mm	KS	624929	2
 Spacer	1/2 module	PLS / CTX SP	686069	50

PROTECT



Redline

2 circuits in 1 m

Redline Unibis*: the solution for

Circuit protection

A

B

C

D

E

F

G

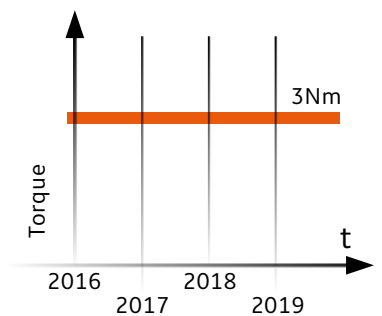
X

Unibis* compact MCBs are one of the latest introductions in the Redline range and are developed to **reduce the size of the distribution board to the minimum**. The performances are upgraded to **10kA**.



Safety terminals

Up to 6mm² + 4mm² wires combined.



odule

space problems



**1P+1P
in
1 module**

**1P+N
in
1 module**

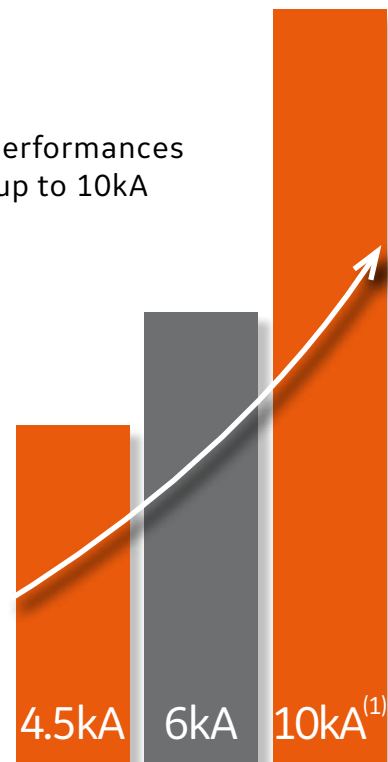
**2P
in
1 module**

**3P
in
2 modules**

**4P
in
2 modules**

- ✓ Brandnew design:
 - 2P in 1 module,
- ✓ 3 and 4P in 2 modules
- ✓ Complete range: from 4.5–6–**10kA**⁽¹⁾,
2–**40** Amps, B and C curves
- ✓ 100% compatible with all Redline
auxiliaries and accessories
- ✓ 100% quality and reliability
acc. to EN 60898
- ✓ CEBEC, NF, VDE, KEMA, IMQ certified

3 performances
up to 10kA

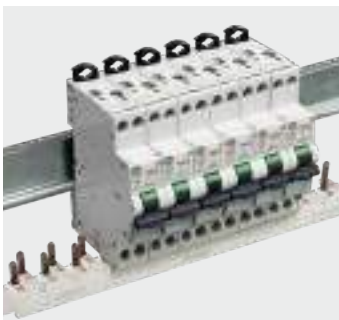


(1) 10kA acc. to IEC 60947-2

The solution for

Unibis* compact MCBs

quality and reliability guaranteed



High performance clips

To fix the MCB to the DIN-rail.



High performance torque

Up to 3Nm.

Easy to replace

Double clips make it easy to replace the MCBs, especially when a busbar is installed.



Userfriendly

All screws are on the same level to work fast and easy.



Green or red flag on toggle with isolation applications

Correct information about the real position. Minimum 5mm distance between open contacts is ensured.



Part of the family

Unibis* MCBs fit perfectly in the Redline range.

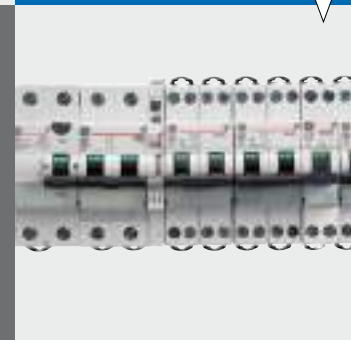
Safety terminals IP20

The capacity of Unibis* terminals has been doubled. Connection possibilities: (2 x 4mm²) or (1 x 4mm²) + (1 x 6mm²).



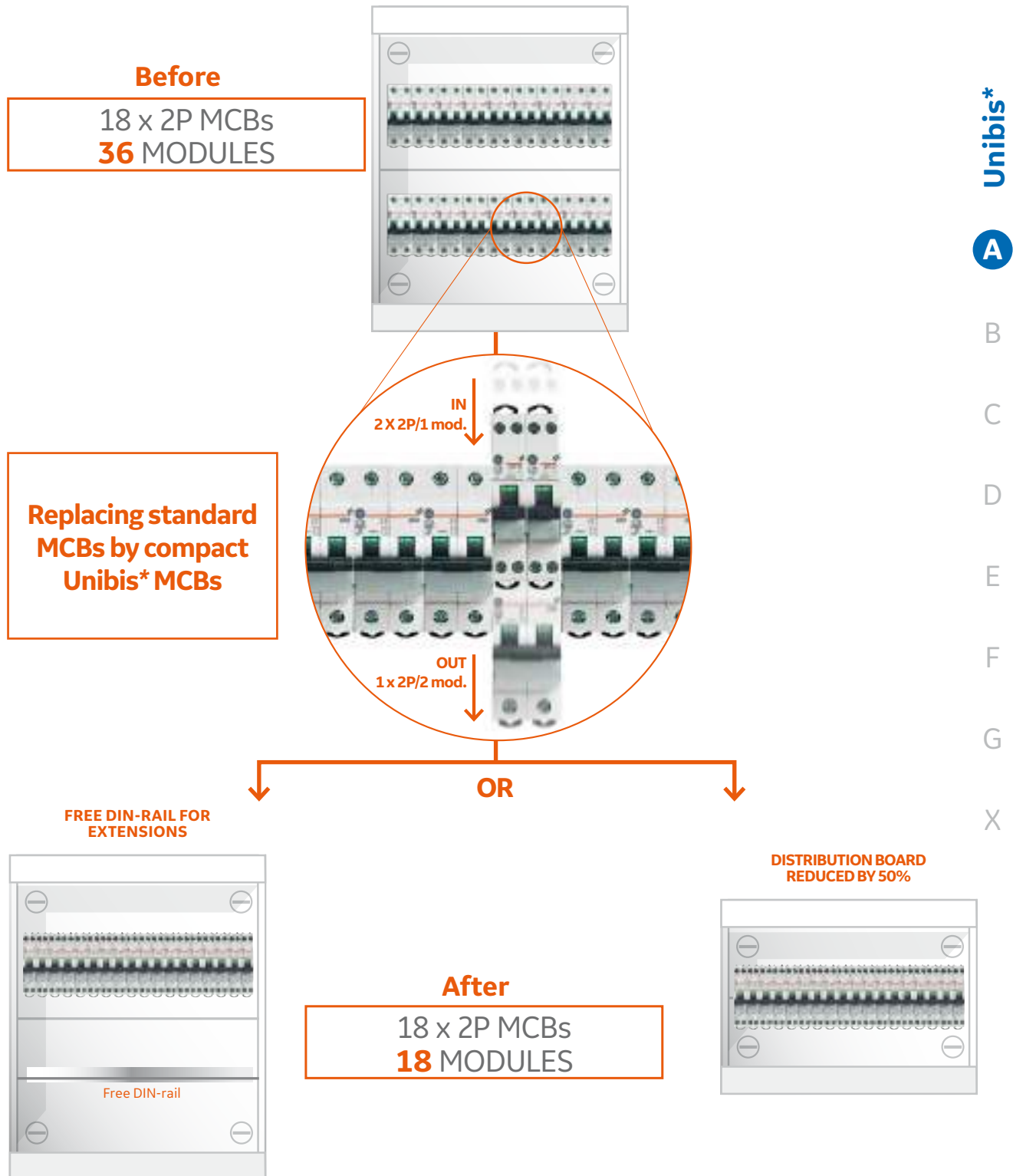
Full functionality

A small auxiliary contact is the interface to the complete functionality of the Redline auxiliaries and accessories.



renovations

Saving up to 50% space in distribution boards!





Technical data of compact MCBs

Circuit protection

A

B

C

D

E

F

G

Series		EPC 451N	EPC 61N
Standards		EN 60898-1	EN 60898-1
Tripping characteristics		B,C	B,C
Nominal current (In)		2-40	2-40
Calibration temperature (°C)		30	30
Number of poles (# mod.)		1+N (1 mod.)	1+N (1 mod.)
Neutral pole protected		-	-
Nominal voltage Un AC	1P+N (V)	240	240
	1P+1P (V)	-	-
	2P (V)	-	-
	3P (V)	-	-
	4P (V)	-	-
Nominal voltage Un DC	2P (V=)	-	-
Frequency	(Hz)	50/60	50/60
	in DC	Thresh. magn. + 40%	Thresh. magn. + 40%
for 400Hz		Thresh. magn. + 50%	Thresh. magn. + 50%
Maximum service voltage UBmax (V)		250	250
Minimum service voltage UBmin (V)		12	12
Energy limiting class (EN 60898-1)		3	3
Rated insulation voltage	Pollution degree 2 (V)	500	500
	Pollution degree 3 (V)	400	400
Impulse withstand test voltage (kV)		6	6
Insulation resistance (MΩ)		1000	1000
Dielectric rigidity (kV)		2.5	2.5
Vibration resistance (in x, y, z direction) (IEC 77/16.3) (g)		3	3
Endurance	Electrical at Un,In	10000 ⁽¹⁾	10000 ⁽¹⁾
	Mechanical	20000	20000
Utilisation category (EN 60947-2)		A	A
Mounting position: vertical/horizontal		any	any
Incoming top or bottom		yes	yes
Protection degree (outside/inside enclosure with door)		IP20/IP40	IP20/IP40
Selfextinguish degree (acc. UL 94)		V2	V2
Tropicalisation (acc. EN 60068-2/DIN 40046)		+55°C/95%RH	+55°C/95%RH
Operating temperature (°C)		-25/+55	-25/+55
Storage temperature (°C)		-55/+55	-55/+55
Terminal capacity	Rigid cable min/max (top) (mm ²)	1/16 ⁽²⁾	1/16 ⁽²⁾
	Flexible cable min/max (top) (mm ²)	1/10 ⁽²⁾	1/10 ⁽²⁾
	Rigid cable min/max (bottom) (mm ²)	1/16 ⁽²⁾	1/16 ⁽²⁾
	Flexible cable min/max (bottom) (mm ²)	1/10 ⁽²⁾	1/10 ⁽²⁾
	Torque (Nm)	3	3
Add-on devices	Auxiliary contacts CA UN	yes	yes
	Tele U	yes ⁽³⁾	yes ⁽³⁾
	Tele L	yes ⁽³⁾	yes ⁽³⁾
	Tele MP	yes ⁽³⁾	yes ⁽³⁾
	PBS	yes ⁽³⁾	yes ⁽³⁾
Busbar systems	Pin (top/bottom)	yes/yes	yes/yes
	Fork (top/bottom)	no/no	no/no
Accessories		yes	yes
Width per mod. (mm)		18	18
Weight per mod. (g)		125	125
Package		12	12
Approvals		KEMA, IMQ, NF	VDE, KEMA, IMQ, NF
CE-marking		yes	yes
Page		A.88	A.89

X

Short-circuit capacity of compact MCBs

Series		EPC 451N	EPC 61N
Short-circuit capacity AC		(kA)	(kA)
EN/IEC 60898-1 Icn	1P+N 240 V	4.5	6
	1P+1P 240 V	-	-
	2P 400 V	-	-
	2P 415 V	-	-
	3P 415 V	-	-
	4P 415 V	-	-
EN 60947-2 Icu	1P+N 230 V	6	10
	1P+1P 230 V	-	-
	2P 230 V	-	-
	2P 415 V	-	-
	3P 415 V	-	-
	4P 415 V	-	-
Short-circuit capacity DC			
EN 60947-2 Icu	2P 96 V=	-	-
	2P 125 V=	-	-



EPC 611	EPC 30	EPC 45	EPC 60	EPC 62R
EN 60898-1	EN 60898-1	EN 60898-1	EN 60898-1	EN 60898-1, EN 50155, EN 45545-2
B,C	C	B,C	B,C	B,C
2-20	2-40	2-40	2-40	2-40
30	30	30	30	30
1P+1P (1 mod.)	2 (1 mod.), 3&4 (2mod.)	2 (1 mod.), 3 and 4 (2 mod.)	2 (1 mod.), 3 and 4 (2 mod.)	2 (1 mod.)
-	-	-	-	-
-	-	-	-	-
230 ⁽⁴⁾	-	-	-	-
-	230/400	415	415	415
-	230/400	415	415	-
-	230/400	415	415	-
-	-	96	96	125
50/60	50/60	50/60	50/60	50/60
Thresh. magn. + 40%	Thresh. magn. + 40%	Thresh. magn. + 40%	Thresh. magn. + 40%	Thresh. magn. + 40%
Thresh. magn. + 50%	Thresh. magn. + 50%	Thresh. magn. + 50%	Thresh. magn. + 50%	Thresh. magn. + 50%
250/440	250/440	250/440	250/440	250/440
12	12	12	12	12
3	3	3	3	3
500	500	500	500	500
400	400	400	400	400
6	6	6	6	6
1000	10000	10000	10000	10000
2.5	2.5	2.5	2.5	2.5
3	3	3	3	3
10000 ⁽¹⁾	10000 ⁽¹⁾	10000 ⁽¹⁾	10000 ⁽¹⁾	10000 ⁽¹⁾
20000	20000	20000	20000	20000
A	A	A	A	A
any	any	any	any	any
yes	yes	yes	yes	yes
IP20/IP40	IP20/IP40	IP20/IP40	IP20/IP40	IP20/IP40
V2	V2	V2	V2	V2
+55°C/95%RH	+55°C/95%RH	+55°C/95%RH	+55°C/95%RH	+55°C/95%RH
-25/+55	-25/+55	-25/+55	-25/+55	-25/+55
-55/+55	-55/+55	-55/+55	-55/+55	-55/+55
1/16 ⁽²⁾	1/16 ⁽²⁾	1/16 ⁽²⁾	1/16 ⁽²⁾	1/16
1/10 ⁽²⁾	1/10 ⁽²⁾	1/10 ⁽²⁾	1/10 ⁽²⁾	1/10
1/16 ⁽²⁾	1/16 ⁽²⁾	1/16 ⁽²⁾	1/16 ⁽²⁾	1/16
1/10 ⁽²⁾	1/10 ⁽²⁾	1/10 ⁽²⁾	1/10 ⁽²⁾	1/10
3	3	3	3	3
yes	yes	yes	yes	yes
yes ⁽³⁾	yes ⁽³⁾	yes ⁽³⁾	yes ⁽³⁾	yes ⁽³⁾
yes ⁽³⁾	yes ⁽³⁾	yes ⁽³⁾	yes ⁽³⁾	yes ⁽³⁾
yes ⁽³⁾	yes	yes ⁽³⁾	yes ⁽³⁾	yes ⁽³⁾
yes ⁽³⁾	yes ⁽³⁾	yes ⁽³⁾	yes ⁽³⁾	yes ⁽³⁾
yes/yes	yes/yes	yes/yes	yes/yes	yes/yes
no/no	no/no	no/no	no/no	no/no
yes	yes	yes	yes	yes
18	18/36	18/36	18/36	18
160	160/320	160/320	160/320	160
12/6	12/6	12/6	12/6	-
VDE, KEMA	NF, CEBC	CEBEC, NF	VDE, IMQ, NF, CEBC	-
yes	yes	yes	yes	yes
A.91	A.92	A.94	A.96	A.98

Unibus*

A

B

C

D

E

F

G

X

EPC 611	EPC 30	EPC 45	EPC 60	EPC 62R
(kA)	(kA)	(kA)	(kA)	(kA)
-	-	-	-	-
6	-	-	-	-
-	3	4.5	6	6
-	3	4.5	6	6
-	3	4.5	6	6
-	-	-	-	-
6	-	-	-	-
-	-	-	-	10
-	3	6	10	6
-	3	6	6	6
-	3	6	6	6
-	3	6	6	6
-	3	4.5	6	6
-	-	-	-	6

(1) 8000 for 32 and 40A

(2) Also accepting (2x4mm²) or (1x4mm²)+(1x6mm²)

(3) Requires CA UN auxiliary contact as interface

(4) Single phase supply or same phase in 3Ph supply



Characteristics according to IEC/EN 60898-1

Miniature Circuit Breakers (MCB) are intended for the protection of wiring installations against both overloads and short-circuits in domestic or commercial wiring installations where operation is possible by uninstructed people.

Influence of ambient air temperature on the rated current

The maximum value of the current which can flow through an MCB depends of the nominal current of the MCB, the conductor cross-section as well as of the ambient air temperature.

The values shown in the table below are for devices in free air. For devices installed with other modular devices in the same switchboard a correction factor (K) shall be applied relative to the mounting situation of the MCB, the ambient temperature and the number of main circuits in the installation (EN 60439-1):

No. of devices	K
2 or 3	0.9
4 or 5	0.8
6 to 9	0.7
> 10	0.6

Calculation example

Within a distribution panel consisting of eight MCBs 2PC16 with an operating ambient temperature of 45°C, which is the highest temperature at which the MCB can operate without unwanted tripping.

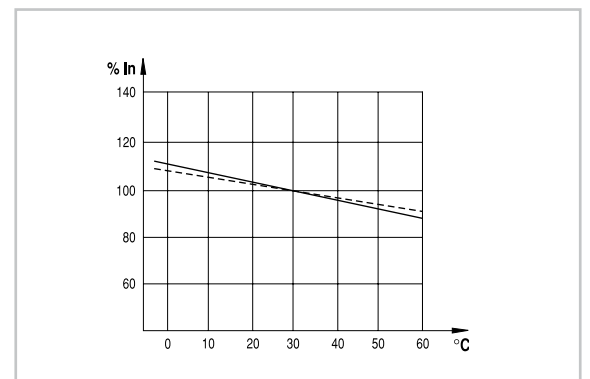
Calculation

The correction factor $K = 0.7$, for use in an eight circuit installation: $16A \times 0.7 = 11.2A$

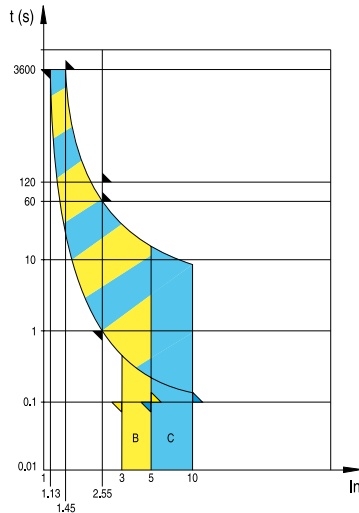
As the MCB is working at 45°C, another factor shall be applied (90% = 0.9):

$$I_n \text{ at } 45^\circ\text{C} = I_n \text{ at } 30^\circ\text{C} \times 0.9 = 11.2A \times 0.9 = 10.1A$$

The thermal calibration of the MCBs was carried out at an ambient temperature of 30°C. Ambient temperatures different from 30°C influence the bimetal and this results in earlier or later thermal tripping.



Tripping characteristic curves (EN/IEC 60898-1)



Magnetic release

An electromagnet with plunger ensures instantaneous tripping in the event of short-circuit. The standard distinguishes two different types, following the current for instantaneous release: type B and C.

I_{cn} (A)	Test current	Tripping time	Applications
B	$3 \times I_n$	$0.1 < t < 45s$ ($I_n \leq 32A$) $0.1 < t < 90s$ ($I_n > 32A$)	Only for resistive loads such as: - electrical heating - water heater - stoves
	$5 \times I_n$	$t < 0.1s$	
C	$5 \times I_n$	$0.1 < t < 15s$ ($I_n \leq 32A$) $0.1 < t < 30s$ ($I_n > 32A$)	Usual loads such as: - lighting - socket-outlets - small motors
	$10 \times I_n$	$t < 0.1s$	

Thermal release

The release is initiated by a bimetal strip in case of overload. The standard defines the range of releases for specific overload values.

Reference ambient temperature is 30°C.

Test current	Tripping time
$1.13 \times I_n$	$t \geq 1h$ ($I_n \leq 63A$) $t \geq 2h$ ($I_n > 63A$)
$1.45 \times I_n$	$t < 1h$ ($I_n \leq 63A$) $t < 2h$ ($I_n > 63A$)
$2.55 \times I_n$	$1s < t < 60s$ ($I_n \leq 32A$) $1s < t < 120s$ ($I_n > 32A$)

Circuit protection

A

B

C

D

E

F

G

X



Tripping current as a function of the frequency

All MCBs are designed to work at frequencies of 50-60Hz, therefore to work at different values, consideration must be given to the variation of the tripping characteristics. The thermal tripping does not change with variation of the frequency but the magnetic tripping values can be up to 50% higher than the ones at 50-60Hz. For DC current magnetic tripping is 50% higher.

Tripping current variations

60Hz	100Hz	200Hz	300Hz	400Hz
1	1.1	1.2	1.4	1.5

Power losses

The power losses are calculated by measuring the voltage drop between the incoming and the outgoing terminals of the device at rated current.

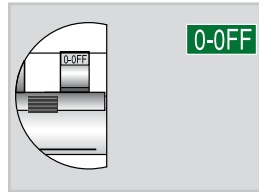
Power losses per pole

In (A)	Voltage drop (V)	Energy loss Pw (W)	Resistance Z (MOhm)
2	0.55	1.1	275.00
4	0.34	1.35	84.38
6	0.25	1.52	42.22
10	0.16	1.64	16.40
16	0.13	2.1	8.20
20	0.13	2.52	6.30
25	0.12	3.1	4.96
32	0.12	3.8	3.71
40	0.11	4.46	2.79

Toggle

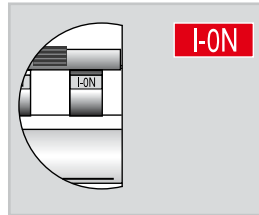
The toggle permits to switch the MCB ON or OFF

Printing on the toggle provides information of the real contact position.



O-OFF

Contacts in open position. Ensures a distance between contacts > 5mm in the Unibus* range.



I-ON

Contacts in closed position. Ensures continuity in the main circuit.



Compact MCBs

Series EPC 451N

EN/IEC 60898-1

4500

3

EN/IEC 60947-2

6kA

Circuit protection



Applications

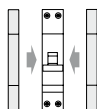


Approvals / Marking

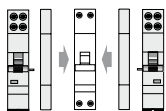


Add-on devices

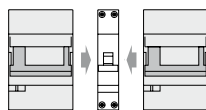
Auxiliaries
CA UN



Tele L
Tele U
PBS



Tele MP



When coupling an add-on device (Tele L, Tele U, PBS, Tele MP) to the MCB, an universal CA UN auxiliary has to be coupled first as interface.

Performance

Thermal setting In	(A) 2-40
Rated voltage AC Un	(V) 240
Minimum operating voltage UBmin	(V) 12
Tripping characteristics	B-C
Energy limiting class	3
Mechanical/electrical endurance	20000/10000 ⁽¹⁾
Tropicalisation acc. to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) 10-16 ⁽²⁾
Poles	1P+N (1 mod)
Weight	(g) 125

Short-circuit capacity

AC acc. to EN/IEC 60898-1

Poles	V	Icn/Ics (kA)
1P+N	240	4.5

AC acc. to EN/IEC 60947-2

Poles	V	Icu (kA)
1P+N	240	6

Attention: do not use on IT net configuration

(1) 8000 for 32 and 40A

(2) Also accepting (2 x 4mm²) or (1 x 4mm²)+(1 x 6mm²)

Series EPC 451N - 4.5kA - characteristics B-C

In (A)	B		C		Pack.	
	Cat. No.	Ref. No.	Cat. No.	Ref. No.		
1P+N 1 mod.	2	EPC 451N B02	692810	EPC 451N C02	692781	12
	4	EPC 451N B04	692811	EPC 451N C04	692782	12
	6	EPC 451N B06	692812	EPC 451N C06	692783	12
	10	EPC 451N B10	692813	EPC 451N C10	692784	12
	16	EPC 451N B16	692814	EPC 451N C16	692786	12
	20	EPC 451N B20	692815	EPC 451N C20	692787	12
	25	EPC 451N B25	692816	EPC 451N C25	692788	12
	32	EPC 451N B32	692817	EPC 451N C32	692789	12
40	EPC 451N B40	692818	EPC 451N C40	692790	12	

Compact MCBs

Series EPC 61N



EN/IEC 60898-1 **6000**
3
 EN/IEC 60947-2 **10kA**

Series EPC 611N

Applications

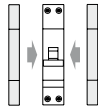


Approvals / Marking

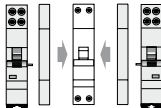


Add-on devices

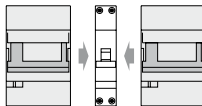
Auxiliaries
CA UN



Tele L
Tele U
PBS



Tele MP



When coupling an add-on device (Tele L, Tele U, PBS, Tele MP) to the MCB, an universal CA UN auxiliary has to be coupled first as interface.

Performance

Thermal setting In	(A) 2-40
Rated voltage AC Un	(V) 240
Minimum operating voltage UBmin	(V) 12
Tripping characteristics	B-C
Energy limiting class	3
Mechanical/electrical endurance	20000/10000 ⁽¹⁾
Tropicalisation acc. to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) 10-16 ⁽²⁾
Poles	1P+N (1 mod)
Weight	(g) 125

Short-circuit capacity

AC acc. to EN/IEC 60898-1		
Poles	V	Icn/Ics (kA)
1P+N	240	6
AC acc. to EN/IEC 60947-2		
Poles	V	Icu (kA)
1P+N	240	10

Attention: do not use on IT net configuration
 (1) 8000 for 32 and 40A
 (2) Also accepting (2 x 4mm²) or (1 x 4mm²) + (1 x 6mm²)

Series EPC 61N - 6kA - characteristics B-C

In (A)	B		C		Pack.	
	Cat. No.	Ref. No.	Cat. No.	Ref. No.		
1P+N 1 mod.	2	EPC 61N B02	692819	EPC 61N C02	692791	12
	4	EPC 61N B04	692820	EPC 61N C04	692792	12
	6	EPC 61N B06	692821	EPC 61N C06	692793	12
	10	EPC 61N B10	692822	EPC 61N C10	692794	12
	13	EPC 61N B13	692604	EPC 61N C13	692795	12
	16	EPC 61N B16	692823	EPC 61N C16	692796	12
	20	EPC 61N B20	692824	EPC 61N C20	692797	12
	25	EPC 61N B25	692825	EPC 61N C25	692798	12
	32	EPC 61N B32	692826	EPC 61N C32	692799	12
	40	EPC 61N B40	692827	EPC 61N C40	692800	12



Compact MCBs

Series EPC 611



EN/IEC 60898-1 6000
3
EN/IEC 60947-2 **6kA**

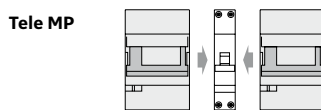
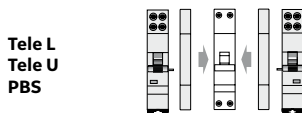
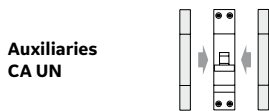
Applications



Approvals / Marking



Add-on devices



When coupling an add-on device (Tele L, Tele U, PBS, Tele MP) to the MCB, an universal CA UN auxiliary has to be coupled first as interface.

Performance

Thermal setting In	(A) 2-20
Rated voltage AC Un	(V) 230 ⁽¹⁾
Minimum operating voltage UBmin	(V) 12
Tripping characteristics	B-C
Energy limiting class	3
Mechanical/electrical endurance	20000/10000
Tropicalisation acc. to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) 10-16 ⁽²⁾
Poles	1P+1P (1 mod)
Weight	(g) 125

Short-circuit capacity

AC acc. to EN/IEC 60898-1		
Poles	V	Icn/Ics (kA)
1+1	230	6
AC acc. to EN/IEC 60947-2		
Poles	V	Icu (kA)
1+1	230	10

Attention: do not use on IT net configuration
 (1) Single phase supply or same phase in 3Ph supply
 (2) Also accepting (2 x 4mm²) or (1 x 4mm²)+(1 x 6mm²)

Series EPC 611 - 6kA - characteristics B-C

In (A)	B		C		Pack.	
	Cat. No.	Ref. No.	Cat. No.	Ref. No.		
1P+1P 1 mod.	2	EPC 611 B02	692689	EPC 611 C02	692699	12
	4	EPC 611 B04	692690	EPC 611 C04	692700	12
	6	EPC 611 B06	692691	EPC 611 C06	692701	12
	10	EPC 611 B10	692692	EPC 611 C10	692702	12
	13	EPC 611 B13	692693	EPC 611 C13	692703	12
	16	EPC 611 B16	692694	EPC 611 C16	692704	12
	20	EPC 611 B20	692695	EPC 611 C20	692705	12

Series EPC 611

A

B

C

D

E

F

G

X



Compact MCBs

Series EPC 30

Circuit protection



EN/IEC 60898-1

6000

3

EN/IEC 60947-2

3kA

Applications

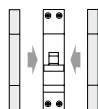


Approvals / Marking

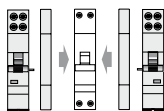


Add-on devices

Auxiliaries
CA UN



Tele L
Tele U
PBS



Tele MP



When coupling an add-on device (Tele L, Tele U, PBS, Tele MP) to the MCB, an universal CA UN auxiliary has to be coupled first as interface.

Performance

Thermal setting In	(A) 2-40
Rated voltage AC Un	(V) 230/400
Minimum operating voltage UBmin	(V) 12
Tripping characteristics	C
Energy limiting class	3
Mechanical/electrical endurance	20000/10000 ⁽¹⁾
Tropicalisation acc. to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable	mm ² 10-16 ⁽²⁾
Poles	2, 3, 4
Weight	g 160

Short-circuit capacity

AC acc. to EN/IEC 60898-1

Poles	V	Icn/Ics (kA)
2	400	3
3	400	3
4	400	3

AC acc. to EN/IEC 60947-2

Poles	V	Icu (kA)
2	415	3
3	415	3
4	415	3

AC acc. to EN/IEC 60947-2






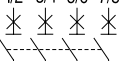
Poles	Un (V _~)	Icu (kA)
2	96	3

(1) 8000 for 32A and 40A

(2) Also accepting (2 x 4mm²) or (1 x 4mm²)+(1 x 6mm²)



Series EPC 30 - 3 kA - characteristic C

		C			
		In (A)	Cat. No.	Ref. No.	Pack.
 <p>2P 1 mod.</p> <p>1/2 3/4</p>  <p>2/1 4/3</p>	2	EPC 32 C02	692500	12	
	4	EPC 32 C04	692501	12	
	6	EPC 32 C06	692502	12	
	10	EPC 32 C10	692503	12	
	16	EPC 32 C16	692504	12	
	20	EPC 32 C20	692505	12	
	25	EPC 32 C25	692506	12	
	32	EPC 32 C32	692507	12	
	40	EPC 32 C40	692508	12	
	 <p>3P(1) 2 mod.</p> <p>1/2 3/4 5/6</p>  <p>2/1 4/3 6/5</p>	2	EPC 33 C02	692509⁽¹⁾	6
		4	EPC 33 C04	692510⁽¹⁾	6
		6	EPC 33 C06	692511⁽¹⁾	6
10		EPC 33 C10	692512⁽¹⁾	6	
16		EPC 33 C16	692513⁽¹⁾	6	
20		EPC 33 C20	692514⁽¹⁾	6	
25		EPC 33 C25	692515⁽¹⁾	6	
32		EPC 33 C32	692516⁽¹⁾	6	
 <p>4P 2 mod.</p> <p>1/2 3/4 5/6 7/8</p>  <p>2/1 4/3 6/5 8/7</p>		2	EPC 34 C02	692518	6
	4	EPC 34 C04	692519	6	
	6	EPC 34 C06	692520	6	
	10	EPC 34 C10	692521	6	
	16	EPC 34 C16	692522	6	
	20	EPC 34 C20	692523	6	
	25	EPC 34 C25	692524	6	
	32	EPC 34 C32	692525	6	

(1) The auxiliary contact CA UN must be placed only on the **left side** of the 3P MCBs

Series EPC 30

A

B

C

D

E

F

G

X



Compact MCBs

Series EPC 45

Circuit protection



EN/IEC 60898-1	4500
	3
EN/IEC 60947-2	6kA

Applications

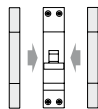


Approvals / Marking

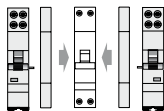


Add-on devices

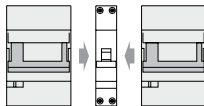
Auxiliaries
CA UN



Tele L
Tele U
PBS



Tele MP



When coupling an add-on device (Tele L, Tele U, PBS, Tele MP) to the MCB, an universal CA UN auxiliary has to be coupled first as interface.

Performance

Thermal setting In	(A) 2-40 ⁽¹⁾
Rated voltage AC Un	(V) 240/415
Minimum operating voltage UBmin	(V) 12
Tripping characteristics	B-C
Energy limiting class	3
Mechanical/electrical endurance	20000/10000 ⁽²⁾
Tropicalisation acc. to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) 10-16 ⁽³⁾
Poles	2, 3, 4
Weight	(g/mod) 160

Short-circuit capacity


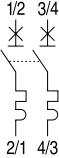

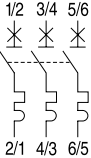

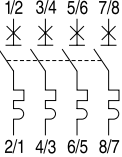
AC acc. to EN/IEC 60898-1		
Poles	V	Icn/Ics (kA)
2	415	4.5
3	415	4.5
4	415	4.5
AC acc. to EN/IEC 60947-2		
Poles	V	Icu (kA)
2	415	6
3	415	6
4	415	6
AC acc. to EN/IEC 60947-2		
Poles	Un (V _≡)	Icu (kA)
2	96	4.5

(1) 32A, 3P and 4P

(2) 8000 for 32A

(3) Also accepting (2 x 4mm²) or (1 x 4mm²)+(1 x 6mm²)

Series EPC 45 - 4.5kA - characteristics B-C

	In (A)	B		C		Pack.	
		Cat. No.	Ref. No.	Cat. No.	Ref. No.		
 1/2 3/4  2/1 4/3	2	EPC 452 B02	692608	EPC 452 C02	692527	12	
	4	EPC 452 B04	692609	EPC 452 C04	692528	12	
	6	EPC 452 B06	692610	EPC 452 C06	692529	12	
	10	EPC 452 B10	692611	EPC 452 C10	692530	12	
	16	EPC 452 B16	692612	EPC 452 C16	692531	12	
	20	EPC 452 B20	692613	EPC 452 C20	692532	12	
	25	EPC 452 B25	692614	EPC 452 C25	692533	12	
	32	EPC 452 B32	692615	EPC 452 C32	692534	12	
	40	EPC 452 B40	692616	EPC 452 C40	692535	12	
	 1/2 3/4 5/6  2/1 4/3 6/5	2	EPC 453 B02	692617⁽¹⁾	EPC 453 C02	692536⁽¹⁾	6
4		EPC 453 B04	692618⁽¹⁾	EPC 453 C04	692537⁽¹⁾	6	
6		EPC 453 B06	692619⁽¹⁾	EPC 453 C06	692538⁽¹⁾	6	
10		EPC 453 B10	692620⁽¹⁾	EPC 453 C10	692539⁽¹⁾	6	
16		EPC 453 B16	692621⁽¹⁾	EPC 453 C16	692540⁽¹⁾	6	
20		EPC 453 B20	692622⁽¹⁾	EPC 453 C20	692541⁽¹⁾	6	
25		EPC 453 B25	692623⁽¹⁾	EPC 453 C25	692542⁽¹⁾	6	
32		EPC 453 B32	692624⁽¹⁾	EPC 453 C32	692543⁽¹⁾	6	
 1/2 3/4 5/6 7/8  2/1 4/3 6/5 8/7		2	EPC 454 B02	692626	EPC 454 C02	692545	6
		4	EPC 454 B04	692627	EPC 454 C04	692546	6
	6	EPC 454 B06	692628	EPC 454 C06	692547	6	
	10	EPC 454 B10	692629	EPC 454 C10	692548	6	
	16	EPC 454 B16	692630	EPC 454 C16	692549	6	
	20	EPC 454 B20	692631	EPC 454 C20	692550	6	
	25	EPC 454 B25	692632	EPC 454 C25	692551	6	
	32	EPC 454 B32	692633	EPC 454 C32	692552	6	

(1) The auxiliary contact CA UN must be placed only on the **left side** of the 3P MCBs



Compact MCBs

Series EPC 60

Circuit protection



EN/IEC 60898-1

6000
3

EN/IEC 60947-2

10kA⁽¹⁾

Applications

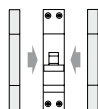


Approvals / Marking

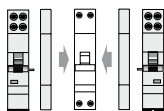


Add-on devices

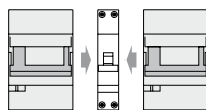
Auxiliaries
CA UN



Tele L
Tele U
PBS



Tele MP



When coupling an add-on device (Tele L, Tele U, PBS, Tele MP) to the MCB, an universal CA UN auxiliary has to be coupled first as interface.

Performance

Thermal setting In	(A) 2-40 ⁽²⁾
Rated voltage AC Un	(V) 240/415
Minimum operating voltage UBmin	(V) 12
Tripping characteristics	B-C
Energy limiting class	3
Mechanical/electrical endurance	20000/10000 ⁽³⁾
Tropicalisation acc. to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) 10-16 ⁽⁴⁾
Poles	2, 3, 4
Weight/mod	(g) 160

Short-circuit capacity

AC acc. to EN/IEC 60898-1

Poles	V	Icn/Ics (kA)
2	240/415	4.5
3	240/415	4.5
4	240/415	4.5

AC acc. to EN/IEC 60947-2

Poles	V	Icu (kA)
2	240/415	10
3	240/415	6
4	240/415	6






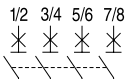
(1) 6kA at 415V

(2) 32A, 3P and 4P

(3) 8000 for 32A


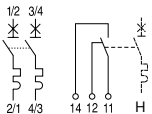
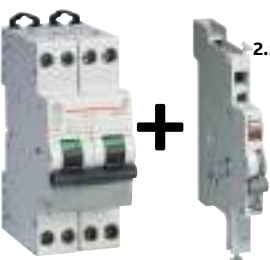
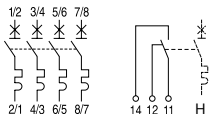
(4) Also accepting (2 x 4mm²) or (1 x 4mm²)+(1 x 6mm²)

Series EPC 60 - 6kA - characteristics B-C

	In (A)	B		C		Pack.	
		Cat. No.	Ref. No.	Cat. No.	Ref. No.		
 <p>2P 1 mod.</p> <p>1/2 3/4</p>  <p>2/1 4/3</p>	2	EPC 62 B02	692635	EPC 62 C02	692554	12	
	4	EPC 62 B04	692636	EPC 62 C04	692555	12	
	6	EPC 62 B06	692637	EPC 62 C06	692556	12	
	10	EPC 62 B10	692638	EPC 62 C10	692557	12	
	16	EPC 62 B16	692639	EPC 62 C16	692558	12	
	20	EPC 62 B20	692640	EPC 62 C20	692559	12	
	25	EPC 62 B25	692641	EPC 62 C25	692560	12	
	32	EPC 62 B32	692642	EPC 62 C32	692561	12	
	40	EPC 62 B40	692643	EPC 62 C40	692562	12	
	 <p>3P 2 mod.</p> <p>1/2 3/4 5/6</p>  <p>2/1 4/3 6/5</p>	2	EPC 63 B02	692644⁽¹⁾	EPC 63 C02	692563⁽¹⁾	6
4		EPC 63 B04	692645⁽¹⁾	EPC 63 C04	692564⁽¹⁾	6	
6		EPC 63 B06	692646⁽¹⁾	EPC 63 C06	692565⁽¹⁾	6	
10		EPC 63 B10	692647⁽¹⁾	EPC 63 C10	692566⁽¹⁾	6	
16		EPC 63 B16	692648⁽¹⁾	EPC 63 C16	692567⁽¹⁾	6	
20		EPC 63 B20	692649⁽¹⁾	EPC 63 C20	692568⁽¹⁾	6	
25		EPC 63 B25	692650⁽¹⁾	EPC 63 C25	692569⁽¹⁾	6	
32 ⁽²⁾		EPC 63 B32	692651⁽¹⁾	EPC 63 C32	692570⁽¹⁾	6	
 <p>4P 2 mod.</p> <p>1/2 3/4 5/6 7/8</p>  <p>2/1 4/3 6/5 8/7</p>		2	EPC 64 B02	692653	EPC 64 C02	692572	6
		4	EPC 64 B04	692654	EPC 64 C04	692573	6
	6	EPC 64 B06	692655	EPC 64 C06	692574	6	
	10	EPC 64 B10	692656	EPC 64 C10	692575	6	
	16	EPC 64 B16	692657	EPC 64 C16	692576	6	
	20	EPC 64 B20	692658	EPC 64 C20	692577	6	
	25	EPC 64 B25	692659	EPC 64 C25	692578	6	
	32	EPC 64 B32	692660	EPC 64 C32	692579	6	

(1) The auxiliary contact CA UN must be placed only on the **left side** of the 3P MCBs

Series EPC 60 - 6kA - characteristics B-C⁽²⁾

	In (A)	B		C		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	
 <p>2P 1.5 mod.</p> 	2	-	-	EPC 62 C02 + CA UN S/H G	693636	1
	4	-	-	EPC 62 C04 + CA UN S/H G	693635	1
	6	EPC 62 B06 + CA UN S/H G	693643	EPC 62 C06 + CA UN S/H G	693634	1
	10	EPC 62 B10 + CA UN S/H G	693642	EPC 62 C10 + CA UN S/H G	693637	1
	16	-	-	EPC 62 C16 + CA UN S/H G	693638	1
	25	-	-	EPC 62 C25 + CA UN S/H G	693641	1
	32	-	-	EPC 62 C32 + CA UN S/H G	693644	1
	 <p>4P 2.5 mod.</p> 	10	-	-	EPC 64 C10 + CA UN S/H G	693639
16		-	-	EPC 64 C16 + CA UN S/H G	693640	6

(2) MCB + auxiliary contact provided already mounted like a set
 CA UN is set on H function (auxiliary contact indication).
 S function (fault indication) is possible.



Circuit protection



Series EPC 62R

Series CA UN

EN/IEC 60898-1

6000
3

EN/IEC 60947-2

10kA⁽¹⁾

EN 45545-2

EN 50155

EN/IEC 62019

EN 50155 (Railway applications - electronic equipment for rolling stock)

Application

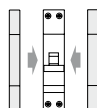


Marking

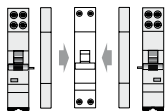


Add-on devices

Auxiliaries
CA UN



Tele L
Tele U
PBS



When coupling an add-on device (Tele L, Tele U, PBS, Tele MP) to the MCB, an universal CA UN auxiliary has to be coupled first as interface.

Performance

Thermal setting In	(A)	2-40
Rated voltage AC Un	(V)	240/415
Minimum operating voltage UBmin	(V)	12
Tripping characteristics		B-C
Energy limiting class		3
Mechanical/electrical endurance		20000/10000 ⁽²⁾
Tropicalisation acc. to EN/IEC 60068-2		95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	10-16 ⁽²⁾
Poles		2
Weight	(g)	160

Short-circuit capacity

AC acc. to EN/IEC 60898-1		
Poles	V _{AC}	I _{cu} (kA)/I _{cs} (kA)
2	240/415	6
AC acc. to EN/IEC 60947-2		
Poles	V _{AC}	I _{cu} (kA)/I _{cs} (kA)
2	240/415	10
DC acc. to EN/IEC 60947-2		
Poles	V _{DC}	I _{cu} (kA)/I _{cs} (kA)
2	125	6

Performance CA UN

Change-over contact		1
Rated current In	(A)	5
Rated voltage AC Un	(V)	240
Electrical endurance		10000
Terminal capacity flexible/rigid cable	(mm ²)	2.5
Weight	(g)	70
Torque	(Nm)	0.8

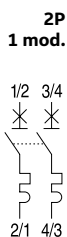
(1) 6kA at 415V

(3) 8000 for 32/40A

(2) Also accepting (2 x 4 mm²) or (1 x 4 mm²) + (1 x 6 mm²)



Series EPC 62 - 6kA - characteristics B-C



In (A)	B		C		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
2	EPC 62R B02	693645	EPC 62R C02	693653	12
4	EPC 62R B04	693646	EPC 62R C04	693654	12
6	EPC 62R B06	693647	EPC 62R C06	693655	12
10	EPC 62R B10	693648	EPC 62R C10	693656	12
16	EPC 62R B16	693649	EPC 62R C16	693657	12
20	EPC 62R B20	693650	EPC 62R C20	693658	12
25	EPC 62R B25	693651	EPC 62R C25	693659	12
32	EPC 62R B32	693652	EPC 62R C32	693660	12
40	EPC 62 B40	692643	EPC 62 C40	692562	12

40A for the standard version

Series EPC 62R

A

B

C

D

E

F

G

X



Screwless & Plug-in

The new range of **Fixwell*** MCBs



Screwless contact

At the top all *Fixwell** MCBs are equipped with 2 screwless contacts per pole, up to 2 x 4mm².

Terminal contact stability guaranteed

No tightening needed later on.



Easy to disconnect

Plug-in the cable to connect, release by pressing the push-button. Tightening and releasing by screws is history!

- ✓ 100% screwless top cable connection up to 20A
- ✓ 100% screwless bottom plug-in connection for standard GE pin busbars up to 63A
- ✓ 100% toolfree installation
- ✓ 100% reliable and safe

g-in and RCCBs

Plug-in connection with standard pin busbars

Click and unclick a standard busbar
with a simple operation

Terminal contact stability guaranteed

No tightening needed later on.

Standard pin busbars as used for all Redline products

Plug-in connection

All *Fixwell** MCBs and RCCBs are
equipped with plug-in busbar contacts.

Fixwell*

A

B

C

D

E

F

G

X



Easy, Fast and

How to install MCBs and RCCBs without tools within seconds

Circuit protection

Fixwell* **MCBs** and **RCCBs** are the most recent extension of the Redline range and are developed **to reduce time of installation to the absolute minimum**. A toolfree installation with guaranteed reliability from the very first moment by **plug & play**. A 100% compatibility with all Redline accessories and auxiliaries are the keys of success of this innovative range of MCBs and RCCBs.

A

B

C

D

E

F

G

X

1 hour becomes 30 min.

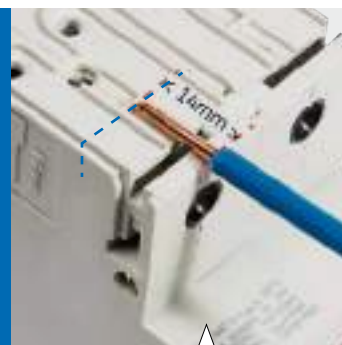
>50% time reduction using manual screwdriver
>30% time reduction using electrical screwdriver



Easy DIN-rail extraction

Plug-in connection with standard busbars

All Fixwell* MCBs and RCCBs are equipped at the bottom with screwless plug-in contacts for GE standard pin busbars. Click and unclick with a simple operation. Time consuming tightening is no longer needed.



Integrated guide

Moulded channels smoothly guide the cables to the terminals in all conditions.



Up to 63A

User-friendly

Determine the perfect length (14mm) of the bare cable using the integrated measurement tool.



Reliable



Fixwell*

A

B

C

D

E

F

G

X

<p>Up to 20A</p>	<p>Sure and secure from the first moment</p> <p>Push down vertically the cable into the contact until the withstand. From that very moment is the cable in perfect position. No additional tightening is required.</p>		<p>Part of the family</p> <p>Fixwell* MCBs and RCCBs fit perfectly in the Redline range and are compatible with all Redline auxiliaries and accessories.</p>
<p>Rigid and flexible cable</p> <p>You have the choice : rigid cable or multiwire from 1 up to 4mm². It doesn't matter, our Fixwell* MCBs are accepting both! No cable crimps needed.</p>	<p>plug&play</p>	<p>Reliable connection</p> <p>The unique concept of Fixwell* screwless contacts guarantees a permanent pull-out force much higher than standards request. The terminal contacts stability along the time is guaranteed. You can rely on Fixwell*.</p>	

**Technical data of screwless MCBs**

Series		EPP60	EPP100
Standards		IEC/EN 60898-1	IEC/EN 60898-1
Tripping characteristics		B,C	B,C
Nominal current ⁽¹⁾	(A)	6 - 63	6 - 63
Calibration temperature	(°C)	30	30
Number of poles (# mod)		1/1P+N/2/3/3P+N/4P	1/2/3/3P+N/4P
Neutral pole protected		yes	yes
Clip-on (rapid closing)		yes	yes
Nominal voltage (Un)	AC	1P (V)	240/415
		1P+N (V)	240
	DC	2P (V)	415
		3P/3P+N/4P (V)	415
DC	1P ⁽²⁾ (VDC)	48	48
	2P (in series) ⁽²⁾ (VDC)	110	110
Frequency		(Hz)	50 to 60
Use in D.C.		(Hz)	DC:
			magn. trip. +40%
		(Hz)	400Hz:
			magn. trip. +50%
Maximum service voltage (U _{Bmax}) between two wires		(V)	250/440; 53/120 DC
Minimum service voltage (U _{Bmin})		(V)	12; 12 DC
Energy limiting class (IEC/EN 60898-1)			3
Isolator application EN 60947-2			yes
Rated insulation voltage	Pollution degree 2	(V)	500
	Pollution degree 3	(V)	440
Impulse withstand test voltage		(kV)	6
Insulation resistance		(MΩ)	10000
Dielectric rigidity		(kV)	2.5
Vibration resistance (in x, y, z direction) (IEC 77/16.3)			3g
Endurance	Electrical at Un, In		10000
	Mechanical		20000
Utilisation category (EN 60947-2)			A
Protection degree (outside / inside enclosure)			IP20/IP40
Self-extinguish degree (acc. to UL94)			V2
Tropicalisation (EN 60068-2 / DIN 40046)			+55°C / 95%RH
Operating temperature ⁽³⁾		(°C)	-25/+55
Storage temperature		(°C)	-55/+55
Terminal capacity			see page A.72
Add-on devices (side add-on)	Auxiliary contacts CA		yes
	Tele U ⁽⁴⁾		yes
	Tele L ⁽⁴⁾		yes
	Tele MP ⁽⁴⁾		yes
	PBS ⁽⁴⁾		yes
Busbar system bottom	Pin		yes
	Fork		no
Accessories			yes
Dimensions, weights, packaging			
(HxDxW) per module		(mm)	88.4x68x18
Weight/module		(g)	125
Package unit			12
Approvals ⁽⁵⁾			VDE-KEMA-CEBEC-IMQ
CE-marking			yes

(1) Rating current derating as usual in function of installation conditions.

(2) Preferred values of rated control supply voltage (EN/IEC 60947-2): 24V DC, 48V DC, 110V DC, 125V DC, 220V DC, 250V DC.

(3) With plug-in pin busbar: -25/+50°C

(4) Only at **any extreme side** of the row. No pin busbars let through allowed.

(5) 4P execution approval pending.

Terminal capacity

Top terminals		Ratings 6A to 20A:	Ratings 25A to 63A:
		Screwless (Max. 2 wires)	Cage terminals
Rigid cable (min/max)	mm ²	2 x (1/4) ⁽¹⁾	1/35
Flexible cable (min/max)	mm ²	2 x (1.5/4) ⁽¹⁾	0.75/25
Recommended torque	Nm	-	2.5
Maximum torque	Nm	-	4.5

Bottom terminals		Ratings 6A to 63A:	Ratings 6A to 63A:	Pin busbar specifications
		Bottom cage terminals ⁽²⁾	Bottom flat plug-in terminals ⁽³⁾	
Rigid cable (min/max)	mm ²	1/25	To insert GE pin busbars, or other brands under following dimensions: Length = 11.5 ± 0.2mm Width = 4 ± 0.2mm Thickness = 1.5 ± 0.05mm Corners min. radius = 0.3mm	
Flexible cable (min/max)	mm ²	0.75/16		
Recommended torque	Nm	2.5		
Maximum torque	Nm	4.5		

- (1) The top screwless terminal is composed of two separate and parallel terminals. You can connect one rigid or flexible cable into each terminal. The bare cable (insulation removed to the appropriate length) should be pushed into the screwless terminal (Fig 5), the terminals will not accept cables with cable lugs or ferrules. For flexible cables it is recommended to twist wires and insert it into the terminal by pressing the push button of the MCB and at the same time gently pull the cable (Fig 6).
- (2) Bottom terminals provide a cage terminal to connect also cables to feed other rows / devices limited to rated current of the device.
- (3) Plug-in window terminals are only foreseen for pin busbars providing the incoming supply to several devices from the bottom side.
Not intended for any other conductor with or without cable lugs or cable connectors.

Fixwell*

A

How to mount the busbar into devices

1. Mount first 2, 3 or 4 poles devices on the DIN-rail at the extreme left side of the row.
2. Mount one device at the extreme right side on the DIN-rail.
3. Fit the pin busbar on both devices.
4. Then, mount one by one the rest of poles pulling down the grey clip previously, inserting the pin bars inside the devices and then closing the clip of every device.
5. Finally, remove 14mm of plastic from every wire and insert them vertically one by one inside the top screwless terminals.
6. For disconnecting the outgoing wires.

Easy to dismantle from DIN-rail

B

C

D

E

F

G

X



Short-circuit capacity of screwless MCBs

Series				EPP60	EPP100
Short-circuit capacity AC (kA)					
IEC/EN 60898-1	I_{cn}	1P	230/400V	6	10
		1P+N	230V	6	10
		2P	230/400V	6	10
		3P/3P+N/4P	230/400V	6	10
	I_{cs} (service)			100% I _{cu}	75% I _{cu}
IEC/EN 60947-2	I_{cu} (max.)	1P	127V	20	30
			240V	10	15
			415V	3	4
		1P+N/2P	127V	30	40
			240V	20	30
			415V	10	15
		2P	240V	20	30
			415V	10	15
		3P/3P+N/4P	240V	20	30
			415V	10	15
	I_{cs} (service)			75% I _{cu}	50% I _{cu}
Short-circuit capacity DC (kA)					
IEC/EN 60947-2	I_{cu} (max.)	1P	≤60V	20	25
			≤125V	-	-
			≤220V	-	-
		2P	≤125V	25	30
			≤440V	-	-
	I_{cs} (service)			100% I _{cu}	100% I _{cu}

Circuit protection

A

B

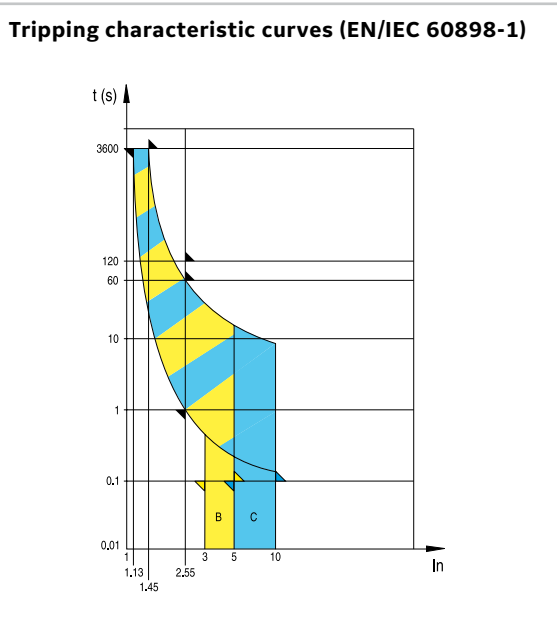
Characteristics according to IEC/EN 60898-1

C

Miniature Circuit Breakers (MCB) are intended for the protection of wiring installations against both overloads and short-circuits in domestic or commercial wiring installations where operation is possible by un instructed people.

D

E



F

G

X

Magnetic release

An electromagnet with plunger ensures instantaneous tripping in the event of short-circuit. The standard distinguishes two different types, following the current for instantaneous release: type B and C.

I _{cn}	Test (A) current	Tripping time	Applications
B	3 x I _n	0.1 < t < 45s (I _n ≤ 32A) 0.1 < t < 90s (I _n > 32A)	Only for resistive loads such as: - electrical heating - water heater - stoves
	5 x I _n	t < 0.1s	
C	5 x I _n	0.1 < t < 15s (I _n ≤ 32A) 0.1 < t < 30s (I _n > 32A)	Usual loads such as: - lighting - socket-outlets - small motors
	10 x I _n	t < 0.1s	

Thermal release

The release is initiated by a bimetal strip in case of overload. The standard defines the range of releases for specific overload values.

Reference ambient temperature is 30°C.

Test current	Tripping time
1.13 x I _n	t ≥ 1h (I _n ≤ 63A) t ≥ 2h (I _n > 63A)
1.45 x I _n	t < 1h (I _n ≤ 63A) t < 2h (I _n > 63A)
2.55 x I _n	1s < t < 60s (I _n ≤ 32A) 1s < t < 120s (I _n > 32A)



Influence of ambient air temperature on the rated current

The maximum value of the current which can flow through a MCB depends of the nominal current of the MCB, the conductor cross-section as well as of the ambient air temperature.

The values shown in the table below are for devices in the free air. For devices installed with other modular devices in the same switchboard a correction factor (K) shall be applied relative to the mounting situation of the MCB, the ambient temperature and the number of main circuits in the installation (EN 60439-1):

No. of devices	K
2 or 3	0.9
4 or 5	0.8
6 to 9	0.7
> 10	0.6

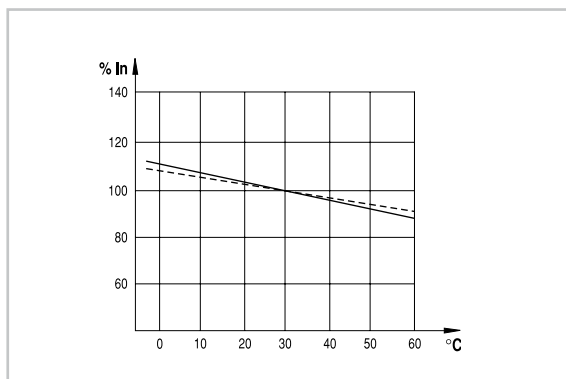
Calculation example

Within a distribution panel consisting of eight MCB 2PC16 with an operating ambient temperature of 45°C, which is the highest temperature the MCB can operate without unwanted tripping.

Calculation

The correction factor $K=0.7$, for use in an eight circuit installation: $16A \times 0.7= 11.2A$
 As the MCB is working at 45°C it shall be applied another factor (90% = 0.9):
 $I_n \text{ at } 45^\circ\text{C} = I_n \text{ at } 30^\circ\text{C} \times 0.9 = 11.2A \times 0.9 = 10.1A$

The thermal calibration of the MCBs was carried out at ambient temperature of 30°C. Ambient temperatures different from 30°C influence the bimetal and this results in earlier or later thermal tripping.



Tripping current as a function of the frequency

All MCBs are designed to work at frequencies of 50-60Hz, therefore to work at different values, consideration must be given to the variation of the tripping characteristics. The thermal tripping does not change with variation of the frequency but the magnetic tripping values can be up to 50% higher than the ones at 50-60Hz. For DC current magnetic tripping is 50% higher.

Tripping current variations

60Hz	100Hz	200Hz	300Hz	400Hz
1	1.1	1.2	1.4	1.5

Power losses

The power losses are calculated by measuring the voltage drop between the incoming and the outgoing terminals of the device at rated current.

Power losses per pole

In (A)	Voltage drop (V)	Energy loss Pw (W)	Resistance Z (MOhm)
0.5	2.23	1.12	4458.00
1	1.27	1.27	1272.00
2	0.62	1.24	310.00
3	0.52	1.56	173.00
4	0.37	1.49	93.00
6	0.26	1.57	43.60
8	0.16	1.24	19.40
10	0.16	1.56	15.60
13	0.16	2.01	11.90
16	0.16	2.57	10.10
20	0.14	2.76	6.90
25	0.13	3.19	5.10
32	0.10	3.07	3.00
40	0.10	4.00	2.50
50	0.09	4.50	1.80
63	0.08	5.16	1.30



Screwless MCBs

Series EPP60

EN/IEC 60898-1	6000
	3
IEC/EN 60947-2	10kA

Circuit protection



Applications

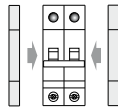


Approvals / Marking

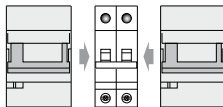


Add-on devices

Auxiliaries⁽¹⁾



Motor operator⁽²⁾



(1) Series CA - Tele L - Tele U - PBS

(2) Only one extension at the extreme end of the pin busbar

Performance

Thermal setting In	(A) 6-63
Rated voltage AC Un	(V) 240/415
Minimum operating voltage UBmin	(V) 12, 12 DC
Tripping characteristics	B,C
Mechanical/electrical endurance	20000/10000
Tropicalisation acc.to IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) 25-35
Poles	1/1P+N/2/3/3P+N/4P
Weight	(g/mod) 125







Short-circuit capacity

AC acc. to EN/IEC 60898-1		
Poles	V	Icn/Ics (kA) ⁽¹⁾
1-4	230/400	6
AC acc. to EN/IEC 60947-2		
Poles	V	Icu (kA)
1	240	10
1+N, 2	127	30
	240	20
2	415	10
3, 3+N, 4	240	20
	415	10
DC acc. to EN/IEC 60947-2		
Poles	V _{DC}	Icu (kA)
1	≤ 60	20
2	≤ 125	25

(1) Ics= 75% Icn



Series EPP60 - characteristics B and C

	In (A)	B		C		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	
 <p>1P</p> <p>1/2</p> <p>2/1</p>	6	EPP61B06	678172	EPP61C06	678212	12
	10	EPP61B10	678173	EPP61C10	678213	12
	13	EPP61B13	678174	EPP61C13	678214	12
	16	EPP61B16	678175	EPP61C16	678215	12
	20	EPP61B20	678176	EPP61C20	678216	12
	25	EPP61B25	678177	EPP61C25	678217	12
	32	EPP61B32	678178	EPP61C32	678218	12
	40	EPP61B40	678179	EPP61C40	678219	12
	50	EPP61B50	678180	EPP61C50	678220	12
	63	EPP61B63	678181	EPP61C63	678221	12
 <p>1P+N</p> <p>1/2 N</p> <p>2/1 N</p>	6	-	-	EPP61NC06	678222	6
	10	-	-	EPP61NC10	678223	6
	13	-	-	EPP61NC13	678224	6
	16	-	-	EPP61NC16	678225	6
	20	-	-	EPP61NC20	678226	6
	25	-	-	EPP61NC25	678227	6
	32	-	-	EPP61NC32	678228	6
	40	-	-	EPP61NC40	678229	6
	50	-	-	EPP61NC50	678230	6
	63	-	-	EPP61NC63	678231	6
 <p>2P</p> <p>1/2 3/4</p> <p>2/1 4/3</p>	6	EPP62B06	678182	EPP62C06	678232	6
	10	EPP62B10	678183	EPP62C10	678233	6
	13	EPP62B13	678184	EPP62C13	678234	6
	16	EPP62B16	678185	EPP62C16	678235	6
	20	EPP62B20	678186	EPP62C20	678236	6
	25	EPP62B25	678187	EPP62C25	678237	6
	32	EPP62B32	678188	EPP62C32	678238	6
	40	EPP62B40	678189	EPP62C40	678239	6
	50	EPP62B50	678190	EPP62C50	678240	6
	63	EPP62B63	678191	EPP62C63	678241	6
 <p>3P</p> <p>1/2 3/4 5/6</p> <p>2/1 4/3 6/5</p>	6	EPP63B06	678192	EPP63C06	678242	4
	10	EPP63B10	678193	EPP63C10	678243	4
	13	EPP63B13	678194	EPP63C13	678244	4
	16	EPP63B16	678195	EPP63C16	678245	4
	20	EPP63B20	678196	EPP63C20	678246	4
	25	EPP63B25	678197	EPP63C25	678247	4
	32	EPP63B32	678198	EPP63C32	678248	4
	40	EPP63B40	678199	EPP63C40	678249	4
	50	EPP63B50	678200	EPP63C50	678250	4
	63	EPP63B63	678201	EPP63C63	678251	4
 <p>3P+N</p> <p>1/2 3/4 5/6 N</p> <p>2/1 4/3 6/5 N</p>	6	EPP63NB06	678202	EPP63NC06	678252	3
	10	EPP63NB10	678203	EPP63NC10	678253	3
	13	EPP63NB13	678204	EPP63NC13	678254	3
	16	EPP63NB16	678205	EPP63NC16	678255	3
	20	EPP63NB20	678206	EPP63NC20	678256	3
	25	EPP63NB25	678207	EPP63NC25	678257	3
	32	EPP63NB32	678208	EPP63NC32	678258	3
	40	EPP63NB40	678209	EPP63NC40	678259	3
	50	EPP63NB50	678210	EPP63NC50	678260	3
	63	EPP63NB63	678211	EPP63NC63	678261	3
 <p>4P</p> <p>1/2 3/4 5/6 7/8</p> <p>2/1 4/3 6/5 8/7</p>	6	EPP64B06	678705	EPP64C06	678715	3
	10	EPP64B10	678706	EPP64C10	678716	3
	13	EPP64B13	678707	EPP64C13	678717	3
	16	EPP64B16	678708	EPP64C16	678718	3
	20	EPP64B20	678709	EPP64C20	678719	3
	25	EPP64B25	678710	EPP64C25	678720	3
	32	EPP64B32	678711	EPP64C32	678721	3
	40	EPP64B40	678712	EPP64C40	678722	3
	50	EPP64B50	678713	EPP64C50	678723	3
	63	EPP64B63	678714	EPP64C63	678724	3

Series EPP60

A

B

C

D

E

F

G

X



SCREWLESS
top terminals
In=6 to 20A



Screwless MCBs

Series EPP100



EN/IEC 60898-1	10000 3
IEC/EN 60947-2	15kA

Circuit protection

A

Applications



B

Approvals / Marking

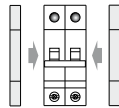


C

Add-on devices

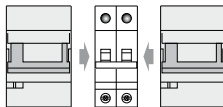
D

Auxiliaries⁽¹⁾



E

Motor operator⁽²⁾



F

(1) Series CA - Tele L - Tele U - PBS

(2) Only one extension at the extreme end of the pin busbar

G

X

Performance

Thermal setting In	(A) 6-63
Rated voltage AC Un	(V) 240/415
Minimum operating voltage UBmin	(V) 12, 12 DC
Tripping characteristics	B,C
Mechanical/electrical endurance	20000/10000
Tropicalisation acc.to IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) 25-35
Poles	1/2/3/3P+N/4P
Weight	(g/mod) 125

Short-circuit capacity

AC acc. to EN/IEC 60898-1		
Poles	V	Icn/Ics (kA) ⁽¹⁾
1-4	230/400	10
AC acc. to EN/IEC 60947-2		
Poles	V	Icu (kA) ⁽²⁾
1	240	15
1+N, 2	127	40
	240	30
2	415	15
3, 3+N, 4	240	30
	415	15
DC acc. to EN/IEC 60947-2		
Poles	V _{DC}	Icu (kA)
1	≤ 60	25
2	≤ 125	30

(1) Ics= 75% Icn

(2) Ics= 50% Icu



Series EPP100 - characteristics B and C

	In (A)	B		C		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	
 <p>1P</p> <p>1/2</p> 	6	EPP101B06	678262	EPP101C06	678302	12
	10	EPP101B10	678263	EPP101C10	678303	12
	13	EPP101B13	678264	EPP101C13	678304	12
	16	EPP101B16	678265	EPP101C16	678305	12
	20	EPP101B20	678266	EPP101C20	678306	12
	25	EPP101B25	678267	EPP101C25	678307	12
	32	EPP101B32	678268	EPP101C32	678308	12
	40	EPP101B40	678269	EPP101C40	678309	12
	50	EPP101B50	678270	EPP101C50	678310	12
	63	EPP101B63	678271	EPP101C63	678311	12
 <p>2P</p> <p>1/2 3/4</p> 	6	EPP102B06	678272	EPP102C06	678312	6
	10	EPP102B10	678273	EPP102C10	678313	6
	13	EPP102B13	678274	EPP102C13	678314	6
	16	EPP102B16	678275	EPP102C16	678315	6
	20	EPP102B20	678276	EPP102C20	678316	6
	25	EPP102B25	678277	EPP102C25	678317	6
	32	EPP102B32	678278	EPP102C32	678318	6
	40	EPP102B40	678279	EPP102C40	678319	6
	50	EPP102B50	678280	EPP102C50	678320	6
	63	EPP102B63	678281	EPP102C63	678321	6
 <p>3P</p> <p>1/2 3/4 5/6</p> 	6	EPP103B06	678282	EPP103C06	678322	4
	10	EPP103B10	678283	EPP103C10	678323	4
	13	EPP103B13	678284	EPP103C13	678324	4
	16	EPP103B16	678285	EPP103C16	678325	4
	20	EPP103B20	678286	EPP103C20	678326	4
	25	EPP103B25	678287	EPP103C25	678327	4
	32	EPP103B32	678288	EPP103C32	678328	4
	40	EPP103B40	678289	EPP103C40	678329	4
	50	EPP103B50	678290	EPP103C50	678330	4
	63	EPP103B63	678291	EPP103C63	678331	4
 <p>3P+N</p> <p>1/2 3/4 5/6 N</p> 	6	EPP103NB06	678292	EPP103NC06	678332	3
	10	EPP103NB10	678293	EPP103NC10	678333	3
	13	EPP103NB13	678294	EPP103NC13	678334	3
	16	EPP103NB16	678295	EPP103NC16	678335	3
	20	EPP103NB20	678296	EPP103NC20	678336	3
	25	EPP103NB25	678297	EPP103NC25	678337	3
	32	EPP103NB32	678298	EPP103NC32	678338	3
	40	EPP103NB40	678299	EPP103NC40	678339	3
	50	EPP103NB50	678300	EPP103NC50	678340	3
	63	EPP103NB63	678301	EPP103NC63	678341	3
 <p>4P</p> <p>1/2 3/4 5/6 7/8</p> 	6	EPP104B06	678725	EPP104C06	678735	3
	10	EPP104B10	678726	EPP104C10	678736	3
	13	EPP104B13	678727	EPP104C13	678737	3
	16	EPP104B16	678728	EPP104C16	678738	3
	20	EPP104B20	678729	EPP104C20	678739	3
	25	EPP104B25	678730	EPP104C25	678740	3
	32	EPP104B32	678731	EPP104C32	678741	3
	40	EPP104B40	678732	EPP104C40	678742	3
	50	EPP104B50	678733	EPP104C50	678743	3
	63	EPP104B63	678734	EPP104C63	678744	3

Series EPP100

A

B

C

D

E

F

G

X





Series SF

Circuit protection



A

Applications



B

Approval / Marking



C

Standards

IEC 60269-2, IEC 60947-3

D

E

F

G

X

Features

- Fuse Holders are used in the industrial and tertiary sector for the protection against overloading and short-circuit. On the other side, the circuit cut-off allows the maintenance tasks fulfillment with total security for the operator.
- All circuits for motors, transformers, low voltage distribution, circuits control and drive protection.
 - Non-load operation

Function

- The fuse holders disconnectors are suitable devices for the protection of low voltage lines in circuits with high short-circuit current.
- Modular fuse-holders are finger-safe under IEC standards to an IP20 grade of protection, including fuse changing (with the flick of a finger).
 - Modular fuse-holders are available in 1, 2 and 3 poles, with or without visual blown fuse indicator, in IEC version or IEC + UL version.
 - SF Series are made of tough and durable thermoplastic or thermoset material.

Advantages

- Finger safe
- Degree of protection: IP20
- Optional visual blown fuse indicator⁽¹⁾
- DIN rail mounting
- Modular design
- Lockable⁽¹⁾
- Sealable in closed and open position
- Plastic material UL94V2 mini
- Flame retardant materials with glow wire flammability index to 960°C

Performance

Type	Series SF Fuseholders			
	8x31	10x38	14x51	22x58
Voltage AC	500VAC	690VAC	690VAC	690VAC
Voltage DC	500 VDC	690VDC	690VDC	690VDC
Amper (A)	25A	32A	50A	125A
SCCR	-	200kA	100kA	100kA
Power dissipation	2.5W	3W	5W	9.5W
Impulse withstand voltage	6kV	6kV	8kV	8kV
Storage temperature	-25°C to 80°C			
Operating temperature	-25°C to 60°C			

(1) For sizes 14x51 and 22x58



Series SF - Fuse Holders



	Poles	In (A)	Modules	Approval	Cat. No	Ref. No	Pack
8x31	N	32A	1	CE	SFN/8x31	676551 ⁽²⁾	12
	1P	25A	1	CE	SF1/8x31	676552	12
	1P+N ⁽²⁾	25A	2	CE	SF1N/8x31	676553	6
	2P	25A	2	CE	SF2/8x31	676554	6
	3P	25A	3	CE	SF3/8x31	676555	4
	3P+N	25A	4	CE	SF3N/8x31	676556	3

10x38	1P	32A	1		SF1/10x38	676558	12
	1P+N ⁽²⁾	32A	2		SF1N/10x38	676559	6
	2P	32A	2		SF2/10x38	676560	6
	3P	32A	3		SF3/10x38	676561	4
	3P+N ⁽²⁾	32A	4		SF3N/10x38	676562	3



14x51	N	50A	1.5		SFN/14x51	676563	6
	1P	50A	1.5		SF1/14x51	676564	6
	1P+N ⁽²⁾	50A	3		SF1N/14x51	676565	3
	2P	50A	3		SF2/14x51	676566	3
	3P	50A	4.5		SF3/14x51	676567	2
	3P+N ⁽²⁾	50A	6		SF3N/14x51	676568	1



22x58	N	125A	2		SFN/22x58	676569	6
	1P	125A	2		SF1/22x58	676570	6
	1P+N	125A	4		SF1N/22x58	676571	3
	2P	125A	4		SF2/22x58	676572	3
	3P	125A	6		SF3/22x58	676573	2
	3P+N	125A	8		SF3N/22x58	676574	1

(1) Left Neutral
(2) Common Neutral for 8x31 and 10x38 sizes

Series SF - Unbis Fuse Holders

	Poles	In (A)	Modules	Approval	Cat. No	Ref. No	Pack
10x38	1P+N ⁽¹⁾	32A	1	CE	SFU1N/10x38	679590 ⁽²⁾	12

(1) Left Neutral
(2) Fuse Holder has the CE Marking

Series SF - Fuse Holders with visual indicator and microswitch

14x51	1P	50A	1.5		SF1/14X51IM	679556	6
	2P	50A	3		SF2/14X51IM	679557	3
	3P	50A	4.5		SF3/14X51IM	679558	2

22x58	1P	120A	2		SF1/22X58IM	679559	6
	2P	120A	4		SF2/22X58IM	679560	3
	3P	120A	6		SF3/22X58IM	679561	2

Series SF

A

B

C

D

E

F

G

X





Fuse Holders

Series SF UL for class CC Fuses

Circuit protection



A

Applications



B

Approval / Marking



C

D

E

F

G

X

Features

- All circuits up to 600V for protection of motors, transformers, low voltage distribution, control circuits, drive protection
- Non-load operation

Function

Modular fuse-holders are finger-safe under IEC standards to an IP20 grade of protection, including fuse changing (with the flick of a finger). Modular fuse-holders SFUL-CC are available in 1, 2 or 3 poles, with or without visual blown fuse indicator. SFUL-CC range is made of tough and durable thermoplastic material.

Performance

Size	Class CC fuse-links
Number of poles	1P, 2P, 3P
Mounting	Installation on to DIN-rails EN 60715
Protection Degree	IP20
SCCR	200kA AC and 100kA DC
Amper (A)	30A
Plastic material	UL94V2
Weight 1P / P / 3P	70 / 125 / 200

Technical data

Type	SF UL 30 CC	SF UL 30CC I
Thermal Current	30A	30A
Insulation Voltage	600VAC/DC	600VAC/DC
Indication System	without indicator	with indicator
Operating Temperature	-25°C to 60°C	-25°C to 60°C
Storage Temperature	-25°C to 80°C	-25°C to 80°C





Series SF UL for CC Fuses



Without indicator

Poles	In (A)	Modules	Cat. No	Ref. No	Pack
1P	30A	1	SFUL1/30CC	679562	12
2P	30A	2	SFUL2/30CC	679563	6
3P	30A	3	SFUL3/30CC	679564	4

With indicator

1P	30A	1	SFUL1/30ICC	679565	12
2P	30A	2	SFUL2/30ICC	679566	6
3P	30A	3	SFUL3/30ICC	679567	4

Series SF UL for CC Fuses

A

B

C

D

E

F

G

X





Fuse Holders

Series SF UL for class J Fuses

Circuit protection



A

Applications



B

Approval / Marking



C

D

E

F

G

X

Features

- All circuits up to 600V for protection of motors, transformers, low voltage distribution, control circuits, drive protection
- Non-load operation

Function

- Modular 600 Volt Fuse Holders for Class J fuses introduce a new level of safety and ease for installing or replacing Class J fuses.
- SF UL J Series are qualify as "finger-safe" to an IP20 grade of protection under IEC standards.
- The SF UL J Series accommodates 30A Class J or 22 x 58 mm French Ferrule⁽¹⁾ fuses.
- It is for 60A Class J fuses. J holders are available in compact 1, 2, or 3 pole units, with or without blown-fuse indicators in each pole.
- All units have provisions for locking in the open position for safety during fuse changeouts or equipment servicing.
- SFUL/30J and SFUL/60J holders can be snap-mounted to 35 mm DIN-rail and they have a unique latch which will stay open to allow re-positioning of the holder in the future.
- SF Series body material is tough and durable polyamide.

(1) Holder not UL listed when installed with French Female Fuses

Performance

Volts	600VAC/DC
Amps	SFUL/30J 30A Maximum
	SFUL/60J 60A Maximum
SCCR	200kA

Highlights:

- Compact footprint
- Quick, easy fuse change
- Optional indicator lights
- DIN-rail
- Finger-safe IP20 protection





Series SF UL for J Fuses



Poles	In (A)	Modules	Cat. No	Ref. No	Pack
1P	30A	2	SFUL1/30J	679583	12
2P	30A	4	SFUL2/30J	679584	6
3P	30A	6	SFUL3/30J	679585	4



1P	60A	3	SFUL1/60J	679586	6
2P	60A	5	SFUL2/60J	679587	3
3P	60A	7	SFUL3/60J	679588	2

Series SF UL for J Fuses

A

B

C

D

E

F

G

X

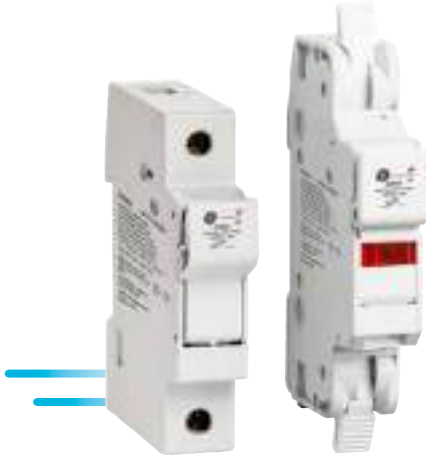




Fuse Holders

Series SF UL for Photovoltaic

Circuit protection



Applications



Approval / Marking



Function

- GE's new Photovoltaic fuseholders series deliver the ultimate ease-of-use, time (labor) saving and reliable solution available in the marketplace.
- Offering screw-less, spring pressure, wire termination technology into a power fuseholder, delivering the best of both technologies to its customers.
- Now you can experience the combined benefits of safety, ease-of-use, labor savings and reliability of SF fuseholders and spring pressure technology

Advantages

- Equipped with industry proven, patented WAGO CAGE CLAMP® technology (over 25 years of field experience and acceptance)
- Reduce wire installation time by up to 75%
- Highly reliable, maintenance free wire contact
- Secure, vibration proof, corrosion resistant, temperature cycling resistant, cost saving wire connection
- Quick, tool-free, easy fuse change-outs
- IP20 finger-safe protection
- Option visual blown fuse indicator
- DIN-rail mounting
- Compact footprint
- Environmentally conscious, RoHS compliant and lead free

Performance

Nominal Current	32A
Rated Voltage	1000VDC
Operation temperature	-40°C to +85°C
Watts Loss	3W or less
Flammability rating	UL 94-VO
Wire range	2.5 to 16mm ² single conductor 2.5 to 5mm ² dual conductor
Wire type	60/75/90°C solid/stranded copper

A

B

C

D

E

F



G

X





Series SF UL for Photovoltaic

	Poles	In (A)	Modules	Cat. No	Ref. No	Pack
 <p>With screws Without Indicator With Indicator</p>	1P	32A	1	SFUL1/10X38	679568	12
	1P	32A	1	SFUL1/10X38I	679569	12
 <p>Screwless Without Indicator With Indicator</p>	1P	32A	1	SFUL1/10X38S	679570	12
	1P	32A	1	SFUL1/10X38IS	679571	12

For photovoltaic fuses ask for availability

Series SF UL for Photovoltaic

A

B

C

D

E

F

G

X

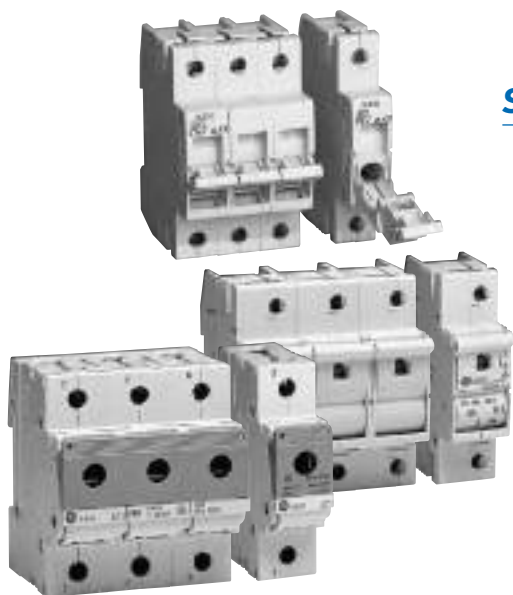




Fuse Holders

Series LT - LD

Circuit protection



Applications



Marking



Technical data LT and LD02

Nominal Current	A 2 - 63
Nominal Voltage	V 240/400 AC 65 DC
Utilization category	AC - 22 (63A) AC - 23 (35A)
Breaking capacity	kA 50
Switching life time	10.000
Ambient temperature	°C -5 to +40
Linking capacity	mm ² to 35
Number of Poles	1, 4
Pole Width	mm 27

Technical data LD01

Nominal Current	A 2 - 16
Nominal Voltage	V 230/400 AC 250 DC
Utilization category	AC - 22 (63A)
Breaking capacity	kA 50
Switching life time	2.000
Ambient temperature	°C -5 to +40
Connection clamps	mm ² to 25
Number of Poles	1, 3
Pole Width	mm 18

A

B

C

D

E

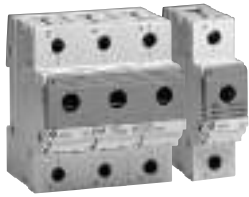
F

G

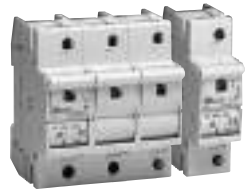
X



Disconnecter for D02-Fuses (without fuse link)

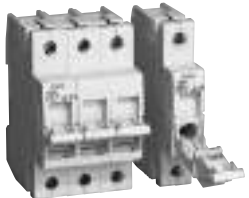


Description	Modules	Cat. No	Ref. No	Pack
2 - 63A, fuses D02				
1P	1.5	LT1 N	676910	3
3P	4.5	LT3 N	676911	1



2 - 63A, fuses with push-bottom insert system				
1P	1.5	LD021	544332	1
3P	4.5	LD023	544333	4

Disconnecter for D01-Fuses (without fuse link)



Description	Modules	Cat. No	Ref. No	Pack
16A				
2P	1	LD011	544339	10
3P	3	LD013	544340	3

Accessories



For LD02

Description	Modules	Cat. No	Ref. No	Pack
Adapter for D01				
3P	3	LD02AD01	544338	20
Operation				
20A	-	LD02P20	544334	1
25A	-	LD02P25	544335	1
35A	-	LD02P35	544336	50
50A	-	LD02P50	544337	1

Series LT - LD

A

B

C

D

E

F

G

X

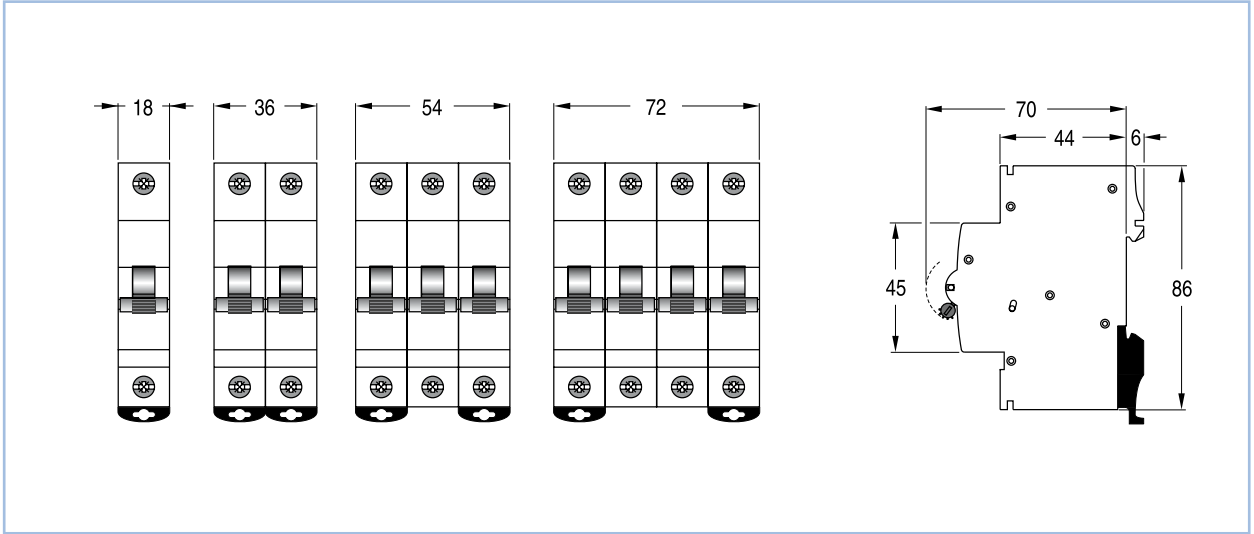




Dimensional drawings

Miniature Circuit Breakers - Series G, GT, Series EP100 UC, EP60 UL and EP100 UL

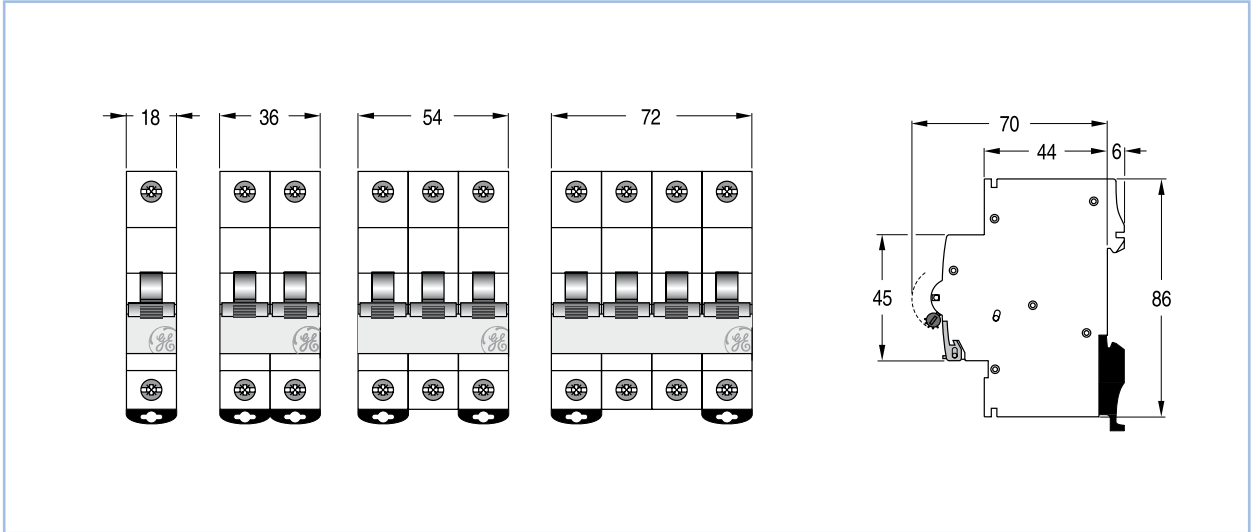
Circuit protection



A

Miniature Circuit Breakers - Series EP60, EP100, EP100T, EP100 UCT, EP100R and EP100 UCR

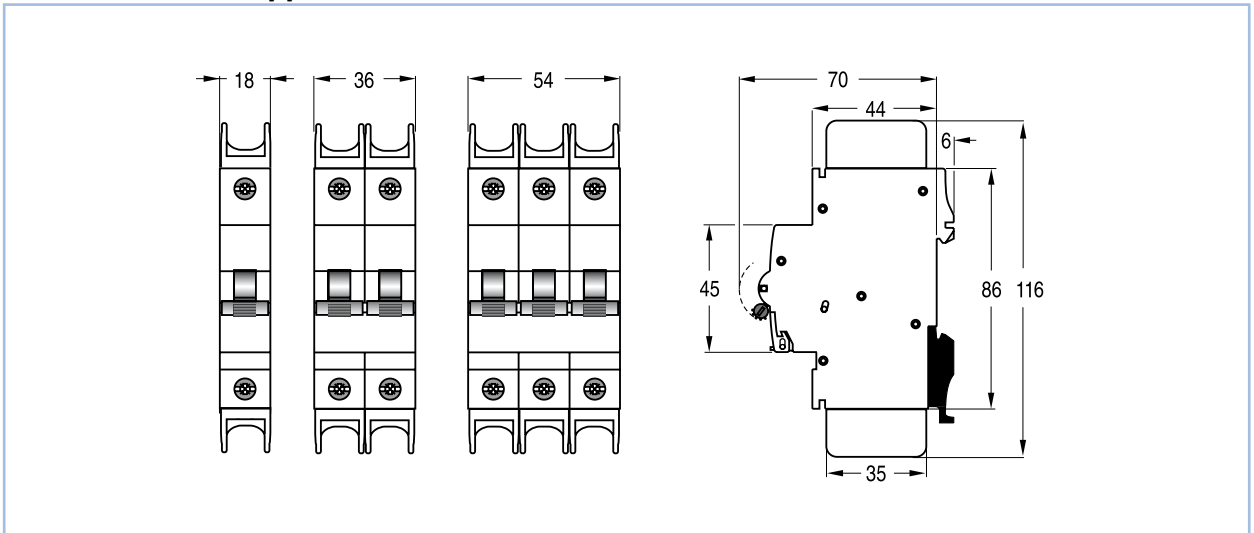
B
C
D
E
F



G

MCB with UL 489 approval - Series EP100 ULH

X

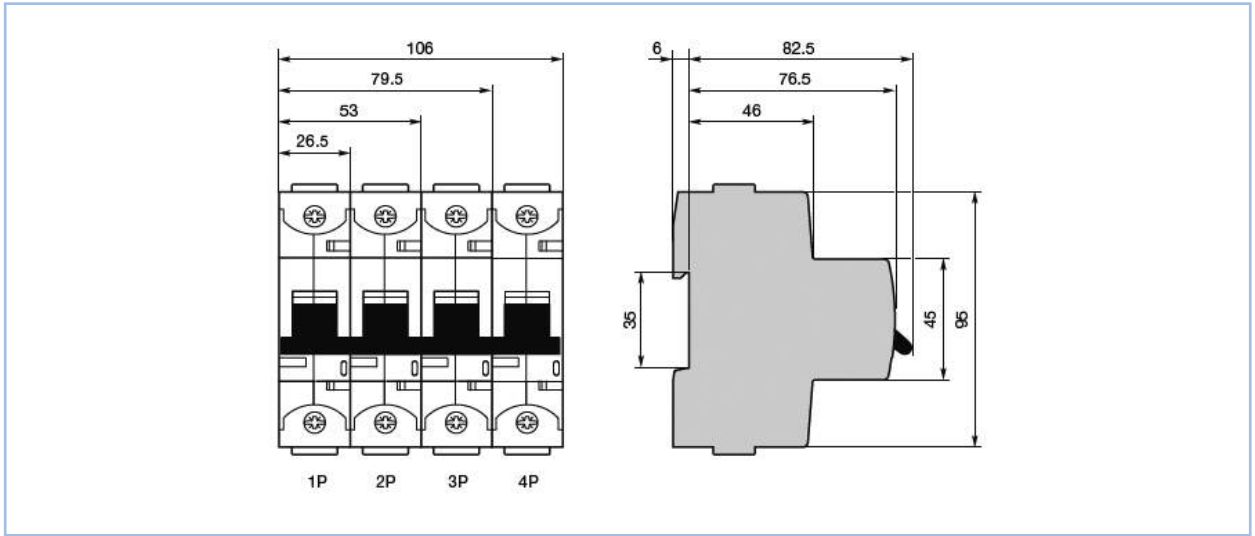




Dimensional drawings

Miniature Circuit Breakers - Series Hti+16, Hti+25, Hti+36, Hti+50

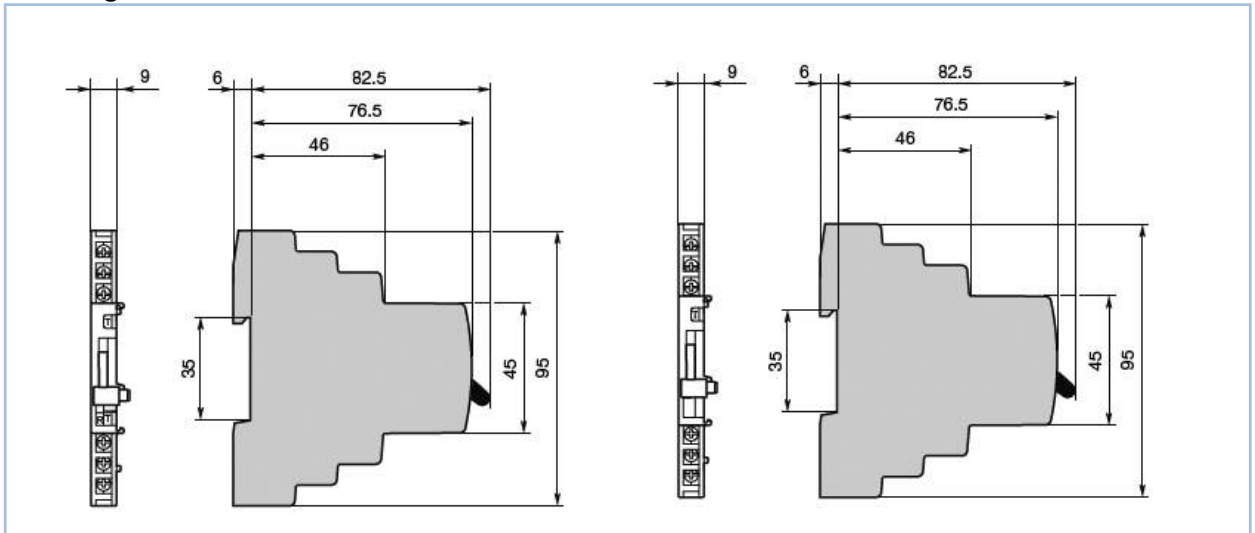
Circuit protection



A

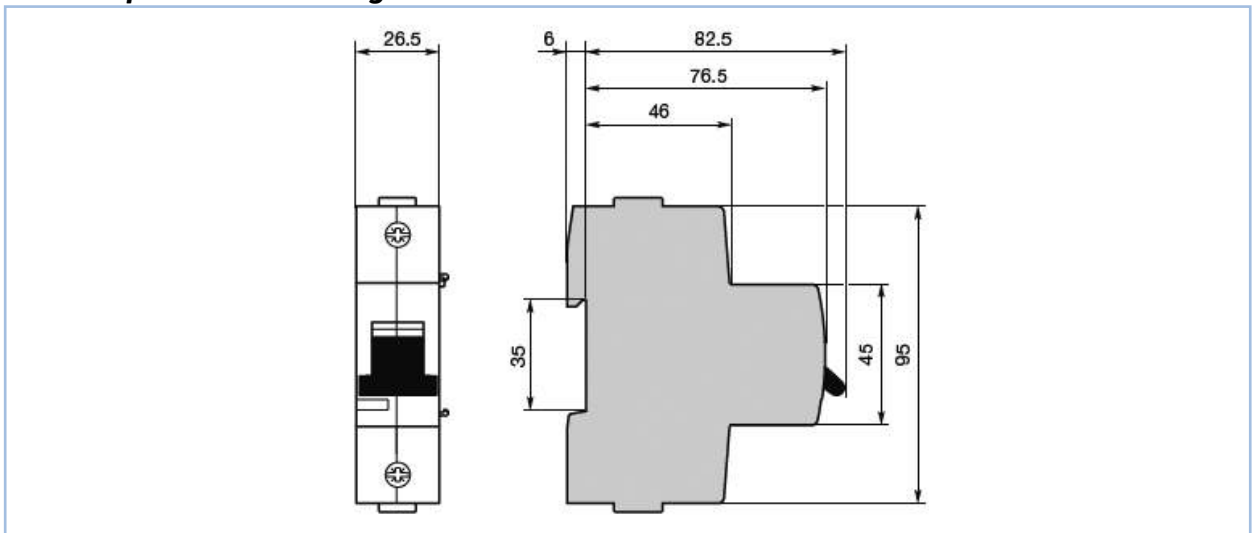
Auxiliary contacts - Series Hti+

B
C
D
E
F



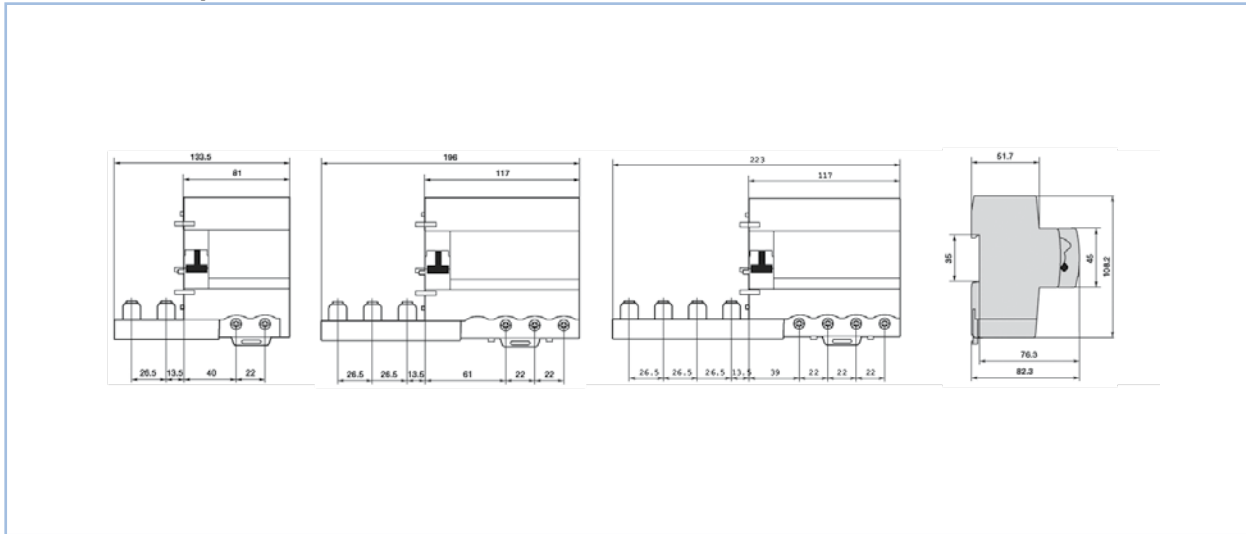
G
X

Shunt trip and Undervoltage - Series Hti+

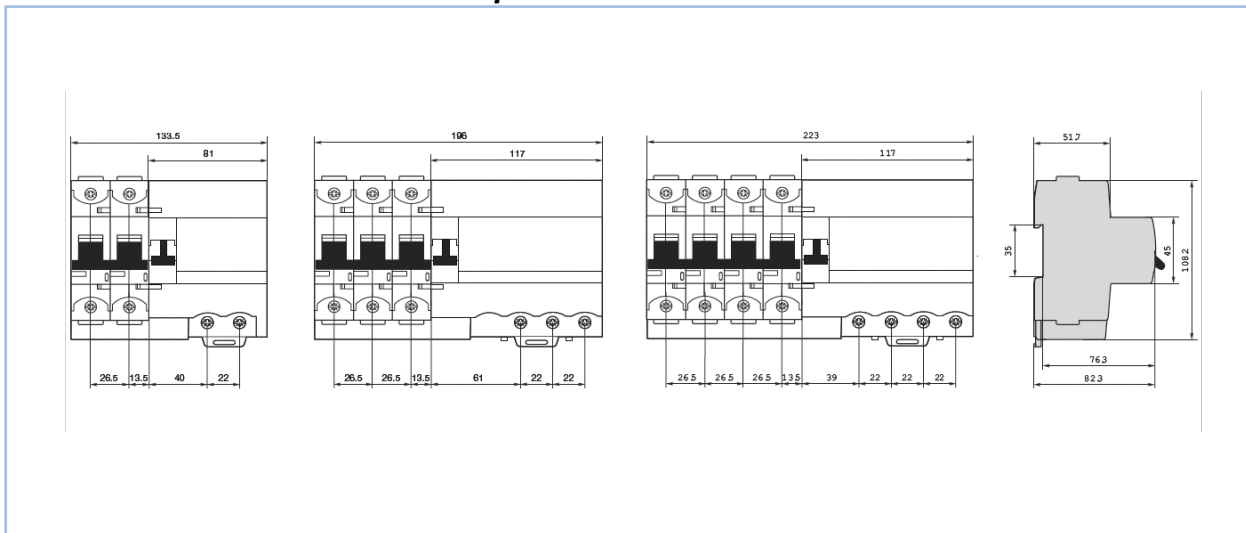


Dimensional drawings

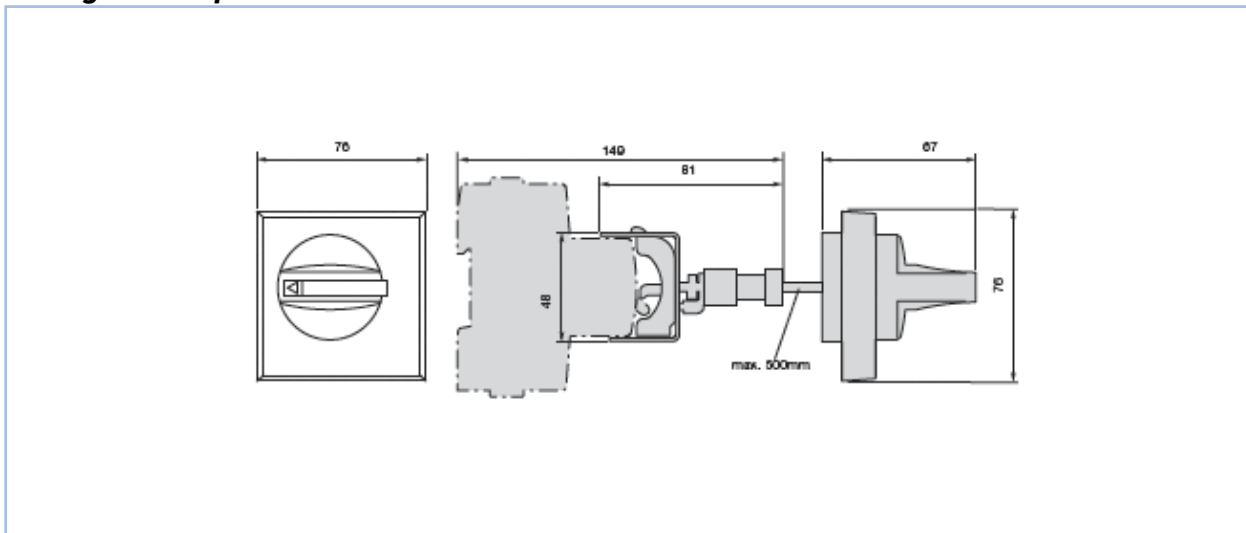
Add-on RCDs for Series Hti+



Residual Current Circuit Breakers for Series Hti+ 50DOC



Rotary Handle for Series Hti+



Dimensional drawings

A

B

C

D

E

F

G

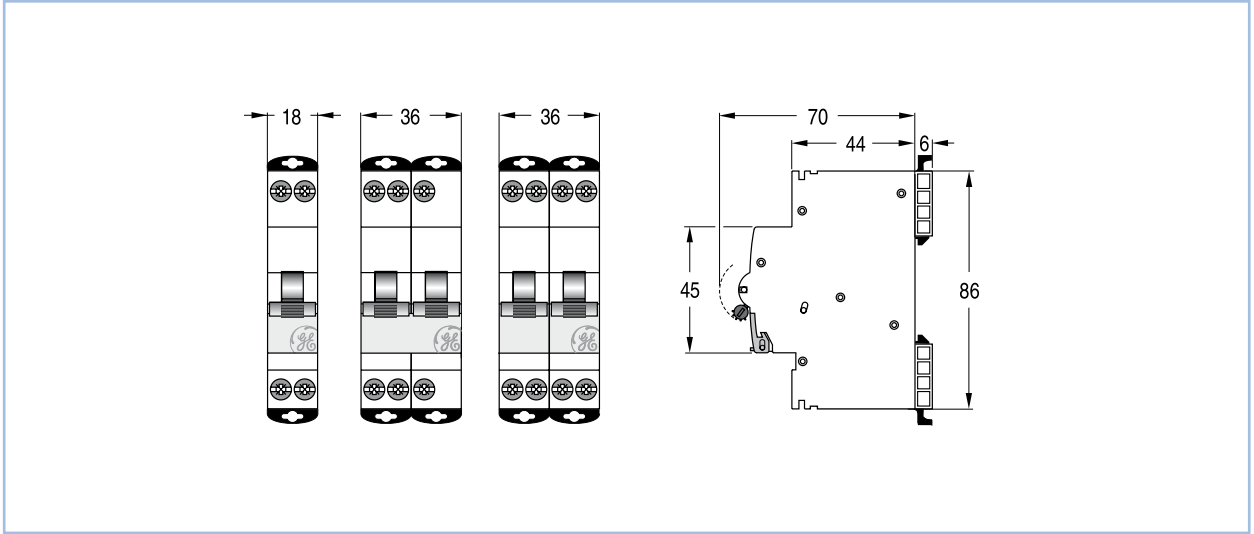
X



Dimensional drawings

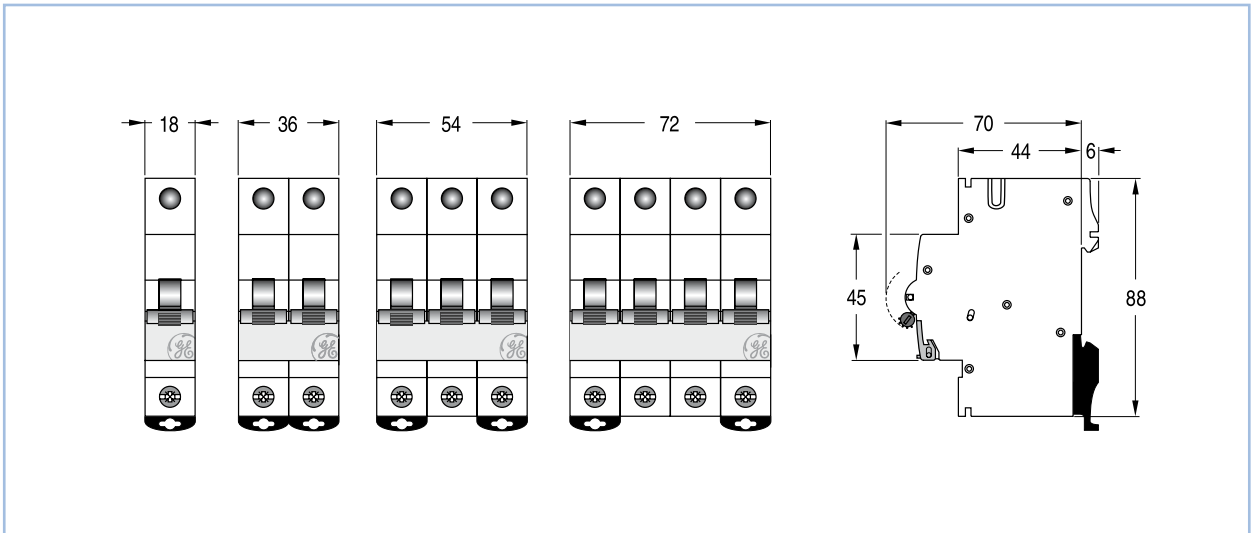
Circuit protection

Compact MCBs - Series EPC - Unibis*



A

Screwless MCBs - Series EPP - Fixwell*



B

C

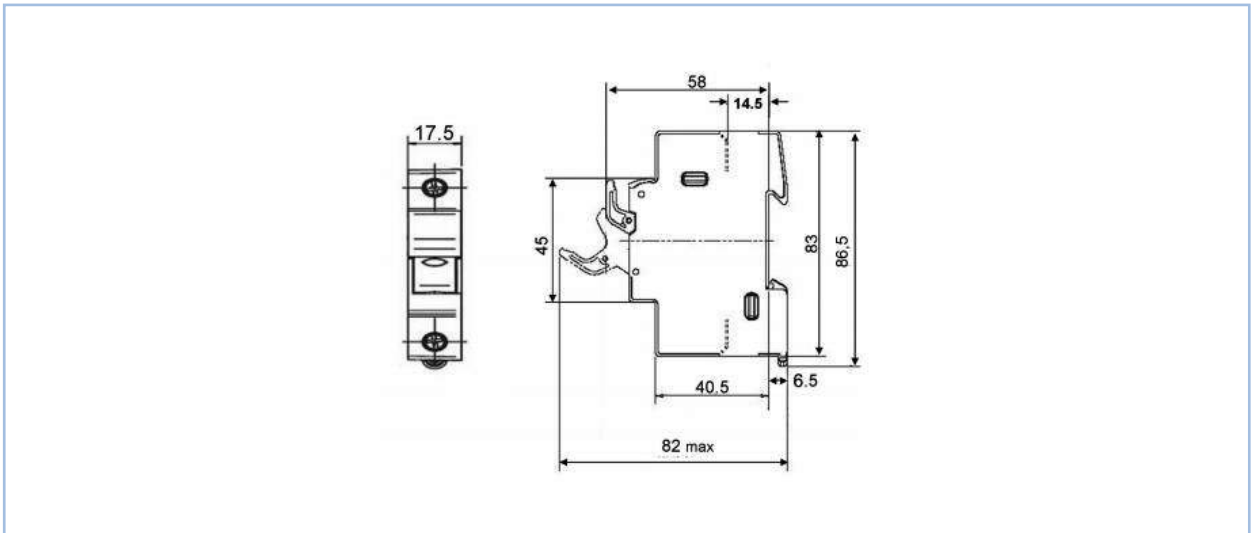
D

E

F

G

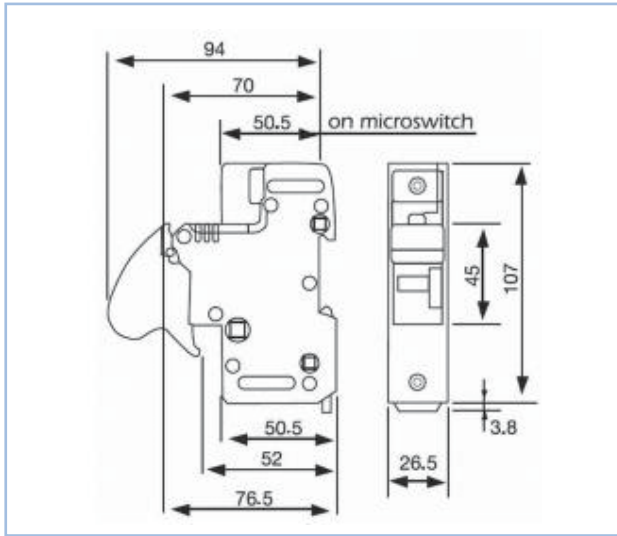
Fuse Holders Series SF- 8x31 & 10x38



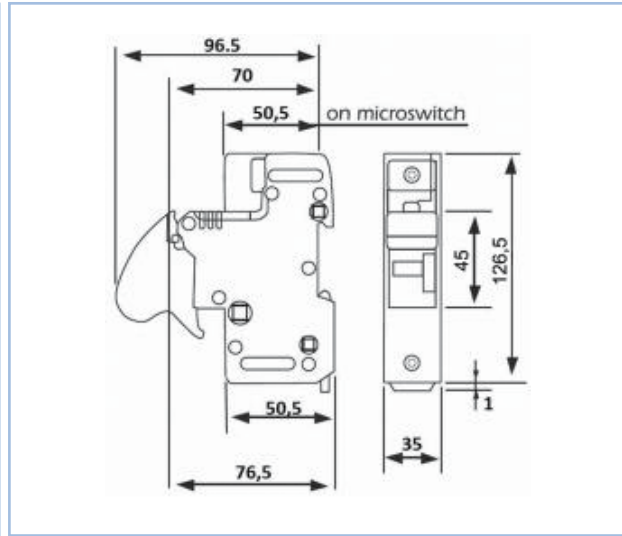
X

Dimensional drawings

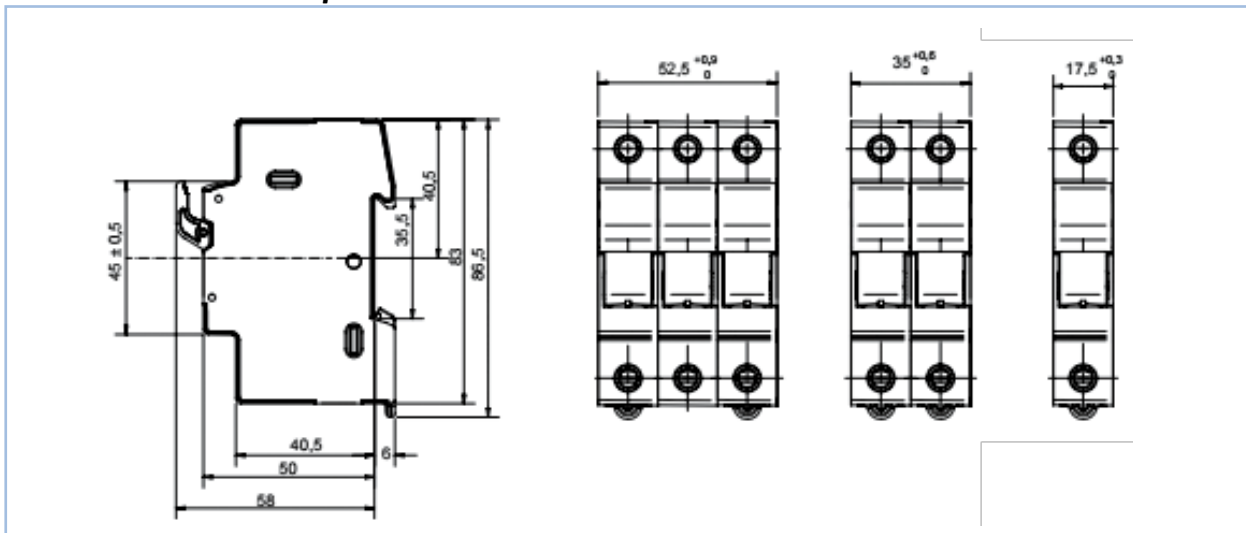
Fuse Holders Series SF- 14x51



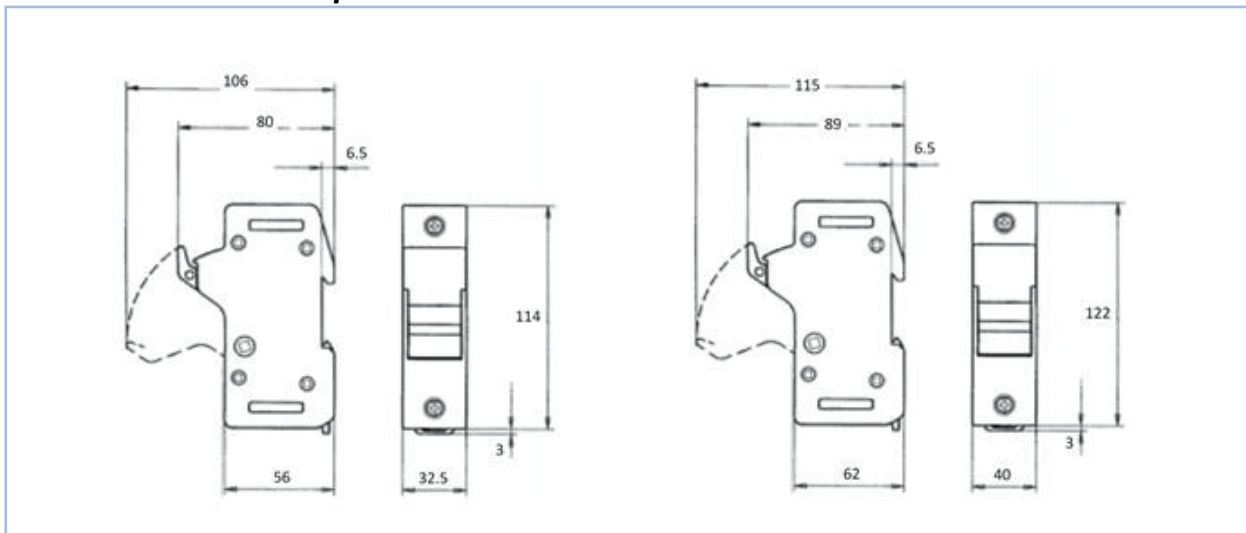
Fuse Holders Series SF- 22x58



Fuse Holders Series SF for Class CC Fuses



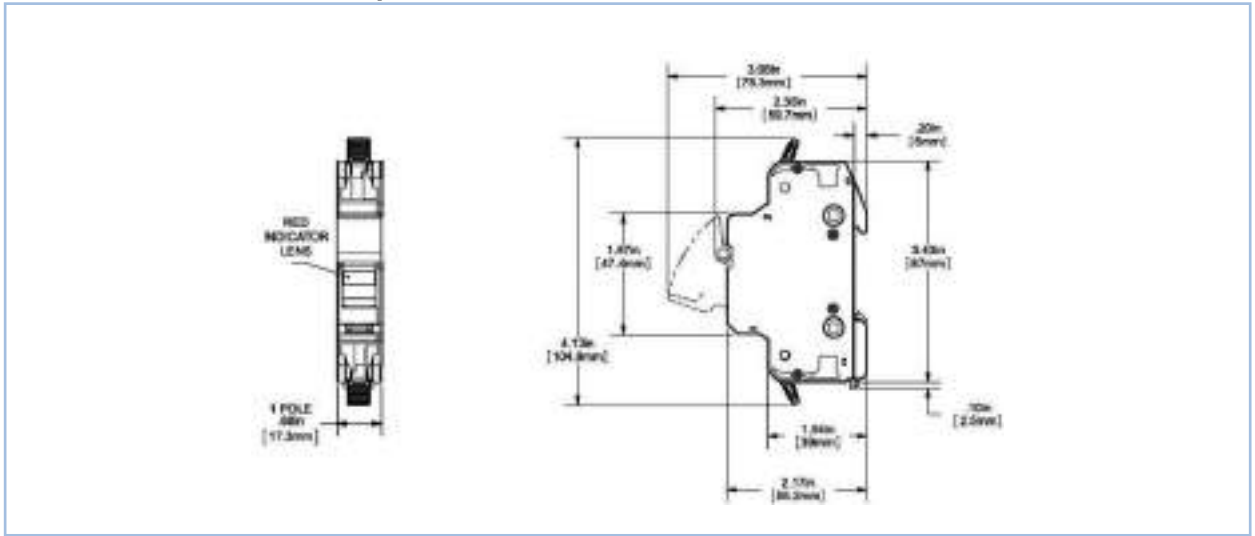
Fuse Holders Series SF for Class 30J and 60J Fuses





Fuse Holders Series SF UL for Photovoltaic

Circuit protection



A

B

C

D

E

F

G

X

B.3 Types of Wave form detected by RCCBs and classification

Unibis* 2P & 3P+N -Compact RCBOs

B.4 Advantages

B.8 Technical data

B.9 Selection table

B.10 2P RCBOs - **Series DPC45**

B.12 2P RCBOs - **Series DPC60**

B.14 2P RCBOs - **Series DPC100**

New

B.16 2P RCBOs - **Series DPCA100**

New

B.18 3P+N RCBOs - **Series DMA63N**

1P+N RCBOs, Add-on RCCBs, compact electronic RCBOs, RCCBs with UL, Fixwell

B.20 Selection table

B.22 Technical data

New

B.26 RCCBs - **Series BP/BD**

New

B.32 RCCBs - Residual Current Circuit Breakers - **Series FP type B**

New

B.34 RCCBs - Residual Current Circuit Breakers - **Series FP type F**

B.36 RCBOs with overcurrent protection - **Series DM60** electromechanical

B.38 RCBOs with overcurrent protection - **Series DM100** electromechanical

B.40 Add-on RCCBs - **Diff-o-Click**

Unibis* - Compact electronic RCBOs

New

B.44 RCBOs - **Series DMCE60NS and DICE60NS**

B.48 RCBOs - **Series DMCE60 and DICE60**

B.50 RCBOs with overcurrent protection - **Series DME**

B.52 RCBOs with overcurrent protection - **Series DMET**

RCCBs with UL Approval

B.54 RCCBs with UL approval - **Series FPAUL**

B.56 RCBOs with UL approval - **Series DPA100UL**

Fixwell* - Screwless RCCBs

B.58 RCCBs - **Series FPP**

B.60 Terminal capacity - Mounting instruction

Earth leakage relay with external toroid

B.62 Residential earth leakage relay - **Series GRDT+TOP**

Earth leakage Current Breaker - Utility Devices

New

B.64 ELCB - **Series Disb**

New

B.64 ELCB - **Series NDP/NDF**

B.70 Dimensional drawings

Circuit Protection

A

People Protection

B

Add-on Devices

C

Comfort Functions

D

Busbars

E

Enclosures

F

Product overview

G

Numerical index

X



Residual Current Circuit Breakers

Residual Current Protection Devices

Types of Wave form detected by RCCBs and classification

Waveform definition	Current waveform	Type AC 	Type A-Ai 	Type F 	Type B 	Tripping current
Sine wave		✓	✓	✓	✓	0.5 to 1 I _{Δn}
Pulsating half wave		X	✓	✓	✓	0.35 to 1.4 I _{Δn}
Pulsating 90°/135° wave		X	✓	✓	✓	Current delay angle 90°: 0.25 to 1.4 I _{Δn}
		X	✓	✓	✓	Current delay angle 135°: 0.11 to 1.4 I _{Δn}
Pulsating Half wave + direct current (6mA)		X	✓	✓	✓	max. 1.4 I _{Δn} +6mA
Pulsating Half wave + direct current (10mA)		X	X	✓	✓	max. 1.4 I _{Δn} +10mA
Composite wave		X	X	✓	✓	0.5 to 1.4 I _{Δn}
High frequency (up to 1kHz)		X	X	✓	✓	Current Frequency 150Hz 0.5 to 2.4 I _{Δn}
		X	X	✓	✓	Current Frequency 400Hz 0.5 to 6 I _{Δn}
		X	X	✓	✓	Current Frequency 1000Hz 1 to 14 I _{Δn}
Two phase rectified full wave		X	X	X	✓	0.5 to 2 I _{Δn}
Three phase rectified full wave		X	X	X	X	
Direct current		X	X	X	X	

RCCBs

A

B

C

D

E

F

G

X

Discover advantages: Type F

Offer the same range of protection and functionality as a Type A RCD; this means that release with sinusoidal AC currents as well as pulsating DC currents.

In addition to this, they are capable of detecting residual currents from mixed frequencies of up to 1000 Hz, which can often occur on the outgoing feeder side of single-phase frequency converters.

This prevents undesirable interruptions to the electrical supply if, for example, pulsed leakage currents of up to ten milliseconds occur at activation of filter capacitors.

Type B

In addition to release residual current waveforms of type A, B type RCCBs are used to detect smooth DC residual currents. B Type RCCBs are recommended for use with EV Charge and drives and inverters for supplying motors for pumps, lifts, textile machines, machine tools... since they recognise a continuous fault current with low level ripple.

Type AC: Release with sinusoidal currents which occur suddenly or slowly rise in magnitude.

Type A-Ai: Release with sinusoidal currents and also with pulsating direct current which occur suddenly or slowly rise in magnitude.

Type S-Si (type A-Ai): Time delay release with sinusoidal currents and also with pulsating direct current which occur suddenly or slowly rise in magnitude.

2P in two modules compact RCBOs The complete protection and ...

Unibus* RCBOs are the latest innovation in the ElfaPlus modular devices range. They have been developed to reduce the size of distribution boards to the minimum. Performances have been up-graded up to 10kA and extended with high immunity residual tripping characteristics. For each line where integrated overload protection and residual current protection are required, a RCBO is now available in only **two modules!**

Saving up to 50% space
in distribution boards!

Protected cables

up to 35mm² rigid cable
up to 25mm² flexible cable



... the solution for space issues



Unibis*

A

B

C

D

E

F

G

X

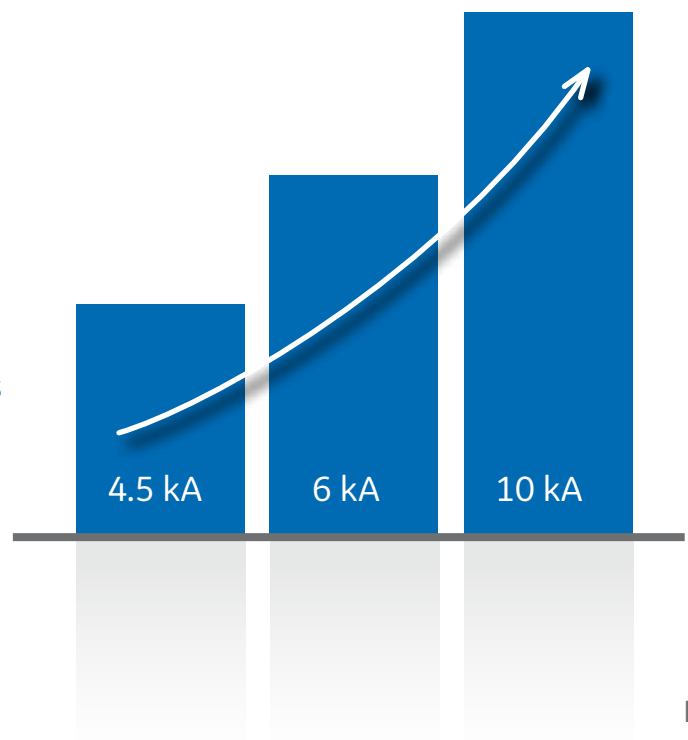
Shipping approvals

4500A
6-40A
AC, A
30-300mA

6000A
6-40A
AC, A, Ai
10-30-300mA

10000A
6-40A
AC, A, Ai
10-30-300mA

- ✓ Brand-new design: 2P RCBO in 2 modules
- ✓ Complete range: 4.5 kA - 6 kA - 10 kA
- ✓ 6-40 Amps, B and C curves
- ✓ Classes: AC - A - Ai
- ✓ 100% compatible with all ElfaPlus auxiliaries, accessories and busbar systems
- ✓ Approvals: CEBC, KEMA, VDE, IMQ, NF
- ✓ RINA and Lloyd's Register certified



The most complete **RCBO** offer on the market for double phase circuits

Saving up to 50% space in distribution boards!

Protected terminals
Plastic tongue in IP20 terminals

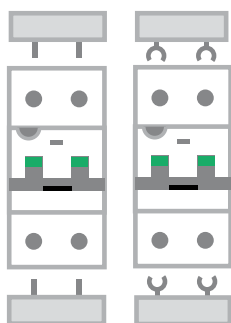
Earth leakage indicator



Easy to replace

Double clips make it easy to replace the RCBO, especially when a busbar is installed.

PIN and FORK busbars



Pin and fork busbars can be placed at the **bottom** and at the **top**.

For residential, commercial and industrial applications

High immunity type Ai RCBO 2 poles protected in 2 modules!

Green and red flag on toggle

with isolation applications



Quality and reliability guaranteed in distribution boards



Userfriendly

All screws are on the same level to work fast and easy.

Perfectly in line with ElfaPlus, Unibis and Redline devices.

High performance torque

Up to 4Nm

Part of the family

The compact RCBO fits perfectly with the Unibis MCB ranges.

Shipping applications

New shipping devices are completing the current Redline and ElfaPlus shipping ranges.



2P RCBO

2P MCB

3P MCB

4P MCB



Full functionality

A small auxiliary contact is the interface to the full functionality of the add-on devices and auxiliaries. The interface can be mounted at the **left** and at the **right** side.



Unibis*

A

B

C

D

E

F

G

X



Technical data - Compact 2P and 3P+N RCBOs

Series		DPC45	DPC60	DPC100 ⁽¹⁾	DMA63N
Standards		EN 61009-1	EN 61009-1	EN 61009-1	EN 61009-1
Magnetic tripping characteristics		C	B,C	B,C	B, C
Residual tripping characteristics		AC, A	AC, A, Ai	AC, A, Ai	A
Tripping time at IΔn instantaneous	ms	<60	<60	<60	-
Rated current	A	6-40	6-40	6-40	10-32
Rated residual current (IΔn)	mA	30, 300	10, 30, 300	10, 30, 300	30, 300
Earth leakage tripping indicator: blue flag		yes	yes	yes	yes
Calibration temperature	°C	30	30	30	30
Number of poles (# mod.)		2P (2 mod.)	2P (2 mod.)	2P (2 mod.)	3P (4 mod.) 3P+N (4 mod.)
Rated voltage Un AC 2P	V	230	230 ⁽¹⁾	230	400
Frequency	Hz	50	50 ⁽²⁾	50 ⁽²⁾	50/60
Maximum service voltage U _{Bmax}	V	265	265	265	-
Minimum service voltage U _{Bmin}	V	117 ⁽³⁾	117 ⁽³⁾	117 ⁽³⁾	-
Minimum voltage for leakage protection	V	Voltage independent	Voltage independent	Voltage independent	Voltage independent
Power supply		top/bottom	top/bottom	top/bottom	top/bottom
Energy limiting class		3	3	3	3
Residual making and breaking capacity (IΔm)	A	4500	6000	6000	3000
Rated short-circuit capacity (Icn)	A	4500	6000	10000	6000
Grid distance (safety distance between two devices)	mm	35	35	60	-
Isolator application		yes	yes	yes	-
Insulation degree					
Insulation voltage	V(DC)	440	440	440	500
Test shock voltage 1.2/50μs	kV	6	6	6	6
Insulation resistance	Mohm	1000	1000	1000	1000
Dielectric strength	V	2500	2500	2500	2500
Shock resistance in x, y, z direction (EN/IEC 60077/16.3)		40g, 18 shocks 5 ms	40g, 18 shocks 5 ms	40g, 18 shocks 5 ms	40g, 18 shocks 5 ms
Vibration resistance in x, y, z direction (EN/IEC 60068-2-6)		1.5g, 30 min, 0...80Hz	1.5g, 30 min, 0...80Hz	1.5g, 30 min, 0...80Hz	5g, 30 min, 0...80Hz
Endurance					
Electrical at Un, In		10000	10000	10000	10000
Mechanical		20000	20000	20000	20000
Protection degree (EN 60529) (outside/inside electrical enclosure with door)		IP20/IP40	IP20/IP40	IP20/IP40	IP20/IP40
Self extinguish degree (UL94)		V2	V2	V2	V2
Tropicalisation (EN/IEC 60068-2, DIN 40046)	°C/RH	55°C/95%	55°C/95%	55°C/95%	55°C/95%
Pollution degree (EN/IEC 60947-1)		3	3	3	3
Operating temperature	°C	-5 up to +60 (-25°C type A)	-5 up to +60 (-25°C type A, Ai)	-5 up to +60 (-25°C type A, Ai)	-5 up to +60
Storage temperature	°C	-25 up to +70	-25 up to +70	-25 up to +70	-25 up to +40
Terminal capacity					
Rigid cable Min./Max. (top)	mm ²	1/35	1/35	1/35	1/25
Flexible cable Min./Max. (top)	mm ²	1/25	1/25	1/25	1/25
Rigid cable Min./Max. (bottom)	mm ²	1/35	1/35	1/35	1/35
Flexible cable Min./Max. (bottom)	mm ²	1/25	1/25	1/25	1/35
Torque top/bottom (max.)	Nm	4	4	4	3
Add-on devices (side add-on)					
Auxiliary contacts		yes	yes	yes	yes
Tele U		yes ⁽⁴⁾	yes ⁽⁴⁾	yes ⁽⁴⁾	no
Tele L		yes ⁽⁴⁾	yes ⁽⁴⁾	yes ⁽⁴⁾	no
Tele MP		yes ⁽⁴⁾	yes ⁽⁴⁾	yes ⁽⁴⁾	no
PBS		yes ⁽⁴⁾	yes ⁽⁴⁾	yes ⁽⁴⁾	no
Maximum add-on combinations (per side)		4x CA + 1x TeleL + 1x Tele U	4x CA + 1x TeleL + 1x Tele U	4x CA + 1x TeleL + 1x Tele U	no
TeleREC Plus		no	yes	yes	no
Busbar systems					
Pin (top/bottom)		yes/yes	yes/yes	yes/yes	yes/yes
Fork (top/bottom)		yes/yes	yes/yes	yes/yes	yes/yes
Accessories		yes	yes	yes	no
Width per mod.	mm	18	18	18	18
Weight per mod.	gr	110	110	110	110
Package	pcs	1/6	1/6	1/6	1/3
Approvals		IMQ	NF, CEBC, KEMA, IMQ, VDE	NF, CEBC, KEMA, IMQ, VDE, LR, RINA	IMQ
CE-marking		yes	yes	yes	yes
Page		B.10	B.12	B.14	B.18

(1) Special application for 120V: DPCA100

(2) 50/60Hz for Ai residual tripping characteristic

(3) U_{Bmin} = 150V for 30mA

(4) Requires CA auxiliary contact as interface

People protection

A

B

C

D

E

F

G

X



Short-circuit capacity - Compact 2P and 3P+N RCBOs

Series		DPC45	DPC60	DPC100	DMA63N
Short-circuit capacity (Icn) at 230Vac (EN/IEC 61009-1)	A	4500	6000	10000	6000
Service short-circuit capacity (Ics)	kA	4.5	6	7.5	6
Rated short-circuit capacity (Icu) acc. EN/IEC 60947-2	kA	6	10	10	6

Selection table - Compact 2P RCBOs

Page	Series	Sensitivity (mA)	Pole	Type	Tripping char.	Short-circuit cap.	6	10	13	16	20	25	32	40	Isolator appl.	Add-on devices	Rated voltage	
B.10	DPC45	30	2P	AC	C	4500									x	x	230	
		300	2P	AC	C	4500										x	x	230
		30	2P	A	C	4500										x	x	230
		300	2P	A	C	4500										x	x	230
B.12	DPC60	10	2P	AC	C	6000									x	x	230	
		30	2P	AC	C	6000										x	x	230
		300	2P	AC	C	6000										x	x	230
		10	2P	A	B	6000										x	x	230
					C	6000										x	x	230
		30	2P	A	B	6000										x	x	230
					C	6000										x	x	230
		300	2P	A	B	6000										x	x	230
					C	6000										x	x	230
		30	2P	Ai	B	6000										x	x	230
					C	6000										x	x	230
					Ai	B	6000									x	x	230
			C	6000										x	x	230		
B.14	DPC100	10	2P	AC	C	10000									x	x	230	
		30	2P	AC	C	10000										x	x	230
		300	2P	AC	C	10000										x	x	230
		10	2P	A	B	10000										x	x	230
					C	10000										x	x	230
		30	2P	A	B	10000		•	•	•	•					x	x	230
					C	10000		•	•	•	•					x	x	230
		300	2P	A	B	10000										x	x	230
					C	10000										x	x	230
		30	2P	Ai	B	10000										x	x	230
			C	10000										x	x	230		
B.16	DPCA100	30	2P	A	C	10000								x	no	120		
B.18	DMA63N	30	3P+N	A	C	6000								x	no	400		
B.18	DPCA100	30	3P+N	A	B	6000									x	x	400	
		300	3P+N	A	C	6000									x	x	400	
		300	3P+N	A	B	6000									x	x	400	
		30	3P	A	C	6000										x	x	400

• Special thermal tripping curves for Norway and Paneuropean types

Technical data

A

B

C

D

E

F

G

X



2P RCBOs - Residual Current Circuit Breaker with Overcurrent Protection

Series DPC45

EN /IEC 61009-1 4.5kA

Type AC



Type A



People protection



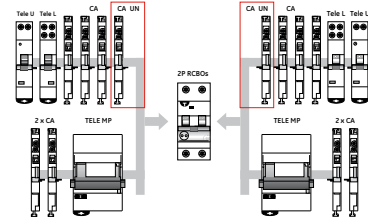
Applications



Approvals / Marking



Add-on devices



The auxiliary contact CA UN is needed as interface if Tele MP needs to trip the 2P RCBO. If the RCBO is used only to reconnect, the interface is not needed.

Performance

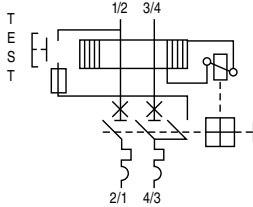
Thermal setting In	(A) 6-40
Residual current	(mA) 30, 300
Tripping characteristics	C
Rated voltage AC Un	(V) 230
Minimum operating voltage UBmin	(V) 117 ⁽¹⁾
Mechanical / electrical endurance	10000/20000
Tropicalisation acc. to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible / rigid cable	(mm ²) 25/35
Poles	2P
Nuisance tripping resistance	(A) 250
Ambient temperature	(°C) Type AC: -5 up to 60 Type A: -25 up to 60
Weight / mod.	(g) 110

Short-circuit capacity

AC acc. to EN/IEC 61009-1	
Residual making and breaking capacity	IΔm = 4500A
Energy limiting class	3
Short-circuit capacity	Icn = 4500A at 230V

(1) UBmin = 150V for 30mA

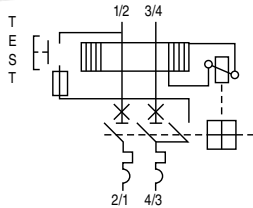
Series DPC45 - Type AC - characteristic C



2P

In (A)	10mA		30mA		300mA		Pack.
	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no.	
6	-	-	DPC45C06/030	606786	DPC45C06/300	606794	1/6
10	-	-	DPC45C10/030	606787	DPC45C10/300	606795	1/6
13	-	-	DPC45C13/030	606788	DPC45C13/300	606796	1/6
16	-	-	DPC45C16/030	606789	DPC45C16/300	606797	1/6
20	-	-	DPC45C20/030	606790	DPC45C20/300	606798	1/6
25	-	-	DPC45C25/030	606791	DPC45C25/300	606799	1/6
32	-	-	DPC45C32/030	606792	DPC45C32/300	606800	1/6
40	-	-	DPC45C40/030	606793	DPC45C40/300	606801	1/6

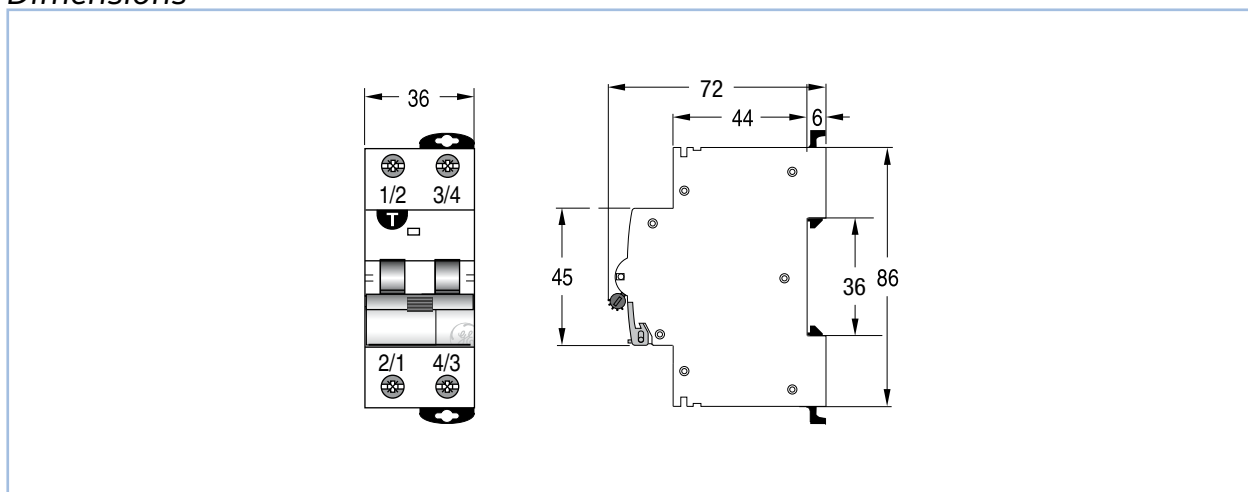
Series DPC45 - Type A - characteristic C



2P

6	-	-	DPCA45C06/030	606802	DPCA45C06/300	606810	1/6
10	-	-	DPCA45C10/030	606803	DPCA45C10/300	606811	1/6
13	-	-	DPCA45C13/030	606804	DPCA45C13/300	606812	1/6
16	-	-	DPCA45C16/030	606805	DPCA45C16/300	606813	1/6
20	-	-	DPCA45C20/030	606806	DPCA45C20/300	606814	1/6
25	-	-	DPCA45C25/030	606807	DPCA45C25/300	606815	1/6
32	-	-	DPCA45C32/030	606808	DPCA45C32/300	606816	1/6
40	-	-	DPCA45C40/030	606809	DPCA45C40/300	606817	1/6

Dimensions



Series DPC45

A

B

C

D

E

F

G

X



2P RCBOs - Residual Current Circuit Breaker with Overcurrent Protection

Series DPC60

EN /IEC 61009-1 6kA

Type AC



Type A - Ai



People protection



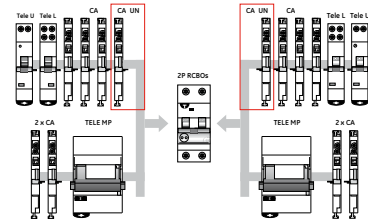
Applications



Approvals / Marking



Add-on devices



The auxiliary contact CA UN is needed as interface if Tele MP needs to trip the 2P RCBO. If the RCBO is used only to reconnect, the interface is not needed.

Performance

Thermal setting In	(A) 6-40
Residual current	(mA) 10, 30, 300
Tripping characteristics	B, C
Rated voltage AC Un	(V) 230
Minimum operating voltage UBmin	(V) 117 ⁽¹⁾
Mechanical / electrical endurance	10000/20000
Tropicalisation acc. to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible / rigid cable	(mm ²) 25/35
Poles	2P
Nuisance tripping resistance	(A) 250 (A, AC), 3000 (Ai)
Ambient temperature	(°C) Type AC: -5 up to 60 Type A: -25 up to 60
Weight / mod.	(g) 110

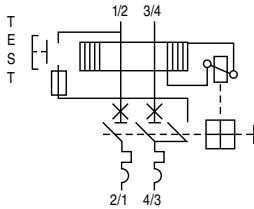
Short-circuit capacity

AC acc. to EN/IEC 61009-1	
Residual making and breaking capacity	I Δ m = 6000A
Energy limiting class	3
Short-circuit capacity	Icn = 6000A at 230V

(1) UBmin = 150V for 30mA

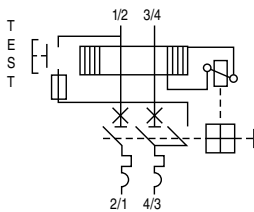


Series DPC60 - Type AC - characteristic C



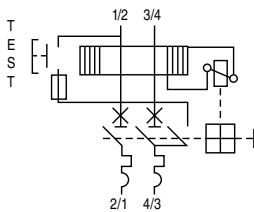
In (A)	10mA		30mA		300mA		Pack.	
	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no.		
2P	6	-	-	DPC60C06/030	606820	DPC60C06/300	606828	1/6
	10	DPC60C10/010	606818	DPC60C10/030	606821	DPC60C10/300	606829	1/6
	13	-	-	DPC60C13/030	606822	DPC60C13/300	606830	1/6
	16	DPC60C16/010	606819	DPC60C16/030	606823	DPC60C16/300	606831	1/6
	20	-	-	DPC60C20/030	606824	DPC60C20/300	606832	1/6
	25	-	-	DPC60C25/030	606825	DPC60C25/300	606833	1/6
	32	-	-	DPC60C32/030	606826	DPC60C32/300	606834	1/6
	40	-	-	DPC60C40/030	606827	DPC60C40/300	606835	1/6

Series DPC60 - Type A - characteristic B



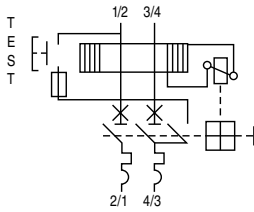
2P	6	-	-	DPCA60B06/030	606872	DPCA60B06/300	606880	1/6
	10	DPCA60B10/010	606870	DPCA60B10/030	606873	DPCA60B10/300	606881	1/6
	13	-	-	DPCA60B13/030	606874	DPCA60B13/300	606882	1/6
	16	DPCA60B16/010	606871	DPCA60B16/030	606875	DPCA60B16/300	606883	1/6
	20	-	-	DPCA60B20/030	606876	DPCA60B20/300	606884	1/6
	25	-	-	DPCA60B25/030	606877	DPCA60B25/300	606885	1/6
	32	-	-	DPCA60B32/030	606878	DPCA60B32/300	606886	1/6
	40	-	-	DPCA60B40/030	606879	DPCA60B40/300	606887	1/6

Series DPC60 - Type A - characteristic C



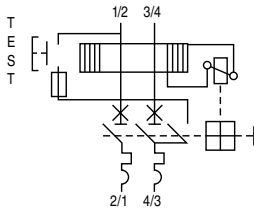
2P	6	-	-	DPCA60C06/030	606838	DPCA60C06/300	606846	1/6
	10	DPCA60C10/010	606836	DPCA60C10/030	606839	DPCA60C10/300	606847	1/6
	13	-	-	DPCA60C13/030	606840	DPCA60C13/300	606848	1/6
	16	DPCA60C16/010	606837	DPCA60C16/030	606841	DPCA60C16/300	606849	1/6
	20	-	-	DPCA60C20/030	606842	DPCA60C20/300	606850	1/6
	25	-	-	DPCA60C25/030	606843	DPCA60C25/300	606851	1/6
	32	-	-	DPCA60C32/030	606844	DPCA60C32/300	606852	1/6
	40	-	-	DPCA60C40/030	606845	DPCA60C40/300	606853	1/6

Series DPC60 - Type Ai - characteristic B



2P	6	-	-	DPCAI60B06/030	606888	DPCAI60B06/300	606896	1/6
	10	-	-	DPCAI60B10/030	606889	DPCAI60B10/300	606897	1/6
	13	-	-	DPCAI60B13/030	606890	DPCAI60B13/300	606898	1/6
	16	-	-	DPCAI60B16/030	606891	DPCAI60B16/300	606899	1/6
	20	-	-	DPCAI60B20/030	606892	DPCAI60B20/300	606900	1/6
	25	-	-	DPCAI60B25/030	606893	DPCAI60B25/300	606901	1/6
	32	-	-	DPCAI60B32/030	606894	DPCAI60B32/300	606902	1/6
	40	-	-	DPCAI60B40/030	606895	DPCAI60B40/300	606903	1/6

Series DPC60 - Type Ai - characteristic C



2P	6	-	-	DPCAI60C06/030	606854	DPCAI60C06/300	606862	1/6
	10	-	-	DPCAI60C10/030	606855	DPCAI60C10/300	606863	1/6
	13	-	-	DPCAI60C13/030	606856	DPCAI60C13/300	606864	1/6
	16	-	-	DPCAI60C16/030	606857	DPCAI60C16/300	606865	1/6
	20	-	-	DPCAI60C20/030	606858	DPCAI60C20/300	606866	1/6
	25	-	-	DPCAI60C25/030	606859	DPCAI60C25/300	606867	1/6
	32	-	-	DPCAI60C32/030	606860	DPCAI60C32/300	606868	1/6
	40	-	-	DPCAI60C40/030	606861	DPCAI60C40/300	606869	1/6

Series DPC60

A

B

C

D

E

F

G

X



2P RCBOs - Residual Current Circuit Breaker with Overcurrent Protection

Series DPC100

EN /IEC 61009-1 10kA

Type AC



Type A - Ai



People protection



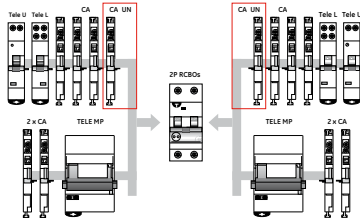
Applications



Approvals / Marking



Add-on devices



The auxiliary contact CA UN is needed as interface if Tele MP needs to trip the 2P RCBO. If the RCBO is used only to reconnect, the interface is not needed.

Performance

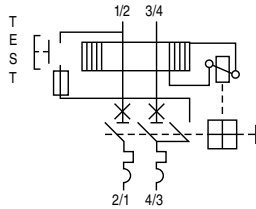
Thermal setting In	(A) 6-40
Residual current	(mA) 10, 30, 300
Tripping characteristics	B ⁽¹⁾ , C ⁽¹⁾
Rated voltage AC Un	(V) 230
Minimum operating voltage UBmin	(V) 117 ⁽²⁾
Mechanical / electrical endurance	10000/20000
Tropicalisation acc. to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible / rigid cable	(mm ²) 25/35
Poles	2P
Nuisance tripping resistance	(A) 250 (A, AC), 3000 (Ai)
Ambient temperature	(°C) Type AC: -5 up to 60 Type A: -25 up to 60
Weight / mod.	(g) 110

Short-circuit capacity

AC acc. to EN/IEC 61009-1	
Residual making and breaking capacity	I Δ m = 6000A
Energy limiting class	3
Short-circuit capacity	Icn = 10000A at 230V

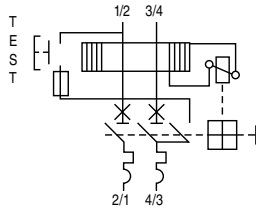
(1) Additional to traditional B and C curves, specials ones focused in Norwegian standards for 10A, 13A, 16A, 20A
(2) UBmin = 150V for 30mA

Series DPC100 - Type AC - characteristic C



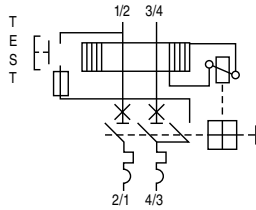
In (A)	10mA		30mA		300mA		Pack.
	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no.	
2P 6	-	-	DPC100C06/030	606906	DPC100C06/300	606914	1/6
10	DPC100C10/010	606904	DPC100C10/030	606907	DPC100C10/300	606915	1/6
13	-	-	DPC100C13/030	606908	DPC100C13/300	606916	1/6
16	DPC100C16/010	606905	DPC100C16/030	606909	DPC100C16/300	606917	1/6
20	-	-	DPC100C20/030	606910	DPC100C20/300	606918	1/6
25	-	-	DPC100C25/030	606911	DPC100C25/300	606919	1/6
32	-	-	DPC100C32/030	606912	DPC100C32/300	606920	1/6
40	-	-	DPC100C40/030	606913	DPC100C40/300	606921	1/6

Series DPC100 - Type A - characteristic B



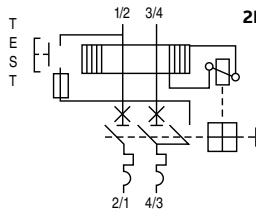
2P 6	-	-	DPCA100B06/030	606964	DPCA100B06/300	606976	1/6
10	DPCA100B10/010	606961	DPCA100B10/030	606965	DPCA100B10/300	606977	1/6
13	DPCA100B13/010	606962	DPCA100B13/030	606966	DPCA100B13/300	606978	1/6
16	DPCA100B16/010	606963	DPCA100B16/030	606967	DPCA100B16/300	606979	1/6
20	-	-	DPCA100B20/030	606968	DPCA100B20/300	606980	1/6
10	-	-	DPCA100B10/030	606969⁽¹⁾	-	-	1/6
13	-	-	DPCA100B13/030	606970⁽¹⁾	-	-	1/6
16	-	-	DPCA100B16/030	606971⁽¹⁾	-	-	1/6
20	-	-	DPCA100B20/030	606972⁽¹⁾	-	-	1/6
25	-	-	DPCA100B25/030	606973	DPCA100B25/300	606981	1/6
32	-	-	DPCA100B32/030	606974	DPCA100B32/300	606982	1/6
40	-	-	DPCA100B40/030	606975	DPCA100B40/300	606983	1/6

Series DPC100 - Type A - characteristic C



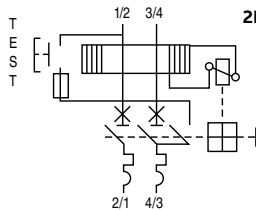
2P 6	-	-	DPCA100C06/030	606925	DPCA100C06/300	606937	1/6
10	DPCA100C10/010	606922	DPCA100C10/030	606926	DPCA100C10/300	606938	1/6
13	DPCA100C13/010	606923	DPCA100C13/030	606927	DPCA100C13/300	606939	1/6
16	DPCA100C16/010	606924	DPCA100C16/030	606928	DPCA100C16/300	606940	1/6
20	-	-	DPCA100C20/030	606929	DPCA100C20/300	606941	1/6
10	-	-	DPCA100C10/030	606930⁽¹⁾	-	-	1/6
13	-	-	DPCA100C13/030	606931⁽¹⁾	-	-	1/6
16	-	-	DPCA100C16/030	606932⁽¹⁾	-	-	1/6
20	-	-	DPCA100C20/030	606933⁽¹⁾	-	-	1/6
25	-	-	DPCA100C25/030	606934	DPCA100C25/300	606942	1/6
32	-	-	DPCA100C32/030	606935	DPCA100C32/300	606943	1/6
40	-	-	DPCA100C40/030	606936	DPCA100C40/300	606944	1/6

Series DPC100 - Type Ai - characteristic B



2P 6	-	-	DPCAi100B06/030	606984	DPCAi100B06/300	606992	1/6
10	-	-	DPCAi100B10/030	606985	DPCAi100B10/300	606993	1/6
13	-	-	DPCAi100B13/030	606986	DPCAi100B13/300	606994	1/6
16	-	-	DPCAi100B16/030	606987	DPCAi100B16/300	606995	1/6
20	-	-	DPCAi100B20/030	606988	DPCAi100B20/300	606996	1/6
25	-	-	DPCAi100B25/030	606989	DPCAi100B25/300	606997	1/6
32	-	-	DPCAi100B32/030	606990	DPCAi100B32/300	606998	1/6
40	-	-	DPCAi100B40/030	606991	DPCAi100B40/300	606999	1/6

Series DPC100 - Type Ai - characteristic C



2P 6	-	-	DPCAi100C06/030	606945	DPCAi100C06/300	606953	1/6
10	-	-	DPCAi100C10/030	606946	DPCAi100C10/300	606954	1/6
13	-	-	DPCAi100C13/030	606947	DPCAi100C13/300	606955	1/6
16	-	-	DPCAi100C16/030	606948	DPCAi100C16/300	606956	1/6
20	-	-	DPCAi100C20/030	606949	DPCAi100C20/300	606957	1/6
25	-	-	DPCAi100C25/030	606950	DPCAi100C25/300	606958	1/6
32	-	-	DPCAi100C32/030	606951	DPCAi100C32/300	606959	1/6
40	-	-	DPCAi100C40/030	606952	DPCAi100C40/300	606960	1/6

(1) Special thermal tripping curves for Norway



2P RCBOs - Residual Current Circuit Breaker with Overcurrent Protection

Series DPCA100 - 120V

EN /IEC 61009-1 10kA

Type A



People protection



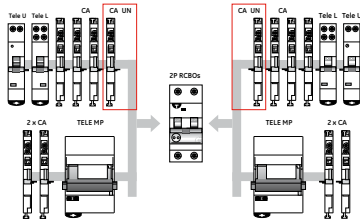
Applications



Marking



Add-on devices



The auxiliary contact CA UN is needed as interface if Tele MP needs to trip the 2P RCBO. If the RCBO is used only to reconnect, the interface is not needed.

Performance

Thermal setting In	(A) 6-40
Residual current	(mA) 30
Tripping characteristics	C
Rated voltage AC Un	(V) 120
Frequency	(Hz) 50..60
Minimum operating voltage UBmin	(V) 85
Mechanical / electrical endurance	10000/20000
Tropicalisation acc. to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible / rigid cable	(mm ²) 25/35
Poles	2P
Nuisance tripping resistance	(A) 250
Ambient temperature	(°C) Type A: -25 up to 60
Weight / mod.	(g) 110

Short-circuit capacity

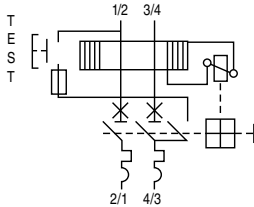
AC acc. to EN/IEC 61009-1	
Residual making and breaking capacity	I Δ m = 6000A
Energy limiting class	3
Short-circuit capacity	Icn = 10000A at 230V

AC acc. to EN/IEC 61009-1	
Short-circuit capacity	Icu = 10kA



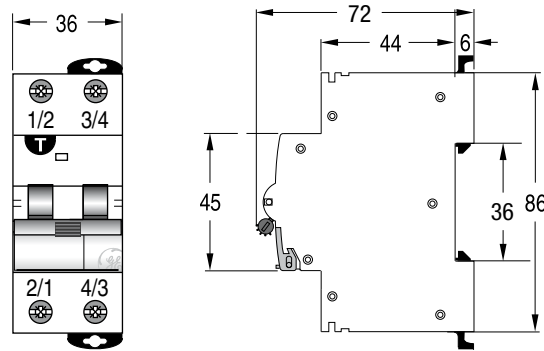


Series DPCA100 - Type A - characteristic C



3P	30mA			Pack.
	In (A)	Cat. no.	Ref. no.	
	6	DPCA100C06/030-120V	606375	1/6
	10	DPCA100C10/030-120V	606376	1/6
	16	DPCA100C16/030-120V	606377	1/6
	20	DPCA100C20/030-120V	606378	1/6
	25	DPCA100C25/030-120V	606379	1/6
	32	DPCA100C32/030-120V	606380	1/6
	40	DPCA100C40/030-120V	606381	1/6

Dimensions



Series DPCA100

A

B

C

D

E

F

G

X





3P+N, 3P RCBOs - Residual Current Circuit Breaker with Overcurrent Protection

Series DMA63N

People protection



EN 61009-1

6000

3

Type A



A

Applications



B

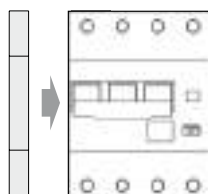
Approval / Marking



C

Add-on devices

Auxiliaries



Max. 1 aux. contact 1NO 1NC on the left

F

Performance

Thermal setting In	(A) 10 - 32
Residual current	(mA) 30, 300
Tripping characteristics	C, B
Rated voltage AC Un	(V) 400
Minimum operating voltage UBmin	(V) 195
Mechanical / electrical endurance	10000/20000
Tropicalisation acc. to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible / rigid cable	(mm ²) 25/35
Poles	3P+N (right), 3P
Nuisance tripping resistance	(A) 250A 8/20µs
Ambient temperature	(°C) -25 up to +40
Weight / mod.	(g) 120

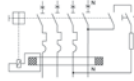
Short-circuit capacity

AC acc. to EN/IEC 61009-1	
Residual making and breaking capacity	I Δ m = 3000A
Energy limiting class	3
Short-circuit capacity	Icn = 6000A at 230V

(1) UBmin = 150V for 30mA

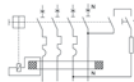


Type A - characteristic C - 3P+N



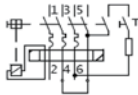
In (A)	30mA		300mA		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
10	DMA63NC10/030	783517	DMA63NC10/300	565381	1
13	DMA63NC13/030	783518	DMA63NC13/300	565382	
16	DMA63NC16/030	783519	DMA63NC16/300	565383	
20	DMA63NC20/030	783520	DMA63NC20/300	565384	
25	DMA63NC25/030	568323	DMA63NC25/300	565385	
32	DMA63NC32/030	568322	DMA63NC32/300	565386	

Type A - characteristic B - 3P+N



In (A)	30mA		300mA		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
10	DMA63NB10/030	565387	DMA63NB10/300	565393	1
13	DMA63NB13/030	565388	DMA63NB13/300	565394	
16	DMA63NB16/030	565389	DMA63NB16/300	565395	
20	DMA63NB20/030	565390	DMA63NB20/300	565396	
25	DMA63NB25/030	565391	DMA63NB25/300	565397	
32	DMA63NB32/030	565392	DMA63NB32/300	565398	

Type A - characteristic C - 3P (IT nets applications)



In (A)	30mA		300mA		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
10	DMA63C10/030IT	568326	-	-	1
16	DMA63C16/030IT	568327	-	-	
20	DMA63C20/030IT	568328	-	-	
25	DMA63C25/030IT	568329	-	-	
32	DMA63C32/030IT	568330	-	-	

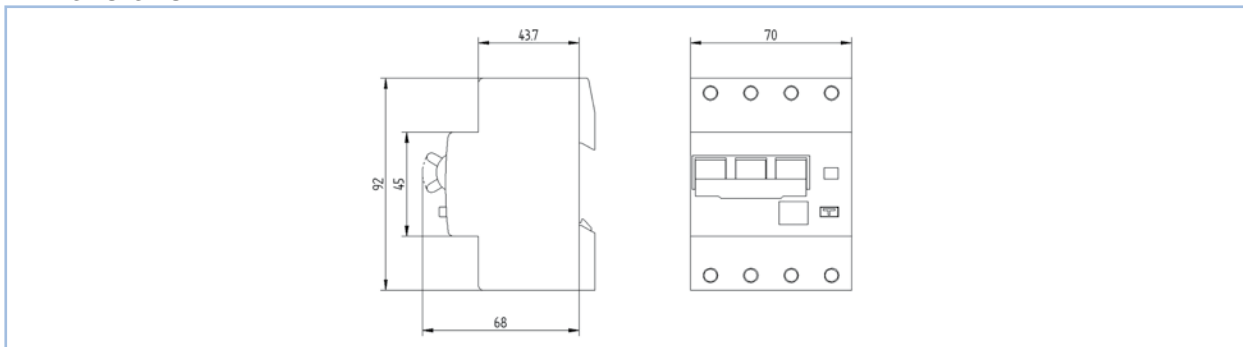
Series CAH DMA63N - Auxiliary contact



Function	Type of contacts	Cat. No.	Ref. No.	Pack.
H	1NO + 1NC	CAH DMA63N	568324	1

3P+N RCBO and 3P RCBO left side

Dimensions



Series DMA63N

A

B

C

D

E

F

G

X





Selection table of RCCBs

Page no.	Series	Sensitivity (mA)	Poles	Type	Nominal current (A)						Isolator appl.	Add-on devices	Rated voltage			
					16	25	40	63	80	100						
B.26	BP/BD															
		10	2P	AC/A								x	x	240		
		30	2P	AC/A								x	x	240		
				G								x	x	240		
				AC								x	x	110		
			4P	AC/A								x	x	240/415		
				G								x	x	240/415		
				AC								x	x	220		
		100	2P	AC/A/S								x	x	240		
				G								x	x	240		
			4P	AC/A/S								x	x	240/415		
				G								x	x	240/415		
		300	2P	AC/A/S								x	x	240		
			4P	AC/A/S								x	x	240/415		
				AC								x	x	220/127		
		500	2P	AC/A/S								x	x	240		
			4P	AC/A/S								x	x	240/415		
		1000	2P	AC/A/S								x	x	240		
			4P	AC/A/S								x	x	240/415		

People protection

Selection table of 1P+N - RCBOs

Page no.	Series	Sensitivity (mA)	Pole	Type	Tripping charact.	Nominal current (A)								Isolator appl.	Add-on devices	Rated voltage		
						4	6	10	13	16	20	25	32				40	
B.36	DM60																	
		10	1P+N	AC/A	B											x	x	240
					C											x	x	240
		30	1P+N	AC/A	B											x	x	240
					C											x	x	240
		100	1P+N	AC/A	B											x	x	240
					C											x	x	240
		300	1P+N	AC/A	B											x	x	240
					C											x	x	240
B.37	DMT60																	
		30	1P+N	AC	C											x	x	240
B.38	DM100																	
		10	1P+N	AC/A	B											x	x	240
					C											x	x	240
		30	1P+N	AC/A	B											x	x	240
					C											x	x	240
		100	1P+N	AC/A	B											x	x	240
					C											x	x	240
		300	1P+N	AC/A	B											x	x	240
					C											x	x	240
B.39	DMT100																	
		30	1P+N	AC	C											x	x	240

A

B

C

D

E

F

Selection table for add-on RCCBs

Page no.	Series	Sensitivity (mA)	Poles	Type	Tripping charact.	Nominal current (A)		Isolator appl.	Add-on devices	Rated voltage
						32	63			
B.40	Diff-o-Click									
		10	2-3-4P	AC/A	-			-	-	240/415
		100, 300, 500, 1000	2-3-4P	AC/A/S	-			-	-	240/415

G

X



Selection table for Unibis Compact electronic RCBOs

Page no.	Series	Sensitivity (mA)	Pole	Type	Tripping charact.	Nominal current (A)								Isolator appl.	Add-on devices	Rated voltage	
						4	6	10	13	16	20	25	32				40
B.36	DM60	30, 100	1P+N	AC	C										x	x	240
B.44	DMC60NS	10, 30	1P+NS	AC, A	C, B										x	x	240
B.47	DICE60NS	10, 30	1P+NS	AC/A	C, B										x	x	240
B.48	DMCE60	30	1P+N	AC/A	C, B										x	x	240
B.48	DICE60	30	1P+N	AC/A	C, B										x	x	240
B.50	DME100	10, 30, 100	1P+N	AC/A	C										x	x	240
		10, 30, 100	1P+N	AC	B										x	x	240
		100	1P+N	AC	D										x	x	240
		10, 30	1P+N	A	B										x	x	240
		10, 30, 100	1P+N	A	C, D										x	x	240
B.52	DMET60	30	1P+N	AC/A	C										x	x	240
B.52	DMET100	10, 30, 100, 300	1P+N	AC	C										x	x	240
		30	1P+N	A	C										x	x	240

Selection table for RCCBs with UL approval

Page no.	Series	Sensitivity (mA)	Poles	Type	Nominal current (A)						Isolator appl.	Add-on devices	Rated voltage	
					16	25	40	63	80	100				
B.54	FPAUL	10, 30, 100												
		300, 500	2P	A								x	x	240
		10, 30, 100												
		300, 500	4P	A								x	x	415

Page no.	Series	Sensitivity (mA)	Pole	Type	Tripping charact.	Nominal current (A)								Isolator appl.	Add-on devices	Rated voltage	
						4	6	10	13	16	20	25	32				40
B.56	DPA100UL	10, 30	1P+N	A	-										x	x	277

Selection table for screwless RCCBs Fixwell

Page no.	Series	Sensitivity (mA)	Poles	Type	Nominal current (A)						Isolator appl.	Add-on devices	Rated voltage
					16	25	40	63	80	100			
B.58	FPP	10, 30, 100	2P	A/S							x	x	240/415
		10, 30, 100	4P	A/S							x	x	240/415

Technical data

A

B

C

D

E

F

G

X



Technical data of RCDs

People protection

A

B

C

D

E

F

G

X

Series		Series BP/BD	Series BPCV	FP Type B	FP Type F
Standards		EN/IEC 61008-1	EN/IEC 61008-1	EN 62423/ VDE 0664-40	EN 62423/ VDE 0664-40
Magnetic tripping characteristics		-	-	-	-
Residual tripping characteristic		AC, A, S, Ai, Si	AC	B	F
Tripping time at I Δ n	Instantaneous	ms	< 40	< 300	< 300
	Selective	ms	> 150	-	-
Rated current	A	16, 25, 40, 63, 80, 100	< 25, < 40, < 63 < 80, < 100	16, 25, 40, 63, 80	25, 40, 63, 80
Rated residual current I Δ n	mA	10, 30, 100, 300, 500, 1000	30, 300	30, 100, 300, 500	30
Calibration temperature	°C	30	30	30	30
Number of poles versus modules		1P	1P	2P=4 mod.; 4P=4 mod.	2P=2 mod.; 4P=4 mod.
Rated voltage Un	2P AC	V	240	110	230
	3P AC	V	-	-	-
	4P AC	V	415	220/127	230/400
Frequency	Hz	50/60	50/60	50/60	50/60
Maximum service voltage U B_{max}	V	2P=255/4P=455	2P=140; 4P=245/140	2P=265/4P=460	2P=265/4P=455
Minimum service voltage U B_{min}	V	2P=117/4P=205 ⁽²⁾	2P=95; 4P=178/100	2P=117/4P=205 ⁽²⁾	2P=176/4P=306
Minimum voltage for leakage protection		Voltage independent	Voltage independent	Voltage independent	Voltage independent
Power supply		Top/Bottom	Top/Bottom	Top/Bottom	Top/Bottom
Energy limiting class		-	-	-	-
Rated making and breaking capacity (I m)	A	500 (or 10xI n)	500 (or 10xI n)	500 (or 10xI n)	500 (or 10xI n)
Residual making and breaking capacity (I Δ m)	A	500 (or 10xI n)	500 (or 10xI n)	500 (or 10xI n)	500 (or 10xI n)
Conditional short-circuit capacity (I nc)	A	10000 fuse 100A gLgG	10000 fuse 100A gLgG	10000 fuse 80A gLgG	10000 fuse 80A gLgG
Conditional residual short-circuit capacity (I Δ c)	A	10000 fuse 100A gLgG	10000 fuse 100A gLgG	10000 fuse 80A gLgG	10000 fuse 80A gLgG
Rated Short-circuit capacity (I cn)	A	-	-	-	-
Grid distance (safety distance between two devices)		35	35	35	35
Isolator application		yes	yes	yes	yes
Insulation degree	Insulation voltage	VDC	440	440	440
	Shock voltage (1.2/50 μ s)	kV	6	6	6
	Insulation resistance	Mohm	1000	1000	1000
	Dielectric strength	V	2500	2500	2500
Shock resist. (in x, y, z direction) (EN/IEC 60077/16.3)		40g, 18 shocks 5 ms	40g, 18 shocks 5 ms	40g, 18 shocks 5 ms	40g, 18 shocks 5 ms
Vibration resist. (in x, y, z direction) (EN/IEC 60068-2-6)		1.5g, 30 min, 0...80Hz	1.5g, 30 min, 0...80Hz	1.5g, 30 min, 0...80Hz	1.5g, 30 min, 0...80Hz
Endurance	electrical at Un, I n	10000	10000	10000	10000
	mechanical at Un, I n	20000	20000	20000	20000
Protection degree (outside/inside electrical enclosure with door)		IP20 / IP40	IP20 / IP40	IP20 / IP40	IP20 / IP40
Self extinguish degree (according to UL94)		V2	V2	V2	V2
Tropicalisation (acc. to EN/IEC 60068-2, DIN 40046)		+55/95% H.R.	+55/95% H.R.	+55/95% H.R.	+55/95% H.R.
Pollution degree (acc. EN/IEC 60947-1)		3	3	3	3
Operating temperature		AC (-5...+40); A -25...+40)	-25°C...+40°C	-25°C...+40°C	-25°C...+40°C
Storage temperature		-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
Terminals capacity	Rigid cable min/max (top)	1.5/50 (1.5/35)	1,5/50	1,5/50 (1,5/35)	1,5/50 (1,5/35)
	Flexible cable min ⁽¹⁾ /max (top)	1.5/35 (1.5/25)	1,5/35	1,5/35 (1,5/25)	1,5/35 (1,5/25)
	Rigid cable min/max (bottom)	1.5/50 (1.5/35)	1,5/50	1,5/50 (1,5/35)	1,5/50 (1,5/35)
	Flexible cable min ⁽¹⁾ /max (bottom)	1.5/35 (1.5/25)	1,5/35	1,5/35 (1,5/25)	1,5/35 (1,5/25)
Torque	Top/Bottom	Nm	5/5	5/5	5/5
Add-on devices (side add-on)	Auxiliary contacts		yes	yes	yes
	Tele U		yes	yes	yes
	Tele L		yes	yes	yes
	Tele M		yes	yes	yes
	PBS		no	yes	yes
Busbars systems	Pin	Button	yes...yes	yes	yes
	Fork		yes	yes...yes	yes
	# Poles		2-4P	2-4P	2-4P
Dimensions	(H x D x W) 86 x 70 x W		36/72	36/72	72
	Weight		2P=250 / 4P=368	2P=250 / 4P=368	2P=340 / 4P=420
	Package	pcs	2P=1/6 / 4P=1/3	2P=6 / 4P=3	1/3
Approvals			KEMA, CCC	-	VDE
CE-marking			yes	yes	yes
Page			B.26	B.27	B.32

(1) Flexible cable 0.75/1/1.5mm² with cable lug

(2) Minimum service voltage for 30mA: 2P=176V / 4P=287V





Technical data of 1P+N RCBOs and compact electronic RCBOs

People protection

A

B

C

D

E

F

G

X

Series		DM60	DM100	Diff-o-Click	DMCE60NS / DICE60NS
Standards		EN/IEC 61009-1	EN/IEC 61009-1	EN/IEC 61009-1	EN/IEC 61009-1 ed3.2 (2013-09), BS EN 61009-1:2012 and AS/NZS 61009-1:20011
Magnetic tripping characteristics		B-C	B-C	B-C-D	C, B
Residual tripping characteristic		AC	AC	AC, A, S	AC, A
Tripping time at I Δn	Instantaneous	ms	< 40	< 40	< 40
	Selective	ms	-	> 150	-
Rated current	A	4, 6, 10, 13, 16, 20, 25, 32, 40	4, 6, 10, 13, 16, 20, 25, 32, 40	0.5, 1, 2, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63	6-32
Rated residual current I Δn	mA	10, 30, 300	10, 30, 300	30, 100, 300, 500, 1000	10, 30 / 30
Calibration temperature	°C	30	30	30	30
Number of poles versus modules		1P	1P	1P	1P+N switch (1 module)
Rated voltage Un	2P AC	V	230 (1P+N)	230 (1P+N)	240/415
	3P AC	V	-	-	400
	4P AC	V	-	-	400
Frequency	Hz	50/60	50/60	50/60	50
Maximum service voltage U _{Bmax}	V	255	255	2P = 255 / 4P = 455	265
Minimum service voltage U _{Bmin}	V	117 ⁽²⁾	117 ⁽²⁾	2P = 205 / 4P = 205 ⁽²⁾	85
Minimum voltage for leakage protection	V	Voltage independent	Voltage independent	Voltage independent	85
Power supply		Top/Bottom	Top/Bottom	Top	Bottom
Energy limiting class		3	3	3	3
Rated making and breaking capacity (I _m)	A	-	-	-	-
Residual making and breaking capacity (IΔ _m)	A	6000	6000	see MCB	4500
Conditional short-circuit capacity (I _{nc})	A	-	-	-	-
Conditional residual short-circuit capacity (IΔ _c)	A	-	-	-	-
Rated Short-circuit capacity (I _{cn})	A	6000	10000	see MCB	6000
Grid distance (safety distance between two devices)		35	35	35	-
Isolator application		yes	yes	no	yes
Insulation degree	Insulation voltage V(DC)	440	440	440	440
	Shock voltage (1.2/50μs) V	6	6	6	6
	Insulation resistance Mohm	1000	1000	1000	1000
	Dielectric strength V	2500	2500	2500	2500
Shock resist. (in x, y, z direction) (EN/IEC 60077/16.3)		40g, 18 shocks 5 ms	40g, 18 shocks 5 ms	40g, 18 shocks 5 ms	40g, 18 shocks 5 ms
Vibration resist. (in x, y, z direction) (EN/IEC 60068-2-6)		1.5g, 30 min, 0...80Hz	1.5g, 30 min, 0...80Hz	5g, 30 min, 0...80Hz	1.5g, 30 min, 0...80Hz
Endurance	electrical at Un, In	10000	10000	10000	10000
	mechanical at Un, In	20000	20000	20000	20000
Protection degree		IP20 / IP40	IP20 / IP40	IP20 / IP40	IP20 / IP40
(outs./inside electrical enclosure with door)					
Self extinguish degree (according to UL94)		V2	V2	V2	V2
Tropicalisation (acc. to EN/IEC 60068-2, DIN 40046)		+55/95%	+55/95%	+55/95%	+55/95%
Pollution degree (acc. EN/IEC 60947-1)		3	3	3	3
Operating temperature		-5...+60	-25...+60	AC (-5...+60); A (-25...+60)	-5...+60
Storage temperature	°C	-25...+70	-5...+70	-25...+70	-25...+70
Terminals capacity	Rigid cable min/max (top) mm ²	1/25	1/25	1/25	1/25
	Flexible cable min ⁽¹⁾ /max (top)	1/16	1/16	1/16	1.5/16
	Rigid cable min/max (bottom)	1/35	1/35	1/35	1/25
	Flexible cable min ⁽¹⁾ /max (bottom)	1/25	1/25	1/25	1.5/16
Torque	Top/Bottom Nm	3/4	3/4	-/4.5	3
Add-on devices (side add-on) Auxiliary contacts		yes	yes	yes (coupled to MCB)	yes CA UN
	Tele U	yes	yes	yes (coupled to MCB)	yes ⁽⁴⁾
	Tele L	yes	yes	yes (coupled to MCB)	yes ⁽⁴⁾
	Tele M	yes	yes	yes (coupled to MCB)	yes ⁽⁴⁾
	PBS	yes	yes	yes (coupled to MCB)	yes ⁽⁴⁾
Busbars systems	Pin	Bottom	Bottom	-	Bottom
	Fork	Bottom	Bottom	-	no/no / no/yes
	# Poles	1P+N	1P+N	2-3-4P	1P+N
Dimensions	(HxDxW) 86x70xW mm	36	36	72/90/108/125/144	18
	Weight g	250	250	2P=250 / 3P=320 / 4P=340	125
	Package pcs	1/6	1/6	1	1/12
Approvals		KEMA	KEMA	KEMA	CEBEC and RCM
CE-marking		yes	yes	yes	yes
Page		B.36	B.38	B.40	B.44

(1) Flexible cable 0.75/1/1.5mm² with cable lug

(2) Minimum service voltage for 30mA: 2P = 176V / 4P = 287V

(3) Making sure that N-L and both flying leads are disconnected

(4) Requires CA UN auxiliary contact as interface



DMCE/DICE	DME60/DMET60	DME100/DMET100	FPAUL	DPA100 UL	FPP
EN/IEC 61009-1	EN/IEC 61009-1	EN/IEC 61009-1	UL1053 and EN/IEC 61008-1	UL1053 and EN/IEC 61009-1	EN 61008-1
B-C AC, A < 40 - 6 ...40	C AC, A < 40 - 6 ...40	B-C-D AC, A < 40 - 6, 10, 16, 20, 25, 32, 40	- A < 40 - 16, 25, 40, 63	B-C A < 40 - 10, 13, 16, 32, 40	- A, S < 40 > 150 25, 40, 63 ⁽⁵⁾
30 30 1P 240 (1P+N) - 50 255 195 85 Top/Bottom 3 10xIn 6000 - - 6000 - - yes 440 6 ⁽³⁾ 1000 ⁽³⁾ 2500 ⁽³⁾	30, 100 30 1P 240 (1P+N) - 50/60 255 195 100 Bottom 3 10xIn 6000 - - 6000 - - yes 440 6 ⁽³⁾ 1000 ⁽³⁾ 2500 ⁽³⁾	10, 30, 100, 300 30 1P 240 (1P+N) - 50/60 255 195 100 Bottom 3 10xIn 10000 - - 10000 - - yes 440 6 ⁽³⁾ 1000 ⁽³⁾ 2500 ⁽³⁾	10, 30, 100, 300, 500 30 1P 240 UL: 240; EN/IEC: 415 50/60 2P = 2255 / 4P = 455 2P = 117 / 4P = 205 ⁽²⁾ Voltage independent Top/Bottom - 500 (or 10xIn) 500 (or 10xIn) 10000 fuse 100A glgG 10000 - 35 yes 500 8 1000 2500	10, 30 30 1P 277 & 240 (1P+N) - 50/60 255 195 Voltage independent Top/Bottom 3 - 6000 - 5000/10000 35 yes 500 6 1000 2500	30, 100, 300 30 1P 240 - 415 50/60 2P = 255 / 4P = 455 2P = 110 / 4P = 190 ⁽²⁾ Voltage independent Top/Bottom - 500 (or 10xIn) 500 (or 10xIn) 10000 fuse 100A 10000 - - yes 500 8 1000 2500
40g, 18 shocks 5 ms 1.5g, 30 min, 0...80Hz 10000 20000 IP20 / IP40	40g, 18 shocks 5 ms 2g, 30 min, 0...80Hz 10000 20000 IP20 / IP40	40g, 18 shocks 5 ms 2g, 30 min, 0...80Hz 10000 20000 IP20 / IP40	40g, 18 shocks 5 ms 1.5g, 30 min, 0...80Hz 10000 20000 IP20 / IP40	40g, 18 shocks 5 ms 1.5g, 30 min, 0...80Hz 10000 20000 IP20 / IP40	40g, 18 shocks 5 ms 1.5g, 30 min, 0...80Hz 10000 20000 IP20 / IP40
V2 +55/95% 3 -5..+60 -25..+70 1/25 1.5/16 1/35 1.5/25 3/3(DMCE) 3/4.5(DICE) yes (coupled to CAUN) yes yes yes yes yes - 1P+N 18 125/215 1/12 RCM yes B.48	V2 +55/95% 3 -5..+60 -25..+70 1/25 1/16 1/35 1/25 3/4.5 - Bottom Bottom 1P+N 18 235 1 KEMA yes B.50 - B.52	V2 +55/95% 3 -5..+60 -25..+70 1/25 1/16 1/35 1/25 3/4.5 - Bottom Bottom 1P+N 18 235 1 CEBEC yes B.50 - B.52	V2 +55/95% 3 AC (-5.. +60); A (-25.. +60) -25..+70 1.5/50 (1.5/35) 1.5/35 (1.5/25) 1.5/50 (1.5/35) 1.5/35 (1.5/25) 5/5 yes yes ⁽⁷⁾ yes yes ⁽⁷⁾ yes ⁽⁷⁾ yes ⁽⁷⁾ yes ⁽⁷⁾ yes ⁽⁷⁾ 2-4P 36/72 2P = 250 / 4P = 368 2P = 1/6 / 4P = 1/3 UL yes B.54	V2 +55/95% 3 -5..+60 -25..+70 1/25 1/16 1/35 1/25 3/4 yes yes ⁽⁷⁾ yes yes ⁽⁷⁾ yes ⁽⁷⁾ yes ⁽⁷⁾ yes ⁽⁷⁾ yes ⁽⁷⁾ 1P+N 36 250 1/6 UL and CEBEC yes B.56	V2 +55/95% 3 -25..+60 ⁽⁶⁾ -25..+70 see page B.58 - - - - yes yes ⁽⁸⁾ yes ⁽⁸⁾ yes ⁽⁸⁾ yes ⁽⁸⁾ yes yes 2-4P 88x68x36/73.2 2P = 248 / 4P = 364 2P = 1/6 / 4P = 1/3 VDE-KEMA-CEBEC-IMQ yes B.58

Technical data

A

B

C

D

E

F

G

X

(5) Rating current derating as usual in function of installation conditions
 (6) With plug-in busbar: -25/+50°C
 (7) Not UL registered
 (8) With plug-in busbar only at right extreme side of each row. No pin busbars let through allowed



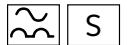
Series BP/BD

EN /IEC 61008-1

Type AC

Type A - Ai

Type S - Si



People protection

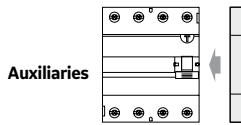
Applications



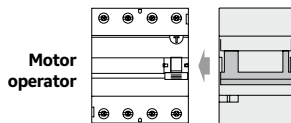
Approvals / Marking



Add-on devices



Auxiliaries



Motor operator

Performance

Thermal setting I_n	(A)	16, 25, 40, 63, 80, 100
Residual current ΔI_n	(mA)	10, 30, 100, 300, 500, 1000
Rated voltage AC U_n	(V)	2P: 240; 110 ⁽³⁾ 4P: 240/415; 220/127 ⁽³⁾
Minimum operating voltage U_{Bmin}⁽¹⁾	(V)	2P: 117, 95 ⁽³⁾ 4P: 205, 178/100 ⁽³⁾ 20000/10000
Mechanical/electrical endurance		
Tropicalisation acc.to EN/IEC 60068-2-28/2-30 and DIN 40046		95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	35-50 ⁽²⁾
Poles		2P, 4P
Nuisance tripping resistance		Type A, AC: 250A 8/20µs; 200A 0.5µs - 100kHz Type S: 3000A 8/20µs Type Ai: 3000A 8/20µs Type Si: 5000A 8/20µs
Ambient temperature	(°C)	Type AC: -5 up to 40 Type A: -25 up to 40
Weight	(g)	2P: 220 4P: 385

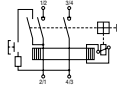
Short-circuit capacity

AC acc. to EN/IEC 61008-1	
Making and breaking capacity	$I_m = 500A$ from 16 up to 40A $I_n = 10I_n$ from 63 up to 100A
Residual making and breaking capacity	$\Delta I_m = 500A$ from 16 up to 40A $\Delta I_m = 10I_n$ from 63 up to 100A
Short-circuit capacity	
Series BD	$I_{nc} = 6000A$ at 240/415V fuse 63A gG
Series BP	$I_{nc} = 10000A$ at 240/415V fuse 80A gG

(1) Minimum service voltage for 30mA: 2P=176V / 4P=287V
(2) Series BD: 25-35mm²
(3) Serie BPCV



Series BP/BD - Type AC



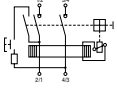
In (A)	10*/30mA		100mA		300mA		Pack.	
	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no.		
2P	16	BPC216/010*	606131	-	-	-	6	
	25	BDC225/030	607125	BPC225/100	606140	BDC225/300	607127	6
	40	BDC240/030	607126	BPC240/100	606141	BDC240/300	607128	6
	63	BPC263/030	606134	BPC263/100	606142	BPC263/300	606150	6
	80	BPC280/030	606135	BPC280/100	606143	BPC280/300	606151	6
	100	BPC2100/030	606136	BPC2100/100	606144	BPC2100/300	606152	6
	500mA		1000mA					
	25	BPC225/500	606153	BPC225/1000	606158		3	
	40	BPC240/500	606154	BPC240/1000	606159		3	
	63	BPC263/500	606155	BPC263/1000	606160		3	
	80	BPC280/500	606156	BPC280/1000	606161		3	
	100	BPC2100/500	606157	BPC2100/1000	606162		3	
	30mA		100mA		300mA			
4P	25	BPC425/030	606208	BPC425/100	606216	BPC425/300	606224	6
	40	BPC440/030	606209	BPC440/100	606217	BPC440/300	606225	6
	63	BPC463/030	606210	BPC463/100	606218	BPC463/300	606226	6
	80	BPC480/030	606211	BPC480/100	606219	BPC480/300	606227	6
	100	BPC4100/030	606212	BPC4100/100	606220	BPC4100/300	606228	6
		500mA		1000mA				
	25	BPC425/500	606229	BPC425/1000	606234		3	
	40	BPC440/500	606230	BPC440/1000	606235		3	
	63	BPC463/500	606231	BPC463/1000	606236		3	
	80	BPC480/500	606232	BPC480/1000	606237		3	
	100	BPC4100/500	606233	BPC4100/1000	606238		3	

Series BP/BD

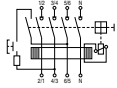
A

B

Series BPCV - Type AC 110V and 220/127V AC



In (A)	10/30mA		100mA		300mA		Pack.	
	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no.		
2P	25	BPCV225/30	600296	-	-	BPCV225/300	600301	1/6
	40	BPCV240/30	600297	-	-	BPCV240/300	600302	1/6
	63	BPCV263/30	600298	-	-	BPCV263/300	600303	1/6
	80	BPCV280/30	600299	-	-	BPCV280/300	600304	1/6
	100	BPCV2100/30	600300	-	-	BPCV2100/300	600305	1/6
4P	25	BPCV225/30	604285	-	-	-	-	1/3
	40	BPCV240/30	604286	-	-	-	-	1/3
	63	BPCV263/30	604287	-	-	-	-	1/3
	80	BPCV280/30	604288	-	-	-	-	1/3
	100	BPCV2100/30	604289	-	-	-	-	1/3



C

D

E

F

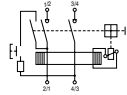
G

X

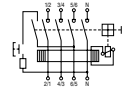
New



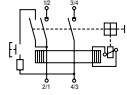
Series BP - Type A 



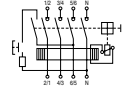
In (A)	10*/30mA		100mA		300mA		Pack.	
	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no.		
2P	16	BPA216/010*	606085	-	-	-	6	
	25	BPA225/030	606086	BPA225/100	606091	BPA225/300	606101	6
	40	BPA240/030	606087	BPA240/100	606092	BPA240/300	606102	6
	63	BPA263/030	606088	BPA263/100	606093	BPA263/300	606103	6
	80	BPA280/030	606089	BPA280/100	606094	BPA280/300	606104	6
	100	BPA2100/030	606090	BPA2100/100	606095	BPA2100/300	606105	6
	500mA		1000mA					
	25	BPA225/500	606111	BPA225/1000	606121		3	
	40	BPA240/500	606112	BPA240/1000	606122		3	
	63	BPA263/500	606113	BPA263/1000	606123		3	
	80	BPA280/500	606114	BPA280/1000	606124		3	
	100	BPA2100/500	606115	BPA2100/1000	606125		3	
4P	30mA		100mA		300mA			
	25	BPA425/030	606163	BPA425/100	606168	BPA425/300	606178	6
	40	BPA440/030	606164	BPA440/100	606169	BPA440/300	606179	6
	63	BPA463/030	606165	BPA463/100	606170	BPA463/300	606180	6
	80	BPA480/030	606166	BPA480/100	606171	BPA480/300	606181	6
	100	BPA4100/030	606167	BPA4100/100	606172	BPA4100/300	606182	6
	500mA		1000mA					
	25	BPA425/500	606188	BPA425/1000	606198		3	
	40	BPA440/500	606189	BPA440/1000	606199		3	
	63	BPA463/500	606190	BPA463/1000	606200		3	
	80	BPA480/500	606191	BPA480/1000	606201		3	
	100	BPA4100/500	606192	BPA4100/1000	606202		3	



Series BP - Type S  



In (A)	100mA		300mA		500mA		1000mA		Pack.	Ref. no.	Pack.
	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no.			
2P	25	BPS225/100	606096	BPS225/300	606106	BPS225/500	606116	BPS225/1000	606126	6	
	40	BPS240/100	606097	BPS240/300	606107	BPS240/500	606117	BPS240/1000	606127	6	
	63	BPS263/100	606098	BPS263/300	606108	BPS263/500	606118	BPS263/1000	606128	6	
	80	BPS280/100	606099	BPS280/300	606109	BPS280/500	606119	BPS280/1000	606129	6	
	100	BPS2100/100	606100	BPS2100/300	606110	BPS2100/500	606120	BPS2100/1000	606130	6	
4P	25	BPS425/100	606173	BPS425/300	606183	BPS425/500	606193	BPS425/1000	606203	3	
	40	BPS440/100	606174	BPS440/300	606184	BPS440/500	606194	BPS440/1000	606204	3	
	63	BPS463/100	606175	BPS463/300	606185	BPS463/500	606195	BPS463/1000	606205	3	
	80	BPS480/100	606176	BPS480/300	606186	BPS480/500	606196	BPS480/1000	606206	3	
	100	BPS4100/100	606177	BPS4100/300	606187	BPS4100/500	606197	BPS4100/1000	606207	3	



People protection

A

B

C

D

E

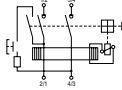
F

G

X

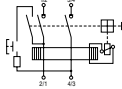


Series BP - Type Ai 

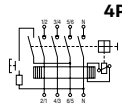


In (A)	30mA		100mA		Pack.	
	Cat. no.	Ref. no.	Cat. no.	Ref. no.		
2P	25	BPAi225/030	606331	BPAi225/300	606347	6
	40	BPAi240/030	606332	BPAi240/300	606348	6
	63	BPAi263/030	606333	BPAi263/300	606349	6
4P	25	BPAi425/030	606334	BPAi425/300	606350	3
	40	BPAi440/030	606335	BPAi440/300	606351	3
	63	BPAi463/030	606336	BPAi463/300	606352	3

Series BP - Type Si  



In (A)	300mA		Pack.	
	Cat. no.	Ref. no.		
2P	25	BPSi225/300	606337	6
	40	BPSi240/300	606338	6
	63	BPSi263/300	606339	6
	80	BPSi280/300	606340	6
	100	BPSi2100/300	606341	6
4P	25	BPSi425/300	606342	3
	40	BPSi440/300	606343	3
	63	BPSi463/300	606344	3
	80	BPSi480/300	606345	3
	100	BPSi4100/300	606346	3



Series BP

A

B

C

D

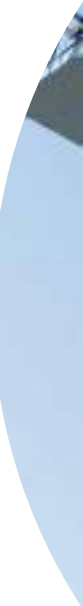
E

F

G

X

PROTECT



Type B applications



A

B

C

D

E

F

G

X

Industrial

Controllers and variable speed drives | Battery chargers and inverters | Frequency converters | Photovoltaic systems, a.c side | Charging stations for electric vehicles

| **Installation in general where we can expect d.c. smooth direct residual currents** |

Variable speed machine tools | UPS, Computer Data Centers |

Elevator controls | Cranes of all kinds | Test set-ups in laboratories

| Backed-up power supplies | Electronic equipment on construction sites |



Series FP

EN 62423/ VDE 0664-40

Type B



People protection



Applications



Performance

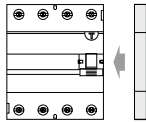
Rated current I_n	(A)	16, 25, 40, 63, 80
Residual current I_Δ	(mA)	30, 100, 300, 500
Rated voltage AC U_n	(V)	2P: 230 4P: 230/400
Minimum operating voltage U_{Bmin}	30mA (V)	2P: 176 4P: 287
	100,300,500mA (V)	2P: 117 4P: 205
Mechanical/electrical endurance		20000/10000
Tropicalisation acc. to EN/IEC 60068-2-28/2-30 and DIN 40046		95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	1.5-50
Poles		2P, 4P
Nuisance tripping resistance		3000A 8/20 μs
Ambient temperature	(°C)	-25 up to 40
Weight	(g)	2P: 340 4P: 420

Approval / Marking

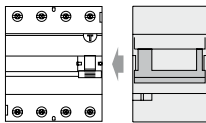


Add-on devices

FP Auxiliaries⁽¹⁾



Motor operator⁽²⁾



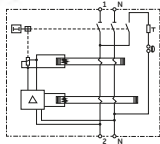
(1) Series CA - Tele L - Tele U - PBS - TeleREC Plus
(2) Only at right side end of the extreme pin busbar

Short-circuit capacity

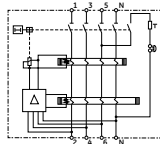
AC acc. to EN/IEC 61009-1	
Making and breaking capacity	I _m = 500A from 16A up to 40A I _m = 10I _n from 63 up to 80A
Residual making and breaking capacity	I _{Δm} = 50I _n from 16A up to 40A I _{Δm} = 10I _n from 63A up to 80A
Short-circuit capacity	I _{nc} = 10000A at 230/400V fuse 80A gG



Series FP - Type B



In (A)	30mA		100mA		300mA		500mA		Pack.	
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.		
2P	16	FPB 2 16/030	565353	FPB 2 16/100	565354	FPB 2 16/300	565355	FPB 2 16/500	565356	3
	25	FPB 2 25/030	565357	FPB 2 25/100	565358	FPB 2 25/300	565359	FPB 2 25/500	565360	3
	40	FPB 2 40/030	565361	FPB 2 40/100	565362	FPB 2 40/300	565363	FPB 2 40/500	565364	3
	63	FPB 2 63/030	565365	FPB 2 63/100	565366	FPB 2 63/300	565367	FPB 2 63/500	565368	3
	80	FPB 2 80/030	565369	FPB 2 80/100	565370	FPB 2 80/300	565371	FPB 2 80/500	565372	3



4P	16	FPB 4 16/030	565333	FPB 4 16/100	565334	FPB 4 16/300	565335	FPB 4 16/500	565336	3
	25	FPB 4 25/030	565337	FPB 4 25/100	565338	FPB 4 25/300	565339	FPB 4 25/500	565340	3
	40	FPB 4 40/030	565341	FPB 4 40/100	565342	FPB 4 40/300	565343	FPB 4 40/500	565344	3
	63	FPB 4 63/030	565345	FPB 4 63/100	565346	FPB 4 63/300	565347	FPB 4 63/500	565348	3
	80	FPB 4 80/030	565349	FPB 4 80/100	565350	FPB 4 80/300	565351	FPB 4 80/500	565352	3

Series FP

A

B

C

D

E

F

G

X

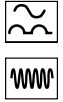
New



Series FP

**EN/IEC EN 62423/
VDE 0664-40**

Type F



People protection



Applications

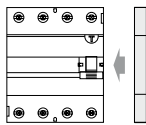


Marking

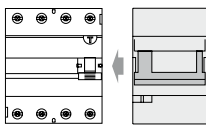


Add-on devices

Auxiliaries⁽¹⁾



Motor operator⁽²⁾



(1) Series CA - Tele L - Tele U - PBS - TeleREC Plus
(2) Only at right side end of the extreme pin busbar

Performance

Rated current I_n	(A)	25, 40, 63, 80
Residual current I_Δ	(mA)	30
Rated voltage AC U_n	(V)	2P: 240 4P: 240/415
Minimum operating voltage U_{Bmin}	30mA (V)	2P: 176 4P: 306
Mechanical/electrical endurance		20000/10000
Tropicalisation acc. to EN/IEC 60068-2-28/2-30 and DIN 40046		95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	1,5-50 (1,5-50)
Poles		2P, 4P (4)
Nuisance tripping resistance		3000A 8/20 μs
Ambient temperature	(°C)	-25 up to 40
Weight	(g)	2P: 220 4P: 385

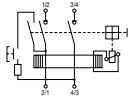
Short-circuit capacity

AC acc. to EN/IEC 61009-1

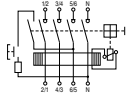
Making and breaking capacity	I _m = 500A from 16A up to 40A I _m = 10I _n from 63 up to 80A
Residual making and breaking capacity	I _{Δm} = 500I _n from 16A up to 80A I _{Δm} = 10I _n from 63A up to 80A
Short-circuit capacity	I _{nc} = 10000A at 240/415V (230V/400V) fuse 80A gG



Series FP - Type F

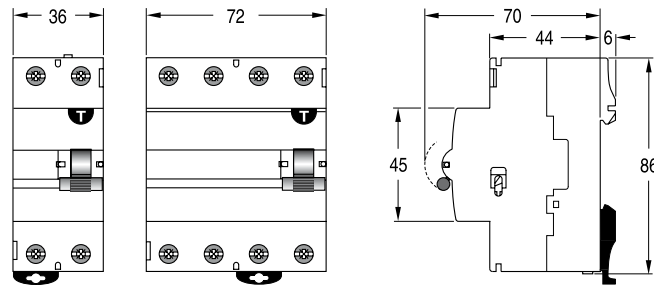


		30mA		
In (A)	Cat. No.	Ref. No.		Pack.
2P	25	FPF 2 25/030	565373	6
	40	FPF 2 40/030	565374	6
	63	FPF 2 63/030	565375	6
	80	FPF 2 80/030	565376	6



4P	25	FPF 4 25/030	565377	3
	40	FPF 4 40/030	565378	3
	63	FPF 4 63/030	565379	3
	80	FPF 4 80/030	565380	3

Dimensions



Series FP

A

B

C

D

E

F

G

X

New



RCBOs - Residual Current Circuit Breakers with Overcurrent Protection

Series DM60

People protection



EN /IEC 61009-1

6000

3

Type AC



Type A



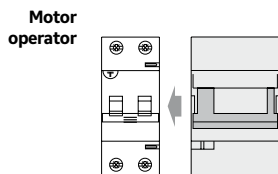
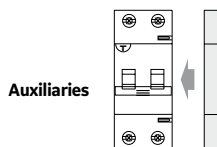
Applications



Approvals / Marking



Add-on devices



Performance

Thermal setting I_n	(A)	4 to 40
Residual current I_{Δn}	(mA)	10, 30, 100, 300
Tripping characteristic		B-C
Rated voltage AC U_n	(V)	230
Minimum operating voltage U_{Bmin}(1)	(V)	117
Mechanical/electrical endurance		20000/10000
Tropicalisation acc. to EN/IEC 60068-2-28/2-30 and DIN 40046		95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	Top terminal: 16-25 Bottom terminal: 25-35
Poles		1P+N
Nuisance tripping resistance		250A 8/20μs; 200A 0.5μs - 100kHz
Ambient temperature	(°C)	Type AC: -5 up to 40 Type A: -25 up to 40
Weight	(g)	250

Short-circuit capacity

Acc. to EN/IEC 61009-1 and EN/IEC 60898-1		
Residual making and breaking capacity		I _{Δm} = 6000A
Energy limiting class		3
Short-circuit capacity		I _{cn} = 6000A at 240V

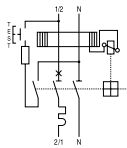
Acc. to EN/IEC 60947-2		
Residual making and breaking capacity		I _{cu} = 10000A at 240V

(1) Minimum service voltage for 30mA: 2P=176V / 4P=287V

Series DM60 - Type AC

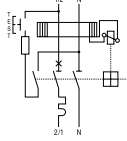


**Characteristic B
1P+N**



In (A)	10mA		30mA		100mA		300mA	
	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no. Pack.
6	DM60B06/010	609802	DM60B06/030	609807	DM60B06/100	609815	DM60B06/300	609823 6
10	DM60B10/010	609803	DM60B10/030	609808	DM60B10/100	609816	DM60B10/300	609824 6
13	DM60B13/010	609804	DM60B13/030	609809	DM60B13/100	609817	DM60B13/300	609825 6
16	DM60B16/010	609805	DM60B16/030	609810	DM60B16/100	609818	DM60B16/300	609826 6
20	DM60B20/010	609806	DM60B20/030	609811	DM60B20/100	609819	DM60B20/300	609827 6
25	-	-	DM60B25/030	609812	DM60B25/100	609820	DM60B25/300	609828 6
32	-	-	DM60B32/030	609813	DM60B32/100	609821	DM60B32/300	609829 6
40	-	-	DM60B40/030	609814	DM60B40/100	609822	DM60B40/300	609830 6

**Characteristic C
1P+N**

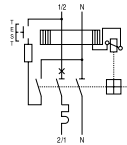


4	DM60C04/010	609831	DM60C04/030	609837	DM60C04/100	609846	DM60C04/300	609855 6
6	DM60C06/010	609832	DM60C06/030	609838	DM60C06/100	609847	DM60C06/300	609856 6
10	DM60C10/010	609833	DM60C10/030	609839	DM60C10/100	609848	DM60C10/300	609857 6
13	DM60C13/010	609834	DM60C13/030	609840	DM60C13/100	609849	DM60C13/300	609858 6
16	DM60C16/010	609835	DM60C16/030	609841	DM60C16/100	609850	DM60C16/300	609859 6
20	DM60C20/010	609836	DM60C20/030	609842	DM60C20/100	609851	DM60C20/300	609860 6
25	-	-	DM60C25/030	609843	DM60C25/100	609852	DM60C25/300	609861 6
32	-	-	DM60C32/030	609844	DM60C32/100	609853	DM60C32/300	609862 6
40	-	-	DM60C40/030	609845	DM60C40/100	609854	DM60C40/300	609863 6

Series DM60 - Type A

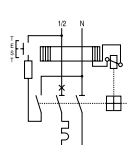


**Characteristic B
1P+N**



In (A)	10mA		30mA		100mA		300mA	
	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no. Pack.
6	DMA60B06/010	609740	DMA60B06/030	609745	DMA60B06/100	609753	DMA60B06/300	609761 6
10	DMA60B10/010	609741	DMA60B10/030	609746	DMA60B10/100	609754	DMA60B10/300	609762 6
13	DMA60B13/010	609742	DMA60B13/030	609747	DMA60B13/100	609755	DMA60B13/300	609763 6
16	DMA60B16/010	609743	DMA60B16/030	609748	DMA60B16/100	609756	DMA60B16/300	609764 6
20	DMA60B20/010	609744	DMA60B20/030	609749	DMA60B20/100	609757	DMA60B20/300	609765 6
25	-	-	DMA60B25/030	609750	DMA60B25/100	609758	DMA60B25/300	609766 6
32	-	-	DMA60B32/030	609751	DMA60B32/100	609759	DMA60B32/300	609767 6
40	-	-	DMA60B40/030	609752	DMA60B40/100	609760	DMA60B40/300	609768 6

**Characteristic C
1P+N**



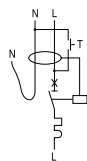
4	DMA60C04/010	609769	DMA60C04/030	609775	DMA60C04/100	609784	DMA60C04/300	609793 6
6	DMA60C06/010	609770	DMA60C06/030	609776	DMA60C06/100	609785	DMA60C06/300	609794 6
10	DMA60C10/010	609771	DMA60C10/030	609777	DMA60C10/100	609786	DMA60C10/300	609795 6
13	DMA60C13/010	609772	DMA60C13/030	609778	DMA60C13/100	609787	DMA60C13/300	609796 6
16	DMA60C16/010	609773	DMA60C16/030	609779	DMA60C16/100	609788	DMA60C16/300	609797 6
20	DMA60C20/010	609774	DMA60C20/030	609780	DMA60C20/100	609789	DMA60C20/300	609798 6
25	-	-	DMA60C25/030	609781	DMA60C25/100	609790	DMA60C25/300	609799 6
32	-	-	DMA60C32/030	609782	DMA60C32/100	609791	DMA60C32/300	609800 6
40	-	-	DMA60C40/030	609783	DMA60C40/100	609792	DMA60C40/300	609801 6

Series DMT60 - Type AC



(1)

**Characteristic C
Unswitched neutral
1P+N**



In (A)	30mA		Pack.
	Cat. no.	Ref. no.	
4	DMT60C04/030	609280	6
6	DMT60C06/030	609281	6
10	DMT60C10/030	609282	6
13	DMT60C13/030	609283	6
16	DMT60C16/030	609284	6
20	DMT60C20/030	609285	6
25	DMT60C25/030	609286	6
32	DMT60C32/030	609287	6
40	DMT60C40/030	609288	6

(1) Please consult us for blue neutral flying lead

Series DM60

A

B

C

D

E

F

G

X



RCBOs - Residual Current Circuit Breakers with Overcurrent Protection

Series DM100

EN /IEC 61009-1

10000
3

Type AC



Type A



People protection

Applications



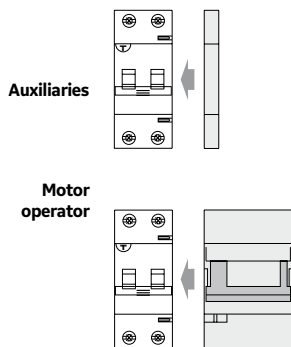
Performance

Thermal setting I_n	(A)	4 to 40
Residual current I_{Δn}	(mA)	10, 30, 100, 300
Tripping characteristic		B-C
Rated voltage AC U_n	(V)	230
Minimum operating voltage U_{Bmin}⁽¹⁾	(V)	117
Mechanical/electrical endurance		20000/10000
Tropicalisation acc. to EN/IEC 60068-2-28/2-30 and DIN 40046		95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	Top terminal: 16-25 Bottom terminal: 25-35
Poles		1P+N
Nuisance tripping resistance		250A 8/20μs; 200A 0.5μs - 100kHz
Ambient temperature	(°C)	Type AC: -5 up to 40 Type A: -25 up to 40
Weight	(g)	250

Approvals / Marking



Add-on devices



Short-circuit capacity

Acc. to EN/IEC 61009-1 and EN/IEC 60898-1	
Residual making and breaking capacity	I _{Δm} = 6000A
Energy limiting class	3
Short-circuit capacity	I _{cn} = 10000A at 240V

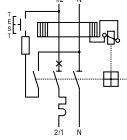
Acc. to EN/IEC 60947-2	
Residual making and breaking capacity	I _{cu} = 15000A at 240V

(1) Minimum service voltage for 30mA: 2P=176V / 4P=287V

Series DM100 - Type AC

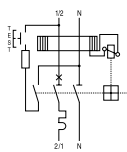


**Characteristic B
1P+N**



In (A)	10mA		30mA		100mA		300mA		
	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no. Pack.	
6	DM100B06/010	609926	DM100B06/030	609931	DM100B06/100	609939	DM100B06/300	609947	6
10	DM100B10/010	609927	DM100B10/030	609932	DM100B10/100	609940	DM100B10/300	609948	6
13	DM100B13/010	609928	DM100B13/030	609933	DM100B13/100	609941	DM100B13/300	609949	6
16	DM100B16/010	609929	DM100B16/030	609934	DM100B16/100	609942	DM100B16/300	609950	6
20	DM100B20/010	609930	DM100B20/030	609935	DM100B20/100	609943	DM100B20/300	609951	6
25	-	-	DM100B25/030	609936	DM100B25/100	609944	DM100B25/300	609952	6
32	-	-	DM100B32/030	609937	DM100B32/100	609945	DM100B32/300	609953	6
40	-	-	DM100B40/030	609938	DM100B40/100	609946	DM100B40/300	609954	6

**Characteristic C
1P+N**

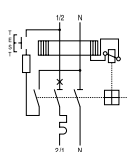


4	DM100C04/010	609955	DM100C04/030	609961	DM100C04/100	609970	DM100C04/300	609979	6
6	DM100C06/010	609956	DM100C06/030	609962	DM100C06/100	609971	DM100C06/300	609980	6
10	DM100C10/010	609957	DM100C10/030	609963	DM100C10/100	609972	DM100C10/300	609981	6
13	DM100C13/010	609958	DM100C13/030	609964	DM100C13/100	609973	DM100C13/300	609982	6
16	DM100C16/010	609959	DM100C16/030	609965	DM100C16/100	609974	DM100C16/300	609983	6
20	DM100C20/010	609960	DM100C20/030	609966	DM100C20/100	609975	DM100C20/300	609984	6
25	-	-	DM100C25/030	609967	DM100C25/100	609976	DM100C25/300	609985	6
32	-	-	DM100C32/030	609968	DM100C32/100	609977	DM100C32/300	609986	6
40	-	-	DM100C40/030	609969	DM100C40/100	609978	DM100C40/300	609987	6

Series DM100 - Type A

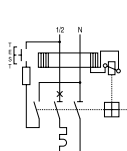


**Characteristic B
1P+N**



In (A)	10mA		30mA		100mA		300mA		
	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no. Pack.	
6	DMA100B06/010	609864	DMA100B06/030	609869	DMA100B06/100	609877	DMA100B06/300	609885	6
10	DMA100B10/010	609865	DMA100B10/030	609870	DMA100B10/100	609878	DMA100B10/300	609886	6
13	DMA100B13/010	609866	DMA100B13/030	609871	DMA100B13/100	609879	DMA100B13/300	609887	6
16	DMA100B16/010	609867	DMA100B16/030	609872	DMA100B16/100	609880	DMA100B16/300	609888	6
20	DMA100B20/010	609868	DMA100B20/030	609873	DMA100B20/100	609881	DMA100B20/300	609889	6
25	-	-	DMA100B25/030	609874	DMA100B25/100	609882	DMA100B25/300	609890	6
32	-	-	DMA100B32/030	609875	DMA100B32/100	609883	DMA100B32/300	609891	6
40	-	-	DMA100B40/030	609876	DMA100B40/100	609884	DMA100B40/300	609892	6

**Characteristic C
1P+N**



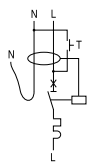
4	DMA100C04/010	609893	DMA100C04/030	609899	DMA100C04/100	609908	DMA100C04/300	609917	6
6	DMA100C06/010	609894	DMA100C06/030	609900	DMA100C06/100	609909	DMA100C06/300	609918	6
10	DMA100C10/010	609895	DMA100C10/030	609901	DMA100C10/100	609910	DMA100C10/300	609919	6
13	DMA100C13/010	609896	DMA100C13/030	609902	DMA100C13/100	609911	DMA100C13/300	609920	6
16	DMA100C16/010	609897	DMA100C16/030	609903	DMA100C16/100	609912	DMA100C16/300	609921	6
20	DMA100C20/010	609898	DMA100C20/030	609904	DMA100C20/100	609913	DMA100C20/300	609922	6
25	-	-	DMA100C25/030	609905	DMA100C25/100	609914	DMA100C25/300	609923	6
32	-	-	DMA100C32/030	609906	DMA100C32/100	609915	DMA100C32/300	609924	6
40	-	-	DMA100C40/030	609907	DMA100C40/100	609916	DMA100C40/300	609925	6

Series DM100 - Type AC



(1)

**Characteristic C
Unswitched neutral
1P+N**



In (A)	30mA		Pack.
	Cat. no.	Ref. no.	
4	DMT100C04/030	609289	6
6	DMT100C06/030	609290	6
10	DMT100C10/030	609291	6
13	DMT100C13/030	609292	6
16	DMT100C16/030	609293	6
20	DMT100C20/030	609294	6
25	DMT100C25/030	609295	6
32	DMT100C32/030	609296	6
40	DMT100C40/030	609297	6

(1) Please consult us for blue neutral flying lead



Diff-o-Click

EN /IEC 61009-1

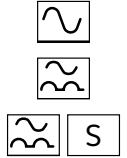
Type AC

Type A

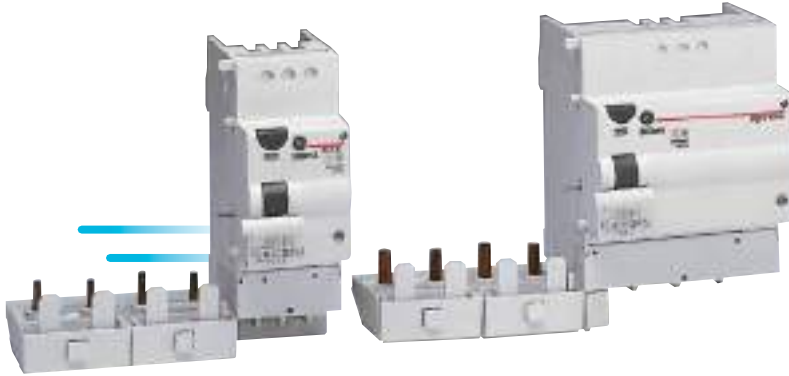
Type S

Type Ai on demand

Type ASI on demand



People protection



Applications



Approvals / Marking



Add-on devices

Integrated auxiliary contact on demand.

Performance

Thermal setting In	(A) 32, 63
Residual current IΔn	(mA) 30, 100, 300, 500, 1000
Rated voltage AC Un	(V) 2P: 240/415 3P: 415 4P: 415
Minimum operating voltage UBmin⁽¹⁾	(V) 2P: 205 3P: 205 4P: 205
Mechanical/electrical endurance	20000/10000
Tropicalisation acc. to EN/IEC 60068-2/3 and DIN 40046	95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) 2P 32 & 63A: 25-35 3P 32 & 63A: 25-35 4P 2 mod. 32A: 16 4P 32 & 63A 4 mod.: 25-35
Poles	2P, 3P, 4P
Nuisance tripping resistance	Type A, AC: 250A 8/20μs; 200A 0.5μs - 100kHz Type S: 3000A 8/20μs
Ambient temperature	(°C) Type AC: -5 up to 55 Type A, S: -25 up to 55
Weight	(g) 2P: 250 3P: 320 4P: 340

Short-circuit capacity

Depends on the associated MCB		MCB			
		G30	G45	G60	G100
Residual making and breaking capacity	IΔm	3000	4500	6000	7500
Short-circuit capacity	Icn	3000	4500	6000	10000

(1) Minimum service voltage for 30mA: 2P= 176V / 4P= 287V

A

B

C

D

E

F

G

X

Add-on RCD - Series Diff-o-Click - Type AC

	In (A)	30mA		100mA		300mA		500mA		1000mA	
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No. Pack.
2P - 2 mod.	32	DOC 232/030	607536	DOC 232/100	607537	DOC 232/300	607538	DOC 232/500	607539	DOC 232/1000	607540 1
	63	DOC 263/030	607542	DOC 263/100	607543	DOC 263/300	607544	DOC 263/500	607545	DOC 263/1000	607546 1
3P - 2 mod. 4 mod.	32	DOC 332/030	607620	DOC 332/100	607621	DOC 332/300	607622	DOC 332/500	607623	DOC 332/1000	607624 1
	63	DOC 363/030	607626	DOC 363/100	607627	DOC 363/300	607628	DOC 363/500	607629	DOC 363/1000	607630 1
4P - 2 mod. 4 mod.	32	DOC 532/030	607722	DOC 532/100	607723	DOC 532/300	607724	DOC 532/500	607725	DOC 532/1000	607726 1
	32	DOC 432/030	607728	DOC 432/100	607729	DOC 432/300	607730	DOC 432/500	607731	DOC 432/1000	607732 1
	63	DOC 463/030	607734	DOC 463/100	607735	DOC 463/300	607736	DOC 463/500	607737	DOC 463/1000	607738 1

Note: 3P+N (unswitched) flying lead on request.

Add-on RCD - Series Diff-o-Click - Type A

	In (A)	30mA		100mA		300mA		500mA		1000mA	
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No. Pack.
2P - 2 mod.	32	DOCA 232/030	607500	DOCA 232/100	607501	DOCA 232/300	607502	DOCA 232/500	607503	DOCA 232/1000	607504 1
	63	DOCA 263/030	607506	DOCA 263/100	607507	DOCA 263/300	607508	DOCA 263/500	607509	DOCA 263/1000	607510 1
3P - 2 mod. 4 mod.	32	DOCA 332/030	607584	DOCA 332/100	607585	DOCA 332/300	607586	DOCA 332/500	607587	DOCA 332/1000	607588 1
	63	DOCA 363/030	607590	DOCA 363/100	607591	DOCA 363/300	607592	DOCA 363/500	607593	DOCA 363/1000	607594 1
4P - 2 mod. 4 mod.	32	DOCA 532/030	607668	DOCA 532/100	607670	DOCA 532/300	607669	DOCA 532/500	607671	DOCA 532/1000	607672 1
	32	DOCA 432/030	607674	DOCA 432/100	607675	DOCA 432/300	607676	DOCA 432/500	607677	DOCA 432/1000	607678 1
	63	DOCA 463/030	607680	DOCA 463/100	607681	DOCA 463/300	607682	DOCA 463/500	607683	DOCA 463/1000	607684 1

Add-on RCD - Series Diff-o-Click - Type S

	In (A)	100mA		300mA		500mA		1000mA	
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No. Pack.
2P - 2 mod.	32	DOCS 232/100	607513	DOCS 232/300	607514	DOCS 232/500	607515	DOCS 232/1000	607516 1
	63	DOCS 263/100	607519	DOCS 263/300	607520	DOCS 263/500	607521	DOCS 263/1000	607522 1
3P - 2 mod. 4 mod.	32	DOCS 332/100	607597	DOCS 332/300	607598	DOCS 332/500	607599	DOCS 332/1000	607600 1
	63	DOCS 363/100	607603	DOCS 363/300	607604	DOCS 363/500	607605	DOCS 363/1000	607606 1
4P - 2 mod. 4 mod.	32	DOCS 532/100	607687	DOCS 532/300	607688	DOCS 532/500	607689	DOCS 532/1000	607690 1
	32	DOCS 432/100	607693	DOCS 432/300	607694	DOCS 432/500	607695	DOCS 432/1000	607696 1
	63	DOCS 463/100	607699	DOCS 463/300	607700	DOCS 463/500	607701	DOCS 463/1000	607702 1

Diff-o-Click

A

B

C

D

E

F

G

X

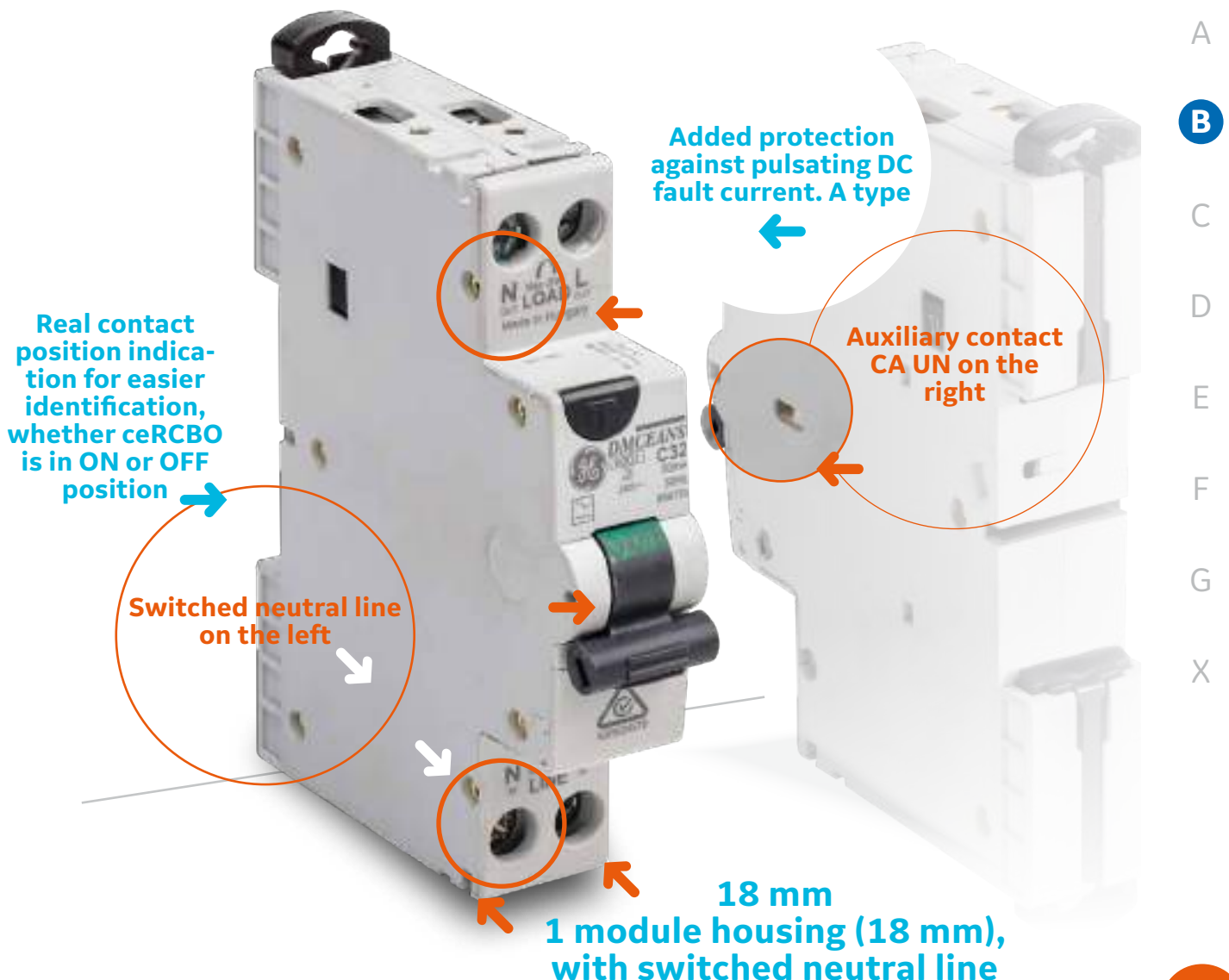


compact electronic RCBO

Switched neutral line

Combining the features of Miniature Circuit Breaker & Residual Current Circuit Breaker

- ✓ Functionally dependent on line voltage, minimum supply voltage 85V
- ✓ Energy limiting class 3:
highest energy limiting performance for optimal protection of cable insulation and maximally reducing risk of fire and other damage
- ✓ The terminals accept not only wires but also time saving PIN busbars



New



Compact electronic Residual Current Circuit Breaker with Overcurrent Protection - Neutral Switch

Serie DMCE60NS / DICE60NS

EN/ IEC 61009-1 ed3.2 (2013-09),
BS EN 61009-1:2012 and
AS/NZS 61009-1:20011

6000
3
Type AC
Type A



People protection

Applications



Performance

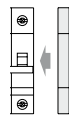
Table with 2 columns: Performance parameter and value. Includes Thermal setting In, Residual current, Tripping characteristics, Rated voltage AC Un, Minimum operating voltage UBmin, Mechanical/electrical endurance, Tropicalisation acc. to EN/IEC 60068-2-30, Terminal capacity flexible /rigid cable, Poles, Nuisance tripping resistance, Ambient temperature, Weight / mod.

Approvals / Marking

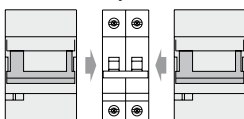


Add-on devices

Auxiliaries(1)



Motor operator(2)



(1) Series CA UN auxiliary contact right side mounted is interface to make compatible all extentions CA, CB, Tele L, Tele U, PSB
(2) Tele MP can be mounted on both sides

Short-circuit capacity

Table with 2 columns: AC acc. to EN/IEC 61009-1 parameter and value. Includes Residual making and breaking capacity, Energy limiting class, Short-circuit capacity.

Terminal capacity:
(1) Flexible copper wires from 1.5mm² up to 16mm²
(2) Rigid copper wires from 1mm² up to 25mm²
25mm² wires need be reshaped before the terminal can accept them.
(3) Switched neutral on the left

A

B

C

D

E

F

G

X





DMCE60NS - Type AC - characteristic C - Domestic application

In (A)	10mA		30mA		Pack.	
	Cat. No.	Ref. No.	Cat. No.	Ref. No.		
1P+N 	6	DMCE60C06/010NS	694769	DMCE60C06/030NS	694783	1
	10	DMCE60C10/010NS	694770	DMCE60C10/030NS	694784	1
	13	DMCE60C13/010NS	694771	DMCE60C13/030NS	694785	1
	16	DMCE60C16/010NS	694772	DMCE60C16/030NS	694786	1
	20	DMCE60C20/010NS	694773	DMCE60C20/030NS	694787	1
	25	DMCE60C25/010NS	694774	DMCE60C25/030NS	694788	1
32	DMCE60C32/010NS	694775	DMCE60C32/030NS	694789	1	

DMCE60NS - Type AC - characteristic B - Domestic application

In (A)	10mA		30mA		Pack.	
	Cat. No.	Ref. No.	Cat. No.	Ref. No.		
1P+N 	6	DMCE60B06/010NS	694791	DMCE60B06/030NS	694776	1
	10	DMCE60B10/010NS	694763	DMCE60B10/030NS	694777	1
	13	DMCE60B13/010NS	694764	DMCE60B13/030NS	694778	1
	16	DMCE60B16/010NS	694765	DMCE60B16/030NS	694779	1
	20	DMCE60B20/010NS	694766	DMCE60B20/030NS	694780	1
	25	DMCE60B25/010NS	694767	DMCE60B25/030NS	694781	1
32	DMCE60B32/010NS	694768	DMCE60B32/030NS	694782	1	

DMCE60NS - Type A - characteristic C - Domestic application

In (A)	10mA		30mA		Pack.	
	Cat. No.	Ref. No.	Cat. No.	Ref. No.		
1P+N 	6	DMCEA60C06/010NS	694685	DMCEA60C06/030NS	694699	1
	10	DMCEA60C10/010NS	694686	DMCEA60C10/030NS	694700	1
	13	DMCEA60C13/010NS	694687	DMCEA60C13/030NS	694701	1
	16	DMCEA60C16/010NS	694688	DMCEA60C16/030NS	694702	1
	20	DMCEA60C20/010NS	694689	DMCEA60C20/030NS	694703	1
	25	DMCEA60C25/010NS	694690	DMCEA60C25/030NS	694704	1
32	DMCEA60C32/010NS	694691	DMCEA60C32/030NS	694705	1	

DMCE60NS - Type A - characteristic B - Domestic application

In (A)	10mA		30mA		Pack.	
	Cat. No.	Ref. No.	Cat. No.	Ref. No.		
1P+N 	6	DMCEA60B06/010NS	694678	DMCEA60B06/030NS	694692	1
	10	DMCEA60B10/010NS	694679	DMCEA60B10/030NS	694693	1
	13	DMCEA60B13/010NS	694680	DMCEA60B13/030NS	694694	1
	16	DMCEA60B16/010NS	694681	DMCEA60B16/030NS	694695	1
	20	DMCEA60B20/010NS	694682	DMCEA60B20/030NS	694696	1
	25	DMCEA60B25/010NS	694683	DMCEA60B25/030NS	694697	1
32	DMCEA60B32/010NS	694684	DMCEA60B32/030NS	694698	1	

Serie DMCE60NS

A

B

C

D

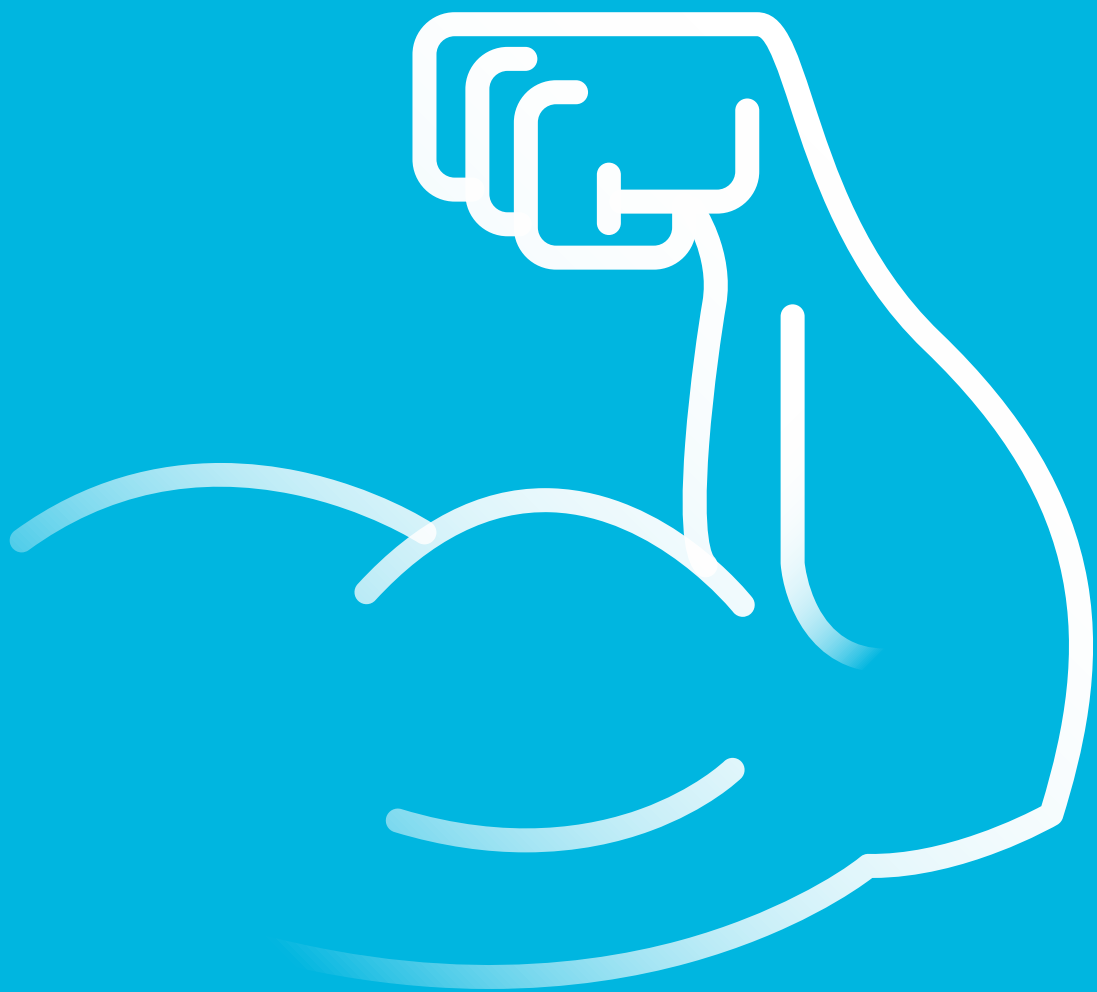
E

F

G

X

New

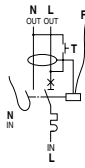




DICE60NS - Type AC - characteristic B - Industrial application



Switched neutral
1P+N

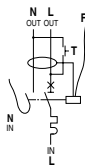


In (A)	10mA		30mA		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
6	-	-	DICE60B06/030NS	694792	1
10	-	-	DICE60B10/030NS	694793	1
16	-	-	DICE60B16/030NS	694794	1
20	-	-	DICE60B20/030NS	694795	1
25	-	-	DICE60B25/030NS	694796	1
32	-	-	DICE60B32/030NS	694797	1

DICE60NS - Type A - characteristic B - Industrial application



Switched neutral
1P+N

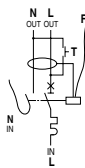


In (A)	10mA		30mA		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
6	-	-	DICEA60B06/030NS	694804	1
10	-	-	DICEA60B10/030NS	694805	1
16	-	-	DICEA60B16/030NS	694806	1
20	-	-	DICEA60B20/030NS	694807	1
25	-	-	DICEA60B25/030NS	694808	1
32	-	-	DICEA60B32/030NS	694809	1

DICE60NS - Type AC - characteristic C - Industrial application



Switched neutral
1P+N

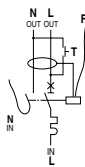


In (A)	10mA		30mA		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
6	-	-	DICE60B06/030NS	694798	1
10	-	-	DICE60B10/030NS	694798	1
16	-	-	DICE60B16/030NS	694800	1
20	-	-	DICE60B20/030NS	694801	1
25	-	-	DICE60B25/030NS	694802	1
32	-	-	DICE60B32/030NS	694803	1

DICE60NS - Type A - characteristic C - Industrial application



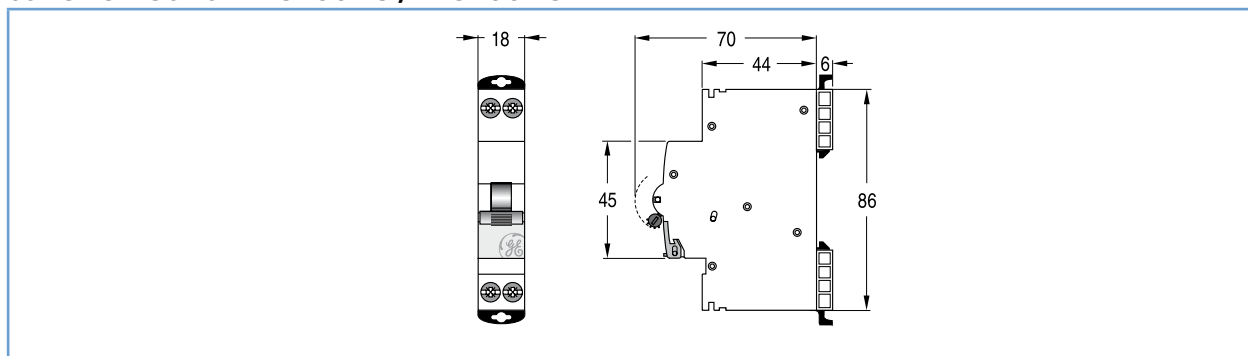
Switched neutral
1P+N



In (A)	10mA		30mA		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
6	-	-	DICEA60B06/030NS	694810	1
10	-	-	DICEA60B10/030NS	694811	1
16	-	-	DICEA60B16/030NS	694812	1
20	-	-	DICEA60B20/030NS	694813	1
25	-	-	DICEA60B25/030NS	694814	1
32	-	-	DICEA60B32/030NS	694815	1

Dimensions

ceRCBO - Serie DMCE60NS / DICE60NS



Serie DICE60NS

A

B

C

D

E

F

G

X





Compact electronic Residual Current Circuit Breaker

Series DMCE60, DICE60

People protection



EN /IEC 61009-1

6000

3

Type AC



Type A



With Overcurrent Protection functionality dependent on Line Voltage

Applications

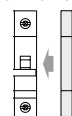


Approval / Marking

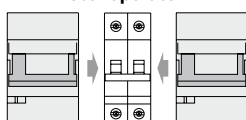


Add-on devices

Auxiliaries⁽¹⁾



Motor operator⁽²⁾



(1) Series CA UN auxiliary contact right side mounted is interface to make compatible all extensions CA, CB, Tele L, Tele U, PSB
(2) Tele MP can be mounted on both sides

Performance

Thermal setting In	(A)	6, 10, 16, 20, 25, 32
Residual current IΔn	(mA)	30
Tripping characteristic		B, C
Rated voltage AC Un	(V)	240
Minimum operating voltage UBmin	(V)	85
Mechanical/electrical endurance		20000/10000
Tropicalisation acc. to EN/IEC 60068-2-28/2-30		95% RH at 55°C
Terminals		
DICE (Industry)	Top	Phase out ⁽¹⁾ , Neutral out ⁽¹⁾ , Neutral in ⁽²⁾
	Bottom	Phase in ⁽³⁾
DMCE (Domestic)	Top	Phase out ⁽¹⁾ , Neutral out ⁽¹⁾
	Bottom	Phase in ⁽¹⁾ , Neutral in ⁽¹⁾ , 1P+N (1 module) ⁽⁴⁾
Poles		250A 8/20 μ s
Nuisance tripping resistance		250A 8/20 μ s
Ambient temperature	(°C)	-5 up to 55
Weight DMCE-DICE	(g)	125-215g

Short-circuit capacity

AC acc. to EN/IEC 61009-1

DMCE60 according to EN/IEC 61009-1

Residual making and breaking capacity	I Δ m = 3000A
Energy limiting class	3
Short-circuit capacity	Icn = 6000A at 240V

Terminal capacity:

(1) Rigid copper wires 1-25mm², flexible copper wires 1.5 - 16mm²
(2) Flying lead entering the device from top side. Cross section of 4mm² up to 25A, 6mm² up to 40A, 1200mm length.
(3) Rigid copper wires 1-35mm², Flexible copper wires 1.5 - 25mm²
(4) Unswitched neutral on the left.

A

B

C

D

E

F

G

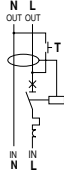
X



Series DMCE60 - Type AC - Domestic Applications



Unswitched neutral
1P+N

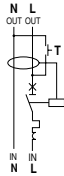


In (A)	B		C		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
6	DMCE60B06/030	694014	DMCE60C06/030	694000	1
10	DMCE60B10/030	694015	DMCE60C10/030	694001	1
16	DMCE60B16/030	694016	DMCE60C16/030	694002	1
20	DMCE60B20/030	694017	DMCE60C20/030	694003	1
25	DMCE60B25/030	694018	DMCE60C25/030	694004	1
32	DMCE60B32/030	694019	DMCE60C32/030	694005	1

Series DMCEA60 - Type A - Domestic Applications



Unswitched neutral
1P+N



In (A)	B		C		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
6	DMCEA60B06/030	694021	DMCEA60C06/030	694007	1
10	DMCEA60B10/030	694022	DMCEA60C10/030	694008	1
16	DMCEA60B16/030	694023	DMCEA60C16/030	694009	1
20	DMCEA60B20/030	694024	DMCEA60C20/030	694010	1
25	DMCEA60B25/030	694025	DMCEA60C25/030	694011	1
32	DMCEA60B32/030	694026	DMCEA60C32/030	694012	1

Series DICE60 - Type AC - Industrial Applications



Unswitched neutral
1P+N



In (A)	B		C		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
6	DICE60B06/030	694042	DICE60C06/030	694028	1
10	DICE60B10/030	694043	DICE60C10/030	694029	1
16	DICE60B16/030	694044	DICE60C16/030	694030	1
20	DICE60B20/030	694045	DICE60C20/030	694031	1
25	DICE60B25/030	694046	DICE60C25/030	694032	1
32	DICE60B32/030	694047	DICE60C32/030	694033	1

Series DICEA60 - Type A - Industrial Applications



Unswitched neutral
1P+N



In (A)	B		C		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
6	DICEA60B06/030	694049	DICEA60C06/030	694035	1
10	DICEA60B10/030	694050	DICEA60C10/030	694036	1
16	DICEA60B16/030	694051	DICEA60C16/030	694037	1
20	DICEA60B20/030	694052	DICEA60C20/030	694038	1
25	DICEA60B25/030	694053	DICEA60C25/030	694039	1
32	DICEA60B32/030	694054	DICEA60C32/030	694040	1

Series DMCE60/DICE60

A

B

C

D

E

F

G

X



eRCBOs - Residual Current Circuit Breakers with Overcurrent Protection NEUTRAL BLUE

Series DME

EN /IEC 61009-1	6000
	3
Type AC	
Type A	

Applications



For use in consumer units and distribution boards.

Marking



Performance

Thermal setting In	(A)	6, 10, 16, 20, 25, 32, 40
Residual current IΔn	(mA)	10, 30, 100
Tripping characteristic		B, C, D
Rated voltage AC Un	(V)	240
Minimum operating voltage UBmin	(V)	195
Mechanical/electrical endurance		20000/10000
Tropicalisation acc. to EN/IEC 60068-2-28/2-30		95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	Bottom terminal: 16-25
Poles		1P+N (1 module)
Nuisance tripping resistance		250A 8/20μs
Ambient temperature		-5 up to 55
Weight		235

The earth reference cable (FE white) ensures protection against earth leakage in case of loss of supply neutral.

Short-circuit capacity

AC acc. to EN/IEC 61009-1

DME60

Residual making and breaking capacity	IΔm = 6000A
Energy limiting class	3
Short-circuit capacity	Icn = 6000A at 240V

DME100

Residual making and breaking capacity	IΔm = 10000A
Energy limiting class	3
Short-circuit capacity	Icn = 10000A at 240V

A

B

C

D

E

F

G

X



Series DME60 - Type AC - Characteristic C

In (A)	30mA		100mA		Pack.		
	Cat. No.	Ref. No.	Cat. No.	Ref. No.			
6	-	-	DME60C06/030	605060	DME60C06/100	605067	1
10	-	-	DME60C10/030	605061	DME60C10/100	605068	1
16	-	-	DME60C16/030	605062	DME60C16/100	605069	1
20	-	-	DME60C20/030	605063	DME60C20/100	605070	1
25	-	-	DME60C25/030	605064	DME60C25/100	605071	1
32	-	-	DME60C32/030	605065	DME60C32/100	605072	1
40	-	-	DME60C40/030	605066	DME60C40/100	605073	1

Series DME100 - Type AC - Characteristic B

In (A)	10mA		30mA		100mA		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
6	DME100B06/010	605030	DME100B06/030	605037	DME100B06/100	605260	1
10	DME100B10/010	605031	DME100B10/030	605038	DME100B10/100	605261	1
16	DME100B16/010	605032	DME100B16/030	605039	DME100B16/100	605262	1
20	DME100B20/010	605033	DME100B20/030	605040	DME100B20/100	605263	1
25	DME100B25/010	605034	DME100B25/030	605041	DME100B25/100	605264	1
32	DME100B32/010	605035	DME100B32/030	605042	DME100B32/100	605265	1
40	DME100B40/010	605036	DME100B40/030	605043	DME100B40/100	605266	1

Series DME100 - Type AC - Characteristic C

6	DME100C06/010	605044	DME100C06/030	605051	DME100C06/100	605240	1
10	DME100C10/010	605045	DME100C10/030	605052	DME100C10/100	605241	1
16	DME100C16/010	605046	DME100C16/030	605053	DME100C16/100	605242	1
20	DME100C20/010	605047	DME100C20/030	605054	DME100C20/100	605243	1
25	DME100C25/010	605048	DME100C25/030	605055	DME100C25/100	605244	1
32	DME100C32/010	605049	DME100C32/030	605056	DME100C32/100	605245	1
40	DME100C40/010	605050	DME100C40/030	605057	DME100C40/100	605246	1

Series DME100 - Type AC - Characteristic D

6	-	-	-	-	DME100D06/100	606519	1
10	-	-	-	-	DME100D10/100	606520	1
16	-	-	-	-	DME100D16/100	606521	1
20	-	-	-	-	DME100D20/100	606522	1
25	-	-	-	-	DME100D25/100	606523	1
32	-	-	-	-	DME100D32/100	606524	1
40	-	-	-	-	DME100D40/100	606525	1

Series DMEA100 - Type A - Characteristic B

In (A)	10mA		30mA		100mA		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
6	DMEA100B06/010	605150	DMEA100B06/030	605157	-	-	1
10	DMEA100B10/010	605151	DMEA100B10/030	605158	-	-	1
16	DMEA100B16/010	605152	DMEA100B16/030	605159	-	-	1
20	DMEA100B20/010	605153	DMEA100B20/030	605160	-	-	1
25	DMEA100B25/010	605154	DMEA100B25/030	605161	-	-	1
32	DMEA100B32/010	605155	DMEA100B32/030	605162	-	-	1
40	DMEA100B40/010	605156	DMEA100B40/030	605163	-	-	1

Series DMEA100 - Type A - Characteristic C

6	DMEA100C06/010	605164	DMEA100C06/030	605171	DMEA100C06/100	606526	1
10	DMEA100C10/010	605165	DMEA100C10/030	605172	DMEA100C10/100	606527	1
16	DMEA100C16/010	605166	DMEA100C16/030	605173	DMEA100C16/100	606528	1
20	DMEA100C20/010	605167	DMEA100C20/030	605174	DMEA100C20/100	606529	1
25	DMEA100C25/010	605168	DMEA100C25/030	605175	DMEA100C25/100	606530	1
32	DMEA100C32/010	605169	DMEA100C32/030	605176	DMEA100C32/100	606531	1
40	DMEA100C40/010	605170	DMEA100C40/030	605177	DMEA100C40/100	606532	1

Series DMEA100 - Type A - Characteristic D

6	DMEA100D06/010	606505	DMEA100D06/030	606512	DMEA100D06/100	606519	1
10	DMEA100D10/010	606506	DMEA100D10/030	606513	DMEA100D10/100	606520	1
16	DMEA100D16/010	606507	DMEA100D16/030	606514	DMEA100D16/100	606521	1
20	DMEA100D20/010	606508	DMEA100D20/030	606515	DMEA100D20/100	606522	1
25	DMEA100D25/010	606509	DMEA100D25/030	606516	DMEA100D25/100	606523	1
32	DMEA100D32/010	606510	DMEA100D32/030	606517	DMEA100D32/100	606524	1
40	DMEA100D40/010	606511	DMEA100D40/030	606518	DMEA100D40/100	606525	1

Series DME

A

B

C

D

E

F

G

X



eRCBOs - Residual Current Circuit Breakers with Overcurrent Protection NEUTRAL BLACK

Series DMET

EN /IEC 61009-1	6000
	3
Type AC	
Type A	

Applications



For use in consumer units and distribution boards.

Marking



Performance

Thermal setting In	(A)	6, 10, 16, 20, 25, 32, 40
Residual current IΔn	(mA)	10, 30, 100
Tripping characteristic		B, C, D
Rated voltage AC Un	(V)	240
Minimum operating voltage UBmin	(V)	195
Mechanical/electrical endurance		20000/10000
Tropicalisation acc. to EN/IEC 60068-2-28/2-30		95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	Bottom terminal: 16-25
Poles		1P+N (1 module)
Nuisance tripping resistance		250A 8/20 μ s
Ambient temperature		-5 up to 55
Weight		235

The earth reference cable (FE white) ensures protection against earth leakage in case of loss of supply neutral.

Short-circuit capacity

AC acc. to EN/IEC 61009-1

DMET60

Residual making and breaking capacity	I Δ m = 6000A
Energy limiting class	3
Short-circuit capacity	Icn = 6000A at 240V

DMET100

Residual making and breaking capacity	I Δ m = 10000A
Energy limiting class	3
Short-circuit capacity	Icn = 10000A at 240V

A

B

C

D

E

F

G

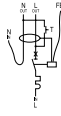
X



Series DMET60 - Type AC - Characteristic C



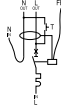
Unswitched neutral
1P+N



In (A)	10mA		30mA		100mA		300mA		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
10	-	-	DMET60C10/030	607427	-	-	-	-	1
16	-	-	DMET60C16/030	607428	-	-	-	-	1
20	-	-	DMET60C20/030	607429	-	-	-	-	1
25	-	-	DMET60C25/030	607430	-	-	-	-	1
32	-	-	DMET60C32/030	607431	-	-	-	-	1

Series DMET60 - Type A - Characteristic C

Unswitched neutral
1P+N

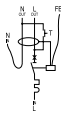


10	-	-	DMEAT60C10/030	608135	-	-	-	-	1
16	-	-	DMEAT60C16/030	608136	-	-	-	-	1
20	-	-	DMEAT60C20/030	608137	-	-	-	-	1
25	-	-	DMEAT60C25/030	608138	-	-	-	-	1
32	-	-	DMEAT60C32/030	608139	-	-	-	-	1

Series DMET100 - Type AC - Characteristic C



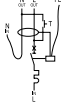
Unswitched neutral
1P+N



In (A)	10mA		30mA		100mA		300mA		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
6	DMET100C06/010	606567	DMET100C06/030	606574	DMET100C06/100	606560	DMEA100C06/300	606588	1
10	DMET100C10/010	606568	DMET100C10/030	606575	DMET100C10/100	606561	DMEA100C10/300	606589	1
16	DMET100C16/010	606569	DMET100C16/030	606576	DMET100C16/100	606562	DMEA100C16/300	606590	1
20	DMET100C20/010	606570	DMET100C20/030	606577	DMET100C20/100	606563	DMEA100C20/300	606591	1
25	DMET100C25/010	606571	DMET100C25/030	606578	DMET100C25/100	606564	DMEA100C25/300	606592	1
32	DMET100C32/010	606572	DMET100C32/030	606579	DMET100C32/100	606565	DMEA100C32/300	606593	1
40	DMET100C40/010	606573	DMET100C40/030	606580	DMET100C40/100	606566	DMEA100C40/300	606581	1

Series DMET100 - Type A - Characteristic C

Unswitched neutral
1P+N



10	-	-	DMEAT100C10/030	607285	-	-	-	-	1
16	-	-	DMEAT100C16/030	607286	-	-	-	-	1
20	-	-	DMEAT100C20/030	607287	-	-	-	-	1
25	-	-	DMEAT100C25/030	607288	-	-	-	-	1
32	-	-	DMEAT100C32/030	607289	-	-	-	-	1

Series DMET

A

B

C

D

E

F

G

X



Residual Current Circuit Breakers
Recognized UL1053

Series FPAUL

EN /IEC 61009-1

Type A



with UL approval

People protection

Applications



Performances UL

Maximum voltage AC	(V)	240
Fault current withstand	(kA)	10
UL file		E248309

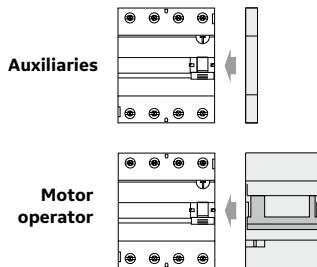
Approvals / Marking



Performances EN/IEC

Thermal setting I _n	(A)	16, 25, 40, 63
Residual current I _{Δn}	(mA)	10, 30, 100, 300, 500
Rated maximum voltage AC U _n	(V)	2P: 240 4P: 240/415
Minimum operating voltage U _{Bmin} ⁽¹⁾	(V)	2P: 117 4P: 205
Mechanical/electrical endurance		20000/10000
Tropicalisation acc. to EN/IEC 60068-2-28/2-30 and DIN 40046		95% RH at 55°C 95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	35-50
Poles		2P, 4P
Nuisance tripping resistance	Type A:	250A 8/20μs; 3000A 8/20μs
Ambient temperature	(°C)	-25 up to 40
Weight	(g)	2P: 220 4P: 385

Add-on devices



Short-circuit capacity

Acc. to EN/IEC 61008-1

Making and breaking capacity	I _m = 500A
Residual making and breaking capacity	I _{Δm} ≥ 500A from 16 up to 40A I _{Δm} = 10I _n from 63 up to 100A
Short-circuit capacity	I _{nc} = 10000A at 230/400V fuse 80A gG

(1) Minimum service voltage for 30mA: 2P=176V / 4P=287V

A

B

C

D

E

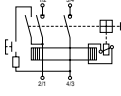
F

G

X

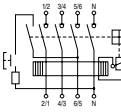


Series FPAUL - Type A



2P In (A)	10"/30mA		100mA		300mA		500mA	
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.Pack.
16	FPAUL 216/010*	608377	-	-	-	-	-	6
25	FPAUL 225/030	608378	FPAUL 225/100	608379	FPAUL 225/300	608380	FPAUL 225/500	608381 6
40	FPAUL 240/030	608382	FPAUL 240/100	608383	FPAUL 240/300	608384	FPAUL 240/500	608385 6
63	FPAUL 263/030	608386	FPAUL 263/100	608387	FPAUL 263/300	608388	FPAUL 263/500	608401 6

Series FPAUL - Type A



4P In (A)	30mA		100mA		300mA		500mA	
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.Pack.
25	FPAUL 425/030	608389	FPAUL 425/100	608390	FPAUL 425/300	608391	FPAUL 425/500	608392 3
40	FPAUL 440/030	608393	FPAUL 440/100	608394	FPAUL 440/300	608395	FPAUL 440/500	608396 3
63	FPAUL 463/030	608397	FPAUL 463/100	608398	FPAUL 463/300	608399	FPAUL 463/500	608400 3

Series FPAUL

A

B

C

D

E

F

G

X



Residual Current Circuit Breakers with Overcurrent Protection - Recognized UL1053

Series DPA100UL

People protection



EN /IEC 61009-1 **10000**
3
Type A

with UL approval

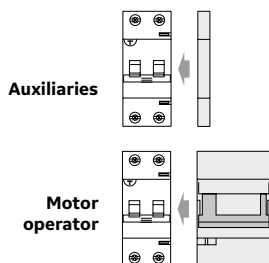
Applications



Approval / Marking



Add-on devices



Performances UL

Rated/Maximum voltage AC	(V) 240 or 277
Fault current withstand	5kA (277V), 10kA (240V)
UL file	E248309

Performances EN/IEC

Thermal setting I_n	(A) 10 to 32
Residual current I_{Δn}	(mA) 10, 30, 100, 300
Tripping characteristic	B-C
Rated voltage AC U_n	(V) 240
Minimum operating voltage U_{Bmin}⁽¹⁾	(V) 195
Mechanical/electrical endurance	20000/10000
Tropicalisation acc. to EN/IEC 60068-2-28/2-30 and DIN 40046	20000/10000 95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) Top terminal: 16-25 Bottom term.: 25-35
Poles	1P+N
Nuisance tripping resistance	250A 8/20μs; 200A 0.5μs - 100kHz
Ambient temperature	(°C) -25 up to 40
Weight	(g) 250 4P: 385

Short-circuit capacity

Acc. to EN/IEC 61009-1

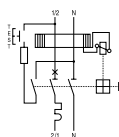
Residual making and breaking capacity	I _{Δm} = 6000A
Short-circuit capacity	I _{cn} = 5000/10000A at 230V
Energy limiting class	3

Acc. to EN/IEC 60947-2

Short-circuit capacity	cu = 15000A at 230V
-------------------------------	---------------------

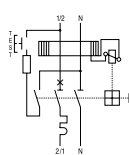
⁽¹⁾ Minimum service voltage for 30mA: 2P=176V / 4P=287V

Series DPA100 - Type A  - characteristic B



1P+N	In (A)	10mA		30mA		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	
	10	DPA100B10/010	608706	DPA100B10/030	608712	6
	13	DPA100B13/010	608707	DPA100B13/030	608713	6
	16	DPA100B16/010	608708	DPA100B16/030	608714	6
	20	DPA100B20/010	608709	DPA100B20/030	608715	6
	25	-	-	DPA100B25/030	608716	6
	32	-	-	DPA100B32/030	608717	6

Series DPA100 - Type A  - characteristic C



1P+N	In (A)	10mA		30mA		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	
	10	DPA100C10/010	608757	DPA100C10/030	608763	6
	13	DPA100C13/010	608758	DPA100C13/030	608764	6
	16	DPA100C16/010	608759	DPA100C16/030	608765	6
	20	DPA100C20/010	608760	DPA100C20/030	608766	6
	25	-	-	DPA100C25/030	608767	6
	32	-	-	DPA100C32/030	608768	6

Series DPA100UL

A

B

C

D

E

F

G

X



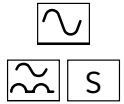
Residual Current Circuit Breakers
Screwless connection

Series FPP

EN/IEC 61008-1

Type A

Type S



People protection

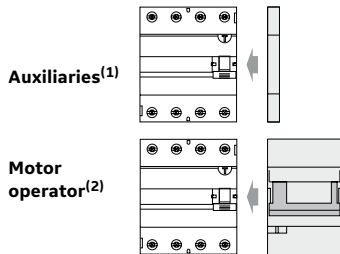
Applications



Approvals / Marking



Add-on devices



(1) Series CA - Tele L - Tele U - PBS
(2) Only at right side end of the extreme pin busbar

Performance

Thermal setting I_n	(A) 25, 40, 63
Residual current I_{Δn}	(mA) 30, 100, 300
Rated voltage AC U_n	(V) 2P: 240 4P: 415
Minimum operating voltage U_{Bmin}⁽¹⁾	(V) 2P: 117 4P: 205
Mechanical/electrical endurance	20000/10000
Tropicalisation acc. to EN/IEC 60068-2-28/2-30 and DIN 40046	95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) 35-50
Poles	2P, 4P
Nuisance tripping resistance	Type A: 250A 8/20μs Type S: 3000A 8/20μs
Ambient temperature	(°C) -25 ... +50
Weight	(g) 2P: 248 4P: 364

Short-circuit capacity

Acc. to EN/IEC 61008-1

Making and breaking capacity	I _m = 500A
Residual making and breaking capacity	I _{Δm} ≥ 500A from 16 up to 40A I _{Δm} = 10I _n from 63 up to 100A
Short-circuit capacity	I _{nc} = 10000A at 240/415V fuse 80A gG

A

B

C

D

E

F

G



X



Series FPP - Type A 



In (A)	30mA			100mA		300mA		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.		
2P	25	FPPA225/030	678359	FPPA225/100	678365	FPPA225/300	678371	6
	40	FPPA240/030	678360	FPPA240/100	678366	FPPA240/300	678372	6
	63	FPPA263/030	678361	FPPA263/100	678367	FPPA263/300	678373	6
4P	25	FPPA425/030	678362	FPPA425/100	678368	FPPA425/300	678374	6
	40	FPPA440/030	678363	FPPA440/100	678369	FPPA440/300	678375	6
	63	FPPA463/030	678364	FPPA463/100	678370	FPPA463/300	678376	6

Series FPP - Type S  



In (A)	300mA			Pack.
	Cat. No.	Ref. No.	Ref. No.	
2P	40	FPPS240/300	678377	6
	63	FPPS263/300	678378	6
4P	40	FPPS440/300	678379	3
	63	FPPS463/300	678380	3

Series FPP

A

B

C

D

E

F

G

X



Fixwell - Screwless connection

Terminal capacity

Top terminals		
Ratings 25A, 40A and 63A:		
Cage terminals		
Rigid cable (min/max)	mm ²	1.5/50
Flexible cable (min/max)	mm ²	1.5/35
Recommended torque	Nm	2.5
Maximum torque	Nm	5

Bottom terminals			Ratings 25A, 40A and 63A:		Pin busbar specifications	
Ratings 25A, 40A and 63A:		Ratings 25A, 40A and 63A:				
Cage terminals (1)		Flat plug-in terminals (2)				
Rigid cable (min/max)	mm ²	1/25	To insert GE pin busbars, or other brands under following dimensions: Length = 11.5 ± 0.2mm Width = 4 ± 0.2mm Thickness = 1.5 ± 0.05mm Corners min. radius = 0.3mm			
Flexible cable (min/max)	mm ²	0.75/16				
Recommended torque	Nm	2.5				
Maximum torque	Nm	4.5				

- (1) Bottom terminals provide a cage terminal to connect also cables to feed other rows / devices limited to rated current of the device.
 (2) Plug-in window terminals are only foreseen for pin busbars providing the incoming to several devices from the bottom side.
 Not intended for any other conductor with or without cable lugs or cable connectors.

How to mount the busbar into devices

- Mount first 2, 3 or 4 poles devices on the DIN-rail at the extreme left side of the row.
- Mount one device at the extreme right side on the DIN-rail.
- Fit the pin busbar on both devices.
- Then, mount one by one the rest of poles pulling down the grey clip previously, inserting the pin bars inside the devices and then closing the clip of every device.

Easy to dismount from DIN-rail

People protection

A

B

C

D

E

F

G

X





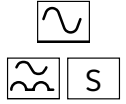
Residential earth leakage relay

Series GRDT+TOP / TOR

EN/IEC 61008-1

Type A

Type S



People protection



Applications



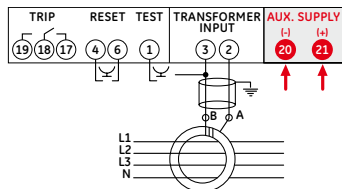
Standard

EN 60947-2

Marking



Electric diagram



Features

This residential residual current device in only 2 modules works at Idn = 30mA instantaneous.

Till 19 ranges selectable set point 30mA...30A sensibility with 7 selectable intervention time being the residual tripping characteristic A type It's available with alarm (1 relay output) and local and remote test button.

GRDT+ TOP works in connection with TOR series which allow to detect earth leakage currents towards ground caused by insulation faults on machines or plants.

Functions

Detect earth leakage current through external toroid and open the line protecting people.

Dimensions

A	B	C	D	E
35	92	113	36	56
60	105	138	36	56
110	165	198	36	56

A

B

C

D

E

F

G

X



Series GRDT+TOP



Idelta n	Intervention time	Modules	Cat. No.	Ref. No.	Pack.
30mA..30A	0-5 seconds	2	GRDT+TOP	665394	1

Series TOR



Toroids	Diameter	Cat. No.	Ref. No.	Pack.
	28mm	TOR+28	665297	1
	35mm	TOR+35	665298	1
	60mm	TOR+60	665299	1
	110mm	TOR+110	665917	1

Performance GRDT+TOP

	GRDT+TOP	TOR
Input		
Connection	Low voltage lines, with TOR toroids	-
Waveform earth leakage current	A type	-
Rated frequency	50Hz	-
Working frequency	47..63Hz	-
Setup		
Sensibility set point	Selectable by 7-position potentiometer, 3 ranges x1, x10, x100	-
Non-operating residual current	0.5 I delta n	-
Intervention time	Selectable by 7-position potentiometer	-
Adjustable range t:	0; 0.15; 0.25; 0.5; 1; 2.5; 5 seconds	-
Signaling		
Power On	Green LED ON	-
Alarm intervention	Red LED "TRIP" + relay switching	-
Ring toroid-realy connection failure	Red LED "TRIP" blinking + relay switching	-
Control		
Manual test	It verifies the residual current relay perfect working	-
Local	Front key	-
Remote	By external contact closing	-
Automatic continuous test	It verifies the integrity of the connection between realy and ring core	-
Terminal capacity		
TRIP state memorisation	Red LED "TRIP" + relay self-retaining	-
Reset	Manual or automatic, selectable by DIP switch	-
Local manual	Front key	-
Remote manual	External contact closing	-
Automatic	3 restart attempts (1 each 60 seconds)	-
Inhibit reset with persistent residual current	>50% I delta n	-
Output		
Relay	1 SPDT relay	-
Contact range	5A 250V AC	-
Auxiliary supply		
Rated value Uaux:	230V AC	-
Rated frequency:	50Hz	-
Tolerance	47-63Hz	-
Rated burden	<2.5W	-
Environmental conditions		
Operating temperature	-5...50°C	-
Number of modules	2	-

For complete technical performances, please ask for technical datasheet of each device



Upgrading our Solid Utility Companies

People protection

A

B

C

D

E

F

G

X

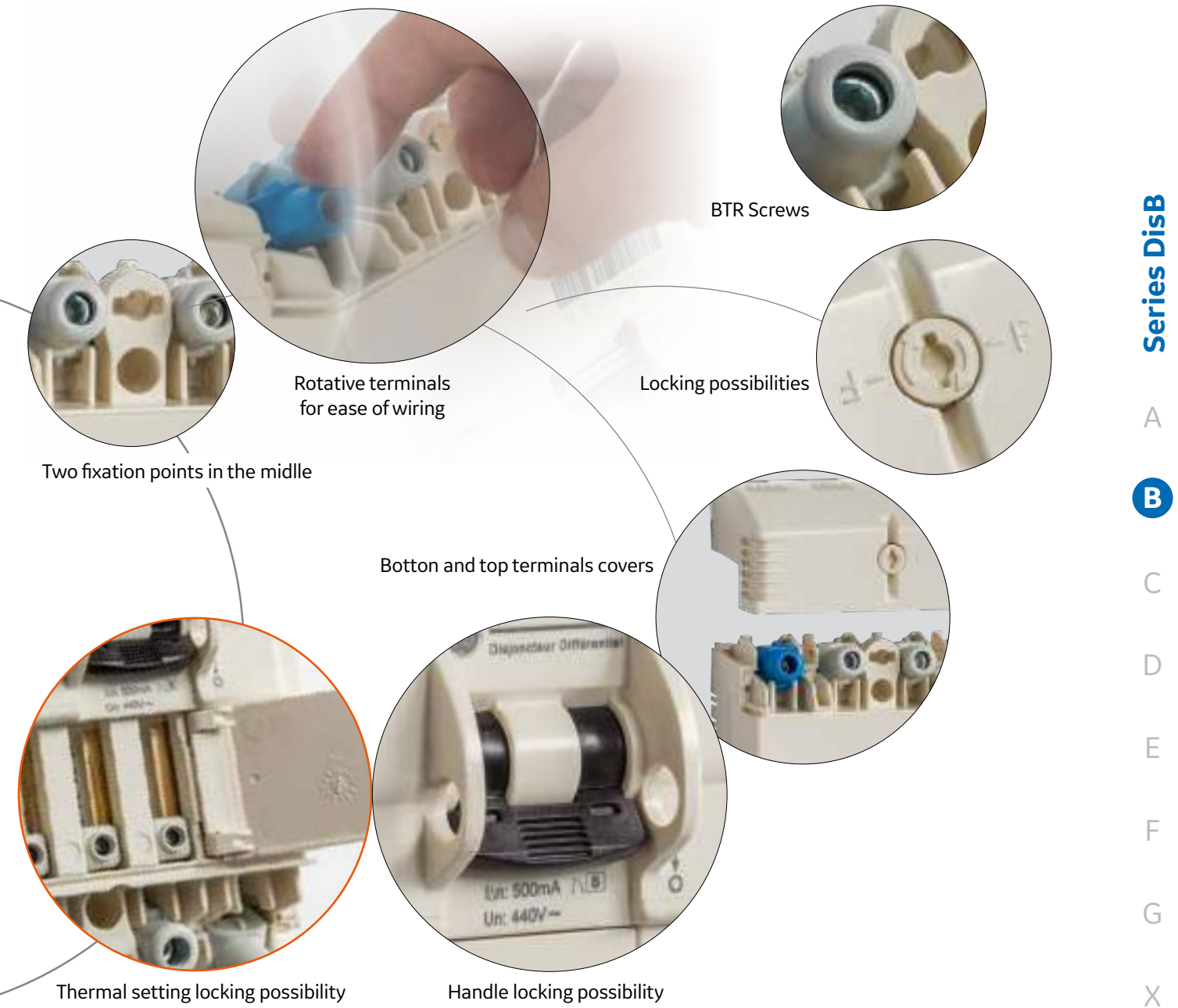
*New
DisB
ELCB*



Main Features

- ✓ User friendly
- ✓ Installation time savings
- ✓ Easier to install even in small space
- ✓ 100% safety and reliable compatible terminals
- ✓ Integrated locker area

utions for



Installation time savings

- ✓ Comply with eRDF Specs CPT M&S Spe 11015B
- ✓ Locking terminal covers possibility
- ✓ Increase reliability (BTR screws)
- ✓ Harmonized tool for installation
- ✓ Simplified wiring through rotative terminals



Earth Leakage Current Breaker

Series DisB

NF C 62-411

Instantaneous

G

Selective

S



According to ERDF CPT M&S Spe 11015B

People protection

Applications



Approval / Marking



Features



Performance

Nominal voltage Un	(V AC)	1P+N: 250 3P+N: 440
Minimum voltage UBmin	(V AC)	1P+N: 200 3P+N: 200 (Ph+N)
Poles		2P/1 Protected 4P/3 Protected
Operating temperature	(°C)	-5 to +40
Terminal capacity flexible/rigid cable	(mm ²)	35/50
Screws head type		BTR
Thermal constraint	kA ² s	40 < I ² t < 57
Max screw torque	(N.m)	8
Voltage loss per pole	(V)	< 0.3
Dielectric rigidity	kV	2.5-4
Terminals		Rotating terminals
Isolation resistance		8
Locking possibilities		YES
External mechanism		Rotating handle

According to EDF prescription from 2015

Short-circuit capacity

Ics (A)	1P+N	15/30/45	(A)	2000
		30/45/60	(A)	2400
		60/75/90	(A)	2400
3P+N	10/15/20/25/30	(A)	2000	
	30/40/50/60	(A)	2400	
I peak (A)	1P+N	15/30/45	(A)	3000
		30/45/60	(A)	3600
		60/75/90	(A)	3600
3P+N	10/15/20/25/30	(A)	3000	
	30/40/50/60	(A)	3600	



Earth Leakage Current Breaker - Instantaneous G



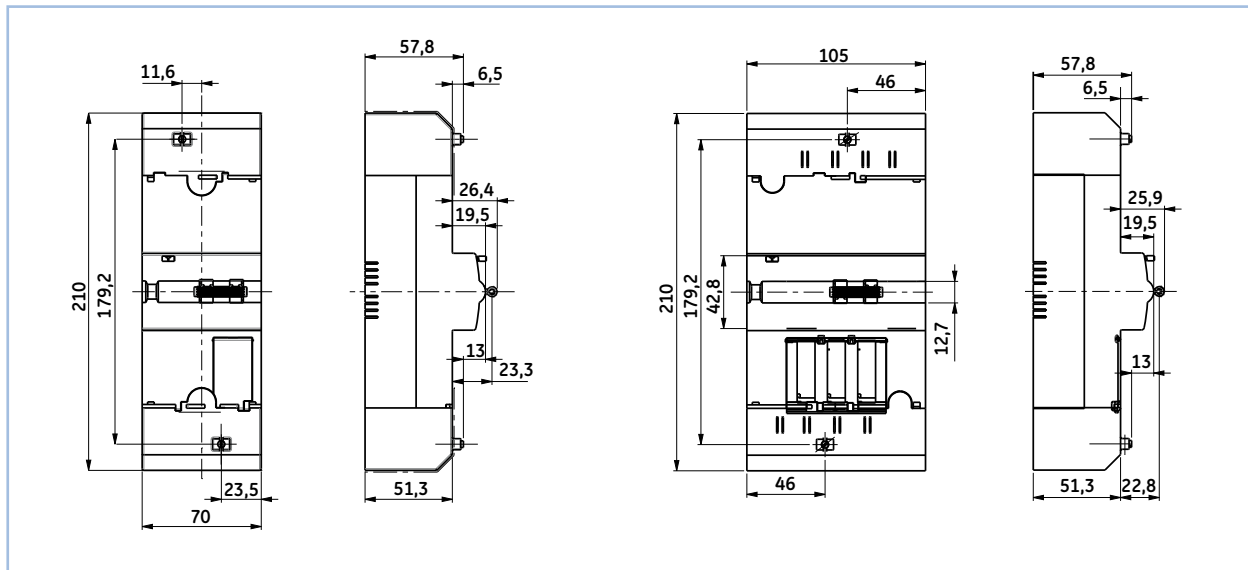
		500mA		
	In (A)	Cat. No.	Ref. No.	Pack.
1P+N	15-45	DisB2 15/45	585436	1
	30-60	DisB2 30/60	585435	1
3P+N	10-30	DisB4 10/30	585440	1
	30-60	DisB4 30/60	585439	1

Earth Leakage Current Breaker - Selective S



		500mA		
	In (A)	Cat. No.	Ref. No.	Pack.
1P+N	15-45	DisBS2 15/45	585438	1
	30-60	DisBS2 30/60	585437	1
3P+N	10-30	DisBS4 10/30	585442	1
	30-60	DisBS4 30/60	585441	1

Dimensions



Series DisB

A

B

C

D

E

F

G

X





Earth Leakage Current Breaker

Series NDP/NDF

NF C 62-411

Instantaneous

G

Selective

S

According to ERDF CPT M&S Spe 11015B

People protection



Applications



Marking



Features



Performance

Nominal voltage Un	(V AC)	1P+N: 250 3P+N: 440
Minimum voltage UBmin	(V AC)	1P+N: 200 3P+N: 200 (Ph+N)
Poles		2P/1 Protected 4P/3 Protected
Operating temperature	(°C)	-5 to +40
Terminal capacity flexible/rigid cable	(mm ²)	35/50
Screws head type		BTR
Thermal constraint	kA ² s	40 < I _{2t} < 57
Max screw torque	(N.m)	5
Voltage loss per pole	(V)	< 0.3
Dielectric rigidity	kV	2.5-4
Terminals	(MOhm)	Fix terminals
Isolation resistance		5
Locking possibilities		NO
External mechanism		Rotating handle

According to EDF prescription from 2015

According to EDF prescription before 2015

Short-circuit capacity

Ics (A)	1P+N	15/30/45	(A)	2000
		30/45/60	(A)	2400
		60/75/90	(A)	2400
3P+N	10/15/20/25/30	(A)	2000	
	30/40/50/60	(A)	2400	
I peak (A)	1P+N	15/30/45	(A)	3000
		30/45/60	(A)	3600
		60/75/90	(A)	3600
3P+N	10/15/20/25/30	(A)	3000	
	30/40/50/60	(A)	3600	



Series NDP/NDF - Earth Leakage Current Breaker - Non differential



	In (A)	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Pack.
1P+N	10-30	NDPS2 10/30	585013	-	-	1
	15-45	-	-	-	-	1
	30-60	NDPS2 30/60	585018	-	-	1
	60-90	-	-	-	-	1
3P+N	10-30	NDPS4 10/30	585029	-	-	1
	30-60	NDPS4 30/60	585035	-	-	1

Series NDP/DB - Earth Leakage Current Breaker - Instantaneous G



500mA						
	In (A)	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Pack.
1P+N	5	NDP2 5/5	585008	-	-	1
	10-30	NDP2 10/30	585014	-	-	1
	15-45	-	-	NDF2 15/45	585016	1
	30-60	NDP2 30/60	585019	NDF2 30/60	585020	1
	60-90	-	-	NDF2 60/90	585025	1
3P+N	10-30	NDP4 10/30	585030	NDF4 10/30	585031	1
	30-60	-	-	NDF4 30/60	585036	1

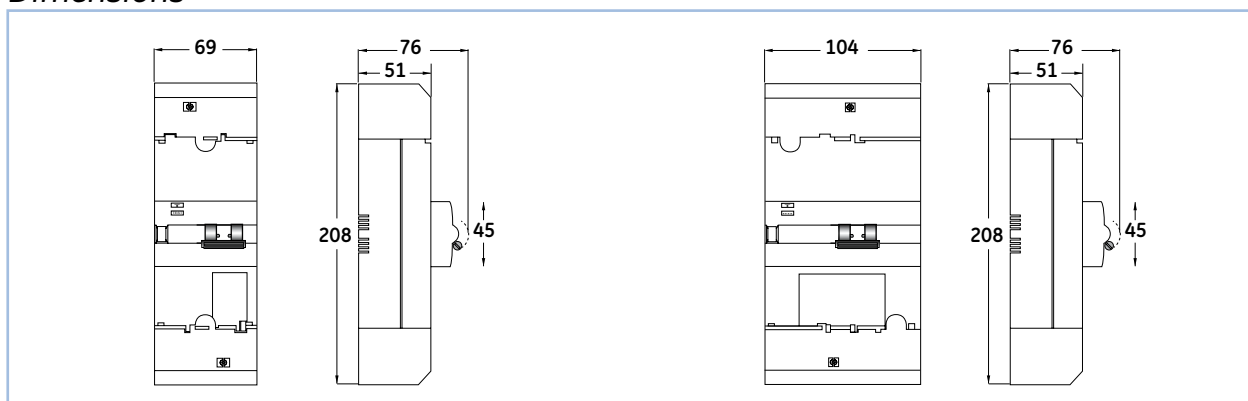
Series NDP/DB - Earth Leakage Current Breaker - Selective S



500mA						
	In (A)	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Pack.
1P+N	15-45	-	-	NDFS2 15/45	585017	1
	30-60	-	-	NDFS2 30/60	585021	1
	60-90	-	-	NDFS2 60/90	585026	1
3P+N	10-30	-	-	NDFS4 10/30	584032	1
	30-60	-	-	NDFS4 30/60	584037	1

Cat. No. and Ref. No. = French language technical information in the front of the device
 Cat. No. and Ref. No. = Portuguese language technical information in the front of the device

Dimensions



Series NDP/NDF

A

B

C

D

E

F

G

X

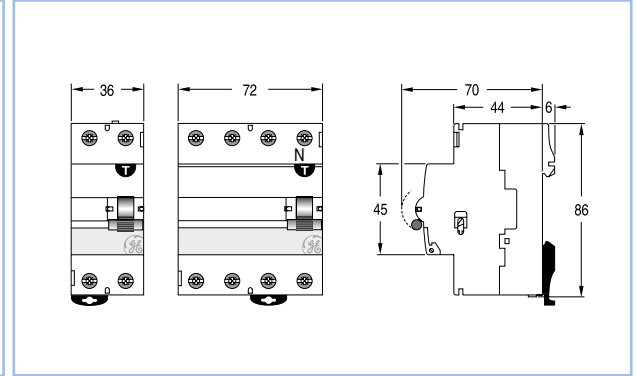
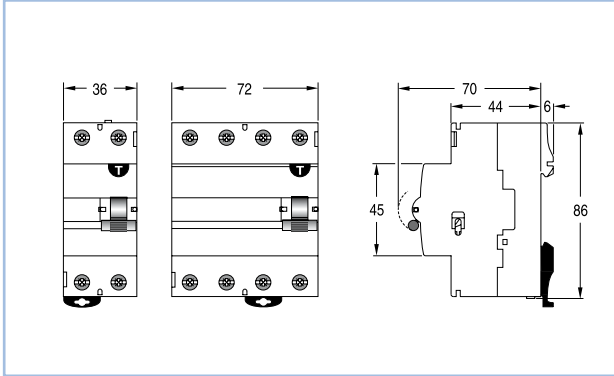




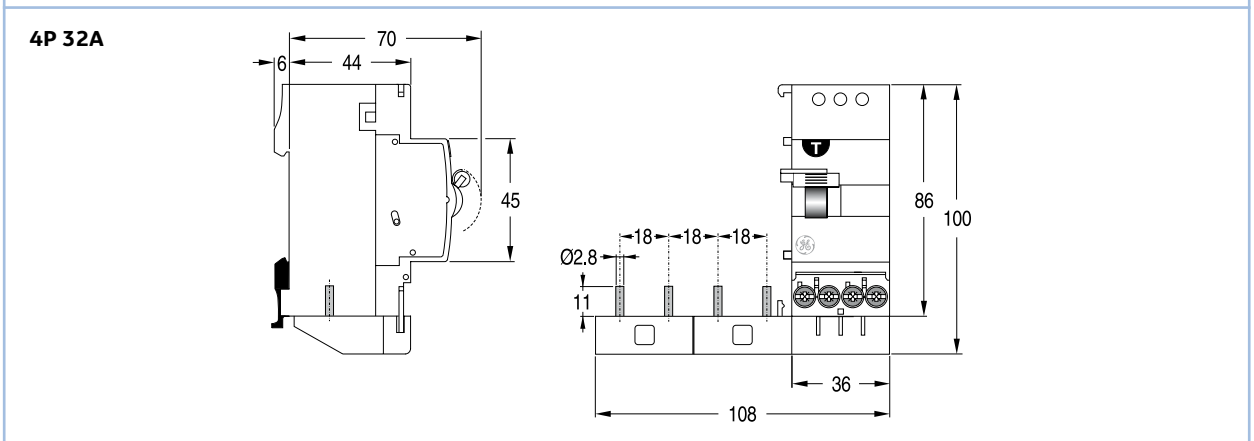
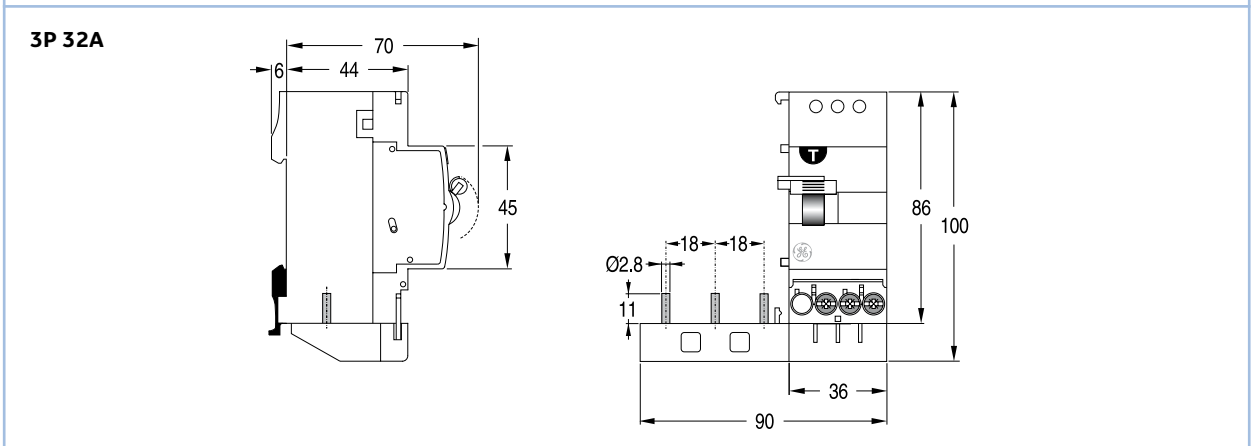
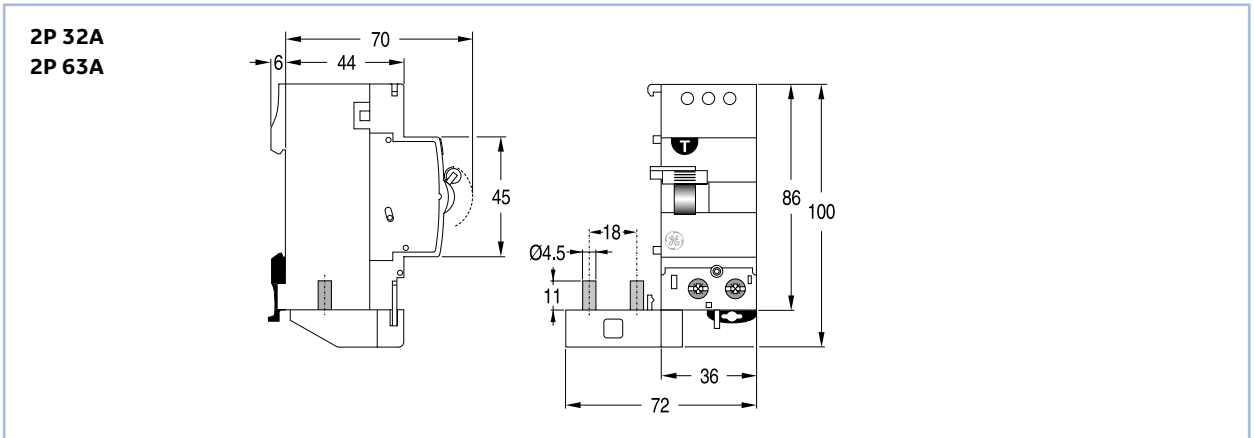
Dimensional drawings

RCCBs - Series BP/BD and FPAUL

RCCBs - Series FPP - Fixwell



Add-on RCCB - Series Diff-o-Click



People protection

A

B

C

D

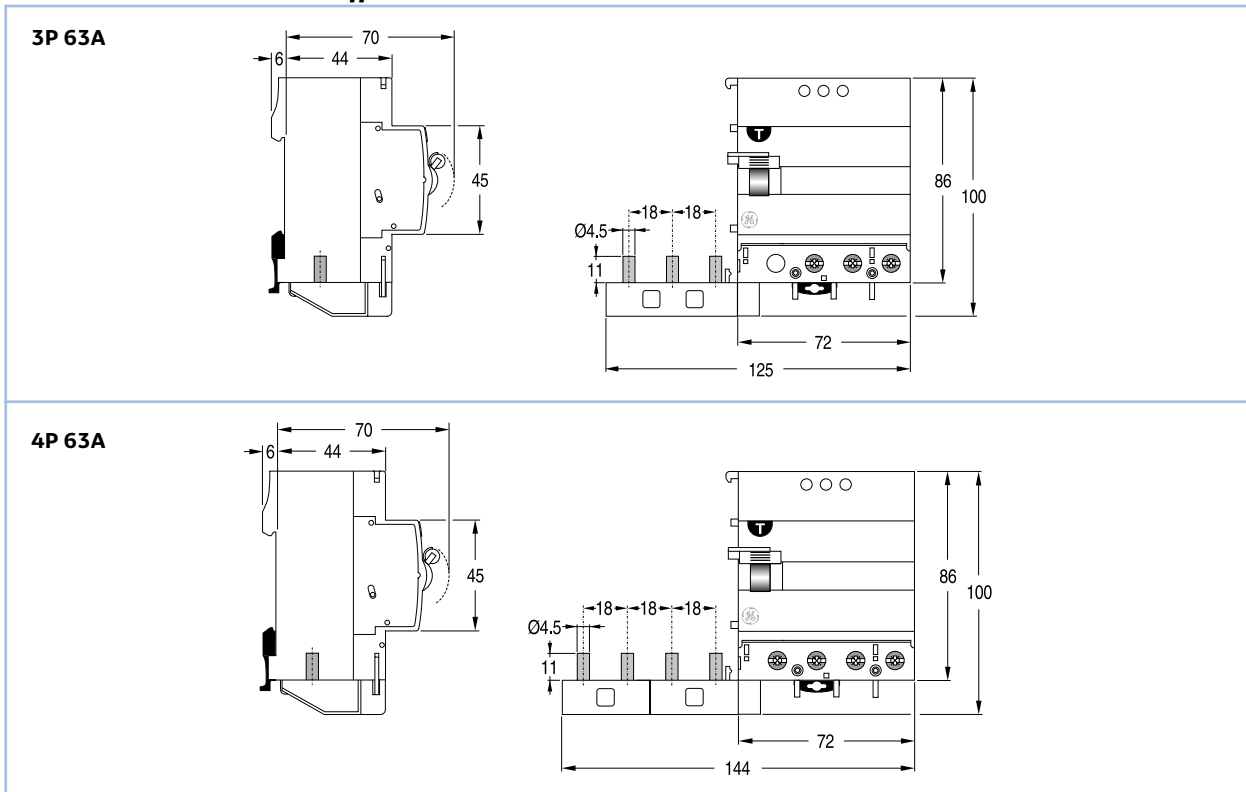
E

F

G

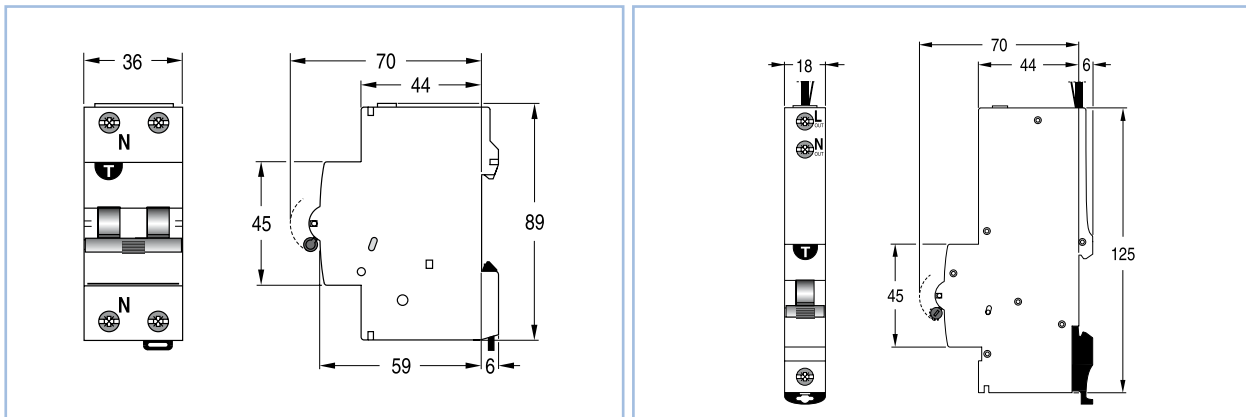
X

Add-on RCCB - Series Diff-o-Click (continued)

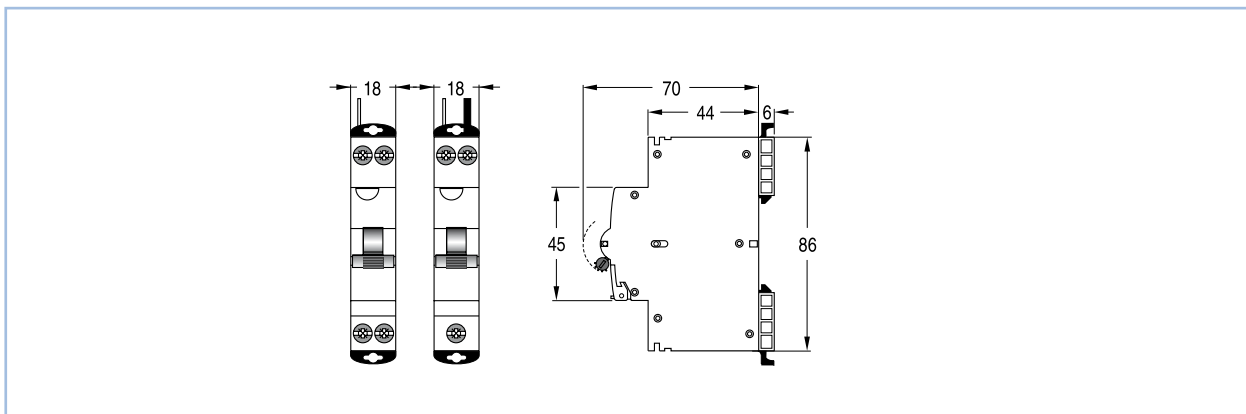


RCBOs - Series DM and DPA100

RCBOs - Series DME



ceRCBO - Series DMCE and DICE



Dimensions

A

B

C

D

E

F

G

X

PROTECT



C.2	Selection table		
C.3	Coupling combinations		
C.4	Auxiliary - Series CA		
C.5	Auxiliary - Series CB		
	Unibis*		
C.6	Interface - Series CA UN		
C.7	Motor operator - Tele MP		
C.8	Shunt trip - Tele L		
C.8	Undervoltage release - Tele U		
C.8	Panel board switch - PBS		
	Add-on devices with ring terminals		
C.10	Auxiliary contacts - Series CBT		
C.11	Shunt trip - Series Tele LT		
C.12	Reclosing system		
C.14	Series TeleREC 2		
C.18	Series TeleREC Top - MCBs		
C.20	Series TeleREC Plus - For industrial applications		
C.21	Dimensional drawings		
		Circuit Protection	A
		People Protection	B
		Add-on Devices	C
		Comfort Functions	D
		Busbars	E
		Enclosures	F
		Product overview	G
		Numerical index	X



Add-on devices for MCBs and RCDs

Add-on devices



A

Common add-on devices suitable for all MCBs and RCDs

B

C

D

E

F

G

X

Function			Type
H		Auxiliary Contact H For monitoring the status of the protection device (Open/Closed) independently, if it has been actuated manually or automatically.	CA
S		Signal or Auxiliary Contact S/H For signalling the automatic tripping of the protection devices: Overload or short-circuit for MCBs Earth leakage tripping for RCDs	CA
S/H+H		Signal or Auxiliary Contact S/H + Auxiliary Contact H Two change-over contacts that include both functions as described above (S/H+H)	CB
PBS		Panel Board Switch For opening the main device when the panel frame is removed	PBS
TL		Shunt Trip (Distance tripping by emission) For opening the device when it is fed locally or remotely	Tele L
TU		Undervoltage Release For opening the device when the voltage goes lower than a certain value	Tele U
TM		Motor Operator Allows to switch on/off the devices from a distance	Tele MP

Coupling of add-on devices on MCBs, RCCBs and modular switches

Cat. No.	Description	Function	EPC /DPC DMCE DICE	G30	G45	G60	G100	GT10	GT25	EP100 UC EP100T EPP100	BP	DM ⁽⁴⁾	Series G + Diff-o- Click	ASTER
CA H	Auxiliary contact	H	L-R ⁽²⁾	L-R	L-R	L-R	L-R	L-R	L-R	L-R	R	R	L	L-R
CA S/H	Signal or auxiliary contact	S/H	L-R ⁽²⁾	L-R	L-R	L-R	L-R	L-R	L-R	L-R	R	R	L	L-R
CA S/H-G	Signal or auxiliary contact, gold contact	S/H	L-R ⁽²⁾	L-R	L-R	L-R	L-R	L-R	L-R	L-R	R	R	L	L-R
CA UN H	Auxiliary contact	H	L-R ⁽¹⁾	-	-	-	-	-	-	-	-	-	-	-
CA UN S/H	Signal or auxiliary contact	S/H	L-R ⁽¹⁾	-	-	-	-	-	-	-	-	-	-	-
CB SH/HH-R	Signal or auxiliary + auxiliary contact	S/H+H	-	R	R	R	R	R	R	R	R	R	-	-
CB SH/HH-L	Signal or auxiliary + auxiliary contact	S/H+H	-	L	L	L	L	L	L	L	-	-	L	-
PBS	Panel board switch	PBS	L-R ⁽²⁾	L-R	L-R	L-R	L-R	L-R	L-R	L-R	-	-	L-R	-
Tele L	Shunt trip	TL	L-R ⁽²⁾	L-R	L-R	L-R	L-R	L-R	L-R	L-R	R	R	L	-
Tele U	Undervoltage release	TU	L-R ⁽²⁾	L-R	L-R	L-R	L-R	L-R	L-R	L-R	R	R	L	-
Tele MP	Motor operator	TM	L-R	L-R	L-R	L-R	L-R	L-R	L-R	L-R	R	R	L	-

(1) Except 3P Unibis that only accept CA UN on the **left** side

(2) Except Tele MP, all add-on devices on EPC need one CA UN as interface

(3) Except DMA63N wich has its own auxiliary contact

L = Coupling on the left

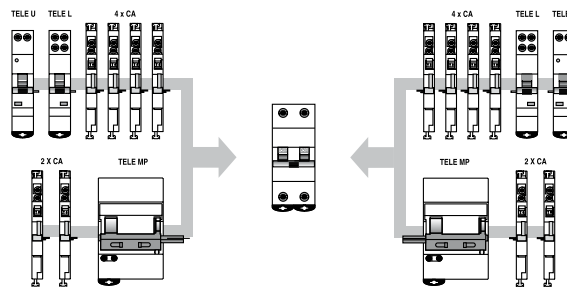
R = Coupling on the right

For detailed information, see website

Miniature Circuit Breakers

Series G/EP

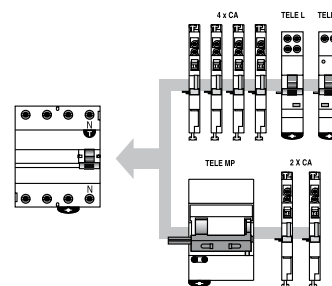
Series EPC⁽⁴⁾



(4) Except for Tele MP the first auxiliary contact on MCB should always be CA UN

Residual Current Circuit Breakers (RCCB)

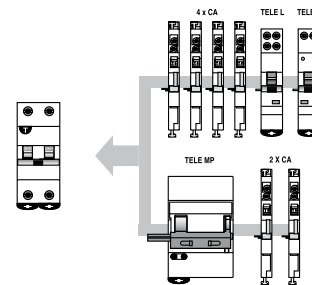
Series BP / FP



Residual Current Circuit Breakers (RCBO)

with Overcurrent Protection

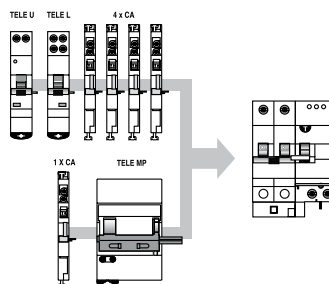
Series DM



Miniature Circuit Breakers

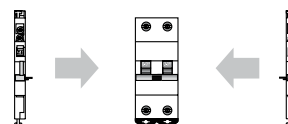
Series G

+ Diff-o-Click



Modular switches

Aster





Auxiliary

Series CA

EN/IEC 62019

UL file: E151139

Add-on-devices



Performance

Change-over contacts	1
Rated current In	(A) 5
Rated voltage AC Un	(V) 240
Electrical endurance	10000
Terminal capacity flexible/rigid cable	(mm ²) 2.5
Weight	(g) 70

Function

The auxiliary contacts are units to be added on to protection devices. They allow information to be monitored from a distance about the protection devices.

Auxiliary contact CA H (function H)

Provides the status of the protection device, OPEN/CLOSED.

Signal or auxiliary contact CA S/H, CA S/H G (function S/H)

This auxiliary can act as an auxiliary contact (function H) or as a signal contact (function S).

The user can change the function at the moment of installation.

Used as signal contact (function S) it provides the information about the automatic tripping of the protection devices: overload or short-circuit for MCBs, earth leakage tripping for RCDs.

- The device has a test button on the front to simulate the function (acting as a function H or S)
- Reset button for the contacts (function S)
- Tripping signal on the front (function S)

Advantages

- Common for all modular protection devices: MCBs and RCBOs up to 63A, RCBOs up to 100A and mains disconnect switches type ASTER (ASTM).
- Can be coupled on both sides of MCBs and modular switches type ASTM.
- Version with golden contacts, available for low current as well as low voltage applications.
- Stack-on left and right up to 4 CA units.
- Permits the pass-through of busbars, pin & fork, top and bottom, just changing the position of the base of the auxiliaries.

Series CA

Applications

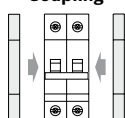


Approvals

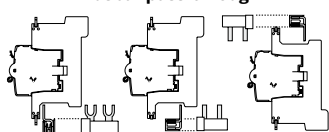


Add-on devices

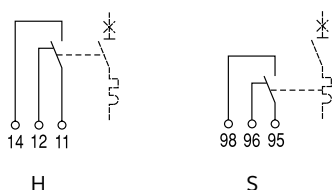
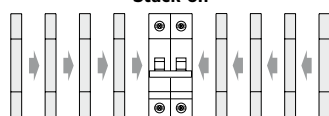
Coupling



Busbar pass-through



Stack-on



Function	Cat. No	Ref. No.	Pack.	
H	CA H	672567	40	
S/H	CA S/H	672568	40	
S/H	CA S/H G	672569	40	golden contacts

A

B

C

D

E

F

G

X

Auxiliary

Series CB

EN/IEC 62019

UL file: E151139

Performance

Change-over contacts	2
Rated current In	(A) 5
Rated voltage AC Un	(V) 240
Electrical endurance	10000
Terminal capacity flexible/rigid cable	(mm ²) 2.5
Weight	(g) 80

Function

Bottom auxiliary contact (function H)

Provides the status of the protection device, OPEN/CLOSED.

Top signal or auxiliary contact (function S/H).

This auxiliary can act as an auxiliary contact (function H) or as a signal contact (function S)

The user can make the change of the function at the moment of installation. Used as signal contact (function S) it provides information about automatic tripping of the protection devices: overload or short-circuit for MCBs, earth leakage tripping for RCCBs.

- The device has a test button on the front to simulate the function (acting as a function H or S)
- Reset button for the contacts (function S)
- Tripping signal on the front (function S)

Advantages

- Common for all modular protection devices: MCBs and RCBOs up to 63A, RCCBs up to 100A
- Common for all modular protection devices: MCBs and RCBOs up to 63A, RCCBs up to 100A.
- This device has 2 change-over contacts, the upper one with changeable function (S/H).
- Two versions: CB SH/HH-R to be coupled on the right side of the protection devices, CBSH/HH-L when assembled on the left side
- No stack-on possibilities (only 1 auxiliary)
- No busbar pass-through facilities

Series CB



Applications

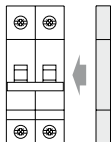


Approvals

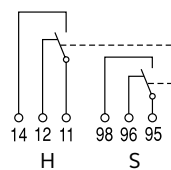
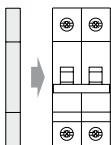


Add-on devices

Coupling right



Coupling left



1/2 mod.

Function	Cat. No	Ref. No.	Pack.
SH/HH	CB SH/HH-R ⁽¹⁾	672570	40
SH/HH	CB SH/HH-L ⁽²⁾	672571	40

(1) R = coupling on the right

(2) L = coupling on the left

Series CA / CB

A

B

C

D

E

F

G

X



Auxiliary

Series CA UN - Unibis Interface

EN/IEC 62019

Performance

Change-over contacts	1
Rated current In	(A) 5
Rated voltage AC Un	(V) 240
Electrical endurance	10000
Terminal capacity flexible/rigid cable	(mm ²) 2.5
Weight	(g) 70

Function

The auxiliary contact Unibis has a double function:

1. The standard function as auxiliary monitoring contact for which it has been developed.
2. The interface function, which allows the use of all auxiliaries in combination with the Unibis MCB range.

Example: to couple the undervoltage release Tele U to a Unibis MCB, the CA 672972 has to be added in between the MCB and the Tele U as interface.

The auxiliary contacts are units to be added on to protection devices. They allow information to be monitored from a distance about the protection devices.

Auxiliary contact CA UN H (function H)

Provides the status of the protection device, OPEN/CLOSED.

Signal or auxiliary contact CA UN S/H, CA UN S/H G (function S/H)

This auxiliary can act as an auxiliary contact (function H) or as a signal contact (function S).

The user can change the function at the moment of installation.

Used as signal contact (function S) it provides the information about the automatic tripping of the protection devices: overload or short-circuit for MCBs, earth leakage tripping for RCDs.

- The device has a test button on the front to simulate the function (acting as a function H or S)
- Reset button for the contacts (function S)
- Tripping signal on the front (function S)

Advantages

- Common for all Unibis modular protection devices: MCBs and RCBOs.
- Can be coupled on both sides of Unibis MCBs, 2P RCBOs and ceRCBOs.
- Version with golden contacts, available for low current as well as low voltage applications.
- Stack-on left or right up to 4 CA units.
- Permits the pass-through of busbars, pin & fork, top and bottom, just changing the position of the base of the auxiliaries.

Series CA UN - Unibis Interface



Add-on-devices

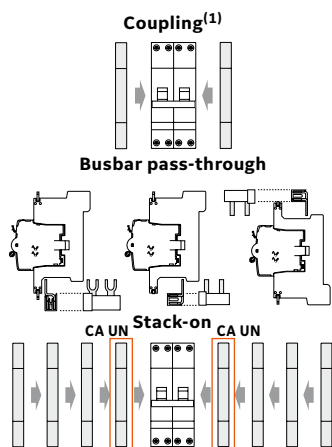
Applications



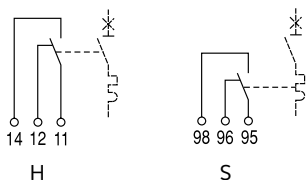
Approvals / Marking



Add-on devices



(1) 3P Unibis MCBs accept CA UN only on the left side
 (2) Only first auxiliary contact on MCB must be CA UN type as interface, than every extension can be stack-on mounted

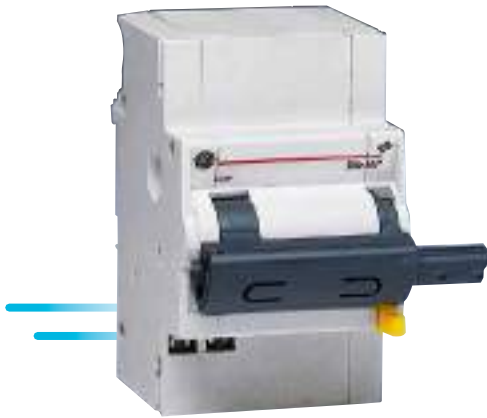


1/2 mod.

Function	Cat. No	Ref. No.	Pack.	
H	CA UN H	672972	1/40	
S/H	CA UN S/H	672973	1/40	
S/H	CA UN S/H G	672974	1/40	golden contacts

Motor Operator

Tele MP



Performance

Rated voltage AC Un	(V)	240
Minimum voltage	(V)	200
Impulse to switch on	(ms)	50
Impulse to switch off	(ms)	50
Closing time	(s)	0.5
Opening time	(s)	0.2
Electrical endurance		10000
Terminal capacity flexible/rigid cable	(mm ²)	2.5
Weight	(g)	380

Applications

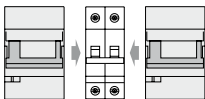


Standard

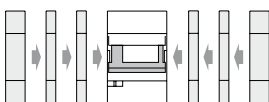
EN/IEC 60947-2

Add-on devices

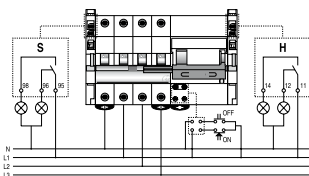
Coupling



Stack-on



Application example



Function

- Common device for all modular protection devices.
- Can be coupled on both sides of MCBs and on the right hand side of RCCBs and RCBOs.
- Stack-on left and right sides up to 4 modules. One of them can be coupled between the main device and the motor operator.
- Can be locked in off position with a lock.
- Manual operating is possible.

The Tele MP allows to remotely open or close any MCB, RCCB, RCBO by means of a push-button or any other automatic management processor (PLC..).

In case of mounting a Tele MP and a Undervoltage Tele U together: when the Tele U trips, a manual reset of the Tele U is locally needed due to safety reasons.

Tele MP - Motor operator

	Voltage	Cat. No	Ref. No.	Pack.
3 mod.	AC 230V	TELE MP	672580	1



Shunt trip, Undervoltage release,
Panel board switch

UL file: E151139

Add-on-devices



Function

- Common device for all modular protection devices.
- Can be coupled on both sides of MCBs, on the right side of RCCBs and RCBOs.
- Permit the pass-through of busbars, pin & fork, at top or bottom terminals.
- Stack-on left and right side up to 4 modules.

Shunt trip Tele L

The Tele L allows to remotely switch off any MCB, RCCB or RCBO by means of push-buttons or any other automatic management processor.
A built-in contact in series with the coil prevents burn-out damage if the voltage remains.

Performance

Rated voltage	(V)	110/415, 110/125 DC
	(V)	24/60, 24/48 DC
Tripping time	(ms)	< 10
Electrical endurance		10000
Terminal capacity flexible/rigid cable	(mm ²)	2.5
Weight	(g)	125
Inrush current (Tele 2)		at 110V AC 0.4A
		at 230V AC 0.9A
		at 415V AC 1.5A

Undervoltage release Tele U

The Tele U releases the main MCB, RCCB, RCBO and modular switch in case the power supply drops below 0.5 x Un. Time delay adjusting up to 300ms.

Performance

Rated voltage AC Un	(V)	240
Rated voltage DC/AC Un	(V)	12, 24, 48 DC/AC
Tripping voltage	(V)	≤ 0.5 x Un ±10%
Resetting voltage	(V)	> 0.5 x Un ±10%
Tripping time	(ms)	Adjustable 0...300
Electrical endurance		2000
Terminal capacity flexible/rigid cable	(mm ²)	2.5
Weight	(g)	125

Panel board switch PBS

The panel board switch PBS is a mechanical switch. When the panel frame releases the PBS switch, it will trip the protection devices (MCBs or RCDs). Consequently the distribution board will become isolated.

Applications



Approval

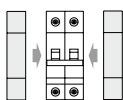


Standard

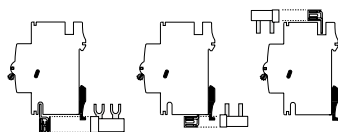
EN/IEC 60947-2

Add-on devices

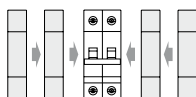
Coupling



Busbar pass-through



Stack-on



(1) For Tele L-1 and Tele L-2

A

B

C

D

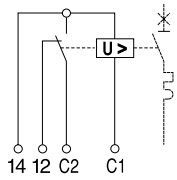
E

F

G

X

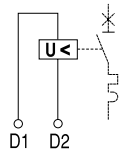
Tele L - Shunt trip **US**



1P
1 mod.

Voltage	Cat. No	Ref. No.	Pack.
AC 24-60V / DC 24-48V	TELE L-1	672573	1
AC 110-415V / DC 110-125V	TELE L-2	672574	1

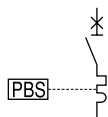
Tele U - Undervoltage release



1P
1 mod.

Voltage	Cat. No	Ref. No.	Pack.
AC 240V	TELE U-230	672575	1
AC/DC 12V	TELE U-12	672576	1
AC/DC 24V	TELE U-24	672577	1
AC/DC 48V	TELE U-48	672578	1

PBS - Panel board switch

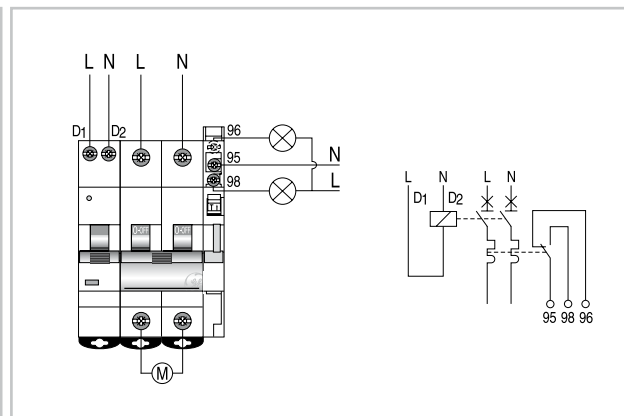
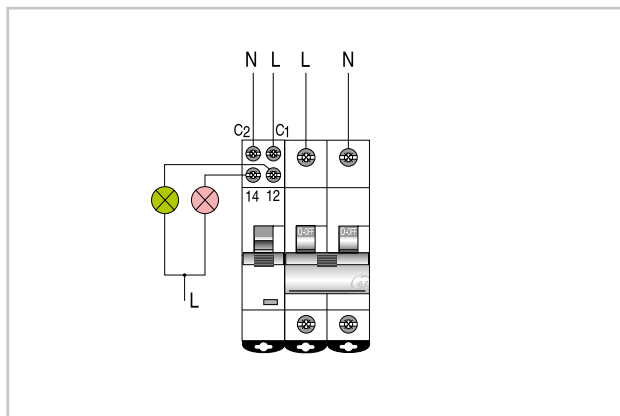


1P
1/2 mod.

Cat. No	Ref. No.	Pack.
PBS	672572	1

Tele L

Tele U



Tele L - Tele U - PBS

A

B

C

D

E

F

G

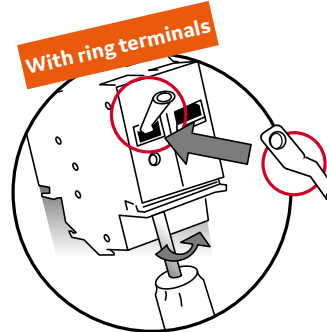
X



Auxiliary contacts

Series CBT

Add-on-devices



The miniature circuit breakers in RAIL-design have been developed with regard to shakes, shocks and vibrations

Standards

EN 60898, EN 60947-2, UNI CEI 11170, EN 61373

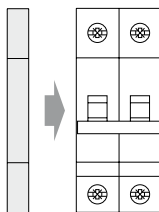
Approvals



Trenitalia n° 371441.01

Add-on devices

Coupling



Features

- Three versions: 1NO+1NC, 2NC, 2NO
- CBT accepts ring terminals on wires
- Certified acc. new CEI UNI 11170 (higher protection against fires)
- Certified acc. to NF 16-101, smoke index F1
- Shock and vibration tests acc. to IEC 61373

Technical data

Number of change-over contacts	2
Thermal setting I_n	5A (230V AC) 4A (24V DC) 1A (60V DC) 230V AC, 60V DC
Rated voltage U_n	230V AC, 60V DC
Endurance electrical	10000
Terminal capacity for flexible/rigid cable	mm ² 2.5
Unlosable screws	Pozidrive 2

A

B

C

D

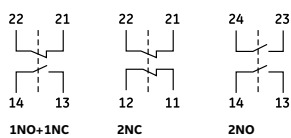
E

F

G

X

Series CBT

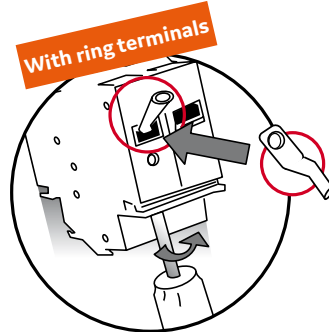


Contact combination	Cat. No.	Ref. No.	Pack.
1NO+1NC	CBTH NO-NC	667249	1
2NC	CBTH 2NC	667250	1
2NO	CBTH 2NO	667251	1



Shunt trip (Distance tripping by emission)

Series Tele LT



The miniature circuit breakers in RAIL-design have been developed with regard to shakes, shocks and vibrations

Standards

EN 60898, EN 60947-2, UNI CEI 11170, EN 61373

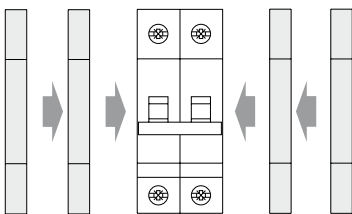
Approval



Trenitalia n° 371441.01

Add-on devices

Coupling



Features

- Tele LT accepts ring terminals on wires
- Certified acc. new CEI UNI 11170 (higher protection against fires)
- Certified acc. to NF 16-101, smoke index F1
- Shock and vibrations tests acc. to IEC 61373

Technical data

Rated voltage	(V) 110/415 ~ 110/128/150 ==
	(V) 24/60 ~ 24/48 ==
Tripping time	(ms) < 10
Electrical endurance	10000
Terminal capacity flexible/rigid cable	(mm ²) 2.5
Unlosable screws	Pozidrive 2
Umin	(V) 0.70 x Un
Umax	(V) 1.25 x Un

Series CBT / Tele LT

A

B

C

D

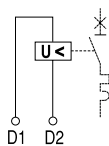
E

F

G

X

Tele LT



1/2 mod.

Voltage	Cat. No.	Ref. No.	Pack.
CA 110/415V ~ CC 110/128/150V =	TELE LT-1	667252	1
CA 24/60V ~ CC 24/48V =	TELE LT-2	667253	1



Redline

TeleREC 2

Double clips to the DIN-rail

Strong fixation to the DIN-rail throughout
Two clips for 2P and 4P version.

Interlock

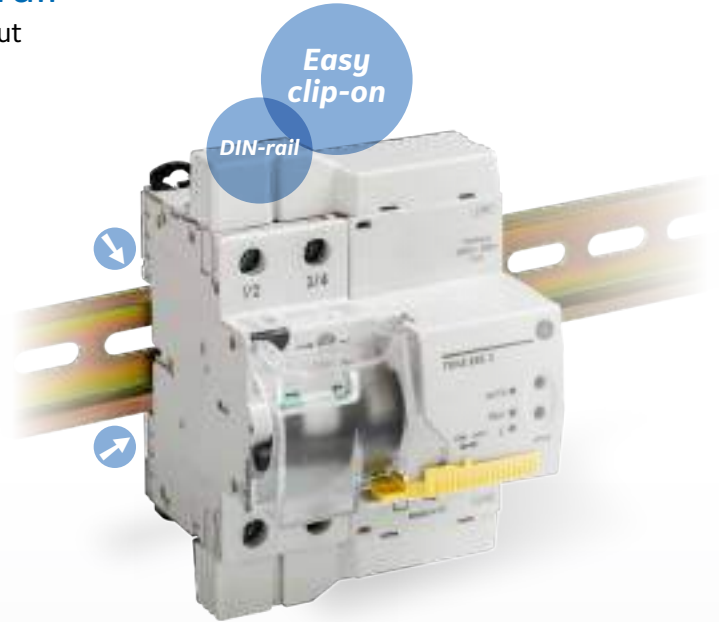
M2 hole to attach a seal or
packlock to block access to
the RCCB or RCBO in case
of works downstream.

4 Poles version

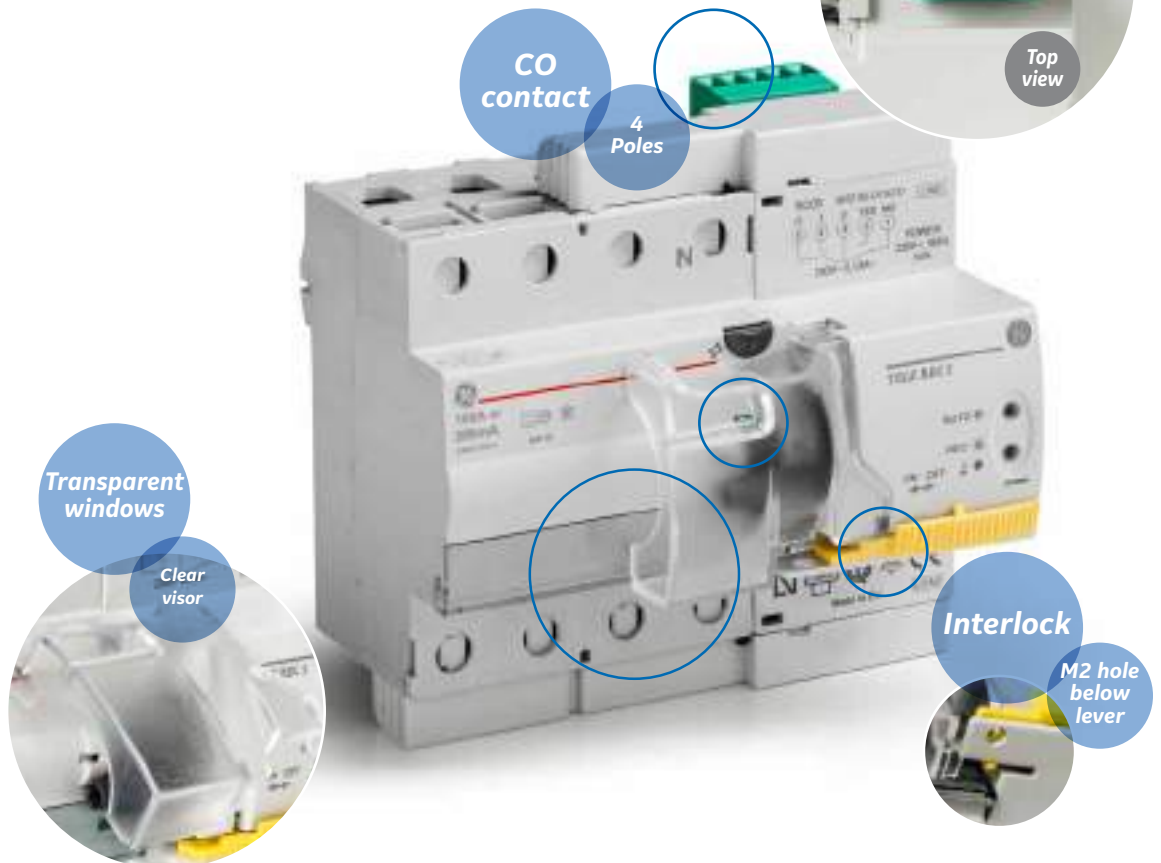
Changeover contact in 4P RCCB
version to indicate the TeleREC 2
status remotely.

Transparent windows

Transparent windows covering
the RCCB following EN 50557
and with a visor to identify the
RCCB or RCBO properly.



Top view



Transparent windows

Clear visor

CO contact

4 Poles

Interlock

M2 hole below lever

TeleREC Top

Monitorised control

Complete screen, buttons and LEDs to program and visualize the state of the reclosing system.

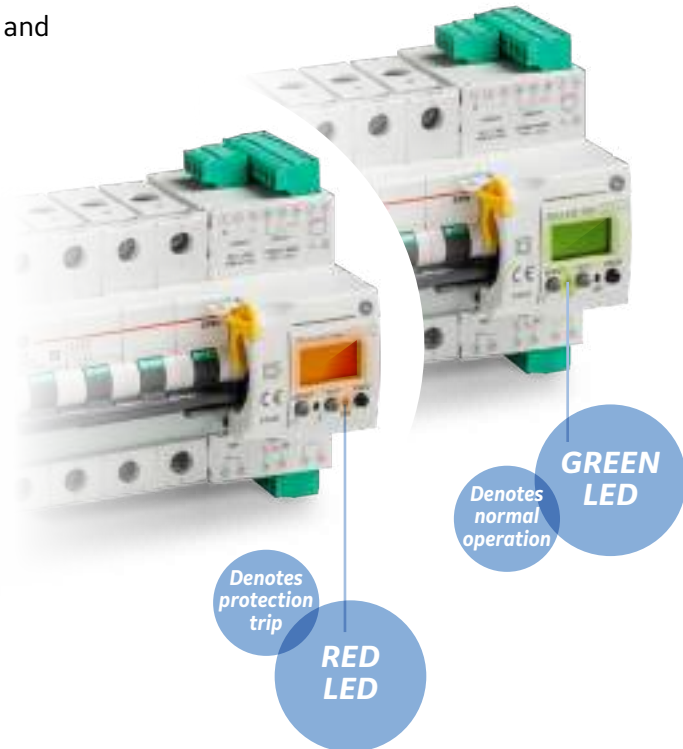
Remote indicators

AUX and TRIP status outputs (voltage-free contacts).

The AUX output is a NO contact, which closes when the auxiliary power supply is connected.

The TRIP output is an alarm output.

The EXT input (not insulated) enables the switch to be controlled remotely.



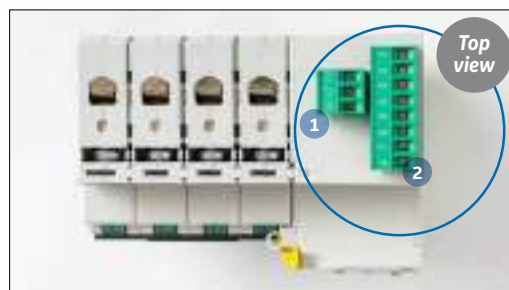
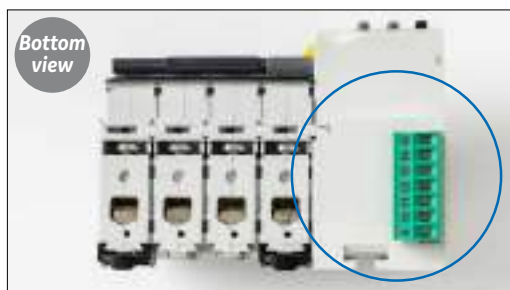
Remote indicators

1

Status outputs for the main switch.
When the switch is closed, contact 16-17 is closed.
When switch is open, contact 16-18 is closed.

2

The auxiliary power supply is connected between terminals 1-3.
The earth leakage transformer is connected between terminals 7-8.



The TeleREC Top is used to protect single and three-phase electrical installations (up to 63A), in which a high level of continuity in the electrical service must be guaranteed. The unit has an automatic rearming system which is activated following a trip, so that it reconnects itself after a certain amount of time, restoring the installations powersupply without the need for any human intervention.

In short, the protection functions performed by the TeleREC Top are:

- Earth leakage protection (protects people against electric shock).
- Protection against overloads and short-circuits via a circuit breaker switch.



Reclosing system for
Residual Current Circuit Breakers

Series TeleREC 2

EN 50557:2012

Add-on-devices



Applications



Approvals / Marking



Performance

Thermal setting In	(A) 25-100
Residual current	(mA) 30, 300
Rated voltage AC Un	(V) 2P: 230 4P: 230/400
Minimum operating voltage UBmin	(V) 2P: 127 4P: 190
Mechanical/electrical endurance	20000/10000
Tropicalisation acc. to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) 25/35
Poles	2P, 4P
Nuisance tripping resistance	(A) Type A: 250 Type Ai, S: 3000
Ambient temperature	(°C) -25 up to +55
Weight	(g) 2P: 416 4P: 598

Short-circuit capacity

Acc. to EN/IEC 61008-1	
Making and breaking capacity	Im = 500A
Residual making and breaking capacity	ΔIm ≥ 500A from 16 up to 40A ΔIm = 630A for 63A ΔIm = 800A from 80A to 100A
Short-circuit capacity	Inc = 10000A at 230/400V fuse 80A gG

Reclosing system by insulation, M mode

RECLOSURES					
1		2		3	
Delay	Restart	Delay	Restart	Delay	Restart
< 3 sec.	10 sec.	30 sec.	30 sec.	120 sec.	60 sec.

The leakage current will be supervised by measuring the resistance downstream of the tripped RCCB.

A

B

C

D


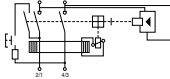

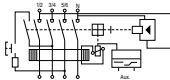
E

F


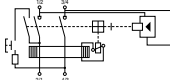

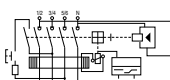
G

X


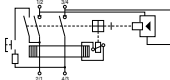

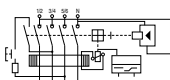
Series TeleREC 2 - RCCBs - Type A

	In (A)	30mA		300mA		Pack.
		Cat. no.	Ref. no.	Cat. no.	Ref. no.	
 	25	REC2 A 225/30	676986	REC2 A 225/300	676994	1
	40	REC2 A 240/30	676987	REC2 A 240/300	676995	1
	63	REC2 A 263/30	676988	REC2 A 263/300	676996	1
	80	REC2 A 280/30	676989	REC2 A 280/300	676997	1
	100	REC2 A 2100/30	676990	REC2 A 2100/300	676998	1
 	25	REC2 A 425/30	677042	REC2 A 425/300	677050	1
	40	REC2 A 440/30	677043	REC2 A 440/300	677071	1
	63	REC2 A 463/30	677044	REC2 A 463/300	677072	1
	80	REC2 A 480/30	677045	REC2 A 480/300	677073	1
	100	REC2 A 4100/30	677046	REC2 A 4100/300	677074	1

Series TeleREC 2 - RCCBs - Type Ai

	In (A)	30mA		300mA		Pack.
		Cat. no.	Ref. no.	Cat. no.	Ref. no.	
 	25	REC2 Ai 225/30	676991	-	-	1
	40	REC2 Ai 240/30	676992	-	-	1
	63	REC2 Ai 263/30	676993	-	-	1
	80	-	-	-	-	-
	100	-	-	-	-	-
 	25	REC2 Ai 425/30	677047	-	-	1
	40	REC2 Ai 440/30	677048	-	-	1
	63	REC2 Ai 463/30	677049	-	-	1
	80	-	-	-	-	-
	100	-	-	-	-	-

Series TeleREC 2 - RCCBs - Type S

	In (A)	30mA		300mA		Pack.
		Cat. no.	Ref. no.	Cat. no.	Ref. no.	
 	25	-	-	-	-	-
	40	-	-	REC2 S 240/300	676999	1
	63	-	-	REC2 S 263/300	677039	1
	80	-	-	REC2 S 280/300	677040	1
	100	-	-	REC2 S 2100/300	677041	1
 	25	-	-	-	-	-
	40	-	-	REC2 S 440/300	677075	1
	63	-	-	REC2 S 463/300	677076	1
	80	-	-	REC2 S 480/300	677077	1
	100	-	-	REC2 S 4100/300	677098	1

Series TeleREC 2

A

B

C

D

E

F

G

X

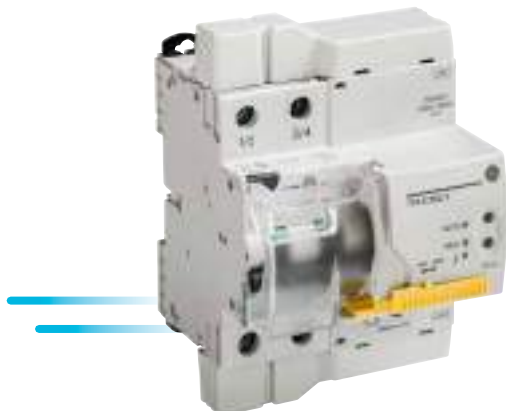


Reclosing system for 2P RCBOs - Residual Current Circuit Breakers with Overcurrent Protection

Series TeleREC 2

EN 50557:2012

Add-on-devices



Applications



Performance

Thermal setting In	(A)	10-40
Residual current	(mA)	30, 300
Tripping characteristics		B-C
Rated voltage AC Un	(V)	230
Minimum operating voltage UBmin	(V)	150
Mechanical/electrical endurance		20000/10000
Tropicalisation acc. to EN/IEC 60068-2		95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	25/35
Poles		2P
Nuisance tripping resistance	(A)	Type A: 250 Type Ai: 3000
Ambient temperature	(°C)	-25 up to +55
Weight	(g)	346

Marking



Short-circuit capacity

Acc. to EN/IEC 61008-1

Residual making and breaking capacity	I Δ m=6000A
Energy limiting class	3
Short-circuit capacity	Icn=10000A at 230V

Reclosing system by insulation, M mode

RECLOSURES					
1		2		3	
Rec time	Restart	Rec time	Restart	Rec time	Restart
3	60	240	240	960	960

The leakage current will be supervised by measuring the resistance downstream of the tripped RCBO.
The short-circuit current will be supervised by measuring the resistance downstream of the tripped RCBO.

A

B

C

D

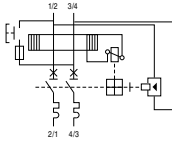
E

F

G

X

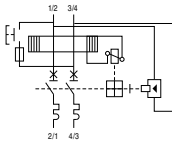
Series TeleREC 2 - RCBOs - Type A - Characteristic C



2P
4.5M

In (A)	30mA		300mA		Pack.
	Cat. no.	Ref. no.	Cat. no.	Ref. no.	
10	REC2 DPCA100C10/030	677150	REC2 DPCA100C10/300	677156	1
16	REC2 DPCA100C16/030	677151	REC2 DPCA100C16/300	677157	1
20	REC2 DPCA100C20/030	677152	REC2 DPCA100C20/300	677158	1
25	REC2 DPCA100C25/030	677153	REC2 DPCA100C25/300	677159	1
32	REC2 DPCA100C32/030	677154	REC2 DPCA100C32/300	677160	1
40	REC2 DPCA100C40/030	677155	REC2 DPCA100C40/300	677161	1

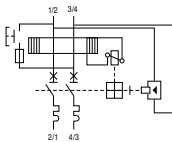
Series TeleREC 2 - RCBOs - Type A - Characteristic B



2P
4.5M

In (A)	30mA		300mA		Pack.
	Cat. no.	Ref. no.	Cat. no.	Ref. no.	
10	REC2 DPCA100B10/030	677174	REC2 DPCA100B10/300	677180	1
16	REC2 DPCA100B16/030	677175	REC2 DPCA100B16/300	677181	1
20	REC2 DPCA100B20/030	677176	REC2 DPCA100B20/300	677182	1
25	REC2 DPCA100B25/030	677177	REC2 DPCA100B25/300	677183	1
32	REC2 DPCA100B32/030	677178	REC2 DPCA100B32/300	677184	1
40	REC2 DPCA100B40/030	677179	REC2 DPCA100B40/300	677185	1

Series TeleREC 2 - RCBOs - Type Ai - Characteristic C



2P
4.5M

In (A)	30mA		300mA		Pack.
	Cat. no.	Ref. no.	Cat. no.	Ref. no.	
10	REC2 DPCAi100C10/030	677162	REC2 DPCAi100C10/300	677168	1
16	REC2 DPCAi100C16/030	677163	REC2 DPCAi100C16/300	677169	1
20	REC2 DPCAi100C20/030	677164	REC2 DPCAi100C20/300	677170	1
25	REC2 DPCAi100C25/030	677165	REC2 DPCAi100C25/300	677171	1
32	REC2 DPCAi100C32/030	677166	REC2 DPCAi100C32/300	677172	1
40	REC2 DPCAi100C40/030	677167	REC2 DPCAi100C40/300	677173	1

Series TeleREC 2

A

B

C

D

E

F

G

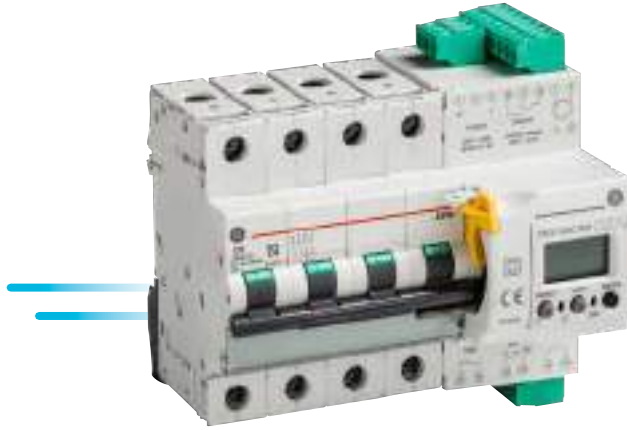
X



Reclosing system with earth leakage protection for Miniature Circuit Breakers

Series TeleREC Top - MCBs

Add-on-devices



A

Application



B

Marking



D

E

F

G

X

Performance

Thermal setting I_n	(A) 6-63
Residual current	adjustable 30mA ... 1A
Tripping characteristics	B-C
Rated voltage AC U_n	(V) 230/400
Minimum operating voltage U_{Bmin}	(V) 12
Energy limiting class	3
Mechanical/electrical endurance	20000/10000
Tropicalisation acc. to EN/IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²) 25/35
Poles	2P, 4P
Nuisance tripping resistance	(A) Type A: 378
Ambient temperature	(°C) -10 up to +50
Weight	(g) 2P: 516 4P: 769

Short-circuit capacity

AC acc. to EN/IEC 60947-2

Poles	V	I _{cn} /I _{cs} (kA)
2-4	230/400	10

DC acc. to EN/IEC 60947-2

Poles	V	I _{cu} /I _{cs} (kA) ⁽¹⁾
2	127	40
2	230	30
2	415	15
4	240	30
4	415	15

Reclosing system

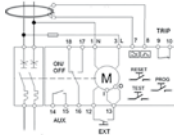
Configuration of the reclosing system after a trip caused by overcurrent or short-circuit fault: maximum number of reclose attempts (NR), the timer (ST) and the resetting time of the partial meter (TR) can be configured. See manual configuration of the reclosing system following a trip caused by an earth leakage: maximum number of reclose attempts (NR), the timer (ST) and the resetting time of the partial meter (TR) can be configured. See manual.

Series TeleREC Top - MCBs - Characteristic C



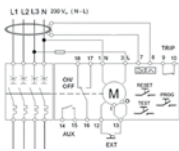
**2P
4.5M**

In (A)	Cat. no.	Ref. no.	Pack.
6	-	-	-
10	REC TOP EP102 C10	677186	1
16	REC TOP EP102 C16	677187	1
20	REC TOP EP102 C20	677188	1
25	REC TOP EP102 C25	677189	1
32	REC TOP EP102 C32	677190	1
40	REC TOP EP102 C40	677191	1
50	REC TOP EP102 C50	677192	1
63	REC TOP EP102 C63	677193	1



**4P
6.5M**

In (A)	Cat. no.	Ref. no.	Pack.
6	-	-	-
10	REC TOP EP104 C10	678028	1
16	REC TOP EP104 C16	678029	1
20	REC TOP EP104 C20	678030	1
25	REC TOP EP104 C25	678031	1
32	REC TOP EP104 C32	678032	1
40	REC TOP EP104 C40	678033	1
50	REC TOP EP104 C50	678034	1
63	REC TOP EP104 C63	678035	1

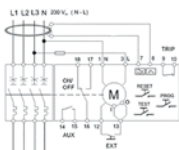


Series TeleREC Top - MCBs - Characteristic B



**4P
6.5M**

In (A)	Cat. no.	Ref. no.	Pack.
6	-	-	-
10	REC TOP EP104 B10	677194	1
16	REC TOP EP104 B16	677195	1
20	REC TOP EP104 B20	677196	1
25	REC TOP EP104 B25	677197	1
32	REC TOP EP104 B32	677198	1
40	REC TOP EP104 B40	677199	1
50	REC TOP EP104 B50	678026	1
63	REC TOP EP104 B63	678027	1



Accessories



∅	Cat. no.	Ref. no.	Pack.
Toroidal transformer for earth leakage detection			
25mm ²	REC TOP TT 25	678036	1
35mm ²	REC TOP TT 35	678037	1

Series TeleREC Top

A

B

C

D

E

F

G

X



Reclosing system for
Residual Current Circuit Breakers

Series TeleREC Plus

For industrial applications

Add-on-devices



Application

A



Marking

B



D

E

F

G


X

Performance

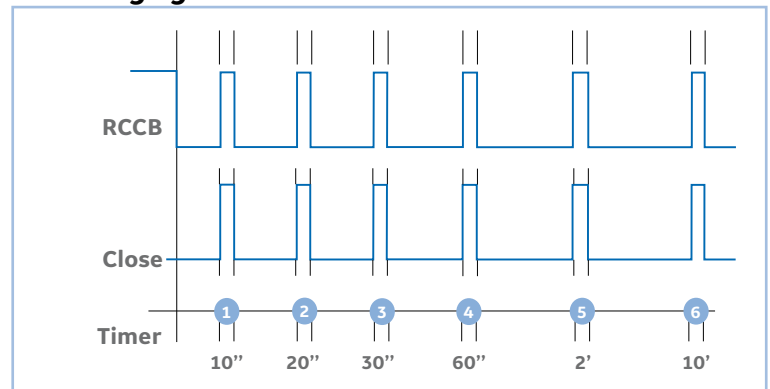
Rated voltage AC Un	(V)	220/400
Frequency	(Hz)	50/60
Reclosing numbers		6
Reclosing cycles	(sec)	10, 20, 30, 60, 120, 600
Auxiliary contact	I _{max}	2A (250V AC or 24V DC)
I_{min} (auxiliary contact)	(mA)	20
Remote control		Manual reclosing with push-button
Weight	(g)	358

Series TeleREC Plus

	Cat. no.	Ref. no.	Pack.
3 mod.	Tele REC PLUS Motor	677132	1



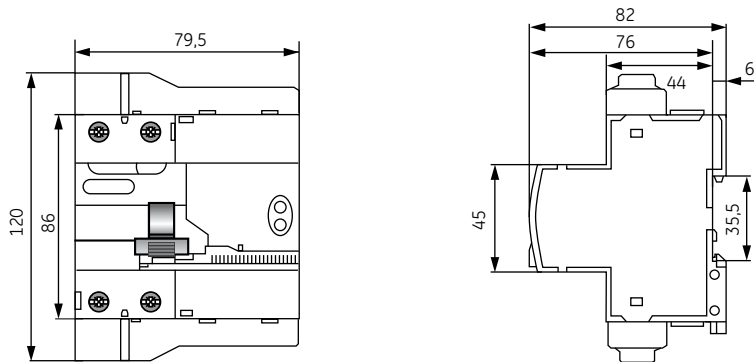
Reclosing cycles



Dimensional drawings

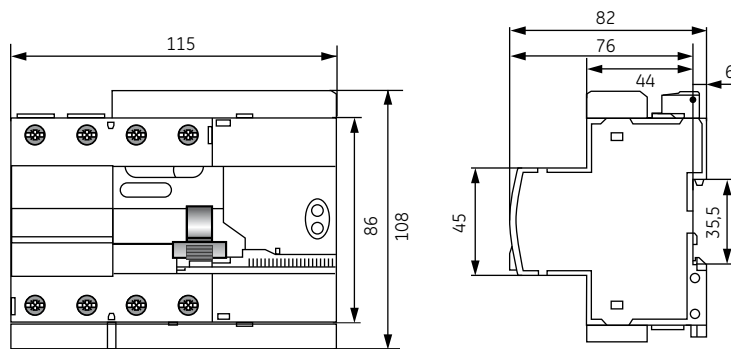
TeleREC 2 RCCB / RCBO

2P
4.5 mod.



TeleREC 2 RCBO

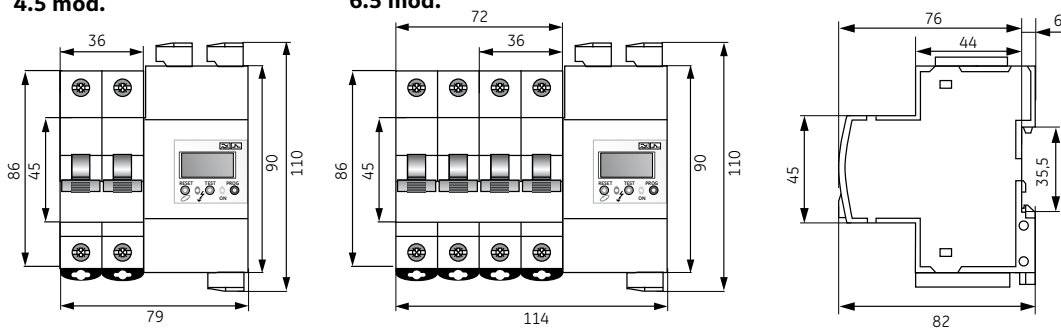
4P
6.5 mod.



TeleREC Top MCB

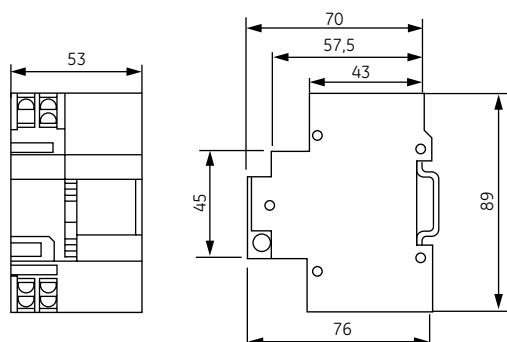
2P
4.5 mod.

4P
6.5 mod.



TeleREC Plus

3 mod.





Dimensional drawings

Add-on-devices

A

B

C

D

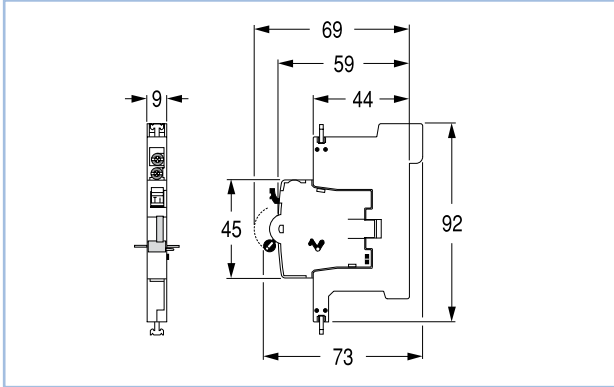
E

F

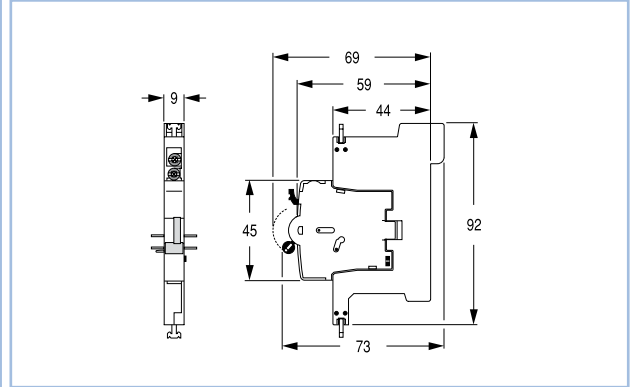
G

X

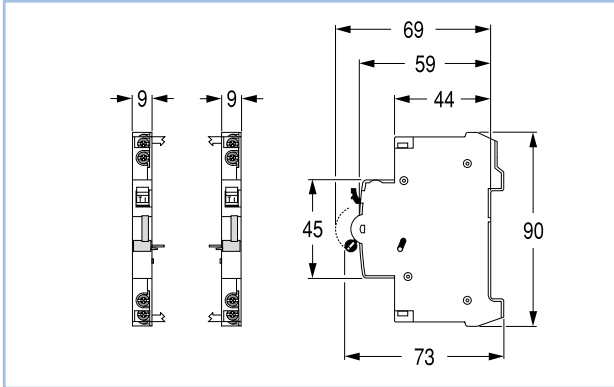
Auxiliary - Series CA



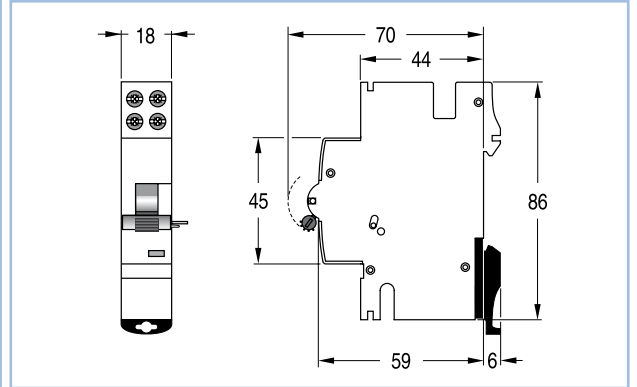
Auxiliary interface - Series CA UN (Unibis)



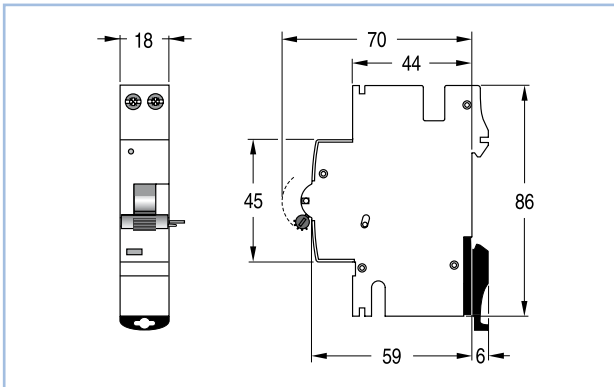
Auxiliary - Series CB / CBT



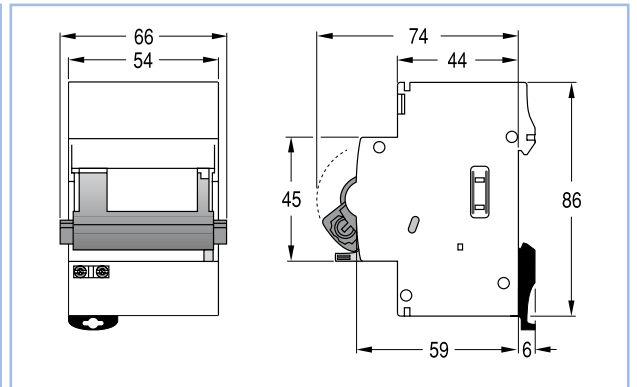
Shunt Trip - Tele L / Tele LT



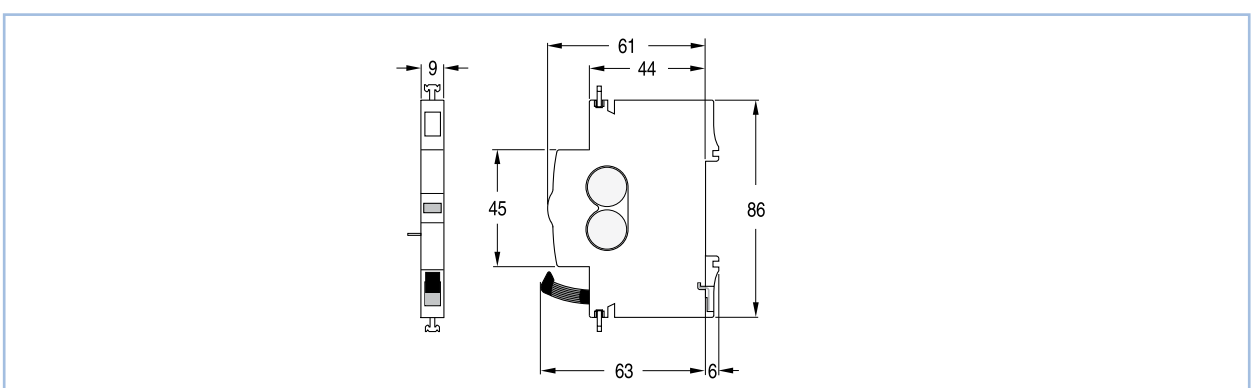
Undervoltage Release - Tele U



Motor operator - Tele MP



Panel board switch - PBS





	D.2	Switches and Push-buttons - Aster
New	D.4	LED Indication Lamp - Aster BL
	D.6	Indication Lamps and Socket outlets - Aster
	D.8	Contactors - Contax
New	D.12	Contactors - Contax L
New	D.14	Relays - Contax R
New	D.18	Impulse Switches - Pulsar S
New	D.24	Staircase Switches - Pulsar SC
New	D.26	Universal reliable multifunction - Time Relays
New	D.30	Time Relays - Pulsar T+
New	D.34	DIN-rail dimmers - DIM
New	D.40	Analogue Time Switches - Classic
New	D.42	Digital Time Switches - Galax
New	D.46	Time Switches - 72 x 72 Classic and Galax
New	D.48	Light Sensitive Switches - Galax LSS
	D.50	Safety and bell transformers Buzzers and bells - Series T+ BU+ BE+
	D.52	Digital kWh - Series MT+D kWh
	D.54	Digital measurement instruments - Series MT+D
	D.56	Analogue measurement instruments - Series MT+A
	D.58	Current transformers - Series MT+CT
	D.60	Compact three-phase analyser - Series MTDIN
	D.62	Basic three-phase analyser - Series MT96
	D.64	Advanced three-phase analyser - Series MT144
	D.66	Power Analysers - Parameter table
New	D.68	Surge Arresters - SurgeGuard
	D.80	Dimensional drawings

Circuit Protection A

People Protection B

Add-on Devices C

Comfort Functions **D**

Busbars E

Enclosures F

Product overview G

Numerical index X



Aster

Comfort functions



Applications



Switching of lighting and heating in homes, shops, offices, warehouses, factories, hospitals, etc.

Approvals⁽¹⁾ / Marking



(1) Depending on type.

Features

Wide range with respect to available contact combinations and switching capacity. Mains disconnect switches and switches with change-over contact and off position available. Compact (4-pole in 1 module) with high switching capacity due to double interruption per path. All switches are sealable through padlock or by means of a lock. The terminals are equipped with captive Pozidriv screws and have IP20 protection degree. Mains disconnect switches accepts auxiliary contacts CA

Functions

Manual control of all kinds of electrical devices.


















Standards

Switches 16/32A	BS EN 60669-1	VDE 0632 Part 1
Mains disconnect switches 40-100	BS EN 60947-3	VDE 0632 Part 101
Rotary switches	BS EN 60947-3	

Performance

	Push-buttons	Switches	Rotary switches	Mains disconnect switches
Clockwork	16A	16A 32A	32-40-63A	40-63-80-100A
Usable as mains disconnect switch	no	no	yes	yes
Nominal breaking capacity at 415V, cos φ = 0.95	-	1.25xIn	8xIn	3xIn
Nominal breaking capacity at 415V, cos φ = 0.65	-	-	8xIn	3xIn
Nominal voltage single pole devices	240V	240V	-	240/415V
Nominal voltage multipole devices	-	415V	240/415V	240/415V
Maximum allowed current during less than 1 s.	-	-	-	2kA
Mechanical service life (complete on-off-cycle)	>20000	>20000	>10000	>20000
Electrical service life, cos φ = 0.95, Un and In	>20000	>20000 >5000	>1500	>1500
Short-circuit resistance with upfront fuses Gg/gL 100A (nominal)	4.5kA (nominal)	4.5kA (nominal)	15kA (nominal)	16kA (nominal)
(peak)	3kA (peak)	3kA (peak)	10kA (peak)	7kA (peak)
Protection degree	IP20	IP20	IP20	IP20
Screws	Pozidriv 1	Pozidriv 1	Pozidriv 2	Pozidriv 2
Terminal capacity:				
min	1x1.5mm ²	1x1.5mm ²	1x2.5mm ²	1x6mm ²
max	1x10mm ²	1x10mm ²	1x25mm ²	1x50mm ²

Aster - Switches and push-buttons

	Nominal current	Contact combination	Number of modules	Cat. No.	Ref. No.	Pack.
Mains disconnect switch     	40A/240V	1NO	1	AST M 40 10	666614	12
	40A/415V	2NO	2	AST M 40 20	666615	6
	40A/415V	3NO	3	AST M 40 30	666616	4
	40A/415V	4NO	4	AST M 40 40	666617	3
	63A/240V	1NO	1	AST M 63 10	666562	12
	63A/415V	2NO	2	AST M 63 20	666563	6
	63A/415V	3NO	3	AST M 63 30	666564	4
	63A/415V	4NO	4	AST M 63 40	666565	3
	80A/240V	1NO	1	AST M 80 10	666566	12
	80A/415V	2NO	2	AST M 80 20	666567	6
	80A/415V	3NO	3	AST M 80 30	666568	4
	80A/415V	4NO	4	AST M 80 40	666569	3
	100A/240V	1NO	1	AST M 100 10	666558	12
	100A/415V	2NO	2	AST M 100 20	666559	6
100A/415V	3NO	3	AST M 100 30	666560	4	
100A/415V	4NO	4	AST M 100 40	666561	3	
Rotary switch     	32A/415V	2NO	4	AST R 32 20	666574	1
	32A/415V	3NO	4	AST R 32 30	666575	1
	32A/415V	3NO+NC	4	AST R 32 3N	666576	1
	32A/415V	4NO	4	AST R 32 40	666577	1
	40A/415V	2NO	4	AST R 40 20	666578	1
	40A/415V	3NO	4	AST R 40 30	666579	1
	40A/415V	3NO+NC	4	AST R 40 3N	666580	1
	40A/415V	4NO	4	AST R 40 40	666581	1
	63A/415V	2NO	4	AST R 63 20	666582	1
	63A/415V	3NO	4	AST R 63 30	666583	1
	63A/415V	3NO+NC	4	AST R 63 3N	666584	1
63A/415V	4NO	4	AST R 63 40	666585	1	
Changeover switches 	16A/240V	1NO	1	AST S 16 10	666587	12
	16A/415V	2NO	1	AST S 16 20	666589	12
	16A/415V	3NO	1	AST S 16 30	666590	12
	16A/415V	4NO	1	AST S 16 40	666593	12
	16A/415V	3NO	2	AST S 16 30 2	666591	6
	16A/415V	4NO	2	AST S 16 40 2	666592	6
	16A/240V	1CO	1	AST S 16 1	666586	12
	16A/240V	2CO	1	AST S 16 2	666588	12
	32A/240V	1NO	1	AST S 32 10	666595	12
	32A/415V	2NO	1	AST S 32 20	666597	12
	32A/415V	3NO	1	AST S 32 30	666599	12
	32A/415V	4NO	1	AST S 32 40	666600	12
	32A/415V	3NO	2	AST S 32 30 2	666598	6
	32A/415V	4NO	2	AST S 32 40 2	666601	6
	32A/240V	1CO	1	AST S 32 1	666594	12
	32A/240V	2CO	1	AST S 32 2	666596	12
	Switch with signal lamp 	16A/240V	1NO	1	AST SL 16 10	666602
16A/240V		2NO	1	AST SL 16 20	666603	12
32A/240V		1NO	1	AST SL 32 10	666604	12
32A/240V		2NO	1	AST SL 32 20	666605	12
Changeover switches with zero position 	16A/240V	1CO	1	AST SZ 16 1	666606	12
	16A/240V	2CO	1	AST SZ 16 2	666607	12
	32A/240V	1CO	1	AST SZ 32 1	666608	12
	32A/240V	2CO	1	AST SZ 32 2	666609	12
Push-button 	16A/240V	1NC	1	AST P 16 01	666570	12
	16A/240V	1NO	1	AST P 16 10	666571	12
	16A/240V	1NO 1NC	1	AST P 16 11	666572	12
Push-button with signal lamp 	16A/240V	1NO	1	AST PL 16 10	666573	12
Accessories for rotary switches						
Extension shaft 	238 mm with emergency handle			AST R ES E	666555	1
	238 mm with standard handle			AST R ES S	666556	1
Sealing piece 			4	AST R TS	666557	1

Aster
A
B
C
D
E
F
G
X



Assembled indication lamps

Aster BL

Comfort functions



Applications



Mainly used to visualize the status of a (sub)part of the installation, heater, motor, fan, pump etc.

Standards / Marking

VDE 0633, BS EN 60730-1, BS EN 60730-2-7



Features

Available in different colored leds. UNIVERSAL Current application DD/AC.

Functions

Status visualisation.

Performance

Standards	EN 60 947-5-1
Number of poles	1
Rated voltage U _n	V AC 230
	V DC 230
Light source	high capacity LED diode
Light source capacity W	0,8
Colours	green - G, red - R, blue - B, Yellow-Y
Terminal capacity mm ²	0,75 - 6 for Cu conductors
Mounting	on rail DIN 35x7,5 EN 60 715
Degree of protection	IP 20
	IP 40 from the front panel
Ambient air temperature °C	from -25 to +55
Working positions	optional

A

B

C

D

E

F

G

X





Aster BL - Assembled indication lamps



Nominal voltage	Color	Number of modules	Cat. No.	Ref. No.	Pack.
230 V AC/DC	Red	1	ASTBLR230	661692	12
230 V AC/DC	Green	1	ASTBLG230	661693	12
230 V AC/DC	Blue	1	ASTBLB230	661694	12
230 V AC/DC	Yellow /Amber	1	ASTBLY230	661695	12

Aster BL

A

B

C

D

E

F

G

X





Indication lamps

Aster

Features

Available in different voltages and with different coloured lenses.

Functions

Status visualisation.

Performance

Nominal voltage	12V	24V
Own consumption	120mA	85mA
Lamp	Incandescent lamp	
Lens colours	Red, green, orange and transparent	
Protection degree	IP20	
Screws	Pozidriv 1	
Terminal capacity:	min	1x1.5mm ²
	max	1x10mm ² / 2x4mm ²

Socket-outlets

MSC

Performance

Nominal current	16A
Nominal voltage	250V
Operating temperature	-20 ... +55°C
Protection degree	IP20
Screws	Pozidriv 2
Terminal capacity:	min
	max
	1x1mm ²
	1x6mm ² or 2x2.5mm ²

Comfort functions



Applications



Mainly used to visualise the status of a (sub)part of the installation, heater, motor, fan, pump etc.

Standards / Marking

VDE 0633, BS EN 60730-1, BS EN 60730-2-7



Applications



Approvals⁽¹⁾ / Marking



Standards

BS EN C61112-1, NF C61-303 (86), IEC 60884-1

(1) Depending on type.

A

B

C

D


E

F



G

X




Aster - Indication lamp

	Nominal operating voltage	Colour	Number of modules	Cat. No.	Ref. No.	Pack.
	-	-	1	AST B	666347	12

Accessories

	Nominal operating voltage	Colour	Number of modules	Cat. No.	Ref. No.	Pack.
	12V	-	-	AST B 12	666340	12
	24V	-	-	AST B 24	666342	12
	-	Transparent	-	AST L CL	666343	12
	-	Green	-	AST L GN	666344	12
	-	Orange	-	AST L OR	666345	12
	-	Red	-	AST L RD	666346	12
	-	-	-	-	-	-

MSC - Socket-outlets

	Nominal current	Nominal voltage	Number of modules	Cat. No.	Ref. No.	Pack.
	16A	250V	2.5	MSC SEP	666501	4
	16A	250V	2.5	MSC SE	666499	4
	16A	250V	2.5	MSC SPP	666502	4

Aster and MSC

A

B

C

D

E

F

G

X



Contactors

Contax

Comfort functions



Applications



Switching of lighting, heating-equipment, motors for pumps and fans, ...

Day and night contactors are used mainly in combination with dual-tariff applications to allow high-energy-loads (i.e. electrical water heaters, accumulation heaters) only to consume energy during the low-tariff period. A forced-on, forced-off, auto-switch allows to overrule the normal operation of the DN-contactor at all times.

Features

Except for the 20A version, all contactors have DC coils, resulting in an absolutely noise-free, real silent operation: 50 or 60Hz noise generation by the contactor is impossible. As all DC coil contactors have an internal diode rectifier bridge, they all can be operated by both DC and AC power supplies. The built-in varistor protects the coil against an overvoltage of up to 5kV. The switch position of the contactor is visualised through an indicator flag. The loss-proof safety terminals are equipped with Pozidriv screws and have IP20 protection degree. Add-on auxiliary contacts as well as spacers and sealing pieces are available.

Functions

Contactors are electromechanically controlled switches used to control single or multi-phase (high) power loads while the control itself can be (very) low power.

Standards

IEC 60947-4-1, BS EN 60947-4-1,
IEC 61095, BS EN 61095. Approval VDE.

Performance

Rated switching capacity	20A	24A	40A	63A
Contacts				
Switching capacity for different loads				
Rated insulation voltage	400V	500V	500V	500V
Rated operational voltage	250V	440V	440V	440V
Switching-on capacity $\cos \varphi = 0.65$ at 380-400V 3phase	-	90A	176A	300A
Switching-on capacity $\cos \varphi = 0.95$ at 220-230V 1phase	100A	-	-	-
Switching-off capacity $\cos \varphi = 0.65$ at 380-400V 3phase	-	72A	176A	240A
Switching-off capacity $\cos \varphi = 0.95$ at 220-230V 1phase	80A	-	-	-
Fuse type GL for short-circuit protection	20A	35A	63A	80A
Ohmic loss per contact at I_n	1.0W	1.5W	3.0W	6.0W
Maximum switching frequency AC1 / AC7a	300/h	300/h	300/h	300/h
Maximum switching frequency AC3 / AC7b	600/h	600/h	600/h	600/h
Mechanical service life	10^6	10^6	10^6	10^6
Electrical service life AC1 / AC7a	150000	150000	150000	150000
Electrical service life AC3 / AC7b	150000	500000	170000	240000
Screws				
	Pozidriv 1	Pozidriv 1	Pozidriv 2	Pozidriv 2
Terminal capacity:	min 1x1mm ²	1x1mm ²	1x1.5mm ²	1x1.5mm ²
	max 1x10mm ² or 2x4mm ²	1x10mm ² or 2x4mm ²	1x25mm ² or 2x10mm ²	1x25mm ² or 2x10mm ²
Magnetic control system				
Control voltage range	85 ... 110% \times Un	85 ... 110% \times Un	85 ... 110% \times Un	85 ... 110% \times Un
Rated operating frequency	50 or 60Hz	DC, 40 ... 450Hz	DC, 40 ... 450Hz	DC, 40 ... 450Hz
Operating temperature range	-25 ... +55°C ⁽¹⁾	-25 ... +55°C ⁽¹⁾	-25 ... +55°C ⁽¹⁾	-25 ... +55°C ⁽¹⁾
Maximum pull-in coil power loss	8.0VA / 5.0W	4VA / 4W	5VA / 5W	6.5VA / 6.5W
Maximum holding coil power loss	3.2VA / 1.2W	4VA / 4W	5VA / 5W	4.2VA / 4.2W
Switching-on delay	9 ... 12 ms	< 40 ms	< 40 ms	< 40 ms
Switching-off delay	10 ... 12 ms	< 40 ms	< 40 ms	< 40 ms
Screws				
	Pozidriv 1	Pozidriv 1	Pozidriv 1	Pozidriv 1
Terminal capacity:	min 1x1mm ²	1x1mm ²	1x1mm ²	1x1mm ²
	max 1x4mm ² or 2x2.5mm ²	1x4mm ² or 2x2.5mm ²	1x4mm ² or 2x2.5mm ²	1x4mm ² or 2x2.5mm ²

(1) Remark: If several contactors are mounted next to each-other and the time of operation exceeds 1 hour and the ambient temperature rises above 40°C, a 1/2-module spacer must be added every second contactor (i.e. contactor contactor spacer contactor contactor spacer contactor contactor etc.)

Contax - Contactors

Contactor	Nominal current	Contact combination	Coil voltage	AC/DC	Number of modules	Cat. No.	Ref. No.	Pack.
	20A	1NO 1NC	24V	AC	1	CTX 20 11 024 A	666127	12
	20A	1NO 1NC	230V	AC	1	CTX 20 11 230 A	666126	12
	20A	2NC	24V	AC	1	CTX 20 02 024 A	666129	12
	20A	2NC	230V	AC	1	CTX 20 02 230 A	666128	12
	20A	2NO	12V	AC	1	CTX 20 20 012 A	666130	12
	20A	2NO	24V	AC	1	CTX 20 20 024 A	666133	12
	20A	2NO	48V	AC	1	CTX 20 20 048 A	666134	12
	20A	2NO	230V	AC	1	CTX 20 20 230 A	666131	12
	20A	2NO	240V	AC	1	CTX 20 20 240 A	666132	12
	2 NC	24A	2NO 2NC	24V	AC/DC	2	CTX 24 22 024 U	666136
	24A	2NO 2NC	230V	AC/DC	2	CTX 24 22 230 U	666135	5
	24A	3NO	24V	AC/DC	2	CTX 24 30 024 U	666138	5
	24A	3NO	230V	AC/DC	2	CTX 24 30 230 U	666137	5
	24A	4NC	24V	AC/DC	2	CTX 24 04 024 U	666140	5
	24A	4NC	230V	AC/DC	2	CTX 24 04 230 U	666139	5
	24A	4NO	12V	AC/DC	2	CTX 24 40 012 U	666141	5
	24A	4NO	24V	AC/DC	2	CTX 24 40 024 U	666144	5
	24A	4NO	48V	AC/DC	2	CTX 24 40 048 U	666145	5
	24A	4NO	230V	AC/DC	2	CTX 24 40 230 U	666142	5
	24A	4NO	240V	AC/DC	2	CTX 24 40 240 U	666143	5
	40A	2NC	230V	AC/DC	3	CTX 40 02 230 U	666170	3
	40A	2NO	230V	AC/DC	3	CTX 40 20 230 U	666146	3
	40A	3NO	24V	AC/DC	3	CTX 40 30 024 U	666149	3
	40A	3NO	230V	AC/DC	3	CTX 40 30 230 U	666148	3
	40A	4NO	12V	AC/DC	3	CTX 40 40 012 U	666150	3
	40A	4NO	24V	AC/DC	3	CTX 40 40 024 U	666153	3
	40A	4NO	48V	AC/DC	3	CTX 40 40 048 U	666154	3
	40A	4NO	230V	AC/DC	3	CTX 40 40 230 U	666151	3
	40A	2NO	24V	AC/DC	3	CTX 40 20 024 U	666147	3
	40A	4NO	240V	AC/DC	3	CTX 40 40 240 U	666152	3
	63A	4NO	24V	AC/DC	3	CTX 63 40 024 U	666158	3
	63A	4NO	230V	AC/DC	3	CTX 63 40 230 U	666156	3
	63A	2NO	230V	AC/DC	3	CTX 63 20 230 U	666155	3
	63A	4NO	240V	AC/DC	3	CTX 63 40 240 U	666157	3

Contactor Day and Night	Nominal current	Contact combination	Coil voltage	AC/DC	Number of modules	Cat. No.	Ref. No.	Pack.
	20A	2NO	230V	AC	1	CTX DN 20 20 230 A	666164	12
	24A	3NO	230V	AC/DC	2	CTX DN 24 30 230 U	666165	5
	24A	4NO	230V	AC/DC	2	CTX DN 24 40 230 U	666166	5
	40A	2NO	230V	AC/DC	3	CTX DN 40 20 230 U	666167	3
	40A	3NO	230V	AC/DC	3	CTX DN 40 30 230 U	666168	3
	40A	4NO	230V	AC/DC	3	CTX DN 40 40 230 U	666169	3
	4 NO							

Add-on auxiliary contact for 24-40-63A contactors

Left mounting	Nominal current	Contact combination	Coil voltage	AC/DC	Number of modules	Cat. No.	Ref. No.	Pack.
	6A	1NO 1NC			0.5	CTX 06 11	666162	5
	6A	2NO			0.5	CTX 06 20	666163	5
	2 NO							

Accessories

	Nominal current	Contact combination	Coil voltage	AC/DC	Number of modules	Cat. No.	Ref. No.	Pack.
					2	CTX TS 2	666160	3
					3	CTX TS 3	666159	3
					0.5	PLS + / CTX + SP	686069	50

Contax
A
B
C
D
E
F
G
X



CTX Modular installation contactors - Lighting application

Comfort functions

A

B

C

D

E

F

G

X

Lamp type	Lamp data Watt	Permitted number of lamps per phase (230V, 50Hz) for contactor type					Capacitor (µF)	
		In (A)	CTX20	CTX24	CTX40	CTX63		
Incandescent lamp	60	0.26	21	25	54	83	-	
	100	0.43	13	15	32	50	-	
	200	0.87	7	7	16	25	-	
	300	1.3	4	5	11	16	-	
	500	2.17	3	3	6	10	-	
	1000	4.35	1	1	3	5	-	
Fluorescent lamp	uncompensated and series compensation							
	15	0.35	25	30	100	155	-	
	20	0.37	22	26	85	140	-	
	40	0.43	17	20	65	105	-	
	42	0.54	13	16	52	85	-	
	65	0.67	10	12	40	60	-	
	115	1.5	4	5	18	28	-	
	140	1.5	4	5	18	28	-	
	two lamp circuit							
	2x20	2x0.13	2x22	2x26	2x85	2x140	-	
	2x40	2x0.22	2x17	2x20	2x65	2x105	-	
	2x42	2x0.24	2x13	2x16	2x52	2x85	-	
	2x65	2x0.34	2x10	2x12	2x40	2x60	-	
	2x115	2x0.65	2x4	2x5	2x18	2x28	-	
	2x140	2x0.75	2x4	2x5	2x18	2x28	-	
	parallel compensation							
	15	0.11	6	8	15	67	4.5	
	20	0.13	5	7	14	60	5	
	40	0.22	6	8	15	67	4.5	
	42	0.24	4	6	12	50	6	
	65	0.65	4	5	10	43	7	
	115	0.65	1	2	4	17	18	
	140	0.75	1	2	4	17	18	
	High pressure mercury vapor lamps (eg. HQL, HPL)	uncompensated						
		50	0.61	12	14	36	50	-
		80	0.8	7	10	27	36	-
		125	1.15	5	7	19	26	-
		250	2.15	3	4	10	14	-
400		3.25	1	2	7	10	-	
700		5.4	-	1	4	6	-	
1000		7.5	-	1	3	4	-	
200/400		8	-	1	3	4	-	
parallel compensation								
50		0.28	4	5	10	43	7	
60		0.41	3	4	8	37	8	
125		0.65	2	3	6	26	10	
250		1.22	1	2	3	15	18	
400		1.95	-	1	3	10	25	
700		3.45	-	-	1	5	45	
1000		4.8	-	-	1	4	60	
200/400		5.45	-	1	2	2	35	
Lamps with electronic power supply units	permitted number of electropower supply units per phase							
	1x18	15	24	55	76	-	-	
	2x18	8	18	34	46	-	-	
	1x36	12	16	34	47	-	-	
	2x36	7	11	20	29	-	-	
	1x58	11	14	32	46	-	-	
	2x58	6	8	17	24	-	-	
	uncompensated							
Metal-halogen lamps (eg. HQL, HPI)	35	0.53	-	10	28	38	-	
	70	1	-	5	14	20	-	
	150	1.8	-	3	8	11	-	
	250	3	-	2	5	7	-	
	400	3.5	-	1	4	6	-	
	1000	9.5	-	-	1	2	-	
	2000	16.5	-	-	1	1	-	
	2000/400V	10.5	-	-	2	2	-	
	3500/400V	18	-	-	1	1	-	
	parallel compensation							
	35	0.25	-	5	11	30	6	
	70	0.45	-	3	5	18	14	
150	0.75	-	1	3	9	20		
250	1.5	-	1	2	7	33		
400	2.5	-	1	2	6	35		
1000	5.8	-	-	-	2	95		
2000	11.5	-	-	-	1	148		
2000/400V	6.6	-	-	1	2	58		
3500/400V	11.6	-	-	-	1	100		



CTX Modular installation contactors - Lighting application

Lamp type	Lamp data Watt	Permitted number of lamps per phase (230V, 50Hz) for contactor type					Capacitor (µF)	
		In (A)	CTX20	CTX24	CTX40	CTX63		
Low pressure sodium vapor lamps	uncompensated							
	35	1.5	5	8	22	30	-	
	55	1.5	5	8	22	30	-	
	90	2.4	3	5	13	19	-	
	135	3.5	2	3	10	13	-	
	150	3.3	2	3	10	14	-	
	180	3.3	2	3	10	14	-	
	200	2.3	3	5	14	20	-	
	parallel compensation							
	35	0.31	-	1	4	15	20	
	55	0.42	-	1	4	15	20	
	90	0.63	-	1	3	10	30	
	135	0.94	-	-	2	7	45	
	150	1	-	-	2	8	40	
180	1.16	-	-	2	8	40		
200	1.32	-	1	3	12	25		
High pressure sodium vapor lamps	uncompensated							
	150	1.8	-	4	15	20	-	
	250	3	-	3	9	15	-	
	330	3.7	-	2	8	10	-	
	400	4.7	-	1	6	8	-	
	1000	10.3	-	-	3	4	-	
	parallel compensation							
	150	0.83	-	1	3	15	20	
	250	1.5	-	1	2	9	33	
	330	2	-	-	2	7	40	
	400	2.4	-	-	1	6	48	
	1000	6.3	-	-	-	2	106	
	Transformer data		Permitted number of transformers per phase (230V, 50Hz)					
	WATT							
Transformers for halogen for low voltage lamps	20	-	40	52	110	174	-	
	50	-	20	24	50	80	-	
	75	-	13	16	35	54	-	
	100	-	10	12	27	43	-	
	150	-	7	9	19	29	-	
	200	-	5	6	14	23	-	
	300	-	3	4	9	14	-	

CTX Modular installation contactors DC1-/DC-3 switching DC with NO contacts

Type	Rated operational Voltage Ue (A)	DC-1 (L/R ≤ 1ms)			DC-3 (L/R ≤ 2ms)		
		1 current path (A)	2 current path series (A)	3 current path series (A)	1 current path (A)	2 current path series (A)	3 current path series (A)
CTX24	24VDC	24	24	24	16	24	24
	48VDC	21	24	24	8	18	24
	60VDC	17	24	24	4	14	24
	110VDC	7	16	24	16	6.5	16
	220VDC	0.9	4.5	13	0.2	1	4
CTX24	24VDC	40	40	40	19	40	40
	48VDC	23	40	40	10	20	40
	60VDC	18	32	40	5	16	34
	110VDC	8	17	30	1.8	7	18
	220VDC	1	5	15	0.3	1.1	4.5
CTX24	24VDC	50	63	63	21	44	63
	48VDC	25	43	63	11	22	47
	60VDC	20	35	60	5.5	18	38
	110VDC	9	19	33	2	8	21
	220VDC	1.1	5.5	17	0.3	1.2	5

Lighting application

A
B
C

D

E
F

G
X



Contactors

Contax L

Comfort functions



Applications



Switching of lighting, heating-equipment, motors for pumps and fans, ...

Day and night contactors are used mainly in combination with dual-tariff applications to allow high-energy-loads (i.e. electrical water heaters, accumulation heaters) only to consume energy during the low-tariff period. A forced-on, forced-off, auto-switch allows to overrule the normal operation of the DN-contactor at all times.

Features

All contactors have DC coils, resulting in an absolutely noise-free, real silent operation: 50 or 60Hz noise generation by the contactor is impossible.

As all DC coil contactors have an internal diode rectifier bridge, they all can be operated by both DC and AC power supplies. The builtin varistor protects the coil against an overvoltage of up to 2kV. The switch position of the contactor is visualised through an indicator flag. The loss-proof safety terminals are equipped with Pozidriv screws and have IP20 protection degree.

These contactor allows:

- Add-on auxiliary contacts:
Contax AUXII, Contax AUX20 (except 1-module AC/DC contactors).
- Sealing caps:
Contax R1CAP, Contax R2CAP (for 3 module available upon request).

Functions

Contactors are electromechanically controlled switches used to control single or multi-phase (high) power loads while the control itself can be (very) low power

Standards / Marking

IEC/EN 61095, IEC/EN 60947-4-1, IEC/EN 60947-5-1, CE

Performance

Rated switching capacity	20A	25A	40A	63A
Contacts				
Switching capacity for different loads				
Rated insulation voltage	440V	440V	440V	440V
Rated operational voltage	400V	400V	400V	400V
Switching-on capacity $\cos \varphi = 0.65$ at 380-400V 3phase	-	85A	220A	300A
Switching-on capacity $\cos \varphi = 0.95$ at 220-230V 1phase	90A	-	-	-
Switching-off capacity $\cos \varphi = 0.65$ at 380-400V 3phase	-	68A	176A	240A
Switching-off capacity $\cos \varphi = 0.95$ at 220-230V 1phase	72A	-	-	-
Fuse type GL for short-circuit protection	20A	25A	63A	80A
Ohmic loss per contact at In	1.7W	2.2W	4.0W	8.0W
Maximum switching frequency AC1 / AC7a	600/h	600/h	600/h	600/h
Maximum switching frequency AC3 / AC7b	600/h	600/h	600/h	600/h
Mechanical service life	10x10 ⁶	10x10 ⁶	10x10 ⁶	10x10 ⁶
Electrical service life AC1 / AC7a	200000	200000	100000	100000
Electrical service life AC3 / AC7b	300000	500000	150000	150000
Screws	Pozidriv 1	Pozidriv 1	Pozidriv 2	Pozidriv 2
Terminal capacity:				
rigid	1x6mm ²	1x6mm ²	1.5x16mm ²	1.5x16mm ²
flexible	1x10mm ²	1x10mm ²	1.5x25mm ²	1.5x25mm ²
Magnetic control system				
Control voltage range	85 ... 110%xUn	85 ... 110%xUn	85 ... 110%xUn	85 ... 110%xUn
Rated operating frequency	40 ... 500Hz	40 ... 500Hz	50/60Hz	50/60Hz
Operating temperature range	-25 ... +55°C ⁽¹⁾	-25 ... +55°C ⁽¹⁾	-25 ... +55°C ⁽¹⁾	-25 ... +55°C ⁽¹⁾
Maximum switch-on coil power loss	2.1VA / 2.1W	2.6VA / 2.6W	5VA / 5W	5VA / 5W
Maximum operation coil power loss	2.1VA / 2.1W	2.6VA / 2.6W	5VA / 5W	5VA / 5W
Make delay	15 ... 45 ms	15 ... 45 ms	15 ... 20 ms	15 ... 20 ms
Brake delay	20 ... 50 ms	20 ... 70 ms	35 ... 45 ms	35 ... 45 ms
Screws	Pozidriv 1	Pozidriv 1	Pozidriv 1	Pozidriv 1
Terminal capacity:				
rigid	1x2.5mm ²	1x2.5mm ²	1x2.5mm ²	1x2.5mm ²
flexible	2x2.5mm ²	2x2.5mm ²	2x2.5mm ²	2x2.5mm ²

(1) Valid for 2NO and 4NO versions of contacts. For other version of contacts is temperature range -15 ... +55°C

A

B

C

D

E





F

G

X



Contax L - Contactors

	Nominal current	Contact combination	Coil voltage	AC/DC	Number of modules	Cat. No.	Ref. No.	Pack.
	20A	2NO	230V	AC/DC	1	CONTAX2020230U	685935	1
	25A	4NO	230V	AC/DC	2	CONTAX2540230U	685936	1
	25A	3NO	230V	AC/DC	2	CONTAX2530230U	685937	1
	25A	2NO 2NC	230V	AC/DC	2	CONTAX2522230U	685938	1
	40A	4NO	230V	AC/DC	3	CONTAX4040230U	685939	1
	63A	4NO	230V	AC/DC	3	CONTAX6340230U	685940	1

Contax L

A

B

C

D




E

F

G

X

Contax L - Contactor Day and Night

	20A	2NO	230V	AC/DC	1	CONTAXDN2020230U	685941	1
	25A	4NO	230V	AC/DC	2	CONTAXDN2540230U	685942	1
	25A	3NO	230V	AC/DC	2	CONTAXDN2530230U	685943	1
	32A	3NO	230V	AC/DC	3	CONTAXDN3230230U	685944	1

New



Relays

Contax R

Comfort functions



Applications



- Switching of lighting, heating, etc.
- Galvanic insulation of i.e. status signalisation lamps from a (high) power (high voltage) circuit.
- Galvanic insulation of PLC-inputs or outputs to avoid destruction through excessive voltage.

Features

- The switch position is visualised by the position of the front handle.
- The safety terminals are equipped with captive Pozidriv screws and have IP20 protection degree.
- Add-on auxiliary contacts available.
- Because of the advanced product design, no spacers are needed.
- Increased safety: sealing caps for both coil and terminal are available.

Functions

Relays are electromechanically controlled switches used to control low power loads.

Standards / Marking

IEC/EN 61095, IEC/EN 60947-4-1,
IEC/EN 60947-5-1



A

B

C

D

E

F

G

X



Performance

				Contax R
Rated current (according to EN 60947-4-1)				
230VAC (1 and 2 pole) / 400VAC (3 and 4 pole)		A		16
Nominal thermal current (I _{th})		A		16
Number of pole				1 → 4
Contacts	NO			1 → 4
	Changeover			1 → 2
	NO + NC			1+1 / 2+2
Width (in 17.8mm DIN modules)	1P and 2P	Mod.		1
	3P and 4P	Mod.		2
Coil specifications				
Supply voltage range (in % of U _n)		%		85-110
Coil voltage frequency		Hz		50/60
Coil pick-up power	1P and 2P	VA		10
	3P and 4P	VA		25
Coil power loss - AC	1P and 2P	VA		1.2
	3P and 4P	VA		1.6
Maximum coil holding voltage time				unlimited
Contact bounce time at closing		sec.		< 0.010
Operate and release time				
Pick-up time (from 0 to U _n)	NO contact	sec.		< 0.025
	NC contact	sec.		< 0.025
Drop-out time (from U _n to 0)	NO contact	sec.		< 0.030
	NC contact	sec.		< 0.030
Maximum peak current at closing				
Single phase 230V AC cos ψ = 0.95				70
3-phase 400V~ cos ψ = 0.65				70
Maximum peak current at opening				
Single phase 230V AC cos ψ = 0.95				56
3-phase 400V~ cos ψ = 0.65				56
Lifetime (in number of operations)				
Electrical (in AC-1 - At full load)				2 x 10 ⁵
Mechanical				3 x 10 ⁶
Load specifications per phase				
Maximum load AC-1	1P and 2P	kW		2.9
	3P and 4P	kW		8.8
Maximum load AC-5b		kW		2.0
Maximum load AC-7b		kW		1.1
Maximum load AC-3	230V AC	kW		1.1
	400V AC	kW		3.0
Minimum load (under 5V)		W		2
Short-circuit fuse protection		A		16
General specifications				
Auxiliary contact add-on (CTX R)				yes
Need for spacer				no
DIN rail mounting				yes
Front handle for manual operation				yes
Permanent ON/OFF				no
Indicator of contact position				yes
Clamping terminals				yes
Unlosable screws				yes
Sealable terminals (coil and load)				yes
Cable cross section (Ø min/max)	Coil	mm ²		1.0 / 2.5
	Load	mm ²		1.0 / 10
Maximum torque on terminals	Coil / load	Nm		0.6 / 1.2
Ambient temperature at installation point (min./max.)		°C		- 15 / 55

Contax R

A

B

C

D

E

F

G

X



Impulse switches, Contax L and relays: maximum lamp loads

Comfort functions

A

B

C

D

E

F

G

X

Lamps type	Lamp Watts Power consumption	Pulsar S PULSAR16	Pulsar S PULSAR 32	Contax R	Contax L Contactors 20A	Contax L Contactors 25A	Contax L Contactors 40A	Contax L Contactors 63A
Incandescent lamps								
Max. load 230VAC		2100W	3600W	2100W	2100W	2220W	4050W	5100W
Max. number of lamps	15W	133	233	133	133	147	267	333
	25W	80	140	80	80	88	160	200
	40W	50	88	50	50	55	100	125
	60W	33	58	33	33	37	67	83
	75W	27	47	27	27	29	53	67
	100W	20	35	20	20	22	40	50
	150W	13	23	13	13	15	27	33
	200W	10	18	10	10	11	20	25
	300W	7	12	7	7	7	13	17
	500W	4	7	3	4	4	8	10
Fluo lamp PF uncorrected								
Max. load 230VAC		1560W	1560W	845W	845W	1105W	1950W	3120W
Max. number of lamps	18W	43	43	24	24	30	54	86
	36W	37	37	20	20	26	47	74
	40W	37	37	20	20	26	47	74
	58W	24	24	13	13	17	30	48
	65W	24	24	13	13	17	30	48
Fluo twin lamps								
Max. load 230VAC		2730W	2730W	1360W	1360W	1760W	4320W	6500W
Max. number of lamps	2x18W	62	62	31	31	40	100	150
	2x36W	33	33	17	17	22	54	81
	2x40W	33	33	17	17	22	54	81
	2x58W	21	21	10	10	13	33	50
	2x65W	21	21	10	10	13	33	50
Fluo lamp parallel compensation								
Max. load 230VAC		720W	1365W	390W	390W	325W	2015W	3055W
Max. number of lamps	18W	18	33	7	7	8	49	73
	36W	18	33	7	7	8	49	73
	40W	18	33	7	7	8	49	73
	58W	11	21	4	4	5	31	47
	65W	11	21	4	4	5	31	47
Halogen 230V								
Max. load 230VAC		2100W	3600W	2100W	2100W	2250W	4050W	5100W
Max. number of lamps	150W	13	23	13	13	15	27	33
	250W	8	14	8	8	9	16	20
	300W	7	12	7	7	7	13	17
	400W	5	9	5	5	6	10	13
	500W	4	7	4	4	4	8	10
	1000W	2	4	2	2	2	4	5
HP sodium vapour								
Max. load 230VAC		1200W	1600W	800W	800W	1000W	2500W	3300W
Max. number of lamps	70W	13	16	9	9	10	30	35
	150W	7	9	5	5	6	17	22
	250W	4	5	3	3	4	10	13
	400W	3	4	2	2	2	6	8
	1000W	1	1	-	-	1	3	3
LP sodium vapour								
Max. load 230VAC		1800W	2880W	540W	540W	720W	1800W	2340W
Max. number of lamps	55W	15	27	7	7	9	23	30
	90W	10	18	4	4	5	14	19
	135W	10	18	3	3	4	10	13
	180W	10	16	3	3	4	10	13
	185W	9	15	2	2	3	9	12
HP mercury vapour								
Max. load 230VAC		1250W	2000W	1000W	1000W	1250W	3000W	4000W
Max. number of lamps	50W	17	27	14	14	18	38	55
	80W	13	20	10	10	13	29	42
	125W	8	13	7	7	9	20	29
	250W	5	7	4	4	5	10	15
	400W	3	5	2	2	3	7	10
	1000W	1	2	1	1	1	3	4
VLV halogen								
Max. load 230VAC		1050W	3000W	1050W	1050W	1200W	2700W	4350W
Max. number of lamps	20W	50	150	50	50	60	135	215
	50W	20	60	20	20	24	54	86
	75W	14	40	14	14	16	36	57
	100W	10	30	10	10	12	27	43
	150W	7	20	7	7	8	18	29
	200W	5	15	5	5	6	14	22
	300W	3	10	3	3	4	9	14
Electronic reactor								
Max. load 230VAC		720W	2800W	470W	470W	720W	2090W	2880W
Max. number of lamps	1x18W	33	133	22	22	35	100	139
	1x36W	19	75	13	13	20	56	78
	1x58W	11	43	7	7	11	32	45
	2x18W	18	71	12	12	19	53	74
	2x36W	10	39	6	6	10	29	40
	2x58W	5	21	4	4	6	16	22
LEDs								
Max. load 230VAC								
	Non dimmable	2A	12A	1.5A	2.4A	3.8A	11A	18A
	Dimmable	2A	12A	1.5A	2.4A	3.8A	11A	18A



Contax R - Relays

	Nominal current	Contact combination	Coil voltage AC	Number of Modules	Cat. No.	Ref. No.	Pack.		
	16A	1 NO	8V	1	CONTAXR1610008A	685693	1		
		1 NO	12V	1	CONTAXR1610012A	685694	1		
		1 NO	24V	1	CONTAXR1610024A	685695	1		
		1 NO	48V	1	CONTAXR1610048A	685696	1		
		1 NO	115V	1	CONTAXR1610115A	685697	1		
		1 NO	230V	1	CONTAXR1610230A	685699	1		
		1 NO	240V	1	CONTAXR1610240A	685700	1		
	16A	1 CO	8V	1	CONTAXR161008A	685701	1		
		1 CO	12V	1	CONTAXR161012A	685702	1		
		1 CO	24V	1	CONTAXR161024A	685703	1		
		1 CO	48V	1	CONTAXR161048A	685704	1		
		1 CO	115V	1	CONTAXR161115A	685705	1		
		1 CO	230V	1	CONTAXR161230A	685706	1		
		1 CO	240V	1	CONTAXR161240A	685707	1		
	16A	2 NO	8V	1	CONTAXR1620008A	685708	1		
		2 NO	12V	1	CONTAXR1620012A	685709	1		
		2 NO	24V	1	CONTAXR1620024A	685710	1		
		2 NO	48V	1	CONTAXR1620048A	685711	1		
		2 NO	115V	1	CONTAXR1620115A	685712	1		
		2 NO	230V	1	CONTAXR1620230A	685714	1		
		2 NO	240V	1	CONTAXR1620240A	685715	1		
	16A	1 NO 1 NC	8V	1	CONTAXR1611008A	685716	1		
		1 NO 1 NC	12V	1	CONTAXR1611012A	685717	1		
		1 NO 1 NC	24V	1	CONTAXR1611024A	685718	1		
		1 NO 1 NC	48V	1	CONTAXR1611048A	685719	1		
		1 NO 1 NC	115V	1	CONTAXR1611115A	685720	1		
		1 NO 1 NC	230V	1	CONTAXR1611230A	685722	1		
		1 NO 1 NC	240V	1	CONTAXR1611240A	685723	1		
	16A	2 CO	8V	2	CONTAXR162008A	685724	1		
		2 CO	12V	2	CONTAXR162012A	685725	1		
		2 CO	24V	2	CONTAXR162024A	685726	1		
		2 CO	48V	2	CONTAXR162048A	685727	1		
		2 CO	115V	2	CONTAXR162115A	685728	1		
		2 CO	230V	2	CONTAXR162230A	685729	1		
		2 CO	240V	2	CONTAXR162240A	685730	1		
	16A	3 NO	12V	2	CONTAXR1630012A	685731	1		
		3 NO	24V	2	CONTAXR1630024A	685732	1		
		3 NO	48V	2	CONTAXR1630048A	685733	1		
		3 NO	230V	2	CONTAXR1630230A	685734	1		
	16A	4 NO	8V	2	CONTAXR1640008A	685735	1		
		4 NO	12V	2	CONTAXR1640012A	685736	1		
		4 NO	24V	2	CONTAXR1640024A	685737	1		
		4 NO	48V	2	CONTAXR1640048A	685738	1		
		4 NO	230V	2	CONTAXR1640230A	685740	1		
		4 NO	240V	2	CONTAXR1640240A	685741	1		
	16A	2 NO 2 NC	8V	2	CONTAXR1622008A	685742	1		
		2 NO 2 NC	12V	2	CONTAXR1622012A	685743	1		
		2 NO 2 NC	24V	2	CONTAXR1622024A	685744	1		
		2 NO 2 NC	48V	2	CONTAXR1622048A	685745	1		
		2 NO 2 NC	230V	2	CONTAXR1622230A	685747	1		
		2 NO 2 NC	240V	2	CONTAXR1622240A	685748	1		
	Sealing covers		-	1	CONTAXR1CAP	685945	2		
			-	2	CONTAXR2CAP	685934	2		
	Add-on auxiliary contact		6A	1NO 1NC	-	0.5	CONTAXRAUX11	685883	1
	1 NO 1 NC 2 NO		6A	2NO	-	0.5	CONTAXRAUX20	685930	1

Contax R

A

B

C

D

E

F

G

X

New



Redline

Pulsar Impulse switches range



Impulse switches are switching devices without power consumption in operating switch-on position and very small power consumption per pole. On a very effective way helps to reduce greenhouse gas emissions of CO₂.

Comfort functions

A
B
C
D



Main Benefits

- Small switch on coil consumption
- No hold coil consumption
- Wide application
- Mounting on 35mm rail
- Sealing terminal covers
- All control voltages from 8V till 240V are possible

For remote switching

- Advanced operation
- Lights and lighting
- Electric heating
- Electric drives

Intelligent installations

- Impulse control
- Manual control

E
F
G
X

Main features

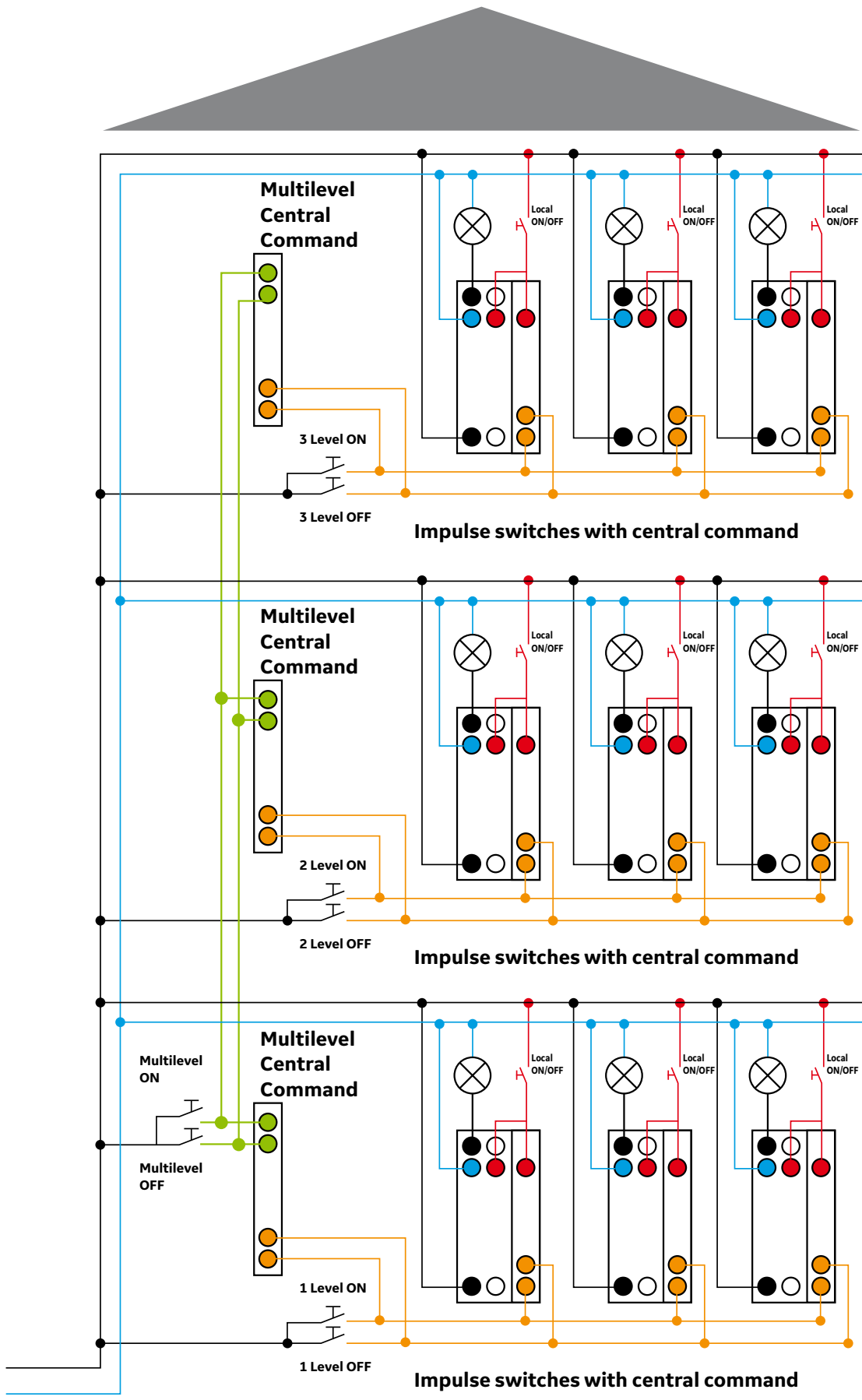
- Redline shape
- Pozidriv screws
- Market terminals
- Electric diagram in front of the device

Plenty of accessories

- Sealing cover
- Capacitor
- Auxiliaries
- General command
- Multilevel



Full functionality





Impulse switches

Pulsar S

Comfort functions



Applications



Mainly used for the switching of lighting and heating equipment and/or to obtain a simplified wiring in case the load needs to be controlled at reduced voltage and/or from more than 2 different places.

Standards / Marking

IEC/EN 60669-1, IEC/EN 60669-2-2



Features

- Besides the normal operation through electrically energising the coil, manual operation is possible at all times.
- The switch position is visualised by the position of the front handle for all devices.
- The central command version was developed to force several devices at the same time to the on or off position, independently of the current status of each individual device. Also in this case, the possibility of operating the device locally remains.
- The safety terminals are equipped with captive Pozidriv screws and have IP20 protection degree.
- An add-on auxiliary contact, add-on central-command module and a spacer are available.
- The use of a large number of luminous push-buttons is possible.
- Availability of sealing cap for coil and load terminals.

DIN-rail positioning: used in vertical/horizontal position

Functions

Impulse switches are electromechanically controlled switches used to control single- or multi-phase medium-power loads while the control itself can be (very) low power.

The device switches between 2 stable positions, each time a (brief) impulse energises its control circuit.

A

B

C

D

E

F

G

X



Performance

		PLS +			PLS + C	
		PLS + 16	PLS + 32	PLS + PU 16	PLS + C 16	PLS + C 32
Rated current (according to IEC/EN 60669-2-2)						
250VAC (1 pole) / 440V AC (2, 3 and 4 pole)	A	16	32	16	16	32
Direct current (at 30V DC)	A	16	20	16	16	20
Number of pole		1 → 4	1 → 4	1 → 4	1 → 4	1 → 3
Contacts						
	NO	1 → 4	1 → 4	1 → 4	1 → 3	-
	Changeover	1 → 2	-	1 → 2	1 → 2	-
	NO + NC	1+1 / 2+2	-	1+1 / 2+2	-	-
Width (in 17.8mm DIN modules)						
	1 P	Mod. 1	1	1	1	1
	2 P	Mod. 1	1	1	1 ½	1 ½
	3 P	Mod. 2	2	2	-	2 ½
	4 P	Mod. 2	2	2	2 ½	-
Coil specifications						
Supply voltage range (in % of Un)	%	90-110	90-110	90-110	90-110	90-110
Coil pick-up power	1P and 2P	VA 18	18	18	18	18
	3P and 4P	VA 18	18	18	18	18
Coil power loss - AC	1P and 2P	VA 9	9	9	9	9
	3P and 4P	VA 9	9	9	9	9
Maximum coil holding voltage time		1h	1h	permanent	1h	1h
Impulse times						
Minimum impulse time (under Un)	sec.	0.050	0.050	0.050	0.050	0.050
Minimum impulse time (90% Un)	sec.	0.100	0.100	0.100	0.100	0.100
Minimum time between impulses	sec.	0.150	0.150	0.150	0.150	0.150
Maximum number of impulses per hour		900	450	900	900	600
Lifetime (in number of operations)						
Electrical (AC - At full load)		2 × 10 ⁵	2 × 10 ⁵	2 × 10 ⁵	2 × 10 ⁵	2 × 10 ⁵
Mechanical		2 × 10 ⁶	2 × 10 ⁶	2 × 10 ⁶	2 × 10 ⁶	2 × 10 ⁶
Load specifications						
Maximum load AC-1	A	16	32	16	16	32
Maximum load DC (30V DC)	A	16	20	16	16	20
Minimum load per phase (under 5V)	W	2	2	2	2	2
Short-circuit fuse protection	A	16	32	16	16	32
Maximum number of push-buttons						
Non illuminated push-buttons		unlimited	unlimited	unlimited	unlimited	unlimited
Luminous push-buttons (0.6mA)						
	Without compensator	4	4	4	4	4
	1 compensator	30	30	30	30	30
	2 compensators	50	50	50	50	50
General specifications						
Auxiliary contact add-on (PLS)		yes	yes	yes	no	no
Need for spacer (up to 40°C) ⁽¹⁾		no	no	yes	no	no
DIN rail mounting		yes	yes	yes	yes	yes
2-POSITION HANDLE		yes	yes	yes	yes	yes
Indicator of contact position		yes	yes	yes	yes	yes
Clamping terminals		yes	yes	yes	yes	yes
Unlosable screws		yes	yes	yes	yes	yes
Sealable terminals (coil and load)		yes	yes	yes	yes	yes
Cable cross section (Ø min/max)	Coil	mm ² 1 / 4	1 / 4	1 / 4	1 / 4	1 / 4
	Load 1P-3P and 4P	mm ² 1 / 10	1 / 10	1 / 10	1 / 10	1 / 10
	Load 2P	mm ² 1 / 10	1 / 10	1 / 10	1 / 10	1 / 10
	Coil / Load	mm ² 1.2 / 0.6	1.2 / 0.6	1.2 / 0.6	1.2 / 0.6	1.2 / 0.6
Ambient temperature at installation point (min./max.)	°C	-25 / 55	-25 / 55	-25 / 55	-25 / 55	-25 / 55

(1) For temperatures 40 ... 55°C the spacer is required on the side of 3 switches side-by-side and for temperatures 55 ... 70 °C the spacer is required on the side of each switch.



Pulsar S - Impulse switches

Comfort functions

A

B

C








D

E

F













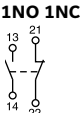
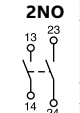
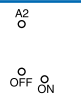
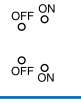

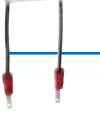

G

X

	Nominal current	Contact combination	Coil voltage AC	Number of modules	Cat. No.	Ref. No.	Pack.	
	Impulse switches							
	1NO							
		16A	1NO	8V	1	PULSAR1610008A	685779	1
		16A	1NO	12V	1	PULSAR1610012A	685780	1
		16A	1NO	24V	1	PULSAR1610024A	685781	1
		16A	1NO	48V	1	PULSAR1610048A	685782	1
		16A	1NO	115V	1	PULSAR1610115A	685783	1
		16A	1NO	230V	1	PULSAR1610230A	685784	1
	16A	1NO	230V/60Hz	1	PULSAR16123060	685785	1	
	16A	1NO	240V	1	PULSAR1610240A	685786	1	
	1CO							
		16A	1CO	8V	1	PULSAR161008A	685787	1
		16A	1CO	12V	1	PULSAR161012A	685788	1
		16A	1CO	24V	1	PULSAR161024A	685789	1
		16A	1CO	48V	1	PULSAR161048A	685790	1
		16A	1CO	115V	1	PULSAR161115A	685791	1
		16A	1CO	230V	1	PULSAR161230A	685792	1
		16A	1CO	240V	1	PULSAR161240A	685793	1
	2NO							
		16A	2NO	8V	1	PULSAR1620008A	685794	1
		16A	2NO	12V	1	PULSAR1620012A	685795	1
		16A	2NO	24V	1	PULSAR1620024A	685796	1
		16A	2NO	48V	1	PULSAR1620048A	685797	1
		16A	2NO	115V	1	PULSAR1620115A	685798	1
		16A	2NO	230V/60Hz	1	PULSAR162023060	685799	1
		16A	2NO	230V	1	PULSAR1620230A	685800	1
	16A	2NO	240V	1	PULSAR1620240A	685801	1	
	1NO 1NC							
		16A	1NO 1NC	8V	1	PULSAR1611008A	685802	1
		16A	1NO 1NC	12V	1	PULSAR1611012A	685803	1
		16A	1NO 1NC	24V	1	PULSAR1611024A	685804	1
		16A	1NO 1NC	48V	1	PULSAR1611048A	685805	1
		16A	1NO 1NC	115V	1	PULSAR1611115A	685806	1
		16A	1NO 1NC	230V	1	PULSAR1611230A	685807	1
		16A	1NO 1NC	230V/60Hz	1	PULSAR161123060	685808	1
	16A	1NO 1NC	240V	1	PULSAR1611240A	685809	1	
	2CO							
		16A	2CO	8V	2	PULSAR162008A	685810	1
		16A	2CO	12V	2	PULSAR162012A	685811	1
		16A	2CO	24V	2	PULSAR162024A	685812	1
		16A	2CO	48V	2	PULSAR162048A	685813	1
		16A	2CO	115V	2	PULSAR162115A	685814	1
		16A	2CO	230V	2	PULSAR162230A	685815	1
		16A	2CO	240V	2	PULSAR162240A	685816	1
	1NO							
		32A	1NO	8V	1	PULSAR3210008A	685817	1
		32A	1NO	12V	1	PULSAR3210012A	685818	1
		32A	1NO	24V	1	PULSAR3210024A	685819	1
		32A	1NO	48V	1	PULSAR3210048A	685820	1
		32A	1NO	115V	1	PULSAR3210115A	685821	1
		32A	1NO	230V	1	PULSAR3210230A	685822	1
		32A	1NO	240V	1	PULSAR3210240A	685823	1
	2NO							
		32A	2NO	8V	1	PULSAR3220008A	685824	1
		32A	2NO	12V	1	PULSAR3220012A	685825	1
		32A	2NO	24V	1	PULSAR3220024A	685826	1
		32A	2NO	48V	1	PULSAR3220048A	685827	1
		32A	2NO	115V	1	PULSAR3220115A	685828	1
		32A	2NO	230V	1	PULSAR3220230A	685829	1
		32A	2NO	240V	1	PULSAR3220240A	685830	1



Pulsar S - Impulse switches

	Nominal current	Contact combination	Coil voltage AC	Number of modules	Cat. No.	Ref. No.	Pack.
All-in central command       	16A	1NO	8V	1.5	PULSARC1610008A	685831	1
	16A	1NO	12V	1.5	PULSARC1610012A	685832	1
	16A	1NO	24V	1.5	PULSARC1610024A	685833	1
	16A	1NO	48V	1.5	PULSARC1610048A	685834	1
	16A	1NO	230V	1.5	PULSARC1610230A	685835	1
	16A	1NO	240V	1.5	PULSARC1610240A	685836	1
	16A	1CO	8V	1.5	PULSARC161008A	685837	1
	16A	1CO	12V	1.5	PULSARC161012A	685838	1
	16A	1CO	24V	1.5	PULSARC161024A	685839	1
	16A	1CO	48V	1.5	PULSARC161048A	685840	1
	16A	1CO	230V	1.5	PULSARC161230A	685841	1
	16A	1CO	240V	1.5	PULSARC161240A	685842	1
	16A	2NO	8V	1.5	PULSARC1620008A	685843	1
	16A	2NO	12V	1.5	PULSARC1620012A	685844	1
	16A	2NO	24V	1.5	PULSARC1620024A	685845	1
	16A	2NO	48V	1.5	PULSARC1620048A	685846	1
	16A	2NO	230V	1.5	PULSARC1620230A	685847	1
	16A	2NO	240V	1.5	PULSARC1620240A	685848	1
16A	2CO	8V	2.5	PULSARC162008A	685849	1	
16A	2CO	12V	2.5	PULSARC162012A	685850	1	
16A	2CO	24V	2.5	PULSARC162024A	685851	1	
16A	2CO	48V	2.5	PULSARC162048A	685852	1	
16A	2CO	230V	2.5	PULSARC162230A	685853	1	
16A	2CO	240V	2.5	PULSARC162240A	685854	1	
1NO  2NO  3NO 	32A	1NO	8V	1.5	PULSARC3210008A	685855	1
	32A	1NO	12V	1.5	PULSARC3210012A	685856	1
	32A	1NO	24V	1.5	PULSARC3210024A	685857	1
	32A	1NO	48V	1.5	PULSARC3210048A	685858	1
	32A	1NO	230V	1.5	PULSARC3210230A	685859	1
	32A	1NO	240V	1.5	PULSARC3210240A	685860	1
	32A	2NO	8V	1.5	PULSARC3220008A	685861	1
	32A	2NO	12V	1.5	PULSARC3220012A	685862	1
	32A	2NO	24V	1.5	PULSARC3220024A	685863	1
	32A	2NO	48V	1.5	PULSARC3220048A	685864	1
	32A	2NO	230V	1.5	PULSARC3220230A	685865	1
	32A	2NO	240V	1.5	PULSARC3220240A	685866	1
32A	3NO	8V	2.5	PULSARC3230008A	685867	1	
32A	3NO	12V	2.5	PULSARC3230012A	685868	1	
32A	3NO	24V	2.5	PULSARC3230024A	685869	1	
32A	3NO	48V	2.5	PULSARC3230048A	685870	1	
32A	3NO	230V	2.5	PULSARC3230230A	685871	1	
32A	3NO	240V	2.5	PULSARC3230240A	685872	1	
Permanent use 	16A	2NO	24V	1	PULSARPU162024A	685873	1
	16A	2NO	230V	1	PULSARPU162230A	685874	1
	16A	2CO	24V	2	PULSARPU1620024A	685875	1
	16A	2CO	230V	2	PULSARPU1620230A	685876	1
4NO 	16A	4NO	24V	2	PULSARPU1640024A	685877	1
	16A	4NO	230V	2	PULSARPU1640230A	685878	1
Add-on auxiliary contact  	6A	1NO 1NC	-	0.5	PULSARAUX11	685879	1
	6A	2NO	-	0.5	PULSARAUX20	685880	1
Add-on central control 	-	A2	-	0.5	PULSARC	685881	1
	-	OFF ON	-	0.5	PULSARM	685882	1
Multilevel central command module 	-	OFF ON	-	0.5	PULSARM	685882	1
	-	OFF ON	-	0.5	PULSARM	685882	1
Capacity module 	-	-	230/240V	-	PULSARCAPM	685884	1
Sealing cap 	-	-	-	1	PULSARCAP	685885	2
Spacer 	-	-	-	0.5	PLC/CTX SP	686059	50

Pulsar S

A

B

C

D

E

F

G

X

New



Staircase switches

Pulsar SC

Comfort functions



Applications



Lighting or ventilation of staircases, basements, halls, etc

Standard

EN 60669-2-1

Features



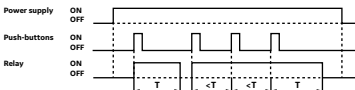
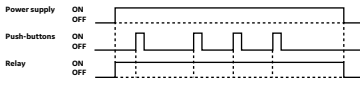
- Designed for a real 4.000W switching capacity.
- User adjustable time.
- 3 or 4 wire wiring possible.
- Safety terminals equipped with captive PH screws and IP20 protection degree.
- Anti vandalisme: resistant to blocked push-buttons.

Functions

The staircase switch Pulsar SC is an electronic switching device with micro-distance (μ) of opening between contacts. It manages over time the lights permanence in rooms such as hallways, stairs, cellars to avoid wasting energy.

A
B
C
D
E
F
G
X

Pulsar SC - Staircase switches

	Nominal Current	Contact Combination	Coil Voltage AC	Coil Voltage DC	Number of modules	Cat. No.	Ref. No.	Pack.
 Electronic staircase switch 1 NO 	16A	1 NO	230 V AC(-15%..+10%)	-	1	PULSAR SC 1-15 16A 1M	687474	1
Automatic								
Staircase light fixed on								



Performance

			PULSAR SC
Rated current (acc. IEC 669-2-3)		A	16
Width	(in number of DIN-modules)		1
Contacts		NO	1
Time range		2 function	30 sec. - 20 min.
Supply voltage		230V - 50/60 Hz	yes
	Supply voltage range (in % of Un)	%	85 - 110
Rated power consumption			
	Closed circuit current	230V VA	6 (1W)
	Working current (ignition and running)	230V VA	6 (1W)
Light types			
	Incandescent lamps		yes
	Fluorescent lamps		yes
	LED		yes
Load type P max			
	Incandescent lamps (230V)	W	4000
	Fluorescence lamps (230V)	W	1000
	LED (<2W)	W	55
	LED (2-8W)	W	150
	LED (>8W)	W	180
Lifetime (in number of operations)			
	Electrical	at 1200W	5.10 ⁴
		at full load	1.10 ⁵
	Mechanical		1.10 ⁷
Max. number of push-buttons			
	Non illuminated push-buttons		unlimited
	Luminous push-buttons:		50 (1mA)
General specifications			
	DIN-rail mounting		yes
	Silent operations		yes
	3-wire and 4-wire installation		yes
	Resistent to blocked push-buttons		yes
	Continuously adjustable time-lag		yes
	Manual switching (number of positions)		2
	Front switch-off lever		yes
	Clamping screw terminals, unloosable screws	Coil mm ²	4
	Cable cross section (Ø min./max)	Load mm ²	1.0 / 2.5
	Maximum torque on terminals	N x m	0.6
	Ambient temperature at installation point (min./max.)	°C	0 / +50
	Storage temperature	°C	-10 / +60

Pulsar SC

A

B

C

D

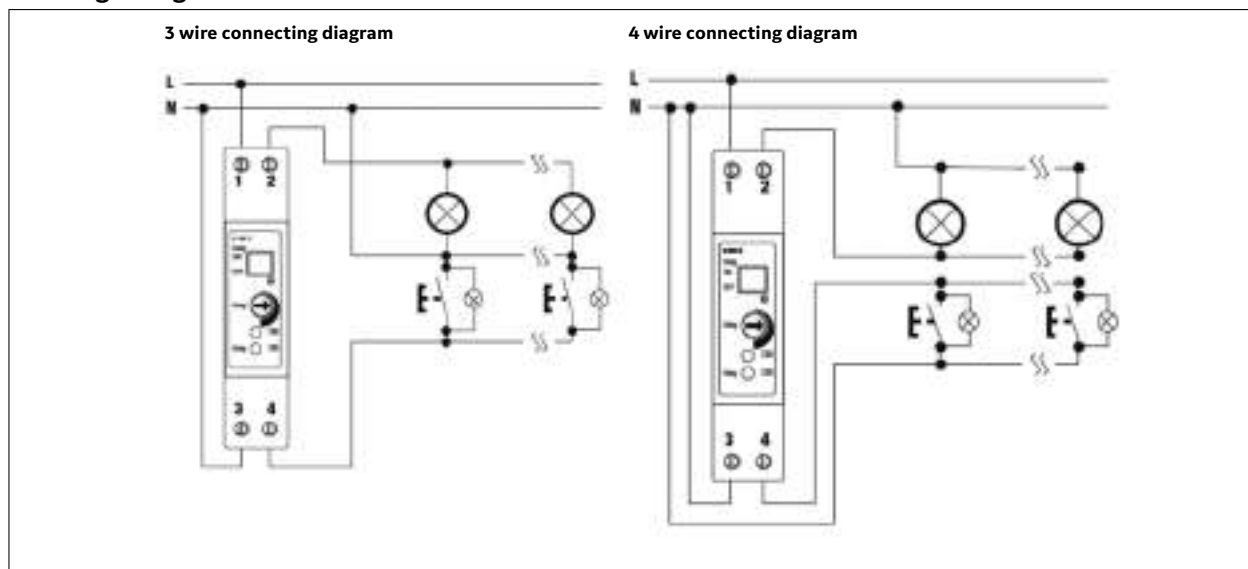
E

F

G

X

Wiring diagram



New

Universal reliable multifunction

Multifunction Time Relays

Ten functions:

- Five time functions controlled via supply voltage
- Four time functions controlled via control input
- One latching relay function

Used for regular room ventilation, cyclic dehumidification, light control, circulating pumps, neon signs, etc.

Time Relay

Time Relay is defined as the controlled period between two operations. A Time relay is a combination of an electromechanical output relay and a control circuit. The control circuit comprises solid-state components and timing circuits that control the operation of the relay and the timing range.

Over time, advances in electronic technology have greatly increased the number and variety of applications available for industrial modular relays. Selecting a relay can often be difficult and confusing task. Hopefully, this brief explanation will help you to understand which factors to consider when selecting a time relay.

Relays perform the crucial function of using one level of voltage to control what is often a different level of voltage. They also provide a high degree of isolation between power wiring and control wiring. Time relays add an extra dimension in terms of application, as they allow the introduction of a time element into the control circuit. It is virtually impossible to design a control circuit in a system without using time relays.

Asymmetrical cycle Time Relay

Used for warning illumination on the road, flashers, cyclers, frequently-switched systems

The PLT+ Time relays range is highly versatile, it provides the basic switching or controlling function as mentioned, and the timing functions in the circuit. The PLT+ range is compact in size, with a modular 18 mm-width shape, and offers unrivalled performance in its function. Time relay contacts are rated from 8 Amp. (3 COM contacts in only 1 mod.) to 16 Amp. AC1.

Timing functions for the PLT+ time relays range include: Delay ON after energization, Delay OFF after energization, Cycler beginning with pause after energization, Cycler beginning with impulse after energization, Delay OFF after de-energization, Instant make of output, Delay OFF responding to make of control contact regardless its length, Delay OFF after break of control contact with instant output, Delay OFF after make and break of control contact, Impulse relay, Pulse generator, Asymmetrical Cycler beginning with pulse, Asymmetrical Cycler beginning with pause.

Timing values may be set using a rotary switch and potentiometer in the front of the device, from 0.1 seconds to 10 days.



Save energy

Examples of Use

- Stagger start of motors to limit inrush current.
- Security systems, delay system lockdown for a set period. This allows the person setting the alarm to clear the area.
- Stairwell light operated via momentary "ON" switch.
- Switch OFF delay of toilet exhaust fan. If used in conjunction with a light circuit, the timer will allow the fan to continue to operate (for a set delay time) after the light has been turned OFF.
- When connected to the main light switch, a True OFF delay timer allows the last person sufficient time to clear the building before all the lights are turned off.
- Running a discharge pump for 1 hour per every 10-hour cycle.
- Turning a beacon "ON" for 2 seconds per every 6-second cycle.

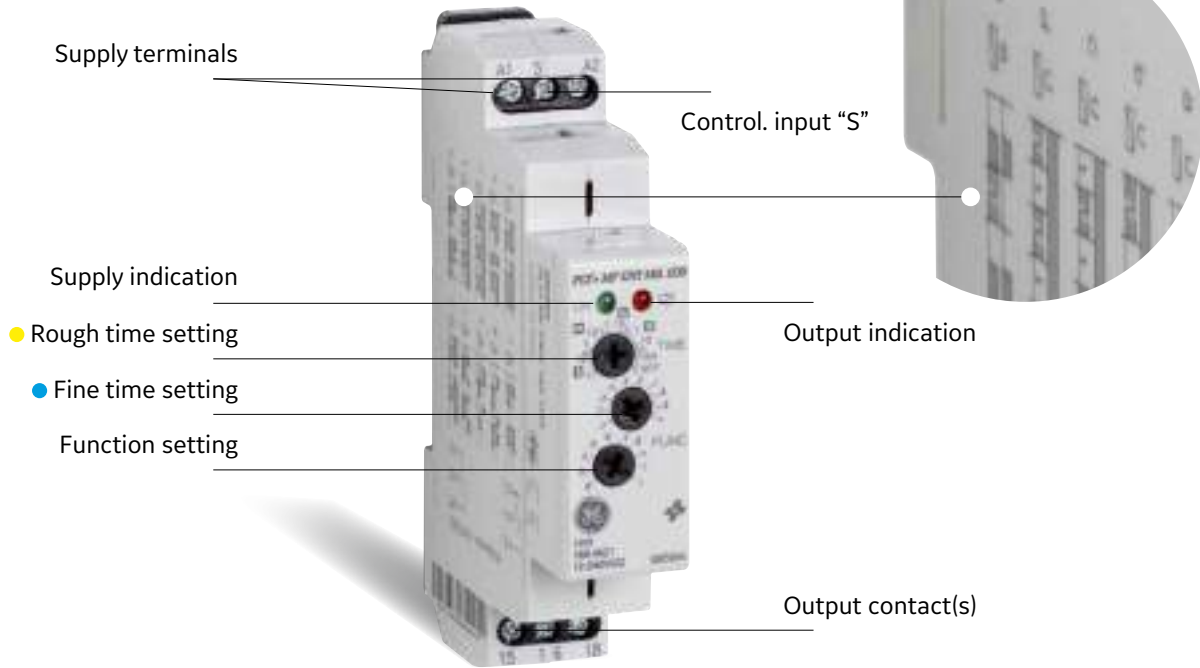


New

Performances and features

Multifunction Time Relays

Functions



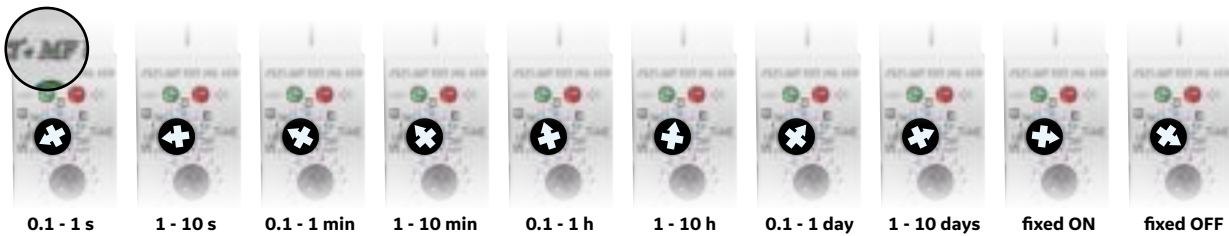
Time Relays

A

B

C

Multifunctional cycle Time Relay (MF)



Rough time setting - IMPULS
time setting in range 0.1 .. 10 days



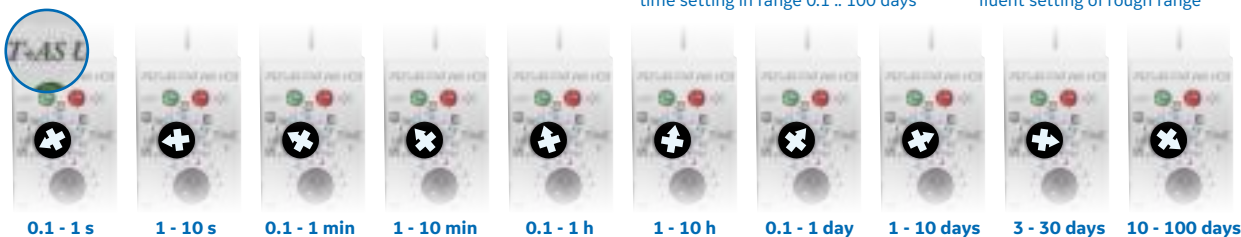
Fine time setting - IMPULS
fluent setting of rough range

Asymmetrical cycle Time Relay (AS)



Rough time setting - IMPULS /PAUSE
time setting in range 0.1 .. 100 days

Fine time setting - IMPULS /PAUSE
fluent setting of rough range



D

E

F

G

X

New

Temporize/Dim whatever you want

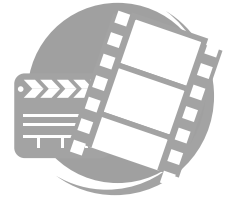
Our new DIM range dimmers have been specifically created to control R, L, C, LED light sources (dimmable) and energy-saving lamps.

The DIM RANGE is designed to be mounted on a DIN-rail onto panelboard. These dimmers have a number of characteristics that make them rank amongst the best on the market:

- The option to set the minimum brightness of the lamp - which eliminates flashing.
- Built-in protection, meaning that the light source will neither flash nor change brightness when the input voltage fluctuates. This dimmer is designed for use in a house, apartment or office.



Enjoy a movie



Dim it. And enjoy yourself

Conjure up rainbows of intense colour when watching fairy tales. Or do you like horror films? Bathe your living room in atmospheric light by programming your LED to shine in dark colours.

The positive impact of dimmers is not limited to private spaces; they can also add value to business premises, where the right lighting can help to create a commercial advantage.

Dimmers in hotels

From the moment hotel guests enter the lobby, they expect immaculate service and perfect comfort. This includes pleasant lighting in their hotel room. Dimmed lights contribute to wellbeing in a hotel room, and it is simple for each guest to adjust the lighting to meet his or her individual needs and preferences.

Dimmers in restaurants

In restaurants and bars, dimmers create the right lighting mood for guests. At the same time, bright lighting is required for laying tables and making preparations at the bar and buffet.

Dimmers in shops

In sales environments, optimal illumination of presentation areas and products is essential. Whenever changes are made to the shop concept, dimmers make it easy to adapt the lighting concept to a new product presentation.

Save up to 30% energy on lighting

Requirement

I want to maintain the same light intensity on my site.

Solution

Get the automatic DIM LC 300 UNI 230V lighting intensity controller, and you will no longer need to keep checking if your employees are switching off the lights.

How to do it?

Connect the product to your existing Push-button (you don't need to cut anything). It will enable you to control brightness or to switch to an automatic mode.

How much will you save?

A 40W lamp switched on for 8 hours for 200 days per year will equal 64KWh; and therefore ten of these lamps in a single office will equal 640kWh.

If you use an automatic lighting intensity controller, the intensity of the light will remain exactly where you set it. So if the sunshine is illuminating a room with high intensity, the lamp will automatically lower its brightness. This will enable you to save up to 50% of costs.



New

Performances and Features

DIM LC 300 UNI 230V

Labels for DIM LC 300 UNI 230V:

- Supply voltage L
- Output
- Thyristor
- Supply voltage indicator
- Light source type selection
- Output indication
- Automated reg. luminance adjustment
- Automatic fade and luminance setting
- Min. luminance adjustment
- Supply voltage N
- Terminals for connecting sensor
- Controlling input

Circuit diagram notes: T 2.5 A recommended upstream protection

Time Relays

A

B

C

D

E

F

G

X

DIM 300 UNI 230V

Labels for DIM 300 UNI 230V:

- Supply voltage L
- Output
- Supply voltage indication
- Light source type selection
- Output indication
- Minimal luminance setting
- Supply voltage N
- Controlling input

Circuit diagram notes: T 2.5 A ballast protection recommended

New



Time Relays

Pulsar T+

Comfort functions



Features

- Multi-function time relay with 10 functions, 1 CO contact 16A or 3 CO contacts 8A
- Multi-voltage time relay two versions: AC/DC 12-240V (AC50-60Hz) and AC 230V (AC50-60Hz)
- Assymetrical time relay with 2 functions and multivoltage AC/DC 12-240V (AC50-60Hz)
- Only 4 references cover the complete range
- In the case of the multi-function relay, the function itself is also user selectable, bringing impulse switch function as default (factory setting)
- Compact version of 3 CO contacts 10 functions time relay in only 1 module!
- The loss-proof safety terminals are equipped with Pozidriv screws and have IP20 protection degree.

Applications



Asymmetrical cycle time relay
 Using for warning illumination on the road, flashers, cyclers, often switched systems
 Multifunction relays
 10 functions:
 - Five time functions controlled via supply voltage
 - Four time functions controlled via control input
 - One function of latching relay
 It is used for regular room ventilation, cyclic dehumidification, light control, circulating pumps, noon signs, etc.

Functions

Conditioning of incoming source to exact predictable output.

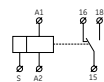
Standards / Marking

EN 61812-1, EN 61010-1

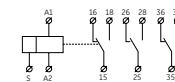


Wiring

1 COM



3 COM



Loads type

Product: **PLT+MF230V16A1CO⁽¹⁾** **PLT+MFUNI16A1CO** **PLT+ASUNI16A1CO**

Type of load	AC1 cos φ ≥ 0.95	AC2	AC3	AC5a uncompensated	AC5a compensated	AC5b HAL230V	AC6a	AC7b	AC12
mat. contacts AgNi, contact 16A	250V / 16A	250V / 5A	250V / 3A	230V / 3A (690VA)	x	800W	x	250V / 3A	250V / 10A
Type of load	AC13	AC14	AC15	DC1	DC3	DC5	DC12	DC13	DC14
mat. contacts AgNi, contact 16A	250V / 6A	250V / 6A	250V / 6A	24V / 16A	24V / 6A	24V / 4A	24V / 16A	24V / 2A	24V / 2A

Product: **PLT+MFUNI8A3CO**

Type of load	AC1 cos φ ≥ 0.95	AC2	AC3	AC5a uncompensated	AC5a compensated	AC5b HAL230V	AC6a	AC7b	AC12
mat. contacts AgNi, contact 8A	250V / 8A	250V / 3A	250V / 3A	230V / 1.5A (345VA)	x	300W	x	250V / 1A	250V / 1A
Type of load	AC13	AC14	AC15	DC1	DC3	DC5	DC12	DC13	DC14
mat. contacts AgNi, contact 8A	x	250V / 3A	250V / 3A	24V / 8A	24V / 3A	24V / 2A	24V / 8A	24V / 2A	x

(1) Only at 230V AC



Pulsar T+ Time Relays

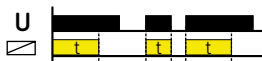


Nom. current	Cont. nr	Contact combin.	Funct. nr	Coil voltage AC	Coil voltage DC	Voltage tolerance	Timing scale	No. of mod.	Cat. No.	Ref. No.	Pack.
16A	1	1 COM	a ... j ⁽¹⁾	230V 50-60Hz	-	-15% ... +10%	0.1s ... 10 days	1	PLT+MF230V16A1CO	685993	1
16A	1	1 COM	a ... j ⁽¹⁾	12-240V 50-60Hz	12-240V	-15% ... +10%	0.1s ... 10 days	1	PLT+MFUNI16A1CO	685994	1
16A	1	1 COM	k, l	12-240V 50-60Hz	12-240V	-15% ... +10%	0.1s ... 100 days	1	PLT+ASUNI16A1CO	685996	1
8A	3	3 COM	a ... j ⁽¹⁾	12-240V 50-60Hz	12-240V	-15% ... +10%	0.1s ... 10 days	1	PLT+MFUNI8A3CO	685995	1

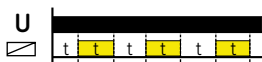
(1) Factory setting: i



a-On delay (Power On) When the input voltage U is applied, timing delay t begins. Relay contacts R change state after time delay is complete. Contacts R return to their shelf state when input voltage U is removed. Trigger switch is not used in this function.



b-Off delay When input voltage U is applied, relay contacts R change state immediately and timing cycle begins. When time delay is complete, contacts return to shelf state. When input voltage U is removed, contacts will also return to their shelfstate. Trigger switch is not used in this function.



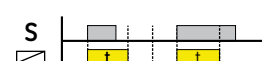
c-Repeat Cycle (Starting Off) When input voltage U is applied, time delay t begins. When time delay t is complete, relay contacts R change state for time delay t. This cycle will repeat until input voltage U is removed. Trigger switch is not used in this function.



d-Repeat Cycle (Starting On) When input voltage U is applied, relay contacts R change state immediately and time delay t begins. When time delay t is complete, contacts return to their shelf state for time delay t. This cycle will repeat until input voltage U is removed. Trigger switch is not used in this function.



e-Off delay (S Break) Input voltage U must be applied continuously. When trigger switch S is closed, relay contacts R change state. When trigger switch S is opened, delay t begins. When delay t is complete, contacts R return to their shelf state. If trigger switch S is closed before time delay t is complete, then time is reset. When trigger switch S is opened, the delay begins again, and relay contacts R remain in their energized state. If input voltage U is removed, relay contacts R return to their shelf state.



f-Single Shot Upon application of input voltage U, the relay is ready to accept trigger signal S. Upon application of the trigger signal S, the relay contacts R transfer and the preset time t begins. During time-out, the trigger signal S is ignored. The relay resets by applying the trigger switch S when the relay is not energized.



g-Single Shot Trailing Edge (Non-Retriggerable) Upon application of input voltage U, the relay is ready to accept trigger signal S. Upon application of the trigger signal S, the relay contacts R transfer and the preset time t begins. At the end of the preset time t, the relay contacts R return to their normal condition unless the trigger switch S is opened and closed prior to time out t (before preset time elapses). Continuous cycling of the trigger switch S at a rate faster than the preset time will cause the relay contacts R to remain closed. If input voltage U is removed, relay contacts R return to their shelf state.



h-On/Off delay Input voltage U must be applied continuously. When trigger switch S is closed, time delay t begins. When time delay is complete, relay contacts R change state and remain transferred until trigger switch S is opened. If input voltage U is removed, relay contacts R return to their shelf state.



i-Latching relay Input voltage U must be applied continuously. Output changes state with every trigger switch S closure. If input voltage U is removed, relay contacts R return to their shelf state.

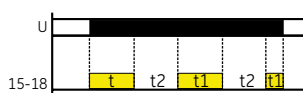


j-Pulse generator Upon application of input voltage U, a single output pulse of 0.5 seconds is delivered to relay after time delay t. Power must be removed and reapplied to repeat pulse. Trigger switch is not used in this function.

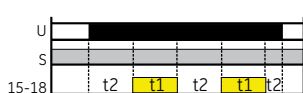
PULS = 0.5s

ASSYMETRICAL CYCLER RELAY

k-Cycler beginning with pulse



l-Cycler beginning with pause





Technical data Time Relays

Comfort functions

A

B

C

D

E

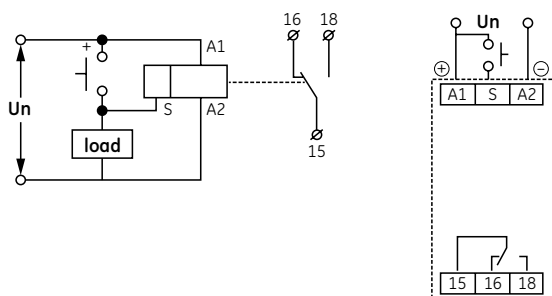
F

G

X

	PLT+MFUNI16A1CO	PLT+MF230V16A1CO	PLT+MFUNI8A3C	PLT+ASUNI16A1CO
Technical data				
Number of functions	10 (a...j)			2: k, l. (second func. is chosen by connecting S-A1)
Supply	A1-A2			
Supply voltage	AC/DC12-240V (AC50-60Hz)	AC 230V / 50 - 60Hz	AC/DC12-240V (AC50-60Hz)	AC/DC12-240V (AC50-60Hz)
Consumption	AC0.7-3VA/DC 0.5-1.7W	AC max. 12VA / 1.3W	AC max. 12VA/1.9W	AC0.7-3VA/DC 0.5-1.7W
Supply voltage tolerance	-15%; +10%			
Supply indication	green LED			
Time ranges	0.1 s - 10 days			
Time setting	rotary switch and potentiometer			
Time deviation	5% mechanical setting			
Repeat accuracy	0.2% set value stability			
Temperature coefficient	0.01% °C, at =20°C			
Output				
Changeover contacts	1 x changeover		3 x changeover	1 x changeover
Rated current	16A / AC1		8A / AC1	16A / AC1
Breaking capacity	4000VA/AC1;384W/DC		2000VA/AC1;192W/DC	4000VA/AC1;384W/DC
Inrush current	30 A/<3s		10 A/<3s	30 A/<3s
Switching voltage	250V AC1 / 24V DC			
Min. breaking capacity DC	500 mW			
Output indication	multifunction red LED			
Mechanical life	3 x 1000000			
Electrical life (AC1)	0.7 x 100000			
Controlling				
Consumption of input	AC 0.025-0.2 VA/ DC 0.1 - 0.7W (UNI), AC 0.53 VA (AC 230V)			-
Load between S-A2	YES ⁽¹⁾			NO
Glow tubes connections	230V - Yes / UNI - No			-
Max. amount of glow lamps connected to controlling input	UNI - glow lamps cannot connected/NO			-
Control terminals	230V - max. 20 pcs (measured with glow lamp 0.68mA/230V AC)			-
Impulse length	A1-S			-
Other information				
Reset time	max. 150ms			
Operating temperature	-20.. +55°C			
Storage temperature	-30.. +70°C			
Electrical strength	4kV (supply-output)			
Operating position	any			
Mounting	DIN-rail EN 60715			
Protection degree	IP40 from front panel; IP20 terminals			
Overvoltage category	III.			
Pollution degree	2			
Max. cable size	max.1x2.5; max. 2x1.5/with cavern max. 1x2.5			
Dimensions	90 x 17.6 x 64 mm			
Weight (g)	64	62	89	65
Standards	EN 61812-1, EN 61010-1			

(1) Through clamps S-A2 can be connect the loading parallel (for example contactor or other units) - without damage of right operation.

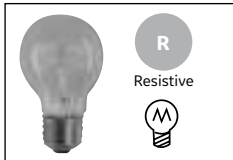


Dimmers

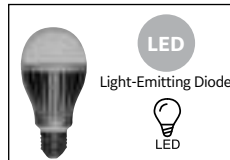
Today we encounter all kinds of different light sources, which makes it relatively hard for the average person to keep track of all of them.

So in the following section, we will try to explain exactly what light sources you will find on the market, and how to control and/or dim them.

TYPES OF LAMPS

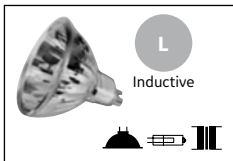


R – You mainly encounter resistance load with the ordinary lamp. The entire process works on the principle of heating a thin, usually tungsten filament, with an electric current running through it.

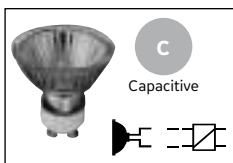


LED – A Light-Emitting Diode (LED) is an electronic semiconductor component, which radiates a visible light. In the last few years, they have replaced the lamps in automobiles, streetlights and home appliances, and their popularity as active household illumination is constantly growing.

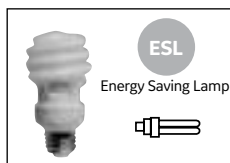
The basis of the LED is the P-N junction. The actual LED chip is often connected with a cooler for efficient removal of waste heat away from the chip, and is covered by an epoxy capsule. This design makes LEDs highly mechanically resistant. It is even more effective than a compact fluorescent lamp - and is up to 15x more efficient than a classic incandescent lamp.



L – This is an inductive load mainly characteristic for low-voltage (12-24V) halogen lamps, which are controlled by a wound transformer, whose principle is the passage of voltage through the coil. By decreasing the voltage at the input, we in turn also change the value of the voltage at the output, which enables dimming.

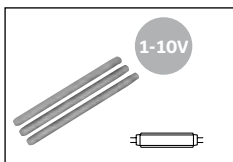


C – This is a capacity load mainly characteristic for energy-saving lamps, fluorescent or halogen lamps controlled by an electronic transformer. The principle is based on electrical ballast, which brightens or darkens the lamp. A dimmable transformer is used to dim.



ESL – Energy saving lamp, often called a compact fluorescent lamp. In its design it is a capacity load, but for better separability of this type of light source, a special designation was created for it.

The principle is a glass tube with heating electrodes filled with mercury vapors, in which the discharge occurs. This falls upon the walls of the tube covered with a lumino-phore - and the lamp illuminates. Disadvantages of this lamp are its sensitivity to frequent switching and the luminous flux that decreases over time.



1-10V - This type of regulation is conditional to so-called dimmable electrical ballast with input for 1-10V. Consequently, at this input, the product is connected with the output 1-10V (RFDA-71B, LBC3-22M), which enables brightness control within this range. This mostly concerns dimming tube fluorescent lamps.

Dimmers and type of lamps

Order codes	EAN code	R	L	C	ESL	LED		
		Standard light bulbs, halogen lamps	Low voltage lamps 12-24V wound transformers	Low voltage lamps 12-24V electronic transformers	Efficient dimmable fluorescent lamps	Category 1 Mostly "multiple LED" illumination sources power provided by LINEAR source limiting current (sharper dimming), lower price	Category 2 Sources that have 1-3 power LEDs, power provided by SWITCHING the source regulating brightness based on the input voltage (smoother dimming), higher price GU10 have higher body	Category 3 LED with DC and current regulation. Designed for dimming LED chips, LED strips, RGB LED
685997 DIM500RL230V Short press ON/OFF, pressing and holding dims, 500VA	5413656859970	X	X					
685998 DIM300UNI230V Dimmer for LED lamps and dimmable efficient fluorescent lamps, potentiometer brightness setting	5413656859987	X	X	X	X	X	X	
685999 DIMLC300UNI230V Dimmer maintaining and light intensity in Lx, including SKS photo-sensor	5413656859994	X	X	X	X	X	X	



DIN-rail dimmers

Comfort functions



DIM

Features

- Low version dimmer only valid for resistive and halogen lamps
- Universal dimmer optimised for LED and CFL lighting, a new universal dimmers perfectly align to any DIN-rail installation.
- Thanks to the low width of 18mm only, the DIN dimmers are particularly suitable for retrofitting.
- The universal DIN-dimmers are the perfect choice for all buildings which demand individual and efficient lighting such as shops, restaurants or public areas.
- Universal dimmer with automatic lighting level control. Ideal to maintain the same light intensity in any site.

Functions

In the past, many different lamps required many different specific dimmers. So changing lamps often led to the situation that the installed dimmer could not control the new lamp without disturbances. Your customers thus faced humming and flickering lighting - and you were forced to choose the right dimmer from a more and more complicated offer.

Industrial Solutions has developed a universal dimmer module you can easily upgrade an installed push-button to future-proof dimmer. The dimmer is optimised to control LED and reliable dims other loads as well. Installed in a switchboard, on a DIN-rail, they can be controlled by several push-buttons.

Applications



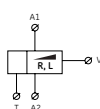
DIM dimmers are designed to adjust light intensity to your needs. They are particularly intended for the residential and tertiary sectors, for example to light conference rooms, cinemas, restaurants and shops.

Nowadays, there are a lot of lighting sources and of course, for a layman, it is really hard to understand which one is the best. Dimming can save up to 20% of your energy bills. Moreover, dimming can create the right atmosphere for party, reading a book or watching a movie...

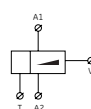
Marking



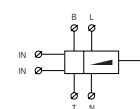
Wiring



RL dimmer



Universal dimmer



Universal dimmer with automatic lighting level control

Performance

Load	lamp, halogen light	low-voltage el. bulbs 12-24V wound trans.	low-voltage el. bulbs 12-24V el. transformers	LED bulbs	saving fluorescent lamps	switching management	
	 R	 L	 C	 230V AC dimmable	 dimmable	 incline edge	 descending edge
DIM 500 RL 230V	•	•	X	X	X	•	X
DIM 300 UNI 230V	•	•	•	•	•	•	•
DIM LC 300 UNI 230V	•	•	•	•	•	•	•



DIM DIN-rail dimmers



Dimmed load	Type of lamps	Output	Control by	Nominal voltage AC	Voltage tolerance	No. of mod.	Cat. No.	Ref. No.	Pack
RL dimmer									
R: 10...500VA L: 10...250VA	R, L	2A	Push-button	230V/ 50Hz	-15%..+10%	1	DIM500RL230V	685997	1
Universal dimmer									
300W ($\cos \varphi = 1$) ⁽¹⁾	R, L, C, LED, ESL	2xMOSFET	Push-Button	230V /50Hz	-15%..+10%	1	DIM300UNI230V	685998	1
Universal dimmer with automatic lighting level control									
300W ($\cos \varphi = 1$) ⁽¹⁾	R, L, C, LED, ESL	2xMOSFET	Push-button & Light sensitive photocell	230V/ 50Hz-60Hz	-15%+15%	1	DIMLC300UNI230V	685999	1

(1) Due to a large number of light source types, the maximum load depends on the internal construction of dimmable LEDs and ESL bulbs and their power factor $\cos \varphi$. The power factor of dimmable LEDs and ESL bulbs ranges from $\cos \varphi = 0.95$ to 0.4 . An approximate value of maximum load may be obtained by multiplying the load capacity of the dimmer by the power factor of the connected light source.

Dimmers

A

B

C

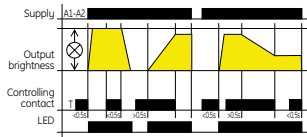
D

E

F

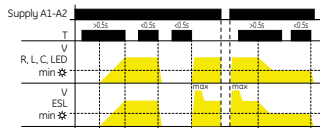
G

X



RL dimmer

- short press for switch on/off the lamp, longer press (> 0.5 s) for fluent illumination regulation
- when a device is de-energized, the brightness level is stored in its memory. When the device is energized again, a light is off. You can switch this light on by pressing a button. The light then switches on in the brightness level which is stored in its memory.



Universal dimmer

Controlling

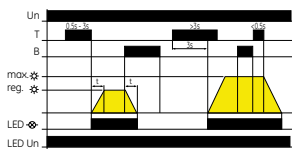
- short button press (<0.5s) turns the light off or on
- long press (>0.5s) enables slight regulation of light intensity
- setting of minimal luminance is possible only during decreasing of luminance by long button press
- setting of minimal luminance by saving fluorescent lamps serves for harmonizing of lowest light intensity prior its unprompted switching off

Luminance setting

- R, L, C, LED - if the light is turned off, short press (<0.5s) switches the light onto last set luminance level
- ESL - if the light is turned off, short press increases the luminance onto maximal level (saving fluorescent lamps fires up) and then luminance decreases onto set level.

Notice

- it is not possible to dim saving fluorescent lamps without marking: dimmable
- an incorrect setting of light source has effect only on dimming range, it means neither dimmer or load get damaged
- The maximum number of dimmable light sources depends on their internal construction



Universal dimmer with automatic lighting level control

T-button control

- pressing button shortly (<0.5s) always turns of lamp
- pressing button longer (0.5... 3s) turns on lamp in automatic regulation mode
- pressing button long (>3s) turns on lamp to full illumination - „cleaner“ mode
- after turning on the power supply, the dimmer is always turned off

Thyristor B

serves to block automatic regulation (lamp turns off)
WARNING! The lamp may be turned on in “cleaner” mode even while blocked.
 After ending block mode, the lamp remains off.

Control elements on the instrument panel

- load switch - has 2 positions for each type of load that differ in their regulation curves (sets the best position for the connected load)
- the lamp turns off (if previously on) whenever the switch settings are changed
- potentiometer setting of minimal luminance
- potentiometer setting of desired lighting level during automatic regulation
- the potentiometer status is stored in short-term memory whenever a change occurs - a green LED flashes (approx. 3s) while storing
- both lighting levels are storing in EEPROM memory during a power supply failure - LED meanwhile briefly turns off

WARNING!

- both lighting levels must be reset when switching Load type
- both lighting levels may only be set in automatic mode while the lamp is on
- potentiometer setting of lighting level fade speed - only available in automatic regulation mode
- determines the reaction time to changes in surrounding lighting level

New



Technical data dimmers

Comfort functions

A

B

C

D

E

F

G

X

	DIM500RL230V	DIM300UNI230V	DIMLC300UNI230V
Supply			
Supply terminals	A1-A2		L-N
Supply voltage	AC 230V / 50Hz		AC 230V / 50-60Hz
Supply voltage tolerance	-15%; +10%		-15%; +10%
Consumption	max. 5 VA	max. 1.5 VA/0.7W	max. 1.6 VA/0.8W
Supply indication	Green LED		
Controlling			
Button - control. terminals	T-A1		L-T
Control voltage	AC 230V		
Control input power	max. 1.5VA	AC 0.3-0.6VA	max. 0.6VA
Control impulse length	min. 80ms / max. unlimited		
Glow tubes connection	YES		
Maximum number of connected glow lamps the control input	max. 15 pcs (measured with glow lamp 0.68mA/230V AC)		230V - max.count 50ks (measured with glow 0.68mA/230V AC)
Blocking input - terminals	-		
Control voltage	-		
Consumption	-		
Connect glow-lamps (terminals L - B)	-		
Impulse length	-		
Output			
Output type	2A	2 x MOSFET	
Output status indication	red LED		
Load capability	R: 10 - 500VA; L: 10 - 250VA	300W (at $\cos \varphi = 1$) ⁽¹⁾	
Other data			
Operating temperature	-20... +55°C		-20... +35°C
Storing temperature	-30... +70°C		-20... +60°C
Operating position	any		vertical
Mounting	DIN-rail EN 60715		
Protection degree	IP40 from front panel, IP10 terminals		
Overvoltage category	III.		
Pollution level	2		
Max. cable size	max. 2 x 2.5; max. 1 x 4 s/with carven max. 1 x 2.5; max. 2 x 1.5		
Dimensions	90 x 17.6 x 64mm		
Weight (g)	58	57	
Applying standards	EN 60669-2-1; EN 61010-1		

(1) Due to a large number of light source types, the maximum load depends on the internal construction of dimmable LEDs and ESL bulbs and their power factor $\cos \varphi$. The power factor of dimmable LEDs and ESL bulbs ranges from $\cos \varphi = 0.95$ to 0.4 . An approximate value of maximum load may be obtained by multiplying the load capacity of the dimmer by the power factor of the connected light source.



New electromechanical time switches

Complete range of possibilities

- 1, 2, 2.5 modules
- With and without battery
- Daily (Grey trippers), weekly (Yellow trippers) timers
- Shortest switch time: 15 minutes or 30 minutes models
- Normally Open and Changeover contacts



New



Redline

New SIMPLE digital time and astronomical switches

GLX+Q 30 Time switch



Comfort functions

The perfect combination of the precision of digital time switch and the simplicity of the electromechanical one.

- Display clarity, simplicity in the 3 keys
- Replaceable backup battery through the rear cover on the back

Use

- Gardens lighting, courtyards, alleys, ...
- Opening gates, doors, ...

A

B

Electric utilities management throughout the day

C

- Desired program setting with simple ON/OFF of the virtual trippers lasting 30 minutes each

D

- All performed programming is immediately viewable on the display
- 1 program for everyday or 7 programs, one for each day of the week (weekly version of the instrument)

E

- Automatic summer/winter time change
- The instrument is supplied with already set time and date

F

G

Astronomical switch

X

- Automatic programming of switching on (at sunset) and switching off (at sunrise)
- Possibility of night switching off with OFF virtual trippers
- Automatic summer/winter time change
- The instrument is supplied with already set time and date

Use

- Shops, shop windows, ...
- Roads, parks, fountains, ...
- Illuminated signs, monuments, ...



New digital time and astronomical switches

GLX+Q 1

Digital time switches 2 DIN-modules to manage electrical utilities in time with the maximum precision. The available models permit to make daily, weekly, monthly and yearly programs with 1 of 2 channels.

Electronic time switch that combines the functionality of astronomical (channel 2) and digital switch (channel 1)



Digital time switch 3 DIN-modules with add on power contacts module and software to program remotely or through IR interface

New light sensitive switches

CHARATERISTICS

- Compact form of the cover
- Adjusting method of the intervention threshold (which occurs via trimmer without the need to open the device)





Analogue time switches

Classic Plus

Comfort functions



Applications



Going from the pre-programmed switching of lighting (car park, advertising signs, public roads, etc.) over pre-programmed switching of heating equipment (home and work-environment, waterheating, etc.), to the pre-programmed switching of motors for pumps and fans and even to presence simulation.

Features

Going from the pre-programmed switching of lighting (car park, advertising signs, public roads, etc.) over pre-programmed switching of heating equipment (home and work-environment, waterheating, etc.), to the pre-programmed switching of motors for pumps and fans and even to presence simulation.

Functions

Pre-programmed switching of all kinds of electrical devices

Standards / Marking

VDE 0633, BS EN 60730-1, BS EN 60730-2-7









Performance

	Plastic switches					
	NET SYNCHRONISED			QUARTZ SYNCHRONISED		
	1 module	2 modules	2.5 modules	1 module	2 modules	2.5 modules
Contact	Voltage free NO	Voltage free CO	Voltage free CO	Voltage free NO	Voltage free CO	Voltage free CO
Fix on, Fix off, Auto switch	yes	yes	yes	yes	yes	yes
Rated switching capacity						
- Resistive load	16A/250V	16A/250V	16A/250V	16A/250V	16A/250V	16A/250V
Connectable Loads						
- Incandescent	2500W	3000W	3000W	2500W	3000W	3000W
- Fluorescent (neon)	1200VA	1200VA	1200VA	1200VA	1200VA	1200VA
- Low voltage halogen	2000VA	2000VA	2000VA	2000VA	2000VA	2000VA
- Halogen (230V)	2500W	3000W	3000W	2500W	3000W	3000W
- Low consumption (CFL)	900VA - 1000VA	900VA - 1000VA	900VA - 1000VA	900VA - 1000VA	900VA - 1000VA	900VA - 1000VA
- Led	100VA	1000VA	1000VA	100VA	1000VA	1000VA
Shortest switching time day-program	15 min.	30 min.	15 min.	15 min.	30 min.	15 min.
Shortest switching time week-program	-	-	-	-	210 min.	120 min.
Screws	Pozidriv1	Pozidriv1	Pozidriv1	Pozidriv1	Pozidriv1	Pozidriv1
Terminal capacity: min	1mm ²	1mm ²	1mm ²	1mm ²	1mm ²	1mm ²
max	4mm ²	4mm ²	4mm ²	4mm ²	4mm ²	4mm ²
Clockwork						
Operating voltage	230 V AC(-15%...+10%)	230 V AC(-15%...+10%)	230 V AC(-15%...+10%)	230 V AC(-15%...+10%)	230 V AC(-15%...+10%)	230 V AC(-15%...+10%)
Own consumption at 230V	0.5W	0.5W	0.5W	0.5W	0.5W	0.5W
Running reserve	-	-	-	150h	150h	150h
Battery charging time	-	-	-	120h	96h	96h
Operating temperature range	-10 °C ... +50°C	-10 °C ... +50°C	-10 °C ... +50°C	-10 °C ... +50°C	-10 °C ... +50°C	-10 °C ... +50°C
Accuracy	±1s/24h at 25°C	±1s/24h at 25°C	±1s/24h at 25°C	±1s/24h at 25°C	±1s/24h at 25°C	±1s/24h at 25°C
Sealable	yes	yes	yes	yes	yes	yes



Classic Plus - Analogue time switches

	Program	No. of channels	Nominal Current	Running reserve	Shortest switch time	Fix on/off auto	No. of mod.	Cat. No.	Ref. No.	Pack.	
NET SYNCHRONISED Day programmable 	Operating Voltage: 230 V AC(-15%...+10%)										
	1x24x4	1NO	16A/250Vac	-	15min.	yes	1	CLS+S 15 1NA 16A 1M D	687436	1	
	1x24x2	1CO	16A/250Vac	-	30min.	yes	2	CLS+S 30 1COM 16A 2M D	687438	1	
	1x24x4	1CO	16A/250Vac	-	15min.	yes	2.5	CLS+S 15 1COM 16A 2.5M D	687441	1	
			1NO	1CO							
QUARTZ SYNCHRONISED Day programmable 	Operating Voltage: 230 V AC(-15%...+10%)										
	1x24x4	1NO	16A/250Vac	150h	15min.	yes	1	CLS+Q 15 1NA 16A 1M D	687437	1	
	1x24x2	1CO	16A/250Vac	150h	30min.	yes	2	CLS+Q 30 1COM 16A 2M D	687439	1	
	1x24x4	1CO	16A/250Vac	150h	15min.	yes	2.5	CLS+Q 15 1COM 16A 2.5M D	687442	1	
			1CO								
QUARTZ SYNCHRONISED Week programmable 	Operating Voltage: 230 V AC(-15%...+10%)										
	7x24/3.5	1CO	16A/250Vac	150h	210min.	yes	2	CLS+Q 210 1COM 16A 2M W	687440	1	
	7x24/2	1CO	16A/250Vac	150h	120min.	yes	2.5	CLS+Q 120 1COM 16A 2.5M W	687443	1	
			1CO								

Classic Plus

A

B

C

D

E

F

G

X





Galax Plus

Comfort functions



Applications



Going from the pre-programmed switching of lighting (car park, advertising signs, public roads, etc.) over pre-programmed switching of heating equipment (home and work environment, water heating, etc.), to the pre-programmed switching of motors for pumps and fans and even to random presence simulation.

Features

Very easy programming, with quasi unlimited possibilities compared to the analogue time switches. Devices with daily, weekly and yearly event programming possibilities are available in 1, 2 up to 8 channel execution. All devices have a shortest switching time of one minute. On all devices, the summer/winter time change is fully automatic. Devices with block-programming,

Functions

Pre-programmed switching of all kinds of electrical devices

Standards

BS EN-60730-1, BS EN-60730-2-7, VDE 0633


Performance

	DAY/WEEK PROGRAMMABLE		DAY/WEEK/MONTH/YEAR	
	1 module	2 modules	DW	BUS
Contact	Voltage free NO	Voltage free CO	Voltage free CO	Voltage free NO
Rated switching capacity				
- Resistive load	16A/250 VAC	16A/250 VAC	16A/250 VAC	16A/250 VAC
Connectable Loads				
- Incandescent 240V	1500W	1500W	1500W	1500W
- Fluorescent (neon)	600W	600W	600W	600W
- Halogen (230V)	1500W	1500W	1500W	1500W
Minimum switching load	100mA/5 VDC	100mA/5 VDC	100mA/5 VDC	100mA/5 VDC
DC switching capacity	16A/24 VDC	16A/24 VDC	16A/24 VDC	16A/24 VDC
Shortest switching time	30 min	30 min	1 min	1 min
Screws	PH	PH	PH	PH
Terminal capacity:	1-4mm ²	1-6mm ²	1-6mm ²	1-6mm ²
Clockwork				
Operating voltage	230V AC(-15%...+10%)	230V AC(-15%...+10%)	230V AC(-10%...+10%)	230V AC(-15%...+10%)
Own consumption at 230V	6VA (1W)	5.5VA (1W)	8VA (2W)	7VA (2.6W)
Operating temperature range	-20°C...+50°C	-20°C...+50°C	-20°C...+50°C	-20°C...+50°C
Accuracy	± 1 second/day at 25°C	± 1 second/day at 25°C	± 1 second/day at 25°C	± 0.5 second/day at 25°C
Sealable	no	no	yes	yes



Galax Plus - Digital time switches



	Program	No. of channels	Switching capacity	Running reserve	Shortest switch time	No. of modules	Cat. No.	Ref. No.	Pack.
QUARTZ SYNCHRONISED	Operating Voltage: 230V AC(-15%...+10%)								
Day programmable	1x24x2	1CO	16A (10) at 250V AC	5 years	30 min	2	GLX+Q 30 1COM 16A 2M D ANA	687447	1
Astro programmable	1x24x2	1CO	16A (10) at 250V AC	5 years	30 min	2	GLX+Q AST30 1NA 16A 2M D ANA	687449	1
Week programmable	7x24h/0.5	1CO	16A (10) at 250V AC	5 years	30 min	2	GLX+Q 30 1COM 16A 2M W ANA	687448	1
	 1CO								



For day/week timers


- Power supply: 230V 50/60Hz
- Daily or weekly versions
- Switching of the relay only in presence of power supply
- Manual override of the relay (temporary or permanent)
- Summer time automatic update
- Date and time already default set
- Backup battery for maintaining the date and time without power from the mains
- Low battery signal
- Password protected lock keypad
- Backlighting always on when instrument is mains powered (auto power off for energy saving in the case of blackout)
- 48 virtual trippers for a resolution of 30 minutes

For Astro Timers

- Available programming:
 - P1 fixed with possibility of night-switch ON/OFF of minimum 30 minutes
 - Sunrise and sunset hours are calculated according to phone prefix or geographical coordinates
 - Display of the sunset/sunrise times calculated by the device
 - Update of sunrise/sunset hours: ±120 minutes
 - Summertime automatic update
- Manual override of the relay (temporary or permanent)
- Relay switching only with power supply
- Depleted battery signaling

Galax Plus - Digital time switches



	Program	No. of channels	Switching capacity	Running reserve	Shortest switch time	No. of modules	Cat. No.	Ref. No.	Pack.
QUARTZ SYNCHRONISED	Operating Voltage: 230V AC(-15%...+10%)								
Day programmable	1x24x4	1NO	16A (10) at 250V AC	4 years	30 min	1	GLX+Q 30 1NA 16A 1M D	687444	1
Astro programmable	1x24x4	1NO	16A (10) at 250V AC	4 years	30 min	1	GLX+Q 30 1NA 16A 1M AST D	687446	1
Week programmable	1x24x2	1NO	16A (10) at 250V AC	4 years	30 min	1	GLX+Q 30 1NA 16A 1M W	687445	1
	 1NO								



For day/week timers

- Power supply: 230V 50/60Hz
- Daily or weekly versions
- Switching of the relay only in presence of power supply
- Manual override of the relay (temporary or permanent)
- Summer time automatic update
- Backup battery for maintaining the date and time without power from the mains
- Low battery signal
- Backlighting always on when instrument is mains powered (auto power off for energy saving in the case of blackout)
- 48 virtual trippers for a resolution of 30 minutes

For Astro Timers

- Available programming:
 - P1 fixed with possibility of night-switch ON/OFF of minimum 30 minutes
 - Sunrise and sunset hours are calculated according to phone prefix or geographical coordinates
 - Display of the sunset/sunrise times calculated by the device
 - Update of sunrise/sunset hours: ±120 minutes
 - Summertime automatic update
- Manual override of the relay (temporary or permanent)
- Relay switching only with power supply
- Depleted battery signaling

Galax Plus

A

B

C

D

E

F

G

X





Galax Plus - Digital time switches

Comfort functions

A

B

C



QUARTZ SYNCHRONISED With no IR interface

With IR interface

ASTRO

remote Infrared control

Program	No. of channels	Switching capacity	Running reserve	Shortest switch time	No. of modules	Cat. No.	Ref. No.	Pack.
Operating Voltage: 230V AC(-10%...+10%)								
7x24x60	1CO	16A (10) at 250V AC	3 years	1 min	2	GLX+Q 1 1COM 16A 2M DW	687450	1
7x24x60	2CO	16A (10) at 250V AC	3 years	1 min	2	GLX+Q 1 2COM 16A 2M DW	687451	1
7x24x60	1CO	16A (10) at 250V AC	3 years	1 min	2	GLX+Q 1 1COM 16A 2M DW IR	687452	1
7x24x60	2CO	16A (10) at 250V AC	3 years	1 min	2	GLX+Q 1 2COM 16A 2M DW IR	687453	1
7x24x60	1CO	16A (10) at 250V AC	3 years	1 min	2	GLX+Q 1 1COM 16A 2M AST IR	687454	1
7x24x60	2CO	16A (10) at 250V AC	3 years	1 min	2	GLX+Q 1 2COM 16A 2M AST IR	687455	1
-	-	2x1.5V (AAA type batteries)	-	-	-	GLX+IR	687456	1

For day/week timers

- Power supply: 230V 50/60Hz
- Version: 1 or 2 channels
- Switching of the relay only in presence of power supply

- Manual override of the relay (temporary or permanent)

- Program:

- ON, OFF, CYCLE, PULSE (1...9 seconds) HOLIDAY, RANDOM

- Maximum storable programs for each channel:

- 30 events (on, off, cycle, pulse)
- 4 holiday periods (period = more consecutive days)
- 20 holiday days (single days)

- Integrated infrared interface (only available in GLX+Q DW IR)

- Password protected lock keypad

- Display automatically shuts-off after 3 minutes of inactivity of the keyboard

For Astro Timers

- Available programming:
 - P1 fixed and not modifiable
 - Only for GLX Q 2COM: 6 programs on output 1
- Maximum holiday events for each channel: 4 periods + 20 days
- Display of the sunset/sunrise times calculated by the device
- Update of sunrise/sunset hours: ±120 minutes
- Summertime automatic update
- Manual override of the relay (temporary or permanent)
- Relay switching only with power supply
- Depleted battery signaling
- Integrated infrared interface

For GLX+IR

- Charge reserve for battery replacement: 2 minutes
- Viewing with display LCD (non-backlit)
- Text guide

- Available languages: English/Italian/Spanish/French/German

- Maximum number of programs that can be stored: 126

D

E

F

G

X

Galax Plus - Digital time switches

Program	No. of channels	Switching capacity	Running reserve	Shortest switch time	No. of modules	Cat. No.	Ref. No.	Pack.
QUARTZ SYNCHRONISED								
Operating Voltage: 230V AC(-10%...+10%)								
365x24x60	1CO	16A (10) at 250V AC	5 years	1 min	3	GLX+Q 1 1COM 16A 3M Y BUS	687464	1
Operating Voltage: 230V AC (-15%...+10%)								
-	4CO	8A (5) at 250V AC	-	-	4	GLX+Q 4COM 8A 4M BUS	687466	1
Operating Voltage: 12V DC(-20%...+20%)								
GEOBUS	-	-	-	-	-	GLX+ GEO BUS	687465	1

For day/week/month/year timers

- Time programming (D/W/M/Y) or astronomical programming
- Available programs: on/off, on pulse, on holiday, off holiday, random, night (astronomical)
- Independent channels to control 9 loads (relays):
 - 1 relay on board of the device
 - 8 relays to be realized by connecting two actuators
- Maximum number of storable programs: 450 (900 events) allocable on 9 channels
- Possibility to automatically capture date, time and geographical position connecting GEO BUS
- Manual override of the relay (temporary or permanent)
- Possibility to copy:
 - The programs of a channel on other channels
 - All programs from another GLX+Q BUS connected
- Password protected lock keypad
- Automatic time update (DST)
- Menu in five languages: English/Italian/Spanish/French/German

For Receiver:

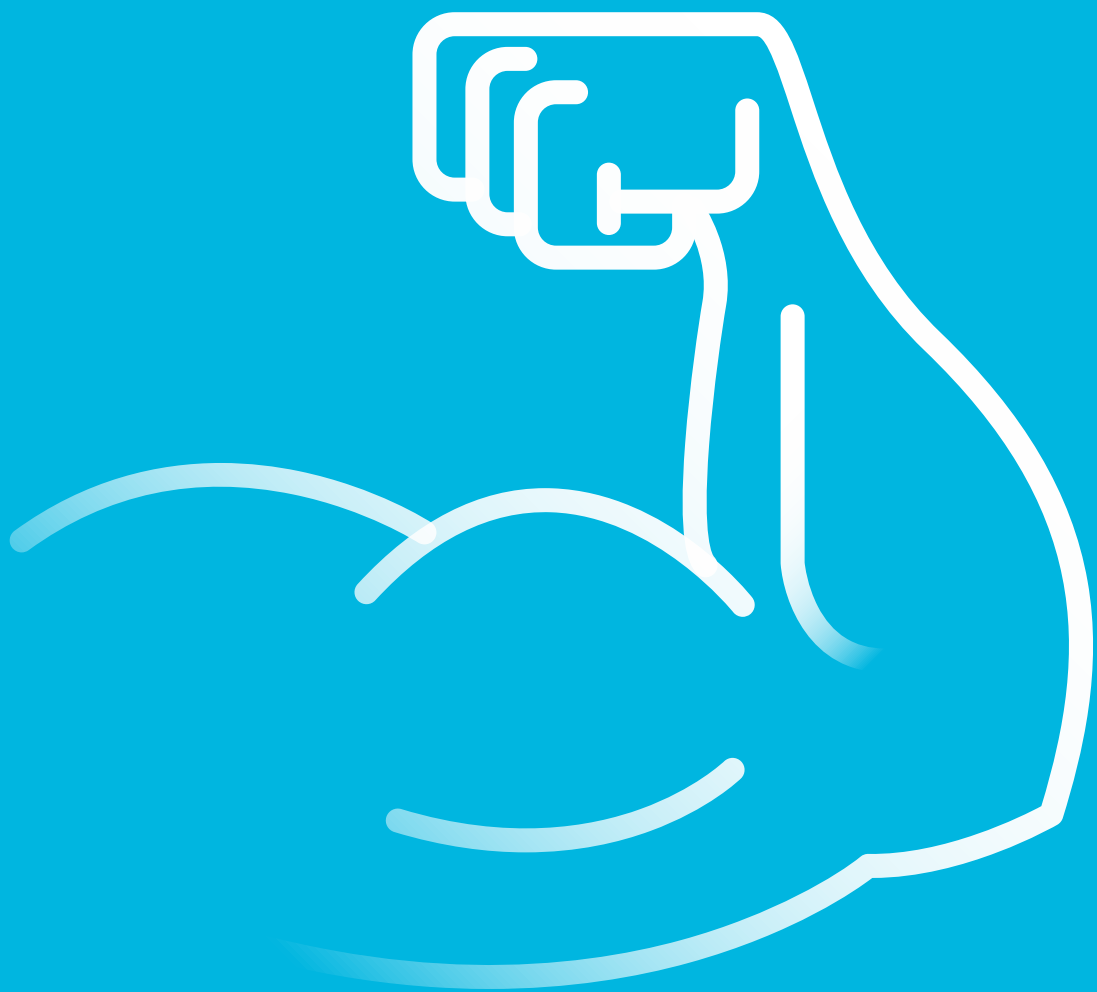
- Power supply: 230V AC (-15%...+10%), 50/60Hz
- Output: 4 bistable relays with change-over contact from 8A (250V AC)

GLX+ GEO BUS

Is a GPS module that allows you to capture the information of date, time and position from satellites. This information will be shared with GLX+Q BUS



New





Time Switches

72 x 72 Classic Plus and Galax Plus

Comfort functions



Applications



Going from the pre-programmed switching of lighting (car park, advertising signs, public roads, etc.) over pre-programmed switching of heating equipment (home and work environment, water heating, etc.), to the pre-programmed switching of motors for pumps and fans and even to random presence simulation.

Features

Very easy programming by means of mechanical switches or digital buttons. Devices with daily and weekly event programming possibilities. Analogue devices have a shortest switching time of 15 minutes and digital device has 1 minute.

Functions

Pre-programmed switching of all kind of electrical devices.

Standards




EN 60780-1, EN 60780-2-7

Performance

	DAY PROGRAMMABLE	WEEK PROGRAMMABLE	DAY/WEEK PROGRAMMABLE
Contact	switched	switched	changeover
Maximum recommended load			
- Incandescent lamps	3000W	3000W	3000W
- Fluorescent with compensation	1200VA	1200VA	-
- Low voltage halogen lamps	2000VA	2000VA	2000VA
- Halogen (230V AC)	3000W	3000W	3000W
- Low consumption lamps	1000VA	1000VA	1000VA
- Downlight lamps	900VA	900VA	-
- LEDs	1000VA	1000VA	1000VA
- Non-compensated	-	-	1200VA
Running reserve	>100h	>100h	5 years
Shortest switching time	15 min	2 h	1 min
Modules	4	4	4
Nominal current	16A/250 VAC	16A/250 VAC	16A/250 VAC
Accuracy	± 1 second/day at 25°C	± 1 second/day at 25°C	± 1 second/day at 25°C
Number of channels	1	1	1
Operating voltage	230V AC	230V AC	230V AC
Fix on/off auto	yes	yes	yes
Own consumption at 230V	1.8W	1.8W	6VA
Operating temperature range	0°C...55°C	-10°C...+45°C	-10°C...+45°C
Flush mounting	yes	yes	yes
Surface mounting	yes	yes	yes
Number of memory position	-	-	50



72 x 72 Classic Plus - Analogue time switches

	Program	No. of channels	Nominal Current	Running reserve	Shortest switch time	Fix on/off auto	No. of modules	Cat. No.	Ref. No.	Pack.	
	Operating Voltage: 120 or 230V AC										
	Day program	1x24	1CO	16A/250 VAC	>100h	15 min	yes	4	CLS+Q 15 1COM 16A 72x72 D	687467	1
	Operating Voltage: 120 or 230V AC - 24 or 48V AC/DC										
	Week program	7x24	1CO	16A/250 VAC	>100h	2 h	yes	4	CLS+Q 15 1COM 16A 72x72 W	687468	1
	Operating Voltage: 120 or 230V AC - 24 or 48V AC/DC										
	Day/Week program	1x24/7x24	1CO	16A/250 VAC	5 years	1min	yes	4	GLX+Q 15 1COM 16A 72x72 W	687469	1

72 x 72 Classic Plus and Galax Plus

A

B

C

D

E

F

G

X





Galax LSS

Comfort functions



Applications



Control of lighting in shop windows, offices, car parking areas, controlling street lights, advertising signs, sun blinds, shutters, or even lighting in a home to simulate the presence of people.

Standards

VDE 0632, VDE 0633, EN 60669-2-1

Features

User presettable switch light intensity, intensity range and hysteresis (to avoid on/off a stable behavior). Reaction time is also user presettable. 1 channel and 2 channel with week-cycle, all with separate photocell are available besides a 1 channel all-in-one device.

Functions





Electronic switch controlled by the intensity of the ambient light, detected by a separate or integrated photocell (depending on the model). When the light intensity drops below the threshold setting, the switch changes its state to the on position. An increasing ambient light intensity eventually will switch off the device again.

Performance

	GLX+Q LUX 1NA 1 module 1 NO	GLX+Q LUX/T1COM 2 module 1 relay in monostable change over	GLX+ LUX WALL Relay with NO contact
Contact			
Switching capacity			
- Resistive load	16A/250 VAC	16A/250 VAC	10A/230 VAC
Connectable Loads			
- Incandescent Lamps	4000W	4000W	4000W
- Fluorescent Lamps	1000W	1000W	1000W
- LED <2W/2-8W/ >8W	55/150/180W	55/150/180W	55/150/180W
DC switching capacity	16A/24VDC	16A/24VDC	16A/24VDC
Shortest switching time	20 sec	1 min	10 sec
Screws	PH	PH	PH
Terminal capacity:			
max	4mm ²	6mm ²	4mm ²
min	1mm ²	1mm ²	1mm ²
Operating voltage	230V AC (-20%...+10%)	230V AC (-10%...+10%)	230V AC (-10%...+10%)
Own consumption at 230V	6VA (1W)	8VA (2W)	8VA (1W)
Running reserve	-	3 years	-
Battery	-	Lithium	-
Operating temperature range	-0°C...+50°C	-20°C...+50°C	-0°C...+50°C
Accuracy	-	± 1 second/day at 25°C	± 1 second/day at 25°C
Sealable	-	yes	-
Light sensitive operating part			
Light intensity switching range	10 to 100 lux	5 to 500 lux	3 to 70 lux
Switching hysteresis	0	1 to 50% threshold	4
On/Off switching delay	15s ON 15s OFF	1-50min (programmable) 1-50min (programmable)	15s 15s
Light sensitive sensor wire-length	max. 100m	max. 50m	-
Light sensitive sensor protection degree	IP65	IP65	IP54
Operating temperature range	-20°C...+50°C	-20°C...+50°C	-0°C...+50°C



Galax LSS

	Program	No. of channels	Nominal Current	No. of modules	Cat. No.	Ref. No.	Pack.
	Operating Voltage: 230V AC (-20%...+10%)						
	10 to 100 lux	1NO	16A/250 VAC	1	GLX+Q LUX 1NA 16A 1M	687470	1
	Operating Voltage: 230V AC (-10%...+10%)						
	5 to 500 lux	1CO	16A/250 VAC	2	GLX+Q LUX/T1COM16A2M	687472	1
	Sensor for GLX+ QLUX						
	-	-	-	-	GLX+LSS EXT	687471	1
	Operating Voltage: 230V AC (-10%...+10%)						
	3 to 70 lux	1NO	10A	-	GLX+ LUX WALL	687473	1

GLX LSS

A

B

C

D

E

F

G

X





Safety and bell transformers Buzzers and bells

Series T+ BU+ BE+

Comfort functions



Applications



Going from supplying power to a bell circuit, to supplying power to the control circuit of impulse switches, relays or contactors for the control of lighting, heating, etc.

Standards / Marking

IEC 61558-1-2-6: Safety transformer
IEC 61558-1-2-8: Bell transformer
EN 62080: Bells and buzzers



Features

Safety transformers have short-circuit protection through PTC or fail-safe transformers and continuous nominal power.
Bell transformers are recommended for intermittent use at the nominal power declared. Complete noiseless operation.
4, 8, 12, 24, 48V secondary voltages available at power indicated. Terminals are equipped with captive Pozidriv screws and have IP20 protection degree. Possibility to connect till 2 loads at lower secondary voltages taking into account the power. For bells and safety transformers over 25VA terminals CAPS available as accesorie with sealing performances.


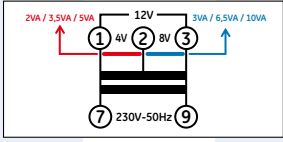

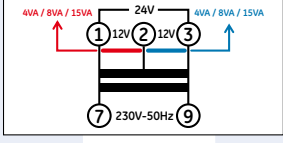
Functions

Reducing the voltage to a very low (safety) voltage used mainly as control-voltage in order to reduce the risk of electrocution due to environmental circumstances (I.e. high degree of humidity like outdoors, in a swimming pool complex, etc.).


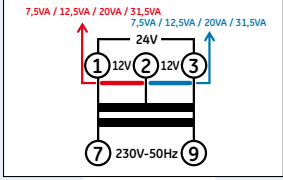
Performance

	Bell transformer	Safety transformer	Buzzers and bells
Nominal primary voltage and frequency//Command voltage	230V 50Hz / 240V 60Hz	230V 50Hz / 240V 60Hz	230V AC-12V AC
Power VA / Comsumption VA	5-10-15-8-16-30	15-25-40-63	4.5
Secondary voltage at nominal primary voltage	4-8- 12V; 12-12-24V	12-12-24V	-
Maximum secondary voltage at zero load	1.5 x Un sec.	1.3 x Un sec.	-
Minimum secondary voltage at nominal load	0.85 x Un sec.	0.95 x Un sec.	-
Maximum load	Nominal power	Nominal power	-
Short-circuit protection	PTC and Fail Safe	PTC and Fail Safe	-
Operating temperature	-20...+40°C	-20...+40°C	-20...+45°C
Isolation voltage	4kV	4kV	
Protection degree	IP20	IP20	IP20
Use	Inttermitent	Permanent	Permanent
Maximum permanent working time	-	-	10 ⁶
Sound level	-	-	77-75 dB
Screw	Slotted and PH1	Slotted and PH1	Pozidriv 1
Terminal capacity:			
min	1x0.5mm ²	1x0.5mm ²	1x1.5mm ²
max	1x4mm ² or 2x2.5mm ²	1x4mm ² or 2x2.5mm ²	1x10mm ²
Maximum torque	0.5Nm	0.5Nm	0.5Nm

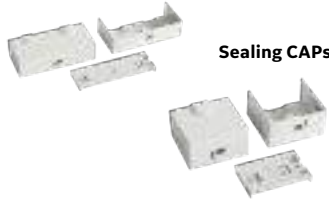
Series TR+ Bells transformers

	Output power VA	Secondary voltages	Primary voltage	Number of modules	Primary circuit protection	Cat. No.	Ref. No.	Pack.
	5	4-8-12V AC	230V AC	2	PTC	TR+ B 5	665900	1
	10	4-8-12V AC	230V AC	2	fail safe	TR+B10	665902	1
	15	4-8-12V AC	230V AC	2	fail safe	TR+B15	665903	1
								
	8	12-12-24V AC	230V AC	2	fail safe	TR+B 8	665901	1
	16	12-12-24V AC	230V AC	2	fail safe	TR+B16	665904	1
	30	12-12-24V AC	230V AC	3	fail safe	TR+B30	665905	1
								



Series TS+ Safety transformers

	Output power VA	Secondary voltages	Primary voltage	Number of modules	Primary circuit protection	Cat. No.	Ref. No.	Pack.
	15	12-12-24V AC	230V AC	2	fail safe	TR+S15	665909	1
	25	12-12-24V AC	230V AC	3	fail safe	TR+S25	665910	1
	40	12-12-24V AC	230V AC	3	PTC	TR+S40	665911	1
	63	12-12-24V AC	230V AC	6	PTC	TR+S63	665912	1
								

Series TR+/TS+ sealing CAPS for Bells and safety transformers

	To be used in			Number of modules		Cat. No.	Ref. No.	Pack.
	TR+S25	TR+S40	TR+B30	3	-	TR&KT+C3MOD	665918	1
	TR+S63	-	-	6	-	TR&KT+C6MOD	665919	1

Bells and Buzzers

	Power Consumption VA	Voltages	dB	Number of modules	Permanent use	Cat. No.	Ref. No.	Pack.
	4.5	230Vac	77	1	12 h	BE230	687498	
	4.5	12Vac	77	1	12 h	BE12	687499	
	4.5	230Vac	75	1	12 h	BU230	687496	
	4.5	12Vac	75	1	12 h	BU12	687497	

Series T+ BU+ BE+

A

B

C

D

E

F

G

X



Series MT+D kWh

Comfort functions



Applications



Measurement of energy consumption. Possibility to integrate in only one system electricity, water, gas... consumptions.

Standards

EN/IEC 62053-21, EN/IEC 62053-23, EN/IEC 62052-11

Approval / Marking



Features

An electricity meter or energy meter is a device that measures the amount of electric energy consumed by a residence, business, or an electrically powered device.

Electricity meters are typically calibrated in billing units, the most common one being the kilowatt hour (kWh). Periodic readings of electricity meters establishes billing cycles and energy used during a cycle.

GE offers a new electronic meter, which display the energy used on an LCD display, and they can also transmit readings to remote places via pulse output, ModBus RS485 or through Ethernet building a powerfull system of measure.

In order to build this system, some accesories devices are offered like RS232/485 converter, RS485/ethernet converter or Pulse output concentrator. The concentrator can also receive pulses from other type of meters like gas meter or water meter in order to integrate in only one system all type of consumptions in a house, village or commercial and industrial building.

Functions

Measurement, visualisation and logging of Energy kWh to be used in BMS systems.

Performance MT+D KWh Performance MT+D KWh

	D1I32	D1I63	D3NI63	D3NI X/5
Display				
Display type	LCD 7 digits	LCD 6 digits	LCD 8 digits	LCD 8 digits
Maximum display	99999.99kWh	99999.9kWh	999999.99kWh	See Tech. Datasheet
Energy				
Resolution	10Wh	100Wh	10Wh	See Tech. Datasheet
Metering LED	1imp/Wh	1imp/Wh	1imp/Wh	1imp/0.1Wh
Total energy count	not resettable	not resettable	not resettable	not resettable
Partial energy count	N/A	resettable	resettable	resettable
Accuracy (EN/IEC 62053-21):	Class 1	Class 1	Class 1	Class 1
Input				
Network	Single-phase	Single-phase	Three phase, 3-4wires	Single Phase, 3-phase, 3-4 wires
Reference voltage	230V AC	230-240V AC	400-415V AC	230-240V single & 400-415 Three phase
Specified operating range	196..264V AC	196..264V AC	197..480V AC	210..264V single & 210..440V Three phase
Reference frequency	50-60Hz	50-60Hz	50-60Hz	50-60Hz
Tolerance (Hz)	47...63Hz	47...63Hz	47...63Hz	47...63Hz
Basic current Ib	5A	5A	10A	x/5A
Max. Current, Imax	32A	63A	63A	6A
Starting current	20mA	20mA	40mA	20mA
Pulse output				
Pulse weight	1 imp/Wh	1, 10, 100, 1000Wh	1, 10, 100, 1000Wh	10, 100Wh; 1, 10, 100, 1000kWh
Type	Class A	Optoelectronic relay	Optoelectronic relay	Optoelectronic relay
Voltage Uimp	12...27V DC	110V DC/AC	110V DC/AC	110V DC/AC
Current	10...27mA	50mA	50mA	50mA
Pulse duration	70ms	50,100,150,200,300,400,500ms	50,100,150,200,300,400,500ms	50,100,150,200,300,400,500ms
RS485 ouput	NO	MT+D1485 63 2M	MT+D3N485 63 4M	MT+D3Ni x/5 4M
Thermal capacity				
Rigid cable	1/10mm ²	1/16mm ²	1/16mm ²	1/4mm ²
Flexible cable	1/7mm ²	1/10mm ²	1/10mm ²	0.05/2.5mm ²
Tightening torque advised	1.1mm ²	1.4mm ²	1.4mm ²	0.8mm ²
Number of modules	1	2	4	4
Environmental conditions				
Operating temperature	-5°C..55°C	-5°C..55°C	-5°C..55°C	-5°C..55°C
Additional Approvals				
MID directive compliance	MT+D1i45 1M MID	MT+D1485 63 2M MID MT+D1i 63 2M MID	MT+D3N485 63 4M MID MT+D3Ni 63 4M MID	MT+D3Ni x/5 4M MID MT+D3N485 x/54M MID

Series MT+D kWh

	Scale	Accuracy	Number of modules	Outputs	Additional measures	Cat. No.	Ref. No.	Pack.
<p>Monophase kWh</p>	<32A	Class 1	1	Pulse	-	MT+D1i 32 1M	665248	1
	<63A	Class 1	2	Pulse	In, Vn, Wt, Hz, PF, HM	MT+D1i 63 2M	665250	1
	<63A	Class 1	2	RS485	In, Vn, Wt, Hz, PF, HM	MT+D1485 63 2M	665252	1
<p>Triphase 3-4 wires kWh</p> <p>For x/5 version see tech. datasheet</p>	<63A	Class 1	4	PULSE	partial kwh, double tariff, Var, Un, In, Wt, Hz, PF, HM	MT+D3Ni 63 4M	665254	1
	<63A	Class 1	4	RS485	partial kwh, double tariff, Var, Un, In, Wt, Hz, PF, HM	MT+D3N485 63 4M	665256	1
	x/5A	Class 1	4	PULSE	partial kwh, Var, Un, In, Wt, Hz, PF	MT+D3Ni x/5 4M	665258	1
	x/5A	Class 1	4	RS485	partial kwh, Var, Un, In, Wt, Hz, PF	MT+D3N485 x/5 4M	665260	1

Series MT+D kWh

Series MT+D kWh. MID Directive approval

	Scale	Accuracy	Number of modules	Outputs	Additional measures (non MID)	Cat. No.	Ref. No.	Pack.
<p>Monophase kWh</p>	<45A	Class B	1	PULSE	-	MT+D1i 45 1M MID	665249	1
	<63A	Class B	2	PULSE	In, Vn, Wt, Hz, PF, HM	MT+D1i 63 2M MID	665251	1
	<63A	Class B	2	RS485	In, Vn, Wt, Hz, PF, HM	MT+D1485 63 2M MID	665253	1
<p>Triphase 3-4 wires kWh</p> <p>For x/5 version see tech. datasheet</p>	<63A	Class B	4	PULSE	partial kwh, Var, Un, In, Wt, Hz, PF, HM	MT+D3Ni 63 4M MID	665255	1
	<63A	Class B	4	RS485	partial kwh, Var, Un, In, Wt, Hz, PF, HM	MT+D3N485 63 4MMID	665257	1
	x/5A	Class B	4	PULSE	partial kwh, Var, Un, In, Wt, Hz, PF	MT+D3Ni x/5 4M MID	665259	1
	x/5A	Class B	4	RS485	partial kwh, Var, Un, In, Wt, Hz, PF	MT+D3N485 x/54MMID	665261	1

A

B

C

D

E

Series MT+D kWh

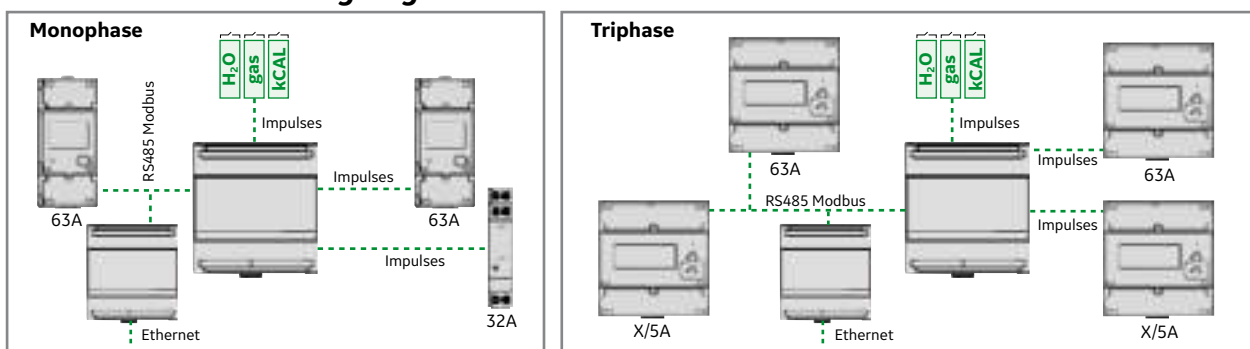
	Number of modules	Description	Cat. No.	Ref. No.	Pack.
	4	Pulse acquisition 3 program input configuration - 12 contact inputs PASSIVE - 6 contact inputs+6 active inputs ACTIVE - S0 (GME ENEL)	MT+ImpCon	665262	1
	4	RS485-Ethernet conversion	MT+RS485/Ethernet	665389	1
	2	RS485 RS232 conversion	MT+RSC TOP	665390	1

F

G

X

Series MT+kWh. Building a system





Series MT+D

Comfort functions



Features

AC measurement devices with digital technology and readout are available. The simple devices (one measurement only voltage, current, frequency) are only available in single phase, while the complex devices (more than one measurement i.e. power, energy, net analyser) are also available in 3-phase execution. High current can be measured through the intermediate use of a current transformer. All devices have very good precision and have also a very low self-consumption to limit as much as possible the measurement error. The net analysers are true RMS measuring devices. Monitoring and logging all electrical values on to a PC is possible by using communication modules to RS484, RS232 and Ethernet.

Applications



Measurement, visualisation and logging of voltage, current, frequency, hours of operation, power, energy, cos φ, etc..

Functions

Measurement of all possible electrical values from simple measurement as voltage, current, frequency over more complex such as power and energy, to all-in-one measurement with the net analyser devices. To avoid down-time due to abnormal situations, i.e. power-supply voltage too high, absorbed power too high, etc., leading to malfunctioning and even breakdown of the machinery, the measurement and monitoring of the electrical values like voltage, current, power, energy etc. is an absolute must and even an indispensable asset when it comes to preventive maintenance.

Standards

EN 61010-1, BS EN 60051-1-2




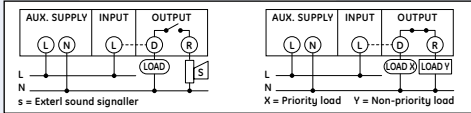

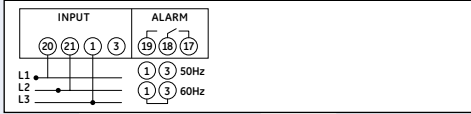


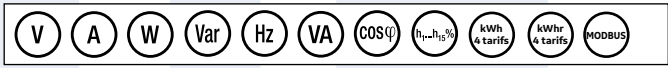
Marking



Performance MT+D KWh Performance MT+D KWh

	D1132	D1163	D3Ni63	D3Ni X/5
Display type	LCD 7 digits	LCD 6 digits	LCD 8 digits	LCD 8 digits
Maximum display	99999.99kWh	99999.9kWh	999999.99kWh	See Tech. Datasheet
Energy				
Resolution	10Wh	100Wh	10Wh	See Tech. Datasheet
Metering LED	1imp/Wh	1imp/Wh	1imp/Wh	1Imp/0.1Wh
Total energy count	not resettable	not resettable	not resettable	not resettable
Partial energy count	N/A	resettable	resettable	resettable
Accuracy (EN/IEC 62053-21):	Class 1	Class 1	Class 1	Class 1
Input				
Network	Single-phase	Single-phase	Three phase, 3-4wires	Single Phase, 3-phase, 3-4 wires
Reference voltage	230V AC	230-240V AC	400-415V AC	230-240V single & 400-415 3-phase
Specified operating range	196..264V AC	196..264V AC	197...480V AC	210..264V single & 210..440V 3-phase
Reference frequency	50-60Hz	50-60Hz	50-60Hz	50-60Hz
Tolerance (Hz)	47...63Hz	47...63Hz	47...63Hz	47...63Hz
Basic current Ib	5A	5A	10A	x/5A
Max. Current, Imax	32A	63A	63A	6A
Starting current	20mA	20mA	40mA	20mA
Pulse output				
Pulse weight	1 imp/Wh	1, 10, 100, 1000Wh	1, 10, 100, 1000Wh	10, 100Wh; 1, 10, 100, 1000kWh
Type	Class A	Optoelectronic relay	Optoelectronic relay	Optoelectronic relay
Voltage Uimp	12...27V DC	110V DC/AC	110V DC/AC	110V DC/AC
Current	10...27mA	50mA	50mA	50mA
Pulse duration	70ms	50,100,150,200,300,400,500ms	50,100,150,200,300,400,500ms	50,100,150,200,300,400,500ms
RS485 output	NO	MT+D1485 63 2M	MT+D3N485 63 4M	MT+D3N485 x/5 4M
Thermal capacity				
Rigid cable	1/10mm ²	1/16mm ²	1/16mm ²	1/4mm ²
Flexible cable	1/7mm ²	1/10mm ²	1/10mm ²	0.05/2.5mm ²
Tightening torque advised	1.1mm ²	1.4mm ²	1.4mm ²	0.8mm ²
Number of modules	1	2	4	4
Environmental conditions				
Operating temperature	-5°C..55°C	-5°C..55°C	-5°C..55°C	-5°C..55°C
Additional Approvals				
MID directive compliance	MT+D1132 1M MID	MT+D1485 63 2M MID MT+D11 63 2M MID	MT+D3N485 63 4M MID MT+D3Ni 63 4M MID	MT+D3Ni x/5 4M MID MT+D3N485 x/54M MID

Series MT+D

	Scale	Accuracy	Number of Outputs	Additional measures	Cat. No.	Ref. No.	Pack.		
	V, A, Hz	x/5A	±1%+1 digit	4	-	voltage, current, frequency	MT+D DV500 DA5 F 4M	665387	1
									
	Priority Relay+Buzzer	direct 28A	-	2	Buzzer	V, A, kW	MT+D PRI BASIC 2M	665395	1
									
	Phase sequence relay	380..415V (phase-phase) 50-60Hz (selectable)	-	2	Alarm	-	MT+ AP 3F 2M	665396	1
									
	Multimeter	x/5A 230/400V	±0.5 (I,V), -1.5%(W), -0.2%(Hz)	4	-	Ph V, Ph A, Linked Voltage Ph act./reactive Power, Act.,React., appar. Power Neutral current, Hz, PF, Working H&min., Power demand, Max. Power demand	MT+D BASIC 4M	665393	1
<p>Single Phase, three phase, 3-4 wires, for electric diagram</p>									
	Net Analyser	x/5A 230/400V	Class 0.5 (kWh) Class 1 (VAr)	4	Pulse	see tech. datasheet	MT+D TOPi 4M	665391	1
<p>Pulse +RS485 see tech. datasheet MT+D TOPiRS485 4M 665392 1</p>									
									
<p>Single Phase, three phase, 3-4 wires, for electric diagram. See tech. datasheet</p>									

Series MT+D

A

B

C

D

E

F

G

X



Series MT+A

Comfort functions



Applications



Measurement, visualisation and logging of voltage, current, frequency and hours of operation

Standards

EN 61010-1, BS EN 60051-1-2

Marking



Features

AC measurement devices with analogue technology and readout are available. The simple devices (one measurement only i.e. voltage, current, frequency) are only available in single phase. High currents can be measured through the intermediate use of a current transformer (for the analogue amp-meter combined with an interchangeable scale-plate). All devices have very good precision and have also a very low self-consumption to limit as much as possible the measurement error. Using one monophase-volt or amp-meter in a 3-phase system is possible by using the appropriate selector switch also available in our range.











Functions

Measurement of voltage, current, frequency and hours of operation with analogue visualisation of the measure.

Performance MT+A

	Ammeter MT+AA	Voltmeter MT+AV	Frequency meter MT+F	Hour Counter MT+AH	Selector MT+S
Scale selection	Interchangeable scaleplate	-	-	Counter 7 digit	I1-I2-I3 V12-V23-V31-V1n-V2n-V3n
Rated burden	< 1.1VA	< 3.5VA(500V) < 3VA (300V)	≤ 4VA	< 8mA	-
Operating temperature range	-25...50°C	-25...50°C	-25...50°C	-20...70°C	-
Class of precision (accuracy)	1.5	1.5	1	0.02%	-
Type	Single phase, AC	Single phase, AC	Single phase, AC	230V-110V-24V	-
Connection	direct or CT /5	300V-500V	-	-	-
Measure	true RMS value	true RMS value	-	-	-
Continuous overload	1.2In	1.2Un	-	-	-
Instantaneous overload	10In / 5 seconds	10Un / 5 seconds	-	-	-
Rating frequency	50Hz	50Hz	50-60Hz	50Hz	-
Working frequency	45..65Hz	45..65Hz	45..65Hz	-	-

Series MT+A analogue measurement instruments

	Scale	Accuracy	Nr. of phases	Nr. of modules	Cat. No.	Ref. No.	Pack.
 <p>Ammeters</p> 	-	1.5	1	4	MT+AA 4M	665264	1
	5A	1.5	1	4	MT+AA5 4M	665265	1
	10A	1.5	1	4	MT+AA10 4M	665266	1
	15A	1.5	1	4	MT+AA15 4M	665267	1
	20A	1.5	1	4	MT+AA20 4M	665268	1
	25A	1.5	1	4	MT+AA25 4M	665269	1
	30A	1.5	1	4	MT+AA30 4M	665270	1
 <p>Interchangeable Ammeter scaleplates</p>	Scale		To use in		Cat. No.	Ref. No.	Pack.
	40/5		665264		MT+SP40	665283	10
	50/5		665264		MT+SP50	665284	10
	60/5		665264		MT+SP60	665285	10
	80/5		665264		MT+SP80	665286	10
	100/5		665264		MT+SP100	665287	10
	150/5		665264		MT+SP150	665288	10
	200/5		665264		MT+SP200	665289	10
	250/5		665264		MT+SP250	665290	10
	300/5		665264		MT+SP300	665291	10
	400/5		665264		MT+SP400	665292	10
	500/5		665264		MT+SP500	665293	10
	600/5		665264		MT+SP600	665294	10
800/5		665264		MT+SP800	665295	10	
1000/5		665264		MT+SP1000	665296	10	
 <p>Voltmeters</p> 	Scale	Accuracy	Nr. of phases	Nr. of modules	Cat. No.	Ref. No.	Pack.
	300V	1.5	1	4	MT+AV300 4M	665271	1
	500V	1.5	1	4	MT+AV500 4M	665272	1
<p>Frequency meter</p> 	Scale	Accuracy	Nr. of phases	Nr. of modules	Cat. No.	Ref. No.	Pack.
	45...65Hz	1.5	1	4	MT+AF 4M	665273	1
 <p>Hour counter</p> 	Scale	Accuracy	Nr. of phases	Nr. of modules	Cat. No.	Ref. No.	Pack.
	110V/50Hz	0.02%	1	2	MT+AH110 2M	665274	1
	230V/50Hz	0.02%	1	2	MT+AH230 2M	665275	1
	24V/50Hz	0.02%	1	2	MT+AH24 2M	665276	1
 <p>Selector switch</p> 				Nr. of modules	Cat. No.	Ref. No.	Pack.
	Amp.			3	MT+S4 3M	665385	1
	Voltage			3	MT+S7 3M	665386	1

Series MT+A

A

B

C

D

E

F

G

X



Current transformers

Series MT+CT

Comfort functions



Features

Current transformers are used extensively for measuring current. This new CTs range covers every facility with three-phase service and single-phase services greater from 40A to 4000A.

The CT is typically described by its current ratio from primary to secondary. Often, multiple CTs are installed for various uses. For example, protection devices and revenue metering may use separate CTs to provide isolation between metering and protection circuits, and allows current transformers with different characteristics (accuracy, overload performance) to be used for the devices. The primary circuit is largely unaffected by the insertion of the CT. The rated secondary current is commonly standardized at 5A.

For example, a 4000:5 CT secondary winding will supply an output current of 5 Amperes when the primary winding current is 4000 A.

The load, or burden, of the CT should be a low resistance.

The accuracy of a CT is directly related to a number of factors including: burden, burden class/saturation class, rating factor, load and physical configuration. For the IEC standard, accuracy classes for various types of measurement are set out in IEC 60044-1, Classes 0.5, 1 and 3.

The class designation is an approximate measure of the CTs accuracy. The ratio (primary to secondary current) error of a Class 1 CT is 1% at rated current; the ratio error of a Class 0.5 CT is 0.5% or less.

Applications



Current transformers are commonly used in metering.

Standard

EN60044-1

Marking



Functions

When current in a circuit is too high to apply directly to measuring instruments, a current transformer produces a reduced current accurately proportional to the current in the circuit, which can be conveniently connected to measuring and recording instruments.

A current transformer isolates the measuring instruments from what may be very high Current in the monitored circuit.

Performance MT+V

	CT40-CT80	CT100-CT400	CT500-CT600	CT800-CT1000	CT1200-CT2000	CT2500-CT4000
Rated primary current I _{pn}	40-50-60-80	100-150-200-250-300-400	500-600	800-1000	1200-1500-2000	2500-3200-4000
Rated frequency	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz
Working frequency	47..63Hz	47..63Hz	47..63Hz	47..63Hz	47..63Hz	47..63Hz
Rated continuous thermal current according to EN60044-1						
Rated short-time thermal current I _{th}	< 60I _n	< 60I _n	< 60I _n	< 60I _n	< 60I _n	< 60I _n
Rated dynamic current I _{dyn}	2.5I _{th}	2.5I _{th}	2.5I _{th}	2.5I _{th}	2.5I _{th}	2.5I _{th}
Instrument security factor (FS)	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5
Rated secondary current I _{sn}	5	5	5	5	5	5
Rated burden	1...2.5VA (see table)	1.5...12VA (see table)	10...15VA (see table)	8...12VA (see table)	15...25VA (see table)	20...50VA (see table)
Accuracy class	1 - 3 (see table)	0.5-1 (see table)	0.5-1 (see table)	0.5-1 (see table)	0.5-1 (see table)	0.5-1 (see table)
Max. power dissipation	≤ 3W	≤ 7W	≤ 9W	≤ 10.5W	≤ 20W	≤ 23W
Allowed max cable or busbar temp.	125°C	125°C	125°C	125°C	125°C	125°C
Rated insulation level	3kV r.m.s. 50Hz/1min	3kV r.m.s. 50Hz/1min	3kV r.m.s. 50Hz/1min	3kV r.m.s. 50Hz/1min	3kV r.m.s. 50Hz/1min	3kV r.m.s. 50Hz/1min
Class of insulation (EN60044-1)	B	B	B	B	B	B
Nominal temperature range	-25...50°C	-25...50°C	-25...50°C	-25...50°C	-25...50°C	-25...40°C
Limit temperature range for storage	-40...85°C	-40...85°C	-40...85°C	-40...85°C	-40...85°C	-40...85°C
Connections						
Primary winding	passing cable	passing cable/ busbar primary	passing cable/ busbar primary	passing cable/ busbar primary	busbar primary	busbar primary
Max. tightening torque for passing primary bar fixing screws:	0.2Nm	0.2Nm	0.2Nm	0.2Nm	0.2Nm	0.2Nm
Secondary winding	screw terminals, max 2x2.5mm ²	screw terminals, max 6mm ²	4 screw terminals, max 6mm ² +2 faston (4.8x0.8mm)	4 screw terminals, max 6mm ² +2 faston (4.8x0.8mm)	tightening by nut	tightening by nut

Series MT+CT Current Transformers

	VA CL. 0.5	VA CL. 1	Secondary current	Primary current	Size (mm)	Cat. No.	Ref. No.	Pack.
	-	1	5	40	65x44x30	MT+CT40	665368	1
	1	1.5	5	50	65x44x30	MT+CT50	665369	1
	1	2	5	60	65x44x30	MT+CT60	665370	1
	1.5	2.5	5	80	65x44x30	MT+CT80	665371	1
	1.5	3	5	100	80x56x43	MT+CT100	665372	1
	3	4	5	150	80x56x43	MT+CT150	665373	1
	4	7	5	200	80x56x43	MT+CT200	665374	1
	6	8	5	250	80x56x43	MT+CT250	665375	1
	8	10	5	300	80x56x43	MT+CT300	665376	1
	10	12	5	400	80x56x43	MT+CT400	665377	1
	10	12	5	500	95x70x45	MT+CT500	665378	1
	12	13	5	600	95x70x45	MT+CT600	665379	1
	10	12	5	800	95x70x45	MT+CT800	665380	1
	12	15	5	1000	95x70x45	MT+CT1000	665381	1
	15	20	5	1200	94x90x40	MT+CT1200	665382	1
	20	25	5	1500	94x90x40	MT+CT1500	665383	1
	20	25	5	2000	94x90x40	MT+CT2000	665384	1
	30	50	5	2500	160x99x58	MT+CT2500	665924	1
	30	50	5	3200	160x125x40	MT+CT3200	665925	1
	30	50	5	4000	160x125x40	MT+CT4000	665926	1

Series MT+CT

A

B

C

D

E

F

G

X



Series MTDIN

Comfort functions



Applications



- Control switchboards for low and medium voltage applications where DIN-rail mounting is preferred due to size restraints.
- Allows the measurement of electrical variables utilized for the effective control of systems.

Approval / Marking



Features

- Current measuring .../5 or .../1A
- DIN-rail format with only 3 modules (52mm).
- Assembly on the 72 x 72 mm panel with frontal adaptor (Ref. No. 665244).
- RS485 communications (Modbus-RTU).
- Two transistor outputs.
- Optional ITF technology: galvanic insulation for inputs.
- THD available per phase for power factor, voltage and current.
- Instantaneous display of important electrical parameters.

Functions

Three-phase power analyser for mounting on DIN-rail. Also adaptable for panel mounting with 72 x 72mm dimension.

Standards

IEC 664, VDE 0110, UL 94, IEC 801, IEC 348, IEC 571-1, EN 61000-6-3, EN 61000-6-1, EN 61010-1

Performance

Power supply circuit	230V AC (-15% to +10%) or 85 to 265V AC / 95 to 300V DC
Consumption	3VA
Frequency	50 or 60Hz
Nominal current (In)	5A
Metering circuit	
Maximum voltage	300V AC (Ph-N) 520V AC (Ph-Ph)
Frequency	45 to 65Hz
Voltage consumption of the circuit	0.7VA
Current consumption of the circuit	0.9VA (ITF) / 0.75VA (shunt)
Nominal current	In / 5A
Permanent overload	1.2 In
Class/Accuracy	
Voltage	0.5% ± 1 digit
Current	0.5% ± 1 digit
Power rating	1% ± 1 digit
Ambient conditions	
Operating temperature	-10°C up to +50°C
Relative humidity (non-condensing)	5% up to 95%

Output transistor	Opto-isolated (open collector) NPN
Max. operating voltage	24V DC
Max. operating current	50mA
Max. impulse frequency	5 impulse / s
Duration of the impulse	100ms
Housing	
Type of box	VO self-extinguishing plastic
Degree of protection	Embedded equipment: IP41 Terminals: IP20
Dimensions (H x W x D)	85 x 52.5 x 67.9mm (3 modules)
Weight	210g
Safety	
	Designed for CAT III 300/520V AC installations, in accordance with EN 61010. Class II double insulated for protection against electric shock

Compact three-phase power analyser - Series MTDIN



Modules	Class (V, A)	Communication	Protocol	Digital output	Voltage	Harmonics	Cat. No.	Ref. No.
3	0.5	-	-	-	85 to 265VAC 95 to 300VAC	-	MTDIN1	665010
3	0.5	-	-	-	230VAC	-	MTDIN2	665011
3	0.5	RS485	ModBus/RTU	2	230VAC	-	MTDIN2COM	665155
3	0.5	RS485	ModBus/RTU	2	85 to 265VAC 95 to 300VDC	U and I (15°)	MTDIN1HARCOM	665012

For other versions, contact GE or your local distributor.

Accessories



Front panel adaptor

MTAdapt	665244	1
---------	---------------	---

Adaptor installing MTDIN on 72x72 mm panels.

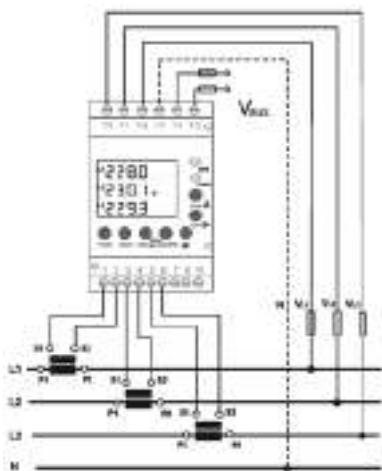
Central fixing.

Adjustable on the rear with two straps.

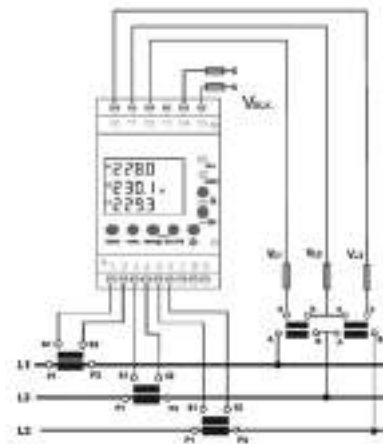
For converters, see page D.43

Connections

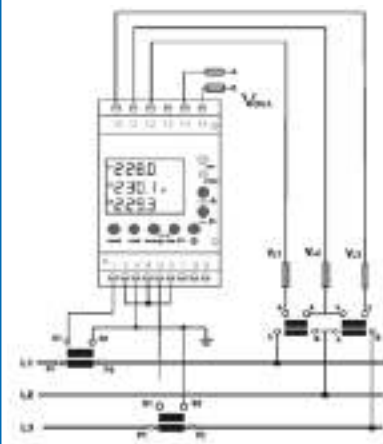
3 or 4 wires (low voltage)



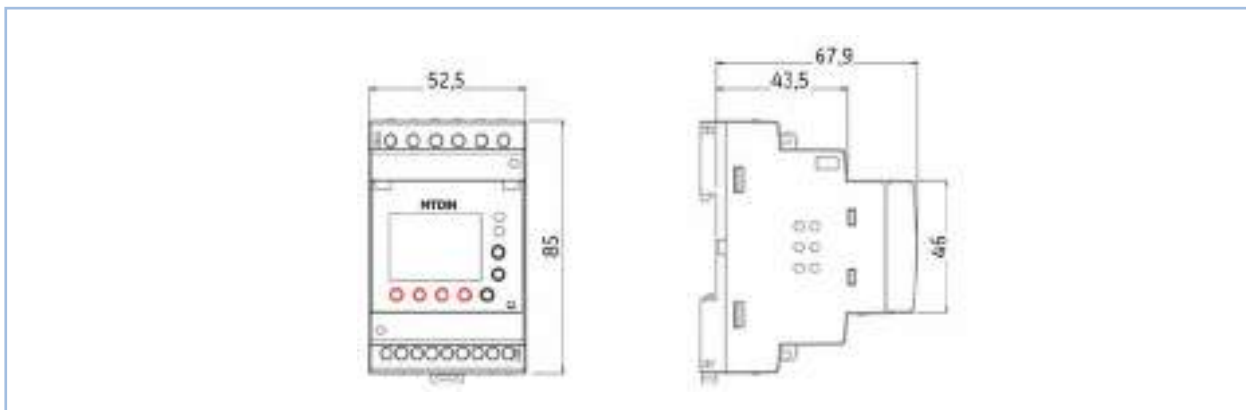
3 wires (2 voltage transformers and 3 current transformers)



3 wires (2 voltage transformers and 2 current transformers)



Dimensions (mm)





Series MT96

Comfort functions



A

Applications



- Control switchboards for low and medium voltage applications.
- Allows the measurement of electrical variables utilized for the effective control of systems.
- Consumed energy can be set to trigger pulses.
- Alarm controls: full programming capability for each output, i.e., the maximum value, minimum value, and delay.

B

C

D

E

Marking



F

Performance

G

X

Power supply circuit	230V AC (-15% tot +10%) or 85 to 265V AC / 95 to 300V DC
Consumption	5VA
Frequency	50 or 60Hz
Nominal current (In)	5A
Metering circuit	
Maximum voltage	300V AC (Ph-N) 520V AC (Ph-Ph)
Frequency	45 to 65Hz
Voltage consumption of the circuit	0.75VA
Current consumption of the circuit	0.9VA (ITF) /1.2VA (shunt)
Nominal current	In / 5A or In /1A
Permanent overload	1.1 In
Class/Accuracy	
Voltage	0.5% ± 2 digits
Current	0.5% ± 2 digits
Power rating	1% ± 2 digits
Ambient conditions	
Operating temperature	-10°C up to +50°C
Relative humidity (non-condensing)	5% up to 95%

Features

- Class 0.5 energy precision.
- Current measure .../5
- Optional RS485 Modbus /RTU communications.
- Instantaneous display of important electrical parameters.
- Digital outputs with opto-isolated transistor.
- Optional ITF technology: galvanic insulation for inputs.
- THD available per phase for power factor, voltage and current.

Functions

Three-phase power analyser for panel mounting with a 96 x 96mm front fascia with compact depth.

Standards

IEC 664, VDE 0110, UL 94, IEC 801, IEC 348, IEC 571-1, EN 61000-6-3, EN 61000-6-1, EN 61010-1

Output transistor	Opto-isolated (open collector) NPN
Max. operating voltage	24V DC
Max. operating current	50mA
Max. impulse frequency	5 impulse / s
Duration of the impulse	100 ms
Housing	
Type of box	VO self-extinguishing plastic
Degree of protection	Fitted unit (frontal): IP51 Non-fitted unit (sides and rear cover) IP31
Dimensions (H x W x D)	96 x 96 x 63mm
Safety	
	Designed for CAT III 300/520V AC installations, in accordance with EN 61010. Class II double insulated for protection against electric shock

Basic three-phase power analyser - Series MT96

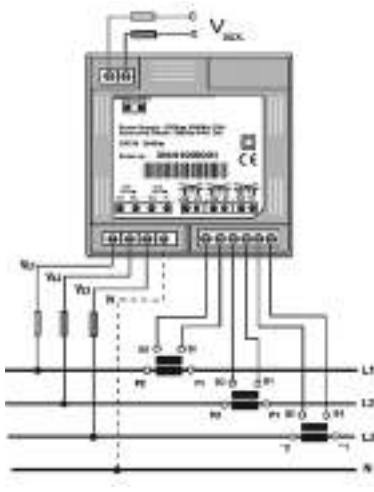


Modules	Class (V, A)	Communi-cation	Protocol	Digital output	Voltage	Harmonics	Cat. No.	Ref. No.
4	0.5	-	-	-	85 to 265VAC 95 to 300VAC	-	MT961	665190
4	0.5	-	-	-	230VAC	-	MT962	665191
4	0.5	RS485	ModBus/RTU	1	230VAC	-	MT962COM	665192
4	0.5	RS485	ModBus/RTU	1	85 to 265VAC 95 to 300VDC	U and I (15°)	MT961HARCOM	665193

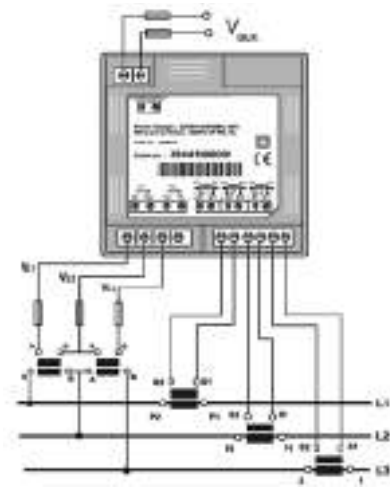
For converters, see page D.43.
For other versions, contact GE or your local distributor.

Connections

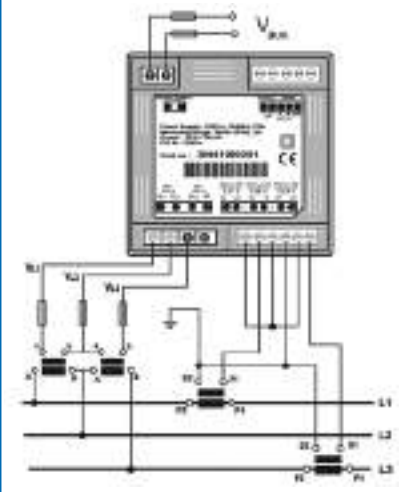
3 or 4 wires (low voltage)



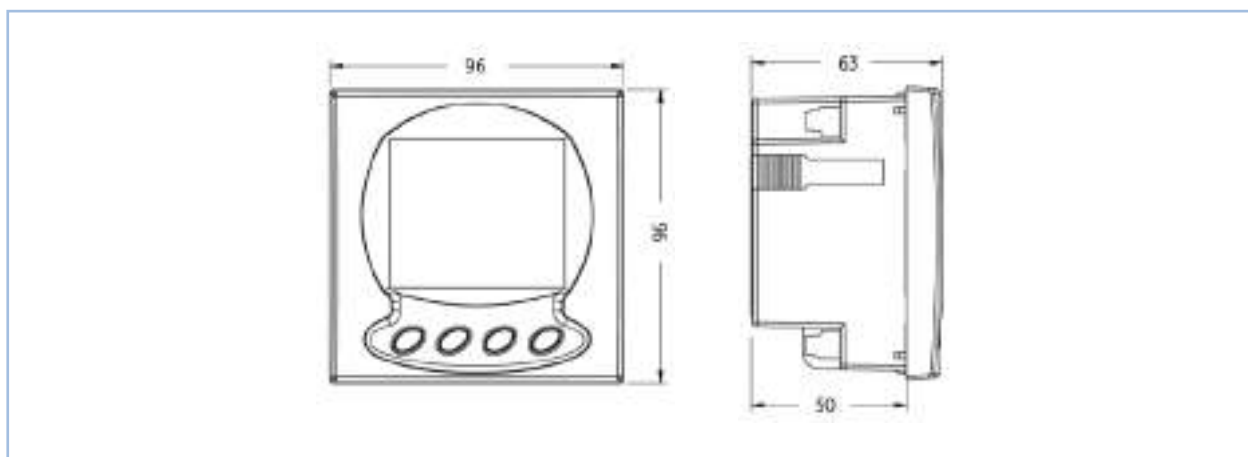
3 wires (2 voltage transformers and 3 current transformers)



3 wires (2 voltage transformers and 2 current transformers)



Dimensions (mm)



Serie MT96

A

B

C

D

E

F

G

X



Series MT144

Comfort functions



Applications



- Control switchboards for low and medium voltage applications.
- Alarm center by means of voltage-free digital inputs.
- Submetering: can measure through impulses other types of consumption, such as gas, water, steam, etc. via their digital inputs.
- Measurement converters: possible to associate instantaneous parameter to one of the analogue outputs (0 to 20mA / 4 to 20mA).
- Recording of instantaneous, maximum, and minimum parameters with a date and hour by means of an expandable memory card.
- Power quality analyser: harmonic decomposition up to order 50^o, asymmetries, flicker, unbalances, overvoltages, gaps, interruptions, etc.

Features

- Class 0.2 energy and power precision.
- Class B power quality analyser.
- One display can monitor up to 32 measurement modules.
- Current measuring .../5 or .../1A
- Measure of neutral current with transformer.
- Optional energy consumption and generation billing (up to 9 rates).
- Expansion possibilities (up to 3 modules).
- RS485 Modbus/RTU communications.
- Profibus GSD module available.
- SD memory module with max capacity of 20 GB available.
- Backlit VGA graphical display.
- Instantaneous display of maximum and minimum electrical parameters with date and hour.
- Measure of energy consumed and generated, up to 100 GWh.
- Up to 8 digital inputs and outputs available.
- ITF technology: galvanic insulation for inputs.

Functions

Three-phase advanced power analyser for panel mounting with a 144 x 144mm front fascia.

Standards

IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-11, IEC 61000-4-4, IEC 61000-4-5

Approval / Marking



Performance

Power supply circuit	85 to 265V AC and 95 to 300V DC
AC power supply frequency	50/60Hz
AC pow. supp. consumption	3VA
DC pow. supp. consumption	< 25W
Metering circuit	
Voltage	15 to 360V AC (L-N) 26 to 600V AC (L-L)
Frequency	45 to 65Hz
Metering margin	5 to 120% Un
Admissible overvoltage	750V AC
Voltage consumption of the circuit	< 0.5VA
Current measuring circuit	
Nominal current (In)	5A or 1A
Metering range	1 to 120% of In
Primary current metered	Programmable < 30,000A
Admissible overload	6A permanent, 100A t < 1s

Maximum meter value	100GWh
Operating temperature	0.2 or 0.5 power and energy
Ambient conditions	
Max. operating voltage	-10°C up to +50°C
Relative humidity	5% up to 95%
Housing	
Metering module	Assembly on DIN-rail 46277 (EN 50022)
Screen or screen + metering module	Assembly on panel (96 x 96mm, 144 x 144mm) or opening with a 103 mm diameter
Dimensions (H x W x D)	144 x 144 x 116mm
Safety	
	Designed for CAT III 300/520V AC installations, in accordance with EN 61010. Class II double insulated for protection against electric shock

Compact units (metering + display module) - Series MT144



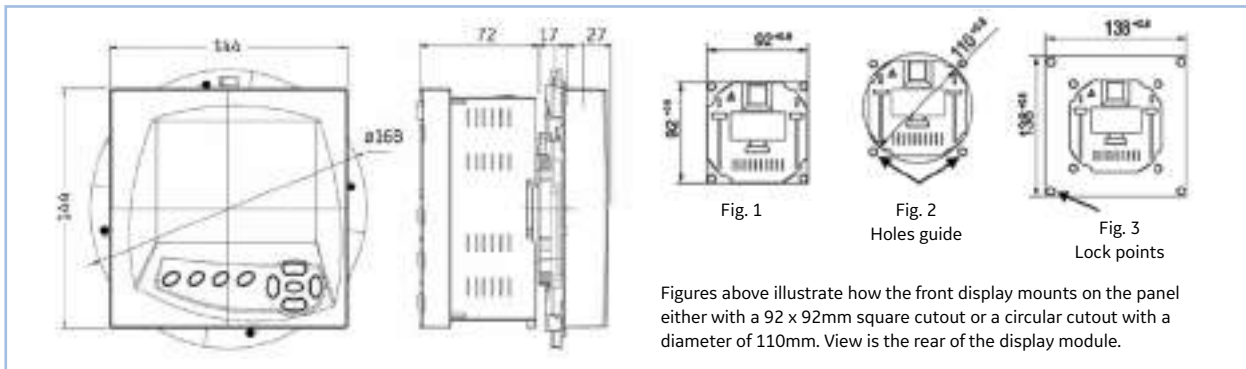
Quadrants	Class (V, A)	Communication	Protocol	Neutral current	Universal power supply	Harmonics	Cat. No.	Ref. No.
4	0.2	RS485	ModBus/RTU	Yes	85 to 265VAC 95 to 300VAC	U and I (15°)	MT144UMD	665194

Measuring units (measuring module and display sold separately) - Series MT144

	Quadrants	Class (V, A)	Communication	Protocol	Neutral current	Universal power supply	Harmonics	Cat. No.	Ref. No.
Measuring module	4	0.2	RS485	ModBus/RTU	Yes	85 to 265VAC 95 to 300VAC	U and I (15°)	MT144UM	665195
VGA display	4	-	-	-	Yes	-	-	MT144UD	665196

For converters, see page D.43.
For other versions, contact GE or your local distributor.

Dimensions



Figures above illustrate how the front display mounts on the panel either with a 92 x 92mm square cutout or a circular cutout with a diameter of 110mm. View is the rear of the display module.

Exchangeable cards

	8I/80 digital expansion card MT8I80 665197 1 8 digital inputs and 8 digitale outputs. Outputs with opto-coupled transistor.	Profibus expansion card - GSD modules MTPBUS 665243 1	
	8I/40 analogue expansion card MT8I40 665198 1 8 analog inputs and 4 analog outputs		
	8I/40 digital expansion card MT8I40R 665199 1 8 digital inputs and 4 digital outputs. Outputs with relay.	SD memory expansion card MTSDMEM 665240 1	

Common accessories for MTDIN, MT96 en MT44 - Converters

	Converter for RS232/485 to Ethernet (and vice-versa) MT485Enet 665245 1 Power supply 85...265VAC / 115...374VDC. Ethernet speed: 10/100 BaseTX RS Bus transmission speed: 1200 bps to 115200 bps.	
	USB converter to RS232 or RS485 MTUSB485 665246 1 Converter from USB network protocol to RS232 or RS485. Power supply through the PC's USB port. Transmission speed: 4800 to 128000 bps.	



Power Analysers - Parameter table

Comfort functions

A

B

C

D

E

F

G

X



	MTDIN				MT96				MT144				
	L1	L2	L3	III	L1	L2	L3	III	L1	L2	L3	N	III
MEASUREMENT													
Single phase voltage	•	•	•		•	•	•		•	•	•		•
Phase phase voltage	•	•	•		•	•	•		•	•	•		
Reference voltage (GND)-neutral												•	
Current	•	•	•	•	•	•	•	◆	•	•	•	•	
Frequency	•				•		•		•				
Active power	•	•	•	•	•	•	•	•	•	•	•		•
Reactive power L (inductance)	•	•	•	•	•	•	•	•	•	•	•		•
Reactive power C (capacitance)	•	•	•	•	•	•	•	•	•	•	•		•
Apparent power	•	•	•	•				•	•	•	•		•
Power factor	•	•	•	•	•	•	•		•	•	•		•
Cosine				•				•	•	•	•		•
Maximum active power demand				•				•					•
Maximum apparent power demand				•				•					•
Maximum current demand	•	•	•	•	•	•	•	•	•	•	•		•
Neutral current			•				•				•		
THD voltage	•	•	•		•	•	•		•	•	•		•
THD current	•	•	•		•	•	•		•	•	•		•
Voltage harmonics	•	•	•	15	•	•	•	15	•	•	•	•	50
Current harmonics	•	•		15	•	•		15	•	•	•	•	50
Active energy				•				•					•
Reactive energy L				•				•					•
Reactive energy C				•				•					•
Apparent energy				•				•					•
Flicker (WA and PST)									•	•	•		
Factor K (current)									•	•	•		
Peak factor (voltage)									•	•	•		
Unbalance (voltage and current)									•	•	•		
Asymmetry (voltage and current)									•	•	•		
Rates (optional)			3				1				9		
Analogue inputs (0/4 20mA)												•	
Analogue outputs (0/4 20mA)												•	
Digital inputs												•	
Digital outputs			•				•				•		
COMMUNICATIONS													
RS232													
RS485			•				•					•	
Ethernet												•	
PROTOCOLS													
Modbus RTU			•				•					•	
Modbus TCP												•	
Profibus DP (optional)												•	

• Available for display and communications
 ◆ Available only for communications





SurgeGuard for distribution networks

Comfort functions



A

Applications



B

Standards

IEC 61643-I
IEC 61643-11/EN 61643-11
DIN VDE 0675-6
NF C61-740
BS 6651
UL1449 4th Edition

C

D

Approval / Marking



E

F

G

X

Features

- The line of surge arresters includes a full range of compact protectors for installation on DIN-rail. The devices are especially designed to provide complete and effective protection against surges, protecting equipment and property connected to the low voltage network.
- The range of surge arresters includes:
 - Class I limp = 100kA (monoblock)
 - Class I+II limp = 12.5kA and limp = 25kA (plug-in)
 - Class I+II limp = 7.5kA and limp = 15kA (monoblock) in 10/350ms waveform
 - Class II with different discharge capacities: 15kA, 40kA in 8/20ms waveform
 - Class II+III: 20kA in 8/20ms
 The most suitable value will be selected according to the type of installation, premises and equipments to be protected.
- NEW plug-in ranges in Class I+II, Class II and for photovoltaic application in uni- and multipole format.
- New Class II SPDs with UL approval for NEMA distribution nets line single Phase System, split phase, Delta, HLD, Wye Systems.
- New Class II plug-in SPDs for DC Photovoltaic application up to 1500Vdc
- Several different formats one pole, single phase, two phase and three phases are available for all types of electrical net systems: TT, TN-S, TN-C, IT.

Functions

Protection of an electrical installation and all electrical and electronic devices connected to this installation against destructive surges. Such voltage surges can be generated by lightning induced currents, by network polluting devices (such a motors, frequency converters, dimmers, etc..) and by power supply networks switching operations.

Surge arresters cover the protection of home appliances (TV, Hifi , VCR, laundry machine, dishwasher...), commercial building equipment (computer, data networks, intrusion and alarm systems, access control and building automation systems), but also industrial equipment (PLC, instrumentation, medical apparatus, monitoring devices) and even the protection of entire offshore drilling platforms.

Parameters

Impulse current (I_{imp})

This is the peak current that the surge arrester can withstand without failing. The waveform of the applied current is normalised as 10/350µs, used in Class I devices.

Maximum discharge current (I_{max})

This is the peak current that the surge arrester can withstand in a single pulse without failing. The waveform of the applied current is normalised as 8/20µs, used in Class II devices.

Nominal discharge current (I_n)

This is the current that the surge protection device is capable of shunting to ground at least 20 times without failing.

Level of protection (Up)

This is the parameter that characterises the action of the protection device against surges by limiting the voltage between its terminals. It must be less than the surge withstand capacity given by the category of the equipment to be protected. However, if the protector is far from the equipment to be protected it may be necessary to use additional protectors.

Maximum continuous operating voltage U_{max} (U_c)

This is the maximum AC or DC voltage which may be continuously applied to the terminals of the surge arrester.


Performance

	SA BLOCK I	SA BLOCK I and II	SAP I+II	SAP II	SAP II+III	SA BLOCK II multi-phase
Energy impulse wave	10/350µs	10/350µs and 8/20µs	10/350µs and 8/20µs	8/20µs	8/20µs	8/20µs
Response time	<100ns	<25ns	<25ns	<25ns	<25ns	<25ns
Thermal fuse	no	yes	yes	yes	yes	yes
Thermal fuse healthy indication	no	yes	yes	yes	yes	yes
Nominal voltage	230V or 400V	230V or 400V	230V or 400V	230V or 400V	230V or 400V	230V or 400V
Frequency	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Usable in networks	TT, TN-S, TN-C, IT	TT, TN-S, TN-C, IT	TT, TN-S, TN-C, IT	TT, TN-S, TN-C, IT	TT, TN-S, TN-C, IT	TT, TN-S, TN-C, IT
Operating temperature	-40°C+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Screws	Pozidriv 3	Pozidriv 3	Pozidriv 3	Pozidriv 3	Pozidriv 3	Pozidriv 3
Terminal capacity:						
min	16mm ²	6mm ²	10mm ²	6mm ²	6mm ²	6mm ²
max (flexible/grid)	35/50mm ²	25/35mm ²	25/35mm ²	25/35mm ²	25/35mm ²	25/35mm ²




SurgeGuard - Surge arresters - SA BLOCK I - Class I/B






	System type	Electrical diagram	Un (VAC)	Uc (V)	Iimp	In (kA)	Up (kV)	Cat. No.	Ref. No.	Pack.
 2 mod.	L-N (1ph)	A	230	275	50	50	<2	SA BLOCK I 50 2M	660494	1
	N-PE (N)	B	Neutral	255	100	100	<2	SA BLOCK I 100 2M	660495	1



SurgeGuard - Surge arresters - Class I+II/B+C

Comfort functions

Single phase PLUG-IN		Iimp	I _{max}	In	Up	Up (L-N)	Up (N-PE)	U _{max} (Uc) per pole	No. of poles	Auxiliary contact	No. of modules	Cat. No.	Ref. No.	Pack.
 TT, TN-S, TN-C, IT system	25kA	100kA	25kA	1500V	-	-	-	275V	1P	-	2	SAP1 I+II 25/230	660125	1
	25kA	100kA	25kA	1500V	-	-	-	275V	1P	1CO	2	SAP1 I+II 25/230 C	660127	1
Neutral-earth SPD's for TT systems														
	100kA	100kA	50kA	1500V	-	-	-	255V	1P	-	2	SAP1 I+II 100N	660391	1

Multi-phase PLUG-IN		Iimp	I _{max}	In	Up	Up (L-N)	Up (N-PE)	U _{max} (Uc) per pole	No. of poles	Auxiliary contact	No. of modules	Cat. No.	Ref. No.	Pack.
 TT system	12.5kA	65kA	20kA	-	1300V	1500V	-	275V	2P	-	2	SAP2 I+II 12.5 TT	660139	1
	12.5kA	65kA	20kA	-	1300V	1500V	-	275V	2P	1CO	2	SAP2 I+II 12.5 TT C	660140	1
	12.5kA	65kA	20kA	-	1300V	1500V	-	275V	4P	-	4	SAP4 I+II 12.5 TT	660150	1
	12.5kA	65kA	20kA	-	1300V	1500V	-	275V	4P	1CO	4	SAP4 I+II 12.5 TT C	660151	1
 TN-S system	12.5kA	65kA	20kA	-	1300V	-	-	275V	2P	-	2	SAP2 I+II 12.5 TNS	660143	1
	12.5kA	65kA	20kA	-	1300V	-	-	275V	2P	1CO	2	SAP2 I+II 12.5 TNS C	660144	1
	12.5kA	65kA	20kA	-	1300V	-	-	275V	4P	-	4	SAP4 I+II 12.5 TNS	660152	1
	12.5kA	65kA	20kA	-	1300V	-	-	275V	4P	1CO	4	SAP4 I+II 12.5 TNS C	660156	1
 TN-C system	12.5kA	65kA	20kA	-	1300V	-	-	275V	3P	-	3	SAP3 I+II 12.5 TNC	660147	1
	12.5kA	65kA	20kA	-	1300V	-	-	275V	3P	1CO	3	SAP3 I+II 12.5 TNC C	660148	1

Replacement modules for Class I+II/B+C

	Iimp	I _{max}	In	Up	Up (L-N)	Up (N-PE)	U _{max} (Uc)	No. of poles	Auxiliary contact	No. of modules	Cat. No.	Ref. No.	Pack.	
	25kA	100kA	25kA	1500V	-	-	275V	1P	-	2	SAM I+II 25/230	660199	1	
	12.5kA	65kA	20kA	1300V	-	-	275V	1P	-	1	SAM I+II 12.5/230	660294	1	
Neutral-earth replacement modules for SAPx I+II...N														
	100kA	100kA	50kA	1500V	-	-	255V	1P	-	2	SAM I+II 100N	660393	1	
	50kA	65kA	50kA	1500V	-	-	255V	1P	-	1	SAM I+II 50N	660274	1	
	25kA	65kA	25kA	1500V	-	-	255V	1P	-	1	SAM I+II 25N	660296	1	



SurgeGuard - Surge arresters - Class II/C

Class II protectors are the most frequently used because they offer high protection and are compatible with most equipments.

Single phase PLUG-IN		I _{max}	In	U _p	U _p (L-N)	U _p (N-PE)	U _{max} (U _c) per pole	No. of poles	Auxiliary contact	No. of modules	Cat. No.	Ref. No.	Pack.
	TT, TN-S, TN-C, IT system	40kA	20kA	-	1300V	-	275V	1P	-	1	SAP1 II 40/230	660158	1
		40kA	20kA	-	1300V	-	275V	1P	1CO	1	SAP1 II 40/230 C	660160	1
		40kA	20kA	-	2000V	-	440V	1P	-	1	SAP1 II 40/400	660159	1
		40kA	20kA	-	2000V	-	440V	1P	1CO	1	SAP1 II 40/400 C	660162	1
	Neutral-earth SPD's for TT systems												
		40kA	20kA	-	-	1500V	265V	1P	-	1	SAP1 II 40N	660163	1
		20kA	10kA	-	-	1500V	255V	1P	-	1	SAP1 II 20N	660169	1
Multi-phase PLUG-IN		I _{max}	In	U _p	U _p (L-N)	U _p (N-PE)	U _{max} (U _c) per pole	No. of poles	Auxiliary contact	No. of modules	Cat. No.	Ref. No.	Pack.
	TT system	40kA	20kA	-	1300V	1500V	275V	2P	-	2	SAP2 II 40/230 TT	660171	1
		40kA	20kA	-	1300V	1500V	275V	2P	1CO	2	SAP2 II 40/230 TTC	660172	1
		40kA	20kA	-	1300V	1500V	275V	4P	-	4	SAP4 II 40/400 TT	660183	1
		40kA	20kA	-	1300V	1500V	275V	4P	1CO	4	SAP4 II 40/400 TTC	660184	1
	TN-S system	40kA	20kA	-	1300V	-	275V	2P	-	2	SAP2 II 40/230 TNS	660175	1
		40kA	20kA	-	1300V	-	275V	2P	1CO	2	SAP2 II 40/230 TNSC	660176	1
		40kA	20kA	-	1300V	-	275V	4P	-	4	SAP4 II 40/400 TNS	660187	1
		40kA	20kA	-	1300V	-	275V	4P	1CO	4	SAP4 II 40/400 TNSC	660188	1
	TN-C system	40kA	20kA	-	1300V	-	275V	3P	-	3	SAP3 II 40/400 TNC	660179	1
		40kA	20kA	-	1300V	-	275V	3P	1CO	3	SAP3 II 40/400 TNCC	660180	1

SurgeGuard - Surge arresters - Class II+III/C+D

New

	TT system	20kA	10kA	-	1400V	1500V	320V	2P	-	2	SAP2 II 20/230 TT	660173	1
		20kA	10kA	-	1400V	1500V	320V	2P	1CO	2	SAP2 II 20/230 TTC	660174	1
		20kA	10kA	-	1400V	1500V	320V	4P	-	4	SAP4 II 20/400 TT	660185	1
		20kA	10kA	-	1400V	1500V	320V	4P	1CO	4	SAP4 II 20/400 TTC	660186	1
	TN-S system	20kA	10kA	-	1400V	-	320V	2P	-	2	SAP2 II 20/230 TNS	660177	1
		20kA	10kA	-	1400V	-	320V	2P	1CO	2	SAP2 II 20/230 TNSC	660178	1
		20kA	10kA	-	1400V	-	320V	4P	-	4	SAP4 II 20/400 TNS	660189	1
		20kA	10kA	-	1400V	-	320V	4P	1CO	4	SAP4 II 20/400 TNSC	660190	1
	TN-C system	20kA	10kA	-	1400V	-	320V	3P	-	3	SAP3 II 20/400 TNC	660181	1
		20kA	10kA	-	1400V	-	320V	3P	1CO	3	SAP3 II 20/400 TNCC	660182	1

Replacement modules for Class II/B and Class II+III/C+D

	I _{max}	In	U _p	U _p (L-N)	U _p (N-PE)	U _{max} (U _c)	No. of poles	Auxiliary contact	No. of modules	Cat. No.	Ref. No.	Pack.
For TT, TN-S, TN-C, IT system	40kA	20kA	1300V	-	-	275V	1P	-	1	SAM II 40/230	660373	1
	40kA	20kA	2000V	-	-	440V	1P	-	1	SAM II 40/400	660374	1
	20kA	10kA	1400V	-	-	320V	1P	-	1	SAM II 20/230	660297	1
Neutral-earth replacement modules for SAPx II...N												
	40kA	20kA	1500V	-	-	265V	1P	-	1	SAM II 40N	660375	1
	20kA	10kA	1500V	-	-	255V	1P	-	1	SAM II 20N	660299	1





MonoBlock - SurgeGuard - Surge arresters - Class I+II/B+C

The surge arrester can operate as a Class I and Class II protection in accordance with the IEC 61643-11 Class I/B and Class II/C integrated in only one device. Used in main panelboards (incomer of installations) with high risk from direct lightning strike discharge. Decoupling coils not needed

Single phase MONOBLOCK



TT, TN-S
TN-C, IT

limp Class I/Class II	In Class II	Up	Up (L-N)	Up (N-PE)	Umax (Uc) per pole	No. of poles	Auxiliary contact	No. of modules	Cat. No.	Ref. No.	Pack.
15kA/100KA	30kA	-	1300V	-	275V	1P	-	2	SA BLOCK I and II 100	667486	1
30kA/100KA	60kA	-	-	1500V	275V	1P	-	2	SA BLOCK I and II 100N	667487	1
7.5kA/65KA	20kA	-	1300V	-	275V	1P	-	1	SA BLOCK I and II 65	667517	1
12kA/65KA	20kA	-	-	1500V	275V	1P	-	1	SA BLOCK I and II 65N	667518	1

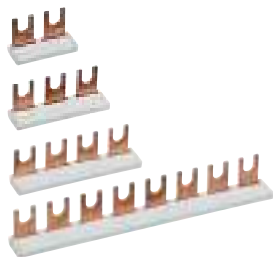
MonoBlock - SurgeGuard - Surge arresters - Class II/C

Multi-phase MONOBLOCK



limp	In	Up	Up (L-N)	Up (N-PE)	Umax (Uc) per pole	No. of poles	Auxiliary contact	No. of modules	Cat. No.	Ref. No.	Pack.
Common and differential mode protection - TT system											
15kA	5kA	-	1200V	1500V	275V	2P	-	1	SA BLOCK II 15LN	667483	1
15kA	5kA	-	1200V	1500V	275V	2P	-	2	SA BLOCK II 15/230 LNE	667488	1
40kA	15kA	-	1300V	1500V	275V	2P	-	2	SA BLOCK II 40/230 LNE	667490	1
15kA	5kA	-	1200V	1500V	440V	4P	-	4	SA BLOCK II 15/400 3L+NE	667494	1
40kA	15kA	-	1300V	1500V	440V	4P	-	4	SA BLOCK II 40/400 3L+NE	667496	1
Common mode protection - TNS system											
15kA	5kA	1200V	-	-	275V	2P	-	2	SA BLOCK II 15/230 LLE	667489	1
40kA	15kA	1300V	-	-	275V	2P	-	2	SA BLOCK II 40/230 LLE	667491	1
15kA	5kA	1200V	-	-	440V	4P	-	4	SA BLOCK II 15/400 4L/NE	667495	1
40kA	15kA	1300V	-	-	440V	4P	-	4	SA BLOCK II 40/400 4L/NE	667497	1
40kA	15kA	1300V	-	-	440V	4P	1CO	4	SA BLOCK II 40/400 4L/NE C	667498	1

Insulated FORK type busbars



Section	Description	Cat. No.	Ref. No.	Pack.
10mm ²	2x1P - 90°	EV-G.1.2.80-90°	624993	20
10mm ²	3x1P - 90°	EV-G.1.3.80-90°	644893	20
10mm ²	4x1P - 90°	EV-G.1.4.80-90°	568106	20
10mm ²	8x1P - 90°	EV-G.1.8.80-90°	644897	20

Comfort functions

A

B

C

D

E

F

G

X

PROTECT



Surge protection devices DIN-rail with UL approval

UL1449 4th edition

Comfort functions

The objective of UL1449 has always been to increase safety in terms of surge protection. Thus, major changes have recently been made to the surge protection standard. The latest edition, known as UL1449 3rd edition, was published on September 29, 2006 and took effect September 2009, and is now also an ANSI standard. A revision was made on February 8, 2011.

To avoid confusion, the objective of this paper is to explain and summarize the major changes made to the standard.

The key updates are:

- Change in the standard's name
- The nominal discharge current

Change in the standard's name: from TVSS to SPDs

Prior to UL1449 3rd edition taking effect, the devices this standard covers were known as transient voltage surge suppressors standard covers were known as transient voltage surge suppressors (TVSS), operating on power circuits not exceeding 600V. With the inception of the 3rd edition, these devices are now known as surge protective devices (SPDs), and may operate on power circuits not exceeding 1000V. This new designation moves the UL standard closer to the International designation and to IEC standards. The new edition is now renamed UL standard for safety for surge protective devices, UL1449.


The nominal discharge current, known as In test is new to UL1449, coming from the IEC standard.


During the test, the SPD is subjected to 15 impulses at the selected nominal discharge current. In order to pass, the SPD cannot create a shock or fire hazard during the test, and nothing in the surge path can open during or after the test. The nominal discharge current values, with a 8/20 μs wave shape, are selected by the manufacturer as follows:
Type 1: 10 or 20kA
Type 2: 3, 5, 10 or 20kA
Type 1, Type 2 and Type 4 SPDs (intended for type 1 or Type 2 applications) are subjected to this test.
Sources: Underwriters Laboratories Inc., standard for safety, surge protective devices (UL1449 4th Edition, 2014)

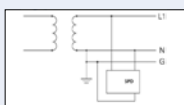
Approval / Marking




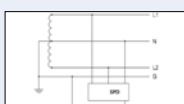
Surge arresters - Class II- SAP Line UL1449 3rd Edition


	In (A)	Imax	Service voltage	MCOV Uc	Auxiliary contact	No. of modules ⁽¹⁾	Cat. No.	Ref. No.	Pack.
	20	40	120V	175	no	1	SAP1II40175	660608	1
	20	40	240V	275	no	1	SAP1II40275	660609	1
	20	40	277V	320	no	1	SAP1II40320	660611	1
	20	40	120V	175	yes	1	SAP1II40175C	660612	1
	20	40	240V	275	yes	1	SAP1II40275C	660613	1
	20	40	277V	320	yes	1	SAP1II40320C	660614	1

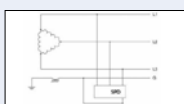
	In (A)	Imax	Service voltage	MCOV Uc	Auxiliary contact	No. of modules ⁽¹⁾	Cat. No.	Ref. No.	Pack.
	20	40	120V single phase	175	no	2	SAP2II40175	660615	1
	20	40	240V single phase	320	no	2	SAP2II40320	660616	1
	20	40	277V single phase	320	no	2	SAP2II40320	660616	1
	20	40	120V single phase	175	yes	2	SAP2II40175C	660617	1
	20	40	240V single phase	320	yes	2	SAP2II40320C	660618	1
	20	40	277V single phase	320	yes	2	SAP2II40320C	660618	1




	In (A)	Imax	Service voltage	MCOV Uc	Auxiliary contact	No. of modules ⁽¹⁾	Cat. No.	Ref. No.	Pack.
	20	40	240V/120V split phase	175	no	3	SAP3II40175	660619	1
	20	40	480V/240V split phase	320	no	3	SAP3II40320	660620	1
	20	40	240V/120V split phase	175	yes	3	SAP3II40175C	660621	1
	20	40	480V/240V split phase	320	yes	3	SAP3II40320C	660622	1




	In (A)	Imax	Service voltage	MCOV Uc	Auxiliary contact	No. of modules ⁽¹⁾	Cat. No.	Ref. No.	Pack.
	20	40	240V Delta	320	no	3	SAP3II40320	660620	1
	10	30	600V Delta	750V	yes	3	SAP3II30750	660624	1
	20	40	240V Delta	320	yes	3	SAP3II40320C	660622	1
	10	30	600V Delta	750	yes	3	SAP3II30750C	660626	1



	In (A)	Imax	Service voltage	MCOV Uc	Auxiliary contact	No. of modules ⁽¹⁾	Cat. No.	Ref. No.	Pack.
	20	40	240V/120V High Leg Delta	320	no	4	SAP4II40320	660627	1
	20	40	240V/120V High Leg Delta	320	yes	4	SAP4II40320C	660628	1
	20	40	480V/277V Wye system	320	no	4	SAP4II40320	660627	1
	20	40	480V/277V Wye system	320	yes	4	SAP4II40320C	660628	1
	20	40	208V/120V Wye System	175	no	4	SAP4II40175	660629	1
	20	40	208V/120V Wye System	175	yes	4	SAP4II40175C	660630	1



Pluggable cartridges

	In (A)	Imax	MCOV Uc	Cartridges replacement In	Cat. No.	Ref. No.	Pack.
	20	40	175	SAP1II40175; SAP1II40175C; SAP2II40175; SAP2II40175C; SAP3II40175; SAP3II40175C; SAP4II40175; SAP4II40175C	SAMII40175	660631	1
	20	40	275	SAP1II40275; SAP1II40275C	SAMII40275	660632	1
	20	40	320	SAP1II40320; SAP1II40320C; SAP2II40320; SAP2II40320C; SAP3II40320; SAP3II40320C; SAP4II40320	SAMII40320	660633	1
	10	30	750	SAP3II30750; SAP3II30750C	SAMII30750	660634	1

(1) 1 mod. = 18mm



Technical features - SPDs with UL approval

Comfort functions

A

B

C

D

E

F

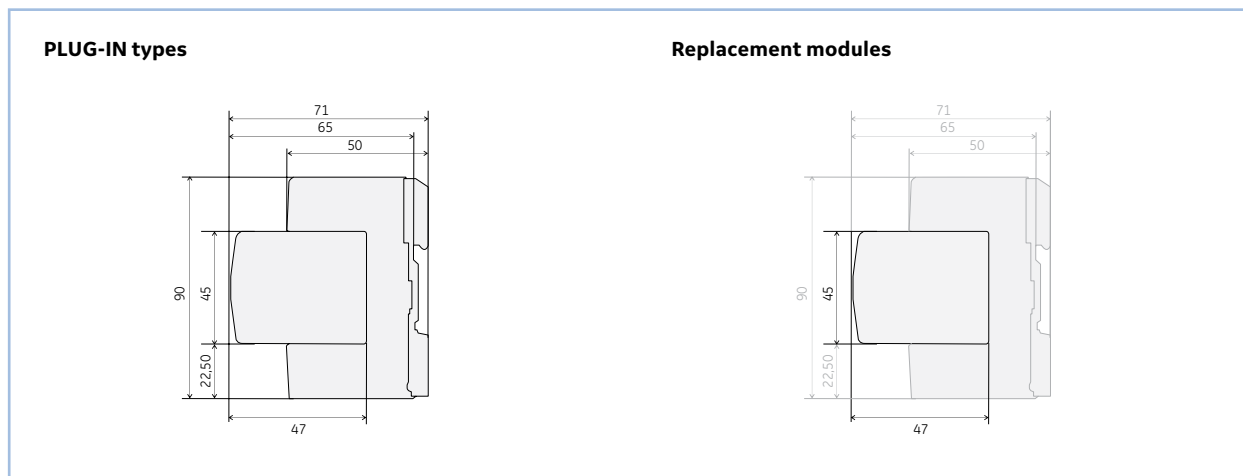
Models Codes	SAP1 II 40/175 660608	SAP1 II 40/275 660609	SAP1 II 40/320 660611
Communication models Communication codes	SAP1 II 40/175C 660612	SAP1 II 40/275C 660613	SAP1 II 40/320C 660614
UL File	E468805	E468805	E468805
Designation according UL 1449 4th edition	SPD Type 2CA	SPD Type 2CA	SPD Type 2CA
Maximum continuous operating voltage MCOV (V)	175	275	320
Nominal discharge current (8/20 μ) I _n (kA)	20	20	20
Voltage protection rating VPR (V)	700	900	1200
Short circuit current rating SCCR (kA)	100	85	100
Designation according to EN 61643-11/IEC 61643-1	Type 2/Class II	Type 2/Class II	Type 2/Class II
Nominal voltage AC 50-60Hz U _n (V)	120	230	277
Max. continuous operating voltage U _C (V)	175	275	320
Max. discharge current (8/20 μs) I _{max} (kA)	40	40	40
Voltage protection level U _p (kV)	≤1	≤1.3	≤1.4
Response time t _A (ns)	≤25	≤25	≤25
Max. mains-side overcurrent protection (A gL/gG)	125	125	125
Short-circuit withstand capability for max. mains-side overcurrent protection I _{cc} (kA)	25	25	25
Temporary overvoltage (TOV) U _T (V)	337/5sec.	337/5sec.	337/5sec.
TOV characteristics	withstand	withstand	withstand
Operating temperature range (parallel)/(series) T _U (°C)	-40 ... +85	-40 ... +85	-40 ... +85
Operating state/fault indication	green/red	green/red	green/red
Number of ports	1	1	1
Cross-sectional area (min.)	6mm ² solid/flexible	6mm ² solid/flexible	6mm ² solid/flexible
Cross-sectional area (max.)	35mm ² stranded/25mm ² flexible	35mm ² stranded/25mm ² flexible	35mm ² stranded/25mm ² flexible
For mounting on	36mm DIN-rail acc. to EN 60715	36mm DIN-rail acc. to EN 60715	36mm DIN-rail acc. to EN 60715
Enclosure material	PA+FG UL94 V-0	PA+FG UL94 V-0	PA+FG UL94 V-0
Location category	indoor	indoor	indoor
Degree of protection	IP 20	IP 20	IP 20
Capacity	1 mod/phase DIN 43880	1 mod/phase DIN 43880	1 mod/phase DIN 43880
Approvals, certifications	UL, CE	UL, CE	UL, CE
Type of remote signalling contact	changeover contact (C models)	changeover contact (C models)	changeover contact (C models)
Switching capacity a.c. (pollution degree = 2)	250V/1A (C models)	250V/1A (C models)	250V/1A (C models)
Switching capacity a.c. (pollution degree = 3)	125V/3A (C models)	125V/3A (C models)	125V/3A (C models)
Cross-sectional area for remote signalling terminals	max 1.5mm ² solid/flexible	max 1.5mm ² solid/flexible	max 1.5mm ² solid/flexible

Dimensional drawings

Surge protection devices (SPDs) - SAP, SAPV, SAM

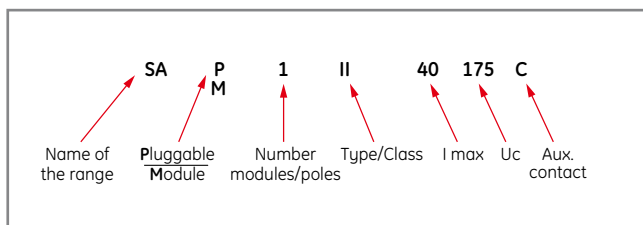
G

X



SAP2 II 40/175 660615	SAP2 II 40/320 660616	SAP3 II 40/175 660619	SAP3 II 40/320 660620	SAP3 II 30/750 660624	SAP4 II 40/175 660629	SAP4 II 40/320 660627
SAP2 II 40/175C 660617	SAP2 II 40/320C 660618	SAP3 II 40/175C 660621	SAP3 II 40/320C 660620	SAP3 II 30/750C 660626	SAP4 II 40/175C 660630	SAP4 II 40/320C 660628
E468805	E468805	E468805	E468805	E468805	E468805	E468805
SPD Type 2CA	SPD Type 2CA	SPD Type 2CA	SPD Type 2CA	SPD Type 2CA	SPD Type 2CA	SPD Type 2CA
175	320	175	320	750	175	320
20	20	20	20	10	20	20
700	1200	700	1200	2500	700	1200
100	100	100	100	50	100	100
Type 2/Class II	Type 2/Class II	Type 2/Class II	Type 2/Class II	Type 2/Class II	Type 2/Class II	Type 2/Class II
120	277	120	277	600	120	277
175	320	175	320	750	175	320
40	40	40	40	30	40	40
≤1	≤1,4	≤1	≤1,4	≤3	≤1	≤1,4
≤25	≤25	≤25	≤25	≤25	≤25	≤25
125	125	125	125	63	125	125
25	25	25	25	25	25	25
337/5sec. withstand	337/5sec. withstand	337/5sec. withstand	337/5sec. withstand	337/5sec. withstand	337/5sec. withstand	337/5sec. withstand
-40 ... +85 green/red	-40 ... +85 green/red	-40 ... +85 green/red	-40 ... +85 green/red	-40 ... +85 green/red	-40 ... +85 green/red	-40 ... +85 green/red
1	1	1	1	1	1	1
6mm ² solid/flexible	6mm ² solid/flexible	6mm ² solid/flexible	6mm ² solid/flexible	6mm ² solid/flexible	6mm ² solid/flexible	6mm ² solid/flexible
35mm ² stranded/25mm ² flexible	35mm ² stranded/25mm ² flexible	35mm ² stranded/25mm ² flexible	35mm ² stranded/25mm ² flexible	35mm ² stranded/25mm ² flexible	35mm ² stranded/25mm ² flexible	35mm ² stranded/25mm ² flexible
36mm DIN-rail acc. to EN 60715	36mm DIN-rail acc. to EN 60715	36mm DIN-rail acc. to EN 60715	36mm DIN-rail acc. to EN 60715	36mm DIN-rail acc. to EN 60715	36mm DIN-rail acc. to EN 60715	36mm DIN-rail acc. to EN 60715
PA+FG UL94 V-0	PA+FG UL94 V-0	PA+FG UL94 V-0	PA+FG UL94 V-0	PA+FG UL94 V-0	PA+FG UL94 V-0	PA+FG UL94 V-0
indoor	indoor	indoor	indoor	indoor	indoor	indoor
IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
1 mod/phase DIN 43880 UL, CE	1 mod/phase DIN 43880 UL, CE	1 mod/phase DIN 43880 UL, CE	1 mod/phase DIN 43880 UL, CE	1 mod/phase DIN 43880 UL, CE	1 mod/phase DIN 43880 UL, CE	1 mod/phase DIN 43880 UL, CE
changeover contact (C models)	changeover contact (C models)	changeover contact (C models)	changeover contact (C models)	changeover contact (C models)	changeover contact (C models)	changeover contact (C models)
250V/1A (C models)	250V/1A (C models)	250V/1A (C models)	250V/1A (C models)	250V/1A (C models)	250V/1A (C models)	250V/1A (C models)
125V/3A (C models)	125V/3A (C models)	125V/3A (C models)	125V/3A (C models)	125V/3A (C models)	125V/3A (C models)	125V/3A (C models)
max 1.5mm ² solid/flexible	max 1.5mm ² solid/flexible	max 1.5mm ² solid/flexible	max 1.5mm ² solid/flexible	max 1.5mm ² solid/flexible	max 1.5mm ² solid/flexible	max 1.5mm ² solid/flexible

Catalogue number guide for ElfaPlus line surge protective devices



Examples

SA	P	1	II	40	175	-
SA	P	2	II	40	320	-
SA	P	3	II	40	320	-
SA	P	3	II	30	750	-
SA	P	1	II	40	175	C
SA	P	2	II	40	320	C
SA	P	3	II	40	320	C
SA	P	3	II	30	750	C



SPDs for photovoltaic application

Comfort functions



Features

SAPV is the series of devices that provide advanced overvoltage protection to photovoltaic systems by utilizing GEIS's optimized dynamic thermal disconnection system...

Ratings and features

- Maximum discharge current (8/20µs): 40kA
- Nominal discharge current (8/20µs): 20kA (10kA for 1500V DC)
- Ucpv: 660, 1060 Vdc and 1500V DC
- Iscpv: 10kA (EN-50539-11), no back-up fuse required
- SCCR: 50kA, 65kA, 100kA (UL1449 3rd edition)
- DIN-rail mountable, plug-in format
- Visual and remote end of life indicators

Application



Approval / Marking



Surge arresters - Class II- SAPV Line UL1449 3rd Edition



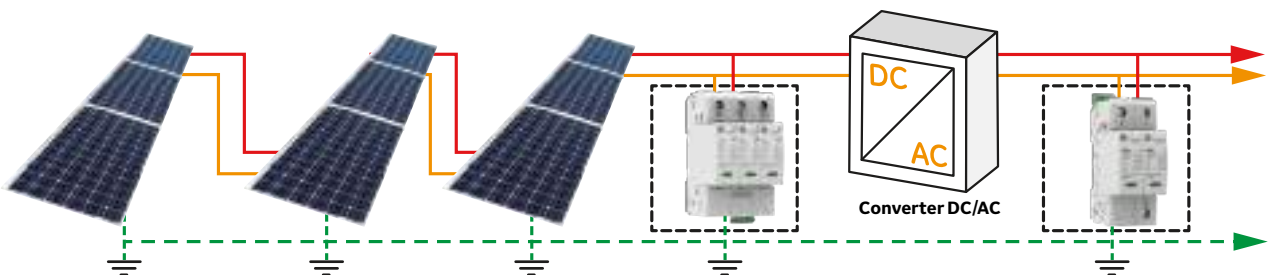
Table with columns: In (kA), Imax, Service voltage AC/DC/DC PV, MCOV Uc, Up (Ures), Auxiliary contact, No. of modules(1), Cat. No., Ref. No., Pack. Includes rows for 20kA and 10kA at 600V, 1000V, and 1500V DC PV.

(1) 1 mod. = 18mm

Pluggable cartridges

Table with columns: In (kA), Imax, Service voltage AC/DC/DC PV, To be replaced in, Cat. No., Ref. No., Pack. Includes rows for 20kA and 10kA at 600V, 1000V, and 1500V DC PV.

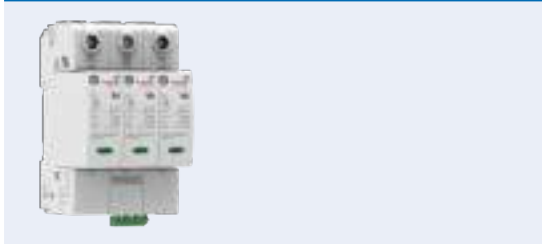
Installation of SAP SPDs on photovoltaic networks



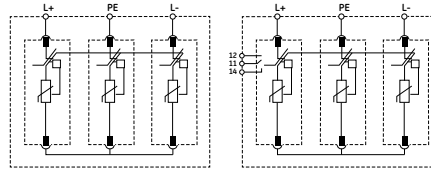
SAPV II 40

UL1449 3rd edition, DIN-rail

Three pole transient surge protector



Internal configuration



Technical features

Models Codes	SAP3 II 40/600 660195	SAP3 II 40/1000 660197	SAP3 II 40/1500 660496
Communication models Communication codes	SAP3 II 40/600 660196	SAP3 II 40/1000C 660198	SAP3 II 40/1500C 660497
UL File	E468805	E468805	E468805
Designation according UL 1449 3rd Edition	PV SPD Type 2CA	PV SPD Type 2CA	PV SPD Type 2CA
Maximum continuous operating voltage	MCOV (V) 600	1000	1500
Nominal discharge current (8/20 μ s)	I_n (kA) 20	20	10
Voltage protection rating	VPR (V) 1800	3000	4000
Short circuit current rating	SCCR (kA) 100	50	65
Designation according to EN 50539-11	Type 2	Type 2	Type 2
Maximum continuous operating voltage DC	U_{CVP} (V) 660	1060	1500
Max. Discharge current (8/20 μ s)	I_{max} (kA) 40	40	20
Short-circuit withstand capability for max. mains-side overcurrent protection	I_{SCVP} (kA) 10	10	10
Voltage protection level	U_p (kV) ≤ 2.6	≤ 4	≤ 5
Response time	t_A (ns) ≤ 25	≤ 25	≤ 25
Operating temperature range (parallel)/(series)	T_U (C°)	-40 ... +85	
Operating state/fault indication		green/red	
Number of ports		1	
Cross-sectional area (min.)		6mm ² solid / flexible	
Cross-sectional area (max.)		35mm ² stranded / 25mm ² flexible	
For mounting on		36mm DIN rail acc. To EN 60715	
Enclosure material		PA+FG UL94 V-0	
Location category		indoor	
Degree of protection		IP 20	
Capacity		1 mod/phase DIN 4388	
Approvals, Certifications		UL, CE	
Type of remote signalling contact		changeover contact (C models)	
Switching capacity AC		250V / 1A (C models)	
Switching capacity DC		125V / 0,2A (C models)	
Cross-sectional area for remote signalling terminals		max 1,5 mm ² solid / flexible (C models)	

Accessories - Replacement modules

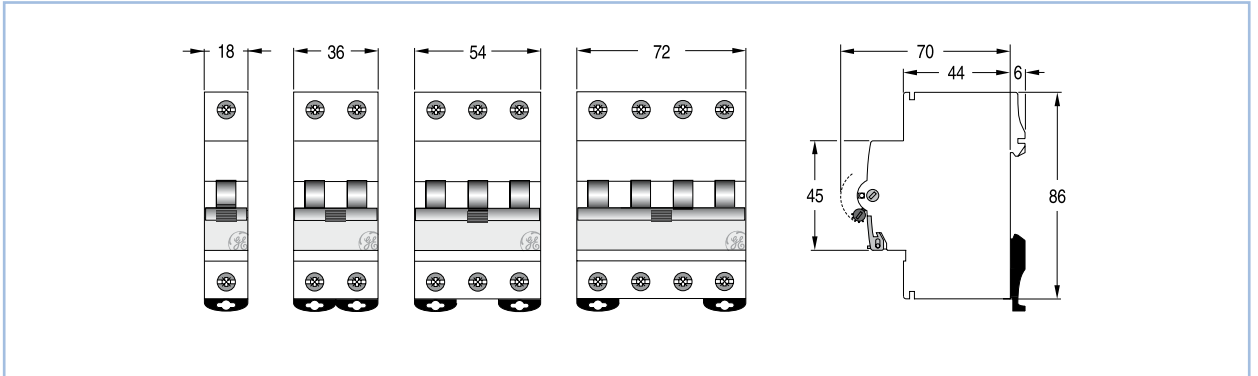
Models Codes	SAM II 40/600 PV 660378	SAM II 40/1000 PV 660379	SAM II 40/1500 PV 660498
	Protection module phase-neutral for		
	SAPV II 40/600	SAPV II 40/1000	SAPV II 40/1500
	SAPV II 40/600 C	SAPV II 40/1000 C	SAPV II 40/1500 C



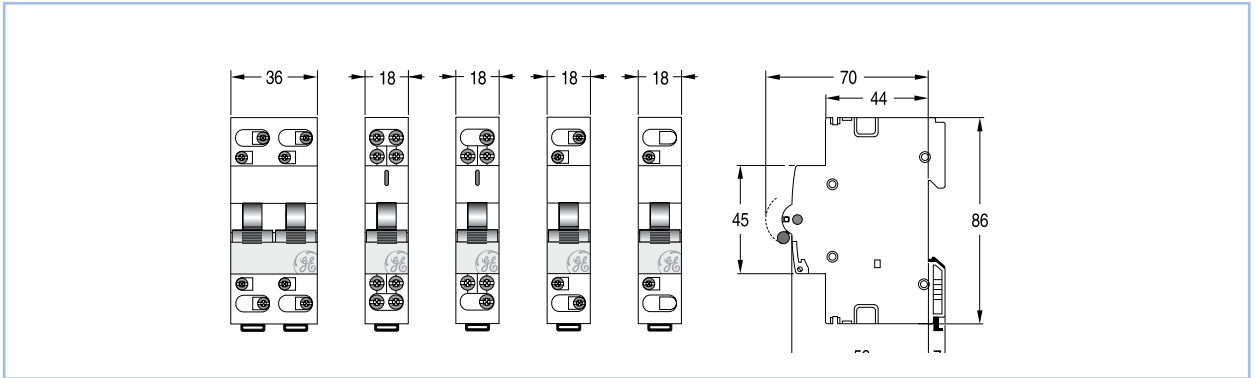
Dimensional drawings

Comfort functions

Mains disconnect switches - Aster

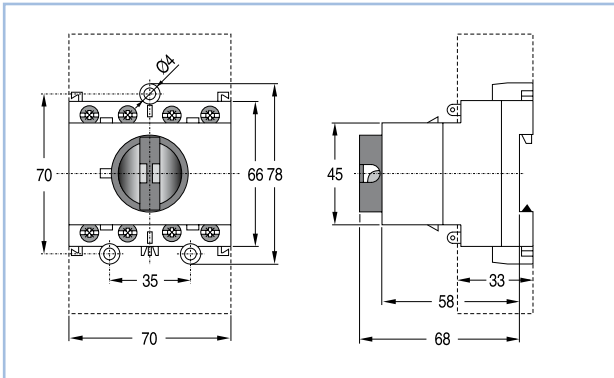


Switches - Aster



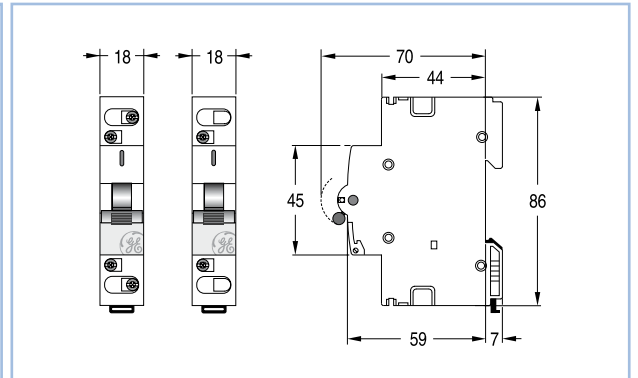
A
B
C

Rotary switches - Aster



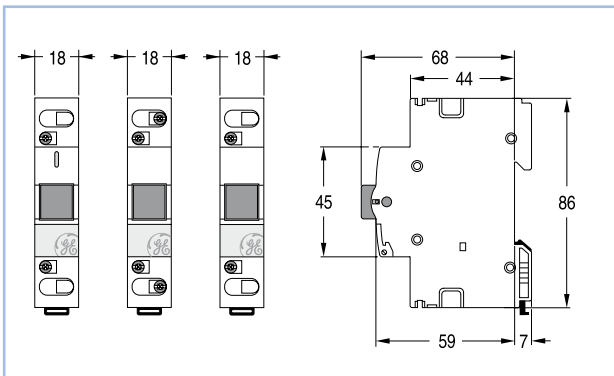
D
E
F
G

Switches with signal lamp - Aster

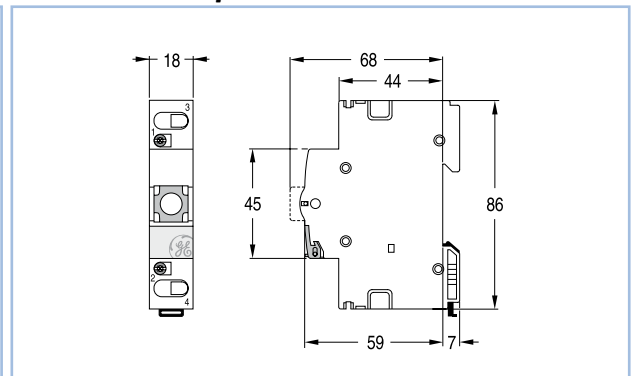


X

Push-buttons - Aster



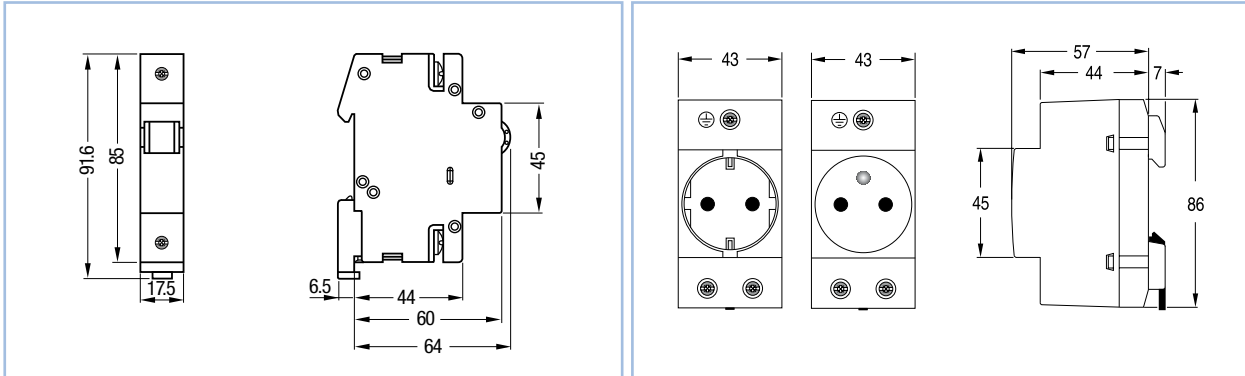
Indication lamp - Aster



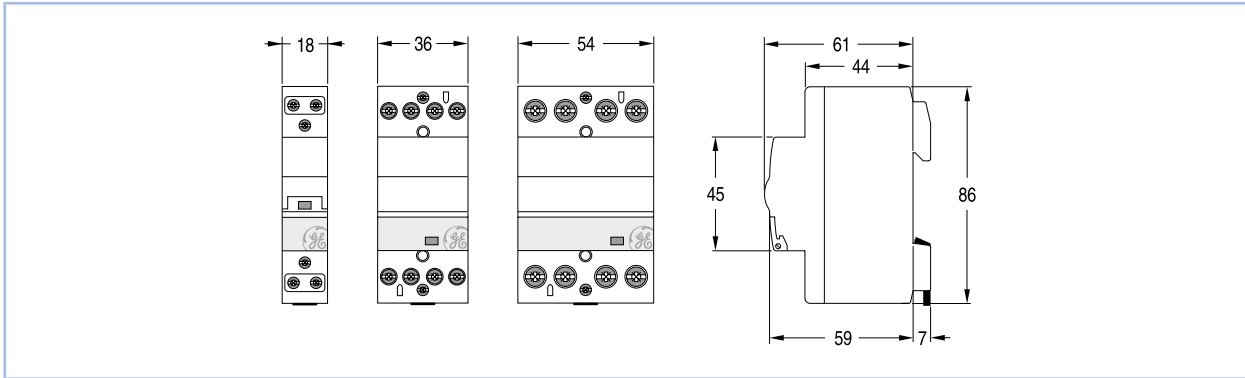
Dimensional drawings

Aster BL - Assembled indication lamps

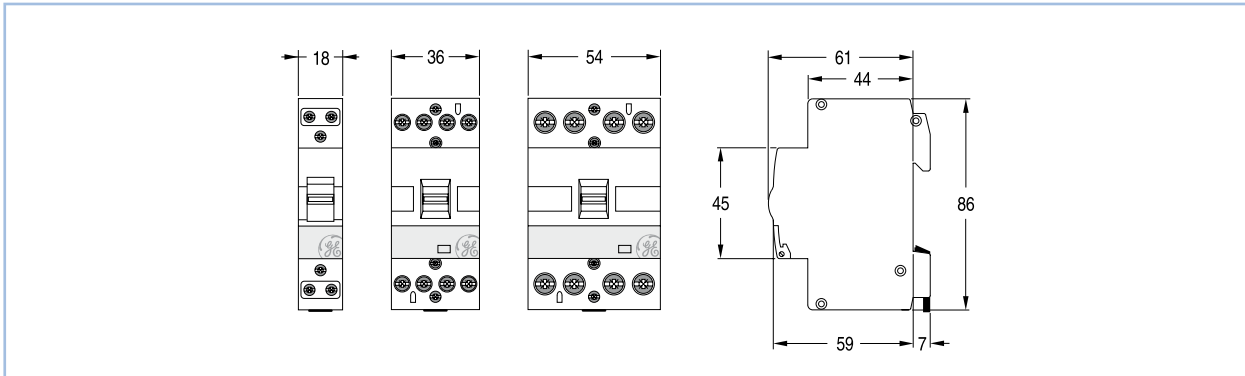
Socket-outlet - Series MSC



Contactors - Contax

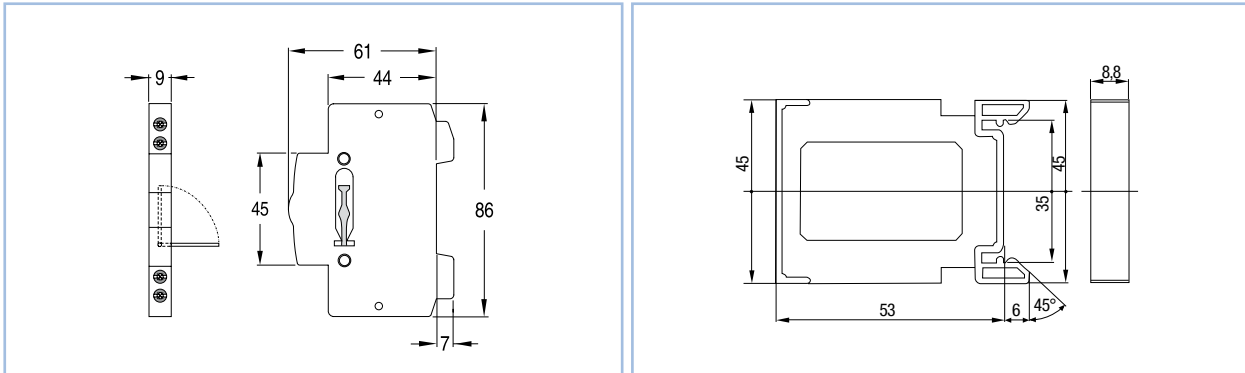


Contactors Day and Night - Contax (L) (R)



Contactors - Auxiliary contact - Contax

Contactors - Spacer - Contax



Dimensional drawings

A

B

C

D

E

F

G

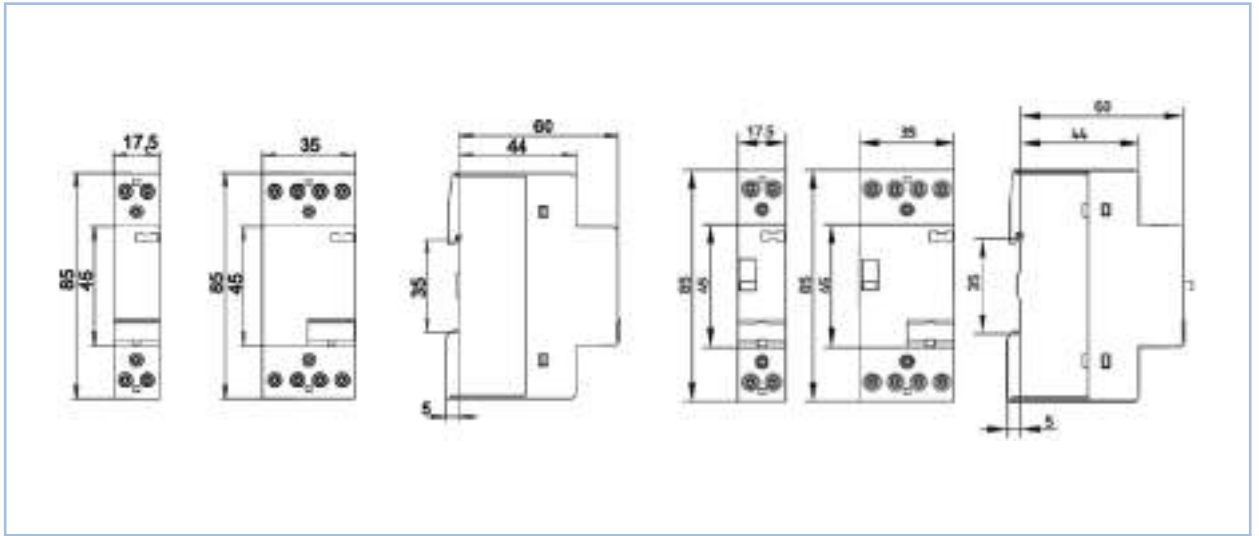
X



Dimensional drawings

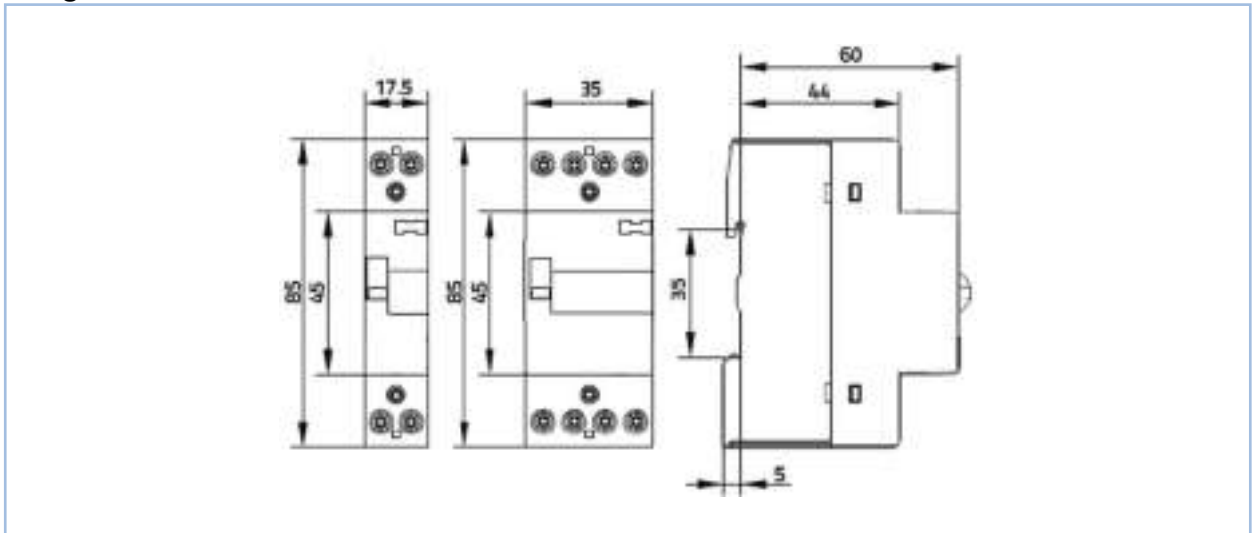
Comfort functions

Contactors - Contax L



A

Relays - Contax R



B

C

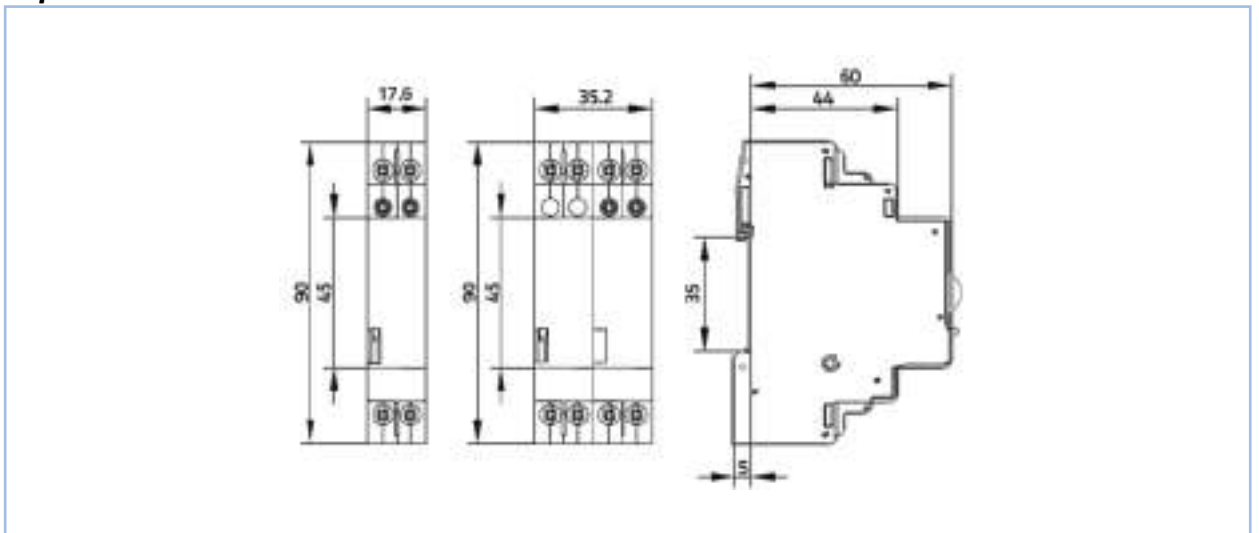
D

E

F

G

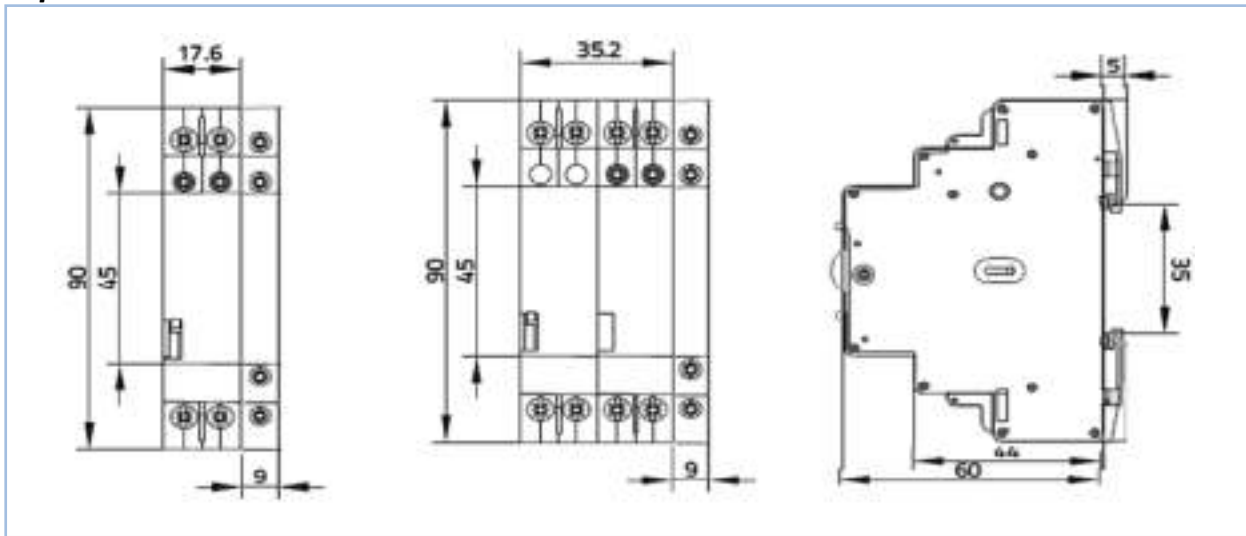
Impulse switches - Pulsar S



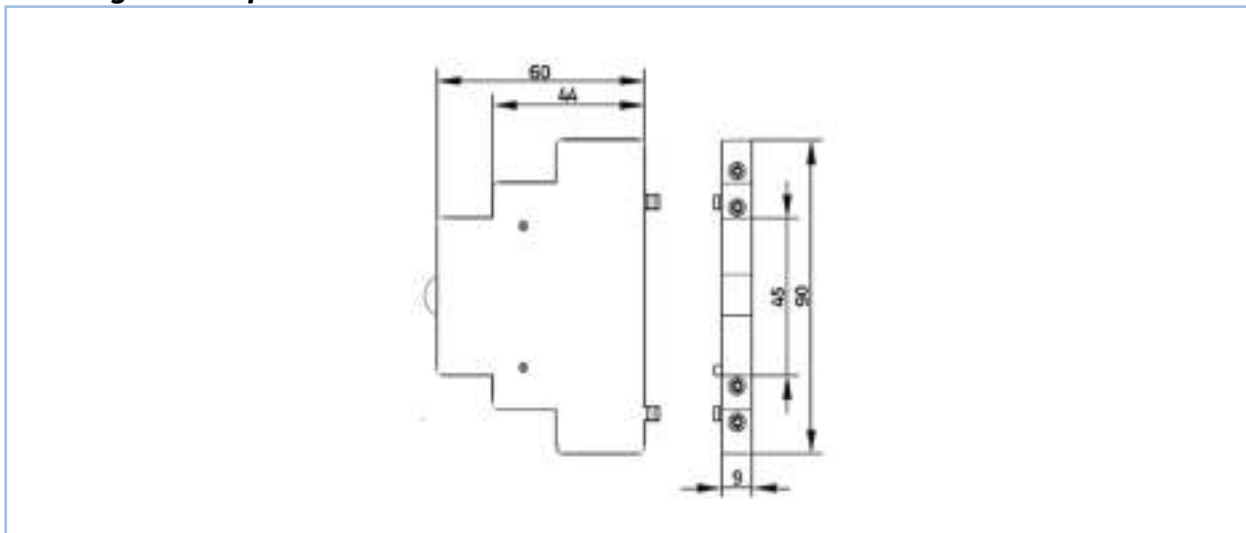
X

Dimensional drawings

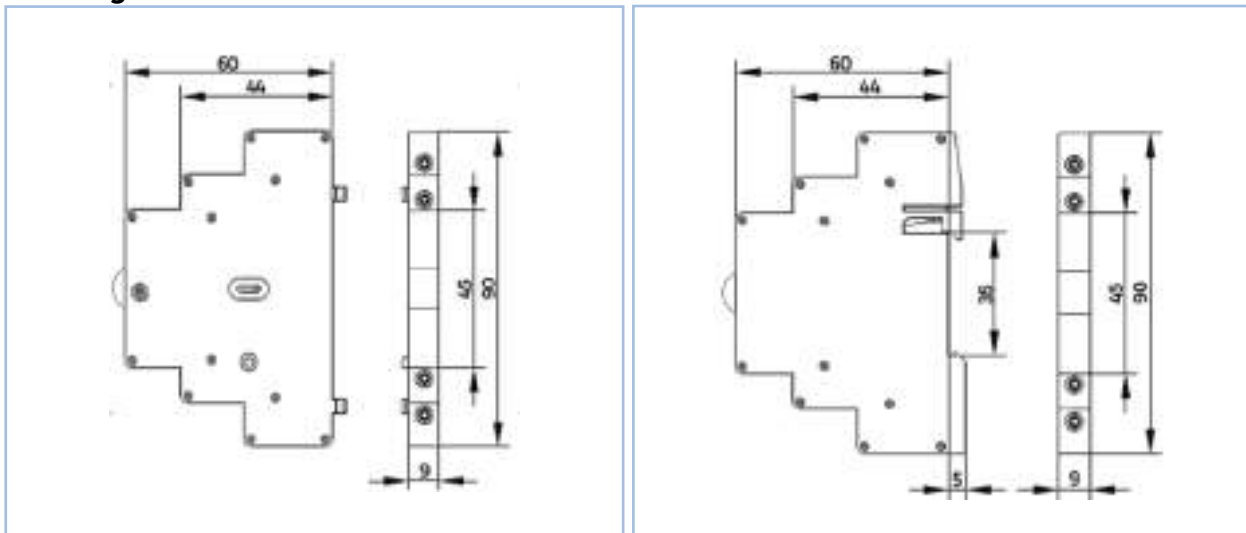
Impulse switches - Pulsar S - PLSC



Auxiliary contact for Contax R



Auxiliary contact and central control - Pulsar Multilevel central command - Pulsar S



Dimensional drawings

A

B

C

D

E

F

G

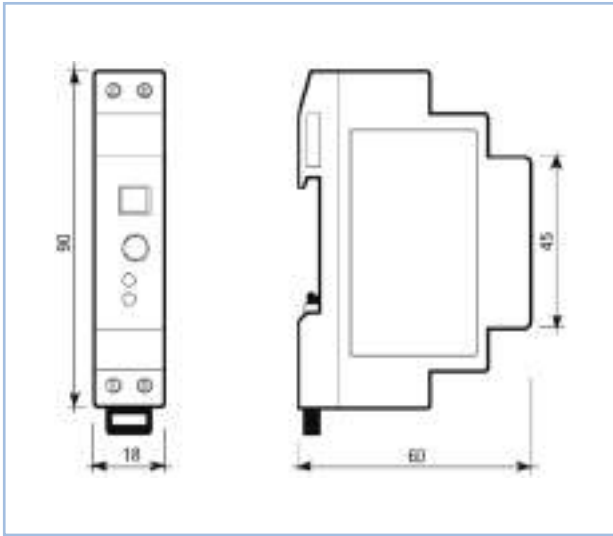
X



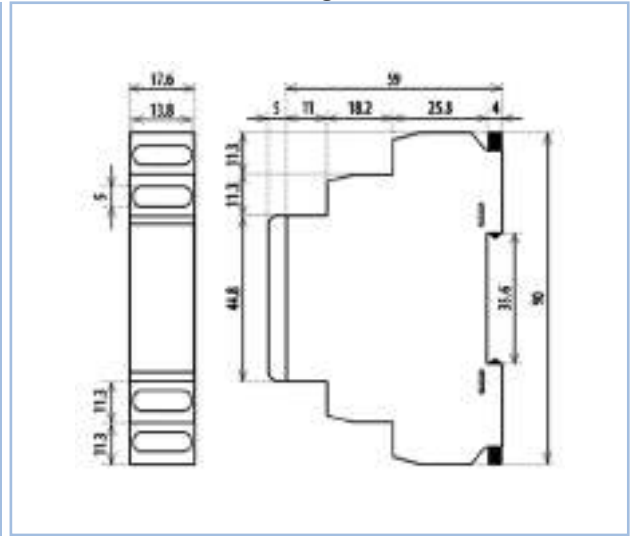
Dimensional drawings

Comfort functions

Staircase switches - Pulsar SC

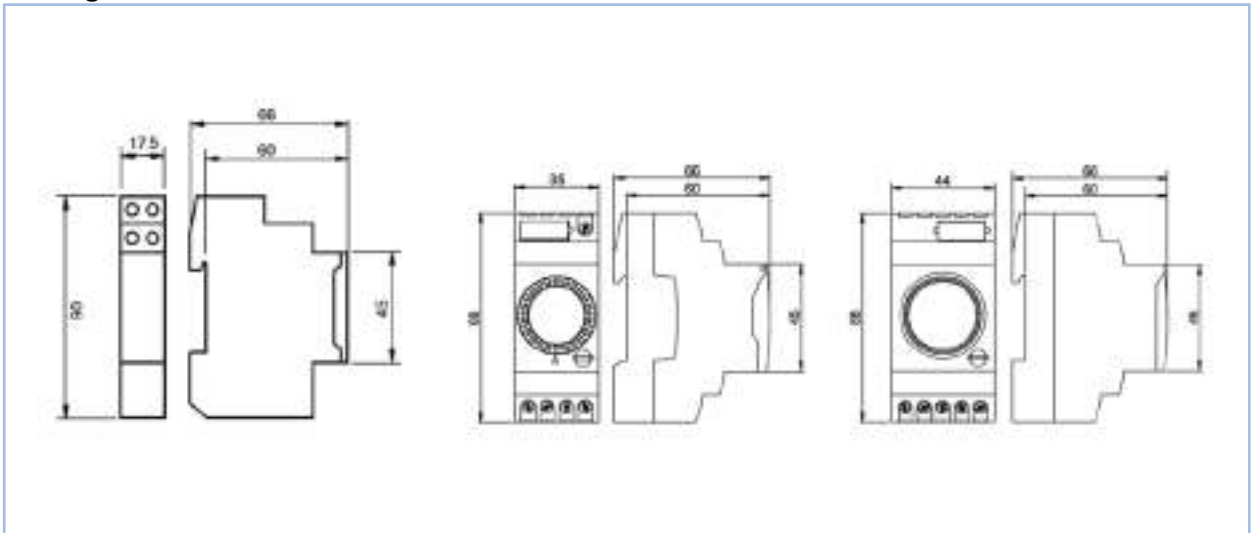


Dimmers and time relays - DIM and Pulsar T+



A

Analogue time switches - Classic Plus



B

C

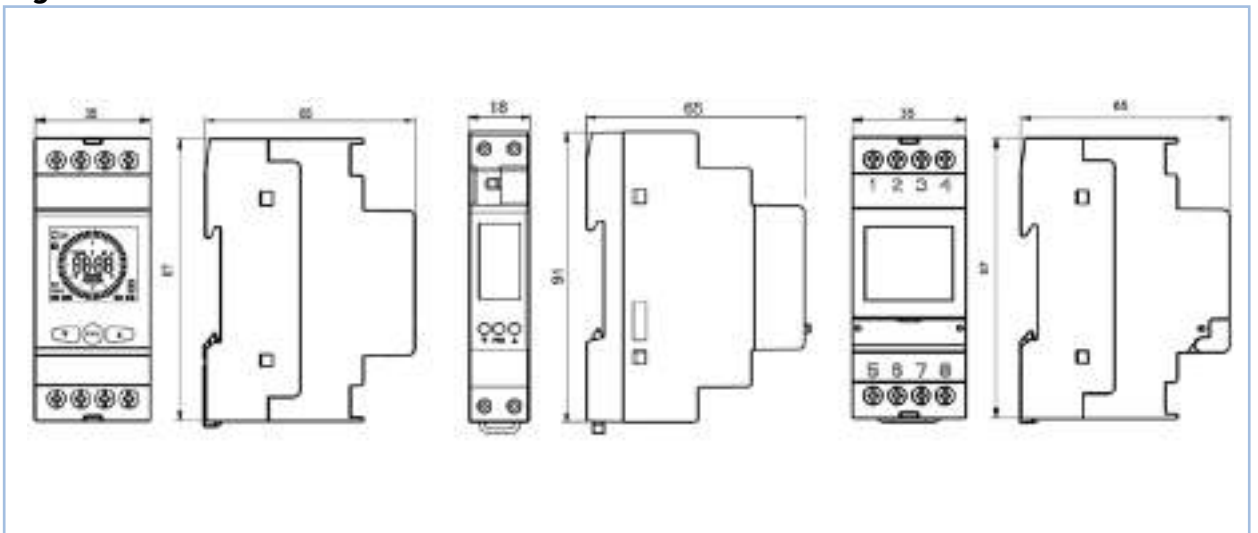
D

E

F

G

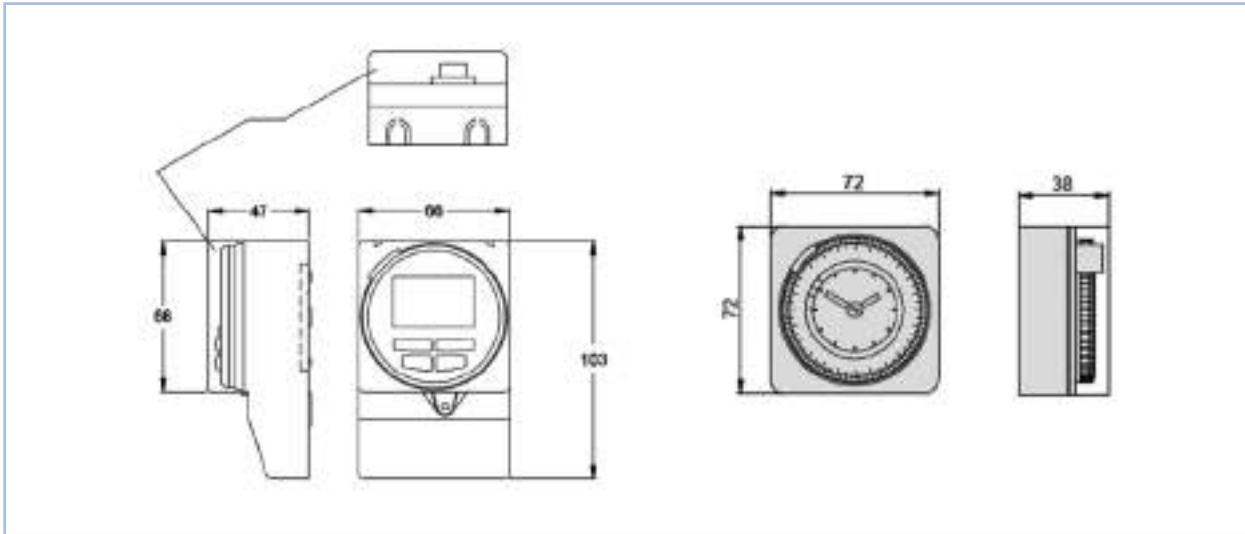
Digital time switches - Galax Plus



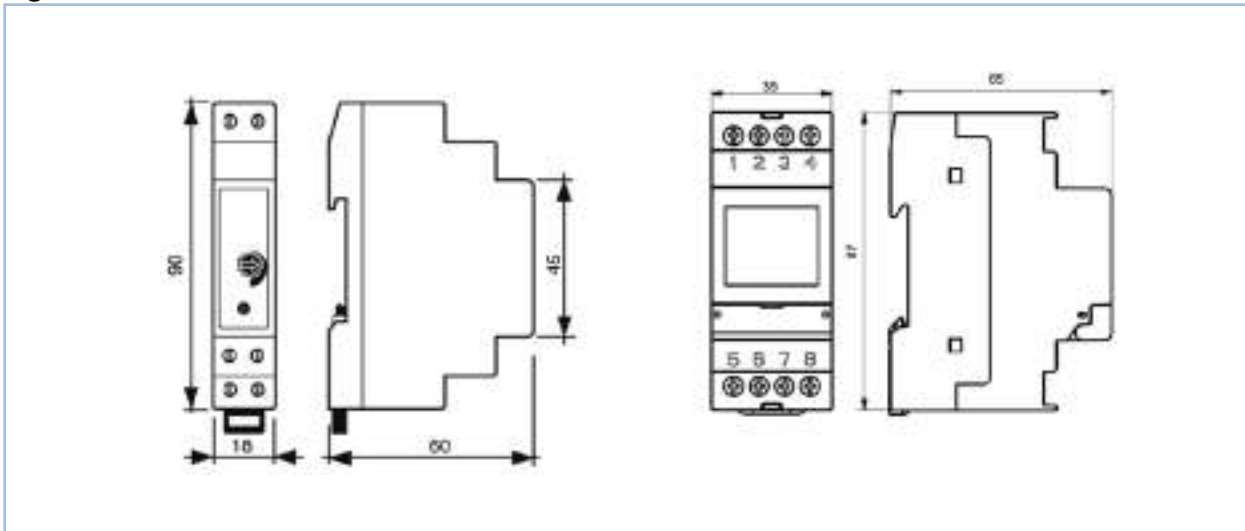
X

Dimensional drawings

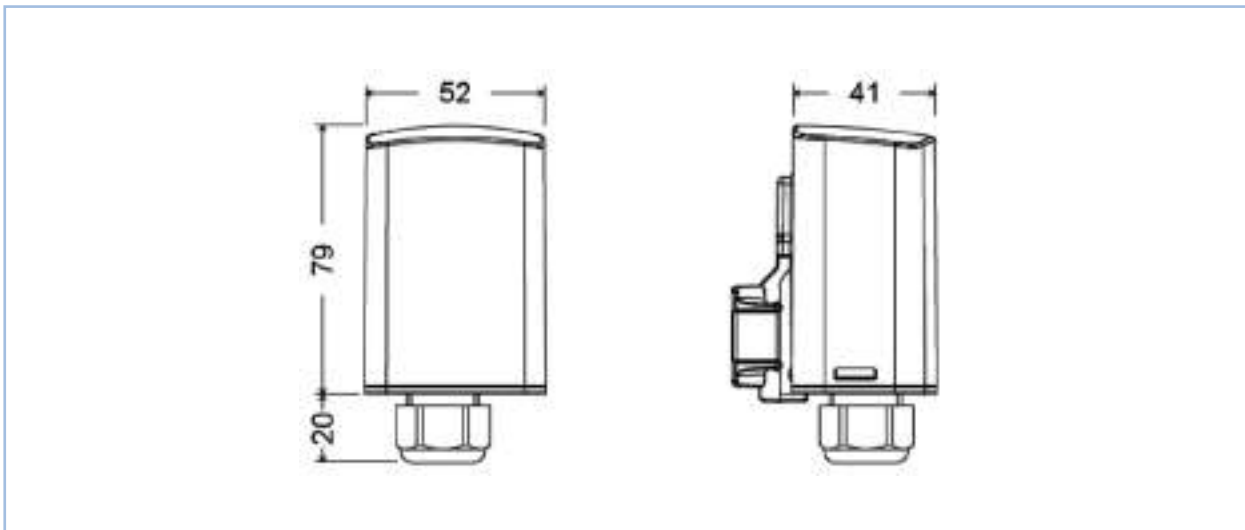
Time switches 72x72 - Classic Plus and Galax Plus



Light sensitive switches - Galax LSS



GLX+LUX WALL



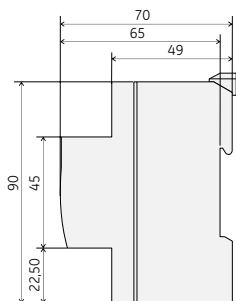


Dimensional drawings

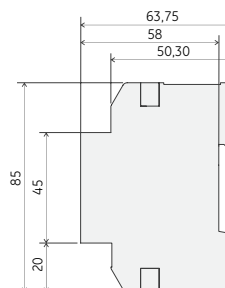
Surge arresters - SurgeGuard

MONOBLOCK types

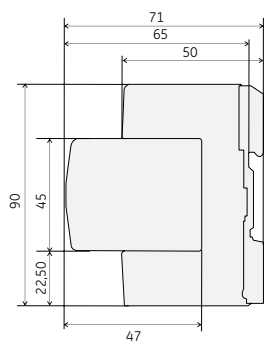
SA BLOCK, SA BLOCK ADSL



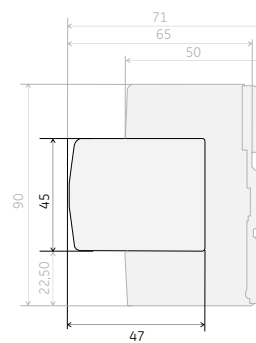
SA BLOCK II 15 LN



PLUG-IN types



Replacement modules



Comfort functions

A

B

C

D


E

F

G

X



- E.2 **Busbar system**
- E.4 Insulated PIN type busbars
- E.5 Insulated PIN type busbars for compact MCBs Unibis*
- E.6 Insulated FORK type busbars
- E.8 Busbars for connection of auxiliaries
- E.8 Accessories
-  E.9 UL Busbars

Circuit Protection A

People Protection B

Add-on Devices C

Comfort Functions D

Busbars **E**

Enclosures F

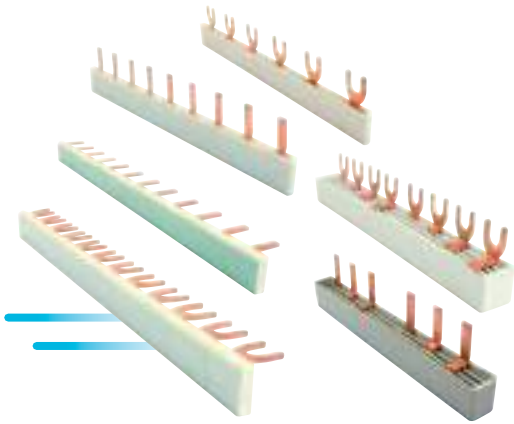
Product overview G

Numerical index X



Busbar system

Rails



Technical data

Rail	Copper (oxygen free) Heat resistant >96°C Self extinguishing V0
Dielectric strength	36kV/mm (acc. to DIN 53481/1.2)
Short-circuit resistance	25kA (100A fuse)
Climate proofing	According to IEC 60068-2-30
Creepage resistance/tracking index	400V (acc. to IEC 60112)
Insulation group acc. to EN 60439-1	Material group II, 400V

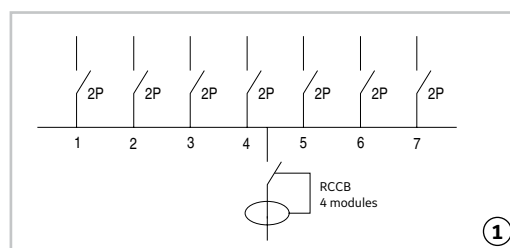
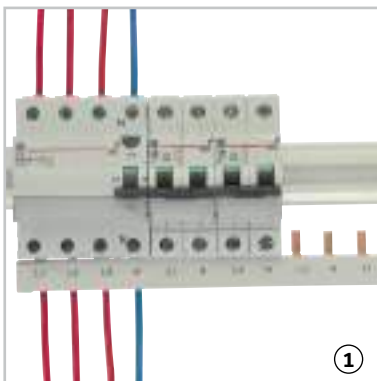
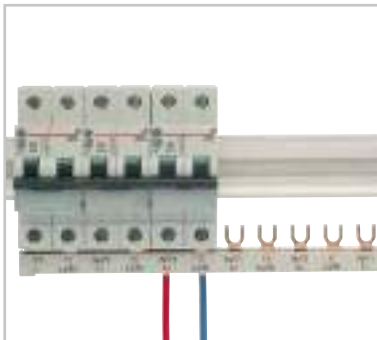
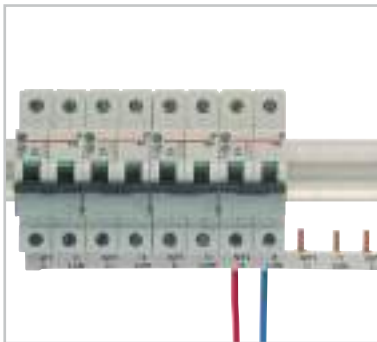
Load values in A (I_{th})

Polarity	Connection	side		1 pole	
		I _{th} (A)	K (mm ²)	I _{th} (A)	K (mm ²)
	10 isolated	80	10	100	25
	12 non isolated	90	16	110	35
	16 non isolated	110	25	130	35
	24 non isolated	160	25	180	2x25
	36 non isolated	200	35	220	2x35

Polarity	Connection	side		n poles	
		I _{th} (A)	K (mm ²)	I _{th} (A)	K (mm ²)
	10 isolated	80	16	100	25
	16 isolated	120	25	130	35

K = section of the connection wire

n = 2P, 1P+N, 3P, 3P+N, 4P





Insulated PIN type busbars

Busbars

A

B

C

D

E

F

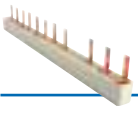

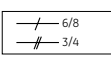
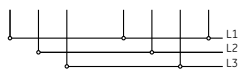
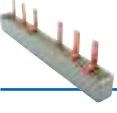

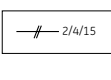
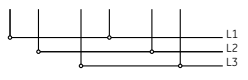
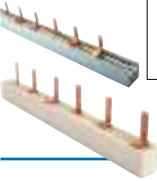

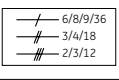
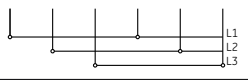
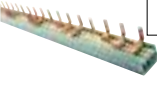

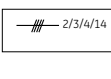
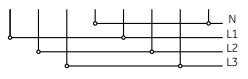
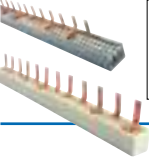

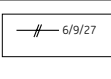

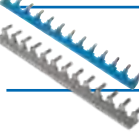

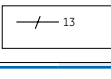

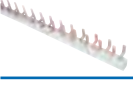

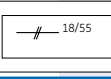
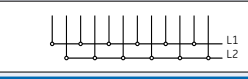
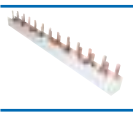

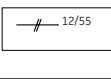
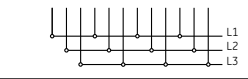


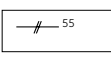
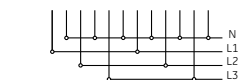


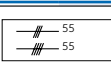
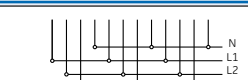
G

X

		Section mm ²	Description	Ref. No.	Pack.
1-phase					
		10	2x1P	546253	10
		10	6x1P	546254	10
		10	12x1P	546255	10
		10	13x1P	650156	10
		10	57x1P - length 1m	624991*	1/10
		16	57x1P - length 1m	544193*	1/10
1-phase 90°					
		10	3x1P - 90°	624959	20
		10	4x1P - 90°	624960	20
		10	5x1P - 90°	624961	20
		10	6x1P - 90°	624962	20
		10	7x1P - 90°	624963	20
		10	8x1P - 90°	624964	20
		10	9x1P - 90°	624965	20
		10	10x1P - 90°	624966	20
		10	11x1P - 90°	624967	20
		10	12x1P - 90°	624968	20
		10	13x1P - 90°	624969	20
		10	14x1P - 90°	624970	20
		10	15x1P - 90°	624971	20
		10	16x1P - 90°	624972	20
	10	17x1P - 90°	624973	20	
	10	18x1P - 90°	624974	20	
1-phase with 1P + auxiliary					
		10	2x (1P + auxiliary)	546256	10
		10	6x (1P + auxiliary)	546257	10
		10	8x (1P + auxiliary)	546237	10
		10	36x (1P + auxiliary) or MCBs Hti - length 1m	546152*	1/50
		16	36x (1P + auxiliary) or MCBs Hti - length 1m	624994*	1/50
	2-phase				
		10	4x1P or 2x2P	546265	10
		10	6x1P or 3x2P	546266	10
		10	12x1P or 6x2P	546267	10
		10	14x1P or 7x2P	544186	10
		10	18x1P or 9x2P	624805	10
		16	14x1P or 7x2P	618294	20
		16	56x1P or 28x2P - length 1m	546139*	1/20
2-phase with 2P + auxiliary					
		10	3x (2P + auxiliary)	546269	10
		10	5x (2P + auxiliary)	546270	10
		16	22x (2P + auxiliary) - length 1m	546126*	1/20
3-phase					
		10	6x1P or 3x2P or 2x3P	546277	10
		10	9x1P or 4x2P or 3x3P	546308	10
		10	12x1P or 4x3P or 3x4P	546278	10
		10	15x1P or 5x3P	544180	10
		10	18x1P or 6x3P	544181	10
		10	21x1P or 7x3P	544182	10
		10	24x1P or 12x2P or 8x3P	624839	20
		10	57x1P or 28x2P or 19x3P - length 1m	546142*	1/20
		16	57x1P or 28x2P or 19x3P - length 1m	546143*	1/20



Insulated PIN type busbars (continued)

		Section mm ²	Description	Ref. No.	Pack.		
3-phase RCDs							
	 3P			10	1xRCD + 6x1P or 3x2P	544183	10
				10	1xRCD + 8x1P or 4x2P	544184	10
3-phase with 3P + auxiliary							
	 3P			10	2x(3P + auxiliary)	555434	10
				10	4x(3P + auxiliary)	555435	10
				10	15x(3P + auxiliary) - length 1m	544195*	1/20
3-phase with 1P + auxiliary							
	 3P			10	6x(1P + auxiliary) or 6x1P MCBs Hti or 3x2P MCBs Hti or 2x3P MCBs Hti	546396	10
				10	8x(1P + auxiliary) or 8x1P Hti MCB or 4x2P Hti MCB	544185	10
				10	9x(1P + auxiliary) or 3x3P MCBs Hti	546397	10
				10	36x(1P + auxiliary) or 18x2P Hti MCB or 12x3P Hti MCB - length 1m	546128*	1/20
4-phase 4P or 3P+N							
	 3P+N/4P			10	2x4P or 2x3P+N	546282	5
				10	3x4P or 3x3P+N	546283	5
				10	4x4P or 4x3P+N	544187	5
				10	14x4P or 14x3P+N - length 1m	624807*	1/15
16	14x4P or 14x3P+N - length 1m	546130*	1/15				
4-phase 1P+N or 2P							
	 3P+N			10	6x1P+N or 6x2P	546284	5
				10	9x1P+N or 9x2P	546285	5
				10	27x1P+N or 27x2P - length 1m	624995*	1/15
				16	27x1P+N or 27x2P - length 1m	624996*	1/15
1-phase 90° for compact MCBs Unibis							
	 1P			10	13x1P - 90° - grey	646091	15
				10	13x1P - 90° - blue	646092	15
1-phase+N / 2P for compact MCBs Unibis							
	 2P			10	18x1P+N / 2P	624796	20
				10	55x1P+N / 2P - length 1m	624893*	1/20
3-phase for compact MCBs Unibis							
	 3P			10	12x2P	624797	15
				10	55x2P - length 1m	624798*	1/15
4-phase 1P+N or 2P for compact MCBs Unibis							
	 3P+N/4P			10	55x2P - length 1m	624892*	1/10
4-phase 4P or 3P+N for compact MCBs Unibis							
	 3P+N/4P			10	55x3P or 4P - length 1m incl. 4 end caps and 4 connection clamps	624800*	1/5

PIN type busbars

A

B

C

D

E

F

G

X



Insulated FORK type busbars

Busbars

A

B

C

D

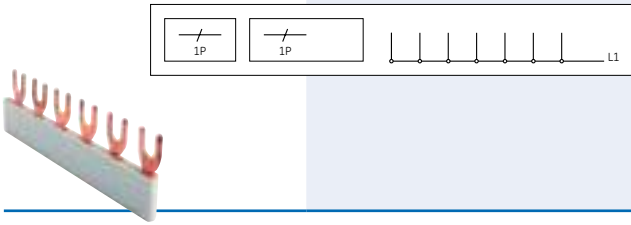
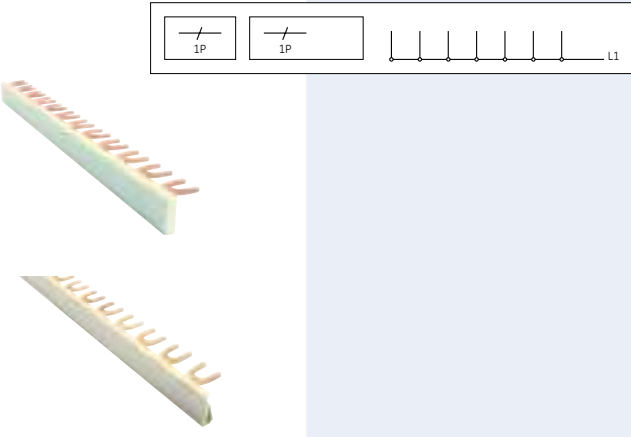
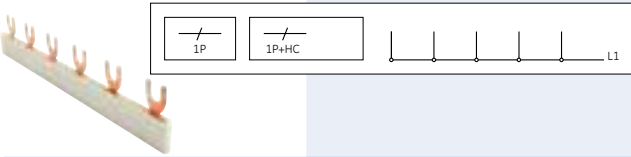
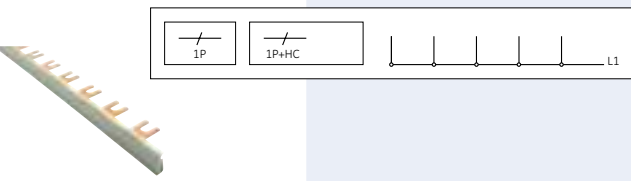
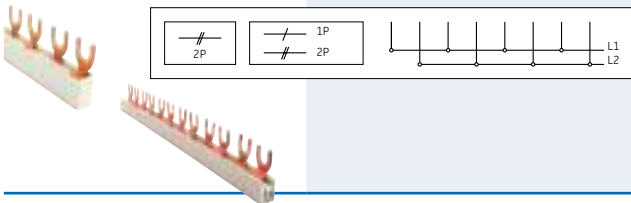
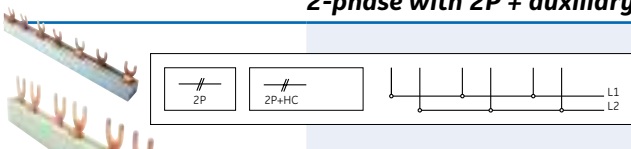
E

F

G

X

E.6

		Section mm ²	Description	Ref. No.	Pack.	
1-phase						
		10	2x1P	546247	20	
		10	3x1P	644873	20	
		10	4x1P	546341	20	
		10	5x1P	650164	20	
		10	6x1P	546248	20	
		10	12x1P	546249	20	
		10	13x1P	650152	20	
		10	57x1P - length 1m	546187*	1/10	
		16	57x1P - length 1m	544188*	1/10	
	1-phase 90°					
		10	2x1P - 90°	624975	20	
		10	4x1P - 90°	624976	20	
		10	5x1P - 90°	624977	20	
		10	6x1P - 90°	624978	20	
		10	7x1P - 90°	624979	20	
		10	8x1P - 90°	624980	20	
		10	9x1P - 90°	624981	20	
		10	10x1P - 90°	624982	20	
		10	11x1P - 90°	624983	20	
		10	12x1P - 90°	624984	20	
		10	13x1P - 90°	624985	20	
		10	14x1P - 90°	624986	20	
		10	15x1P - 90°	624987	20	
		10	16x1P - 90°	624988	20	
		10	17x1P - 90°	624989	20	
		10	18x1P - 90°	624990	20	
		16	57x1P - 90° - length 1m	644890*	1/50	
		10	2x1P - 90° for surge arresters SurgeGuard	624993	20	
		10	3x1P - 90° for surge arresters SurgeGuard	644893	20	
	10	4x1P - 90° for surge arresters SurgeGuard	568106	20		
	10	8x1P - 90° for surge arresters SurgeGuard	644897	20		
1-phase with 1P + auxiliary						
		10	2x(1P + auxiliary)	546250	20	
		10	3x(1P + auxiliary)	644875	20	
		10	4x(1P + auxiliary)	644876	20	
		10	5x(1P + auxiliary)	644877	20	
		10	6x(1P + auxiliary)	546251	20	
		10	8x(1P + auxiliary)	546295	20	
		10	9x(1P + auxiliary)	546252	20	
	1-phase with 1P + auxiliary 90°					
		10	2x(1P + auxiliary) - 90°	544272	20	
		10	7x(1P + auxiliary) - 90°	544277	20	
		10	13x(1P + auxiliary) - 90°	544296	50	
		10	14x(1P + auxiliary) - 90°	644879	20	
		10	15x(1P + auxiliary) - 90°	644880	20	
		16	15x(1P + auxiliary) - 90°	544327	20	
		10	37x(1P + auxiliary) - 90° - length 1m	546197*	1/50	
		16	37x(1P + auxiliary) - 90° - length 1m	544189*	1/50	
	2-phase					
			10	4x1P or 2x2P	546259	10
		10	6x1P or 3x2P	546260	10	
		10	10x1P or 5x2P	644881	10	
		10	12x1P or 6x2P	546261	10	
		10	14x1P or 7x2P	544178	10	
		10	18x1P or 9x2P	644882	10	
		10	56x1P or 28x2P - length 1m	544191*	1/20	
		16	56x1P or 28x2P - length 1m	546227*	1/20	
2-phase with 2P + auxiliary						
			10	2x(2P + auxiliary)	546262	10
		10	3x(2P + auxiliary)	546263	10	
		10	4x(2P + auxiliary)	544344	10	
		10	5x(2P + auxiliary)	546264	10	
		16	22x(2P + auxiliary) - length 1m	546125*	1/20	



Insulated FORK type busbars (continued)

		Section mm ²	Description	Ref. No.	Pack.
3-phase					
	10	6x1P or 3x2P or 2x3P	546271	10	
	10	7x1P	624957	10	
	10	9x1P or 3x3P	546296	10	
	10	12x1P or 6x2P or 4x3P	546272	10	
	10	13x1P	650153	10	
	10	14x1P or 7x2P	650154	10	
	10	15x1P or 5x3P	544172	10	
	10	18x1P or 9x2P or 6x3P	544173	10	
	10	21x1P or 7x3P	544174	10	
	10	24x1P or 12x2P or 8x3P	624958	20	
	10	57x1P or 28x2P or 19x3P - length 1m All forks on the lateral side of the busbar	546229*	1/20	
	16	57x1P or 19x3P - length 1m All forks in the middle of the busbar	546176*	1/20	
16	57x1P or 28x2P or 19x3P - length 1m All forks in the middle of the busbar	546230*	1/20		
3-phase RCDs					
	10	1xRCD + 5x1P	555609	10	
	10	1xRCD + 6x1P or 3x2P or 2x3P	544175	10	
	10	1xRCD + 8x1P or 4x2P	544176	10	
3-phase with 3P + auxiliary					
	10	2x(3P + auxiliary)	546273	10	
	10	3x(3P + auxiliary)	644884	10	
	10	4x(3P + auxiliary)	546274	10	
	10	5x(3P + auxiliary)	644885	10	
	10	6x(3P + auxiliary)	644886	10	
	16	15x(3P + auxiliary) - length 1m	546129*	1/20	
3-phase with 1P + auxiliary					
	10	6x(1P + auxiliary) or 6x MCBs Hti	546275	10	
	10	8x(1P + auxiliary) or 8x MCBs Hti	544177	10	
	10	9x(1P + auxiliary) or 9x MCBs Hti	546276	10	
	16	36x(1P + auxiliary) - length 1m	546127*	1/20	
	4-phase 4P or 3P+N				
	10	2x4P or 2x3P+N	546279	5	
	10	3x4P or 3x3P+N	546280	5	
	10	4x4P or 4x3P+N	544179	5	
	10	14x4P or 14x3P+N - length 1m	618293*	1/15	
	16	14x4P or 14x3P+N - length 1m	546234*	1/15	
	4-phase 1P+N or 2P				
	10	6x1P+N or 6x2P	546398	5	
	10	9x1P+N or 9x2P	546281	5	
	10	2xAdd on 32A +4P	546228	5	
	10	27x1P+N or 27x2P - length 1m	624799*	1/15	
	16	27x1P+N or 27x2P - length 1m	544192*	1/15	
	4-phase with 4P + auxiliary				
	10	2x(4P + auxiliary) or 2x(3P+N + auxiliary)	646084	5	
	16	12x(4P + auxiliary) or 12x(3P+N + auxiliary) - length 1m	646083*	1/15	

FORK type busbars

A

B

C

D

E




F

G

X



Busbars for connection of auxiliaries

	Section mm ²	Description	Ref. No.	Pack.
	For auxiliary function added on 1P MCB			
	27mm / 8P		546244	10
	27mm / 4P		544346	10
	For auxiliary function added on 2P MCB			
	45mm / 5P		546245	10
	45mm / 4P		544347	10
	For auxiliary function added on 3P MCB			
	63mm / 4P		546246	10

Accessories

Busbars

A

B

C






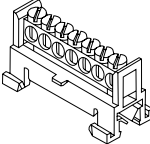

D

E

F

G

X

	End caps			
	10/16	for 1P busbars	644891	50
	10	for 2P busbars	546181	10
	10	for 3P busbars	546200	10
	16	for 2P and 3P busbars	546184	10
	Connection clamps			
	10/16	for 4P busbars	629867	10
	25	fork	546287	30
	25	pin	546288	30
	25	pin long	546289	50
	Insulation cap			
	35	for fork and pin direct on busbar	546290	10
	Insulation strip			
	25	4P compact MCBs Unibis	624795	30
	Clamps for neutral conductor			
		Pin/fork - Yellow (RAL 1004)	546291	10
		For fork and pin - length 1m	624860	10
	16	7 poles	546297	10
	Clamps for phase conductors			
	16	12 poles	546298	10
	16	12 poles, insulated	568083	10
	16	15 poles	546299	10
	DIN-rail (EN 50022)			
	16	12 poles, insulated	568084	10
	16	15 poles	546302	10
		Length 1000mm - Height 7mm	564092	10



UL Busbars for Circuit Breakers, supplementary protection and ground fault protection devices

Series		BS..PULL	BS..PULR
Standards		UL489	UL1077
Certifications		UL489; UL File Nr E488748	UL1077; UL File Nr E151139
Standards		UL508	
Certifications		UL508, E356776	
Operational Voltage			
UL489	V AC	600V	480Y/277 and 240
Short-circuit resistance with 100A fuse		25kA	25kA
Dielectric strength acc. DIN 53481/1.2	KV/mm	36	36
Rated current at 40°C ambient temperature		110	110
Maximum operating voltage	V AC	600	500
Insulation coordination			
Degree of pollution		2	2
Overvoltage category		II	II
Busbar cross-section	mm ² Cu	16	16
Infeed		Any	Any
Rail		Copper (oxygen free)	Copper (oxygen free)
Insulation strip		Plastic	Plastic
Heat resistance		>96°C self extinguishing V0	>96°C self extinguishing V0
Poles		1,2,3	1,2,3
Accessories			
Tooth cap		yes	yes
Pin connector		yes	yes

Performance

- Busbars for MCBs in conformance with UL489, UL1077 and UL508
- For application in that is a bigger air- and creep-distance necessary.
- 30% Installation time savings!
- Panel space savings.
- Available in 1, 2, 3 – phase busbars.
- Combining 6 or 12 modules UL489 busbars is possible to link 12 up to 60 poles.
- Yellow tooth-cap available for live free pins.
- Pin connectors adapted for UL489 busbars to feed the mcbs row.

Approval



UL Busbars

A

B

C

D

E

F

G

X





A

B

C

D

E

F

G

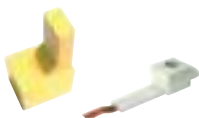
X

Busbars according to UL489 for use with EP100ULH⁽¹⁾



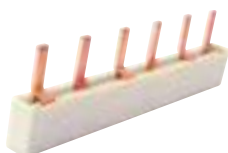
	Poles	Max. Voltage	Modules	PIN spacing ⁽²⁾	Cat. No.	Ref. No.	Pack.
For 6 MCBs	1	600V AC	6	1 module	BS1PULL600/06	624785	1/100
For 12 MCBs	1	600V AC	12	1 module	BS1PULL600/12	624786	1/50
For 3 MCBs	2	600V AC	6	1 module	BS2PULL600/06	624818	1/100
For 6 MCBs	2	600V AC	12	1 module	BS2PULL600/12	624873	1/50
For 2 MCBs	3	600V AC	6	1 module	BS3PULL600/06	624874	1/100
For 4 MCBs	3	600V AC	12	1 module	BS3PULL600/12	624881	1/50

Busbars accessories according to UL489 for use with EP100ULH



	Cat. No.	Ref. No.	Pack.
Tooth cap	IcapUL1	624897	10/20
Pin connector	ASUL	624898	1/30

Busbars to UL1077 for use with EP100UL, FP and DP RCCBs and RCBOs⁽¹⁾



	Poles	Voltage	Modules	PIN spacing ⁽²⁾	Cat. No.	Ref. No.	Pack.
For 12 MCBs	1	480Y/277	12	1 module	BS1PULR277/12	624882	1/50
For 6 MCBs	2	480Y/277	12	1 module	BS2PULR480/12	624883	1/50
For 4 MCBs	3	480Y/277	12	1 module	BS3PULR480/12	624896	1/50

Busbars accessories according to UL1077

	Cat. No.	Ref. No.	Pack.
Tooth cap	IcapUL2	624808	5/20
Pin connector	ASUL2	624809	1/30

Accessories for MCBs



	Cat. No.	Ref. No.	Pack.
Walls Walls for terminals	WUL	690244	10

Padlocking bracket



	Cat. No.	Ref. No.	Pack.
Allows padlocking in ON and OFF position	KS	624929	2


(1) Fixed lengths, can't be cut
 (2) 1 module width = 18mm



**Metal enclosures**

- F.2 Surface mounting - **Fix-o-Rail Senior**
- F.4 Surface and flush mounting - **Fix-o-Rail 144**
- F.8 Surface mounting - **Modular 200**

Insulated plastic enclosures

- F.12 Junction boxes - **Flex-o-Box**
- F.14 Junction boxes - **Series 55**
- F.18 Surface mounting - **Fix-o-Rail Covers**
- F.20 Surface mounting - **Fix-o-Rail Junior**
- F.22 Surface mounting - **Fix-o-Rail Classic**
- F.26 Surface mounting - **Abaco S**
-  F.28 Surface mounting - **Fix-o-Rail 150**
- F.32 Surface mounting - **Fix-o-Rail 55**
- F.34 Surface mounting - **Aquaria**
- F.36 Flush mounting - **Abaco F**
- F.38 Flush mounting - **Fix-o-Rail 150-F4**
- F.40 Dimensional drawings

Circuit Protection A

People Protection B

Add-on Devices C

Comfort Functions D

Busbars E

Enclosures **F**

Product overview G

Numerical index X



Metal enclosures - Surface mounting

Enclosures

A

B

C

D

E

F

G

X

F.2



Fix-o-Rail Senior

IP43

Features

- **Secure: total insulation**
- **Double wall: a steel outer wall plus an inner insulated extruded wall**
- Protection degree: IP43-IK08 (plain door), IK05-transparent door
- Universal: for DIN-rail equipment up to 92.5mm
- Installation friendly: ample wiring room and a removable mounting frame
- Two-component cable entries at top and bottom, integrated in the base

Components

The Fix-o-Rail Senior enclosure includes:

- base in RAL 9016
- mounting frame
- labels for circuit indication
- coverplates
- a transparent or grey door in RAL 9016
- closed by handle without lock
- sealing option



Applications



As an elegant insulated enclosure in:

- restaurants and hotels
- workshops
- hospitals
- shopping centers
- offices
- commercial buildings
- leisure and sport locations

Marking





Standard

EN/IEC 62208









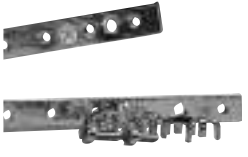
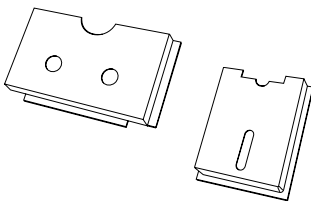
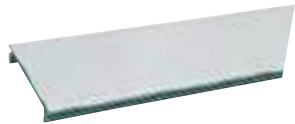
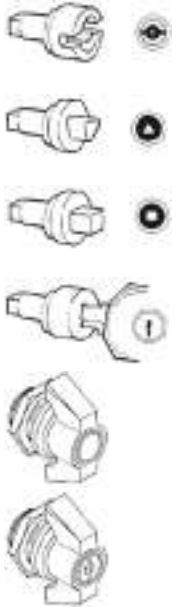
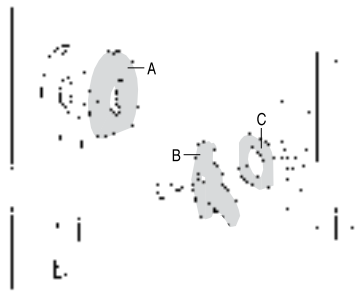
EN/IEC 61439-2 (in preparation)



Fix-o-Rail Senior

	HxWxD (mm)	Number of modules	Number of rows	Ref. No.	Pack.	
	Plain door	650 x 300 x 210	48	4	610239	1
		800 x 300 x 210	60	5	610248	1
		650 x 550 x 210	96	4	610240	1
		800 x 550 x 210	120	5	610249	1
		950 x 550 x 210	144	6	610257	1
		1100 x 550 x 210	168	7	610241	1
		1250 x 550 x 210	192	8	610242	1
		1100 x 800 x 210	252	7	610243	1
		1250 x 800 x 210	288	8	610244	1
			Transparent door	650 x 300 x 210	48	4
800 x 300 x 210	60			5	610330	1
650 x 550 x 210	96			4	610329	1
800 x 550 x 210	120			5	610331	1
950 x 550 x 210	144			6	610332	1

Accessories

	<p>4-pole terminal 63A</p> <table border="1"> <tr> <td>610022</td> <td>18</td> </tr> </table> <p>63A Connection range 4x(10x16mm²) Cu section 6,5x9mm</p>	610022	18	<p>Cable-entry plate</p> <table border="1"> <tr> <td>815094</td> <td>1</td> </tr> </table> <p>Smooth surface, in case the standard two-component cable-entry plate needs to be replaced.</p>	815094	1													
610022	18																		
815094	1																		
	<p>4-pole terminal 160A</p> <table border="1"> <tr> <td>617992</td> <td>5</td> </tr> </table> <p>160 A with cover 4x(1x10 to 50mm² incoming + 3x6 to 35mm² + 8x2.5 to 16mm² outgoing) Cu section 12x10mm</p>	617992	5	<p>Foam rubber (IP30)</p> <table border="1"> <tr> <td>815095</td> <td>1</td> </tr> </table>	815095	1													
617992	5																		
815095	1																		
	<p>4-pole terminal 160A</p> <table border="1"> <tr> <td>610020</td> <td>1</td> </tr> </table> <p>160A connection range 4x(10x10mm²) Cu section 12x5mm</p>	610020	1	<p>Pre-drilled plates</p> <table border="1"> <tr> <td>815093</td> <td>5</td> </tr> <tr> <td>815092</td> <td>5</td> </tr> </table> <p>21xM16 2xM50; 5XM20</p>	815093	5	815092	5											
610020	1																		
815093	5																		
815092	5																		
	<p>Protective shroud</p> <table border="1"> <tr> <td>610021</td> <td>1</td> </tr> </table> <p>For 160A terminal (ref. 610020)</p>	610021	1	<p>Label for circuit indication</p> <table border="1"> <tr> <td>610232</td> <td>10</td> </tr> <tr> <td>610233</td> <td>10</td> </tr> <tr> <td>610238</td> <td>10</td> </tr> </table> <p>For enclosure width 300mm For enclosure width 550mm For enclosure width 800mm</p>	610232	10	610233	10	610238	10									
610021	1																		
610232	10																		
610233	10																		
610238	10																		
	<p>Earth bar</p> <table border="1"> <tr> <td>828152</td> <td>1</td> </tr> <tr> <td>828153</td> <td>1</td> </tr> <tr> <td>828149</td> <td>1</td> </tr> </table> <p>For enclosure width 300mm - length 190mm For enclosure width 550mm - length 437mm For enclosure width 800mm - length 684mm</p>	828152	1	828153	1	828149	1	<p>Document pocket</p> <table border="1"> <tr> <td>811516</td> <td>1</td> </tr> <tr> <td>832000</td> <td>1</td> </tr> </table> <p>DIN A4 - W x H = 325 x 180mm DIN A5 - W x H = 155 x 225mm</p>	811516	1	832000	1							
828152	1																		
828153	1																		
828149	1																		
811516	1																		
832000	1																		
	<p>Cover strip</p> <table border="1"> <tr> <td>828056</td> <td>1</td> </tr> </table> <p>For cut-out of 45mm, length 1m</p>	828056	1	<p>Non standard lock</p> <table border="1"> <tr> <td>815105</td> <td>1</td> </tr> <tr> <td>811327</td> <td>1</td> </tr> <tr> <td>811326</td> <td>1</td> </tr> <tr> <td>811325</td> <td>1</td> </tr> <tr> <td>811331</td> <td>1</td> </tr> <tr> <td>813146</td> <td>1</td> </tr> <tr> <td>813156</td> <td>1</td> </tr> </table> <p>Adaptor kit Insert 3mm double bit key Insert 8mm triangle key Insert 8mm square key Cylinder with 2 keys V2432-E Neutral handle Handle with key V2432-E</p>	815105	1	811327	1	811326	1	811325	1	811331	1	813146	1	813156	1	<p>The standard handle can be replaced by adaptor kit + insert or handle</p> 
828056	1																		
815105	1																		
811327	1																		
811326	1																		
811325	1																		
811331	1																		
813146	1																		
813156	1																		
<p>Adaptor kit = A + B + C</p> 																			

A

B

C

D

E

F

G

X



Fix-o-Rail 144 F - 144 S

IP40

Enclosures



Features

- In accordance with EN/IEC 61439-3
- Protection degree: IP40 – IK07 without door
IP40 – IK08 with plain door
IP40 – IK07 with transparent door
- Each DIN-rail can be equipped with 24 modules
- Centre distance between two DIN-rails: 150mm
- Flush mounting depth: 105mm
- Can be equipped with the Record Plus D-frame
- Colour: RAL 7035

Electrical properties

- Designated voltage: 415V AC
- Designated current: 125A

Masking frame and door

- Ridged masking frame
- Manufactured in quality mild steel of 1mm thick, cold reduced
- Pre-treated prior to electrostatic powder coating in RAL 7035 (light grey)
- Transparent or plain door

Protection plate

- Made from sheet steel 1mm, double folded corner

Base

- Ridged base (mono-block)
- Manufactured in sendzimir zinc plated steel of 1mm thick (FOR 144F)
- Sidewalls foreseen with position lugs (FOR 144F)
- Pre-treated prior to electrostatic powder coating in RAL 7035, light grey (FOR 144S)
- Knock-outs in the upper, lower and the bottom side of the base
- Fixing points for the fixation of cables with cable ties

Mounting frame

- Ridged and removable mounting frame
- Adjustable in depth (± 20 mm) (FOR 144F)
- Adjustable left or right (± 10 mm) (FOR 144F)
- Distance between two DIN-rails: 150mm

Door

- Transparent or plain door, security lock included

Earth bar (L = 380mm)

- Copper bar, 12 x 5mm, 18 x M5 threaded holes + connectors and screws

Applications



As a surface or flush mounted distribution board in:

- restaurants and hotels
- workshops
- hospitals
- shopping centers
- offices

Marking



Advantages

- Suitable for DIN-rail mounting devices up to 70mm as MCBs, RCDs, relays, ...
- Door, transparent or plain easy to install (optional)
- Generous wiring room
- Easy to install
- Earth terminal can be installed on the upper and the lower side of the base
- Removable mounting frame
- Easy removable protection plates
- Electrostatic powder coating RAL 7035
- Flush mounting depth base 105mm
- Can be equipped with wiring trunks (W x H): 15 x 40mm, 25 x 40mm, 40 x 40mm, 60 x 40mm

Components

The enclosure packaging includes:

- Base
- Mounting frame
- Earth terminal
- Protection plate
- Masking frame
- User instructions

The door packaging includes:

- Plain or transparent door
- Security lock
- Hinges
- Earth continuity set
- User instructions



A

B

C

D

E

F

G

X



Fix-o-Rail 144-F - Flush mounting enclosures without door⁽¹⁾

Included ref. 617965 = an earth terminal: copper bar 12x5mm, 18 threaded holes M 5, connectors and screws

	Dimensions HxWxD (mm)	Number of modules	Number of rows	Power dissipation (W)		Ref. No.	Pack.
				Without door	With door		
	650x740x140 ⁽¹⁾ 560x610x105 ⁽²⁾	72	3	140	83	617934	1
	800x740x140 ⁽¹⁾ 710x610x105 ⁽²⁾	96	4	152	95	617935	1
	950x740x140 ⁽¹⁾ 860x610x105 ⁽²⁾	120	5	164	110	617936	1
	1100x740x140 ⁽¹⁾ 1010x610x105 ⁽²⁾	144	6	176	116	617937	1
 Equipped with function for Record Plus 160A D-frame	1100x740x140 ⁽¹⁾ 1010x610x105 ⁽²⁾	120	5	176	116	617938	1

Fix-o-Rail 144

A

B

C

D


E

F

G

X

Transparent and plain doors

	For enclosure	Number of modules	Number of rows	Transparent door	Plain door	Pack.
				Ref. No.	Ref. No.	
	617934	72	3	617939	617943	1
	617935	96	4	617940	617944	1
	617936	120	5	617941	617945	1
	617937	144	6	617942	617946	1
	617938	120	5	617942	617946	1

(1) External dimensions
(2) Internal dimensions



Fix-o-Rail 144-S - Surface mounting enclosures without door

Included ref. 617965 = an earth terminal: copper bar 12x5mm, 18 threaded holes M 5, connectors and screws

Enclosures

A

B

C

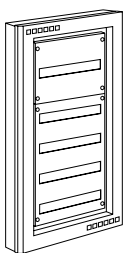
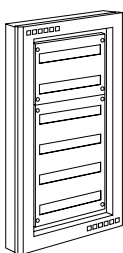
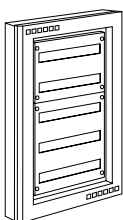
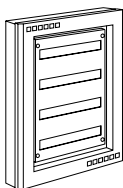
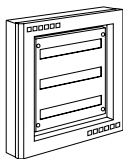
D

E

F

G

X



Equipped with function for Record Plus 160A D-frame

Dimensions HxWxD (mm)	Number of modules	Number of rows	Power dissipation (W)		Ref. No.	Pack.
			Without door	With door		
650x740x140	72	3	160	88	617966	1
800x740x140	96	4	175	100	617967	1
950x740x140	120	5	187	115	617968	1
1100x740x140	144	6	195	125	617969	1
1100x740x140	120	5	195	125	617970	1

Transparent and plain doors



For enclosure	Number of modules	Number of rows	Transparent door	Plain door	Pack.
			Ref. No.	Ref. No.	
617966	72	3	617939	617943	1
617967	96	4	617940	617944	1
617968	120	5	617941	617945	1
617969	144	6	617942	617946	1
617970	120	5	617942	617946	1



Accessories

	4-pole terminal 160A 617992 5 160 A with cover 4x(1x10 to 50mm ² incoming + 3x6 to 35mm ² + 8x2.5 to 16mm ² outgoing) Cu section 12x10mm
	4-pole terminal 160A 610020 1 160A connection range 4x(10x10mm ²) Cu section 12x5mm
	Protective shroud 610021 1 For 160A terminal (ref. 610020)
	Earth terminal kit 617965 1 Cu bar 12x5, 18 threaded holes M5, L = 380mm, with connectors and screws Can be installed in the upper and lower side of the base
	Cover strip 828056 1 For cut out of 45mm, length 1m
	Blank plate 610142 4 610484 500 Length: 72mm Cut-out width: 45mm Can be cut into 9mm lengths RAL 7035
	Document pocket 811516 1 DIN A4 - W x H = 325 x 180mm
	832000 1 DIN A5 - W x H = 155 x 225mm

Function for Record Plus 125A D-frame Fix-o-Rail 144 F/S 617018 1 HxW: 326x552mm
--



Depth adapter & support 617947 1 PVC profile: lenght 355mm used with the function 617964



Security lock 617948 1 With two keys
--



Label for circuit indication 610233 10 For enclosure width 550mm
--



Support for wiring-trunking 617949 1



Wiring supports 828145 1 Cable-tray support (20 pieces)
828146 1 Cable-tray (10 pieces)



Fix-o-Rail 144

A

B

C

D

E

F

G

X



Type B MCB Distribution Board

Modular 200

IP30 / IP31



Enclosures

A

Applications



Distribution Board for:
- commercial buildings
- hotels
- hospitals
- small factories

B

C

Marking



D

Standards

BSEN 61439-3
BS5486

E

F

G

X

Performance


Busbar rating	(A) 200
Rated short circuit strength (Icw)	(Icw) 16kA - 0,1s
Rated conditional short circuit current	(Icc) 16kA (415V)
Rated voltage	(V) 415
E+N out terminal capacity	(mm ²) 25
E+N incoming cable capacity	(mm ²) 70
No of TP ways	4, 6, 8, 12, 18, 24
Ingress protection	IP30 IP31 (with additional roof)
Enclosure colour	Light grey (RAL7035)

Features

- Durable structured powder coated finish
- Matching light grey throughout the range
- All incomers benefit from positive contact indication
- Modular extension boxes to install modular control devices
- Pan assembly can be easily removed to ease installation
- One piece (no welds or rivets) phase busbar - NO hot spots!
- Ample space behind pan assembly aids wiring installation
- Split terminal bars to reduce wiring installation time
- Neutral disconnect as standard to aid speedy testing
- Doors can be removed to ease installation
- Sturdy folded sheet steel construction
- Accepts 6kA, 10kA and 25kA MCB's
- Generous wiring room even when using 1 module RCBO



Type B MCB Distribution Board

	No of TP Ways	Dimension code	Busbar Rating	Art. No.	Ref. No.
 <p>Boards</p>	4	A	200A	MOD2DB40	619100
	6	B	200A	MOD2DB60	619101
	8	C	200A	MOD2DB80	619102
	12	D	200A	MOD2DB120	619103
	18	E	200A	MOD2DB180	619104
	24	F	200A	MOD2DB240	619122
<p>Pan assembly</p>	4	-	200A	MOD2PA40	619177
	6	-	200A	MOD2PA60	619178
	8	-	200A	MOD2PA80	619179
	12	-	200A	MOD2PA120	619180
	18	-	200A	MOD2PA180	619181
	24	-	200A	MOD2PA240	619192

Integral Incomer Kits

	Rating	Description	Poles	Terminal Capacity	Art. No.	Ref. No.
 <p>Switch Disconnectors</p>	100A	Switch disconnecter	3	50mm ²	MOD2ISO3	619111
	125A	Switch disconnecter	3	50mm ²	MOD2DIL125	619114
	125A	Switch disconnecter	4	50mm ²	MOD2DIL125/	619124
 <p>RCD Main Switch</p>	100A	30mA RCD	4	50mm ²	MOD2RCDA	619119
	100A	100mA RCD	4	50mm ²	MOD2RCDB	619112
	100A	300mA RCD	4	50mm ²	MOD2RCDC	619113
	100A	100mA time delayed RCD	4	50mm ²	MOD2RCDBTD	619120
 <p>MCB Main Switch</p>	63A	MCB main switch	3	35mm ²	MOD2MCB63	619605
	100A	MCB main switch	3	70mm ²	MOD2MCB100	619606
 <p>Direct Connection Kit</p>	200A	Direct connection kit	3	95mm ²	MOD2DC	619115
 <p>Single Phase Kit</p>	100A	Single phase conversion kit	1P+N	50mm ²	MOD2SPK1	618300

Modular 200 Type B

A

B

C

D

E

F

G

X



Add-on Incomer Extension Kits



Rating	Description	Poles	Terminal Capacity		Dimension code	Art. No.	Ref. No.
			Standard palm	Narrow palm			
200A	Switch disconnector	4	70mm ²	150mm ²	G	MOD2DIL200	619110
200A	MCCB non auto	3	70mm ²	150mm ²	H	MOD2MC200NA	619107
200A	TP automatic MCCB	3	70mm ²	150mm ²	H	MOD2MC200A	619109
200A	TP MCCB with RCD	4	70mm ²	150mm ²	H	MOD2MCRCD	619108

For increased terminal capacity narrow palm lugs must be used in conjunction with MOD2SB1.

Enclosures

A

Add-on Incomer Extension Kits

B



C

Dimension code	Description	Art. No.	Ref. No.
G	18 module modular devices	MOD218D	619105
G	Modular spreader box	MOD2SB1	619106
-	Heavy duty gland plate 2mm thick	MOD2HDGP	619116

D



E

F

G

X



Accessories Type B MCB Distribution Board

	<p>Busbar shroud</p> <table border="1"> <tr> <td>619018</td> <td>10</td> </tr> </table> <p>3 module busbar shroud for unused ways preformed in 1 module widths.</p>	619018	10	<p>Security</p> <table border="1"> <tr> <td>610063</td> <td>1</td> </tr> </table> <p>Ronis security door lock supplied with two keys</p>	610063	1			
619018	10								
610063	1								
	<p>Blank plate</p> <table border="1"> <tr> <td>610142</td> <td>4</td> </tr> <tr> <td>610484</td> <td>500</td> </tr> </table> <p>length: 72 mm cut out width : 45 mm can be cut into 9 mm length RAL 7035</p>	610142	4	610484	500	<p>Safety</p> <table border="1"> <tr> <td>624929</td> <td>2</td> </tr> </table> <p>MCB padlocking bracket (padlocks not supplied)</p>	624929	2	
610142	4								
610484	500								
624929	2								
	<p>Clean earth facility</p> <table border="1"> <tr> <td>619118</td> <td>1</td> </tr> </table> <p>can be fitted for increased flexibility</p>	619118	1						
619118	1								

Modular 200 Type B

A

B

C

D

E

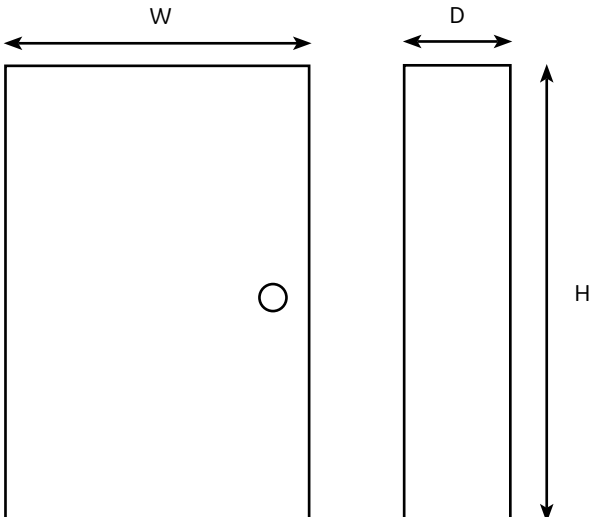
F

G


X

**Dimensional drawing
Modular 200 Type B**

Boards



Extension Incomers and Enclosures



Dimensions (mm)			
Code	H	W	D
A	534	135	500
B	588	135	500
C	642	135	500
D	750	135	500
E	912	135	500
F	1136	135	500
G	250	135	500
H	500	135	500
I	250	135	500



Applications



Application as junction box in:
- residential application
- commercial buildings
- automation and control wiring

Approvals / Marking



Standards

EN/IEC 60670-22

Features

Flex-o-Box Junior

Technical data

- Suitable for surface mounting
- 2.5mm² - 500V
- IP65 protection degree
- IK07
- Colour: RAL 7035
- Material: resists the 650°C incandescent wire test
- Halogen-free⁽¹⁾
- Operating temperature: -5°C to +60°C
- Total insulation: ☑

Eight flexible entries

- 7 x Ø 20 in the side wall
- 1 x Ø 20 in the back
- Suitable for cable max. Ø 13
- Suitable for tubes Ø 16 and Ø 20

Flex-o-Box JB⁶

Technical data

- Suitable for surface mounting
- 6mm² - 500V
- IP65 protection degree
- IK07
- Colour: RAL 7035
- Material: resists the 650°C incandescent wire test
- Halogen-free⁽¹⁾
- Operating temperature: -5°C to +60°C
- Total insulation: ☑

Nine flexible entries

- 7 x M20 in the side wall
- 2 x Ø 20mm max. entries in the back of the base
- Suitable for cable max. Ø 13
- Suitable for tubes Ø 16 and Ø 20
- Suitable for cable seals M20 (10mm min. thread length) , max. Torque 2.5 Nm. Cable diam. up-to 8mm.



(1) Halogens are not intentionally added and are not expected to be present.

A

B

C

D

E



F

G

X



Flex-o-Box

		Description	Ref. No.	Pack
	Junior	Junction box 2.5mm ²	600656	10/100
		Junction box 2.5mm ² (40 pieces in a red polybox basket)	600311	1
	JB⁶	Junction box 6mm ²	600651	10/100
		Junction box 6mm ² (24 pieces in a grey polybox basket)	600310	1

Accessories

		for Junior and JB ⁶	only for JB ⁶	
	Terminal block	600950 30	851652 50	
	6mm ² - 500V - pin-type 5-terminal blocks Possible connections per terminal: 6x1.5mm ² 2x6mm ² 4x2.5mm ² 2x10mm ² 3x4mm ² grey			
	Terminal strip	600650 20	851660 50	
	6mm ² - 500V - hole-type 5-terminal strips Possible connections per terminal: 6x1.5mm ² 3x4mm ² 4x2.5mm ² 2x6mm ² grey			
	Screws	600642 40	851674 100	
	For cover fastening Stainless steel			

Flex-o-Box

A

B

C

D

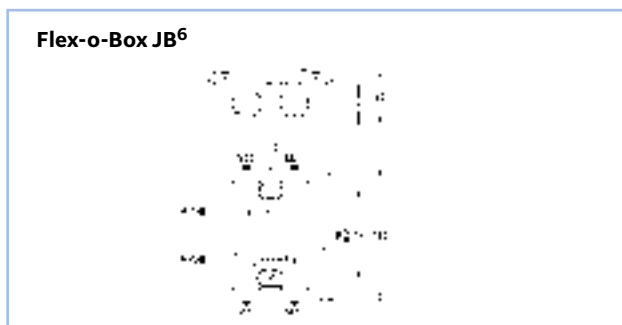
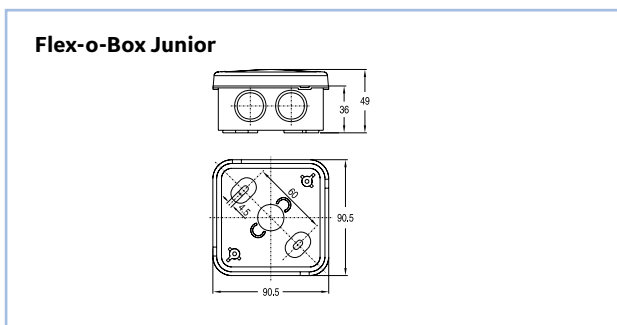
E

F

G

X

Dimensional drawings





Junction boxes

Series 55

IP66

Enclosures



Applications



Application as junction and terminal box in:

- residential application
- commercial buildings
- automation and control wiring
- On-site control box
- As an empty box
- As a junction box (10/16/25mm²)
- Coupled

Approval / Marking



Standard

EN/IEC 60670-22

Dimensions

Three sizes - three types
 55100 - 125 x 125 x 75mm
 55200 - 175 x 175 x 95mm
 55300 - 225 x 175 x 95mm

Features

- Material: Cover in ABS, base in high impact polystyrene
- Total insulation: □

Benefits



The cable entries are selective knockouts placed as close as possible to the wall.



Oval openings in the base allow levelling. Four fixing holes outside the gasket and two fixing holes inside the box.



The raised bottom avoids obstruction while cabling and bending of the cables.



Raised supports for the placement of the mounting plate.



The screws are thermoplastic, captive, full turn, with a big pitch and placed outside the gasket area.

All the boxes are sealable.



A

B

C

D

E

F

G

X



Series 55100 - 10 mm²

IP66 - IK07



Cover	Entries	Characteristics	Ref. No.	Pack.
grey	5 x PG 16/21	Empty. Can be equipped with terminal blocks 600516	600514	16
grey	5 x PG 16/21	Equipped with terminal blocks 600516: 5 clamps with maximum capacity: 5 x 4 mm ² / 4 x 6 mm ² / 3 x 10 mm ²	600515	16

Series 55200 - 16 mm²

IP66 - IK07



Cover	Entries	Characteristics	Ref. No.	Pack.
grey	6 x PG 16/21 5 x PG 21/29	Empty. Can be equipped with terminal blocks 600525 600526 (x5) 600544 (x5) 600545 (x5) 600516	600517	9
grey	6 x PG 16/21 5 x PG 21/29	Equipped with terminal blocks 600525: 5 clamps with maximum capacity: 5 x 6 mm ² / 4 x 10 mm ² / 3 x 16 mm ²	600524	9

Series 55300 - 25 mm²

IP66 - IK07



Cover	Entries	Characteristics	Ref. No.	Pack.
grey	8 x PG 21 6 x PG 21/29	Empty. Can be equipped with terminal blocks 600544 (x5) 600545 (x5) 600525 600526 (x5)	600532	1
grey	8 x PG 21 6 x PG 21/29	Equipped with terminal blocks 600544 (x5): 5 clamps/nuts with maximum capacity: 4 x 16 mm ² / 3 x 25 mm ² / 2 x 35 mm ²	600543	9

Series 55

A

B

C

D

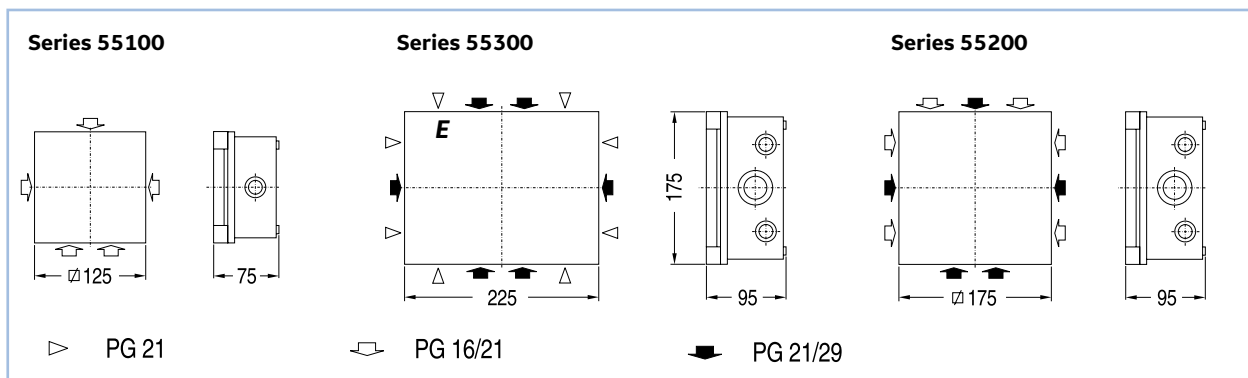
E

F

G

X

Dimensional drawings





Accessories Series 55

Enclosures

A

B

C

D

E

F

G

X



Terminal blocks 500V 10mm²

600516 6

Set terminal blocks with two fixation screws. With five clamps suitable for Al or Cu connection.

Maximum cable section per clamp: 5x4mm² / 5x4mm² / 5x4mm².

Can be fitted in types 55100 and 55200.

Couplings

600509 1

Set of two pieces

PG21

It is possible to combine types

55200 and 55300



Terminal blocks 500V 16mm²

600525 6

With five clamps, suitable for Al or Cu connection.

Maximum cable section per clamp: 5x6mm² / 4x10mm² / 3x16mm².

Can be fitted in types 55200 and 55300.

Compression glands

600504 25

PG21 with nut in glass fibre reinforced polyamide. Grey.

600505 25

PG29 with nut in glass fibre reinforced polyamide. Grey.



Terminal blocks 500V 16mm²

600526 24

With one clamp/nut (with nut), suitable for Al or Cu connection.

Maximum cable section per clamp: 5x6mm² / 4x10mm² / 3x16mm².

Can be fitted in types 55200 and 55300.

Compression glands

600501 25

PG21 polyamide with nut in glass fibre reinforced polyamide. Brown.

600502 25

PG29 polyamide with nut in glass fibre reinforced polyamide. Brown.



Terminal blocks 500V 25mm²

600544 24

With one clamp/nut (with nut), suitable for Al or Cu connection.

Maximum cable section per clamp: 4x16mm² / 3x25mm² / 2x35mm².

Can be fitted in types 55200 and 55300.

Locknuts

600506 100

Nut in glass fibre reinforced polyamide to connect compression glands PG21. Grey.

600507 50

Nut in glass fibre reinforced polyamide to connect compression glands PG29. Grey.



Terminal blocks 500V 25mm²

600545 24

With one clamp/nut (double nut), suitable for Al or Cu connection.

Maximum cable section per clamp: 4x16mm² / 3x25mm² / 2x35mm².

Can be fitted in types 55200 and 55300.

Universal entries (grey)

610130 25

Cable max. 18mm, drill 23mm, PG16

610132 25

Cable max. 24mm, drill 29mm, PG21

610133 25

Cable max. 32mm, drill 38mm, PG29.



Insulated cap

890838 48

Suitable for terminal blocks



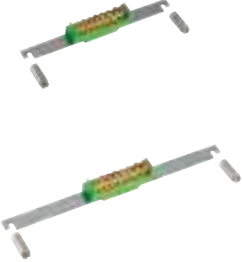
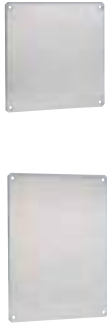
600526

600544

600545



Accessories Series 55 (continued)

	<p>DIN-rails Set DIN-rail with two fixation screws</p> <p>600521 1</p> <p>Length = 144mm, for type 55200 and short side of type 55300</p>	<p>Coverplate Set of 1 coverplate (no need for fixation screws)</p> <p>600519 1</p> <p>8 modules for type 55200</p>	
	<p>600537 1</p> <p>Length = 192mm, for type 55300</p>	<p>600535 1</p> <p>8 modules for type 55300, short side</p>	
	<p>600522 1</p> <p>for type 55200 and short side of type 55300</p>	<p>Mountingplate Set of 1 mountingplate (with four fixation screws)</p> <p>600520 1</p> <p>Al-plate for type 55200</p>	
	<p>600538 1</p> <p>For type 55300</p>	<p>600536 1</p> <p>Al-plate for type 55300</p>	
<p>Support for earth-rail Set earth-rail 610186 - 6 x 10mm² and 2 x 16mm² support, spaces and two fixation screws</p>			

Series 55

A

B

C

D


E

F

G

X

Type 55200 combinations

	HxWxD (mm)	IP	Ref. No.	Pack
	8 modules below hinged cover for installing modular devices (DIN-rail mounted)	IP55	600531	1



Fix-o-Rail covers

IP30

Enclosures



Applications



- As an empty box
- As a junction box (10/16/25mm²)
- Coupled

Features

- Protection degree: IP30, IK07
- Made from high resistance ABS
- Flame resistance: self extinguishing material, resist the 650°C
- Colour: grey RAL7035 and white RAL9003
- Installation temperature: -15°C up to +60°C

Marking



Standard

EN/IEC 60670-24



A

B

C

D

E

F

G

X



Fix-o-Rail covers - Without door



HxWxD (mm)	Color	No. of modules	No. of rows	Ref. No.	Pack
139x51x61	Grey RAL 7035	2	1	610090	50
139x88x61	Grey RAL 7035	4	1	610091	60
140x165x72	Grey RAL 7035	6	1	610354	28
198x200x72	Grey RAL 7035	8	1	610355	18
139x51x61	White RAL 9003	2	1	600579	50
139x88x61	White RAL 9003	4	1	600580	60
140x165x72	White RAL 9003	6	1	600581	28
198x200x72	White RAL 9003	8	1	600582	18

Dimensional drawing

Dimensions (mm)			
Type	H	W	D
2 mod.	139	51	61
4 mod.	139	88	61
6 mod.	140	165	72
8 mod.	198	200	72

Fix-o-Rail covers

A

B

C

D

E

F

G

X



Fix-o-Rail Junior

IP40

Enclosures



Applications



For new buildings, replacing old units and adding add-on devices.

Approval / Marking



Standards

EN/IEC 61439-3
EN/IEC 60670-24

Features

- High resistance material
- Modern design
- Compact construction
- High protection degree IP40
- Total insulation
- Total security
- Transparent cover allowing visibility of devices
- For all modular equipment
- Available in 4 and 8 modules
- Colour: RAL 7035
- HIPS for the base
- Flame resistance: self extinguishing material, resist the 650°C glow-wire test
- Polycarbonate for the lid



A

B

C

D

E

F

G

X



Fix-o-Rail Junior

	HxWxD (mm)	Equipment	No. of modules	Ref. No.	Pack
	170x90x100 Max. depth of the devices: 70mm Entries: 2xPG29, 4xPG21	Earth terminal: connection 5x16mm ² Neutral terminal: connection 5x16mm ²	4	610344	1/15
	170x175x120 Max. depth of the devices: 92.5mm Entries: 2xPG21, 4xPG16	Earth termin. connect. 6x10 + 2x16mm ² Neutral termin.: connecti. 6x10 + 2x16mm ²	8	610345	1/8

Accessories

	Earth/neutral terminals For Junior 4 modules	610141 2	
	Connection range 5x16mm ²		
	Earth/neutral terminals For Junior 8 modules	610186 4	
	Earth connection range 6x10mm ² + 2x16mm ²	610187 4	
	Neutral connection range 6x10mm ² + 2x16mm ²		
	Grommets	610130 25	length: 72mm cut out width: 45mm can be cut into 9mm length RAL 7035
	PG16	610132 25	
	PG21	610133 25	
	PG29		

Fix-o-Rail Junior

A

B

C

D

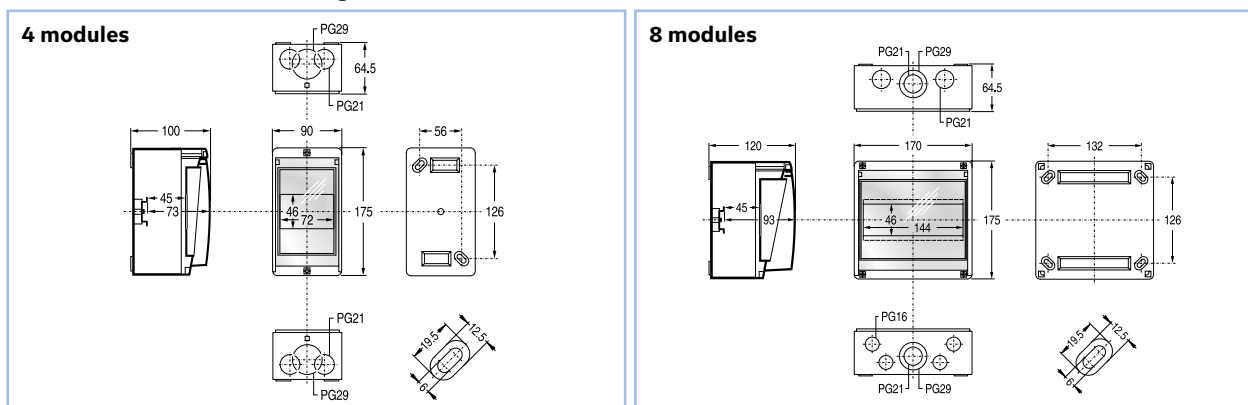
E

F

G

X

Dimensional drawings





Fix-o-Rail Classic

IP30 / IP40

Enclosures



Applications



Fix-o-Rail Classic and the accessories are a homogeneous system for power distribution in new homes, adding add-on devices and replacing old units.

Approval / Marking



Standards

EN/IEC 61439-3
NF C61-910

Features

- Protection degree: IP30 / IP40 with door (optional)
- Colour: RAL 9010
- 13, 26, 39 and 52 modules
- Total insulation (with backplate and door)
- Transparent or plain door
- Surface mounting
- Adjustable DIN-rail
- HIPS for the covers
- Polycarbonate for the transparent doors
- Flame resistance: self extinguishing material, resist the glowwire 650°C

Components

The Fix-o-Rail Classic A packaging includes:

- A mounting frame
- A protective cover
- A backplate
- A support with earth and neutral terminals
- A modular blank plate
- Four insulating caps
- Labels for circuit identification
- Installation guidelines

The Fix-o-Rail Classic B packaging includes:

- A mounting frame
- A protective cover
- Labels for circuit identification
- Installation guidelines

Advantages

- Two DIN-rail positions: 47 and 55mm
- Generous wiring room 30mm behind the mounting frame
- 13 modules on each row
- 125mm distance between two DIN-rails
- Self positioning protective cover, fixation with four captive quarter-turn screws
- Door can be opened to the left or the right and hinges over 180°
- The Classic range can be coupled

A

B

C

D

E

F

G

X



Accessories Fix-o-Rail Classic (continued)

Enclosures

A

B

C

D

E

F

G

X



Shrouding for earth and neutral support

Protects against direct contact with live parts

618531 1

Cable entry

For a perfect finish

Can be fixed on the top as well as on the bottom of the mounting frame

619084 1

Knockouts: 11xPG 13.5 + 1xPG 21/29



Metal support for connection terminals

618524 1

Blank plate 4 modules

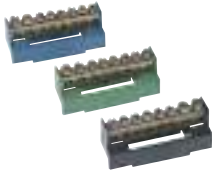
610382 4

Length: 72mm

Cut-out width: 45mm

Can be cut into 9mm length

RAL 9010



Connection terminals

610185 4

Phase terminal 6x10mm² + 2x16mm²

610186 4

Earth terminal 6x10mm² + 2x16mm²

610187 4

Neutral terminal 6x10mm² + 2x16mm²

Coupling

618528 2



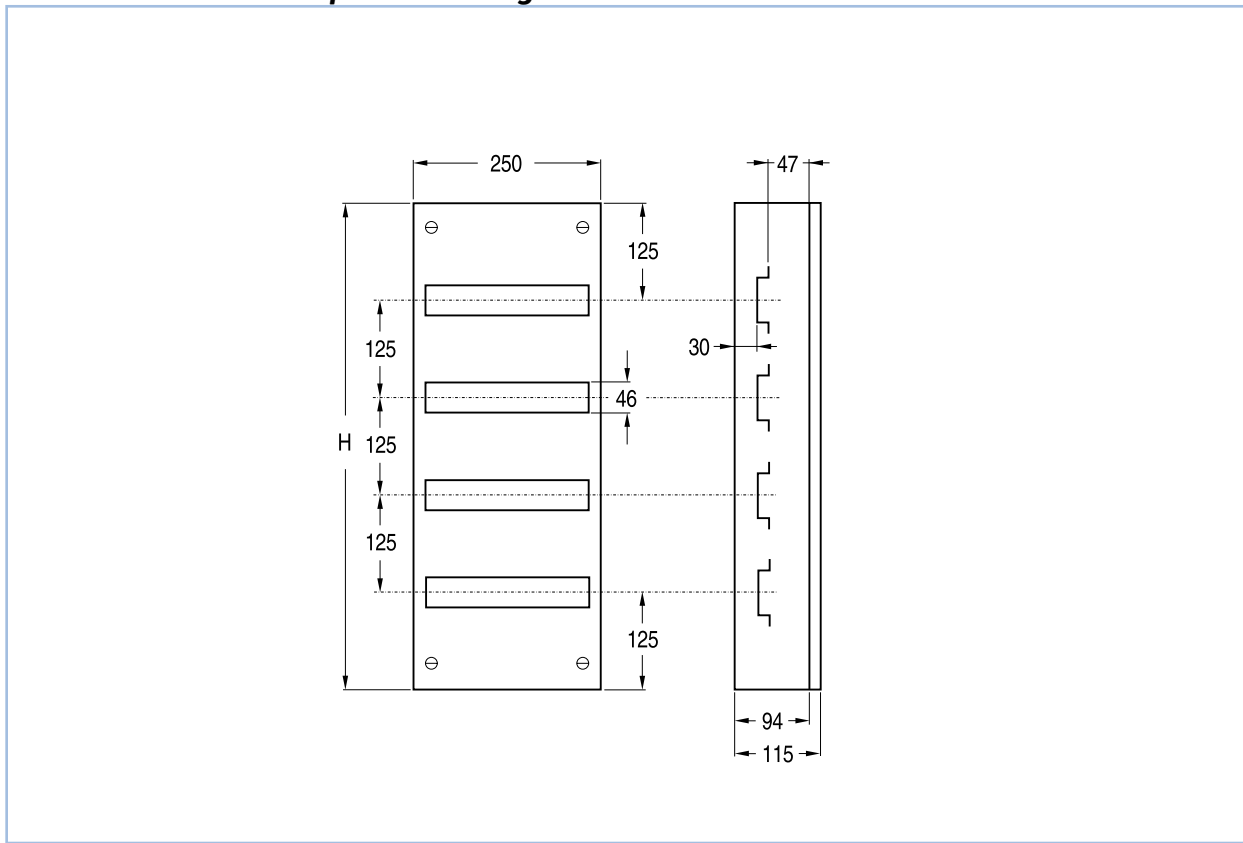
Sealing bracket

618527 2



Dimensional drawings

Fix-o-Rail Classic - Surface mounting



Dimensions

A

B

C

D

E

F

G

X



Abaco S

IP40



Enclosures

Applications



The Abaco surface enclosures are used for power distribution in house building and commercial buildings as offices, banks, etc.

Features

- Protection degree IP40.
- Total insulation: class II ☐ .
- Four dimensions in two colours.
- Colours: grey RAL 7035 and white RAL 9010.
- Range from 8 modules up to 39 modules.
- Flame resistance: self extinguishing material, resists the 650°C.
- Operating temperature: -15°C to +60°C.
- Surface mounting with flat panels; easy mounting of cable entries.
- The DIN-rails can be taken off to make the equipment externally.
- The position of the mounting frame can be adjusted.

Marking



Standards

EN/IEC 60670-24

A

B

C

D

E

F

G

X

Abaco S - Transparent door



Colour	HxWxD (mm)	Modules 17.5mm	Number of rows	Ref. No.	Pack.
Grey: RAL 7035	230x200x110	8/10	1	619375	14
White: RAL 9010	230x200x110	8/10	1	619376	14
Grey: RAL 7035	300x200x110	12/14	1	619369	10
White: RAL 9010	300x200x110	12/14	1	619372	10
Grey: RAL 7035	315x400x110	24/26	2	619370	1
White: RAL 9010	315x400x110	24/26	2	619373	1
Grey: RAL 7035	315x525x110	36/39	3	619371	1
White: RAL 9010	315x525x110	36/39	3	619374	1

Accessories

Insulated support for earth and neutral	Blank plate	Security lock
619319 120	619323 150	619350 1
for enclosure 6/10 modules connection range 2x16mm ² + 8x10mm ²	RAL7035, 5 modules	24 and 36 modules
619320 120	619338 150	
for enclosure 10/14 modules connection range 2x16mm ² + 12x10mm ²	RAL9010, 5 modules	
619321 60		
for enclosure 24/36 modules connection range 2x16mm ² + 12x10mm ²		



Dimensional drawings

Dimensions (mm)			
Type	A	B	C
1 row - 8/10 mod.	230	200	110
1 row - 12/14 mod.	300	200	110
2 rows - 24/26 mod.	315	400	110
3 rows - 36/39 mod.	315	525	110

Abaco S

A

B

C

D

E

F

G

X



Fix-o-Rail 150

IP40

Enclosures



- Total safety
- Complete
- Time saving
- Quality
- Design

Applications



Standards / Marking

EN 61439-3



Halogens are not intentionally added and are not expected to be present.

Advantages

- Removable cable entry plate – to adjust to specific site requirements – with pre-defined break-out sections for easy on-site adjustments.
- Very rigid enclosure base, re-inforced by ribs – adapts to surface conditions
- Plenty wiring space at top and bottom of 150mm each.
- Cable stress relieve bar (optional) – for cable management.
- Strong frame for DIN-rail devices – can be equipped outside the enclosure – easy to position and fix by means of studs and 4 screws.
- Wiring space behind the DIN-rail makes installers life easy.
- Can be coupled to extend existing installations. Domotica or Media functionality can be added easily therefore.
- Aesthetic door design that allows left/right hinge adaptation to accommodate site conditions. Foreseen for optional key-lock.
- Wiring diagram holder on the back-side of the cover can be integrated optionally.

Features

- Protection degree IP40-IK08 (IP30 without door).
- Total insulation: class II .
- Colour: white RAL 9010.
- 1 to 4 rows with 18 modules per row.
- Operating temperature: -15°C to +60°C.
- Flame resistance: complies with the 650°C glow-wire test
- Nominal current 80A (1 and 2 row), 100A (3 and 4 row)

Components

Packaging includes

- Earth-rail (screwless)⁽¹⁾
- Cable entry-plate
- One blanking plate
- 7 insulating caps
- Circuit identification:
 - adhesive labels
 - adhesive pictograms
- Installation guide

(1) Fix-o-Rail 150, 4-row includes 2 screwless earth-rails



A

B

C

D

E

F

G



X





Fix-o-Rail 150

Distribution board RAL9010

	# of rows	# of modules	Dimensions HxWxD (mm)	In	Ref. No.	Pack.
 <p>Transparent door</p>	1	18	270x355x150	80A	610636	1
	2	36	450x355x150	80A	610637	1
	3	54	600x355x150	100A	610638	1
	4	72	750x355x150	100A	610639	1
 <p>Plain door</p>	1	18	270x355x150	80A	610646	1
	2	36	450x355x150	80A	610647	1
	3	54	600x355x150	100A	610648	1
	4	72	750x355x150	100A	610649	1
Clamping section screwless earth-rail 6x16mm ² and 21x4mm ²						

Fix-o-Rail 150

Accessories

	Description	Ref. No.	Pack.
	Terminals		
	63A - Connection range 4 x (10 x 16mm ²), Cu section 6.5 x 9mm	610022	18
	160A - Connection range 4 x (1 x 10 to 50mm ² incoming + 3 x 6 to 35mm ² + 8 x 2.5 to 16mm ² outgoing), Cu section 12 x 10mm 20kA (10 ms) l _{cw} : 6,2kA (1 s)	617992	1/5
	160A - Connection range 4 x (10 x 10mm ²), Cu section 12 x 5mm	610020	16
	Replacement door transparent		
	For 1-row distribution board	610277	1
	For 2-row distribution board	610287	1
	For 3-row distribution board	610297	1
	Replacement door plain (RAL9010)		
	For 1-row distribution board	610654	1
	For 2-row distribution board	610655	1
	For 3-row distribution board	610656	1
	For 4-row distribution board	610657	1

Fix-o-Rail 150

A

B

C

D

E

F

G

X

New



Fix-o-Rail 150

Accessories (continued)

Enclosures

A

B

C

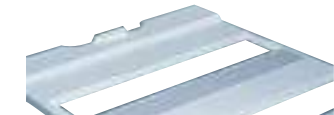
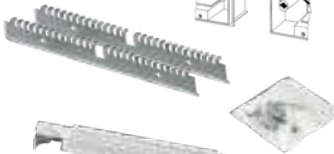
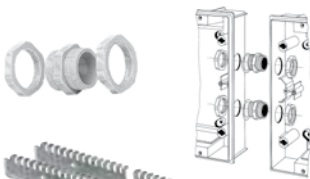
D

E

F

G

X

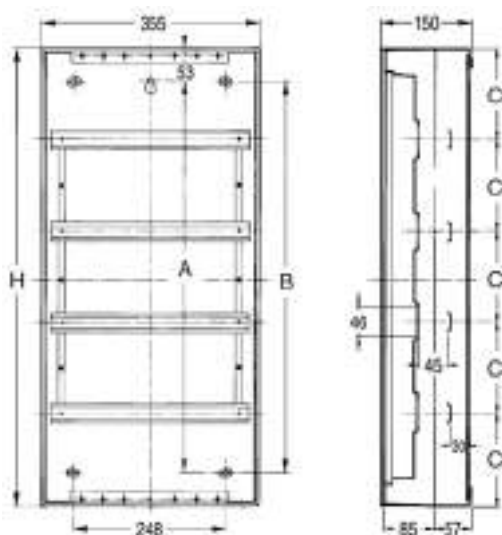


Description	Ref. No.	Pack.
Protective shroud For 160A terminal (ref. 610020)	610021	1
Support with screwless earth-bar Connection: 6x16mm ² and 21x4mm ² (Included with all distribution boards)	610396	1
Support with earth or neutral terminals Cable section: 14 x 16mm ²	610386	4
Cable section: 18 x 16mm ²	610385	4
Support with terminal bars Cable section: 2 (17 x 16mm ²)	610532	4
Support with terminal bars L1-L2-L3-N Cable section: 4 (5 x 16mm ²)	610387	4
Coupling set (2 pcs) Allows to couple two Fix-o-Rail 150 enclosures horizontally 1 set is needed to couple two enclosures.	600509	1
Cable relief (2 pcs) with 4 fixation screws Set: 4 quarter-turn screws for cover-plate, 7 isolation caps, 4 screws for cable entry-plate, 4 screws for screwless earth-rail	610630	1
Cable-entry plate (2 pcs) with 4 fixation screws	610645	1
Lock Security lock with 2 keys	610170	1
Blanking plate Length: 72mm, cut-out height: 45mm, breaking sections per 9mm	610382	4
Labels and labelholders Set of 50 pieces	610270	1
Adhesive pictograms For clear and permanent identification of circuits. Set of 50 pieces	610380	1
Drawing pocket To be positioned at the bottom or top backside of the cover-plate	610265	1



Dimensional drawing

Fix-o-Rail 150



Dimensions (mm)				
Type	H	A	B	C
1 row - 18 mod.	270	163	162	135
2 rows - 36 mod.	450	343	342	150
3 rows - 54 mod.	600	493	492	150
4 rows - 72 mod.	750	643	642	150

Fix-o-Rail 150

A

B

C

D

E

F

G

X





Fix-o-Rail 55

IP55

Enclosures



Applications



The Abaco surface enclosures are used for power distribution in house building and commercial buildings as offices, banks, etc.

Marking



Standards

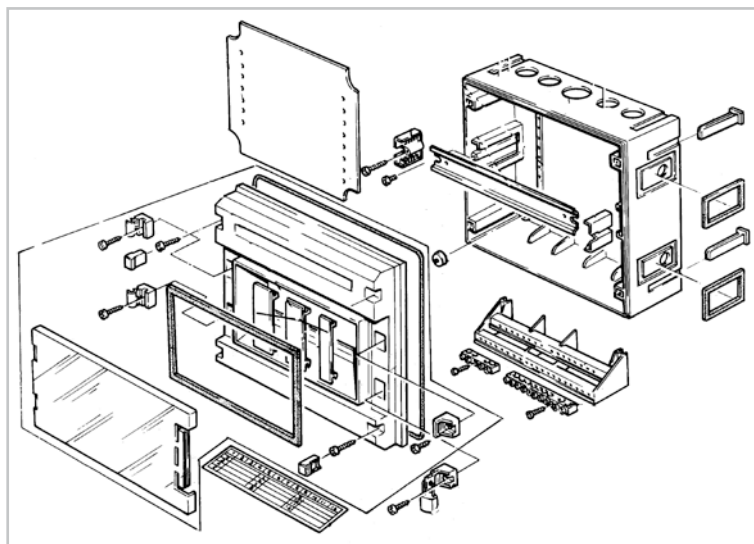
EN/IEC 60670-24

Features

- Total insulation \square
- Protection degree IP55-IK07
- Can be coupled
- Transparent door
- Adjustable DIN-rails, according the height of the DIN-equipment
- For equipment up to 92.5mm
- Padlocking option
- The transparent door can be opened to the left or the right (12, 24, 36 module versions)
- Base:
 - ABS for the 3 up to 8 modules
 - Polystyrene for the 12 up to 36 modules
- Flame resistance: self extinguishing material, resist the 650°C
- Polycarbonate for the transparent door
- Halogene free (Halogens are not intentionally added and are not expected to be present).

Components

- Rigid base and protection cover, colour RAL 7035
- Transparent door
- DIN-rails, the centre distance between two DIN-rail is 125mm
- Labeling facilities
- With earth bar for the 12, 24 and 36 modules



A

B

C

D

E







F

G

X



Fix-o-Rail 55

	HxWxD (mm)	Equipment	Number of modules	Number of rows	Ref. No.	Pack.
	175x83x106	Without earth bar	3	1	600573	12
	175x125x114	Without earth bar	5	1	600574	20
	175x215x114	Without earth bar	8	1	600575	12
	250x285x136	Earth bar, connection range: 2x16mm ² and 6x10mm ²	12	1	610316	1
	375x285x136	Earth bar, connection range: 2x16mm ² and 8x16mm ²	24	2	610317	1
	500x285x136	Earth bar, connection range: 2x16mm ² and 12x16mm ²	36	3	610318	1

Fix-o-Rail 55

A

B

C

D





E

F

G

X

Accessories

	<p>Terminal</p> <p>Additional busbar for earth and neutral connections</p>	<p>Locking device</p> <p>Allows the enclosure to be fitted with a padlocking device</p>	
	<p>610314 1</p> <p>Cable section: 2x16mm² and 6x6mm²</p>	<p>610313 1</p>	
	<p>Coupling set</p> <p>To couple two enclosures in a simple way</p>		
	<p>610315 1</p>		



Aquaria

IP65

Enclosures



Applications



Aquaria is the best choice for power distribution purposes in premises with a need for high protection degree eg. power plants, technical areas small laboratories, etc..

Approval / Marking



Standards

EN/IEC 60670-1
EN/IEC 60670-24
CEI 23-48, CEI 23-49

Features

- Total insulation
- Protection degree IP65 - IK08
- Colour: RAL 7035
- Transparent lid or hinged door (3 rows)
- For DIN-rail equipment up to 92.5mm
- DIN-rails adjustable up to 3 different levels
- Operating temperature: -5°C to +60°C
- Flame resistance: resist the 650°C
- Non UV stable
- Enclosures can not be coupled

Power dissipation

Enclosure	# mod.	Ref. No.	Maximal power dissipation (W)
1 row	5	597956	8
1 row	8	597957	11
1 row	12	597958	17
1 row	12	597959	20
2 rows	24	597960	30
3 rows	48	597961	45

A

B

C

D

E

F

G

X



Aquaria - Waterproof enclosures surface mounting IP65

	Colour	Dimensions mm (HxLxW)	Modules 17.5mm	# rows	Art. No.	ENCLOSURE		EARTH BAR	
						Ref. No.	Pack	Ref. No.	Pack
	Grey RAL 7035	120x160x90	3/5	1	AQA005PG	597956	1/40/840	597962	1/20/120
	Grey RAL 7035	200x160x90	4/8	1	AQA008PG	597957	1/26/546	597963	1/20/120
	Grey RAL 7035	225x200x110	6/12	1	AQA012PG	597958	1/14/294	619320	1/20/120
	Grey RAL 7035	250x250x145	6/12	1	AQA912PG	597959	1/1/152	619320	1/20/120
	Grey RAL 7035	375x250x145	24	2	AQA024PG	597960	1/1/108	619320	1/20/120
	Grey RAL 7035	550x350x145	48	3	AQA048PG	597961	1/1/44	619321	1/10/60

Aquaria

A

B

C

D

E

F

G

X

Accessories - Earth bars⁽¹⁾

Connection	# earth bars	Ref. No.	Pack
2 x 16mm ² + 5 x 10mm ²	1	597962	1/20/120
2 x 16mm ² + 8 x 10mm ²	2	597963	1/20/120
2 x 16mm ² + 12 x 10mm ²	2	619320	1/20/120
2 x 16mm ² + 12 x 10mm ²	4	619321	1/10/60

(1) To be ordered separately



Abaco F

IP40

Enclosures



Applications



Abaco F enclosures find their place in the power distribution into the house building industry: new homes, apartments, offices, hotels. Due to the design of the masking frame and the door, the Abaco flush mounting enclosure offers significant aesthetic appeal, particularly in applications where appearance is important.

Features

- Flush mounting
- Total insulation
- Protection degree IP40
- Six dimensions in three colours
- Colours: grey RAL 7035, white RAL 9010 and metallised black
- Range from 2 modules up to 39 modules
- Transparent door made from polycarbonate
- High impact resistance material
- Removable mounting frame
- 20mm clearance behind the mounting frame

Marking



Standards

EN/IEC 60670-24

A

B

C

D

E

F

G

X



Abaco F - Enclosure base with transparent door

	Colour	HxWxD (mm)	Modules 17.5mm	Number of rows	Ref. No.	Pack.
	Grey	120x200x73	2/4	1	619300	12
	Metallised black	120x200x73	2/4	1	619362	12
	Grey	180x200x73	4/7	1	619301	24
	White	180x200x73	4/7	1	619325	24
	Metallised black	180x200x73	4/7	1	619331	24
	Grey	230x200x73	6/10	1	619302	14
	White	230x200x73	6/10	1	619326	14
	Metallised black	230x200x73	6/10	1	619332	14
	Grey	300x200x73	10/14	1	619303	12
	White	300x200x73	10/14	1	619327	12
	Metallised black	300x200x73	10/14	1	619333	12
	Grey	315x400x80	24/26	2	619304	1
	White	315x400x80	24/26	2	619328	1
	Metallised black	315x400x80	24/26	2	619334	1
	Grey	315x525x80	36/39	3	619305	1
	White	315x525x80	36/39	3	619329	1
	Metallised black	315x525x80	36/39	3	619335	1

Accessories

	Coupling					
	619322	10/100/600				
		2/4 and 10/14 modules				
	Blank plate					
	619323	150/450				
		Grey, RAL7035, 5 modules				
	619338	150/450				
		White, RAL9010, 5 modules				
	619339	1/450				
		Metallised black, 5 modules				
	Security lock					
	619350	1				
		24 and 36 modules				
	Transparent lid					
	619340	1				
		2/4 modules				
	619341	1				
		4/7 modules				
	619342	1				
		6/10 modules				
	619343	1				
		10/14 modules				
	619344	1				
		24/26 modules				
	619345	1				
		36/39 modules				
	Insulated support for earth or neutral					
619337	1/30/180					
	for enclosure 4/7 modules connection range 7x10mm ²					
619319	1/20/120					
	for enclosure 6/10 modules connection range 2x16mm ² + 8x10mm ²					
619320	1/20/210					
	for enclosure 10/14 modules connection range 2x16mm ² + 12x10mm ²					
619321	1/10/60					
	for enclosure 24/36 modules connection range 2x16mm ² + 12x10mm ²					

Abaco F

A

B

C

D

E

F

G

X



Insulated enclosures - Flush mounting

Enclosures



Fix-o-Rail 150-F4

IP40

-  Total safety
-  Complete
-  Time saving
-  Quality
-  Design

Applications



The Fix-o-Rail 150-F4 is an electrical distribution board for the following applications:

- homes: new buildings, renovations and add-on devices
- commercial buildings: offices, shops, etc.

Due to the discreet design and colour of the masking frame and door, the Fix-o-Rail 150-F4 flush mounting enclosure offers significant aesthetic appeal, particularly in applications where appearance is important.

Approval / Marking



Standards

EN/IEC 61439-3
EN/IEC 60670-24

Features



- Protection degree: IP40-IP07
- Total insulation
- CEBEC- approval
- 1-2-3-4 rows / 14 modules per row
- For all flush mounting installations
- One enclosure for installation in brickwork and studed walls
- Transparent or plain door
- Universal for all modular equipment with a shoulder height of 47mm and a max. depth of 70mm
- Wiring space:
 - 20mm behind the mounting frame
 - 150mm between the DIN-rails
 - above and below the base
- Removable mounting frame / Removable entries
- Easy to install
- Base, cable entries and protective cover are made in high resistant material
- HIPS for the base and cover
- Flame resistance: self extinguishing material, resist the 850°C glow-wire test
- The door and the masking frame are in sheet steel, coated with a white epoxy powder (colour RAL 9010)
- In accordance with EN/IEC 61439-3 and EN/IEC 60670-24
- Sturdy enclosure and mounting frame
- Due to the discreet design of the masking frame and door, the Fix-o-Rail 150-F4 offers significant aesthetic appeal
- Colour RAL 9010
- Optional security lock

Components

Fix-o-Rail 150-F4 enclosure includes:

- earth bar
- label holders
- neutral bar
- installation guidelines
- adhesive pictograms
- a blank plate
- labels for circuit identification
- protective plate on the base (against dust and plaster)

Fix-o-Rail 150-F4 - Base and door included

	HxWxD (mm)	Equipment	No. of modules	No. of rows	Ref. No.	Pack.	
 <p>Transparent door</p>	350x375x108	Earth bar: connection 14x16mm ² Neutral bar: connection 14x16mm ²	In 50A	14	1	610368	1
	525x375x108	Earth bar: connection 14x16mm ² Neutral bar: connection 14x16mm ²	In 63A	28	2	610369	1
	675x375x108	Earth bar: connection 18x16mm ² Neutral bar: connection 18x16mm ²	In 80A	42	3	610370	1
	825x375x108	Earth bar: connection 18x16mm ² Neutral bar: connection 18x16mm ²	In 100A	56	4	610371	1
 <p>Plain door</p>	350x375x108	Earth bar: connection 14x16mm ² Neutral bar: connection 14x16mm ²	In 50A	14	1	610372	1
	525x375x108	Earth bar: connection 14x16mm ² Neutral bar: connection 14x16mm ²	In 63A	28	2	610373	1
	675x375x108	Earth bar: connection 18x16mm ² Neutral bar: connection 18x16mm ²	In 80A	42	3	610374	1
	825x375x108	Earth bar: connection 18x16mm ² Neutral bar: connection 18x16mm ²	In 100A	56	4	610375	1

Accessories

	Half-inset frame (RAL 9010)					
		610376	1			
	For 1 row enclosure					
		610377	1			
	For 2 rows enclosure					
		610378	1			
For 3 rows enclosure						
		610379	1			
For 4 rows enclosure						
	Blank plate					
		610382	500			
	Length = 72mm					
	Cut-out width = 45mm					
	Section of 9mm					
Colour RAL 9010						
	Labels and label holders					
		610383	1			
	Set of 50 pieces					
	Adhesive pictograms					
		610380	1			
	For clear and permanent identification of circuits					
	Set of 50 pieces					
	Grips					
	For building into studded walls					
		610381	1			
	Security lock					
		610384	1			
	With two keys					
	Support with earth or neutral terminals					
		610385	4			
	Cable section: 18x16mm ²					
	Delivered with 3 and 4 rows enclosures					
		610386	4			
Cable section: 14x16mm ²						
Delivered with 1 and 2 rows enclosures						
	Support with terminals L1, L2, L3, N					
		610387	4			
	Cable section: 4 (5x16mm ²)					
	Support with terminals					
		610532	4			
	Cable section: 2 (17x16mm ²)					



Dimensional drawings

Fix-o-Rail 150-F4 - Flush mounting

Enclosures

A

B

C

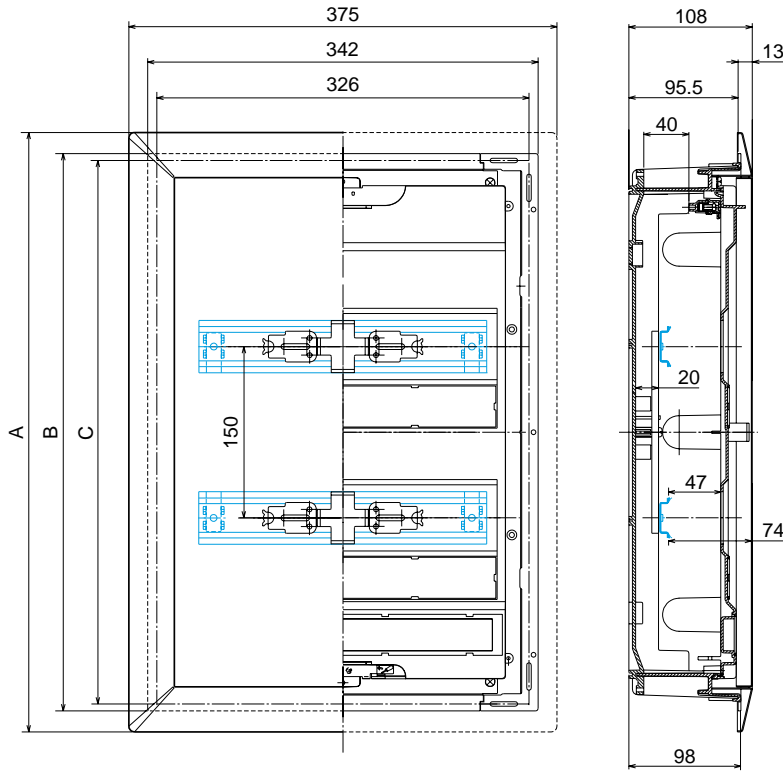
D

E

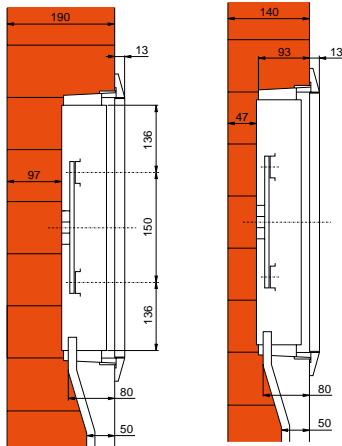
F

G

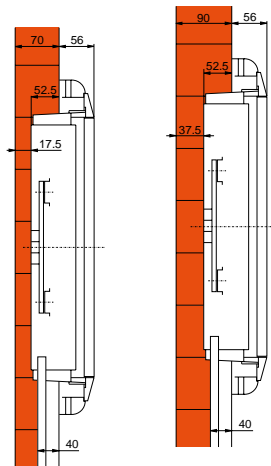
X



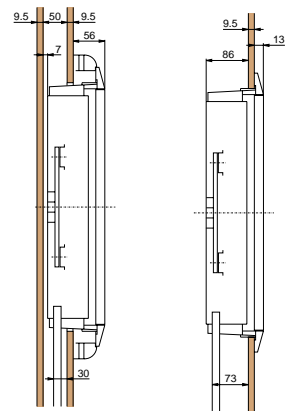
Dimensions (mm)			
Type	A	B	C
1 row - 14 mod.	350	313	301
2 rows - 28 mod.	525	488	476
3 rows - 42 mod.	675	638	626
4 rows - 56 mod.	825	788	776



Flush mounting into brickwork



Flush mounting and semi flush mounting into brickwork

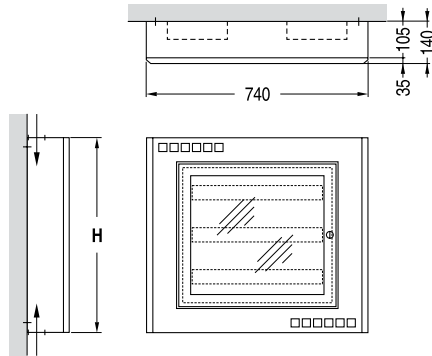


Semi flush mounting into studed walls

Dimensional drawings

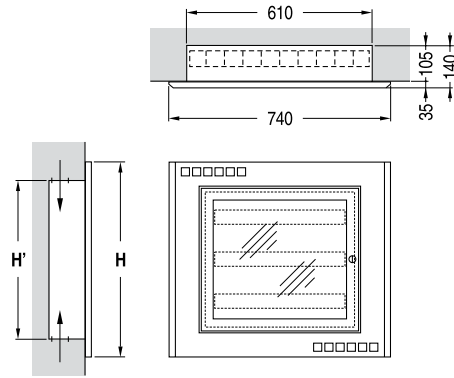
Fix-o-Rail 144

Fix-o-Rail 144 S
Surface mounting

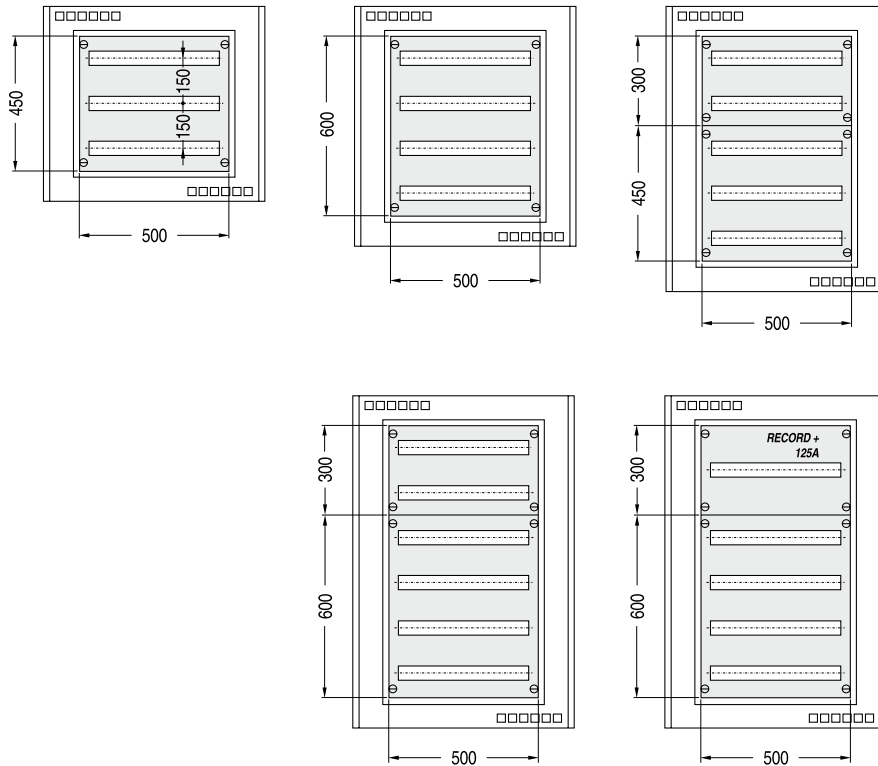


Dimensions (mm)	
	H
3 rows - 72 mod.	650
4 rows - 96 mod.	800
5 rows - 120 mod.	950
6 rows - 144 mod.	1100
4 rows+Record - 120 mod.	1100

Fix-o-Rail 144 F
Flush mounting



Dimensions (mm)		
	H	H'
3 rows - 72 mod.	650	560
4 rows - 96 mod.	800	710
5 rows - 120 mod.	950	860
6 rows - 144 mod.	1100	1010
4 rows+Record - 120 mod.	1100	1010



Dimensions

A

B

C

D

E

F

G

X

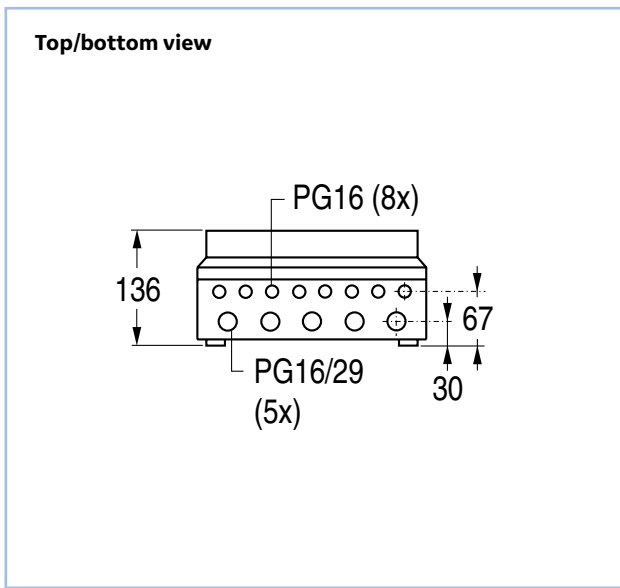
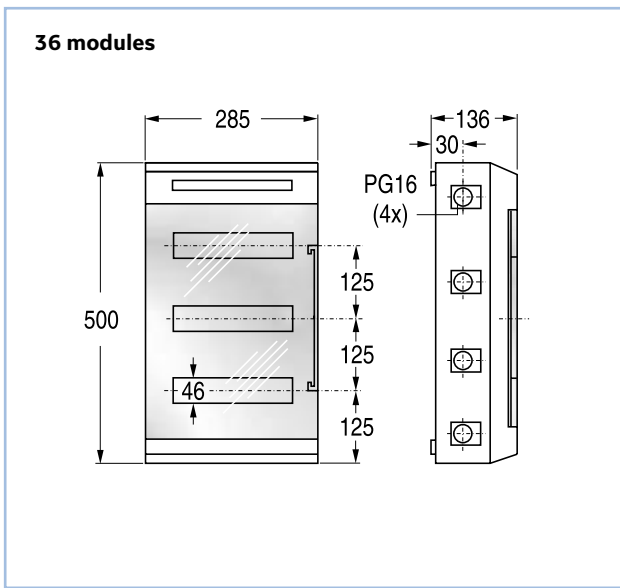
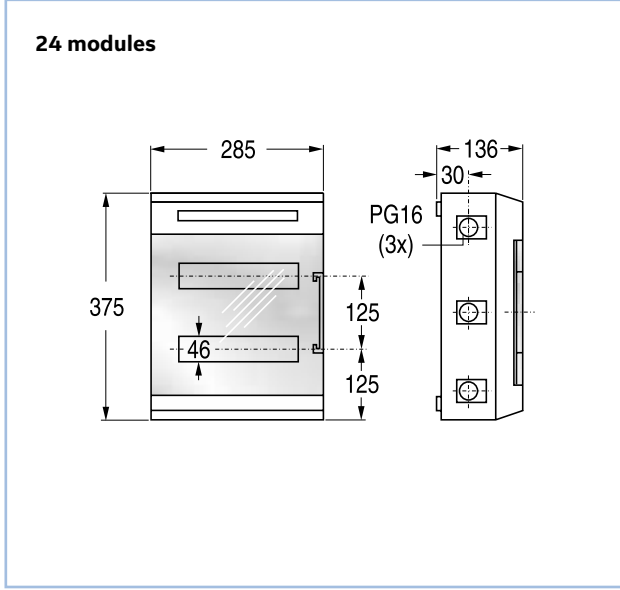
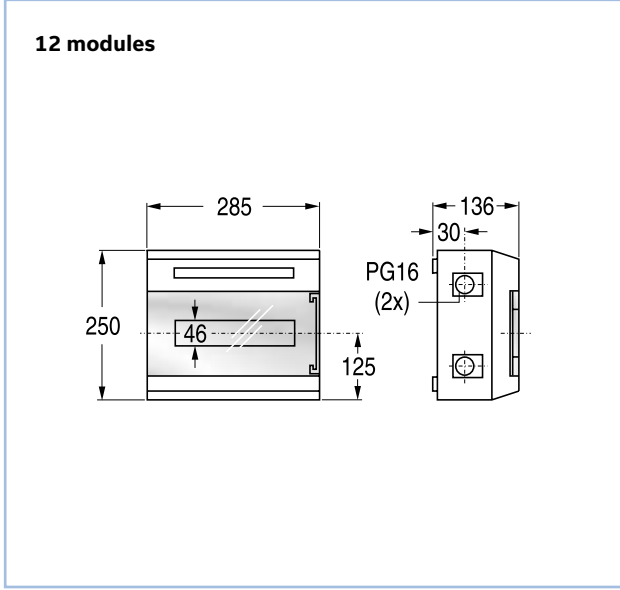
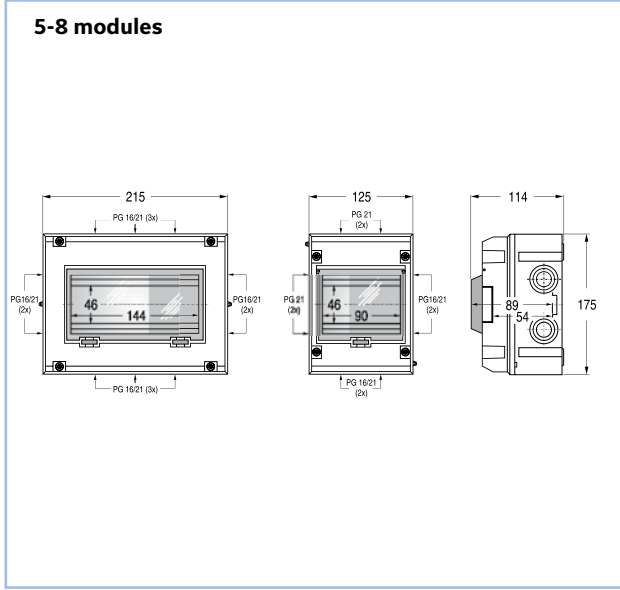
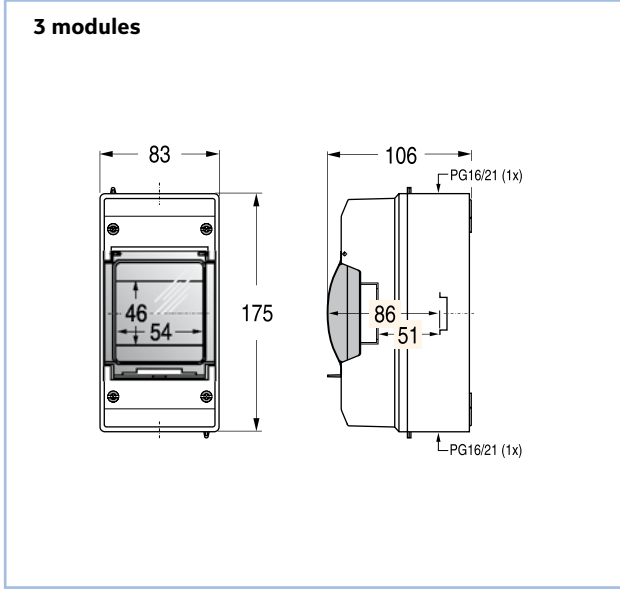


Dimensional drawings

Fix-o-Rail 55 - Surface mounting

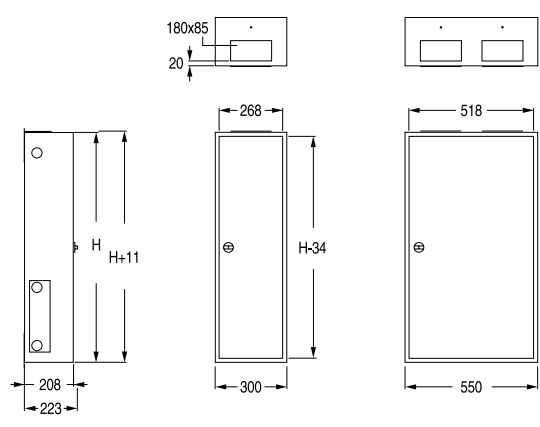
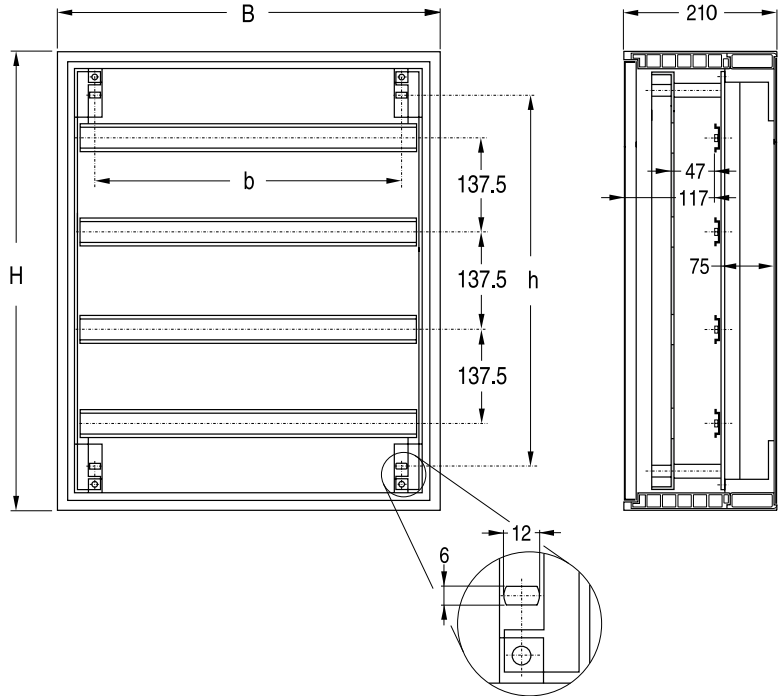
Enclosures

A
B
C
D
E
F
G
X



Dimensional drawings

Fix-o-Rail Senior - Surface mounting



Dimensions (mm)				
Type	B	b	H	Ha
4 rows - 48 mod.	300	191	650	401
5 rows - 60 mod.	300	191	800	551
4 rows - 96 mod.	550	441	650	401
5 rows - 120 mod.	550	441	800	551
6 rows - 144 mod.	550	441	950	701
7 rows - 168 mod.	550	441	1100	851
7 rows - 252 mod.	550	441	1250	1001
8 rows - 192 mod.	800	691	1100	851
8 rows - 288 mod.	800	691	1250	1001

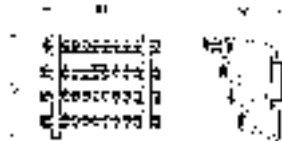
Dimensions
 A
 B
 C
 D
 E
F
 G
 X

Accessories distribution boards

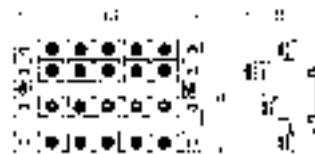
Gland plate



4P terminal 63A



4P terminal 160A





Dimensional drawings

Abaco F - Flush mounting

Enclosures

A

B

C

D

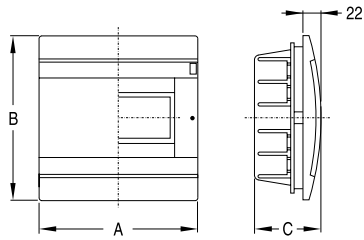
E

F

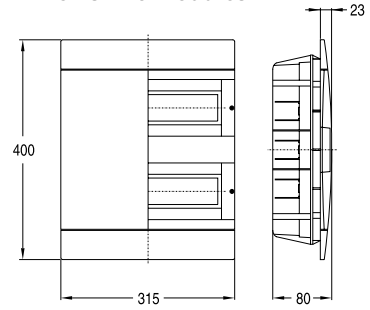
G

X

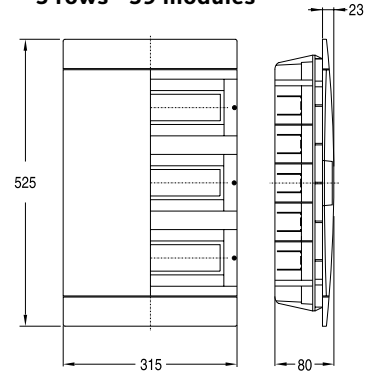
1 row - 14 modules



2 rows - 26 modules



3 rows - 39 modules



Dimensions (mm)			
Type	A	B	C
4 mod.	120	200	73
7 mod.	180	200	73
10 mod.	230	200	73
14 mod.	300	200	73



	Overview
G.3	Controls and Power Electronics
G.4	Industrial Breakers
G.5	Low voltage applications

Circuit Protection	A
People Protection	B
Add-on Devices	C
Comfort Functions	D
Busbars	E
Enclosures	F
Product overview	G
Numerical index	X



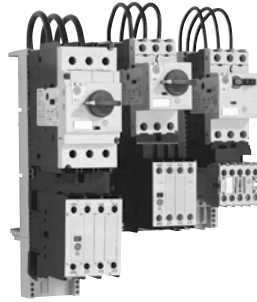


Push-buttons

Industrial push-buttons and switches

Series P9 - Ø 22.5 mm

Series 077 - Ø 30 mm



**Motor protection devices
Surion**

Thermal and magnetic protection.
Standard and high breaking capacity.
Rocker and rotary handle operator.



Variable Speed Drives

AF-7 & AF-6 series

Variable speed drives for three phase induction motors from 0.18 up to 1400kW



**Contactors &
Manual Motor Starters**

Four ranges, 3 and 4 poles

Efficor* - from 9 to 105A in AC3

Series M - from 6 to 9A in AC3

Series CL - from 9 to 105A in AC3

Series CK - from 150 to 780A in AC3



Electronic relays

Multivoltage timers
Detector relays (tension, intensity, liquid level, etc.) and control and protection relays



Softstarters

ASTAT XB-XBm-XL

Compact softstarters
XB and **XBm** in the power range from 18 to 200A, 7.5 to 110kW at 400Vac, 10 to 180HP at 460Vac, with a wide voltage range of 200 to 575Vac
XL in the power range from 23 to 1600A, 11 to 850kW at 400Vac, 15 to 1340HP at 460Vac, with a wide voltage range of 200 to 690Vac



Plug-in relays - Series PRC

Miniature, 8-11 pins and interface

Overload relays

To fit on the four contactor ranges:
Series MT - from 0.11 to 14A setting
Series RT - from 0.16 to 110A setting
Series RT - from 55 to 850A setting
Series RE - (Electronic): 0.1 to 150A

A

B

C

D

E

F



X



A

B

C

D

E

F

G

X



GuardEon*

Moulded case circuit breakers

Selective and current limiting
Available in two sizes, GuardEon was designed with customers to meet a variety of applications from basic to advanced.

Frame E up to 250A
Frame F up to 630A

GuardEon circuit breakers meet the requirements of IEC, CCC, and CE allowing for a standardized global design.



EntelliGuard*

Power circuit breakers

Uncompromising, fast and selective

Frame T (compact)
400A to 1600A - 50kA and 65kA
Frame 1
400A to 2000A - 50kA and 65kA
Frame 2
400A to 4000A - 50, 65, 80 and 100kA
Frame 3
3200A to 6400A - 100kA and 150kA

Fixed pattern and withdrawable type.
In accordance with EN/IEC 60947-2



Dilos

Loadbreak disconnectors

From 16A up to 4000A

Fulos

Fused loadbreak disconnectors

From 32A up to 1000/1250A



Trip Unit Toolkit

A broad and expanding set of tools designed to monitor, set, and customize the data present in the GE range of EntelliGuard, PremEon* and MET trip units.



Gerapid

High speed DC breaker

From 2600A up to 10 000A

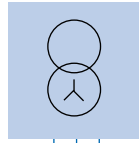
A wide range of models with rated voltages up to 3900V



Distribution boards

SEN Plus

Rated voltage: up to 690Vac / 600Vdc
 Rated current: up to 7600A



Power circuit breakers

EntelliGuard*

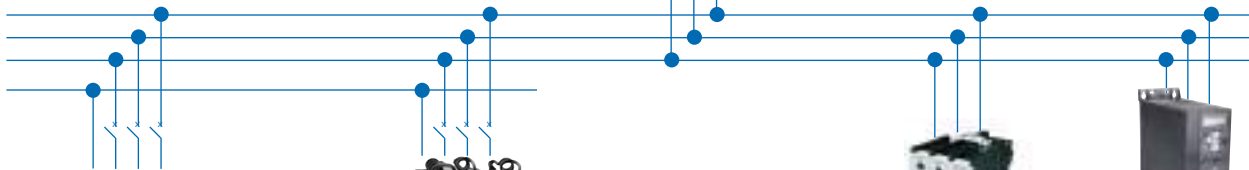
Rating: from 400A to 6400A



Moulded case circuit breakers

Record Plus*/GuardEon*

Selective and current limiting
 Rating: from 8A to 1600A

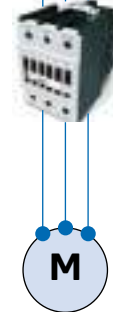


MCCBs

acc. EN/IEC 60947-2/UL489

Special contactors

for capacitor protection



A full range of **contactors** and auxiliaries, according to EN/IEC 60947-4

A full range of **starters**:
 Direct-on-line, Star-Delta, Reversing
ASTAT Softstarters
AF-7/AF-6 Variable speed drives for commercial and industrial applications



A wide range of **push-buttons**, round and square, in metal and in engineering thermoplastic, illuminated, with or without key,...

A full range of **modular DIN-rail devices**
 MCBs acc. EN/IEC 60898-1 and EN/IEC 60947-2
 Add-on RCDs acc. EN/IEC 61009-1
 RCCBs acc. EN/IEC 61008-1
 RCBOs acc. EN/IEC 61009-1
 Switches, timers, contactors, surge arresters, measurement devices.

Disconnecter loadbreak switches and changeover switches from 16A to 4000A.

Fused disconnector load-break switches from 32A to 1250A.

According to EN/IEC 60947-3 and UL 508 (listed).

A full range of **enclosures** to house your equipment: plastic or metallic, for indoor and outdoor use. For industrial as well as residential and commercial applications. According to EN/IEC 60529

A

B

C

D

E

F



X

PROTECT



X.2 Numerical index by reference number
X.18 Numerical index by catalogue number
X.32 Product Selector

Circuit Protection	A
People Protection	B
Add-on Devices	C
Comfort Functions	D
Busbars	E
Enclosures	F
Product overview	G
Numerical index	X





Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page
290000			546273		E.7	565387	DMA63NB10/030	B.19	600526		F.16
290237	EP103ULH2B13	A.65	546274		E.7	565388	DMA63NB13/030	B.19	600531		F.17
290238	EP103ULH2B15	A.65	546275		E.7	565389	DMA63NB16/030	B.19	600532		F.15
544000			546276		E.7	565390	DMA63NB20/030	B.19	600534		F.17
544172		E.7	546277		E.4	565391	DMA63NB25/030	B.19	600535		F.17
544173		E.7	546278		E.4	565392	DMA63NB32/030	B.19	600536		F.17
544174		E.7	546279		E.7	565393	DMA63NB10/300	B.19	600537		F.17
544175		E.7	546280		E.7	565394	DMA63NB13/300	B.19	600538		F.17
544176		E.7	546281		E.7	565395	DMA63NB16/300	B.19	600543		F.15
544177		E.7	546282		E.5	565396	DMA63NB20/300	B.19	600544		F.16
544178		E.6	546283		E.5	565397	DMA63NB25/300	B.19	600545		F.16
544179		E.7	546284		E.5	565398	DMA63NB32/300	B.19	600573		F.33
544180		E.4	546285		E.5	568000			600574		F.33
544181		E.4	546287		E.8	568083		E.8	600575		F.33
544182		E.4	546288		E.8	568084		E.8	600579		F.19
544183		E.5	546289		E.8	568106	EV-G.1.4.80-90°	D.72	600580		F.19
544184		E.5	546290		E.8	568322	DMA63NC32/030	B.19	600581		F.19
544185		E.5	546291		E.8	568323	DMA63NC25/030	B.19	600582		F.19
544186		E.4	546295		E.6	568324	CAH DMA63N	B.19	600642		F.13
544187		E.5	546296		E.7	568326	DMA63C10/030IT	B.19	600650		F.13
544188		E.6	546297		E.8	568327	DMA63C16/030IT	B.19	600651		F.13
544189		E.6	546298		E.8	568328	DMA63C20/030IT	B.19	600656		F.13
544191		E.6	546299		E.8	568329	DMA63C25/030IT	B.19	600950		F.13
544192		E.7	546300		E.8	568330	DMA63C32/030IT	B.19	604000		
544193		E.4	546301		E.8	584000			604285	BPCV225/30	B.27
544195		E.5	546302		E.8	584032	NDFS4 10/30	B.69	604286	BPCV240/30	B.27
544272		E.6	546308		E.4	584037	NDFS4 30/60	B.69	604287	BPCV263/30	B.27
544277		E.6	546341		E.6	585000			604288	BPCV280/30	B.27
544296		E.6	546396		E.5	585008	NDF2 5/5	B.69	604289	BPCV2100/30	B.27
544327		E.6	546397		E.5	585013	NDF2 10/30	B.69	605000		
544332	LD021	A.121	546398		E.7	585014	NDF2 10/30	B.69	605030	DME100B06/010	B.51
544333	LD023	A.121	555000			585016	NDF2 15/45	B.69	605031	DME100B10/010	B.51
544334	LD02P20	A.121	555434		E.5	585017	NDFS2 15/45	B.69	605032	DME100B16/010	B.51
544335	LD02P25	A.121	555435		E.5	585018	NDFS2 30/60	B.69	605033	DME100B20/010	B.51
544336	LD02P35	A.121	555609		E.7	585019	NDF2 30/60	B.69	605034	DME100B25/010	B.51
544337	LD02P50	A.121	564000			585020	NDF2 30/60	B.69	605035	DME100B32/010	B.51
544338	LD02AD01	A.121	564092		E.8	585021	NDFS2 30/60	B.69	605036	DME100B40/010	B.51
544339	LD011	A.121	565000			585025	NDF2 60/90	B.69	605037	DME100B06/030	B.51
544340	LD013	A.121	565333	FPB 4 16/030	B.33	585026	NDFS2 60/90	B.69	605038	DME100B10/030	B.51
544344		E.6	565334	FPB 4 16/100	B.33	585029	NDFS4 10/30	B.69	605039	DME100B16/030	B.51
544346		E.8	565335	FPB 4 16/300	B.33	585030	NDF4 10/30	B.69	605040	DME100B20/030	B.51
544347		E.8	565336	FPB 4 16/500	B.33	585031	NDF4 10/30	B.69	605041	DME100B25/030	B.51
546000			565337	FPB 4 25/030	B.33	585035	NDFS4 30/60	B.69	605042	DME100B32/030	B.51
546125		E.6	565338	FPB 4 25/100	B.33	585036	NDF4 30/60	B.69	605043	DME100B40/030	B.51
546126		E.4	565339	FPB 4 25/300	B.33	585435	DisB2 30/60	B.67	605044	DME100C06/010	B.51
546127		E.7	565340	FPB 4 25/500	B.33	585436	DisB2 15/45	B.67	605045	DME100C10/010	B.51
546128		E.5	565341	FPB 4 40/030	B.33	585437	DisBS2 30/60	B.67	605046	DME100C16/010	B.51
546129		E.7	565342	FPB 4 40/100	B.33	585438	DisBS2 15/45	B.67	605047	DME100C20/010	B.51
546130		E.5	565343	FPB 4 40/300	B.33	585439	DisB4 30/60	B.67	605048	DME100C25/010	B.51
546139		E.4	565344	FPB 4 40/500	B.33	585440	DisB4 10/30	B.67	605049	DME100C32/010	B.51
546142		E.4	565345	FPB 4 63/030	B.33	585441	DisBS4 30/60	B.67	605050	DME100C40/010	B.51
546143		E.4	565346	FPB 4 63/100	B.33	585442	DisBS4 10/30	B.67	605051	DME100C06/030	B.51
546152		E.4	565347	FPB 4 63/300	B.33	597000			605052	DME100C10/030	B.51
546176		E.7	565348	FPB 4 63/500	B.33	597956	AQA005PG	F.35	605053	DME100C16/030	B.51
546181		E.8	565349	FPB 4 80/030	B.33	597957	AQA008PG	F.35	605054	DME100C20/030	B.51
546184		E.8	565350	FPB 4 80/100	B.33	597958	AQA012PG	F.35	605055	DME100C25/030	B.51
546187		E.6	565351	FPB 4 80/300	B.33	597959	AQA912PG	F.35	605056	DME100C32/030	B.51
546197		E.6	565352	FPB 4 80/500	B.33	597960	AQA024PG	F.35	605057	DME100C40/030	B.51
546200		E.8	565353	FPB 2 16/030	B.33	597961	AQA048PG	F.35	605060	DME60C06/030	B.51
546227		E.6	565354	FPB 2 16/100	B.33	597962		F.35	605061	DME60C10/030	B.51
546228		E.7	565355	FPB 2 16/300	B.33	597963		F.35	605062	DME60C16/030	B.51
546229		E.7	565356	FPB 2 16/500	B.33	600000			605063	DME60C20/030	B.51
546230		E.7	565357	FPB 2 25/030	B.33	600296	BPCV225/30	B.27	605064	DME60C25/030	B.51
546234		E.7	565358	FPB 2 25/100	B.33	600297	BPCV240/30	B.27	605065	DME60C32/030	B.51
546237		E.4	565359	FPB 2 25/300	B.33	600298	BPCV263/30	B.27	605066	DME60C40/030	B.51
546244		E.8	565360	FPB 2 25/500	B.33	600299	BPCV280/30	B.27	605067	DME60C06/100	B.51
546245		E.8	565361	FPB 2 40/030	B.33	600300	BPCV2100/30	B.27	605068	DME60C10/100	B.51
546246		E.8	565362	FPB 2 40/100	B.33	600301	BPCV225/300	B.27	605069	DME60C16/100	B.51
546247		E.6	565363	FPB 2 40/300	B.33	600302	BPCV240/300	B.27	605070	DME60C20/100	B.51
546248		E.6	565364	FPB 2 40/500	B.33	600303	BPCV263/300	B.27	605071	DME60C25/100	B.51
546249		E.6	565365	FPB 2 63/030	B.33	600304	BPCV280/300	B.27	605072	DME60C32/100	B.51
546250		E.6	565366	FPB 2 63/100	B.33	600305	BPCV2100/300	B.27	605073	DME60C40/100	B.51
546251		E.6	565367	FPB 2 63/300	B.33	600310		F.13	605150	DMEA100B06/010	B.51
546252		E.6	565368	FPB 2 63/500	B.33	600311		F.13	605151	DMEA100B10/010	B.51
546253		E.4	565369	FPB 2 80/030	B.33	600346		F.13	605152	DMEA100B16/010	B.51
546254		E.4	565370	FPB 2 80/100	B.33	600501		F.16	605153	DMEA100B20/010	B.51
546255		E.4	565371	FPB 2 80/300	B.33	600502		F.16	605154	DMEA100B25/010	B.51
546256		E.4	565372	FPB 2 80/500	B.33	600504		F.16	605155	DMEA100B32/010	B.51
546257		E.4	565373	FPF 2 25/030	B.35	600505		F.16	605156	DMEA100B40/010	B.51
546259		E.6	565374	FPF 2 40/030	B.35	600506		F.16	605157	DMEA100B06/030	B.51
546260		E.6	565375	FPF 2 63/030	B.35	600507		F.16	605158	DMEA100B10/030	B.51
546261		E.6	565376	FPF 2 80/030	B.35	600509		F.16	605159	DMEA100B16/030	B.51
546262		E.6	565377	FPF 4 25/030	B.35	600514		F.15	605160	DMEA100B20/030	B.51
546263		E.6	565378	FPF 4 40/030	B.35	600515		F.15	605161	DMEA100B25/030	B.51
546264		E.6	565379	FPF 4 63/030	B.35	600516		F.16	605162	DMEA100B32/030	B.51
546265		E.4	565380	FPF 4 80/030	B.35	600517		F.15	605163	DMEA100B40/030	B.51
546266		E.4	565381	DMA63NC10/300	B.19	600519		F.17	605164	DMEA100C06/010	B.51
546267		E.4	565382	DMA63NC13/300	B.19	600520		F.17	605165	DMEA100C10/010	B.51
546269		E.4	565383	DMA63NC16/300	B.19	600521		F.17	605166	DMEA100C16/010	B.51
546270		E.4	565384	DMA63NC20/300	B.19	600522		F.17	605167	DMEA100C20/010	B.51
546271		E.7	565385	DMA63NC25/300	B.19	600524		F.15	605168	DMEA100C25/010	B.51
546272		E.7	565386	DMA63NC32/300	B.19	600525		F.16	605169	DMEA100C32/010	B.51



By reference number

A
B
C
D
E
F
G
X

Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page
605170	DMEA100C40/010	B.51	606164	BPA440/030	B.28	606376	DPCA100C10/030-120V	B.17	606816	DPCA45C32/300	B.11
605171	DMEA100C06/030	B.51	606165	BPA463/030	B.28	606377	DPCA100C16/030-120V	B.17	606817	DPCA45C40/300	B.11
605172	DMEA100C10/030	B.51	606166	BPA480/030	B.28	606378	DPCA100C20/030-120V	B.17	606820	DPC60C06/030	B.13
605173	DMEA100C16/030	B.51	606167	BPA4100/030	B.28	606379	DPCA100C25/030-120V	B.17	606821	DPC60C10/030	B.13
605174	DMEA100C20/030	B.51	606168	BPA425/100	B.28	606380	DPCA100C32/030-120V	B.17	606822	DPC60C13/030	B.13
605175	DMEA100C25/030	B.51	606169	BPA440/100	B.28	606381	DPCA100C40/030-120V	B.17	606823	DPC60C16/030	B.13
605176	DMEA100C32/030	B.51	606170	BPA463/100	B.28	606505	DMEA100D06/010	B.51	606824	DPC60C20/030	B.13
605177	DMEA100C40/030	B.51	606171	BPA480/100	B.28	606506	DMEA100D10/010	B.51	606825	DPC60C25/030	B.13
605240	DME100C06/100	B.51	606172	BPA4100/100	B.28	606507	DMEA100D16/010	B.51	606826	DPC60C32/030	B.13
605241	DME100C10/100	B.51	606173	BPS425/100	B.28	606508	DMEA100D20/010	B.51	606827	DPC60C40/030	B.13
605242	DME100C16/100	B.51	606174	BPS440/100	B.28	606509	DMEA100D25/010	B.51	606828	DPC60C06/300	B.13
605243	DME100C20/100	B.51	606175	BPS463/100	B.28	606510	DMEA100D32/010	B.51	606829	DPC60C10/300	B.13
605244	DME100C25/100	B.51	606176	BPS480/100	B.28	606511	DMEA100D40/010	B.51	606830	DPC60C13/300	B.13
605245	DME100C32/100	B.51	606177	BPS4100/100	B.28	606512	DMEA100D06/030	B.51	606831	DPC60C16/300	B.13
605246	DME100C40/100	B.51	606178	BPA425/300	B.28	606513	DMEA100D10/030	B.51	606832	DPC60C20/300	B.13
605260	DME100B06/100	B.51	606179	BPA440/300	B.28	606514	DMEA100D16/030	B.51	606833	DPC60C25/300	B.13
605261	DME100B10/100	B.51	606180	BPA463/300	B.28	606515	DMEA100D20/030	B.51	606834	DPC60C32/300	B.13
605262	DME100B16/100	B.51	606181	BPA480/300	B.28	606516	DMEA100D25/030	B.51	606835	DPC60C40/300	B.13
605263	DME100B20/100	B.51	606182	BPA4100/300	B.28	606517	DMEA100D32/030	B.51	606838	DPCA60C06/030	B.13
605264	DME100B25/100	B.51	606183	BPS425/300	B.28	606518	DMEA100D40/030	B.51	606839	DPCA60C10/030	B.13
605265	DME100B32/100	B.51	606184	BPS440/300	B.28	606519	DME100D06/100	B.51	606840	DPCA60C13/030	B.13
605266	DME100B40/100	B.51	606185	BPS463/300	B.28	606520	DME100D10/100	B.51	606841	DPCA60C16/030	B.13
606000			606186	BPS480/300	B.28	606521	DME100D16/100	B.51	606842	DPCA60C20/030	B.13
606085	BPA216/010	B.28	606187	BPS4100/300	B.28	606522	DME100D20/100	B.51	606843	DPCA60C25/030	B.13
606086	BPA225/030	B.28	606188	BPA425/500	B.28	606523	DME100D25/100	B.51	606844	DPCA60C32/030	B.13
606087	BPA240/030	B.28	606189	BPA440/500	B.28	606524	DME100D32/100	B.51	606845	DPCA60C40/030	B.13
606088	BPA263/030	B.28	606190	BPA463/500	B.28	606525	DME100D40/100	B.51	606846	DPCA60C06/300	B.13
606089	BPA280/030	B.28	606191	BPA480/500	B.28	606526	DMEA100C06/100	B.51	606847	DPCA60C10/300	B.13
606090	BPA2100/030	B.28	606192	BPA4100/500	B.28	606527	DMEA100C10/100	B.51	606848	DPCA60C13/300	B.13
606091	BPA225/100	B.28	606193	BPS425/500	B.28	606528	DMEA100C16/100	B.51	606849	DPCA60C16/300	B.13
606092	BPA240/100	B.28	606194	BPS440/500	B.28	606529	DMEA100C20/100	B.51	606850	DPCA60C20/300	B.13
606093	BPA263/100	B.28	606195	BPS463/500	B.28	606530	DMEA100C25/100	B.51	606851	DPCA60C25/300	B.13
606094	BPA280/100	B.28	606196	BPS480/500	B.28	606531	DMEA100C32/100	B.51	606852	DPCA60C32/300	B.13
606095	BPA2100/100	B.28	606197	BPS4100/500	B.28	606532	DMEA100C40/100	B.51	606853	DPCA60C40/300	B.13
606096	BPS225/100	B.28	606198	BPA425/1000	B.28	606560	DMET100C06/100	B.53	606854	DPCA60C06/030	B.13
606097	BPS240/100	B.28	606199	BPA440/1000	B.28	606561	DMET100C10/100	B.53	606855	DPCA60C10/030	B.13
606098	BPS263/100	B.28	606200	BPA463/1000	B.28	606562	DMET100C16/100	B.53	606856	DPCA60C13/030	B.13
606099	BPS280/100	B.28	606201	BPA480/1000	B.28	606563	DMET100C20/100	B.53	606857	DPCA60C16/030	B.13
606100	BPS2100/100	B.28	606202	BPA4100/1000	B.28	606564	DMET100C25/100	B.53	606858	DPCA60C20/030	B.13
606101	BPA225/300	B.28	606203	BPS425/1000	B.28	606565	DMET100C32/100	B.53	606859	DPCA60C25/030	B.13
606102	BPA240/300	B.28	606204	BPS440/1000	B.28	606566	DMET100C40/100	B.53	606860	DPCA60C32/030	B.13
606103	BPA263/300	B.28	606205	BPS463/1000	B.28	606567	DMET100C06/010	B.53	606861	DPCA60C40/030	B.13
606104	BPA280/300	B.28	606206	BPS480/1000	B.28	606568	DMET100C10/010	B.53	606862	DPCA60C06/300	B.13
606105	BPA2100/300	B.28	606207	BPS4100/1000	B.28	606569	DMET100C16/010	B.53	606863	DPCA60C10/300	B.13
606106	BPS225/300	B.28	606208	BPC425/030	B.27	606570	DMET100C20/010	B.53	606864	DPCA60C13/300	B.13
606107	BPS240/300	B.28	606209	BPC440/030	B.27	606571	DMET100C25/010	B.53	606865	DPCA60C16/300	B.13
606108	BPS263/300	B.28	606210	BPC463/030	B.27	606572	DMET100C32/010	B.53	606866	DPCA60C20/300	B.13
606109	BPS280/300	B.28	606211	BPC480/030	B.27	606573	DMET100C40/010	B.53	606867	DPCA60C25/300	B.13
606110	BPS2100/300	B.28	606212	BPC4100/030	B.27	606574	DMET100C06/030	B.53	606868	DPCA60C32/300	B.13
606111	BPA225/500	B.28	606216	BPC425/100	B.27	606575	DMET100C10/030	B.53	606869	DPCA60C40/300	B.13
606112	BPA240/500	B.28	606217	BPC440/100	B.27	606576	DMET100C16/030	B.53	606872	DPCA60B06/030	B.13
606113	BPA263/500	B.28	606218	BPC463/100	B.27	606577	DMET100C20/030	B.53	606873	DPCA60B10/030	B.13
606114	BPA280/500	B.28	606219	BPC480/100	B.27	606578	DMET100C25/030	B.53	606874	DPCA60B13/030	B.13
606115	BPA2100/500	B.28	606220	BPC4100/100	B.27	606579	DMET100C32/030	B.53	606875	DPCA60B16/030	B.13
606116	BPS225/500	B.28	606224	BPC425/300	B.27	606580	DMET100C40/030	B.53	606876	DPCA60B20/030	B.13
606117	BPS240/500	B.28	606225	BPC440/300	B.27	606581	DMEA100C40/300	B.53	606877	DPCA60B25/030	B.13
606118	BPS263/500	B.28	606226	BPC463/300	B.27	606588	DMEA100C06/300	B.53	606878	DPCA60B32/030	B.13
606119	BPS280/500	B.28	606227	BPC480/300	B.27	606589	DMEA100C10/300	B.53	606879	DPCA60B40/030	B.13
606120	BPS2100/500	B.28	606228	BPC4100/300	B.27	606590	DMEA100C16/300	B.53	606880	DPCA60B06/300	B.13
606121	BPA225/1000	B.28	606229	BPC425/500	B.27	606591	DMEA100C20/300	B.53	606881	DPCA60B10/300	B.13
606122	BPA240/1000	B.28	606230	BPC440/500	B.27	606592	DMEA100C25/300	B.53	606882	DPCA60B13/300	B.13
606123	BPA263/1000	B.28	606231	BPC463/500	B.27	606593	DMEA100C32/300	B.53	606883	DPCA60B16/300	B.13
606124	BPA280/1000	B.28	606232	BPC480/500	B.27	606786	DPC45C06/030	B.11	606884	DPCA60B20/300	B.13
606125	BPA2100/1000	B.28	606233	BPC4100/500	B.27	606787	DPC45C10/030	B.11	606885	DPCA60B25/300	B.13
606126	BPS225/1000	B.28	606234	BPC425/1000	B.27	606788	DPC45C13/030	B.11	606886	DPCA60B32/300	B.13
606127	BPS240/1000	B.28	606235	BPC440/1000	B.27	606789	DPC45C16/030	B.11	606887	DPCA60B40/300	B.13
606128	BPS263/1000	B.28	606236	BPC463/1000	B.27	606790	DPC45C20/030	B.11	606888	DPCA60B06/030	B.13
606129	BPS280/1000	B.28	606237	BPC480/1000	B.27	606791	DPC45C25/030	B.11	606889	DPCA60B10/030	B.13
606130	BPS2100/1000	B.28	606238	BPC4100/1000	B.27	606792	DPC45C32/030	B.11	606890	DPCA60B13/030	B.13
606131	BPC216/010	B.27	606331	BPAi225/030	B.29	606793	DPC45C40/030	B.11	606891	DPCA60B16/030	B.13
606134	BPC263/030	B.27	606332	BPAi240/030	B.29	606794	DPC45C06/300	B.11	606892	DPCA60B20/030	B.13
606135	BPC280/030	B.27	606333	BPAi263/030	B.29	606795	DPC45C10/300	B.11	606893	DPCA60B25/030	B.13
606136	BPC2100/030	B.27	606334	BPAi425/030	B.29	606796	DPC45C13/300	B.11	606894	DPCA60B32/030	B.13
606140	BPC225/100	B.27	606335	BPAi440/030	B.29	606797	DPC45C16/300	B.11	606895	DPCA60B40/030	B.13
606141	BPC240/100	B.27	606336	BPAi463/030	B.29	606798	DPC45C20/300	B.11	606896	DPCA60B06/300	B.13
606142	BPC263/100	B.27	606337	BPSi225/300	B.29	606799	DPC45C25/300	B.11	606897	DPCA60B10/300	B.13
606143	BPC280/100	B.27	606338	BPSi240/300	B.29	606800	DPC45C32/300	B.11	606898	DPCA60B13/300	B.13
606144	BPC2100/100	B.27	606339	BPSi263/300	B.29	606801	DPC45C40/300	B.11	606899	DPCA60B16/300	B.13
606150	BPC263/300	B.27	606340	BPSi280/300	B.29	606802	DPCA45C06/030	B.11	606900	DPCA60B20/300	B.13
606151	BPC280/300	B.27	606341	BPSi2100/300	B.29	606803	DPCA45C10/030	B.11	606901	DPCA60B25/300	B.13
606152	BPC2100/300	B.27	606342	BPSi425/300	B.29	606804	DPCA45C13/030	B.11	606902	DPCA60B32/300	B.13
606153	BPC225/500	B.27	606343	BPSi440/300	B.29	606805	DPCA45C16/030	B.11	606903	DPCA60B40/300	B.13
606154	BPC240/500	B.27	606344	BPSi463/300	B.29	606806	DPCA45C20/030	B.11	606904	DPC100C10/010	B.15
606155	BPC263/500	B.27	606345	BPSi480/300	B.29	606807	DPCA45C25/030	B.11	606905	DPC100C16/010	B.15
606156	BPC280/500	B.27	606346	BPSi4100/300	B.29	606808	DPCA45C32/030	B.11	606906	DPC100C06/030	B.15
606157	BPC2100/500	B.27	606347	BPAi225/300	B.29	606809	DPCA46C40/030	B.11	606907	DPC100C10/030	B.15
606158	BPC225/1000	B.27	606348	BPAi240							



Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page
606914	DPCA100C06/300	B.15	607286	DMEAT100C16/030	B.53	607722	DOC 532/030	B.41	609772	DMA60C13/010	B.37
606915	DPCA100C10/300	B.15	607287	DMEAT100C20/030	B.53	607723	DOC 532/100	B.41	609773	DMA60C16/010	B.37
606916	DPCA100C13/300	B.15	607288	DMEAT100C25/030	B.53	607724	DOC 532/300	B.41	609774	DMA60C20/010	B.37
606917	DPCA100C16/300	B.15	607289	DMEAT100C32/030	B.53	607725	DOC 532/500	B.41	609775	DMA60C04/030	B.37
606918	DPCA100C20/300	B.15	607427	DMET60C10/030	B.53	607726	DOC 532/1000	B.41	609776	DMA60C06/030	B.37
606919	DPCA100C25/300	B.15	607428	DMET60C16/030	B.53	607728	DOC 432/030	B.41	609777	DMA60C10/030	B.37
606920	DPCA100C32/300	B.15	607429	DMET60C20/030	B.53	607729	DOC 432/100	B.41	609778	DMA60C13/030	B.37
606921	DPCA100C40/300	B.15	607430	DMET60C25/030	B.53	607730	DOC 432/300	B.41	609779	DMA60C16/030	B.37
606922	DPCA100C10/010	B.15	607431	DMET60C32/030	B.53	607731	DOC 432/500	B.41	609780	DMA60C20/030	B.37
606923	DPCA100C13/010	B.15	607500	DOCA 232/030	B.41	607732	DOC 432/1000	B.41	609781	DMA60C25/030	B.37
606924	DPCA100C16/010	B.15	607501	DOCA 232/100	B.41	607734	DOC 463/030	B.41	609782	DMA60C32/030	B.37
606925	DPCA100C06/030	B.15	607502	DOCA 232/300	B.41	607735	DOC 463/100	B.41	609783	DMA60C40/030	B.37
606926	DPCA100C10/030	B.15	607503	DOCA 232/500	B.41	607736	DOC 463/300	B.41	609784	DMA60C04/100	B.37
606927	DPCA100C13/030	B.15	607504	DOCA 232/1000	B.41	607737	DOC 463/500	B.41	609785	DMA60C06/100	B.37
606928	DPCA100C16/030	B.15	607506	DOCA 263/030	B.41	607738	DOC 463/1000	B.41	609786	DMA60C10/100	B.37
606929	DPCA100C20/030	B.15	607507	DOCA 263/100	B.41	608000			609787	DMA60C13/100	B.37
606930	DPCA100C10/030	B.15	607508	DOCA 263/300	B.41	608135	DMEAT60C10/030	B.53	609788	DMA60C16/100	B.37
606931	DPCA100C13/030	B.15	607509	DOCA 263/500	B.41	608136	DMEAT60C16/030	B.53	609789	DMA60C20/100	B.37
606932	DPCA100C16/030	B.15	607510	DOCA 263/1000	B.41	608137	DMEAT60C20/030	B.53	609790	DMA60C25/100	B.37
606933	DPCA100C20/030	B.15	607513	DOCS 232/100	B.41	608138	DMEAT60C25/030	B.53	609791	DMA60C32/100	B.37
606934	DPCA100C25/030	B.15	607514	DOCS 232/300	B.41	608139	DMEAT60C32/030	B.53	609792	DMA60C40/100	B.37
606935	DPCA100C32/030	B.15	607515	DOCS 232/500	B.41	608706	DPA100B10/010	B.57	609793	DMA60C04/300	B.37
606936	DPCA100C40/030	B.15	607516	DOCS 232/1000	B.41	608707	DPA100B13/010	B.57	609794	DMA60C06/300	B.37
606937	DPCA100C06/300	B.15	607519	DOCS 263/100	B.41	608708	DPA100B16/010	B.57	609795	DMA60C10/300	B.37
606938	DPCA100C10/300	B.15	607520	DOCS 263/300	B.41	608709	DPA100B20/010	B.57	609796	DMA60C13/300	B.37
606939	DPCA100C13/300	B.15	607521	DOCS 263/500	B.41	608712	DPA100B10/030	B.57	609797	DMA60C16/300	B.37
606940	DPCA100C16/300	B.15	607522	DOCS 263/1000	B.41	608713	DPA100B13/030	B.57	609798	DMA60C20/300	B.37
606941	DPCA100C20/300	B.15	607536	DOC 232/030	B.41	608714	DPA100B16/030	B.57	609799	DMA60C25/300	B.37
606942	DPCA100C25/300	B.15	607537	DOC 232/100	B.41	608715	DPA100B20/030	B.57	609800	DMA60C32/300	B.37
606943	DPCA100C32/300	B.15	607538	DOC 232/300	B.41	608716	DPA100B25/030	B.57	609801	DMA60C40/300	B.37
606944	DPCA100C40/300	B.15	607539	DOC 232/500	B.41	608717	DPA100B32/030	B.57	609802	DM60B06/010	B.37
606945	DPCAi100C06/030	B.15	607540	DOC 232/1000	B.41	608757	DPA100C10/010	B.57	609803	DM60B10/010	B.37
606946	DPCAi100C10/030	B.15	607542	DOC 263/030	B.41	608758	DPA100C13/010	B.57	609804	DM60B13/010	B.37
606947	DPCAi100C13/030	B.15	607543	DOC 263/100	B.41	608759	DPA100C16/010	B.57	609805	DM60B16/010	B.37
606948	DPCAi100C16/030	B.15	607544	DOC 263/300	B.41	608760	DPA100C20/010	B.57	609806	DM60B20/010	B.37
606949	DPCAi100C20/030	B.15	607545	DOC 263/500	B.41	608763	DPA100C10/030	B.57	609807	DM60B06/030	B.37
606950	DPCAi100C25/030	B.15	607546	DOC 263/1000	B.41	608764	DPA100C13/030	B.57	609808	DM60B10/030	B.37
606951	DPCAi100C32/030	B.15	607584	DOCA 332/030	B.41	608765	DPA100C16/030	B.57	609809	DM60B13/030	B.37
606952	DPCAi100C40/030	B.15	607585	DOCA 332/100	B.41	608766	DPA100C20/030	B.57	609810	DM60B16/030	B.37
606953	DPCAi100C06/300	B.15	607586	DOCA 332/300	B.41	608767	DPA100C25/030	B.57	609811	DM60B20/030	B.37
606954	DPCAi100C10/300	B.15	607587	DOCA 332/500	B.41	608768	DPA100C32/030	B.57	609812	DM60B25/030	B.37
606955	DPCAi100C13/300	B.15	607588	DOCA 332/1000	B.41	609000			609813	DM60B32/030	B.37
606956	DPCAi100C16/300	B.15	607590	DOCA 363/030	B.41	609280	DMT60C04/030	B.37	609814	DM60B40/030	B.37
606957	DPCAi100C20/300	B.15	607591	DOCA 363/100	B.41	609281	DMT60C06/030	B.37	609815	DM60B06/100	B.37
606958	DPCAi100C25/300	B.15	607592	DOCA 363/300	B.41	609282	DMT60C10/030	B.37	609816	DM60B10/100	B.37
606959	DPCAi100C32/300	B.15	607593	DOCA 363/500	B.41	609283	DMT60C13/030	B.37	609817	DM60B13/100	B.37
606960	DPCAi100C40/300	B.15	607594	DOCA 363/1000	B.41	609284	DMT60C16/030	B.37	609818	DM60B16/100	B.37
606961	DPCA100B10/010	B.15	607597	DOCS 332/100	B.41	609285	DMT60C20/030	B.37	609819	DM60B20/100	B.37
606962	DPCA100B13/010	B.15	607598	DOCS 332/300	B.41	609286	DMT60C25/030	B.37	609820	DM60B25/100	B.37
606963	DPCA100B16/010	B.15	607599	DOCS 332/500	B.41	609287	DMT60C32/030	B.37	609821	DM60B32/100	B.37
606964	DPCA100B06/030	B.15	607600	DOCS 332/1000	B.41	609288	DMT60C40/030	B.37	609822	DM60B40/100	B.37
606965	DPCA100B10/030	B.15	607603	DOCS 363/100	B.41	609289	DMT100C04/030	B.39	609823	DM60B06/300	B.37
606966	DPCA100B13/030	B.15	607604	DOCS 363/300	B.41	609290	DMT100C06/030	B.39	609824	DM60B10/300	B.37
606967	DPCA100B16/030	B.15	607605	DOCS 363/500	B.41	609291	DMT100C10/030	B.39	609825	DM60B13/300	B.37
606968	DPCA100B20/030	B.15	607606	DOCS 363/1000	B.41	609292	DMT100C13/030	B.39	609826	DM60B16/300	B.37
606969	DPCA100B10/030	B.15	607620	DOC 332/030	B.41	609293	DMT100C16/030	B.39	609827	DM60B20/300	B.37
606970	DPCA100B13/030	B.15	607621	DOC 332/100	B.41	609294	DMT100C20/030	B.39	609828	DM60B25/300	B.37
606971	DPCA100B16/030	B.15	607622	DOC 332/300	B.41	609295	DMT100C25/030	B.39	609829	DM60B32/300	B.37
606972	DPCA100B20/030	B.15	607623	DOC 332/500	B.41	609296	DMT100C32/030	B.39	609830	DM60B40/300	B.37
606973	DPCA100B25/030	B.15	607624	DOC 332/1000	B.41	609297	DMT100C40/030	B.39	609831	DM60C04/010	B.37
606974	DPCA100B32/030	B.15	607626	DOC 363/030	B.41	609740	DMA60B06/010	B.37	609832	DM60C06/010	B.37
606975	DPCA100B40/030	B.15	607627	DOC 363/100	B.41	609741	DMA60B10/010	B.37	609833	DM60C10/010	B.37
606976	DPCA100B06/300	B.15	607628	DOC 363/300	B.41	609742	DMA60B13/010	B.37	609834	DM60C13/010	B.37
606977	DPCA100B10/300	B.15	607629	DOC 363/500	B.41	609743	DMA60B16/010	B.37	609835	DM60C16/010	B.37
606978	DPCA100B13/300	B.15	607630	DOC 363/1000	B.41	609744	DMA60B20/010	B.37	609836	DM60C20/010	B.37
606979	DPCA100B16/300	B.15	607668	DOCA 532/030	B.41	609745	DMA60B06/030	B.37	609837	DM60C04/030	B.37
606980	DPCA100B20/300	B.15	607669	DOCA 532/300	B.41	609746	DMA60B10/030	B.37	609838	DM60C06/030	B.37
606981	DPCA100B25/300	B.15	607670	DOCA 532/100	B.41	609747	DMA60B13/030	B.37	609839	DM60C10/030	B.37
606982	DPCA100B32/300	B.15	607671	DOCA 532/500	B.41	609748	DMA60B16/030	B.37	609840	DM60C13/030	B.37
606983	DPCA100B40/300	B.15	607672	DOCA 532/1000	B.41	609749	DMA60B20/030	B.37	609841	DM60C16/030	B.37
606984	DPCAi100B06/030	B.15	607674	DOCA 432/030	B.41	609750	DMA60B25/030	B.37	609842	DM60C20/030	B.37
606985	DPCAi100B10/030	B.15	607675	DOCA 432/100	B.41	609751	DMA60B32/030	B.37	609843	DM60C25/030	B.37
606986	DPCAi100B13/030	B.15	607676	DOCA 432/300	B.41	609752	DMA60B40/030	B.37	609844	DM60C32/030	B.37
606987	DPCAi100B16/030	B.15	607677	DOCA 432/500	B.41	609753	DMA60B06/100	B.37	609845	DM60C40/030	B.37
606988	DPCAi100B20/030	B.15	607678	DOCA 432/1000	B.41	609754	DMA60B10/100	B.37	609846	DM60C04/100	B.37
606989	DPCAi100B25/030	B.15	607680	DOCA 463/030	B.41	609755	DMA60B13/100	B.37	609847	DM60C06/100	B.37
606990	DPCAi100B32/030	B.15	607681	DOCA 463/100	B.41	609756	DMA60B16/100	B.37	609848	DM60C10/100	B.37
606991	DPCAi100B40/030	B.15	607682	DOCA 463/300	B.41	609757	DMA60B20/100	B.37	609849	DM60C13/100	B.37
606992	DPCAi100B06/300	B.15	607683	DOCA 463/500	B.41	609758	DMA60B25/100	B.37	609850	DM60C16/100	B.37
606993	DPCAi100B10/300	B.15	607684	DOCA 463/1000	B.41	609759	DMA60B32/100	B.37	609851	DM60C20/100	B.37
606994	DPCAi100B13/300	B.15	607687	DOCS 532/100	B.41	609760	DMA60B40/100	B.37	609852	DM60C25/100	B.37
606995	DPCAi100B16/300	B.15	607688	DOCS 532/300	B.41	609761	DMA60B06/300	B.37	609853	DM60C32/100	B.37
606996	DPCAi100B20/300	B.15	607689	DOCS 532/500	B.41	609762	DMA60B10/300	B.37	609854	DM60C40/100	B.37
606997	DPCAi100B25/300	B.15	607690	DOCS 532/1000	B.41	609763	DMA60B13/300	B.37	609855	DM60C04/300	B.37
606998	DPCAi100B32/300	B.15	607693	DOCS 432/100	B.41	609764	DMA60B16/300	B.37	609856	DM60C06/300	B.37



By reference number

A

B

C

D

E

F

G

X

Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page
609864	DMA100B06/010	B.39	609956	DM100C06/010	B.39	610376		F.39	619106	MOD2SB1	F.10
609865	DMA100B10/010	B.39	609957	DM100C10/010	B.39	610377		F.39	619107	MOD2MCC200NA	F.10
609866	DMA100B13/010	B.39	609958	DM100C13/010	B.39	610378		F.39	619108	MOD2MCRCD	F.10
609867	DMA100B16/010	B.39	609959	DM100C16/010	B.39	610379		F.39	619109	MOD2MCC200A	F.10
609868	DMA100B20/010	B.39	609960	DM100C20/010	B.39	610380		F.30	619110	MOD2DIL200	F.10
609869	DMA100B06/030	B.39	609961	DM100C04/030	B.39	610381		F.39	619111	MOD2ISQ3	F.9
609870	DMA100B10/030	B.39	609962	DM100C06/030	B.39	610382		F.30	619112	MOD2RCDB	F.9
609871	DMA100B13/030	B.39	609963	DM100C10/030	B.39	610383		F.39	619113	MOD2RCDC	F.9
609872	DMA100B16/030	B.39	609964	DM100C13/030	B.39	610384		F.39	619114	MOD2DIL125	F.9
609873	DMA100B20/030	B.39	609965	DM100C16/030	B.39	610385		F.30	619115	MOD2DC	F.9
609874	DMA100B25/030	B.39	609966	DM100C20/030	B.39	610386		F.30	619116	MOD2HDGP	F.10
609875	DMA100B32/030	B.39	609967	DM100C25/030	B.39	610387		F.30	619118		F.11
609876	DMA100B40/030	B.39	609968	DM100C32/030	B.39	610396		F.30	619119	MOD2RCDA	F.9
609877	DMA100B06/100	B.39	609969	DM100C40/030	B.39	610484		F.11	619120	MOD2RCDBTD	F.9
609878	DMA100B10/100	B.39	609970	DM100C04/100	B.39	610532		F.30	619122	MOD2DB240	F.9
609879	DMA100B13/100	B.39	609971	DM100C06/100	B.39	610629		F.30	619124	MOD2DIL125/	F.9
609880	DMA100B16/100	B.39	609972	DM100C10/100	B.39	610630		F.30	619177	MOD2PA40	F.9
609881	DMA100B20/100	B.39	609973	DM100C13/100	B.39	610636		F.29	619178	MOD2PA60	F.9
609882	DMA100B25/100	B.39	609974	DM100C16/100	B.39	610637		F.29	619179	MOD2PA80	F.9
609883	DMA100B32/100	B.39	609975	DM100C20/100	B.39	610638		F.29	619180	MOD2PA120	F.9
609884	DMA100B40/100	B.39	609976	DM100C25/100	B.39	610639		F.29	619181	MOD2PA180	F.9
609885	DMA100B06/300	B.39	609977	DM100C32/100	B.39	610645		F.30	619192	MOD2PA240	F.9
609886	DMA100B10/300	B.39	609978	DM100C40/100	B.39	610646		F.29	619200		F.23
609887	DMA100B13/300	B.39	609979	DM100C04/300	B.39	610647		F.29	619201		F.23
609888	DMA100B16/300	B.39	609980	DM100C06/300	B.39	610648		F.29	619202		F.23
609889	DMA100B20/300	B.39	609981	DM100C10/300	B.39	610649		F.29	619203		F.23
609890	DMA100B25/300	B.39	609982	DM100C13/300	B.39	610654		F.29	619204		F.23
609891	DMA100B32/300	B.39	609983	DM100C16/300	B.39	610655		F.29	619205		F.23
609892	DMA100B40/300	B.39	609984	DM100C20/300	B.39	610656		F.29	619206		F.23
609893	DMA100C04/010	B.39	609985	DM100C25/300	B.39	610657		F.29	619207		F.23
609894	DMA100C06/010	B.39	609986	DM100C32/300	B.39	617000			619208		F.23
609895	DMA100C10/010	B.39	609987	DM100C40/300	B.39	617018		F.7	619300		F.37
609896	DMA100C13/010	B.39	610000			617934		F.5	619301		F.37
609897	DMA100C16/010	B.39	610020		F.29	617935		F.5	619302		F.37
609898	DMA100C20/010	B.39	610021		F.3	617936		F.5	619303		F.37
609899	DMA100C04/030	B.39	610022		F.29	617937		F.5	619304		F.37
609900	DMA100C06/030	B.39	610063		F.11	617938		F.5	619305		F.37
609901	DMA100C10/030	B.39	610090		F.19	617939		F.5	619319		F.27
609902	DMA100C13/030	B.39	610091		F.19	617940		F.5	619320		F.27
609903	DMA100C16/030	B.39	610130		F.16	617941		F.5	619321		F.27
609904	DMA100C20/030	B.39	610132		F.16	617942		F.5	619322		F.37
609905	DMA100C25/030	B.39	610133		F.16	617943		F.5	619323		F.27
609906	DMA100C32/030	B.39	610140		F.21	617944		F.5	619325		F.37
609907	DMA100C40/030	B.39	610141		F.21	617945		F.5	619326		F.37
609908	DMA100C04/100	B.39	610142		F.11	617946		F.5	619327		F.37
609909	DMA100C06/100	B.39	610170		F.30	617947		F.7	619328		F.37
609910	DMA100C10/100	B.39	610185		F.24	617948		F.7	619329		F.37
609911	DMA100C13/100	B.39	610186		F.21	617949		F.7	619331		F.37
609912	DMA100C16/100	B.39	610187		F.21	617961		F.23	619332		F.37
609913	DMA100C20/100	B.39	610232		F.3	617962		F.23	619333		F.37
609914	DMA100C25/100	B.39	610233		F.3	617965		F.7	619334		F.37
609915	DMA100C32/100	B.39	610238		F.3	617966		F.6	619335		F.37
609916	DMA100C40/100	B.39	610239		F.2	617967		F.6	619337		F.37
609917	DMA100C04/300	B.39	610240		F.2	617968		F.6	619338		F.27
609918	DMA100C06/300	B.39	610241		F.2	617969		F.6	619339		F.37
609919	DMA100C10/300	B.39	610242		F.2	617970		F.6	619340		F.37
609920	DMA100C13/300	B.39	610243		F.2	617992		F.29	619341		F.37
609921	DMA100C16/300	B.39	610244		F.2	618000			619342		F.37
609922	DMA100C20/300	B.39	610248		F.2	618116		F.23	619343		F.37
609923	DMA100C25/300	B.39	610249		F.2	618117		F.23	619344		F.37
609924	DMA100C32/300	B.39	610257		F.2	618293		E.7	619345		F.37
609925	DMA100C40/300	B.39	610265		F.30	618294		E.4	619350		F.37
609926	DM100B06/010	B.39	610270		F.30	618300	MOD2SPK1	F.9	619362		F.37
609927	DM100B10/010	B.39	610277		F.29	618503		F.23	619369		F.27
609928	DM100B13/010	B.39	610287		F.29	618505		F.23	619370		F.27
609929	DM100B16/010	B.39	610297		F.29	618506		F.23	619371		F.27
609930	DM100B20/010	B.39	610305		F.29	618509		F.23	619372		F.27
609931	DM100B06/030	B.39	610313		F.33	618511		F.23	619373		F.27
609932	DM100B10/030	B.39	610314		F.33	618512		F.23	619374		F.27
609933	DM100B13/030	B.39	610315		F.33	618515		F.23	619375		F.27
609934	DM100B16/030	B.39	610316		F.33	618517		F.23	619376		F.27
609935	DM100B20/030	B.39	610317		F.33	618518		F.23	619411		F.23
609936	DM100B25/030	B.39	610318		F.33	618519		F.23	619605	MOD2MCCB63	F.9
609937	DM100B32/030	B.39	610328		F.2	618520		F.23	619606	MOD2MCCB100	F.9
609938	DM100B40/030	B.39	610329		F.2	618521		F.23	62000		
609939	DM100B06/100	B.39	610000			618522		F.23	624785		E.10
609940	DM100B10/100	B.39	610330		F.2	618523		F.23	624786		E.10
609941	DM100B13/100	B.39	610000			618524		F.24	624000		
609942	DM100B16/100	B.39	610331		F.2	618527		F.24	624795		E.8
609943	DM100B20/100	B.39	610332		F.2	618528		F.24	624796		E.5
609944	DM100B25/100	B.39	610344		F.21	618529		F.23	624797		E.5
609945	DM100B32/100	B.39	610345		F.21	618530		F.23	624798		E.5
609946	DM100B40/100	B.39	610354		F.19	618531		F.24	624799		E.7
609947	DM100B06/300	B.39	610355		F.19	619000			624800		E.5
609948	DM100B10/300	B.39	610368		F.39	619018		F.11	624805		E.4
609949	DM100B13/300	B.39	610369		F.39	619084		F.24	624807		E.5
609950	DM100B16/300	B.39	610370		F.39	619100	MOD2DB40	F.9	62000		
609951	DM100B20/300	B.39	610371		F.39	619101	MOD2DB60	F.9	624808		E.10
609952	DM100B25/300	B.39	610372		F.39	619102	MOD2DB80	F.9	624809		E.10
609953	DM100B32/300	B.39	610373		F.39	619103	MOD2DB120	F.9	624818		E.10
609954	DM100B40/300	B.39	610374		F.39	619104	MOD2DB180	F.9	624000		
609955	DM100C04/010	B.39	610375		F.39	619105	MOD218D	F.10	624839		E.4



Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page
624860		E.8	660144	SAP2 I+II 12.5 TNS C	D.70	665193	MT961HARCOM	D.63	665909	TR+S15	D.51
62000			660147	SAP3 I+II 12.5 TNC	D.70	665194	MT144UMD	D.65	665910	TR+S25	D.51
624873		E.10	660148	SAP3 I+II 12.5 TNC C	D.70	665195	MT144UM	D.65	665911	TR+S40	D.51
624874		E.10	660150	SAP4 I+II 12.5 TT	D.70	665196	MT144UD	D.65	665912	TR+S63	D.51
624881		E.10	660151	SAP4 I+II 12.5 TT C	D.70	665197	MT8I80	D.65	665917	TOR+110	B.63
624882		E.10	660152	SAP4 I+II 12.5 TNS	D.70	665198	MT8I40	D.65	665918	TR&KT+C3MOD	D.51
624883		E.10	660156	SAP4 I+II 12.5 TNS C	D.70	665199	MT8I40R	D.65	665919	TR&KT+C6MOD	D.51
624000			660158	SAP1 II 40/230	D.71	665239	MTMBUS	D.65	665924	MT+CT2500	D.59
624892		E.5	660159	SAP1 II 40/400	D.71	665240	MTSDMEM	D.65	665925	MT+CT3200	D.59
624893		E.5	660160	SAP1 II 40/230 C	D.71	665243	MTPBUS	D.65	665926	MT+CT4000	D.59
62000			660162	SAP1 II 40/400 C	D.71	665244	MTAdapt	D.61	666000		
624896		E.10	660163	SAP1 II 40N	D.71	665245	MT485Enet	D.65	666126	CTX 20 11 230 A	D.9
624897		E.10	660169	SAP1 II 20N	D.71	665246	MTUSB485	D.65	666127	CTX 20 11 024 A	D.9
624898		E.10	660171	SAP2 II 40/230 TT	D.71	665248	MT+D1i 32 1M	D.53	666128	CTX 20 02 230 A	D.9
624000			660172	SAP2 II 40/230 TTC	D.71	665249	MT+D1i 45 1M MID	D.53	666129	CTX 20 02 024 A	D.9
624929	KS	A.78	660173	SAP2 II 20/230 TT	D.71	665250	MT+D1i 63 2M	D.53	666130	CTX 20 20 012 A	D.9
624945	TELE L 110	A.41	660174	SAP2 II 20/230 TTC	D.71	665251	MT+D1i 63 2M MID	D.53	666131	CTX 20 20 230 A	D.9
624946	TELE L 24	A.41	660175	SAP2 II 40/230 TNS	D.71	665252	MT+D1485 63 2M	D.53	666132	CTX 20 20 240 A	D.9
624957		E.7	660176	SAP2 II 40/230 TNSC	D.71	665253	MT+D1485 63 2M MID	D.53	666133	CTX 20 20 024 A	D.9
624958		E.7	660177	SAP2 II 20/230 TNS	D.71	665254	MT+D3Ni 63 4M	D.53	666134	CTX 20 20 048 A	D.9
624959		E.4	660178	SAP2 II 20/230 TNSC	D.71	665255	MT+D3Ni 63 4M MID	D.53	666135	CTX 24 22 230 U	D.9
624960		E.4	660179	SAP3 II 40/400 TNC	D.71	665256	MT+D3N485 63 4M	D.53	666136	CTX 24 22 024 U	D.9
624961		E.4	660180	SAP3 II 40/400 TNCC	D.71	665257	MT+D3N485 63 4MMID	D.53	666137	CTX 24 30 230 U	D.9
624962		E.4	660181	SAP3 II 20/400 TNC	D.71	665258	MT+D3Ni x/5 4M	D.53	666138	CTX 24 30 024 U	D.9
624963		E.4	660182	SAP3 II 20/400 TNCC	D.71	665259	MT+D3Ni x/5 4M MID	D.53	666139	CTX 24 04 230 U	D.9
624964		E.4	660183	SAP4 II 40/400 TT	D.71	665260	MT+D3N485 x/5 4M	D.53	666140	CTX 24 04 024 U	D.9
624965		E.4	660184	SAP4 II 40/400 TTC	D.71	665261	MT+D3N485 x/54MMID	D.53	666141	CTX 24 40 012 U	D.9
624966		E.4	660185	SAP4 II 20/400 TT	D.71	665262	MT+ImpCon	D.53	666142	CTX 24 40 230 U	D.9
624967		E.4	660186	SAP4 II 20/400 TTC	D.71	665264	MT+AA 4M	D.57	666143	CTX 24 40 240 U	D.9
624968		E.4	660187	SAP4 II 40/400 TNS	D.71	665265	MT+AA5 4M	D.57	666144	CTX 24 40 024 U	D.9
624969		E.4	660188	SAP4 II 40/400 TNCC	D.71	665266	MT+AA10 4M	D.57	666145	CTX 24 40 048 U	D.9
624970		E.4	660189	SAP4 II 20/400 TNS	D.71	665267	MT+AA15 4M	D.57	666146	CTX 40 20 230 U	D.9
624971		E.4	660190	SAP4 II 20/400 TNSC	D.71	665268	MT+AA20 4M	D.57	666147	CTX 40 20 024 U	D.9
624972		E.4	660195	SAPVII40/600	D.78	665269	MT+AA25 4M	D.57	666148	CTX 40 30 230 U	D.9
624973		E.4	660196	SAPVII40/600C	D.78	665270	MT+AA30 4M	D.57	666149	CTX 40 30 024 U	D.9
624974		E.4	660197	SAPVII40/1000	D.78	665271	MT+AV300 4M	D.57	666150	CTX 40 40 012 U	D.9
624975		E.6	660198	SAPVII40/1000C	D.78	665272	MT+AV500 4M	D.57	666151	CTX 40 40 230 U	D.9
624976		E.6	660199	SAM I+II 25/230	D.70	665273	MT+AF 4M	D.57	666152	CTX 40 40 240 U	D.9
624977		E.6	660274	SAM I+II 50N	D.70	665274	MT+AH110 2M	D.57	666153	CTX 40 40 024 U	D.9
624978		E.6	660294	SAM I+II 12.5/230	D.70	665275	MT+AH230 2M	D.57	666154	CTX 40 40 048 U	D.9
624979		E.6	660296	SAM I+II 25N	D.70	665276	MT+AH24 2M	D.57	666155	CTX 63 20 230 U	D.9
624980		E.6	660297	SAM II 20/230	D.71	665283	MT+SP40	D.57	666156	CTX 63 40 230 U	D.9
624981		E.6	660299	SAM II 20N	D.71	665284	MT+SP50	D.57	666157	CTX 63 40 240 U	D.9
624982		E.6	660373	SAM II 40/230	D.71	665285	MT+SP60	D.57	666158	CTX 63 40 024 U	D.9
624983		E.6	660374	SAM II 40/400	D.71	665286	MT+SP80	D.57	666159	CTX TS 5	D.9
624984		E.6	660375	SAM II 40N	D.71	665287	MT+SP100	D.57	666160	CTX TS 2	D.9
624985		E.6	660378	SAM II 40/600PV	D.78	665288	MT+SP150	D.57	666162	CTX 06 11	D.9
624986		E.6	660379	SAM II 40/1000PV	D.78	665289	MT+SP200	D.57	666163	CTX 06 20	D.9
624987		E.6	660391	SAP1 I+II 100N	D.70	665290	MT+SP250	D.57	666164	CTX DN 20 20 230 A	D.9
624988		E.6	660393	SAM I+II 100N	D.70	665291	MT+SP300	D.57	666165	CTX DN 24 30 230 U	D.9
624989		E.6	660494	SA BLOCK I 50 2M	D.70	665292	MT+SP400	D.57	666166	CTX DN 24 40 230 U	D.9
624990		E.6	660495	SA BLOCK I 100 2M	D.70	665293	MT+SP500	D.57	666167	CTX DN 40 20 230 U	D.9
624991		E.4	660496	SAPVII40/1500	D.78	665294	MT+SP600	D.57	666168	CTX DN 40 30 230 U	D.9
624993	EV-G.1.2.80-90°	D.72	660497	SAPVII40/1500C	D.78	665295	MT+SP800	D.57	666169	CTX DN 40 40 230 U	D.9
624994		E.4	660498	SAM II 40/1500PV	D.78	665296	MT+SP1000	D.57	666170	CTX 40 02 230 U	D.9
624995		E.5	660608	SAP1II40175	D.75	665297	TOR+28	B.63	666340	AST B 12	D.7
624996		E.5	660609	SAP1II40275	D.75	665298	TOR+35	B.63	666342	AST B 24	D.7
629000			660611	SAP1II40320	D.75	665299	TOR+60	B.63	666343	AST L CL	D.7
629867		E.8	660612	SAP1II40175C	D.75	665368	MT+CT40	D.59	666344	AST L GN	D.7
644000			660613	SAP1II40275C	D.75	665369	MT+CT50	D.59	666345	AST L OR	D.7
644873		E.6	660614	SAP1II40320C	D.75	665370	MT+CT60	D.59	666346	AST L RD	D.7
644875		E.6	660615	SAP2II40175	D.75	665371	MT+CT80	D.59	666347	AST B	D.7
644876		E.6	660616	SAP2II40320	D.75	665372	MT+CT100	D.59	666499	PLS + / CTX + SP	D.9
644877		E.6	660617	SAP2II40175C	D.75	665373	MT+CT150	D.59	666501	MSC SEP	D.7
644879		E.6	660618	SAP2II40320C	D.75	665374	MT+CT200	D.59	666502	MSC SPP	D.7
644880		E.6	660619	SAP3II40175	D.75	665375	MT+CT250	D.59	666555	AST R ES E	D.3
644881		E.6	660620	SAP3II40320	D.75	665376	MT+CT300	D.59	666556	AST R ES S	D.3
644882		E.6	660621	SAP3II40175C	D.75	665377	MT+CT400	D.59	666557	AST R TS	D.3
644884		E.7	660622	SAP3II40320C	D.75	665378	MT+CT500	D.59	666558	AST M 100 10	D.3
644885		E.7	660624	SAP3II30750	D.75	665379	MT+CT600	D.59	666559	AST M 100 20	D.3
644886		E.7	660626	SAP3II30750C	D.75	665380	MT+CT800	D.59	666560	AST M 100 30	D.3
644890		E.6	660627	SAP4II40320	D.75	665381	MT+CT1000	D.59	666561	AST M 100 40	D.3
644891		E.8	660628	SAP4II40320C	D.75	665382	MT+CT1200	D.59	666562	AST M 63 10	D.3
644893	EV-G.1.3.80-90°	D.72	660629	SAP4II40175	D.75	665383	MT+CT1500	D.59	666563	AST M 63 20	D.3
644897	EV-G.1.8.80-90°	D.72	660630	SAP4II40175C	D.75	665384	MT+CT2000	D.59	666564	AST M 63 30	D.3
646000			660631	SAMII40175	D.75	665385	MT+S4 3M	D.57	666565	AST M 63 40	D.3
646083		E.7	660632	SAMII40275	D.75	665386	MT+S7 3M	D.57	666566	AST M 80 10	D.3
646084		E.7	660633	SAMII40320	D.75	665387	MT+D DV500 DA5 F 4M	D.55	666567	AST M 80 20	D.3
646091		E.5	660634	SAMII30750	D.75	665389	MT+RS485/Ethernet	D.53	666568	AST M 80 30	D.3
646092		E.5	661000			665390	MT+RSC TOP	D.53	666569	AST M 80 40	D.3
650000			661692	ASTBLR230	D.5	665391	MT+D TOPI 4M	D.55	666570	AST P 16 01	D.3
650152		E.6	661693	ASTBLG230	D.5	665392	MT+D TOPIRS485 4M	D.55	666571	AST P 16 10	D.3
650153		E.7	661694	ASTBLB230	D.5	665393	MT+D BASIC 4M	D.55	666572	AST P 16 11	D.3
650154		E.7	661695	ASTBLY230	D.5	665394	GRDT+TOP	B.63	666573	AST PL 16 10	D.3
650156		E.4	665000			665395	MT+D PRI BASIC 2M	D.55	666574	AST R 32 20	D.3
650164		E.6	665010	MTDIN1	D.61	665396	MT+ AP 3F 2M	D.55	666575	AST R 32 30	D.3
660000			665011	MTDIN2	D.61	665900	TR+ B 5	D.51	666576	AST R 32 3N	D.3
660125	SAP1 I+II 25/230	D.70	665012	MTDIN1HARCOM	D.61	665901	TR+B 8	D.51	666577	AST R 32 40	D.3
660127	SAP1 I+II 25/230 C	D.70	665155	MTDIN2COM	D.61	665902	TR+B10	D.51	666578	AST R 40 20	D.3
660139	SAP2 I+II 12.5 TT	D.70	665190	MT961	D.63	665903	TR+B15	D.51	666579	AST R 40 30	D.3
660140	SAP2 I+II 12.5 TT C	D.70	665191	MT962	D.63	665904	TR+B16	D.51	666580	AST R 40 3N	D.3
660143	SAP2 I+II 12.5 TNS	D.70	665192	MT962COM	D.63	665905	TR+B30	D.51	666581	AST R 40 40	D.3



By reference number

A

B

C

D

E

F

G

X

Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page
666582	AST R 63 20	D.3	671072	HTI+504C125	A.51	671164	HTI+252D80	A.47	671584	DOC 3125/300	A.40
666583	AST R 63 30	D.3	671073	HTI+504C100	A.51	671165	HTI+251D125	A.47	671585	DOCS 3125/300	A.40
666584	AST R 63 3N	D.3	671074	HTI+504C80	A.51	671166	HTI+251D100	A.47	671589	DOCA 4125/030	A.40
666585	AST R 63 40	D.3	671075	HTI+503C125	A.51	671167	HTI+251D80	A.47	671590	DOC 4125/030	A.40
666586	AST S 16 1	D.3	671076	HTI+503C100	A.51	671168	HTI+164D125	A.45	671591	DOCA 4125/300	A.40
666587	AST S 16 10	D.3	671077	HTI+503C80	A.51	671169	HTI+164D100	A.45	671592	DOC 4125/300	A.40
666588	AST S 16 2	D.3	671078	HTI+502C125	A.51	671170	HTI+164D80	A.45	671597	Hti H	A.41
666589	AST S 16 20	D.3	671079	HTI+502C100	A.51	671171	HTI+163D125	A.45	671598	Hti S	A.41
666590	AST S 16 30	D.3	671080	HTI+502C80	A.51	671172	HTI+163D100	A.45	671599	Hti H/S	A.41
666591	AST S 16 30 2	D.3	671081	HTI+501C125	A.51	671173	HTI+163D80	A.45	671600	Hti HH/HS	A.41
666592	AST S 16 40 2	D.3	671082	HTI+501C100	A.51	671174	HTI+162D125	A.45	671602	Hti HSR	A.41
666593	AST S 16 40	D.3	671083	HTI+501C80	A.51	671175	HTI+162D100	A.45	672000		
666594	AST S 32 1	D.3	671084	HTI+254C125	A.47	671176	HTI+162D80	A.45	672402	EP101K0.5	A.31
666595	AST S 32 10	D.3	671085	HTI+254C100	A.47	671177	HTI+161D125	A.45	672403	EP101K01	A.31
666596	AST S 32 2	D.3	671086	HTI+254C80	A.47	671178	HTI+161D100	A.45	672404	EP101K02	A.31
666597	AST S 32 20	D.3	671087	HTI+253C125	A.47	671179	HTI+161D80	A.45	672405	EP101K03	A.31
666598	AST S 32 30 2	D.3	671088	HTI+253C100	A.47	671504	Hti 101 B080	A.39	672406	EP101K04	A.31
666599	AST S 32 30	D.3	671089	HTI+253C80	A.47	671505	Hti 101 B100	A.39	672407	EP101K06	A.31
666600	AST S 32 40	D.3	671090	HTI+252C125	A.47	671506	Hti 101 B125	A.39	672408	EP101K08	A.31
666601	AST S 32 40 2	D.3	671091	HTI+252C100	A.47	671507	HTI+502B125Ai/030	A.55	672409	EP101K10	A.31
666602	AST SL 16 10	D.3	671092	HTI+252C80	A.47	671508	HTI+502C125Ai/030	A.55	672411	EP101K16	A.31
666603	AST SL 16 20	D.3	671093	HTI+251C125	A.47	671509	HTI+502D125Ai/030	A.55	672412	EP101K20	A.31
666604	AST SL 32 10	D.3	671094	HTI+251C100	A.47	671510	Hti 102 B080	A.39	672413	EP101K25	A.31
666605	AST SL 32 20	D.3	671095	HTI+251C80	A.47	671511	Hti 102 B100	A.39	672414	EP101K32	A.31
666606	AST SZ 16 1	D.3	671096	HTI+164C125	A.45	671512	Hti 102 B125	A.39	672415	EP101K40	A.31
666607	AST SZ 16 2	D.3	671097	HTI+164C100	A.45	671513	HTI+502B125A/300	A.55	672416	EP101K50	A.31
666608	AST SZ 32 1	D.3	671098	HTI+164C80	A.45	671514	HTI+502C125A/300	A.55	672417	EP101K63	A.31
666609	AST SZ 32 2	D.3	671099	HTI+163C125	A.45	671515	HTI+502D125A/300	A.55	672434	EP102K0.5	A.31
666614	AST M 40 10	D.3	671100	HTI+163C100	A.45	671516	Hti 103 B080	A.39	672435	EP102K01	A.31
666615	AST M 40 20	D.3	671101	HTI+163C80	A.45	671517	Hti 103 B100	A.39	672436	EP102K02	A.31
666616	AST M 40 30	D.3	671102	HTI+162C125	A.45	671518	Hti 103 B125	A.39	672437	EP102K03	A.31
666617	AST M 40 40	D.3	671103	HTI+162C100	A.45	671519	HTI+503B125Ai/030	A.55	672438	EP102K04	A.31
667247	EP104TB16	A.75	671104	HTI+162C80	A.45	671520	HTI+503C125Ai/030	A.55	672439	EP102K06	A.31
667248	EP101TC25	A.75	671105	HTI+161C125	A.45	671521	HTI+503D125Ai/030	A.55	672440	EP102K08	A.31
667249	CBT H NO-NC	C.10	671106	HTI+161C100	A.45	671522	Hti 104 B80	A.39	672441	EP102K10	A.31
667250	CBT H 2NC	C.10	671107	HTI+161C80	A.45	671523	Hti 104 B100	A.39	672443	EP102K16	A.31
667251	CBT H 2NO	C.10	671108	HTI+504B125	A.51	671524	Hti 104 B125	A.39	672444	EP102K20	A.31
667252	TELE LT-1	C.11	671109	HTI+504B100	A.51	671525	HTI+503B125A/300	A.55	672445	EP102K25	A.31
667253	TELE LT-2	C.11	671110	HTI+504B80	A.51	671526	HTI+503C125A/300	A.55	672446	EP102K32	A.31
667483	SA BLOCK II 15LN	D.72	671111	HTI+503B125	A.51	671527	HTI+503D125A/300	A.55	672447	EP102K40	A.31
667486	SA BLOCK I and II 100	D.72	671112	HTI+503B100	A.51	671528	Hti 101 C080	A.39	672448	EP102K50	A.31
667487	SA BLOCK I and II 100N	D.72	671113	HTI+503B80	A.51	671529	Hti 101 C100	A.39	672449	EP102K63	A.31
667488	SA BLOCK II 15/230 LNE	D.72	671114	HTI+502B125	A.51	671530	Hti 101 C125	A.39	672450	EP103K0.5	A.31
667489	SA BLOCK II 15/230 LLE	D.72	671115	HTI+502B100	A.51	671531	HTI+504B125Ai/030	A.55	672451	EP103K01	A.31
667490	SA BLOCK II 15/400 4L/NE	D.72	671116	HTI+502B80	A.51	671532	HTI+504C125Ai/030	A.55	672452	EP103K02	A.31
667491	SA BLOCK II 40/230 LLE	D.72	671117	HTI+501B125	A.51	671533	HTI+504D125Ai/030	A.55	672453	EP103K03	A.31
667494	SA BLOCK II 15/400 3L+NE	D.72	671118	HTI+501B100	A.51	671534	Hti 102 C080	A.39	672454	EP103K04	A.31
667495	SA BLOCK II 15/400 4L/NE	D.72	671119	HTI+501B80	A.51	671535	Hti 102 C100	A.39	672455	EP103K06	A.31
667496	SA BLOCK II 40/400 3L+NE	D.72	671120	HTI+254B125	A.47	671536	Hti 102 C125	A.39	672456	EP103K08	A.31
667497	SA BLOCK II 40/400 4L/NE	D.72	671121	HTI+254B100	A.47	671537	HTI+504B125A/300	A.55	672457	EP103K10	A.31
667517	SA BLOCK I and II 65N	D.72	671122	HTI+254B80	A.47	671538	HTI+504C125A/300	A.55	672459	EP103K16	A.31
669000			671123	HTI+253B125	A.47	671539	HTI+504D125A/300	A.55	672460	EP103K20	A.31
669486	EPP	A.78	671124	HTI+253B100	A.47	671540	Hti 103 C080	A.39	672461	EP103K25	A.31
671000			671125	HTI+253B80	A.47	671541	Hti 103 C100	A.39	672462	EP103K32	A.31
671024	HTI+364C125	A.49	671126	HTI+252B125	A.47	671542	Hti 103 C125	A.39	672463	EP103K40	A.31
671025	HTI+364C100	A.49	671127	HTI+252B100	A.47	671543	DOCAHTI+2100/030	A.53	672464	EP103K50	A.31
671026	HTI+364C80	A.49	671128	HTI+252B80	A.47	671544	DOCAHTI+2100/300	A.53	672465	EP103K63	A.31
671027	HTI+363C125	A.49	671129	HTI+251B125	A.47	671545	DOCAHTI+2100/500	A.53	672466	EP104K0.5	A.31
671028	HTI+363C100	A.49	671130	HTI+251B100	A.47	671546	Hti 104 C080	A.39	672467	EP104K01	A.31
671029	HTI+363C80	A.49	671131	HTI+251B80	A.47	671547	Hti 104 C100	A.39	672468	EP104K02	A.31
671030	HTI+362C125	A.49	671132	HTI+164B125	A.45	671548	Hti 104 C125	A.39	672469	EP104K03	A.31
671031	HTI+362C100	A.49	671133	HTI+164B100	A.45	671549	DOCSHTI+2100/300	A.53	672470	EP104K04	A.31
671032	HTI+362C80	A.49	671134	HTI+164B80	A.45	671550	DOCSHTI+2100/1000	A.53	672471	EP104K06	A.31
671033	HTI+361C125	A.49	671135	HTI+163B125	A.45	671551	DOCAHTI+3100/030	A.53	672472	EP104K08	A.31
671034	HTI+361C100	A.49	671136	HTI+163B100	A.45	671552	Hti 101 D080	A.39	672473	EP104K10	A.31
671035	HTI+361C80	A.49	671137	HTI+163B80	A.45	671553	Hti 101 D100	A.39	672475	EP104K16	A.31
671036	HTI+364B125	A.49	671138	HTI+162B125	A.45	671554	Hti 101 D125	A.39	672476	EP104K20	A.31
671037	HTI+364B100	A.49	671139	HTI+162B100	A.45	671555	DOCAHTI+3100/300	A.53	672477	EP104K25	A.31
671038	HTI+364B80	A.49	671140	HTI+162B80	A.45	671556	DOCAHTI+3100/500	A.53	672478	EP104K32	A.31
671039	HTI+363B125	A.49	671141	HTI+161B125	A.45	671557	DOCSHTI+3100/300	A.53	672479	EP104K40	A.31
671040	HTI+363B100	A.49	671142	HTI+161B100	A.45	671558	Hti 102 D080	A.39	672480	EP104K50	A.31
671041	HTI+363B80	A.49	671143	HTI+161B80	A.45	671559	Hti 102 D100	A.39	672481	EP104K63	A.31
671042	HTI+362B125	A.49	671144	HTI+504D125	A.51	671560	Hti 102 D125	A.39	672567	CA H	C.4
671043	HTI+362B100	A.49	671145	HTI+504D100	A.51	671561	DOCSHTI+3100/500	A.53	672568	CA S/H	C.4
671044	HTI+362B80	A.49	671146	HTI+504D80	A.51	671562	DOCSHTI+3100/1000	A.53	672569	CA S/H/G	C.4
671045	HTI+361B125	A.49	671147	HTI+503D125	A.51	671563	DOCAHTI+4100/030	A.53	672570	CB SH/HH-R	C.5
671046	HTI+361B100	A.49	671148	HTI+503D100	A.51	671564	Hti 103 D080	A.39	672571	CB SH/HH-L	C.5
671047	HTI+361B80	A.49	671149	HTI+503D80	A.51	671565	Hti 103 D100	A.39	672572	PBS	C.9
671048	HTI+364D125	A.49	671150	HTI+502D125	A.51	671566	Hti 103 D125	A.39	672573	TELE L-1	C.9
671049	HTI+364D100	A.49	671151	HTI+502D100	A.51	671567	DOCAHTI+4100/300	A.53	672574	TELE L-2	C.9
671050	HTI+364D80	A.49	671152	HTI+502D80	A.51	671568	DOCAHTI+4100/500	A.53	672575	TELE U-230	C.9
671051	HTI+363D125	A.49	671153	HTI+501D125	A.51	671569	DOCSHTI+4100/300	A.53	672576	TELE U-12	C.9
671052	HTI+363D100	A.49	671154	HTI+501D100	A.51	671570	Hti 104 D080	A.39	672577	TELE U-24	C.9
671053	HTI+363D80	A.49	671155	HTI+501D80	A.51	671571	Hti 104 D100	A.39	672578	TELE U-48	C.9
671054	HTI+362D125	A.49	671156	HTI+254D125	A.47	671572	Hti 104 D125	A.39	672580	TELE MP	C.7
671055	HTI+362D100	A.49	671157	HTI+254D100	A.47	671574	DOC 2125/030	A.40	672972	CA UN H	C.6
671056	HTI+362D80	A.49	671158	HTI+254D80	A.47	671576	DOC 2125/300	A.40	672973	CA UN S/H	C.6
671057											



Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page
673270	EP101UCRK02	A.73	674407	G32C32	A.21	674565	G42B10	A.23	674712	G61NB50	A.25
673271	EP101UCRK03	A.73	674408	G32C40	A.21	674567	G42B16	A.23	674713	G61NB63	A.25
673272	EP101UCRK04	A.73	674413	G33C02	A.21	674568	G42B20	A.23	674714	G62B06	A.25
673273	EP101UCRK06	A.73	674415	G33C04	A.21	674569	G42B25	A.23	674716	G62B10	A.25
673274	EP101UCRK08	A.73	674416	G33C06	A.21	674570	G42B32	A.23	674718	G62B16	A.25
673275	EP101UCRK10	A.73	674418	G33C10	A.21	674571	G42B40	A.23	674719	G62B20	A.25
673276	EP101UCRK13	A.73	674420	G33C16	A.21	674574	G43B06	A.23	674720	G62B25	A.25
673277	EP101UCRK16	A.73	674421	G33C20	A.21	674576	G43B10	A.23	674721	G62B32	A.25
673278	EP101UCRK20	A.73	674422	G33C25	A.21	674578	G43B16	A.23	674722	G62B40	A.25
673279	EP101UCRK25	A.73	674423	G33C32	A.21	674579	G43B20	A.23	674723	G62B50	A.25
673280	EP101UCRK32	A.73	674424	G33C40	A.21	674580	G43B25	A.23	674724	G62B63	A.25
673281	EP101UCRK40	A.73	674429	G34C02	A.21	674581	G43B32	A.23	674725	G63B06	A.25
673282	EP101UCRK50	A.73	674431	G34C04	A.21	674582	G43B40	A.23	674727	G63B10	A.25
673283	EP101UCRK63	A.73	674432	G34C06	A.21	674585	G44B06	A.23	674729	G63B16	A.25
673284	EP102UCRK0.5	A.73	674434	G34C10	A.21	674587	G44B10	A.23	674730	G63B20	A.25
673285	EP102UCRK10	A.73	674436	G34C16	A.21	674589	G44B16	A.23	674731	G63B25	A.25
673286	EP102UCRK1.6	A.73	674437	G34C20	A.21	674590	G44B20	A.23	674732	G63B32	A.25
673287	EP102UCRK02	A.73	674438	G34C25	A.21	674591	G44B25	A.23	674733	G63B40	A.25
673288	EP102UCRK03	A.73	674439	G34C32	A.21	674592	G44B32	A.23	674734	G63B50	A.25
673289	EP102UCRK04	A.73	674440	G34C40	A.21	674593	G44B40	A.23	674735	G63B63	A.25
673290	EP102UCRK06	A.73	674443	G31B06	A.21	674598	G61C02	A.25	674736	G64B06	A.25
673291	EP102UCRK08	A.73	674445	G31B10	A.21	674600	G61C04	A.25	674738	G64B10	A.25
673292	EP102UCRK10	A.73	674447	G31B16	A.21	674601	G61C06	A.25	674740	G64B16	A.25
673293	EP102UCRK13	A.73	674448	G31B20	A.21	674603	G61C10	A.25	674741	G64B20	A.25
673294	EP102UCRK16	A.73	674449	G31B25	A.21	674605	G61C16	A.25	674742	G64B25	A.25
673295	EP102UCRK20	A.73	674450	G31B32	A.21	674606	G61C20	A.25	674743	G64B32	A.25
673296	EP102UCRK25	A.73	674451	G31B40	A.21	674607	G61C25	A.25	674744	G64B40	A.25
673297	EP102UCRK32	A.73	674454	G32B06	A.21	674608	G61C32	A.25	674745	G64B50	A.25
673298	EP102UCRK40	A.73	674456	G32B10	A.21	674609	G61C40	A.25	674746	G64B63	A.25
673299	EP102UCRK50	A.73	674458	G32B16	A.21	674610	G61C50	A.25	674760	G61D02	A.25
673300	EP102UCRK63	A.73	674459	G32B20	A.21	674611	G61C63	A.25	674762	G61D04	A.25
673301	EP101UCC0.5	A.37	674460	G32B25	A.21	674614	G61NC02	A.25	674763	G61D06	A.25
673302	EP101UCC01	A.37	674461	G32B32	A.21	674616	G61NC04	A.25	674765	G61D10	A.25
673303	EP101UCC02	A.37	674462	G32B40	A.21	674617	G61NC06	A.25	674767	G61D16	A.25
673305	EP101UCC04	A.37	674466	G33B06	A.21	674619	G61NC10	A.25	674768	G61D20	A.25
673306	EP101UCC06	A.37	674468	G33B10	A.21	674621	G61NC16	A.25	674769	G61D25	A.25
673308	EP101UCC10	A.37	674470	G33B16	A.21	674622	G61NC20	A.25	674770	G61D32	A.25
673310	EP101UCC16	A.37	674471	G33B20	A.21	674623	G61NC25	A.25	674771	G61D40	A.25
673311	EP101UCC20	A.37	674472	G33B25	A.21	674624	G61NC32	A.25	674772	G61D50	A.25
673312	EP101UCC25	A.37	674473	G33B32	A.21	674625	G61NC40	A.25	674773	G61D63	A.25
673313	EP101UCC32	A.37	674474	G33B40	A.21	674626	G61NC50	A.25	674776	G61ND02	A.25
673314	EP101UCC40	A.37	674477	G34B06	A.21	674627	G61NC63	A.25	674778	G61ND04	A.25
673315	EP101UCC50	A.37	674479	G34B10	A.21	674630	G62C02	A.25	674779	G61ND06	A.25
673316	EP101UCC63	A.37	674481	G34B16	A.21	674632	G62C04	A.25	674781	G61ND10	A.25
673317	EP102UCC0.5	A.37	674482	G34B20	A.21	674633	G62C06	A.25	674783	G61ND16	A.25
673318	EP102UCC01	A.37	674483	G34B25	A.21	674635	G62C10	A.25	674784	G61ND20	A.25
673319	EP102UCC02	A.37	674484	G34B32	A.21	674637	G62C16	A.25	674785	G61ND25	A.25
673321	EP102UCC04	A.37	674485	G34B40	A.21	674638	G62C20	A.25	674786	G61ND32	A.25
673322	EP102UCC06	A.37	674490	G41C02	A.23	674639	G62C25	A.25	674787	G61ND40	A.25
673324	EP102UCC10	A.37	674492	G41C04	A.23	674640	G62C32	A.25	674788	G61ND50	A.25
673326	EP102UCC16	A.37	674493	G41C06	A.23	674641	G62C40	A.25	674789	G61ND63	A.25
673327	EP121UCC20	A.37	674495	G41C10	A.23	674642	G62C50	A.25	674792	G62D02	A.25
673328	EP102UCC25	A.37	674497	G41C16	A.23	674643	G62C63	A.25	674794	G62D04	A.25
673329	EP102UCC32	A.37	674498	G41C20	A.23	674646	G63C02	A.25	674795	G62D06	A.25
673330	EP102UCC40	A.37	674499	G41C25	A.23	674648	G63C04	A.25	674797	G62D10	A.25
673331	EP102UCC50	A.37	674500	G41C32	A.23	674649	G63C06	A.25	674799	G62D16	A.25
673332	EP102UCC63	A.37	674501	G41C40	A.23	674651	G63C10	A.25	674800	G62D20	A.25
673333	EP101UCB06	A.37	674506	G42C02	A.23	674653	G63C16	A.25	674801	G62D25	A.25
673334	EP101UCB10	A.37	674508	G42C04	A.23	674654	G63C20	A.25	674802	G62D32	A.25
673335	EP101UCB16	A.37	674509	G42C06	A.23	674655	G63C25	A.25	674803	G62D40	A.25
673336	EP101UCB20	A.37	674511	G42C10	A.23	674656	G63C32	A.25	674804	G62D50	A.25
673337	EP101UCB25	A.37	674513	G42C16	A.23	674657	G63C40	A.25	674805	G62D63	A.25
673338	EP101UCB32	A.37	674514	G42C20	A.23	674658	G63C50	A.25	674808	G63D02	A.25
673339	EP101UCB40	A.37	674515	G42C25	A.23	674659	G63C63	A.25	674810	G63D04	A.25
673340	EP101UCB50	A.37	674516	G42C32	A.23	674660	G64C0.5	A.25	674811	G63D06	A.25
673341	EP101UCB63	A.37	674517	G42C40	A.23	674662	G64C02	A.25	674813	G63D10	A.25
673342	EP102UCB06	A.37	674522	G43C02	A.23	674664	G64C04	A.25	674815	G63D16	A.25
673343	EP102UCB10	A.37	674524	G43C04	A.23	674665	G64C06	A.25	674816	G63D20	A.25
673344	EP102UCB16	A.37	674525	G43C06	A.23	674667	G64C10	A.25	674817	G63D25	A.25
673345	EP102UCB20	A.37	674527	G43C10	A.23	674669	G64C16	A.25	674818	G63D32	A.25
673346	EP102UCB25	A.37	674529	G43C16	A.23	674670	G64C20	A.25	674819	G63D40	A.25
673347	EP102UCB32	A.37	674530	G43C20	A.23	674671	G64C25	A.25	674820	G63D50	A.25
673348	EP102UCB40	A.37	674531	G43C25	A.23	674672	G64C32	A.25	674821	G63D63	A.25
673349	EP102UCB50	A.37	674532	G43C32	A.23	674673	G64C40	A.25	674824	G64D02	A.25
673350	EP102UCB63	A.37	674533	G43C40	A.23	674674	G64C50	A.25	674826	G64D04	A.25
674000			674538	G44C02	A.23	674675	G64C63	A.25	674827	G64D06	A.25
674381	G31C02	A.21	674540	G44C04	A.23	674692	G61B06	A.25	674829	G64D10	A.25
674383	G31C04	A.21	674541	G44C06	A.23	674694	G61B10	A.25	674831	G64D16	A.25
674384	G31C06	A.21	674543	G44C10	A.23	674696	G61B16	A.25	674832	G64D20	A.25
674386	G31C10	A.21	674545	G44C16	A.23	674697	G61B20	A.25	674833	G64D25	A.25
674388	G31C16	A.21	674546	G44C20	A.23	674698	G61B25	A.25	674834	G64D32	A.25
674389	G31C20	A.21	674547	G44C25	A.23	674699	G61B32	A.25	674835	G64D40	A.25
674390	G31C25	A.21	674548	G44C32	A.23	674700	G61B40	A.25	674836	G64D50	A.25
674391	G31C32	A.21	674549	G44C40	A.23	674701	G61B50	A.25	674837	G64D63	A.25
674392	G31C40	A.21	674552	G41B06	A.23	674702	G61B63	A.25	674854	G101C0.5	A.29
674397	G32C02	A.21	674554	G41B10	A.23	674703	G61NB06	A.25	674855	G101C01	A.29
674399	G32C04	A.21	674556	G41B16	A.23	674705	G61NB10	A.25	674856	G101C02	A.29
674400	G32C06	A.21	674557	G41B20	A.23	674707	G61NB16	A.25	674857	G101C03	A.29
674402	G32C10	A.21	674558	G41B25	A.23	674708	G61NB20	A.25	674858	G101C04	A.29
674404	G32C16	A.21	674559	G41B32	A.23	674709	G61NB25	A.25	674859	G101C06	A.29
674405	G32C20	A.21	674560	G41B40	A.23	674710	G61NB32	A.25	674861	G101C10	A.29
674406	G32C25	A.21	674563	G42B06	A.23	674711	G61NB40	A.25	674862	G101C13	A.29



By reference number

A

B

C

D

E

F

G

X

Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page
674863	G101C16	A.29	674980	G102B40	A.29	675089	G104D16	A.29	675204	GT103B25	A.33
674864	G101C20	A.29	674981	G102B50	A.29	675090	G104D20	A.29	675205	GT103B32	A.33
674865	G101C25	A.29	674982	G102B63	A.29	675091	G104D25	A.29	675206	GT103B40	A.33
674866	G101C32	A.29	674983	G103B06	A.29	675092	G104D32	A.29	675207	GT103B50	A.33
674867	G101C40	A.29	674985	G103B10	A.29	675093	G104D40	A.29	675208	GT103B63	A.33
674868	G101C50	A.29	674986	G103B13	A.29	675094	G104D50	A.29	675209	GT104B06	A.33
674869	G101C63	A.29	674987	G103B16	A.29	675095	G104D63	A.29	675211	GT104B10	A.33
674872	G101NC02	A.29	674988	G103B20	A.29	675112	GT101C05	A.33	675212	GT104B13	A.33
674873	G101NC03	A.29	674989	G103B25	A.29	675113	GT101C01	A.33	675213	GT104B16	A.33
674874	G101NC04	A.29	674990	G103B32	A.29	675114	GT101C02	A.33	675214	GT104B20	A.33
674875	G101NC06	A.29	674991	G103B40	A.29	675115	GT101C03	A.33	675215	GT104B25	A.33
674877	G101NC10	A.29	674992	G103B50	A.29	675116	GT101C04	A.33	675216	GT104B32	A.33
674878	G101NC13	A.29	674993	G103B63	A.29	675117	GT101C06	A.33	675217	GT104B40	A.33
674879	G101NC16	A.29	674994	G104B06	A.29	675119	GT101C10	A.33	675218	GT104B50	A.33
674880	G101NC20	A.29	674996	G104B10	A.29	675120	GT101C13	A.33	675219	GT104B63	A.33
674881	G101NC25	A.29	674997	G104B13	A.29	675121	GT101C16	A.33	675220	GT101D05	A.33
674882	G101NC32	A.29	674998	G104B16	A.29	675122	GT101C20	A.33	675221	GT101D01	A.33
674883	G101NC40	A.29	674999	G104B20	A.29	675123	GT101C25	A.33	675222	GT101D02	A.33
674884	G101NC50	A.29	675000			675124	GT101C32	A.33	675223	GT101D03	A.33
674885	G101NC63	A.29	675000	G104B25	A.29	675125	GT101C40	A.33	675224	GT101D04	A.33
674886	G102C0.5	A.29	675001	G104B32	A.29	675126	GT101C50	A.33	675225	GT101D06	A.33
674887	G102C01	A.29	675002	G104B40	A.29	675127	GT101C63	A.33	675227	GT101D10	A.33
674888	G102C02	A.29	675003	G104B50	A.29	675128	GT102C0.5	A.33	675228	GT101D13	A.33
674889	G102C03	A.29	675004	G104B63	A.29	675129	GT102C01	A.33	675229	GT101D16	A.33
674890	G102C04	A.29	675016	G101D0.5	A.29	675130	GT102C02	A.33	675230	GT101D20	A.33
674891	G102C06	A.29	675017	G101D01	A.29	675131	GT102C03	A.33	675231	GT101D25	A.33
674893	G102C10	A.29	675018	G101D02	A.29	675132	GT102C04	A.33	675232	GT101D32	A.33
674894	G102C13	A.29	675019	G101D03	A.29	675133	GT102C06	A.33	675233	GT101D40	A.33
674895	G102C16	A.29	675020	G101D04	A.29	675135	GT102C10	A.33	675234	GT101D50	A.33
674896	G102C20	A.29	675021	G101D06	A.29	675136	GT102C13	A.33	675235	GT101D63	A.33
674897	G102C25	A.29	675023	G101D10	A.29	675137	GT102C16	A.33	675236	GT102D0.5	A.33
674898	G102C32	A.29	675024	G101D13	A.29	675138	GT102C20	A.33	675237	GT102D01	A.33
674899	G102C40	A.29	675025	G101D16	A.29	675139	GT102C25	A.33	675238	GT102D02	A.33
674900	G102C50	A.29	675026	G101D20	A.29	675140	GT102C32	A.33	675239	GT102D03	A.33
674901	G102C63	A.29	675027	G101D25	A.29	675141	GT102C40	A.33	675240	GT102D04	A.33
674902	G103C0.5	A.29	675028	G101D32	A.29	675142	GT102C50	A.33	675241	GT102D06	A.33
674903	G103C01	A.29	675029	G101D40	A.29	675143	GT102C63	A.33	675243	GT102D10	A.33
674904	G103C02	A.29	675030	G101D50	A.29	675144	GT103C0.5	A.33	675244	GT102D13	A.33
674905	G103C03	A.29	675031	G101D63	A.29	675145	GT103C01	A.33	675245	GT102D16	A.33
674906	G103C04	A.29	675032	G101ND0.5	A.29	675146	GT103C02	A.33	675246	GT102D20	A.33
674907	G103C06	A.29	675033	G101ND01	A.29	675147	GT103C03	A.33	675247	GT102D25	A.33
674909	G103C10	A.29	675034	G101ND02	A.29	675148	GT103C04	A.33	675248	GT102D32	A.33
674910	G103C13	A.29	675035	G101ND03	A.29	675149	GT103C06	A.33	675249	GT102D40	A.33
674911	G103C16	A.29	675036	G101ND04	A.29	675151	GT103C10	A.33	675250	GT102D50	A.33
674912	G103C20	A.29	675037	G101ND06	A.29	675152	GT103C13	A.33	675251	GT102D63	A.33
674913	G103C25	A.29	675039	G101ND10	A.29	675153	GT103C16	A.33	675252	GT103D0.5	A.33
674914	G103C32	A.29	675040	G101ND13	A.29	675154	GT103C20	A.33	675253	GT103D01	A.33
674915	G103C40	A.29	675041	G101ND16	A.29	675155	GT103C25	A.33	675254	GT103D02	A.33
674916	G103C50	A.29	675042	G101ND20	A.29	675156	GT103C32	A.33	675255	GT103D03	A.33
674917	G103C63	A.29	675043	G101ND25	A.29	675157	GT103C40	A.33	675256	GT103D04	A.33
674918	G104C0.5	A.29	675044	G101ND32	A.29	675158	GT103C50	A.33	675257	GT103D06	A.33
674919	G104C01	A.29	675045	G101ND40	A.29	675159	GT103C63	A.33	675259	GT103D10	A.33
674920	G104C02	A.29	675046	G101ND50	A.29	675160	GT104C0.5	A.33	675260	GT103D13	A.33
674921	G104C03	A.29	675047	G101ND63	A.29	675161	GT104C01	A.33	675261	GT103D16	A.33
674922	G104C04	A.29	675048	G102D0.5	A.29	675162	GT104C02	A.33	675262	GT103D20	A.33
674923	G104C06	A.29	675049	G102D01	A.29	675163	GT104C03	A.33	675263	GT103D25	A.33
674925	G104C10	A.29	675050	G102D02	A.29	675164	GT104C04	A.33	675264	GT103D32	A.33
674926	G104C13	A.29	675051	G102D03	A.29	675165	GT104C06	A.33	675265	GT103D40	A.33
674927	G104C16	A.29	675052	G102D04	A.29	675167	GT104C10	A.33	675266	GT103D50	A.33
674928	G104C20	A.29	675053	G102D06	A.29	675168	GT104C13	A.33	675267	GT103D63	A.33
674929	G104C25	A.29	675055	G102D10	A.29	675169	GT104C16	A.33	675268	GT104D0.5	A.33
674930	G104C32	A.29	675056	G102D13	A.29	675170	GT104C20	A.33	675269	GT104D01	A.33
674931	G104C40	A.29	675057	G102D16	A.29	675171	GT104C25	A.33	675270	GT104D02	A.33
674932	G104C50	A.29	675058	G102D20	A.29	675172	GT104C32	A.33	675271	GT104D03	A.33
674933	G104C63	A.29	675059	G102D25	A.29	675173	GT104C40	A.33	675272	GT104D04	A.33
674950	G101B06	A.29	675060	G102D32	A.29	675174	GT104C50	A.33	675273	GT104D06	A.33
674952	G101B10	A.29	675061	G102D40	A.29	675175	GT104C63	A.33	675275	GT104D10	A.33
674953	G101B13	A.29	675062	G102D50	A.29	675176	GT101B06	A.33	675276	GT104D13	A.33
674954	G101B16	A.29	675063	G102D63	A.29	675178	GT101B10	A.33	675277	GT104D16	A.33
674955	G101B20	A.29	675064	G103D0.5	A.29	675179	GT101B13	A.33	675278	GT104D20	A.33
674956	G101B25	A.29	675065	G103D01	A.29	675180	GT101B16	A.33	675279	GT104D25	A.33
674957	G101B32	A.29	675066	G103D02	A.29	675181	GT101B20	A.33	675280	GT104D32	A.33
674958	G101B40	A.29	675067	G103D03	A.29	675182	GT101B25	A.33	675281	GT104D40	A.33
674959	G101B50	A.29	675068	G103D04	A.29	675183	GT101B32	A.33	675282	GT104D50	A.33
674960	G101B63	A.29	675069	G103D06	A.29	675184	GT101B40	A.33	675283	GT104D63	A.33
674961	G101NB06	A.29	675071	G103D10	A.29	675185	GT101B50	A.33	675284	GT251C0.5	A.35
674963	G101NB10	A.29	675072	G103D13	A.29	675186	GT101B63	A.33	675285	GT251C01	A.35
674964	G101NB13	A.29	675073	G103D16	A.29	675187	GT102B06	A.33	675286	GT251C02	A.35
674965	G101NB16	A.29	675074	G103D20	A.29	675189	GT102B10	A.33	675288	GT251C04	A.35
674966	G101NB20	A.29	675075	G103D25	A.29	675190	GT102B13	A.33	675289	GT251C06	A.35
674967	G101NB25	A.29	675076	G103D32	A.29	675191	GT102B16	A.33	675291	GT251C10	A.35
674968	G101NB32	A.29	675077	G103D40	A.29	675192	GT102B20	A.33	675293	GT251C16	A.35
674969	G101NB40	A.29	675078	G103D50	A.29	675193	GT102B25	A.33	675294	GT251C20	A.35
674970	G101NB50	A.29	675079	G103D63	A.29	675194	GT102B32	A.33	675295	GT251C25	A.35
674971	G101NB63	A.29	675080	G104D0.5	A.29	675195	GT102B40	A.33	675296	GT251C32	A.35
674972	G102B06	A.29	675081	G104D01	A.29	675196	GT102B50	A.33	675297	GT251C40	A.35
674974	G102B10	A.29	675082	G104D02	A.29	675197	GT102B63	A.33	675298	GT251C50	A.35
674975	G102B13	A.29	675083	G104D03	A.29	675198	GT103B06	A.33	675299	GT251C63	A.35
674976	G102B16	A.29	675084	G104D04	A.29	675200	GT103B10	A.33	675300	GT252C0.5	A.35
674977	G102B20	A.29	675085	G104D06	A.29	675201	GT103B13	A.33	675301	GT252C01	A.35
674978	G102B25	A.29	675087	G104D10	A.29	675202	GT103B16	A.33	675302	GT252C02	A.35
674979	G102B32	A.29	675088	G104D13	A.29	675203	GT103B20	A.33	675304	GT252C04	A.35



Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page
675305	GT252C06	A.35	675419	GT252D25	A.35	677150	REC2 DPCA100C10/030	C.17	678187	EPP62B25	A.109
675307	GT252C10	A.35	675420	GT252D32	A.35	677151	REC2 DPCA100C16/030	C.17	678188	EPP62B32	A.109
675309	GT252C16	A.35	675421	GT252D40	A.35	677152	REC2 DPCA100C20/030	C.17	678189	EPP62B40	A.109
675310	GT252C20	A.35	675422	GT252D50	A.35	677153	REC2 DPCA100C25/030	C.17	678190	EPP62B50	A.109
675311	GT252C25	A.35	675423	GT252D63	A.35	677154	REC2 DPCA100C32/030	C.17	678191	EPP62B63	A.109
675312	GT252C32	A.35	675424	GT253D0.5	A.35	677155	REC2 DPCA100C40/030	C.17	678192	EPP63B06	A.109
675313	GT252C40	A.35	675425	GT253D01	A.35	677156	REC2 DPCA100C10/300	C.17	678193	EPP63B10	A.109
675314	GT252C50	A.35	675426	GT253D02	A.35	677157	REC2 DPCA100C16/300	C.17	678194	EPP63B13	A.109
675315	GT252C63	A.35	675428	GT253D04	A.35	677158	REC2 DPCA100C20/300	C.17	678195	EPP63B16	A.109
675316	GT253C0.5	A.35	675429	GT253D06	A.35	677159	REC2 DPCA100C25/300	C.17	678196	EPP63B20	A.109
675317	GT253C01	A.35	675431	GT253D10	A.35	677160	REC2 DPCA100C32/300	C.17	678197	EPP63B25	A.109
675318	GT253C02	A.35	675433	GT253D16	A.35	677161	REC2 DPCA100C40/300	C.17	678198	EPP63B32	A.109
675320	GT253C04	A.35	675434	GT253D20	A.35	677162	REC2 DPCA100C10/030	C.17	678199	EPP63B40	A.109
675321	GT253C06	A.35	675435	GT253D25	A.35	677163	REC2 DPCA100C16/030	C.17	678200	EPP63B50	A.109
675323	GT253C10	A.35	675436	GT253D32	A.35	677164	REC2 DPCA100C20/030	C.17	678201	EPP63B63	A.109
675325	GT253C16	A.35	675437	GT253D40	A.35	677165	REC2 DPCA100C25/030	C.17	678202	EPP63NB06	A.109
675326	GT253C20	A.35	675438	GT253D50	A.35	677166	REC2 DPCA100C32/030	C.17	678203	EPP63NB10	A.109
675327	GT253C25	A.35	675439	GT253D63	A.35	677167	REC2 DPCA100C40/030	C.17	678204	EPP63NB13	A.109
675328	GT253C32	A.35	675440	GT254D0.5	A.35	677168	REC2 DPCA100C10/300	C.17	678205	EPP63NB16	A.109
675329	GT253C40	A.35	675441	GT254D01	A.35	677169	REC2 DPCA100C16/300	C.17	678206	EPP63NB20	A.109
675330	GT253C50	A.35	675442	GT254D02	A.35	677170	REC2 DPCA100C20/300	C.17	678207	EPP63NB25	A.109
675331	GT253C63	A.35	675444	GT254D04	A.35	677171	REC2 DPCA100C25/300	C.17	678208	EPP63NB32	A.109
675332	GT254C0.5	A.35	675445	GT254D06	A.35	677172	REC2 DPCA100C32/300	C.17	678209	EPP63NB40	A.109
675333	GT254C01	A.35	675447	GT254D10	A.35	677173	REC2 DPCA100C40/300	C.17	678210	EPP63NB50	A.109
675334	GT254C02	A.35	675449	GT254D16	A.35	677174	REC2 DPCA100B10/030	C.17	678211	EPP63NB63	A.109
675336	GT254C04	A.35	675450	GT254D20	A.35	677175	REC2 DPCA100B16/030	C.17	678212	EPP61C06	A.109
675337	GT254C06	A.35	675451	GT254D25	A.35	677176	REC2 DPCA100B20/030	C.17	678213	EPP61C10	A.109
675339	GT254C10	A.35	675452	GT254D32	A.35	677177	REC2 DPCA100B25/030	C.17	678214	EPP61C13	A.109
675341	GT254C16	A.35	675453	GT254D40	A.35	677178	REC2 DPCA100B32/030	C.17	678215	EPP61C16	A.109
675342	GT254C20	A.35	675454	GT254D50	A.35	677179	REC2 DPCA100B40/030	C.17	678216	EPP61C20	A.109
675343	GT254C25	A.35	675455	GT254D63	A.35	677180	REC2 DPCA100B10/300	C.17	678217	EPP61C25	A.109
675344	GT254C32	A.35	676000			677181	REC2 DPCA100B16/300	C.17	678218	EPP61C32	A.109
675345	GT254C40	A.35	676551	SFN/8x31	A.113	677182	REC2 DPCA100B20/300	C.17	678219	EPP61C40	A.109
675346	GT254C50	A.35	676552	SF1/8x31	A.113	677183	REC2 DPCA100B25/300	C.17	678220	EPP61C50	A.109
675347	GT254C63	A.35	676554	SF2/8x31	A.113	677184	REC2 DPCA100B32/300	C.17	678221	EPP61C63	A.109
675348	GT251B06	A.35	676555	SF3/8x31	A.113	677185	REC2 DPCA100B40/300	C.17	678222	EPP61NC06	A.109
675350	GT251B10	A.35	676556	SF3N/8x31	A.113	677186	REC TOP EP102 C10	C.19	678223	EPP61NC10	A.109
675352	GT251B16	A.35	676558	SF1/10x38	A.113	677187	REC TOP EP102 C16	C.19	678224	EPP61NC13	A.109
675353	GT251B20	A.35	676559	SF1N/10x38	A.113	677188	REC TOP EP102 C20	C.19	678225	EPP61NC16	A.109
675354	GT251B25	A.35	676560	SF2/10x38	A.113	677189	REC TOP EP102 C25	C.19	678226	EPP61NC20	A.109
675355	GT251B32	A.35	676561	SF3/10x38	A.113	677190	REC TOP EP102 C32	C.19	678227	EPP61NC25	A.109
675356	GT251B40	A.35	676562	SF3N/10x38	A.113	677191	REC TOP EP102 C40	C.19	678228	EPP61NC32	A.109
675357	GT251B50	A.35	676563	SFN/14x51	A.113	677192	REC TOP EP102 C50	C.19	678229	EPP61NC40	A.109
675358	GT251B63	A.35	676564	SF1/14x51	A.113	677193	REC TOP EP102 C63	C.19	678230	EPP61NC50	A.109
675359	GT252B06	A.35	676565	SF1N/14x51	A.113	677194	REC TOP EP104 B10	C.19	678231	EPP61NC63	A.109
675361	GT252B10	A.35	676566	SF2/14x51	A.113	677195	REC TOP EP104 B16	C.19	678232	EPP62C06	A.109
675363	GT252B16	A.35	676567	SF3/14x51	A.113	677196	REC TOP EP104 B20	C.19	678233	EPP62C10	A.109
675364	GT252B20	A.35	676568	SF3N/14x51	A.113	677197	REC TOP EP104 B25	C.19	678234	EPP62C13	A.109
675365	GT252B25	A.35	676569	SFN/22x58	A.113	677198	REC TOP EP104 B32	C.19	678235	EPP62C16	A.109
675366	GT252B32	A.35	676570	SF1/22x58	A.113	677199	REC TOP EP104 B40	C.19	678236	EPP62C20	A.109
675367	GT252B40	A.35	676571	SF1N/22x58	A.113	678000			678237	EPP62C25	A.109
675368	GT252B50	A.35	676572	SF2/22x58	A.113	678026	REC TOP EP104 B50	C.19	678238	EPP62C32	A.109
675369	GT252B63	A.35	676573	SF3/22x58	A.113	678027	REC TOP EP104 B63	C.19	678239	EPP62C40	A.109
675370	GT253B06	A.35	676574	SF3N/22x58	A.113	678028	REC TOP EP104 C10	C.19	678240	EPP62C50	A.109
675372	GT253B10	A.35	676910	LT1 N	A.121	678029	REC TOP EP104 C16	C.19	678241	EPP62C63	A.109
675374	GT253B16	A.35	676911	LT3 N	A.121	678030	REC TOP EP104 C20	C.19	678242	EPP63C06	A.109
675375	GT253B20	A.35	676986	REC2 A 225/30	C.15	678031	REC TOP EP104 C25	C.19	678243	EPP63C10	A.109
675376	GT253B25	A.35	676987	REC2 A 240/30	C.15	678032	REC TOP EP104 C32	C.19	678244	EPP63C13	A.109
675377	GT253B32	A.35	676988	REC2 A 263/30	C.15	678033	REC TOP EP104 C40	C.19	678245	EPP63C16	A.109
675378	GT253B40	A.35	676989	REC2 A 280/30	C.15	678034	REC TOP EP104 C50	C.19	678246	EPP63C20	A.109
675379	GT253B50	A.35	676990	REC2 A 2100/30	C.15	678035	REC TOP EP104 C63	C.19	678247	EPP63C25	A.109
675380	GT253B63	A.35	676991	REC2 Ai 225/30	C.15	678036	REC TOP TT 25	C.19	678248	EPP63C32	A.109
675381	GT254B06	A.35	676992	REC2 Ai 240/30	C.15	678037	REC TOP TT 35	C.19	678249	EPP63C40	A.109
675383	GT254B10	A.35	676993	REC2 Ai 263/30	C.15	678082	HTI+H	A.56	678250	EPP63C50	A.109
675385	GT254B16	A.35	676994	REC2 A 225/300	C.15	678083	HTI+H/S	A.57	678251	EPP63C63	A.109
675386	GT254B20	A.35	676995	REC2 A 240/300	C.15	678084	HTI+KS	A.61	678252	EPP63NC06	A.109
675387	GT254B25	A.35	676996	REC2 A 263/300	C.15	678085	HTI+TELEL220	A.58	678253	EPP63NC10	A.109
675388	GT254B32	A.35	676997	REC2 A 280/300	C.15	678086	HTI+TELEU220	A.59	678254	EPP63NC13	A.109
675389	GT254B40	A.35	676998	REC2 A 2100/300	C.15	678087	HTI+RH-RED	A.61	678255	EPP63NC16	A.109
675390	GT254B50	A.35	676999	REC2 S 240/300	C.15	678088	HTI+RH-BLACK	A.61	678256	EPP63NC20	A.109
675391	GT254B63	A.35	677000			678089	HTI+TELEL110	A.58	678257	EPP63NC25	A.109
675392	GT251D0.5	A.35	677039	REC2 S 263/300	C.15	678090	HTI+TELEL48	A.58	678258	EPP63NC32	A.109
675393	GT251D01	A.35	677040	REC2 S 280/300	C.15	678091	HTI+TELEU48	A.59	678259	EPP63NC40	A.109
675394	GT251D02	A.35	677041	REC2 S 2100/300	C.15	678092	HTI+TELEU24	A.59	678260	EPP63NC50	A.109
675396	GT251D04	A.35	677042	REC2 A 425/30	C.15	678093	HTI+RH-A500	A.61	678261	EPP63NC63	A.109
675397	GT251D06	A.35	677043	REC2 A 440/30	C.15	678094	HTI+RH-DRIVE	A.61	678262	EPP101B06	A.111
675399	GT251D10	A.35	677044	REC2 A 463/30	C.15	678095	HTI+RH-IP54	A.61	678263	EPP101B10	A.111
675401	GT251D16	A.35	677045	REC2 A 480/30	C.15	678172	EPP61B06	A.109	678264	EPP101B13	A.111
675402	GT251D20	A.35	677046	REC2 A 4100/30	C.15	678173	EPP61B10	A.109	678265	EPP101B16	A.111
675403	GT251D25	A.35	677047	REC2 Ai 425/30	C.15	678174	EPP61B13	A.109	678266	EPP101B20	A.111
675404	GT251D32	A.35	677048	REC2 Ai 440/30	C.15	678175	EPP61B16	A.109	678267	EPP101B25	A.111
675405	GT251D40	A.35	677049	REC2 Ai 463/30	C.15	678176	EPP61B20	A.109	678268	EPP101B32	A.111
675406	GT251D50	A.35	677050	REC2 A 425/300	C.15	678177	EPP61B25	A.109	678269	EPP101B40	A.111
675407	GT251D63	A.35	677071	REC2 A 440/300	C.15	678178	EPP61B32	A.109	678270	EPP101B50	A.111
675408	GT252D0.5	A.35	677072	REC2 A 463/300	C.15	678179	EPP61B40	A.109	678271	EPP101B63	A.111
675409	GT252D01	A.35	677073	REC2 A 480/300	C.15	678180	EPP61B50	A.109	678272	EPP102B06	A.111
675410	GT252D02	A.35	677074	REC2 A 4100/300	C.15	678181	EPP61B63	A.109	678273	EPP102B10	A.111
675412	GT252D04	A.35	677075	REC2 S 440/300	C.15	678182	EPP62B06	A.109	678274	EPP102B13	A.111
675413	GT252D06	A.35	677076	REC2 S 463/300	C.15	678183	EPP62B10	A.109	678275	EPP102B16	A.111
675415	GT252D10	A.35	677077	REC2 S 480/300	C.15	678184	EPP62B13	A.109	678276	EPP102B20	A.111
675417	GT252D16	A.35	677098	REC2 S 4100/300	C.						



By reference number

A

B

C

D

E

F

G

X

Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page
678279	EPP102B40	A.111	678712	EPP64B40	A.109	681472	EP103C40RAIL	A.71	681641	EP63K16	A.27
678280	EPP102B50	A.111	678713	EPP64B50	A.109	681473	EP103C50RAIL	A.71	681642	EP63K20	A.27
678281	EPP102B63	A.111	678714	EPP64B63	A.109	681474	EP103C63RAIL	A.71	681643	EP63K25	A.27
678282	EPP103B06	A.111	678715	EPP64C06	A.109	681475	EP101RucB06	A.73	681644	EP63K32	A.27
678283	EPP103B10	A.111	678716	EPP64C10	A.109	681476	EP101RucB10	A.73	681645	EP63K40	A.27
678284	EPP103B13	A.111	678717	EPP64C13	A.109	681477	EP101RucB16	A.73	681646	EP63K50	A.27
678285	EPP103B16	A.111	678718	EPP64C16	A.109	681478	EP101RucB20	A.73	681647	EP63K63	A.27
678286	EPP103B20	A.111	678719	EPP64C20	A.109	681479	EP101RucB25	A.73	681648	EP64K0.5	A.27
678287	EPP103B25	A.111	678720	EPP64C25	A.109	681480	EP101RucB32	A.73	681649	EP64K01	A.27
678288	EPP103B32	A.111	678721	EPP64C32	A.109	681481	EP101RucB40	A.73	681650	EP64K1.6	A.27
678289	EPP103B40	A.111	678722	EPP64C40	A.109	681482	EP101RucB50	A.73	681651	EP64K02	A.27
678290	EPP103B50	A.111	678723	EPP64C50	A.109	681483	EP101RucB63	A.73	681652	EP64K03	A.27
678291	EPP103B63	A.111	678724	EPP64C63	A.109	681484	EP102RucB06	A.73	681653	EP64K04	A.27
678292	EPP103NB06	A.111	678725	EPP104B06	A.111	681485	EP102RucB10	A.73	681654	EP64K06	A.27
678293	EPP103NB10	A.111	678726	EPP104B10	A.111	681486	EP102RucB16	A.73	681655	EP64K08	A.27
678294	EPP103NB13	A.111	678727	EPP104B13	A.111	681487	EP102RucB20	A.73	681656	EP64K10	A.27
678295	EPP103NB16	A.111	678728	EPP104B16	A.111	681488	EP102RucB25	A.73	681657	EP64K16	A.27
678296	EPP103NB20	A.111	678729	EPP104B20	A.111	681489	EP102RucB32	A.73	681658	EP64K20	A.27
678297	EPP103NB25	A.111	678730	EPP104B25	A.111	681490	EP102RucB40	A.73	681659	EP64K25	A.27
678298	EPP103NB32	A.111	678731	EPP104B32	A.111	681491	EP102RucB50	A.73	681660	EP64K32	A.27
678299	EPP103NB40	A.111	678732	EPP104B40	A.111	681492	EP102RucB63	A.73	681661	EP64K40	A.27
678300	EPP103NB50	A.111	678733	EPP104B50	A.111	681493	EP101RucC0.5	A.73	681662	EP64K50	A.27
678301	EPP103NB63	A.111	678734	EPP104B63	A.111	681494	EP101RucC01	A.73	681663	EP64K63	A.27
678302	EPP101C06	A.111	678735	EPP104C06	A.111	681495	EP101RucC02	A.73	682000		
678303	EPP101C10	A.111	678736	EPP104C10	A.111	681496	EP101RucC04	A.73	682211	EP101ULH1B08	A.65
678304	EPP101C13	A.111	678737	EPP104C13	A.111	681497	EP101RucC06	A.73	682212	EP102ULH2B08	A.65
678305	EPP101C16	A.111	678738	EPP104C16	A.111	681498	EP101RucC10	A.73	682213	EP103ULH2B08	A.65
678306	EPP101C20	A.111	678739	EPP104C20	A.111	681499	EP101RucC16	A.73	682214	EP101ULH1B35	A.65
678307	EPP101C25	A.111	678740	EPP104C25	A.111	681500	EP101RucC20	A.73	682215	EP101ULH1B40	A.65
678308	EPP101C32	A.111	678741	EPP104C32	A.111	681501	EP101RucC25	A.73	682216	EP101ULH1B50	A.65
678309	EPP101C40	A.111	678742	EPP104C40	A.111	681502	EP101RucC32	A.73	682217	EP101ULH1B60	A.65
678310	EPP101C50	A.111	678743	EPP104C50	A.111	681503	EP101RucC40	A.73	682218	EP101ULH1B63	A.65
678311	EPP101C63	A.111	678744	EPP104C63	A.111	681504	EP101RucC50	A.73	682219	EP102ULH2B35	A.65
678312	EPP102C06	A.111	679000			681505	EP101RucC63	A.73	682220	EP102ULH2B40	A.65
678313	EPP102C10	A.111	679556	SF1/14X51M	A.113	681506	EP102RucC0.5	A.73	682221	EP102ULH2B50	A.65
678314	EPP102C13	A.111	679557	SF2/14X51M	A.113	681507	EP102RucC01	A.73	682222	EP102ULH2B60	A.65
678315	EPP102C16	A.111	679558	SF3/14X51M	A.113	681508	EP102RucC02	A.73	682223	EP102ULH2B63	A.65
678316	EPP102C20	A.111	679559	SF1/22X58M	A.113	681509	EP102RucC04	A.73	682224	EP103ULH2B35	A.65
678317	EPP102C25	A.111	679560	SF2/22X58M	A.113	681510	EP102RucC06	A.73	682225	EP103ULH2B40	A.65
678318	EPP102C32	A.111	679561	SF3/22X58M	A.113	681511	EP102RucC10	A.73	682226	EP103ULH2B50	A.65
678319	EPP102C40	A.111	679562	SFUL1/30CC	A.115	681512	EP102RucC16	A.73	682227	EP103ULH2B60	A.65
678320	EPP102C50	A.111	679563	SFUL2/30CC	A.115	681513	EP102RucC20	A.73	682228	EP103ULH2B63	A.65
678321	EPP102C63	A.111	679564	SFUL3/30CC	A.115	681514	EP102RucC25	A.73	682229	EP101ULH1C35	A.65
678322	EPP103C06	A.111	679565	SFUL1/30ICC	A.115	681515	EP102RucC32	A.73	682230	EP101ULH1C40	A.65
678323	EPP103C10	A.111	679566	SFUL2/30ICC	A.115	681516	EP102RucC40	A.73	682231	EP101ULH1C50	A.65
678324	EPP103C13	A.111	679567	SFUL3/30ICC	A.115	681517	EP102RucC50	A.73	682232	EP101ULH1C60	A.65
678325	EPP103C16	A.111	679568	SFUL1/10X38	A.119	681518	EP102RucC63	A.73	682233	EP101ULH1C63	A.65
678326	EPP103C20	A.111	679569	SFUL1/10X38I	A.119	681588	EP101K1.6	A.31	682234	EP102ULH2C35	A.65
678327	EPP103C25	A.111	679570	SFUL1/10X38S	A.119	681591	EP102K1.6	A.31	682235	EP101ULH2C40	A.65
678328	EPP103C32	A.111	679571	SFUL1/10X38IS	A.119	681594	EP103K1.6	A.31	682236	EP102ULH2C50	A.65
678329	EPP103C40	A.111	679583	SFUL1/30J	A.117	681597	EP104K1.6	A.31	682237	EP102ULH2C60	A.65
678330	EPP103C50	A.111	679584	SFUL2/30J	A.117	681600	EP61K0.5	A.27	682238	EP102ULH2C63	A.65
678331	EPP103C63	A.111	679585	SFUL3/30J	A.117	681601	EP61K01	A.27	682239	EP103ULH2C35	A.65
678332	EPP103NC06	A.111	679586	SFUL1/60J	A.117	681602	EP61K1.6	A.27	682240	EP103ULH2C40	A.65
678333	EPP103NC10	A.111	679587	SFUL2/60J	A.117	681603	EP61K02	A.27	682241	EP103ULH2C50	A.65
678334	EPP103NC13	A.111	679588	SFUL3/60J	A.117	681604	EP61K03	A.27	682242	EP103ULH2C60	A.65
678335	EPP103NC16	A.111	679590	SFU1N/10x38	A.113	681605	EP61K04	A.27	682243	EP103ULH2C63	A.65
678336	EPP103NC20	A.111	680000			681606	EP61K06	A.27	682244	EP101ULH1D35	A.65
678337	EPP103NC25	A.111	680565	EP102UCRC0.5	A.73	681607	EP61K08	A.27	682245	EP101ULH1D40	A.65
678338	EPP103NC32	A.111	680566	EP102UCRC01	A.73	681608	EP61K10	A.27	682246	EP101ULH1D50	A.65
678339	EPP103NC40	A.111	680567	EP102UCRC02	A.73	681609	EP61K16	A.27	682247	EP101ULH1D60	A.65
678340	EPP103NC50	A.111	680568	EP102UCRC04	A.73	681610	EP61K20	A.27	682248	EP101ULH1D63	A.65
678341	EPP103NC63	A.111	680569	EP102UCRC06	A.73	681611	EP61K25	A.27	682249	EP102ULH2D35	A.65
678359	FPPA225/030	B.59	680570	EP102UCRC10	A.73	681612	EP61K32	A.27	682250	EP102ULH2D40	A.65
678360	FPPA240/030	B.59	680571	EP102UCRC16	A.73	681613	EP61K40	A.27	682251	EP102ULH2D50	A.65
678361	FPPA263/030	B.59	680572	EP102UCRC20	A.73	681614	EP61K50	A.27	682252	EP102ULH2D60	A.65
678362	FPPA425/030	B.59	680573	EP102UCRC25	A.73	681615	EP61K63	A.27	682253	EP102ULH2D63	A.65
678363	FPPA440/030	B.59	680574	EP102UCRC32	A.73	681616	EP62K0.5	A.27	682254	EP103ULH2D35	A.65
678364	FPPA463/030	B.59	680575	EP102UCRC40	A.73	681617	EP62K01	A.27	682255	EP103ULH2D40	A.65
678365	FPPA225/100	B.59	680576	EP102UCRC50	A.73	681618	EP62K1.6	A.27	682256	EP103ULH2D50	A.65
678366	FPPA240/100	B.59	680577	EP102UCRC63	A.73	681619	EP62K02	A.27	682257	EP103ULH2D60	A.65
678367	FPPA263/100	B.59	681000			681620	EP62K03	A.27	682258	EP103ULH2D63	A.65
678368	FPPA425/100	B.59	681452	EP103B06RAIL	A.71	681621	EP62K04	A.27	682259	EP101ULH3B05	A.63
678369	FPPA440/100	B.59	681453	EP103B10RAIL	A.71	681622	EP62K06	A.27	682260	EP101ULH3B06	A.63
678370	FPPA463/100	B.59	681454	EP103B16RAIL	A.71	681623	EP62K08	A.27	682261	EP101ULH3B08	A.63
678371	FPPA225/300	B.59	681455	EP103B20RAIL	A.71	681624	EP62K10	A.27	682262	EP101ULH3B10	A.63
678372	FPPA240/300	B.59	681456	EP103B25RAIL	A.71	681625	EP62K16	A.27	682263	EP101ULH3B13	A.63
678373	FPPA263/300	B.59	681457	EP103B32RAIL	A.71	681626	EP62K20	A.27	682264	EP101ULH3B15	A.63
678374	FPPA425/300	B.59	681458	EP103B40RAIL	A.71	681627	EP62K25	A.27	682265	EP101ULH3B16	A.63
678375	FPPA440/300	B.59	681459	EP103B50RAIL	A.71	681628	EP62K32	A.27	682266	EP101ULH3B20	A.63
678376	FPPA463/300	B.59	681460	EP103B63RAIL	A.71	681629	EP62K40	A.27	682267	EP101ULH3B25	A.63
678377	FPPS240/300	B.59	681461	EP103C0.5RAIL	A.71	681630	EP62K50	A.27	682268	EP101ULH3B30	A.63
678378	FPPS263/300	B.59	681462	EP103C01RAIL	A.71	681631	EP62K63	A.27	682269	EP101ULH3B32	A.63
678379	FPPS440/300	B.59	681463	EP103C02RAIL	A.71	681632	EP63K0.5	A.27	682270	EP101ULH3B35	A.63
678380	FPPS463/300	B.59	681464	EP103C03RAIL	A.71	681633	EP63K01	A.27	682271	EP101ULH3B40	A.63
678705	EPP64B06	A.109	681465	EP103C04RAIL	A.71	681634	EP63K1.6	A.27	682272	EP102ULH4B05	A.63
678706	EPP64B10	A.109	681466	EP103C06RAIL	A.71	681635	EP63K02	A.27	682273	EP102ULH4B06	A.63
678707	EPP64B13	A.109	681467	EP103C10RAIL	A.71	681636	EP63K03	A.27	682274	EP102ULH4B08	A.63
678708	EPP64B16	A.109	681468	EP103C16RAIL	A.71	681637	EP63K04	A.27	682275	EP102ULH4B10	



Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page
682279	EP102ULH4B20	A.63	682371	EP102ULH4D01	A.63	682832	EP103Z16N	A.31	685732	CONTAXR1630024A	D.17
682280	EP102ULH4B25	A.63	682372	EP102ULH4D02	A.63	682833	EP103Z20N	A.31	685733	CONTAXR1630048A	D.17
682281	EP102ULH4B30	A.63	682373	EP102ULH4D03	A.63	682834	EP103Z25N	A.31	685734	CONTAXR1630230A	D.17
682282	EP102ULH4B32	A.63	682374	EP102ULH4D04	A.63	682835	EP103Z32N	A.31	685735	CONTAXR1640008A	D.17
682283	EP102ULH4B35	A.63	682375	EP102ULH4D05	A.63	682836	EP103Z40N	A.31	685736	CONTAXR1640012A	D.17
682284	EP102ULH4B40	A.63	682376	EP102ULH4D06	A.63	682837	EP103Z50N	A.31	685737	CONTAXR1640024A	D.17
682285	EP103ULH4B05	A.63	682377	EP102ULH4D08	A.63	682838	EP103Z63N	A.31	685738	CONTAXR1640048A	D.17
682286	EP103ULH4B06	A.63	682378	EP102ULH4D10	A.63	682839	EP104Z0.5	A.31	685740	CONTAXR1640230A	D.17
682287	EP103ULH4B08	A.63	682379	EP102ULH4D13	A.63	682840	EP104Z01	A.31	685741	CONTAXR1640240A	D.17
682288	EP103ULH4B10	A.63	682380	EP102ULH4D15	A.63	682841	EP104Z1.6	A.31	685742	CONTAXR1622008A	D.17
682289	EP103ULH4B13	A.63	682381	EP102ULH4D16	A.63	682842	EP104Z02	A.31	685743	CONTAXR1622012A	D.17
682290	EP103ULH4B15	A.63	682382	EP102ULH4D20	A.63	682843	EP104Z03	A.31	685744	CONTAXR1622024A	D.17
682291	EP103ULH4B16	A.63	682383	EP102ULH4D25	A.63	682844	EP104Z04	A.31	685745	CONTAXR1622048A	D.17
682292	EP103ULH4B20	A.63	682384	EP102ULH4D30	A.63	682845	EP104Z06	A.31	685747	CONTAXR1622230A	D.17
682293	EP103ULH4B25	A.63	682385	EP102ULH4D32	A.63	682846	EP104Z08	A.31	685748	CONTAXR1622240A	D.17
682294	EP103ULH4B30	A.63	682386	EP102ULH4D35	A.63	682847	EP104Z10	A.31	685779	PULSAR1610008A	D.22
682295	EP103ULH4B32	A.63	682387	EP102ULH4D40	A.63	682848	EP104Z16	A.31	685780	PULSAR1610012A	D.22
682296	EP103ULH4B35	A.63	682388	EP103ULH4D0.5	A.63	682849	EP104Z20	A.31	685781	PULSAR1610024A	D.22
682297	EP103ULH4B40	A.63	682389	EP103ULH4D01	A.63	682850	EP104Z25	A.31	685782	PULSAR1610048A	D.22
682298	EP101ULH3C0.5	A.63	682390	EP103ULH4D02	A.63	682851	EP104Z32	A.31	685783	PULSAR1610115A	D.22
682299	EP101ULH3C01	A.63	682391	EP103ULH4D03	A.63	682852	EP104Z40	A.31	685784	PULSAR1610230A	D.22
682300	EP101ULH3C02	A.63	682392	EP103ULH4D04	A.63	682853	EP104Z50	A.31	685785	PULSAR16123060	D.22
682301	EP101ULH3C03	A.63	682393	EP103ULH4D05	A.63	682854	EP104Z63	A.31	685786	PULSAR1610240A	D.22
682302	EP101ULH3C04	A.63	682394	EP103ULH4D06	A.63	682935	EP101UC20.5	A.37	685787	PULSAR161008A	D.22
682303	EP101ULH3C05	A.63	682395	EP103ULH4D08	A.63	682936	EP101UC201	A.37	685788	PULSAR161012A	D.22
682304	EP101ULH3C06	A.63	682396	EP103ULH4D10	A.63	682937	EP101UC21.6	A.37	685789	PULSAR161024A	D.22
682305	EP101ULH3C08	A.63	682397	EP103ULH4D13	A.63	682938	EP101UC202	A.37	685790	PULSAR161048A	D.22
682306	EP101ULH3C10	A.63	682398	EP103ULH4D15	A.63	682939	EP101UC203	A.37	685791	PULSAR161115A	D.22
682307	EP101ULH3C13	A.63	682399	EP103ULH4D16	A.63	682940	EP101UC204	A.37	685792	PULSAR161230A	D.22
682308	EP101ULH3C15	A.63	682400	EP103ULH4D20	A.63	682941	EP101UC206	A.37	685793	PULSAR161240A	D.22
682309	EP101ULH3C16	A.63	682401	EP103ULH4D25	A.63	682942	EP101UC208	A.37	685794	PULSAR1620008A	D.22
682310	EP101ULH3C20	A.63	682402	EP103ULH4D30	A.63	682943	EP101UC210	A.37	685795	PULSAR1620012A	D.22
682311	EP101ULH3C25	A.63	682403	EP103ULH4D32	A.63	682944	EP101UC216	A.37	685796	PULSAR1620024A	D.22
682312	EP101ULH3C30	A.63	682404	EP103ULH4D35	A.63	682945	EP101UC220	A.37	685797	PULSAR1620048A	D.22
682313	EP101ULH3C32	A.63	682405	EP103ULH4D40	A.63	682946	EP101UC225	A.37	685798	PULSAR1620115A	D.22
682314	EP101ULH3C35	A.63	682775	EP101Z0.5	A.31	682947	EP101UC232	A.37	685799	PULSAR162023060	D.22
682315	EP101ULH3C40	A.63	682776	EP101Z01	A.31	682948	EP101UC240	A.37	685800	PULSAR1620230A	D.22
682316	EP102ULH4C0.5	A.63	682777	EP101Z1.6	A.31	682949	EP101UC250	A.37	685801	PULSAR1620240A	D.22
682317	EP102ULH4C01	A.63	682778	EP101Z02	A.31	682950	EP101UC263	A.37	685802	PULSAR1611008A	D.22
682318	EP102ULH4C02	A.63	682779	EP101Z03	A.31	682951	EP102UC20.5	A.37	685803	PULSAR1611012A	D.22
682319	EP102ULH4C03	A.63	682780	EP101Z04	A.31	682952	EP102UC201	A.37	685804	PULSAR1611024A	D.22
682320	EP102ULH4C04	A.63	682781	EP101Z06	A.31	682953	EP102UC21.6	A.37	685805	PULSAR1611048A	D.22
682321	EP102ULH4C05	A.63	682782	EP101Z08	A.31	682954	EP102UC202	A.37	685806	PULSAR1611115A	D.22
682322	EP102ULH4C06	A.63	682783	EP101Z10	A.31	682955	EP102UC203	A.37	685807	PULSAR1611230A	D.22
682323	EP102ULH4C08	A.63	682784	EP101Z16	A.31	682956	EP102UC204	A.37	685808	PULSAR161123060	D.22
682324	EP102ULH4C10	A.63	682785	EP101Z20	A.31	682957	EP102UC206	A.37	685809	PULSAR1611240A	D.22
682325	EP102ULH4C13	A.63	682786	EP101Z25	A.31	682958	EP102UC208	A.37	685810	PULSAR162008A	D.22
682326	EP102ULH4C15	A.63	682787	EP101Z32	A.31	682959	EP102UC210	A.37	685811	PULSAR162012A	D.22
682327	EP102ULH4C16	A.63	682788	EP101Z40	A.31	682960	EP102UC216	A.37	685812	PULSAR162024A	D.22
682328	EP102ULH4C20	A.63	682789	EP101Z50	A.31	682961	EP102UC220	A.37	685813	PULSAR162048A	D.22
682329	EP102ULH4C25	A.63	682790	EP101Z63	A.31	682962	EP102UC225	A.37	685814	PULSAR162115A	D.22
682330	EP102ULH4C30	A.63	682791	EP102Z0.5	A.31	682963	EP102UC232	A.37	685815	PULSAR162230A	D.22
682331	EP102ULH4C32	A.63	682792	EP102Z01	A.31	682964	EP102UC240	A.37	685816	PULSAR162240A	D.22
682332	EP102ULH4C35	A.63	682793	EP102Z1.6	A.31	682965	EP102UC250	A.37	685817	PULSAR3210008A	D.22
682333	EP102ULH4C40	A.63	682794	EP102Z02	A.31	682966	EP102UC263	A.37	685818	PULSAR3210012A	D.22
682334	EP103ULH4C0.5	A.63	682795	EP102Z03	A.31	685000			685819	PULSAR3210024A	D.22
682335	EP103ULH4C01	A.63	682796	EP102Z04	A.31	685693	CONTAXR1610008A	D.17	685820	PULSAR3210048A	D.22
682336	EP103ULH4C02	A.63	682797	EP102Z06	A.31	685694	CONTAXR1610012A	D.17	685821	PULSAR3210115A	D.22
682337	EP103ULH4C03	A.63	682798	EP102Z08	A.31	685695	CONTAXR1610024A	D.17	685822	PULSAR3210230A	D.22
682338	EP103ULH4C04	A.63	682799	EP102Z10	A.31	685696	CONTAXR1610048A	D.17	685823	PULSAR3210240A	D.22
682339	EP103ULH4C05	A.63	682800	EP102Z16	A.31	685697	CONTAXR1610115A	D.17	685824	PULSAR3220008A	D.22
682340	EP103ULH4C06	A.63	682801	EP102Z20	A.31	685699	CONTAXR1610230A	D.17	685825	PULSAR3220012A	D.22
682341	EP103ULH4C08	A.63	682802	EP102Z25	A.31	685700	CONTAXR1610240A	D.17	685826	PULSAR3220024A	D.22
682342	EP103ULH4C10	A.63	682803	EP102Z32	A.31	685701	CONTAXR161008A	D.17	685827	PULSAR3220048A	D.22
682343	EP103ULH4C13	A.63	682804	EP102Z40	A.31	685702	CONTAXR161012A	D.17	685828	PULSAR3220115A	D.22
682344	EP103ULH4C15	A.63	682805	EP102Z50	A.31	685703	CONTAXR161024A	D.17	685829	PULSAR3220230A	D.22
682345	EP103ULH4C16	A.63	682806	EP102Z63	A.31	685704	CONTAXR161048A	D.17	685830	PULSAR3220240A	D.22
682346	EP103ULH4C20	A.63	682807	EP103Z0.5	A.31	685705	CONTAXR161115A	D.17	685831	PULSAR3210008A	D.23
682347	EP103ULH4C25	A.63	682808	EP103Z01	A.31	685706	CONTAXR161230A	D.17	685832	PULSARC1610012A	D.23
682348	EP103ULH4C30	A.63	682809	EP103Z1.6	A.31	685707	CONTAXR161240A	D.17	685833	PULSARC1610024A	D.23
682349	EP103ULH4C32	A.63	682810	EP103Z02	A.31	685708	CONTAXR1620008A	D.17	685834	PULSARC1610048A	D.23
682350	EP103ULH4C35	A.63	682811	EP103Z03	A.31	685709	CONTAXR1620012A	D.17	685835	PULSARC1610230A	D.23
682351	EP103ULH4C40	A.63	682812	EP103Z04	A.31	685710	CONTAXR1620024A	D.17	685836	PULSARC1610240A	D.23
682352	EP101ULH3D0.5	A.63	682813	EP103Z06	A.31	685711	CONTAXR1620048A	D.17	685837	PULSARC161008A	D.23
682353	EP101ULH3D01	A.63	682814	EP103Z08	A.31	685712	CONTAXR1620115A	D.17	685838	PULSARC161012A	D.23
682354	EP101ULH3D02	A.63	682815	EP103Z10	A.31	685714	CONTAXR1620230A	D.17	685839	PULSARC161024A	D.23
682355	EP101ULH3D03	A.63	682816	EP103Z16	A.31	685715	CONTAXR1620240A	D.17	685840	PULSARC161048A	D.23
682356	EP101ULH3D04	A.63	682817	EP103Z20	A.31	685716	CONTAXR1611008A	D.17	685841	PULSARC161230A	D.23
682357	EP101ULH3D05	A.63	682818	EP103Z25	A.31	685717	CONTAXR1611012A	D.17	685842	PULSARC161240A	D.23
682358	EP101ULH3D06	A.63	682819	EP103Z32	A.31	685718	CONTAXR1611024A	D.17	685843	PULSARC1620008A	D.23
682359	EP101ULH3D08	A.63	682820	EP103Z40	A.31	685719	CONTAXR1611048A	D.17	685844	PULSARC1620012A	D.23
682360	EP101ULH3D10	A.63	682821	EP103Z50	A.31	685720	CONTAXR1611115A	D.17	685845	PULSARC1620024A	D.23
682361	EP101ULH3D13	A.63	682822	EP103Z63	A.31	685722	CONTAXR1611230A	D.17	685846	PULSARC1620048A	D.23
682362	EP101ULH3D15	A.63	682823	EP103Z0.5N	A.31	685723	CONTAXR1611240A	D.17	685847	PULSARC1620230A	D.23
682363	EP101ULH3D16	A.63	682824	EP103Z01N	A.31	685724	CONTAXR162008A	D.17	685848	PULSARC1620240A	D.23
682364	EP101ULH3D20	A.63	682825	EP103Z1.6N	A.31	685725	CONTAXR162012A	D.17	685849	PULSARC162008A	D.23
682365	EP101ULH3D25	A.63	682826	EP103Z02N	A.31	685726	CONTAXR162024A	D.17	685850	PULSARC162012A	D.23
682366	EP101ULH3D30	A.63									



By reference number

A

B

C

D

E

F

G

X

Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page
685856	PULSARC3210012A	D.23	686639	EP63ULB50	A.69	686731	EP64ULC63	A.69	686823	EP102ULB06	A.67
685857	PULSARC3210024A	D.23	686640	EP63ULB60	A.69	686732	EP61ULD0.5	A.69	686824	EP102ULB10	A.67
685858	PULSARC3210048A	D.23	686641	EP63ULB63	A.69	686733	EP61ULD01	A.69	686825	EP102ULB13	A.67
685859	PULSARC3210230A	D.23	686642	EP64ULB05	A.69	686734	EP61ULD02	A.69	686826	EP102ULB15	A.67
685860	PULSARC3210240A	D.23	686643	EP64ULB06	A.69	686735	EP61ULD03	A.69	686827	EP102ULB16	A.67
685861	PULSARC3220008A	D.23	686644	EP64ULB10	A.69	686736	EP61ULD04	A.69	686828	EP102ULB20	A.67
685862	PULSARC3220012A	D.23	686645	EP64ULB13	A.69	686737	EP61ULD05	A.69	686829	EP102ULB25	A.67
685863	PULSARC3220024A	D.23	686646	EP64ULB15	A.69	686738	EP61ULD06	A.69	686830	EP102ULB30	A.67
685864	PULSARC3220230A	D.23	686647	EP64ULB16	A.69	686739	EP61ULD10	A.69	686831	EP102ULB32	A.67
685865	PULSARC3220240A	D.23	686648	EP64ULB20	A.69	686740	EP61ULD13	A.69	686832	EP102ULB40	A.67
685866	PULSARC3220240A	D.23	686649	EP64ULB25	A.69	686741	EP61ULD15	A.69	686833	EP102ULB50	A.67
685867	PULSARC3230008A	D.23	686650	EP64ULB30	A.69	686742	EP61ULD16	A.69	686834	EP102ULB60	A.67
685868	PULSARC3230012A	D.23	686651	EP64ULB32	A.69	686743	EP61ULD20	A.69	686835	EP102ULB63	A.67
685869	PULSARC3230024A	D.23	686652	EP64ULB40	A.69	686744	EP61ULD25	A.69	686836	EP103ULB05	A.67
685870	PULSARC3230048A	D.23	686653	EP64ULB50	A.69	686745	EP61ULD30	A.69	686837	EP103ULB06	A.67
685871	PULSARC3230230A	D.23	686654	EP64ULB60	A.69	686746	EP61ULD32	A.69	686838	EP103ULB10	A.67
685872	PULSARC3230240A	D.23	686655	EP64ULB63	A.69	686747	EP61ULD40	A.69	686839	EP103ULB13	A.67
685873	PULSARPU162024A	D.23	686656	EP61ULC0.5	A.69	686748	EP61ULD50	A.69	686840	EP103ULB15	A.67
685874	PULSARPU162230A	D.23	686657	EP61ULC01	A.69	686749	EP61ULD60	A.69	686841	EP103ULB16	A.67
685875	PULSARPU1620024A	D.23	686658	EP61ULC02	A.69	686750	EP61ULD63	A.69	686842	EP103ULB20	A.67
685876	PULSARPU1620230A	D.23	686659	EP61ULC03	A.69	686751	EP62ULD0.5	A.69	686843	EP103ULB25	A.67
685877	PULSARPU1640024A	D.23	686660	EP61ULC04	A.69	686752	EP62ULD01	A.69	686844	EP103ULB30	A.67
685878	PULSARPU1640230A	D.23	686661	EP61ULC05	A.69	686753	EP62ULD02	A.69	686845	EP103ULB32	A.67
685879	PULSARAUX11	D.23	686662	EP61ULC06	A.69	686754	EP62ULD03	A.69	686846	EP103ULB40	A.67
685880	PULSARAUX20	D.23	686663	EP61ULC10	A.69	686755	EP62ULD04	A.69	686847	EP103ULB50	A.67
685881	PULSARC	D.23	686664	EP61ULC13	A.69	686756	EP62ULD05	A.69	686848	EP103ULB60	A.67
685882	PULSARM	D.23	686665	EP61ULC15	A.69	686757	EP62ULD06	A.69	686849	EP103ULB63	A.67
685883	CONTAXRAUX11	D.17	686666	EP61ULC16	A.69	686758	EP62ULD10	A.69	686850	EP104ULB05	A.67
685884	PULSARCAPM	D.23	686667	EP61ULC20	A.69	686759	EP62ULD13	A.69	686851	EP104ULB06	A.67
685885	PULSARCAP	D.23	686668	EP61ULC25	A.69	686760	EP62ULD15	A.69	686852	EP104ULB10	A.67
685930	CONTAXRAUX20	D.17	686669	EP61ULC30	A.69	686761	EP62ULD16	A.69	686853	EP104ULB13	A.67
685934	CONTAXR2CAP	D.17	686670	EP61ULC32	A.69	686762	EP62ULD20	A.69	686854	EP104ULB15	A.67
685935	CONTAX2020230U	D.13	686671	EP61ULC40	A.69	686763	EP62ULD25	A.69	686855	EP104ULB16	A.67
685936	CONTAX2540230U	D.13	686672	EP61ULC50	A.69	686764	EP62ULD30	A.69	686856	EP104ULB20	A.67
685937	CONTAX2530230U	D.13	686673	EP61ULC60	A.69	686765	EP62ULD32	A.69	686857	EP104ULB25	A.67
685938	CONTAX2522230U	D.13	686674	EP61ULC63	A.69	686766	EP62ULD40	A.69	686858	EP104ULB30	A.67
685939	CONTAX4040230U	D.13	686675	EP62ULC0.5	A.69	686767	EP62ULD50	A.69	686859	EP104ULB32	A.67
685940	CONTAX6340230U	D.13	686676	EP62ULC01	A.69	686768	EP62ULD60	A.69	686860	EP104ULB40	A.67
685941	CONTAXDN2020230U	D.13	686677	EP62ULC02	A.69	686769	EP62ULD63	A.69	686861	EP104ULB50	A.67
685942	CONTAXDN2540230U	D.13	686678	EP62ULC03	A.69	686770	EP63ULD0.5	A.69	686862	EP104ULB60	A.67
685943	CONTAXDN2530230U	D.13	686679	EP62ULC04	A.69	686771	EP63ULD01	A.69	686863	EP104ULB63	A.67
685944	CONTAXDN3230230U	D.13	686680	EP62ULC05	A.69	686772	EP63ULD02	A.69	686864	EP101ULC0.5	A.67
685945	CONTAXR1CAP	D.17	686681	EP62ULC06	A.69	686773	EP63ULD03	A.69	686865	EP101ULC01	A.67
685993	PLT+MF230V16A1CO	D.31	686682	EP62ULC10	A.69	686774	EP63ULD04	A.69	686866	EP101ULC02	A.67
685994	PLT+MFUN116A1CO	D.31	686683	EP62ULC13	A.69	686775	EP63ULD05	A.69	686867	EP101ULC03	A.67
685995	PLT+MFUN18A3CO	D.31	686684	EP62ULC15	A.69	686776	EP63ULD06	A.69	686868	EP101ULC04	A.67
685996	PLT+ASUN116A1CO	D.31	686685	EP62ULC16	A.69	686777	EP63ULD10	A.69	686869	EP101ULC05	A.67
685997	DIM500RL230V	D.35	686686	EP62ULC20	A.69	686778	EP63ULD13	A.69	686870	EP101ULC06	A.67
685998	DIM300UNI230V	D.35	686687	EP62ULC25	A.69	686779	EP63ULD15	A.69	686871	EP101ULC10	A.67
685999	DIMLC300UNI230V	D.35	686688	EP62ULC30	A.69	686780	EP63ULD16	A.69	686872	EP101ULC13	A.67
686000			686689	EP62ULC32	A.69	686781	EP63ULD20	A.69	686873	EP101ULC15	A.67
686059	PLC/CTX SP	D.23	686690	EP62ULC40	A.69	686782	EP63ULD25	A.69	686874	EP101ULC16	A.67
686069	MSC SE	D.7	686691	EP62ULC50	A.69	686783	EP63ULD30	A.69	686875	EP101ULC20	A.67
686600	EP61ULB05	A.69	686692	EP62ULC60	A.69	686784	EP63ULD32	A.69	686876	EP101ULC25	A.67
686601	EP61ULB06	A.69	686693	EP62ULC63	A.69	686785	EP63ULD40	A.69	686877	EP101ULC30	A.67
686602	EP61ULB10	A.69	686694	EP63ULC0.5	A.69	686786	EP63ULD50	A.69	686878	EP101ULC32	A.67
686603	EP61ULB13	A.69	686695	EP63ULC01	A.69	686787	EP63ULD60	A.69	686879	EP101ULC40	A.67
686604	EP61ULB15	A.69	686696	EP63ULC02	A.69	686788	EP63ULD63	A.69	686880	EP101ULC50	A.67
686605	EP61ULB16	A.69	686697	EP63ULC03	A.69	686789	EP64ULD0.5	A.69	686881	EP101ULC60	A.67
686606	EP61ULB20	A.69	686698	EP63ULC04	A.69	686790	EP64ULD01	A.69	686882	EP101ULC63	A.67
686607	EP61ULB25	A.69	686699	EP63ULC05	A.69	686791	EP64ULD02	A.69	686883	EP102ULC0.5	A.67
686608	EP61ULB30	A.69	686700	EP63ULC06	A.69	686792	EP64ULD03	A.69	686884	EP102ULC01	A.67
686609	EP61ULB32	A.69	686701	EP63ULC10	A.69	686793	EP64ULD04	A.69	686885	EP102ULC02	A.67
686610	EP61ULB40	A.69	686702	EP63ULC13	A.69	686794	EP64ULD05	A.69	686886	EP102ULC03	A.67
686611	EP61ULB50	A.69	686703	EP63ULC15	A.69	686795	EP64ULD06	A.69	686887	EP102ULC04	A.67
686612	EP61ULB60	A.69	686704	EP63ULC16	A.69	686796	EP64ULD10	A.69	686888	EP102ULC05	A.67
686613	EP61ULB63	A.69	686705	EP63ULC20	A.69	686797	EP64ULD13	A.69	686889	EP102ULC06	A.67
686614	EP62ULB05	A.69	686706	EP63ULC25	A.69	686798	EP64ULD15	A.69	686890	EP102ULC10	A.67
686615	EP62ULB06	A.69	686707	EP63ULC30	A.69	686799	EP64ULD16	A.69	686891	EP102ULC13	A.67
686616	EP62ULB10	A.69	686708	EP63ULC32	A.69	686800	EP64ULD20	A.69	686892	EP102ULC15	A.67
686617	EP62ULB13	A.69	686709	EP63ULC40	A.69	686801	EP64ULD25	A.69	686893	EP102ULC16	A.67
686618	EP62ULB15	A.69	686710	EP63ULC50	A.69	686802	EP64ULD30	A.69	686894	EP102ULC20	A.67
686619	EP62ULB16	A.69	686711	EP63ULC60	A.69	686803	EP64ULD32	A.69	686895	EP102ULC25	A.67
686620	EP62ULB20	A.69	686712	EP63ULC63	A.69	686804	EP64ULD40	A.69	686896	EP102ULC30	A.67
686621	EP62ULB25	A.69	686713	EP64ULC0.5	A.69	686805	EP64ULD50	A.69	686897	EP102ULC32	A.67
686622	EP62ULB30	A.69	686714	EP64ULC01	A.69	686806	EP64ULD60	A.69	686898	EP102ULC40	A.67
686623	EP62ULB32	A.69	686715	EP64ULC02	A.69	686807	EP64ULD63	A.69	686899	EP102ULC50	A.67
686624	EP62ULB40	A.69	686716	EP64ULC03	A.69	686808	EP101ULB05	A.67	686900	EP102ULC60	A.67
686625	EP62ULB50	A.69	686717	EP64ULC04	A.69	686809	EP101ULB06	A.67	686901	EP102ULC63	A.67
686626	EP62ULB60	A.69	686718	EP64ULC05	A.69	686810	EP101ULB10	A.67	686902	EP103ULC0.5	A.67
686627	EP62ULB63	A.69	686719	EP64ULC06	A.69	686811	EP101ULB13	A.67	686903	EP103ULC01	A.67
686628	EP63ULB05	A.69	686720	EP64ULC10	A.69	686812	EP101ULB15	A.67	686904	EP103ULC02	A.67
686629	EP63ULB06	A.69	686721	EP64ULC13	A.69	686813	EP101ULB16	A.67	686905	EP103ULC03	A.67
686630	EP63ULB10	A.69	686722	EP64ULC15	A.69	686814	EP101ULB20	A.67	686906	EP103ULC04	A.67
686631	EP63ULB13	A.69	686723	EP64ULC16	A.69	686815	EP101ULB25	A.67	686907	EP103ULC05	A.67
686632	EP63ULB15	A.69	686724	EP64ULC20	A.69	686816	EP101ULB30	A.67	686908	EP103ULC06	A.67
686633	EP63ULB16	A.69	686725	EP64ULC25	A.69	686817	EP101ULB32	A.67	686909	EP103ULC10	A.67
686634	EP63ULB20	A.69	686726	EP64ULC30	A.69	686818	EP101ULB40	A.67	686910	EP103ULC13	A.67
686635	EP63ULB25	A.69	686727	EP64ULC32	A.69	686819	EP101ULB50	A.67	686911	EP103ULC15	A.67
686636	EP63ULB30	A.69	686728	EP64ULC40	A.69	686820	EP101ULB60	A.67	686912	EP103ULC16	A.67
686637	EP63ULB32	A.69	686729	EP64ULC50	A.69	686821	EP101ULB63	A.67	686913	EP1	



Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page
686915	EP103ULC30	A.67	687006	EP104ULD15	A.67	690275	EP101ULH1C15	A.65	691239	EP101TB20	A.75
686916	EP103ULC32	A.67	687007	EP104ULD16	A.67	690276	EP101ULH1C16	A.65	691240	EP101TB25	A.75
686917	EP103ULC40	A.67	687008	EP104ULD20	A.67	690277	EP101ULH1C20	A.65	691241	EP101TB32	A.75
686918	EP103ULC50	A.67	687009	EP104ULD25	A.67	690278	EP101ULH1C25	A.65	691242	EP101TB40	A.75
686919	EP103ULC60	A.67	687010	EP104ULD30	A.67	690279	EP101ULH1C30	A.65	691243	EP101TB50	A.75
686920	EP103ULC63	A.67	687011	EP104ULD32	A.67	690280	EP101ULH1C32	A.65	691244	EP101TB63	A.75
686921	EP104ULC0.5	A.67	687012	EP104ULD40	A.67	690281	EP102ULH2C0.5	A.65	691245	EP101TC0.5	A.75
686922	EP104ULC01	A.67	687013	EP104ULD50	A.67	690282	EP102ULH2C01	A.65	691246	EP101TC01	A.75
686923	EP104ULC02	A.67	687014	EP104ULD60	A.67	690283	EP102ULH2C02	A.65	691247	EP101TC02	A.75
686924	EP104ULC03	A.67	687015	EP104ULD63	A.67	690284	EP102ULH2C03	A.65	691248	EP101TC03	A.75
686925	EP104ULC04	A.67	687436	CLS+S 15 1NA 16A 1M D	D.41	690285	EP102ULH2C04	A.65	691249	EP101TC04	A.75
686926	EP104ULC05	A.67	687437	CLS+Q 15 1NA 16A 1M D	D.41	690286	EP102ULH2C05	A.65	691250	EP101TC06	A.75
686927	EP104ULC06	A.67	687438	CLS+S 30 1COM 16A 2M D	D.41	690287	EP102ULH2C06	A.65	691251	EP101TC08	A.75
686928	EP104ULC10	A.67	687439	CLS+Q 30 1COM 16A 2M D	D.41	690288	EP102ULH2C08	A.65	691252	EP101TC1.6	A.75
686929	EP104ULC13	A.67	687440	CLS+Q 210 1COM 16A 2M W	D.41	690289	EP102ULH2C10	A.65	691253	EP101TC10	A.75
686930	EP104ULC15	A.67	687441	CLS+S 15 1COM 16A 2.5M D	D.41	690290	EP102ULH2C13	A.65	691254	EP101TC13	A.75
686931	EP104ULC16	A.67	687442	CLS+Q 15 1COM 16A 2.5M D	D.41	690291	EP102ULH2C15	A.65	691255	EP101TC16	A.75
686932	EP104ULC20	A.67	687443	CLS+Q 120 1COM 16A 2.5M W	D.41	690292	EP102ULH2C16	A.65	691256	EP101TC20	A.75
686933	EP104ULC25	A.67	687444	GLX+Q 30 1NA 16A 1M D	D.43	690293	EP102ULH2C20	A.65	691257	EP101TC32	A.75
686934	EP104ULC30	A.67	687445	GLX+Q 30 1NA 16A 1M W	D.43	690294	EP102ULH2C25	A.65	691258	EP101TC40	A.75
686935	EP104ULC32	A.67	687446	GLX+Q 30 1NA 16A 1M ASTD	D.43	690295	EP102ULH2C30	A.65	691259	EP101TC50	A.75
686936	EP104ULC40	A.67	687447	GLX+Q 30 1COM 16A 2M D ANA	D.43	690296	EP102ULH2C32	A.65	691260	EP101TC63	A.75
686937	EP104ULC50	A.67	687448	GLX+Q 30 1COM 16A 2M W ANA	D.43	690297	EP103ULH2C0.5	A.65	691261	EP101TK0.5	A.75
686938	EP104ULC60	A.67	687449	GLX+Q AST30 1NA 16A 2M D ANA	D.43	690298	EP103ULH2C01	A.65	691262	EP101TK02	A.75
686939	EP104ULC63	A.67	687450	GLX+Q 1 1COM 16A 2M DW	D.44	690299	EP103ULH2C02	A.65	691263	EP101TK03	A.75
686940	EP101ULD0.5	A.67	687451	GLX+Q 1 2COM 16A 2M DW	D.44	690300	EP103ULH2C03	A.65	691264	EP101TK04	A.75
686941	EP101ULD01	A.67	687452	GLX+Q 1 1COM 16A 2M DWIR	D.44	690301	EP103ULH2C04	A.65	691265	EP101TK06	A.75
686942	EP101ULD02	A.67	687453	GLX+Q 1 2COM 16A 2M DWIR	D.44	690302	EP103ULH2C05	A.65	691266	EP101TK08	A.75
686943	EP101ULD03	A.67	687454	GLX+Q 1 1COM 16A 2M ASTIR	D.44	690303	EP103ULH2C06	A.65	691267	EP101TK1	A.75
686944	EP101ULD04	A.67	687455	GLX+Q 1 2COM 16A 2M ASTIR	D.44	690304	EP103ULH2C08	A.65	691268	EP101TK1.6	A.75
686945	EP101ULD05	A.67	687456	GLX+ IR	D.44	690305	EP103ULH2C10	A.65	691269	EP101TK10	A.75
686946	EP101ULD06	A.67	687464	GLX+Q 1 1COM 16A 3MY BUS	D.44	690306	EP103ULH2C13	A.65	691270	EP101TK16	A.75
686947	EP101ULD10	A.67	687465	GLX+ GEO BUS	D.44	690307	EP103ULH2C15	A.65	691271	EP101TK20	A.75
686948	EP101ULD13	A.67	687466	GLX+Q 4COM 8A 4M BUS	D.44	690308	EP103ULH2C16	A.65	691272	EP101TK25	A.75
686949	EP101ULD15	A.67	687467	CLS+Q 15 1COM 16A 7x27D	D.47	690309	EP103ULH2C20	A.65	691273	EP101TK32	A.75
686950	EP101ULD16	A.67	687468	CLS+Q 15 1COM 16A 7x27W	D.47	690310	EP103ULH2C25	A.65	691274	EP101TK40	A.75
686951	EP101ULD20	A.67	687469	GLX+Q 15 1COM 16A 7x27W	D.47	690311	EP103ULH2C30	A.65	691275	EP101TK50	A.75
686952	EP101ULD25	A.67	687470	GLX+Q LUX 1NA 16A 1M	D.49	690312	EP103ULH2C32	A.65	691276	EP101TK63	A.75
686953	EP101ULD30	A.67	687471	GLX+LSS EXT	D.49	690313	EP101ULH1D0.5	A.65	691277	EP101T20.5	A.75
686954	EP101ULD32	A.67	687472	GLX+Q LUX/T1COM16A2M	D.49	690314	EP101ULH1D01	A.65	691278	EP101T201	A.75
686955	EP101ULD40	A.67	687473	GLX+ LUX WALL	D.49	690315	EP101ULH1D02	A.65	691279	EP101T202	A.75
686956	EP101ULD50	A.67	687474	PULSAR SC 1-15 16A 1M	D.24	690316	EP101ULH1D03	A.65	691280	EP101T203	A.75
686957	EP101ULD60	A.67	687496	BU230	D.51	690317	EP101ULH1D04	A.65	691281	EP101T204	A.75
686958	EP101ULD63	A.67	687497	BU12	D.51	690318	EP101ULH1D05	A.65	691282	EP101T206	A.75
686959	EP102ULD0.5	A.67	687498	BE230	D.51	690319	EP101ULH1D06	A.65	691283	EP101T208	A.75
686960	EP102ULD01	A.67	687499	BE12	D.51	690320	EP101ULH1D08	A.65	691284	EP101T21.6	A.75
686961	EP102ULD02	A.67	688000			690321	EP101ULH1D10	A.65	691285	EP101T210	A.75
686962	EP102ULD03	A.67	688026	EP104UCB20	A.37	690322	EP101ULH1D13	A.65	691286	EP101T216	A.75
686963	EP102ULD04	A.67	688027	EP104UCB40	A.37	690323	EP101ULH1D15	A.65	691287	EP101T220	A.75
686964	EP102ULD05	A.67	688028	EP104UCB63	A.37	690324	EP101ULH1D16	A.65	691288	EP101T225	A.75
686965	EP102ULD06	A.67	688029	EP104UCB16	A.37	690325	EP101ULH1D20	A.65	691289	EP101T232	A.75
686966	EP102ULD10	A.67	690000			690326	EP101ULH1D25	A.65	691290	EP101T240	A.75
686967	EP102ULD13	A.67	690200	EP104UCB10	A.37	690327	EP101ULH1D30	A.65	691291	EP101T250	A.75
686968	EP102ULD15	A.67	690214	EP101ULH1B05	A.65	690328	EP101ULH1D32	A.65	691292	EP101T263	A.75
686969	EP102ULD16	A.67	690215	EP101ULH1B06	A.65	690329	EP102ULH2D0.5	A.65	691293	EP102TB06	A.75
686970	EP102ULD20	A.67	690216	EP101ULH1B10	A.65	690330	EP102ULH2D01	A.65	691294	EP102TB08	A.75
686971	EP102ULD25	A.67	690217	EP101ULH1B13	A.65	690331	EP102ULH2D02	A.65	691295	EP102TB10	A.75
686972	EP102ULD30	A.67	690218	EP101ULH1B15	A.65	690332	EP102ULH2D03	A.65	691296	EP102TB13	A.75
686973	EP102ULD32	A.67	690219	EP101ULH1B16	A.65	690333	EP102ULH2D04	A.65	691297	EP102TB16	A.75
686974	EP102ULD40	A.67	690220	EP101ULH1B20	A.65	690334	EP102ULH2D05	A.65	691298	EP102TB20	A.75
686975	EP102ULD50	A.67	690221	EP101ULH1B25	A.65	690335	EP102ULH2D06	A.65	691299	EP102TB25	A.75
686976	EP102ULD60	A.67	690222	EP101ULH1B30	A.65	690336	EP102ULH2D08	A.65	691300	EP102TB32	A.75
686977	EP102ULD63	A.67	690223	EP101ULH1B32	A.65	690337	EP102ULH2D10	A.65	691301	EP102TB40	A.75
686978	EP103ULD0.5	A.67	690224	EP102ULH2B05	A.65	690338	EP102ULH2D13	A.65	691302	EP102TB50	A.75
686979	EP103ULD01	A.67	690225	EP102ULH2B06	A.65	690339	EP102ULH2D15	A.65	691303	EP102TB63	A.75
686980	EP103ULD02	A.67	690226	EP102ULH2B10	A.65	690340	EP102ULH2D16	A.65	691304	EP102TC0.5	A.75
686981	EP103ULD03	A.67	690227	EP102ULH2B13	A.65	690341	EP102ULH2D20	A.65	691305	EP102TC01	A.75
686982	EP103ULD04	A.67	690228	EP102ULH2B15	A.65	690342	EP102ULH2D25	A.65	691306	EP102TC02	A.75
686983	EP103ULD05	A.67	690229	EP102ULH2B16	A.65	690343	EP102ULH2D30	A.65	691307	EP102TC03	A.75
686984	EP103ULD06	A.67	690230	EP102ULH2B20	A.65	690344	EP102ULH2D32	A.65	691308	EP102TC04	A.75
686985	EP103ULD10	A.67	690231	EP102ULH2B25	A.65	690345	EP103ULH2D0.5	A.65	691309	EP102TC06	A.75
686986	EP103ULD13	A.67	690232	EP102ULH2B30	A.65	690346	EP103ULH2D01	A.65	691310	EP102TC08	A.75
686987	EP103ULD15	A.67	690233	EP102ULH2B32	A.65	690347	EP103ULH2D02	A.65	691311	EP102TC1.6	A.75
686988	EP103ULD16	A.67	690234	EP103ULH2B05	A.65	690348	EP103ULH2D03	A.65	691312	EP102TC10	A.75
686989	EP103ULD20	A.67	690235	EP103ULH2B06	A.65	690349	EP103ULH2D04	A.65	691313	EP102TC13	A.75
686990	EP103ULD25	A.67	690236	EP103ULH2B10	A.65	690350	EP103ULH2D05	A.65	691314	EP102TC16	A.75
686991	EP103ULD30	A.67	690239	EP103ULH2B16	A.65	690351	EP103ULH2D06	A.65	691315	EP102TC20	A.75
686992	EP103ULD32	A.67	690240	EP103ULH2B20	A.65	690352	EP103ULH2D08	A.65	691316	EP102TC25	A.75
686993	EP103ULD40	A.67	690241	EP103ULH2B25	A.65	690353	EP103ULH2D10	A.65	691317	EP102TC32	A.75
686994	EP103ULD50	A.67	690242	EP103ULH2B30	A.65	690354	EP103ULH2D13	A.65	691318	EP102TC40	A.75
686995	EP103ULD60	A.67	690243	EP103ULH2B32	A.65	690355	EP103ULH2D15	A.65	691319	EP102TC50	A.75
686996	EP103ULD63	A.67	690244		E.10	690356	EP103ULH2D16	A.65	691320	EP102TC63	A.75
686997	EP104ULD0.5	A.67	690265	EP101ULH1C0.5	A.65	690357	EP103ULH2D20	A.65	691321	EP102TK0.5	A.75
686998	EP104ULD01	A.67	690266	EP101ULH1C01	A.65	690358	EP103ULH2D25	A.65	691322	EP102TK01	A.75
686999	EP104ULD02	A.67	690267	EP101ULH1C02	A.65	690359	EP103ULH2D30	A.65	691323	EP102TK02	A.75
687000			690268	EP101ULH1C03	A.65	690360	EP103ULH2D32	A.65	691324	EP102TK03	A.75
687001	EP104ULD03	A.67	690269	EP101ULH1C04	A.65	691000			691325	EP102TK04	A.75
687002	EP104ULD04	A.67	690270	EP101ULH1C05	A.65	691234	EP101TB6	A.75	691326	EP102TK06	A.75
687003	EP104ULD05	A.67	690271	EP101ULH1C06	A.65	691235	EP101TB8	A.75	691327	EP102TK08</	



By reference number

A

B

C

D

E

F

G

X

Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page
691331	EP102TK20	A.75	691423	EP104TK63	A.75	691515	EP102UCTC04	A.77	692547	EPC 454 C06	A.95
691332	EP102TK25	A.75	691424	EP104TK0.5	A.75	691516	EP102UCTC06	A.77	692548	EPC 454 C10	A.95
691333	EP102TK32	A.75	691425	EP104TK01	A.75	691517	EP102UCTC08	A.77	692549	EPC 454 C16	A.95
691334	EP102TK40	A.75	691426	EP104TK02	A.75	691518	EP102UCTC1.6	A.77	692550	EPC 454 C20	A.95
691335	EP102TK50	A.75	691427	EP104TK03	A.75	691519	EP102UCTC10	A.77	692551	EPC 454 C25	A.95
691336	EP102TK63	A.75	691428	EP104TK04	A.75	691520	EP102UCTC13	A.77	692552	EPC 454 C32	A.95
691337	EP102TZ0.5	A.75	691429	EP104TK06	A.75	691521	EP102UCTC16	A.77	692554	EPC 62 C02	A.97
691338	EP102TZ01	A.75	691430	EP104TK08	A.75	691522	EP102UCTC20	A.77	692555	EPC 62 C04	A.97
691339	EP102TZ02	A.75	691431	EP104TK1.6	A.75	691523	EP102UCTC25	A.77	692556	EPC 62 C06	A.97
691340	EP102TZ03	A.75	691432	EP104TK10	A.75	691524	EP102UCTC32	A.77	692557	EPC 62 C10	A.97
691341	EP102TZ04	A.75	691433	EP104TK16	A.75	691525	EP102UCTC40	A.77	692558	EPC 62 C16	A.97
691342	EP102TZ06	A.75	691434	EP104TK20	A.75	691526	EP102UCTC50	A.77	692559	EPC 62 C20	A.97
691343	EP102TZ08	A.75	691435	EP104TK25	A.75	691527	EP102UCTC63	A.77	692560	EPC 62 C25	A.97
691344	EP102TZ1.6	A.75	691436	EP104TK32	A.75	691528	EP102UCTK0.5	A.77	692561	EPC 62 C32	A.97
691345	EP102TZ10	A.75	691437	EP104TK40	A.75	691529	EP102UCTK01	A.77	692562	EPC 62 C40	A.97
691346	EP102TZ16	A.75	691438	EP104TK50	A.75	691530	EP102UCTK02	A.77	692563	EPC 63 C02	A.97
691347	EP102TZ20	A.75	691439	EP104TK63	A.75	691531	EP102UCTK03	A.77	692564	EPC 63 C04	A.97
691348	EP102TZ25	A.75	691440	EP101UCTB06	A.77	691532	EP102UCTK04	A.77	692565	EPC 63 C06	A.97
691349	EP102TZ32	A.75	691441	EP101UCTB08	A.77	691533	EP102UCTK06	A.77	692566	EPC 63 C10	A.97
691350	EP102TZ40	A.75	691442	EP101UCTB10	A.77	691534	EP102UCTK08	A.77	692567	EPC 63 C16	A.97
691351	EP102TZ50	A.75	691443	EP101UCTB13	A.77	691535	EP102UCTK1.6	A.77	692568	EPC 63 C20	A.97
691352	EP102TZ63	A.75	691444	EP101UCTB16	A.77	691536	EP102UCTK10	A.77	692569	EPC 63 C25	A.97
691353	EP103TB06	A.75	691445	EP101UCTB20	A.77	691537	EP102UCTK16	A.77	692570	EPC 63 C32	A.97
691354	EP103TB08	A.75	691446	EP101UCTB25	A.77	691538	EP102UCTK20	A.77	692572	EPC 64 C02	A.97
691355	EP103TB10	A.75	691447	EP101UCTB32	A.77	691539	EP102UCTK25	A.77	692573	EPC 64 C04	A.97
691356	EP103TB13	A.75	691448	EP101UCTB40	A.77	691540	EP102UCTK32	A.77	692574	EPC 64 C06	A.97
691357	EP103TB16	A.75	691449	EP101UCTB50	A.77	691541	EP102UCTK40	A.77	692575	EPC 64 C10	A.97
691358	EP103TB20	A.75	691450	EP101UCTB63	A.77	691542	EP102UCTK50	A.77	692576	EPC 64 C16	A.97
691359	EP103TB25	A.75	691451	EP101UCTC0.5	A.77	691543	EP102UCTK63	A.77	692577	EPC 64 C20	A.97
691360	EP103TB32	A.75	691452	EP101UCTC01	A.77	691544	EP102UCTZ0.5	A.77	692578	EPC 64 C25	A.97
691361	EP103TB40	A.75	691453	EP101UCTC02	A.77	691545	EP102UCTZ01	A.77	692579	EPC 64 C32	A.97
691362	EP103TB50	A.75	691454	EP101UCTC03	A.77	691546	EP102UCTZ1.6	A.77	692604	EPC 61N B13	A.89
691363	EP103TB63	A.75	691455	EP101UCTC04	A.77	691547	EP102UCTZ03	A.77	692608	EPC 452 B02	A.95
691364	EP103TC0.5	A.75	691456	EP101UCTC06	A.77	691548	EP102UCTZ04	A.77	692609	EPC 452 B04	A.95
691365	EP103TC01	A.75	691457	EP101UCTC08	A.77	691549	EP102UCTZ06	A.77	692610	EPC 452 B06	A.95
691366	EP103TC02	A.75	691458	EP101UCTC16	A.77	691550	EP102UCTZ08	A.77	692611	EPC 452 B10	A.95
691367	EP103TC03	A.75	691459	EP101UCTC10	A.77	691551	EP102UCTZ02	A.77	692612	EPC 452 B16	A.95
691368	EP103TC04	A.75	691460	EP101UCTC13	A.77	691552	EP102UCTZ10	A.77	692613	EPC 452 B20	A.95
691369	EP103TC06	A.75	691461	EP101UCTC16	A.77	691553	EP102UCTZ16	A.77	692614	EPC 452 B25	A.95
691370	EP103TC08	A.75	691462	EP101UCTC20	A.77	691554	EP102UCTZ20	A.77	692615	EPC 452 B32	A.95
691371	EP103TC1.6	A.75	691463	EP101UCTC25	A.77	691555	EP102UCTZ25	A.77	692616	EPC 452 B40	A.95
691372	EP103TC10	A.75	691464	EP101UCTC32	A.77	691556	EP102UCTZ32	A.77	692617	EPC 453 B02	A.95
691373	EP103TC13	A.75	691465	EP101UCTC40	A.77	691557	EP102UCTZ40	A.77	692618	EPC 453 B04	A.95
691374	EP103TC16	A.75	691466	EP101UCTC50	A.77	691558	EP102UCTZ50	A.77	692619	EPC 453 B06	A.95
691375	EP103TC20	A.75	691467	EP101UCTC63	A.77	691559	EP102UCTZ63	A.77	692620	EPC 453 B10	A.95
691376	EP103TC25	A.75	691468	EP101UCTK0.5	A.77	691580	EP104UCB25	A.37	692621	EPC 453 B16	A.95
691377	EP103TC32	A.75	691469	EP101UCTK01	A.77	691581	EP104UCB32	A.37	692622	EPC 453 B20	A.95
691378	EP103TC40	A.75	691470	EP101UCTK02	A.77	692000			692623	EPC 453 B25	A.95
691379	EP103TC50	A.75	691471	EP101UCTK03	A.77	692500	EPC 32 C02	A.93	692624	EPC 453 B32	A.95
691380	EP103TC63	A.75	691472	EP101UCTK04	A.77	692501	EPC 32 C04	A.93	692626	EPC 454 B02	A.95
691381	EP103TK0.5	A.75	691473	EP101UCTK06	A.77	692502	EPC 32 C06	A.93	692627	EPC 454 B04	A.95
691382	EP103TK01	A.75	691474	EP101UCTK08	A.77	692503	EPC 32 C10	A.93	692628	EPC 454 B06	A.95
691383	EP103TK02	A.75	691475	EP101UCTK1.6	A.77	692504	EPC 32 C16	A.93	692629	EPC 454 B10	A.95
691384	EP103TK03	A.75	691476	EP101UCTK10	A.77	692505	EPC 32 C20	A.93	692630	EPC 454 B16	A.95
691385	EP103TK04	A.75	691477	EP101UCTK16	A.77	692506	EPC 32 C25	A.93	692631	EPC 454 B20	A.95
691386	EP103TK06	A.75	691478	EP101UCTK20	A.77	692507	EPC 32 C32	A.93	692632	EPC 454 B25	A.95
691387	EP103TK08	A.75	691479	EP101UCTK25	A.77	692508	EPC 32 C40	A.93	692633	EPC 454 B32	A.95
691388	EP103TK1.6	A.75	691480	EP101UCTK32	A.77	692509	EPC 33 C02	A.93	692635	EPC 62 B02	A.97
691389	EP103TK10	A.75	691481	EP101UCTK40	A.77	692510	EPC 33 C04	A.93	692636	EPC 62 B04	A.97
691390	EP103TK16	A.75	691482	EP101UCTK50	A.77	692511	EPC 33 C06	A.93	692637	EPC 62 B06	A.97
691391	EP103TK20	A.75	691483	EP101UCTK63	A.77	692512	EPC 33 C10	A.93	692638	EPC 62 B10	A.97
691392	EP103TK25	A.75	691484	EP101UCTZ0.5	A.77	692513	EPC 33 C16	A.93	692639	EPC 62 B16	A.97
691393	EP103TK32	A.75	691485	EP101UCTZ01	A.77	692514	EPC 33 C20	A.93	692640	EPC 62 B20	A.97
691394	EP103TK40	A.75	691486	EP101UCTZ02	A.77	692515	EPC 33 C25	A.93	692641	EPC 62 B25	A.97
691395	EP103TK50	A.75	691487	EP101UCTZ03	A.77	692516	EPC 33 C32	A.93	692642	EPC 62 B32	A.97
691396	EP103TK63	A.75	691488	EP101UCTZ04	A.77	692518	EPC 34 C02	A.93	692643	EPC 62 B40	A.97
691397	EP104TB06	A.75	691489	EP101UCTZ06	A.77	692519	EPC 34 C04	A.93	692644	EPC 63 B02	A.97
691398	EP104TB08	A.75	691490	EP101UCTZ08	A.77	692520	EPC 34 C06	A.93	692645	EPC 63 B04	A.97
691399	EP104TB10	A.75	691491	EP101UCTZ1.6	A.77	692521	EPC 34 C10	A.93	692646	EPC 63 B06	A.97
691400	EP104TB13	A.75	691492	EP101UCTZ10	A.77	692522	EPC 34 C16	A.93	692647	EPC 63 B10	A.97
691401	EP104TB20	A.75	691493	EP101UCTZ16	A.77	692523	EPC 34 C20	A.93	692648	EPC 63 B16	A.97
691402	EP104TB25	A.75	691494	EP101UCTZ20	A.77	692524	EPC 34 C25	A.93	692649	EPC 63 B20	A.97
691403	EP104TB32	A.75	691495	EP101UCTZ25	A.77	692525	EPC 34 C32	A.93	692650	EPC 63 B25	A.97
691404	EP104TB40	A.75	691496	EP101UCTZ32	A.77	692527	EPC 452 C02	A.95	692651	EPC 63 B32	A.97
691405	EP104TB50	A.75	691497	EP101UCTZ40	A.77	692528	EPC 452 C04	A.95	692653	EPC 64 B02	A.97
691406	EP104TB63	A.75	691498	EP101UCTZ50	A.77	692529	EPC 452 C06	A.95	692654	EPC 64 B04	A.97
691407	EP104TC0.5	A.75	691499	EP101UCTZ63	A.77	692530	EPC 452 C10	A.95	692655	EPC 64 B06	A.97
691408	EP104TC01	A.75	691500	EP102UCTB06	A.77	692531	EPC 452 C16	A.95	692656	EPC 64 B10	A.97
691409	EP104TC02	A.75	691501	EP102UCTB08	A.77	692532	EPC 452 C20	A.95	692657	EPC 64 B16	A.97
691410	EP104TC03	A.75	691502	EP102UCTB10	A.77	692533	EPC 452 C25	A.95	692658	EPC 64 B20	A.97
691411	EP104TC04	A.75	691503	EP102UCTB13	A.77	692534	EPC 452 C32	A.95	692659	EPC 64 B25	A.97
691412	EP104TC06	A.75	691504	EP102UCTB16	A.77	692535	EPC 452 C40	A.95	692660	EPC 64 B32	A.97
691413	EP104TC08	A.75	691505	EP102UCTB20	A.77	692536	EPC 453 C02	A.95	692689	EPC 611 B02	A.91
691414	EP104TC1.6	A.75	691506	EP102UCTB25	A.77	692537	EPC 453 C04	A.95	692690	EPC 611 B04	A.91
691415	EP104TC10	A.75	691507	EP102UCTB32	A.77	692538	EPC 453 C06	A.95	692691	EPC 611 B06	A.91
691416	EP104TC13	A.75	691508	EP102UCTB40	A.77	692539	EPC 453 C10	A.95	692692	EPC 611 B10	A.91
691417	EP104TC16	A.75	691509	EP102UCTB50	A.77	692540	EPC 453 C16	A.95	692693	EPC 611 B13	A.91
691418	EP104TC20	A.75	691510	EP102UCTB63	A.77	692541	EPC 453 C20	A.95	692694	EPC 611 B16	A.91
691419	EP104TC25	A.75	691511	EP102UCTC0.5	A.77	692542	EPC 453 C25	A.95	692695	EPC 611 B20	A.91
691420	EP104TC32	A.75	691512	EP102UCTC01	A.77	692543	EPC 453 C32	A.95	692699	EPC 611 C02	A.91
691421	EP104TC40	A.75	691513	EP102UCTC02	A.77	692545					



Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page	Ref. No.	Cat. No.	Page
692702	EPC 611 C10	A.91	694025	DMCEA60B25/030	B.49	694803	DICE60B32/030NS	B.47
692703	EPC 611 C13	A.91	694026	DMCEA60B32/030	B.49	694804	DICEA60B06/030NS	B.47
692704	EPC 611 C16	A.91	694028	DICE60C06/030	B.49	694805	DICEA60B10/030NS	B.47
692705	EPC 611 C20	A.91	694029	DICE60C10/030	B.49	694806	DICEA60B16/030NS	B.47
692781	EPC 451N C02	A.88	694030	DICE60C16/030	B.49	694807	DICEA60B20/030NS	B.47
692782	EPC 451N C04	A.88	694031	DICE60C20/030	B.49	694808	DICEA60B25/030NS	B.47
692783	EPC 451N C06	A.88	694032	DICE60C25/030	B.49	694809	DICEA60B32/030NS	B.47
692784	EPC 451N C10	A.88	694033	DICE60C32/030	B.49	694810	DICEA60B06/030NS	B.47
692786	EPC 451N C16	A.88	694035	DICEA60C06/030	B.49	694811	DICEA60B10/030NS	B.47
692787	EPC 451N C20	A.88	694036	DICEA60C10/030	B.49	694812	DICEA60B16/030NS	B.47
692788	EPC 451N C25	A.88	694037	DICEA60C16/030	B.49	694813	DICEA60B20/030NS	B.47
692789	EPC 451N C32	A.88	694038	DICEA60C20/030	B.49	694814	DICEA60B25/030NS	B.47
692790	EPC 451N C40	A.88	694039	DICEA60C25/030	B.49	694815	DICEA60B32/030NS	B.47
692791	EPC 61N C02	A.89	694040	DICEA60C32/030	B.49	783000		
692792	EPC 61N C04	A.89	694042	DICE60B06/030	B.49	783517	DMA63NC10/030	B.19
692793	EPC 61N C06	A.89	694043	DICE60B10/030	B.49	783518	DMA63NC13/030	B.19
692794	EPC 61N C10	A.89	694044	DICE60B16/030	B.49	783519	DMA63NC16/030	B.19
692795	EPC 61N C13	A.89	694045	DICE60B20/030	B.49	783520	DMA63NC20/030	B.19
692796	EPC 61N C16	A.89	694046	DICE60B25/030	B.49	811000		
692797	EPC 61N C20	A.89	694047	DICE60B32/030	B.49	811325		F.3
692798	EPC 61N C25	A.89	694049	DICEA60B06/030	B.49	811326		F.3
692799	EPC 61N C32	A.89	694050	DICEA60B10/030	B.49	811327		F.3
692800	EPC 61N C40	A.89	694051	DICEA60B16/030	B.49	811331		F.3
692810	EPC 451N B02	A.88	694052	DICEA60B20/030	B.49	811516		F.3
692811	EPC 451N B04	A.88	694053	DICEA60B25/030	B.49	813000		
692812	EPC 451N B06	A.88	694054	DICEA60B32/030	B.49	813146		F.3
692813	EPC 451N B10	A.88	694678	DMCEA60B06/010NS	B.45	813156		F.3
692814	EPC 451N B16	A.88	694679	DMCEA60B10/010NS	B.45	815000		
692815	EPC 451N B20	A.88	694680	DMCEA60B13/010NS	B.45	815092		F.3
692816	EPC 451N B25	A.88	694681	DMCEA60B16/010NS	B.45	815093		F.3
692817	EPC 451N B32	A.88	694682	DMCEA60B20/010NS	B.45	815094		F.3
692818	EPC 451N B40	A.88	694683	DMCEA60B25/010NS	B.45	815095		F.3
692819	EPC 61N B02	A.89	694684	DMCEA60B32/010NS	B.45	815105		F.3
692820	EPC 61N B04	A.89	694685	DMCEA60C06/010NS	B.45	828000		
692821	EPC 61N B06	A.89	694686	DMCEA60C10/010NS	B.45	828056		F.3
692822	EPC 61N B10	A.89	694687	DMCEA60C13/010NS	B.45	828145		F.7
692823	EPC 61N B16	A.89	694688	DMCEA60C16/010NS	B.45	828146		F.7
692824	EPC 61N B20	A.89	694689	DMCEA60C20/010NS	B.45	828149		F.3
692825	EPC 61N B25	A.89	694690	DMCEA60C25/010NS	B.45	828152		F.3
692826	EPC 61N B32	A.89	694691	DMCEA60C32/010NS	B.45	828153		F.3
692827	EPC 61N B40	A.89	694692	DMCEA60B06/030NS	B.45	832000		
693000			694693	DMCEA60B10/030NS	B.45	832000		F.3
693634	EPC 62 C06 + CA UN S/H G	A.97	694694	DMCEA60B13/030NS	B.45	851000		
693635	EPC 62 C04 + CA UN S/H G	A.97	694695	DMCEA60B16/030NS	B.45	851652		F.13
693636	EPC 62 C02 + CA UN S/H G	A.97	694696	DMCEA60B20/030NS	B.45	851660		F.13
693637	EPC 62 C10 + CA UN S/H G	A.97	694697	DMCEA60B25/030NS	B.45	851674		F.13
693638	EPC 62 C16 + CA UN S/H G	A.97	694698	DMCEA60B32/030NS	B.45	890000		
693639	EPC 64 C10 + CA UN S/H G	A.97	694699	DMCEA60C06/030NS	B.45	890838		F.16
693640	EPC 64 C16 + CA UN S/H G	A.97	694700	DMCEA60C10/030NS	B.45	608000		
693641	EPC 62 C25 + CA UN S/H G	A.97	694701	DMCEA60C13/030NS	B.45	608377	FPAUL 216/010	B.55
693642	EPC 62 B10 + CA UN S/H G	A.97	694702	DMCEA60C16/030NS	B.45	608378	FPAUL 225/030	B.55
693643	EPC 62 B06 + CA UN S/H G	A.97	694703	DMCEA60C20/030NS	B.45	608379	FPAUL 225/100	B.55
693644	EPC 62 C32 + CA UN S/H G	A.97	694704	DMCEA60C25/030NS	B.45	608380	FPAUL 225/300	B.55
693645	EPC 62R B02	A.99	694705	DMCEA60C32/030NS	B.45	608381	FPAUL 225/500	B.55
693646	EPC 62R B04	A.99	694763	DMCE60B10/010NS	B.45	608382	FPAUL 240/030	B.55
693647	EPC 62R B06	A.99	694764	DMCE60B13/010NS	B.45	608383	FPAUL 240/100	B.55
693648	EPC 62R B10	A.99	694765	DMCE60B16/010NS	B.45	608384	FPAUL 240/300	B.55
693649	EPC 62R B16	A.99	694766	DMCE60B20/010NS	B.45	608385	FPAUL 240/500	B.55
693650	EPC 62R B20	A.99	694767	DMCE60B25/010NS	B.45	608386	FPAUL 263/030	B.55
693651	EPC 62R B25	A.99	694768	DMCE60B32/010NS	B.45	608387	FPAUL 263/100	B.55
693652	EPC 62R B32	A.99	694769	DMCE60C06/010NS	B.45	608388	FPAUL 263/300	B.55
693653	EPC 62R C02	A.99	694770	DMCE60C10/010NS	B.45	608389	FPAUL 425/030	B.55
693654	EPC 62R C04	A.99	694771	DMCE60C13/010NS	B.45	608390	FPAUL 425/100	B.55
693655	EPC 62R C06	A.99	694772	DMCE60C16/010NS	B.45	608391	FPAUL 425/300	B.55
693656	EPC 62R C10	A.99	694773	DMCE60C20/010NS	B.45	608392	FPAUL 425/500	B.55
693657	EPC 62R C16	A.99	694774	DMCE60C25/010NS	B.45	608393	FPAUL 440/030	B.55
693658	EPC 62R C20	A.99	694775	DMCE60C32/010NS	B.45	608394	FPAUL 440/100	B.55
693659	EPC 62R C25	A.99	694776	DMCE60B06/030NS	B.45	608395	FPAUL 440/300	B.55
693660	EPC 62R C32	A.99	694777	DMCE60B10/030NS	B.45	608396	FPAUL 440/500	B.55
694000			694778	DMCE60B13/030NS	B.45	608397	FPAUL 463/030	B.55
694000	DMCE60C06/030	B.49	694779	DMCE60B16/030NS	B.45	608398	FPAUL 463/100	B.55
694001	DMCE60C10/030	B.49	694780	DMCE60B20/030NS	B.45	608399	FPAUL 463/300	B.55
694002	DMCE60C16/030	B.49	694781	DMCE60B25/030NS	B.45	608400	FPAUL 463/500	B.55
694003	DMCE60C20/030	B.49	694782	DMCE60B32/030NS	B.45	608401	FPAUL 263/500	B.55
694004	DMCE60C25/030	B.49	694783	DMCE60C06/030NS	B.45			
694005	DMCE60C32/030	B.49	694784	DMCE60C10/030NS	B.45			
694007	DMCEA60C06/030	B.49	694785	DMCE60C13/030NS	B.45			
694008	DMCEA60C10/030	B.49	694786	DMCE60C16/030NS	B.45			
694009	DMCEA60C16/030	B.49	694787	DMCE60C20/030NS	B.45			
694010	DMCEA60C20/030	B.49	694788	DMCE60C25/030NS	B.45			
694011	DMCEA60C25/030	B.49	694789	DMCE60C32/030NS	B.45			
694012	DMCEA60C32/030	B.49	694791	DMCE60B06/010NS	B.45			
694014	DMCE60B06/030	B.49	694792	DICE60B06/030NS	B.47			
694015	DMCE60B10/030	B.49	694793	DICE60B10/030NS	B.47			
694016	DMCE60B16/030	B.49	694794	DICE60B16/030NS	B.47			
694017	DMCE60B20/030	B.49	694795	DICE60B20/030NS	B.47			
694018	DMCE60B25/030	B.49	694796	DICE60B25/030NS	B.47			
694019	DMCE60B32/030	B.49	694797	DICE60B32/030NS	B.47			
694021	DMCEA60B06/030	B.49	694798	DICE60B06/030NS	B.47			
694022	DMCEA60B10/030	B.49	694800	DICE60B16/030NS	B.47			
694023	DMCEA60B16/030	B.49	694801	DICE60B20/030NS	B.47			
694024	DMCEA60B20/030	B.49	694802	DICE60B25/030NS	B.47			



By catalogue number

A

B

C

D

E

F

G

X

Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page
A...											
AQA005PG	597956	F.35	BPA225/1000	606121	B.28	BPC463/030	606210	B.27	CLS+Q 30 1COM 16A 2M D	687439	D.41
AQA008PG	597957	F.35	BPA225/300	606101	B.28	BPC463/100	606218	B.27	CLS+S 15 1COM 16A 2.5M D	687441	D.41
AQA012PG	597958	F.35	BPA225/500	606111	B.28	BPC463/1000	606236	B.27	CLS+S 15 1NA 16A 1M D	687436	D.41
AQA024PG	597960	F.35	BPA240/030	606087	B.28	BPC463/300	606226	B.27	CLS+S 30 1COM 16A 2M D	687438	D.41
AQA048PG	597961	F.35	BPA240/1000	606092	B.28	BPC463/500	606231	B.27	CONTAX2020230U	685935	D.13
AQA912PG	597959	F.35	BPA240/300	606122	B.28	BPC480/030	606211	B.27	CONTAX2522230U	685938	D.13
AST B	666347	D.7	BPA240/500	606102	B.28	BPC480/100	606219	B.27	CONTAX2530230U	685937	D.13
AST B 12	666340	D.7	BPA240/1000	606112	B.28	BPC480/1000	606237	B.27	CONTAX2540230U	685936	D.13
AST B 24	666342	D.7	BPA263/030	606088	B.28	BPC480/300	606227	B.27	CONTAX4040230U	685939	D.13
AST L CL	666343	D.7	BPA263/100	606093	B.28	BPC480/500	606232	B.27	CONTAX6340230U	685940	D.13
AST L GN	666344	D.7	BPA263/1000	606123	B.28	BPCV2100/30	600300	B.27	CONTAXDN2020230U	685941	D.13
AST L OR	666345	D.7	BPA263/300	606103	B.28	BPCV2100/300	600305	B.27	CONTAXDN2530230U	685943	D.13
AST L RD	666346	D.7	BPA263/500	606113	B.28	BPCV225/30	600296	B.27	CONTAXDN3230230U	685944	D.13
AST M 100 10	666558	D.3	BPA280/030	606089	B.28	BPCV225/300	600301	B.27	CONTAXDN2540230U	685942	D.13
AST M 100 20	666559	D.3	BPA280/100	606094	B.28	BPCV240/30	600297	B.27	CONTAXR1610008A	685693	D.17
AST M 100 30	666560	D.3	BPA280/1000	606124	B.28	BPCV240/300	600302	B.27	CONTAXR1610012A	685694	D.17
AST M 100 40	666561	D.3	BPA280/300	606104	B.28	BPCV263/30	600298	B.27	CONTAXR1610024A	685695	D.17
AST M 40 10	666614	D.3	BPA280/500	606114	B.28	BPCV263/300	600303	B.27	CONTAXR1610048A	685696	D.17
AST M 40 20	666615	D.3	BPA4100/030	606167	B.28	BPCV280/30	600299	B.27	CONTAXR161008A	685701	D.17
AST M 40 30	666616	D.3	BPA4100/1000	606172	B.28	BPCV280/300	600304	B.27	CONTAXR1610115A	685697	D.17
AST M 40 40	666617	D.3	BPA4100/300	606202	B.28	BPS1200/100	606100	B.28	CONTAXR161012A	685702	D.17
AST M 63 10	666562	D.3	BPA4100/500	606182	B.28	BPS2100/1000	606130	B.28	CONTAXR1610230A	685699	D.17
AST M 63 20	666563	D.3	BPA4100/1000	606192	B.28	BPS2100/300	606110	B.28	CONTAXR1610240A	685700	D.17
AST M 63 30	666564	D.3	BPA425/030	606163	B.28	BPS2100/500	606120	B.28	CONTAXR161024A	685703	D.17
AST M 63 40	666565	D.3	BPA425/100	606168	B.28	BPS225/100	606096	B.28	CONTAXR161048A	685704	D.17
AST M 80 10	666566	D.3	BPA425/1000	606198	B.28	BPS225/1000	606126	B.28	CONTAXR1611008A	685716	D.17
AST M 80 20	666567	D.3	BPA425/300	606178	B.28	BPS225/300	606106	B.28	CONTAXR1611012A	685717	D.17
AST M 80 30	666568	D.3	BPA425/500	606188	B.28	BPS225/500	606116	B.28	CONTAXR1611024A	685718	D.17
AST M 80 40	666569	D.3	BPA440/030	606164	B.28	BPS240/100	606097	B.28	CONTAXR1611048A	685719	D.17
AST P 16 01	666570	D.3	BPA440/100	606169	B.28	BPS240/1000	606127	B.28	CONTAXR1611115A	685720	D.17
AST P 16 10	666571	D.3	BPA440/1000	606199	B.28	BPS240/300	606107	B.28	CONTAXR161115A	685705	D.17
AST P 16 11	666572	D.3	BPA440/300	606179	B.28	BPS240/500	606117	B.28	CONTAXR1611230A	685722	D.17
AST PL 16 10	666573	D.3	BPA440/500	606189	B.28	BPS263/100	606098	B.28	CONTAXR1611240A	685723	D.17
AST R 32 20	666574	D.3	BPA463/030	606165	B.28	BPS263/1000	606128	B.28	CONTAXR161230A	685706	D.17
AST R 32 30	666575	D.3	BPA463/100	606170	B.28	BPS263/300	606108	B.28	CONTAXR161240A	685707	D.17
AST R 32 3N	666576	D.3	BPA463/1000	606200	B.28	BPS263/500	606118	B.28	CONTAXR1620008A	685708	D.17
AST R 32 40	666577	D.3	BPA463/300	606180	B.28	BPS280/100	606099	B.28	CONTAXR1620012A	685709	D.17
AST R 40 20	666578	D.3	BPA463/500	606190	B.28	BPS280/1000	606129	B.28	CONTAXR1620024A	685710	D.17
AST R 40 30	666579	D.3	BPA480/030	606166	B.28	BPS280/300	606109	B.28	CONTAXR1620048A	685711	D.17
AST R 40 3N	666580	D.3	BPA480/100	606171	B.28	BPS280/500	606119	B.28	CONTAXR162008A	685724	D.17
AST R 40 40	666581	D.3	BPA480/1000	606201	B.28	BPS4100/100	606177	B.28	CONTAXR1620115A	685712	D.17
AST R 63 20	666582	D.3	BPA480/300	606181	B.28	BPS4100/1000	606207	B.28	CONTAXR162012A	685725	D.17
AST R 63 30	666583	D.3	BPA480/500	606191	B.28	BPS4100/300	606187	B.28	CONTAXR1620230A	685714	D.17
AST R 63 3N	666584	D.3	BPAi225/030	606331	B.29	BPS4100/500	606197	B.28	CONTAXR1620240A	685715	D.17
AST R 63 40	666585	D.3	BPAi225/300	606347	B.29	BPS425/100	606173	B.28	CONTAXR162024A	685726	D.17
AST R ES E	666555	D.3	BPAi240/030	606332	B.29	BPS425/1000	606203	B.28	CONTAXR162048A	685727	D.17
AST R ES S	666556	D.3	BPAi240/300	606348	B.29	BPS425/300	606183	B.28	CONTAXR162115A	685728	D.17
AST R TS	666557	D.3	BPAi263/030	606333	B.29	BPS425/500	606193	B.28	CONTAXR1622008A	685742	D.17
AST S 16 1	666586	D.3	BPAi263/300	606349	B.29	BPS440/100	606174	B.28	CONTAXR1622012A	685743	D.17
AST S 16 10	666587	D.3	BPAi425/030	606334	B.29	BPS440/1000	606204	B.28	CONTAXR1622024A	685744	D.17
AST S 16 2	666588	D.3	BPAi425/300	606350	B.29	BPS440/300	606184	B.28	CONTAXR1622048A	685745	D.17
AST S 16 20	666589	D.3	BPAi440/030	606335	B.29	BPS440/500	606194	B.28	CONTAXR1622230A	685747	D.17
AST S 16 30	666590	D.3	BPAi440/300	606351	B.29	BPS463/100	606175	B.28	CONTAXR1622240A	685748	D.17
AST S 16 30 2	666591	D.3	BPAi463/030	606336	B.29	BPS463/1000	606205	B.28	CONTAXR162230A	685729	D.17
AST S 16 40	666593	D.3	BPAi463/300	606352	B.29	BPS463/300	606185	B.28	CONTAXR162240A	685730	D.17
AST S 16 40 2	666592	D.3	BPC2100/030	606136	B.27	BPS463/500	606195	B.28	CONTAXR1630012A	685731	D.17
AST S 32 1	666594	D.3	BPC2100/100	606144	B.27	BPS480/100	606176	B.28	CONTAXR1630024A	685732	D.17
AST S 32 10	666595	D.3	BPC2100/1000	606162	B.27	BPS480/1000	606206	B.28	CONTAXR1630048A	685733	D.17
AST S 32 2	666596	D.3	BPC2100/300	606152	B.27	BPS480/300	606186	B.28	CONTAXR1630230A	685734	D.17
AST S 32 20	666597	D.3	BPC2100/500	606157	B.27	BPS480/500	606196	B.28	CONTAXR1640008A	685735	D.17
AST S 32 30	666599	D.3	BPC216/010	606131	B.27	BPSi2100/300	606341	B.29	CONTAXR1640012A	685736	D.17
AST S 32 30 2	666598	D.3	BPC225/100	606140	B.27	BPSi225/300	606337	B.29	CONTAXR1640024A	685737	D.17
AST S 32 40	666600	D.3	BPC225/1000	606158	B.27	BPSi240/300	606338	B.29	CONTAXR1640048A	685738	D.17
AST S 32 40 2	666601	D.3	BPC225/500	606153	B.27	BPSi263/300	606339	B.29	CONTAXR1640230A	685740	D.17
AST SL 16 10	666602	D.3	BPC240/100	606141	B.27	BPSi280/300	606340	B.29	CONTAXR1640240A	685741	D.17
AST SL 16 20	666603	D.3	BPC240/1000	606159	B.27	BPSi4100/300	606346	B.29	CONTAXR1CAP	685945	D.17
AST SL 32 10	666604	D.3	BPC240/300	606154	B.27	BPSi425/300	606342	B.29	CONTAXR2CAP	685934	D.17
AST SL 32 20	666605	D.3	BPC263/030	606134	B.27	BPSi440/300	606343	B.29	CONTAXRAUX11	685883	D.17
AST SZ 16 1	666606	D.3	BPC263/100	606142	B.27	BPSi463/300	606344	B.29	CONTAXRAUX20	685930	D.17
AST SZ 16 2	666607	D.3	BPC263/1000	606160	B.27	BPSi480/300	606345	B.29	CTX 06 11	666162	D.9
AST SZ 32 1	666608	D.3	BPC263/300	606150	B.27	BU12	687497	D.51	CTX 06 20	666163	D.9
AST SZ 32 2	666609	D.3	BPC263/500	606155	B.27	BU230	687496	D.51	CTX 20 02 024 A	666129	D.9
ASTB 230	661694	D.5	BPC280/030	606135	B.27	C...			CTX 20 02 230 A	666128	D.9
ASTBLG230	661693	D.5	BPC280/100	606143	B.27	CA H	672567	C.4	CTX 20 11 024 A	666127	D.9
ASTBLR230	661692	D.5	BPC280/1000	606161	B.27	CA S/H	672568	C.4	CTX 20 11 230 A	666126	D.9
ASTBLY230	661695	D.5	BPC280/300	606151	B.27	CA S/H G	672569	C.4	CTX 20 20 012 A	666130	D.9
B...			BPC280/500	606156	B.27	CA UN H	672972	C.6	CTX 20 20 024 A	666133	D.9
BDC225/030	607125	B.27	BPC4100/030	606212	B.27	CA UN S/H	672973	C.6	CTX 20 20 048 A	666134	D.9
BDC225/300	607127	B.27	BPC4100/100	606220	B.27	CA UN S/H G	672974	C.6	CTX 20 20 230 A	666131	D.9
BDC240/030	607126	B.27	BPC4100/1000	606238	B.27	CAH DMA63N	568324	B.19	CTX 20 20 240 A	666132	D.9
BDC240/300	607128	B.27	BPC4100/300	606228	B.27	Cat. No.	Ref. No.	D.75	CTX 24 04 024 U	666140	D.9
BE12	687499	D.51	BPC4100/500	606233	B.27	CB SH/HH-L	672571	C.5	CTX 24 04 230 U	666139	D.9
BE230	687498	D.51	BPC425/030	606208	B.27	CB SH/HH-R	672570	C.5	CTX 24 22 024 U	666136	D.9
BPA2100/030	606090	B.28	BPC425/100	606216	B.27	CBT H 2NC	667250	C.10	CTX 24 22 230 U	666135	D.9
BPA2100/100	606095	B.28	BPC425/1000	606234	B.27	CBT H 2NO	667251	C.10	CTX 24 30 024 U	666138	D.9
BPA2100/1000	606125	B.28	BPC425/300	606224	B.27	CBT H NO-NC	667249	C.10	CTX 24 30 230 U	666137	D.9
BPA2100/300	606105	B.28	BPC425/500	606229	B.27	CLS+Q 120 1COM 16A 2.5M W	687443	D.41	CTX 24 40 012 U	666141	D.9
BPA2100/500	606115	B.28	BPC440/030	606209	B.27	CLS+Q 15 1COM 16A 2.5M D	687442	D.41	CTX 24 40 024 U	666144	D.9
B											



Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page
CTX 40 20 024 U	666147	D.9	DM100B32/030	609937	B.39	DM60C25/030	609843	B.37	DMA60B25/100	609758	B.37
CTX 40 20 230 U	666146	D.9	DM100B32/100	609945	B.39	DM60C25/100	609852	B.37	DMA60B25/300	609766	B.37
CTX 40 30 024 U	666149	D.9	DM100B32/300	609953	B.39	DM60C25/300	609861	B.37	DMA60B32/030	609751	B.37
CTX 40 30 230 U	666148	D.9	DM100B40/030	609938	B.39	DM60C32/030	609844	B.37	DMA60B32/100	609759	B.37
CTX 40 40 012 U	666150	D.9	DM100B40/100	609946	B.39	DM60C32/100	609853	B.37	DMA60B32/300	609767	B.37
CTX 40 40 024 U	666153	D.9	DM100B40/300	609954	B.39	DM60C32/300	609862	B.37	DMA60B40/030	609752	B.37
CTX 40 40 048 U	666154	D.9	DM100C04/010	609955	B.39	DM60C40/030	609845	B.37	DMA60B40/100	609760	B.37
CTX 40 40 230 U	666151	D.9	DM100C04/030	609961	B.39	DM60C40/100	609854	B.37	DMA60B40/300	609768	B.37
CTX 40 20 240 U	666152	D.9	DM100C04/100	609970	B.39	DM60C40/300	609863	B.37	DMA60C04/010	609769	B.37
CTX 63 20 230 U	666155	D.9	DM100C04/300	609979	B.39	DMA100B06/010	609864	B.39	DMA60C04/030	609775	B.37
CTX 63 40 024 U	666158	D.9	DM100C06/010	609956	B.39	DMA100B06/030	609869	B.39	DMA60C04/100	609784	B.37
CTX 63 40 230 U	666156	D.9	DM100C06/030	609962	B.39	DMA100B06/100	609877	B.39	DMA60C04/300	609793	B.37
CTX 63 40 240 U	666157	D.9	DM100C06/100	609971	B.39	DMA100B06/300	609885	B.39	DMA60C06/010	609770	B.37
CTX DN 20 20 230 A	666164	D.9	DM100C06/300	609980	B.39	DMA100B10/010	609865	B.39	DMA60C06/030	609776	B.37
CTX DN 24 30 230 U	666165	D.9	DM100C10/010	609957	B.39	DMA100B10/030	609870	B.39	DMA60C06/100	609785	B.37
CTX DN 24 40 230 U	666166	D.9	DM100C10/030	609963	B.39	DMA100B10/100	609878	B.39	DMA60C06/300	609794	B.37
CTX DN 40 20 230 U	666167	D.9	DM100C10/100	609972	B.39	DMA100B10/300	609886	B.39	DMA60C10/010	609771	B.37
CTX DN 40 30 230 U	666168	D.9	DM100C10/300	609981	B.39	DMA100B13/010	609866	B.39	DMA60C10/030	609777	B.37
CTX DN 40 40 230 U	666169	D.9	DM100C13/010	609958	B.39	DMA100B13/030	609871	B.39	DMA60C10/100	609786	B.37
CTX TS 2	666160	D.9	DM100C13/030	609964	B.39	DMA100B13/100	609879	B.39	DMA60C10/300	609795	B.37
CTX TS 3	666159	D.9	DM100C13/100	609973	B.39	DMA100B13/300	609887	B.39	DMA60C13/010	609772	B.37
D...			DM100C13/300	609982	B.39	DMA100B16/010	609867	B.39	DMA60C13/030	609778	B.37
DICE60B06/030	694042	B.49	DM100C16/010	609959	B.39	DMA100B16/030	609872	B.39	DMA60C13/100	609787	B.37
DICE60B06/030NS	694792	B.47	DM100C16/030	609965	B.39	DMA100B16/100	609880	B.39	DMA60C13/300	609796	B.37
DICE60B10/030	694043	B.49	DM100C16/100	609974	B.39	DMA100B16/300	609888	B.39	DMA60C16/010	609773	B.37
DICE60B10/030NS	694793	B.47	DM100C16/300	609983	B.39	DMA100B20/010	609868	B.39	DMA60C16/030	609779	B.37
DICE60B16/030	694044	B.49	DM100C20/010	609960	B.39	DMA100B20/030	609873	B.39	DMA60C16/100	609788	B.37
DICE60B16/030NS	694794	B.47	DM100C20/030	609966	B.39	DMA100B20/100	609881	B.39	DMA60C16/300	609797	B.37
DICE60B20/030	694045	B.49	DM100C20/100	609975	B.39	DMA100B20/300	609889	B.39	DMA60C20/010	609774	B.37
DICE60B20/030NS	694795	B.47	DM100C20/300	609984	B.39	DMA100B25/030	609874	B.39	DMA60C20/030	609780	B.37
DICE60B25/030	694046	B.49	DM100C25/030	609967	B.39	DMA100B25/100	609882	B.39	DMA60C20/100	609789	B.37
DICE60B25/030NS	694796	B.47	DM100C25/100	609976	B.39	DMA100B25/300	609890	B.39	DMA60C20/300	609798	B.37
DICE60B32/030	694047	B.49	DM100C25/300	609985	B.39	DMA100B32/030	609875	B.39	DMA60C25/030	609781	B.37
DICE60B32/030NS	694797	B.47	DM100C32/030	609968	B.39	DMA100B32/100	609883	B.39	DMA60C25/100	609790	B.37
DICE60C06/030	694028	B.49	DM100C32/100	609977	B.39	DMA100B32/300	609891	B.39	DMA60C25/300	609799	B.37
DICE60C10/030	694029	B.49	DM100C32/300	609986	B.39	DMA100B40/030	609876	B.39	DMA60C32/030	609782	B.37
DICE60C16/030	694030	B.49	DM100C40/030	609969	B.39	DMA100B40/100	609884	B.39	DMA60C32/100	609791	B.37
DICE60C20/030	694031	B.49	DM100C40/100	609978	B.39	DMA100B40/300	609892	B.39	DMA60C32/300	609800	B.37
DICE60C25/030	694032	B.49	DM100C40/300	609987	B.39	DMA100C04/010	609893	B.39	DMA60C40/030	609783	B.37
DICE60C32/030	694033	B.49	DM60B06/010	609802	B.37	DMA100C04/030	609899	B.39	DMA60C40/100	609792	B.37
DICE60B06/030	694049	B.49	DM60B06/030	609807	B.37	DMA100C04/100	609908	B.39	DMA60C40/300	609801	B.37
DICEA60B06/030NS	694804	B.47	DM60B06/100	609815	B.37	DMA100C04/300	609917	B.39	DMA63C10/030IT	568326	B.19
DICEA60B10/030	694050	B.49	DM60B06/300	609823	B.37	DMA100C06/010	609894	B.39	DMA63C16/030IT	568327	B.19
DICEA60B10/030NS	694805	B.47	DM60B10/010	609803	B.37	DMA100C06/030	609900	B.39	DMA63C20/030IT	568328	B.19
DICEA60B16/030	694051	B.49	DM60B10/030	609808	B.37	DMA100C06/100	609909	B.39	DMA63C25/030IT	568329	B.19
DICEA60B16/030NS	694806	B.47	DM60B10/100	609816	B.37	DMA100C06/300	609918	B.39	DMA63C32/030IT	568330	B.19
DICEA60B20/030	694052	B.49	DM60B10/300	609824	B.37	DMA100C10/010	609895	B.39	DMA63NB10/030	565387	B.19
DICEA60B20/030NS	694807	B.47	DM60B13/010	609804	B.37	DMA100C10/030	609901	B.39	DMA63NB10/300	565393	B.19
DICEA60B25/030	694053	B.49	DM60B13/030	609809	B.37	DMA100C10/100	609910	B.39	DMA63NB13/030	565388	B.19
DICEA60B25/030NS	694808	B.47	DM60B13/100	609817	B.37	DMA100C10/300	609919	B.39	DMA63NB13/300	565394	B.19
DICEA60B32/030	694054	B.49	DM60B13/300	609825	B.37	DMA100C13/010	609896	B.39	DMA63NB16/030	565389	B.19
DICEA60B32/030NS	694809	B.47	DM60B16/010	609805	B.37	DMA100C13/030	609902	B.39	DMA63NB16/300	565395	B.19
DICEA60C06/030	694035	B.49	DM60B16/030	609810	B.37	DMA100C13/100	609911	B.39	DMA63NB20/030	565390	B.19
DICEA60C10/030	694036	B.49	DM60B16/100	609818	B.37	DMA100C13/300	609920	B.39	DMA63NB20/300	565396	B.19
DICEA60C16/030	694037	B.49	DM60B16/300	609826	B.37	DMA100C16/010	609897	B.39	DMA63NB25/030	565391	B.19
DICEA60C20/030	694038	B.49	DM60B20/010	609806	B.37	DMA100C16/030	609903	B.39	DMA63NB25/300	565397	B.19
DICEA60C25/030	694039	B.49	DM60B20/030	609811	B.37	DMA100C16/100	609912	B.39	DMA63NB32/030	565392	B.19
DICEA60C32/030	694040	B.49	DM60B20/100	609819	B.37	DMA100C16/300	609921	B.39	DMA63NB32/300	565398	B.19
DIM300UNI230V	685998	D.35	DM60B20/300	609827	B.37	DMA100C20/010	609898	B.39	DMA63NC10/030	783517	B.19
DIM500RL230V	685997	D.35	DM60B25/030	609812	B.37	DMA100C20/030	609904	B.39	DMA63NC10/300	565381	B.19
DIMLC300UNI230V	685999	D.35	DM60B25/100	609820	B.37	DMA100C20/100	609913	B.39	DMA63NC13/030	783518	B.19
DisB2 15/45	585436	B.67	DM60B25/300	609828	B.37	DMA100C20/300	609922	B.39	DMA63NC13/300	565382	B.19
DisB2 30/60	585435	B.67	DM60B32/030	609813	B.37	DMA100C25/030	609905	B.39	DMA63NC16/030	783519	B.19
DisB4 10/30	585440	B.67	DM60B32/100	609821	B.37	DMA100C25/100	609914	B.39	DMA63NC16/300	565383	B.19
DisB4 30/60	585439	B.67	DM60B32/300	609829	B.37	DMA100C25/300	609923	B.39	DMA63NC20/030	783520	B.19
DisBS2 15/45	585438	B.67	DM60B40/030	609814	B.37	DMA100C32/030	609906	B.39	DMA63NC20/300	565384	B.19
DisBS2 30/60	585437	B.67	DM60B40/100	609822	B.37	DMA100C32/100	609915	B.39	DMA63NC25/030	568323	B.19
DisBS4 10/30	585442	B.67	DM60B40/300	609830	B.37	DMA100C32/300	609924	B.39	DMA63NC25/300	565385	B.19
DisBS4 30/60	585441	B.67	DM60C04/010	609831	B.37	DMA100C40/030	609907	B.39	DMA63NC32/030	568322	B.19
DM100B06/010	609926	B.39	DM60C04/030	609837	B.37	DMA100C40/100	609916	B.39	DMA63NC32/300	565386	B.19
DM100B06/030	609931	B.39	DM60C04/100	609846	B.37	DMA100C40/300	609925	B.39	DMCE60B06/010NS	694791	B.45
DM100B06/100	609939	B.39	DM60C04/300	609855	B.37	DMA60B06/010	609740	B.37	DMCE60B06/030	694014	B.49
DM100B06/300	609947	B.39	DM60C06/010	609832	B.37	DMA60B06/030	609745	B.37	DMCE60B06/030NS	694776	B.45
DM100B10/010	609927	B.39	DM60C06/030	609838	B.37	DMA60B06/100	609753	B.37	DMCE60B10/010NS	694763	B.45
DM100B10/030	609932	B.39	DM60C06/100	609847	B.37	DMA60B06/300	609761	B.37	DMCE60B10/030	694015	B.49
DM100B10/100	609940	B.39	DM60C06/300	609856	B.37	DMA60B10/010	609741	B.37	DMCE60B10/030NS	694777	B.45
DM100B10/300	609948	B.39	DM60C10/010	609833	B.37	DMA60B10/030	609746	B.37	DMCE60B13/010NS	694764	B.45
DM100B13/010	609928	B.39	DM60C10/030	609839	B.37	DMA60B10/100	609754	B.37	DMCE60B13/030NS	694778	B.45
DM100B13/030	609933	B.39	DM60C10/100	609848	B.37	DMA60B10/300	609762	B.37	DMCE60B16/010NS	694765	B.45
DM100B13/100	609941	B.39	DM60C10/300	609857	B.37	DMA60B13/010	609742	B.37	DMCE60B16/030	694016	B.49
DM100B13/300	609949	B.39	DM60C13/010	609834	B.37	DMA60B13/030	609747	B.37	DMCE60B16/030NS	694779	B.45
DM100B16/010	609929	B.39	DM60C13/030	609840	B.37	DMA60B13/100	609755	B.37	DMCE60B20/010NS	694766	B.45
DM100B16/030	609934	B.39	DM60C13/100	609849	B.37	DMA60B13/300	609763	B.37	DMCE60B20/030	694017	B.49
DM100B16/100	609942	B.39	DM60C13/300	609858	B.37	DMA60B16/010	609743	B.37	DMCE60B20/030NS	694780	B.45
DM100B16/300	609950	B.39	DM60C16/010	609835	B.37	DMA60B16/030	609748	B.37	DMCE60B25/010NS		



By catalogue number

A
B
C
D
E
F
G
X

Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page
DMCE60C06/030NS	694783	B.45	DME100C25/030	605055	B.51	DMEAT60C20/030	608137	B.53	DOCA 232/500	607503	B.41
DMCE60C10/010NS	694770	B.45	DME100C25/100	605244	B.51	DMEAT60C25/030	608138	B.53	DOCA 263/030	607506	B.41
DMCE60C10/030	694001	B.49	DME100C32/010	605049	B.51	DMEAT60C32/030	608139	B.53	DOCA 263/100	607507	B.41
DMCE60C10/030NS	694784	B.45	DME100C32/030	605056	B.51	DMET100C06/010	606567	B.53	DOCA 263/1000	607510	B.41
DMCE60C13/010NS	694771	B.45	DME100C32/100	605245	B.51	DMET100C06/030	606574	B.53	DOCA 263/300	607508	B.41
DMCE60C13/030NS	694785	B.45	DME100C40/010	605050	B.51	DMET100C06/100	606560	B.53	DOCA 263/500	607509	B.41
DMCE60C16/010NS	694772	B.45	DME100C40/030	605057	B.51	DMET100C10/010	606568	B.53	DOCA 3125/030	671581	A.40
DMCE60C16/030	694002	B.49	DME100C40/100	605246	B.51	DMET100C10/030	606575	B.53	DOCA 3125/300	671583	A.40
DMCE60C16/030NS	694786	B.45	DME100D06/100	606519	B.51	DMET100C10/100	606561	B.53	DOCA 332/030	607584	B.41
DMCE60C20/010NS	694773	B.45	DME100D10/100	606520	B.51	DMET100C16/010	606569	B.53	DOCA 332/100	607585	B.41
DMCE60C20/030	694003	B.49	DME100D16/100	606521	B.51	DMET100C16/030	606576	B.53	DOCA 332/1000	607588	B.41
DMCE60C20/030NS	694787	B.45	DME100D20/100	606522	B.51	DMET100C16/100	606562	B.53	DOCA 332/300	607586	B.41
DMCE60C25/010NS	694774	B.45	DME100D25/100	606523	B.51	DMET100C20/010	606570	B.53	DOCA 332/500	607587	B.41
DMCE60C25/030	694004	B.49	DME100D32/100	606524	B.51	DMET100C20/030	606577	B.53	DOCA 363/030	607590	B.41
DMCE60C25/030NS	694788	B.45	DME100D40/100	606525	B.51	DMET100C20/100	606563	B.53	DOCA 363/100	607591	B.41
DMCE60C32/010NS	694775	B.45	DME60C06/030	605060	B.51	DMET100C25/010	606571	B.53	DOCA 363/1000	607594	B.41
DMCE60C32/030	694005	B.49	DME60C06/100	605067	B.51	DMET100C25/030	606578	B.53	DOCA 363/300	607592	B.41
DMCE60C32/030NS	694789	B.45	DME60C10/030	605061	B.51	DMET100C25/100	606564	B.53	DOCA 363/500	607593	B.41
DMCEA60B06/010NS	694678	B.45	DME60C10/100	605068	B.51	DMET100C32/010	606572	B.53	DOCA 4125/030	671589	A.40
DMCEA60B06/030	694021	B.49	DME60C16/030	605062	B.51	DMET100C32/030	606579	B.53	DOCA 4125/300	671591	A.40
DMCEA60B06/030NS	694692	B.45	DME60C16/100	605069	B.51	DMET100C32/100	606565	B.53	DOCA 432/030	607674	B.41
DMCEA60B10/010NS	694679	B.45	DME60C20/030	605063	B.51	DMET100C40/010	606573	B.53	DOCA 432/100	607675	B.41
DMCEA60B10/030	694022	B.49	DME60C20/100	605070	B.51	DMET100C40/030	606580	B.53	DOCA 432/1000	607678	B.41
DMCEA60B10/030NS	694693	B.45	DME60C25/030	605064	B.51	DMET100C40/100	606566	B.53	DOCA 432/300	607676	B.41
DMCEA60B13/010NS	694680	B.45	DME60C25/100	605071	B.51	DMET60C10/030	607427	B.53	DOCA 432/500	607677	B.41
DMCEA60B13/030NS	694694	B.45	DME60C32/030	605065	B.51	DMET60C16/030	607428	B.53	DOCA 463/030	607680	B.41
DMCEA60B16/010NS	694681	B.45	DME60C32/100	605072	B.51	DMET60C20/030	607429	B.53	DOCA 463/100	607681	B.41
DMCEA60B16/030	694023	B.49	DME60C40/030	605066	B.51	DMET60C25/030	607430	B.53	DOCA 463/1000	607684	B.41
DMCEA60B16/030NS	694695	B.45	DME60C40/100	605073	B.51	DMET60C32/030	607431	B.53	DOCA 463/300	607682	B.41
DMCEA60B20/010NS	694682	B.45	DMEA100B06/010	605150	B.51	DMT100C04/030	609289	B.39	DOCA 463/500	607683	B.41
DMCEA60B20/030	694024	B.49	DMEA100B06/030	605157	B.51	DMT100C06/030	609290	B.39	DOCA 532/030	607668	B.41
DMCEA60B20/030NS	694696	B.45	DMEA100B10/010	605151	B.51	DMT100C10/030	609291	B.39	DOCA 532/100	607670	B.41
DMCEA60B25/010NS	694683	B.45	DMEA100B10/030	605158	B.51	DMT100C13/030	609292	B.39	DOCA 532/1000	607672	B.41
DMCEA60B25/030	694025	B.49	DMEA100B16/010	605152	B.51	DMT100C16/030	609293	B.39	DOCA 532/300	607669	B.41
DMCEA60B25/030NS	694697	B.45	DMEA100B16/030	605159	B.51	DMT100C20/030	609294	B.39	DOCA 532/500	607671	B.41
DMCEA60B32/010NS	694684	B.45	DMEA100B20/010	605153	B.51	DMT100C25/030	609295	B.39	DOCAHTI+2100/300	671544	A.53
DMCEA60B32/030	694026	B.49	DMEA100B20/030	605160	B.51	DMT100C32/030	609296	B.39	DOCAHTI+2100/500	671545	A.53
DMCEA60B32/030NS	694698	B.45	DMEA100B25/010	605154	B.51	DMT100C40/030	609297	B.39	DOCAHTI+3100/300	671555	A.53
DMCEA60C06/010NS	694685	B.45	DMEA100B25/030	605161	B.51	DMT60C04/030	609280	B.37	DOCAHTI+3100/500	671556	A.53
DMCEA60C06/030	694007	B.49	DMEA100B32/010	605155	B.51	DMT60C06/030	609281	B.37	DOCAHTI+4100/300	671567	A.53
DMCEA60C06/030NS	694699	B.45	DMEA100B32/030	605162	B.51	DMT60C10/030	609282	B.37	DOCAHTI+4100/500	671568	A.53
DMCEA60C10/010NS	694686	B.45	DMEA100B40/010	605156	B.51	DMT60C13/030	609283	B.37	DOCAHTI+2100/030	671543	A.53
DMCEA60C10/030	694008	B.49	DMEA100B40/030	605163	B.51	DMT60C16/030	609284	B.37	DOCAHTI+3100/030	671551	A.53
DMCEA60C10/030NS	694700	B.45	DMEA100C06/010	605164	B.51	DMT60C20/030	609285	B.37	DOCAHTI+4100/030	671563	A.53
DMCEA60C13/010NS	694687	B.45	DMEA100C06/030	605171	B.51	DMT60C25/030	609286	B.37	DOCS 232/100	607513	B.41
DMCEA60C13/030NS	694701	B.45	DMEA100C06/100	606526	B.51	DMT60C32/030	609287	B.37	DOCS 232/1000	607516	B.41
DMCEA60C16/010NS	694688	B.45	DMEA100C06/300	606588	B.53	DMT60C40/030	609288	B.37	DOCS 232/300	607514	B.41
DMCEA60C16/030	694009	B.49	DMEA100C10/010	605165	B.51	DOC 2125/030	671574	A.40	DOCS 232/500	607515	B.41
DMCEA60C16/030NS	694702	B.45	DMEA100C10/030	605172	B.51	DOC 2125/300	671576	A.40	DOCS 263/100	607519	B.41
DMCEA60C20/010NS	694689	B.45	DMEA100C10/100	606527	B.51	DOC 232/030	607536	B.41	DOCS 263/1000	607522	B.41
DMCEA60C20/030	694010	B.49	DMEA100C10/300	606589	B.53	DOC 232/100	607537	B.41	DOCS 263/300	607520	B.41
DMCEA60C20/030NS	694703	B.45	DMEA100C16/010	605166	B.51	DOC 232/1000	607540	B.41	DOCS 263/500	607521	B.41
DMCEA60C25/010NS	694690	B.45	DMEA100C16/030	605173	B.51	DOC 232/300	607538	B.41	DOCS 3125/300	671585	A.40
DMCEA60C25/030	694011	B.49	DMEA100C16/100	606528	B.51	DOC 232/500	607539	B.41	DOCS 332/100	607597	B.41
DMCEA60C25/030NS	694704	B.45	DMEA100C16/300	606590	B.53	DOC 263/030	607542	B.41	DOCS 332/1000	607600	B.41
DMCEA60C32/010NS	694691	B.45	DMEA100C20/010	605167	B.51	DOC 263/100	607543	B.41	DOCS 332/300	607598	B.41
DMCEA60C32/030	694012	B.49	DMEA100C20/030	605174	B.51	DOC 263/300	607546	B.41	DOCS 332/500	607599	B.41
DMCEA60C32/030NS	694705	B.45	DMEA100C20/100	606529	B.51	DOC 263/500	607544	B.41	DOCS 363/100	607603	B.41
DME100B06/010	605030	B.51	DMEA100C20/300	606591	B.53	DOC 263/500	607545	B.41	DOCS 363/1000	607606	B.41
DME100B06/030	605037	B.51	DMEA100C25/010	605168	B.51	DOC 3125/030	671582	A.40	DOCS 363/300	607604	B.41
DME100B06/100	605260	B.51	DMEA100C25/030	605175	B.51	DOC 3125/300	671584	A.40	DOCS 363/500	607605	B.41
DME100B10/010	605031	B.51	DMEA100C25/100	606530	B.51	DOC 332/030	607620	B.41	DOCS 4125/300	671585	A.40
DME100B10/030	605038	B.51	DMEA100C25/300	606592	B.53	DOC 332/100	607621	B.41	DOCS 432/100	607693	B.41
DME100B10/100	605261	B.51	DMEA100C32/010	605169	B.51	DOC 332/1000	607624	B.41	DOCS 432/1000	607696	B.41
DME100B16/010	605032	B.51	DMEA100C32/030	605176	B.51	DOC 332/300	607622	B.41	DOCS 432/300	607694	B.41
DME100B16/030	605039	B.51	DMEA100C32/100	606531	B.51	DOC 332/500	607623	B.41	DOCS 432/500	607695	B.41
DME100B16/100	605262	B.51	DMEA100C32/300	606593	B.53	DOC 363/030	607626	B.41	DOCS 463/100	607699	B.41
DME100B20/010	605033	B.51	DMEA100C40/010	605170	B.51	DOC 363/100	607627	B.41	DOCS 463/1000	607702	B.41
DME100B20/030	605040	B.51	DMEA100C40/030	605177	B.51	DOC 363/1000	607630	B.41	DOCS 463/300	607700	B.41
DME100B20/100	605263	B.51	DMEA100C40/100	606532	B.51	DOC 363/300	607628	B.41	DOCS 463/500	607701	B.41
DME100B25/010	605034	B.51	DMEA100C40/300	606581	B.53	DOC 363/500	607629	B.41	DOCS 532/100	607687	B.41
DME100B25/030	605041	B.51	DMEA100D06/010	606505	B.51	DOC 4125/030	671590	A.40	DOCS 532/1000	607690	B.41
DME100B25/100	605264	B.51	DMEA100D06/030	606512	B.51	DOC 4125/300	671592	A.40	DOCS 532/300	607688	B.41
DME100B32/010	605035	B.51	DMEA100D10/010	606506	B.51	DOC 432/030	607728	B.41	DOCS 532/500	607689	B.41
DME100B32/030	605042	B.51	DMEA100D10/030	606513	B.51	DOC 432/1000	607729	B.41	DOCSHTI+2100/1000	671550	A.53
DME100B32/100	605265	B.51	DMEA100D16/010	606507	B.51	DOC 432/1000	607732	B.41	DOCSHTI+2100/300	671549	A.53
DME100B40/010	605036	B.51	DMEA100D16/030	606514	B.51	DOC 432/300	607730	B.41	DOCSHTI+3100/1000	671562	A.53
DME100B40/030	605043	B.51	DMEA100D20/010	606508	B.51	DOC 432/500	607731	B.41	DOCSHTI+3100/300	671557	A.53
DME100B40/100	605266	B.51	DMEA100D20/030	606515	B.51	DOC 463/030	607734	B.41	DOCSHTI+3100/500	671561	A.53
DME100C06/010	605044	B.51	DMEA100D25/010	606509	B.51	DOC 463/100	607735	B.41	DOCSHTI+4100/1000	671580	A.53
DME100C06/030	605051	B.51	DMEA100D25/030	606516	B.51	DOC 463/1000	607738	B.41	DOCSHTI+4100/300	671569	A.53
DME100C06/100	605240	B.51	DMEA100D32/010	606510	B.51	DOC 463/300	607736	B.41	DOCSHTI+4100/500	671579	A.53
DME100C10/010	605045	B.51	DMEA100D32/030	606517	B.51	DOC 463/500	607737	B.41	DPA100B10/010	608706	B.57
DME100C10/											



Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page
DPA100C10/010	608757	B.57	DPCA100C16/300	606940	B.15	DPCAi100C40/300	606960	B.15	EP101TC13	691254	A.75
DPA100C10/030	608763	B.57	DPCA100C20/030	606929	B.15	DPCAi60B06/030	606888	B.13	EP101TC16	691255	A.75
DPA100C13/010	608758	B.57	DPCA100C20/030-120V	606378	B.17	DPCAi60B06/300	606896	B.13	EP101TC20	691256	A.75
DPA100C13/030	608764	B.57	DPCA100C20/300	606941	B.15	DPCAi60B10/030	606889	B.13	EP101TC25	667248	A.75
DPA100C16/010	608759	B.57	DPCA100C25/030	606939	B.15	DPCAi60B10/300	606897	B.13	EP101TC32	691257	A.75
DPA100C16/030	608765	B.57	DPCA100C25/030-120V	606379	B.17	DPCAi60B13/030	606890	B.13	EP101TC40	691258	A.75
DPA100C20/010	608760	B.57	DPCA100C25/300	606942	B.15	DPCAi60B13/300	606898	B.13	EP101TC50	691259	A.75
DPA100C20/030	608766	B.57	DPCA100C32/030	606935	B.15	DPCAi60B16/030	606891	B.13	EP101TC63	691260	A.75
DPA100C25/030	608767	B.57	DPCA100C32/030-120V	606380	B.17	DPCAi60B16/300	606899	B.13	EP101TK0.5	691261	A.75
DPA100C32/030	608768	B.57	DPCA100C32/300	606943	B.15	DPCAi60B20/030	606892	B.13	EP101TK02	691262	A.75
DPC100C06/030	606906	B.15	DPCA100C40/030	606936	B.15	DPCAi60B20/300	606900	B.13	EP101TK05	691263	A.75
DPC100C06/300	606914	B.15	DPCA100C40/030-120V	606381	B.17	DPCAi60B25/030	606893	B.13	EP101TK08	691264	A.75
DPC100C10/010	606904	B.15	DPCA100C40/300	606944	B.15	DPCAi60B25/300	606901	B.13	EP101TK06	691265	A.75
DPC100C10/030	606907	B.15	DPCA45C06/030	606802	B.11	DPCAi60B32/030	606894	B.13	EP101TK08	691266	A.75
DPC100C10/300	606915	B.15	DPCA45C06/300	606810	B.11	DPCAi60B32/300	606902	B.13	EP101TK1	691267	A.75
DPC100C13/030	606908	B.15	DPCA45C10/030	606803	B.11	DPCAi60B40/030	606895	B.13	EP101TK1.6	691268	A.75
DPC100C13/300	606916	B.15	DPCA45C10/300	606811	B.11	DPCAi60B40/300	606903	B.13	EP101TK10	691269	A.75
DPC100C16/010	606905	B.15	DPCA45C13/030	606804	B.11	DPCAi60C06/030	606854	B.13	EP101TK16	691270	A.75
DPC100C16/030	606909	B.15	DPCA45C13/300	606812	B.11	DPCAi60C06/300	606862	B.13	EP101TK20	691271	A.75
DPC100C16/300	606917	B.15	DPCA45C16/030	606805	B.11	DPCAi60C10/030	606855	B.13	EP101TK25	691272	A.75
DPC100C20/030	606910	B.15	DPCA45C16/300	606813	B.11	DPCAi60C10/300	606863	B.13	EP101TK32	691273	A.75
DPC100C20/300	606918	B.15	DPCA45C20/030	606806	B.11	DPCAi60C13/030	606856	B.13	EP101TK40	691274	A.75
DPC100C25/030	606911	B.15	DPCA45C20/300	606814	B.11	DPCAi60C13/300	606864	B.13	EP101TK50	691275	A.75
DPC100C25/300	606919	B.15	DPCA45C25/030	606807	B.11	DPCAi60C16/030	606857	B.13	EP101TK63	691276	A.75
DPC100C32/030	606912	B.15	DPCA45C25/300	606815	B.11	DPCAi60C16/300	606865	B.13	EP101TZ0.5	691277	A.75
DPC100C32/300	606920	B.15	DPCA45C32/030	606808	B.11	DPCAi60C20/030	606858	B.13	EP101TZ01	691278	A.75
DPC100C40/030	606913	B.15	DPCA45C32/300	606816	B.11	DPCAi60C20/300	606866	B.13	EP101TZ20	691279	A.75
DPC100C40/300	606921	B.15	DPCA45C40/300	606817	B.11	DPCAi60C25/030	606859	B.13	EP101TZ03	691280	A.75
DPC45C06/030	606786	B.11	DPCA46C40/030	606809	B.11	DPCAi60C25/300	606867	B.13	EP101TZ04	691281	A.75
DPC45C06/300	606794	B.11	DPCA60B06/030	606872	B.13	DPCAi60C32/030	606860	B.13	EP101TZ06	691282	A.75
DPC45C10/030	606787	B.11	DPCA60B06/300	606880	B.13	DPCAi60C32/300	606868	B.13	EP101TZ08	691283	A.75
DPC45C10/300	606795	B.11	DPCA60B10/030	606873	B.13	DPCAi60C40/030	606861	B.13	EP101TZ1.6	691284	A.75
DPC45C13/030	606788	B.11	DPCA60B10/300	606881	B.13	DPCAi60C40/300	606869	B.13	EP101TZ10	691285	A.75
DPC45C13/300	606796	B.11	DPCA60B13/030	606874	B.13	E...			EP101TZ16	691286	A.75
DPC45C16/030	606789	B.11	DPCA60B13/300	606882	B.13	EP101K0.5	672402	A.31	EP101TZ20	691287	A.75
DPC45C16/300	606797	B.11	DPCA60B16/030	606875	B.13	EP101K01	672403	A.31	EP101TZ25	691288	A.75
DPC45C20/030	606790	B.11	DPCA60B16/300	606883	B.13	EP101K02	672404	A.31	EP101TZ32	691289	A.75
DPC45C20/300	606798	B.11	DPCA60B20/030	606876	B.13	EP101K03	672405	A.31	EP101TZ40	691290	A.75
DPC45C25/030	606791	B.11	DPCA60B20/300	606884	B.13	EP101K04	672406	A.31	EP101TZ50	691291	A.75
DPC45C25/300	606799	B.11	DPCA60B25/030	606877	B.13	EP101K06	672407	A.31	EP101TZ63	691292	A.75
DPC45C32/030	606792	B.11	DPCA60B25/300	606885	B.13	EP101K08	672408	A.31	EP101UCB06	673333	A.37
DPC45C32/300	606800	B.11	DPCA60B32/030	606878	B.13	EP101K1.6	681588	A.31	EP101UCB10	673334	A.37
DPC45C40/030	606793	B.11	DPCA60B32/300	606886	B.13	EP101K10	672409	A.31	EP101UCB16	673335	A.37
DPC45C40/300	606801	B.11	DPCA60B40/030	606879	B.13	EP101K16	672411	A.31	EP101UCB20	673336	A.37
DPC60C06/030	606820	B.13	DPCA60B40/300	606887	B.13	EP101K20	672412	A.31	EP101UCB25	673337	A.37
DPC60C06/300	606828	B.13	DPCA60C06/030	606838	B.13	EP101K25	672413	A.31	EP101UCB32	673338	A.37
DPC60C10/030	606821	B.13	DPCA60C06/300	606846	B.13	EP101K32	672414	A.31	EP101UCB40	673339	A.37
DPC60C10/300	606829	B.13	DPCA60C10/030	606839	B.13	EP101K40	672415	A.31	EP101UCB50	673340	A.37
DPC60C13/030	606822	B.13	DPCA60C10/300	606847	B.13	EP101K50	672416	A.31	EP101UCB63	673341	A.37
DPC60C13/300	606830	B.13	DPCA60C13/030	606840	B.13	EP101K63	672417	A.31	EP101UCC0.5	673301	A.37
DPC60C16/030	606823	B.13	DPCA60C13/300	606848	B.13	EP101RucB06	681475	A.73	EP101UCC01	673302	A.37
DPC60C16/300	606831	B.13	DPCA60C16/030	606841	B.13	EP101RucB10	681476	A.73	EP101UCC02	673303	A.37
DPC60C20/030	606824	B.13	DPCA60C16/300	606849	B.13	EP101RucB16	681477	A.73	EP101UCC04	673305	A.37
DPC60C20/300	606832	B.13	DPCA60C20/030	606842	B.13	EP101RucB20	681478	A.73	EP101UCC06	673306	A.37
DPC60C25/030	606825	B.13	DPCA60C20/300	606850	B.13	EP101RucB25	681479	A.73	EP101UCC10	673308	A.37
DPC60C25/300	606833	B.13	DPCA60C25/030	606843	B.13	EP101RucB32	681480	A.73	EP101UCC16	673310	A.37
DPC60C32/030	606826	B.13	DPCA60C25/300	606851	B.13	EP101RucB40	681481	A.73	EP101UCC20	673311	A.37
DPC60C32/300	606834	B.13	DPCA60C32/030	606844	B.13	EP101RucB50	681482	A.73	EP101UCC25	673312	A.37
DPC60C40/030	606827	B.13	DPCA60C32/300	606852	B.13	EP101RucB63	681483	A.73	EP101UCC32	673313	A.37
DPC60C40/300	606835	B.13	DPCA60C40/030	606845	B.13	EP101RucC0.5	681493	A.73	EP101UCC40	673314	A.37
DPCA100B06/030	606964	B.15	DPCA60C40/300	606853	B.13	EP101RucC01	681494	A.73	EP101UCC50	673315	A.37
DPCA100B06/300	606976	B.15	DPCA100B06/030	606984	B.15	EP101RucC02	681495	A.73	EP101UCC63	673316	A.37
DPCA100B10/010	606961	B.15	DPCAi100B06/300	606992	B.15	EP101RucC04	681496	A.73	EP101UCR0.5	673267	A.73
DPCA100B10/030	606965	B.15	DPCAi100B10/030	606985	B.15	EP101RucC06	681497	A.73	EP101UCR01	673268	A.73
DPCA100B10/300	606977	B.15	DPCAi100B10/300	606993	B.15	EP101RucC10	681498	A.73	EP101UCR02	673270	A.73
DPCA100B13/010	606962	B.15	DPCAi100B13/030	606986	B.15	EP101RucC16	681499	A.73	EP101UCR03	673271	A.73
DPCA100B13/030	606966	B.15	DPCAi100B13/300	606994	B.15	EP101RucC20	681500	A.73	EP101UCR04	673272	A.73
DPCA100B13/300	606978	B.15	DPCAi100B16/030	606987	B.15	EP101RucC25	681501	A.73	EP101UCR06	673273	A.73
DPCA100B16/010	606963	B.15	DPCAi100B16/300	606995	B.15	EP101RucC32	681502	A.73	EP101UCR08	673274	A.73
DPCA100B16/030	606967	B.15	DPCAi100B20/030	606988	B.15	EP101RucC40	681503	A.73	EP101UCR1.6	673269	A.73
DPCA100B16/300	606979	B.15	DPCAi100B20/300	606996	B.15	EP101RucC50	681504	A.73	EP101UCR10	673275	A.73
DPCA100B20/030	606968	B.15	DPCAi100B25/030	606989	B.15	EP101RucC63	681505	A.73	EP101UCR13	673276	A.73
DPCA100B20/300	606980	B.15	DPCAi100B25/300	606997	B.15	EP101TB10	691236	A.75	EP101UCR16	673277	A.73
DPCA100B25/030	606973	B.15	DPCAi100B32/030	606990	B.15	EP101TB13	691237	A.75	EP101UCR20	673278	A.73
DPCA100B25/300	606981	B.15	DPCAi100B32/300	606998	B.15	EP101TB16	691238	A.75	EP101UCR25	673279	A.73
DPCA100B32/030	606974	B.15	DPCAi100B40/030	606991	B.15	EP101TB20	691239	A.75	EP101UCR32	673280	A.73
DPCA100B32/300	606982	B.15	DPCAi100B40/300	606999	B.15	EP101TB25	691240	A.75	EP101UCR40	673281	A.73
DPCA100B40/030	606975	B.15	DPCAi100C06/030	606945	B.15	EP101TB32	691241	A.75	EP101UCR50	673282	A.73
DPCA100B40/300	606983	B.15	DPCAi100C06/300	606953	B.15	EP101TB40	691242	A.75	EP101UCR63	673283	A.73
DPCA100C06/030	606925	B.15	DPCAi100C10/030	606946	B.15	EP101TB50	691243	A.75	EP101UCTB06	691440	A.77
DPCA100C06/030-120V	606375	B.17	DPCAi100C10/300	606954	B.15	EP101TB6	691234	A.75	EP101UCTB08	691441	A.77
DPCA100C06/300	606937	B.15	DPCAi100C13/030	606947	B.15	EP101TB63	691244	A.75	EP101UCTB10	691442	A.77
DPCA100C10/010	606922	B.15	DPCAi100C13/300	606955	B.15	EP101TB8	691235	A.75	EP101UCTB13	691443	A.77
DPCA100C10/030	606926	B.15	DPCAi100C16/030	606948	B.15	EP101TC0.5	691245	A.75	EP101UCTB16	691444	A.77
DPCA100C10/030-120V	606376	B.17	DPCAi100C16/300	606956	B.15	EP101TC01	691246	A.75	EP101UCTB20	691445	A.77
DPCA100C10/300	606938	B.15	DPCAi100C20/030	606949	B.15	EP101TC02	691247	A.75	EP101UCTB25	691446	A.77
DPCA100C13/010	606923	B.15	DPCAi100C20/300	606957	B.15	EP101TC03	691248	A.75	EP101UCT32	691447	A.77
DPCA100C1											



By catalogue number

A
B
C
D
E
F
G
X

Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page
EP101UCT02	691453	A.77	EP101ULC40	686879	A.67	EP101ULH3B35	682270	A.63	EP102TB06	691293	A.75
EP101UCT03	691454	A.77	EP101ULC50	686880	A.67	EP101ULH3B40	682271	A.63	EP102TB08	691294	A.75
EP101UCT04	691455	A.77	EP101ULC60	686881	A.67	EP101ULH3C0.5	682298	A.63	EP102TB10	691295	A.75
EP101UCT06	691456	A.77	EP101ULC63	686882	A.67	EP101ULH3C01	682299	A.63	EP102TB13	691296	A.75
EP101UCT08	691457	A.77	EP101ULD0.5	686940	A.67	EP101ULH3C02	682300	A.63	EP102TB16	691297	A.75
EP101UCT1.6	691458	A.77	EP101ULD01	686941	A.67	EP101ULH3C03	682301	A.63	EP102TB20	691298	A.75
EP101UCT10	691459	A.77	EP101ULD02	686942	A.67	EP101ULH3C04	682302	A.63	EP102TB25	691299	A.75
EP101UCT13	691460	A.77	EP101ULD03	686943	A.67	EP101ULH3C05	682303	A.63	EP102TB32	691300	A.75
EP101UCT16	691461	A.77	EP101ULD04	686944	A.67	EP101ULH3C06	682304	A.63	EP102TB40	691301	A.75
EP101UCT20	691462	A.77	EP101ULD05	686945	A.67	EP101ULH3C08	682305	A.63	EP102TB50	691302	A.75
EP101UCT25	691463	A.77	EP101ULD06	686946	A.67	EP101ULH3C10	682306	A.63	EP102TB63	691303	A.75
EP101UCT32	691464	A.77	EP101ULD10	686947	A.67	EP101ULH3C13	682307	A.63	EP102TC0.5	691304	A.75
EP101UCT40	691465	A.77	EP101ULD13	686948	A.67	EP101ULH3C15	682308	A.63	EP102TC01	691305	A.75
EP101UCT50	691466	A.77	EP101ULD15	686949	A.67	EP101ULH3C16	682309	A.63	EP102TC02	691306	A.75
EP101UCT63	691467	A.77	EP101ULD16	686950	A.67	EP101ULH3C20	682310	A.63	EP102TC03	691307	A.75
EP101UCTK0.5	691468	A.77	EP101ULD20	686951	A.67	EP101ULH3C25	682311	A.63	EP102TC04	691308	A.75
EP101UCTK01	691469	A.77	EP101ULD25	686952	A.67	EP101ULH3C30	682312	A.63	EP102TC06	691309	A.75
EP101UCTK02	691470	A.77	EP101ULD30	686953	A.67	EP101ULH3C32	682313	A.63	EP102TC08	691310	A.75
EP101UCTK03	691471	A.77	EP101ULD32	686954	A.67	EP101ULH3C35	682314	A.63	EP102TC1.6	691311	A.75
EP101UCTK04	691472	A.77	EP101ULD40	686955	A.67	EP101ULH3C40	682315	A.63	EP102TC10	691312	A.75
EP101UCTK06	691473	A.77	EP101ULD50	686956	A.67	EP101ULH3D0.5	682352	A.63	EP102TC13	691313	A.75
EP101UCTK08	691474	A.77	EP101ULD60	686957	A.67	EP101ULH3D01	682353	A.63	EP102TC16	691314	A.75
EP101UCTK1.6	691475	A.77	EP101ULD63	686958	A.67	EP101ULH3D02	682354	A.63	EP102TC20	691315	A.75
EP101UCTK10	691476	A.77	EP101ULH1B05	690214	A.65	EP101ULH3D03	682355	A.63	EP102TC25	691316	A.75
EP101UCTK16	691477	A.77	EP101ULH1B06	690215	A.65	EP101ULH3D04	682356	A.63	EP102TC32	691317	A.75
EP101UCTK20	691478	A.77	EP101ULH1B08	682211	A.65	EP101ULH3D05	682357	A.63	EP102TC40	691318	A.75
EP101UCTK25	691479	A.77	EP101ULH1B10	690216	A.65	EP101ULH3D06	682358	A.63	EP102TC50	691319	A.75
EP101UCTK32	691480	A.77	EP101ULH1B13	690217	A.65	EP101ULH3D08	682359	A.63	EP102TC63	691320	A.75
EP101UCTK40	691481	A.77	EP101ULH1B15	690218	A.65	EP101ULH3D10	682360	A.63	EP102TK0.5	691321	A.75
EP101UCTK50	691482	A.77	EP101ULH1B16	690219	A.65	EP101ULH3D13	682361	A.63	EP102TK01	691322	A.75
EP101UCTK63	691483	A.77	EP101ULH1B20	690220	A.65	EP101ULH3D15	682362	A.63	EP102TK02	691323	A.75
EP101UCTZ0.5	691484	A.77	EP101ULH1B25	690221	A.65	EP101ULH3D16	682363	A.63	EP102TK03	691324	A.75
EP101UCTZ01	691485	A.77	EP101ULH1B30	690222	A.65	EP101ULH3D20	682364	A.63	EP102TK04	691325	A.75
EP101UCTZ02	691486	A.77	EP101ULH1B32	690223	A.65	EP101ULH3D25	682365	A.63	EP102TK06	691326	A.75
EP101UCTZ03	691487	A.77	EP101ULH1B35	682214	A.65	EP101ULH3D30	682366	A.63	EP102TK08	691327	A.75
EP101UCTZ04	691488	A.77	EP101ULH1B40	682215	A.65	EP101ULH3D32	682367	A.63	EP102TK1.6	691328	A.75
EP101UCTZ06	691489	A.77	EP101ULH1B50	682216	A.65	EP101ULH3D35	682368	A.63	EP102TK10	691329	A.75
EP101UCTZ08	691490	A.77	EP101ULH1B60	682217	A.65	EP101ULH3D40	682369	A.63	EP102TK16	691330	A.75
EP101UCTZ1.6	691491	A.77	EP101ULH1B63	682218	A.65	EP101Z0.5	682775	A.31	EP102TK20	691331	A.75
EP101UCTZ10	691492	A.77	EP101ULH1C0.5	690265	A.65	EP101Z01	682776	A.31	EP102TK25	691332	A.75
EP101UCTZ16	691493	A.77	EP101ULH1C01	690266	A.65	EP101Z02	682778	A.31	EP102TK32	691333	A.75
EP101UCTZ20	691494	A.77	EP101ULH1C02	690267	A.65	EP101Z03	682779	A.31	EP102TK40	691334	A.75
EP101UCTZ25	691495	A.77	EP101ULH1C03	690268	A.65	EP101Z04	682780	A.31	EP102TK50	691335	A.75
EP101UCTZ32	691496	A.77	EP101ULH1C04	690269	A.65	EP101Z06	682781	A.31	EP102TK63	691336	A.75
EP101UCTZ40	691497	A.77	EP101ULH1C05	690270	A.65	EP101Z08	682782	A.31	EP102TZ0.5	691337	A.75
EP101UCTZ50	691498	A.77	EP101ULH1C06	690271	A.65	EP101Z1.6	682777	A.31	EP102TZ01	691338	A.75
EP101UCTZ63	691499	A.77	EP101ULH1C08	690272	A.65	EP101Z10	682783	A.31	EP102TZ02	691339	A.75
EP101UCTZ0.5	682935	A.37	EP101ULH1C10	690273	A.65	EP101Z16	682784	A.31	EP102TZ03	691340	A.75
EP101UCTZ01	682936	A.37	EP101ULH1C13	690274	A.65	EP101Z20	682785	A.31	EP102TZ04	691341	A.75
EP101UCTZ02	682938	A.37	EP101ULH1C15	690275	A.65	EP101Z25	682786	A.31	EP102TZ06	691342	A.75
EP101UCTZ03	682939	A.37	EP101ULH1C16	690276	A.65	EP101Z32	682787	A.31	EP102TZ08	691343	A.75
EP101UCTZ04	682940	A.37	EP101ULH1C20	690277	A.65	EP101Z40	682788	A.31	EP102TZ1.6	691344	A.75
EP101UCTZ06	682941	A.37	EP101ULH1C25	690278	A.65	EP101Z50	682789	A.31	EP102TZ10	691345	A.75
EP101UCTZ08	682942	A.37	EP101ULH1C30	690279	A.65	EP101Z63	682790	A.31	EP102TZ16	691346	A.75
EP101UCTZ1.6	682937	A.37	EP101ULH1C32	690280	A.65	EP102K0.5	672434	A.31	EP102TZ20	691347	A.75
EP101UCTZ10	682943	A.37	EP101ULH1C35	682229	A.65	EP102K01	672435	A.31	EP102TZ25	691348	A.75
EP101UCTZ16	682944	A.37	EP101ULH1C40	682230	A.65	EP102K02	672436	A.31	EP102TZ32	691349	A.75
EP101UCTZ20	682945	A.37	EP101ULH1C50	682231	A.65	EP102K03	672437	A.31	EP102TZ40	691350	A.75
EP101UCTZ25	682946	A.37	EP101ULH1C60	682232	A.65	EP102K04	672438	A.31	EP102TZ50	691351	A.75
EP101UCTZ32	682947	A.37	EP101ULH1C63	682233	A.65	EP102K06	672439	A.31	EP102TZ63	691352	A.75
EP101UCTZ40	682948	A.37	EP101ULH1D0.5	690313	A.65	EP102K08	672440	A.31	EP102UCB06	673342	A.37
EP101UCTZ50	682949	A.37	EP101ULH1D01	690314	A.65	EP102K1.6	681591	A.31	EP102UCB10	673343	A.37
EP101UCTZ63	682950	A.37	EP101ULH1D02	690315	A.65	EP102K10	672441	A.31	EP102UCB16	673344	A.37
EP101ULB05	686808	A.67	EP101ULH1D03	690316	A.65	EP102K16	672443	A.31	EP102UCB20	673345	A.37
EP101ULB06	686809	A.67	EP101ULH1D04	690317	A.65	EP102K20	672444	A.31	EP102UCB25	673346	A.37
EP101ULB10	686810	A.67	EP101ULH1D05	690318	A.65	EP102K25	672445	A.31	EP102UCB32	673347	A.37
EP101ULB13	686811	A.67	EP101ULH1D06	690319	A.65	EP102K32	672446	A.31	EP102UCB40	673348	A.37
EP101ULB15	686812	A.67	EP101ULH1D08	690320	A.65	EP102K40	672447	A.31	EP102UCB50	673349	A.37
EP101ULB16	686813	A.67	EP101ULH1D10	690321	A.65	EP102K50	672448	A.31	EP102UCB63	673350	A.37
EP101ULB20	686814	A.67	EP101ULH1D13	690322	A.65	EP102K63	672449	A.31	EP102UCC0.5	673351	A.37
EP101ULB25	686815	A.67	EP101ULH1D15	690323	A.65	EP102RucB06	681484	A.73	EP102UCC01	673352	A.37
EP101ULB30	686816	A.67	EP101ULH1D16	690324	A.65	EP102RucB10	681485	A.73	EP102UCC02	673353	A.37
EP101ULB32	686817	A.67	EP101ULH1D20	690325	A.65	EP102RucB16	681486	A.73	EP102UCC04	673354	A.37
EP101ULB40	686818	A.67	EP101ULH1D25	690326	A.65	EP102RucB20	681487	A.73	EP102UCC06	673355	A.37
EP101ULB50	686819	A.67	EP101ULH1D30	690327	A.65	EP102RucB25	681488	A.73	EP102UCC10	673356	A.37
EP101ULB60	686820	A.67	EP101ULH1D32	690328	A.65	EP102RucB32	681489	A.73	EP102UCC16	673357	A.37
EP101ULB63	686821	A.67	EP101ULH1D35	682244	A.65	EP102RucB40	681490	A.73	EP102UCC25	673358	A.37
EP101ULC0.5	686864	A.67	EP101ULH1D40	682245	A.65	EP102RucB50	681491	A.73	EP102UCC32	673359	A.37
EP101ULC01	686865	A.67	EP101ULH1D50	682246	A.65	EP102RucB63	681492	A.73	EP102UCC40	673360	A.37
EP101ULC02	686866	A.67	EP101ULH1D60	682247	A.65	EP102RucC0.5	681506	A.73	EP102UCC50	673361	A.37
EP101ULC03	686867	A.67	EP101ULH1D63	682248	A.65	EP102RucC01	681507	A.73	EP102UCC63	673362	A.37
EP101ULC04	686868	A.67	EP101ULH3B05	682259	A.63	EP102RucC02	681508	A.73	EP102UCRC0.5	680565	A.73
EP101ULC05	686869	A.67	EP101ULH3B06	682260	A.63	EP102RucC04	681509	A.73	EP102UCRC01	680566	A.73
EP101ULC06	686870	A.67	EP101ULH3B08	682261	A.63	EP102RucC06	681510	A.73	EP102UCRC02	680567	A.73
EP101ULC10	686871	A.67	EP101ULH3B10	682262	A.63	EP102RucC10	681511	A.73	EP102UCRC04	680568	A.73
EP101ULC13	686872	A.67	EP101ULH3B13	682263	A.63	EP102RucC16	681512	A.73	EP102UCRC06	680569	A.73
EP101ULC15	686873	A.67	EP101ULH3B15	682264	A.63	EP102RucC20	681513	A.73	EP102UCRC10	680570	A.73
EP101ULC16	686874	A.67	EP101ULH3B16	682265	A.63	EP102RucC25	681514	A.73	EP102UCRC16	680571	A.73
EP101ULC20	686875	A.67	EP101ULH3B20	682266	A.63	EP102RucC32	681515	A.73	EP102UCRC20	680572	A.73
EP101ULC25	686876	A.67	EP101ULH3B25	682267	A.63	EP102RucC40	681516	A.73	EP102UCRC25		



Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page
EP102UCRC50	680576	A.73	EP102UCZ40	682964	A.37	EP102ULH2D05	690329	A.65	EP103B40RAIL	681458	A.71
EP102UCRC63	680577	A.73	EP102UCZ50	682965	A.37	EP102ULH2D01	690330	A.65	EP103B50RAIL	681459	A.71
EP102UCRKO.5	673284	A.73	EP102UCZ63	682966	A.37	EP102ULH2D02	690331	A.65	EP103B63RAIL	681460	A.71
EP102UCRKO1	673285	A.73	EP102ULB05	686822	A.67	EP102ULH2D03	690332	A.65	EP103CO.5RAIL	681461	A.71
EP102UCRKO2	673287	A.73	EP102ULB06	686823	A.67	EP102ULH2D04	690333	A.65	EP103CO1RAIL	681462	A.71
EP102UCRKO3	673288	A.73	EP102ULB10	686824	A.67	EP102ULH2D05	690334	A.65	EP103CO2RAIL	681463	A.71
EP102UCRKO4	673289	A.73	EP102ULB13	686825	A.67	EP102ULH2D06	690335	A.65	EP103CO3RAIL	681464	A.71
EP102UCRKO6	673290	A.73	EP102ULB15	686826	A.67	EP102ULH2D08	690336	A.65	EP103CO4RAIL	681465	A.71
EP102UCRKO8	673291	A.73	EP102ULB16	686827	A.67	EP102ULH2D10	690337	A.65	EP103CO6RAIL	681466	A.71
EP102UCRKL1.6	673286	A.73	EP102ULB20	686828	A.67	EP102ULH2D13	690338	A.65	EP103C10RAIL	681467	A.71
EP102UCRKL10	673292	A.73	EP102ULB25	686829	A.67	EP102ULH2D15	690339	A.65	EP103C16RAIL	681468	A.71
EP102UCRKL13	673293	A.73	EP102ULB30	686830	A.67	EP102ULH2D16	690340	A.65	EP103C20RAIL	681469	A.71
EP102UCRKL16	673294	A.73	EP102ULB32	686831	A.67	EP102ULH2D20	690341	A.65	EP103C25RAIL	681470	A.71
EP102UCRKL20	673295	A.73	EP102ULB40	686832	A.67	EP102ULH2D25	690342	A.65	EP103C32RAIL	681471	A.71
EP102UCRKL25	673296	A.73	EP102ULB50	686833	A.67	EP102ULH2D30	690343	A.65	EP103C40RAIL	681472	A.71
EP102UCRKL32	673297	A.73	EP102ULB60	686834	A.67	EP102ULH2D32	690344	A.65	EP103C50RAIL	681473	A.71
EP102UCRKL40	673298	A.73	EP102ULB63	686835	A.67	EP102ULH2D35	682249	A.65	EP103C63RAIL	681474	A.71
EP102UCRKL50	673299	A.73	EP102ULC0.5	686883	A.67	EP102ULH2D40	682250	A.65	EP103K0.5	672450	A.31
EP102UCRKL63	673300	A.73	EP102ULC01	686884	A.67	EP102ULH2D50	682251	A.65	EP103K01	672451	A.31
EP102UCTB06	691500	A.77	EP102ULC02	686885	A.67	EP102ULH2D60	682252	A.65	EP103K02	672452	A.31
EP102UCTB08	691501	A.77	EP102ULC03	686886	A.67	EP102ULH2D63	682253	A.65	EP103K03	672453	A.31
EP102UCTB10	691502	A.77	EP102ULC04	686887	A.67	EP102ULH4B05	682272	A.63	EP103K04	672454	A.31
EP102UCTB13	691503	A.77	EP102ULC05	686888	A.67	EP102ULH4B06	682273	A.63	EP103K06	672455	A.31
EP102UCTB16	691504	A.77	EP102ULC06	686889	A.67	EP102ULH4B08	682274	A.63	EP103K08	672456	A.31
EP102UCTB20	691505	A.77	EP102ULC10	686890	A.67	EP102ULH4B10	682275	A.63	EP103K1.6	681594	A.31
EP102UCTB25	691506	A.77	EP102ULC13	686891	A.67	EP102ULH4B13	682276	A.63	EP103K10	672457	A.31
EP102UCTB32	691507	A.77	EP102ULC15	686892	A.67	EP102ULH4B15	682277	A.63	EP103K16	672459	A.31
EP102UCTB40	691508	A.77	EP102ULC16	686893	A.67	EP102ULH4B16	682278	A.63	EP103K20	672460	A.31
EP102UCTB50	691509	A.77	EP102ULC20	686894	A.67	EP102ULH4B20	682279	A.63	EP103K25	672461	A.31
EP102UCTB63	691510	A.77	EP102ULC25	686895	A.67	EP102ULH4B25	682280	A.63	EP103K32	672462	A.31
EP102UCTC0.5	691511	A.77	EP102ULC30	686896	A.67	EP102ULH4B30	682281	A.63	EP103K40	672463	A.31
EP102UCTC01	691512	A.77	EP102ULC32	686897	A.67	EP102ULH4B32	682282	A.63	EP103K50	672464	A.31
EP102UCTC02	691513	A.77	EP102ULC40	686898	A.67	EP102ULH4B35	682283	A.63	EP103K63	672465	A.31
EP102UCTC03	691514	A.77	EP102ULC50	686899	A.67	EP102ULH4B40	682284	A.63	EP103TB06	691353	A.75
EP102UCTC04	691515	A.77	EP102ULC60	686900	A.67	EP102ULH4C0.5	682316	A.63	EP103TB08	691354	A.75
EP102UCTC06	691516	A.77	EP102ULC63	686901	A.67	EP102ULH4C01	682317	A.63	EP103TB10	691355	A.75
EP102UCTC08	691517	A.77	EP102ULD0.5	686959	A.67	EP102ULH4C02	682318	A.63	EP103TB13	691356	A.75
EP102UCTC1.6	691518	A.77	EP102ULD01	686960	A.67	EP102ULH4C03	682319	A.63	EP103TB16	691357	A.75
EP102UCTC10	691519	A.77	EP102ULD02	686961	A.67	EP102ULH4C04	682320	A.63	EP103TB20	691358	A.75
EP102UCTC13	691520	A.77	EP102ULD03	686962	A.67	EP102ULH4C05	682321	A.63	EP103TB25	691359	A.75
EP102UCTC16	691521	A.77	EP102ULD04	686963	A.67	EP102ULH4C06	682322	A.63	EP103TB32	691360	A.75
EP102UCTC20	691522	A.77	EP102ULD05	686964	A.67	EP102ULH4C08	682323	A.63	EP103TB40	691361	A.75
EP102UCTC25	691523	A.77	EP102ULD06	686965	A.67	EP102ULH4C10	682324	A.63	EP103TB50	691362	A.75
EP102UCTC32	691524	A.77	EP102ULD10	686966	A.67	EP102ULH4C13	682325	A.63	EP103TB63	691363	A.75
EP102UCTC40	691525	A.77	EP102ULD13	686967	A.67	EP102ULH4C15	682326	A.63	EP103TC0.5	691364	A.75
EP102UCTC50	691526	A.77	EP102ULD15	686968	A.67	EP102ULH4C16	682327	A.63	EP103TC01	691365	A.75
EP102UCTC63	691527	A.77	EP102ULD16	686969	A.67	EP102ULH4C20	682328	A.63	EP103TC02	691366	A.75
EP102UCTK0.5	691528	A.77	EP102ULD20	686970	A.67	EP102ULH4C25	682329	A.63	EP103TC03	691367	A.75
EP102UCTK01	691529	A.77	EP102ULD25	686971	A.67	EP102ULH4C30	682330	A.63	EP103TC04	691368	A.75
EP102UCTK02	691530	A.77	EP102ULD30	686972	A.67	EP102ULH4C32	682331	A.63	EP103TC06	691369	A.75
EP102UCTK03	691531	A.77	EP102ULD32	686973	A.67	EP102ULH4C35	682332	A.63	EP103TC08	691370	A.75
EP102UCTK04	691532	A.77	EP102ULD40	686974	A.67	EP102ULH4C40	682333	A.63	EP103TC1.6	691371	A.75
EP102UCTK06	691533	A.77	EP102ULD50	686975	A.67	EP102ULH4D0.5	682370	A.63	EP103TC10	691372	A.75
EP102UCTK08	691534	A.77	EP102ULD60	686976	A.67	EP102ULH4D01	682371	A.63	EP103TC13	691373	A.75
EP102UCTK1.6	691535	A.77	EP102ULD63	686977	A.67	EP102ULH4D02	682372	A.63	EP103TC16	691374	A.75
EP102UCTK10	691536	A.77	EP102ULH2B05	690224	A.65	EP102ULH4D03	682373	A.63	EP103TC20	691375	A.75
EP102UCTK16	691537	A.77	EP102ULH2B06	690225	A.65	EP102ULH4D04	682374	A.63	EP103TC25	691376	A.75
EP102UCTK20	691538	A.77	EP102ULH2B08	682212	A.65	EP102ULH4D05	682375	A.63	EP103TC32	691377	A.75
EP102UCTK25	691539	A.77	EP102ULH2B10	690226	A.65	EP102ULH4D06	682376	A.63	EP103TC40	691378	A.75
EP102UCTK32	691540	A.77	EP102ULH2B13	690227	A.65	EP102ULH4D08	682377	A.63	EP103TC50	691379	A.75
EP102UCTK40	691541	A.77	EP102ULH2B15	690228	A.65	EP102ULH4D10	682378	A.63	EP103TC63	691380	A.75
EP102UCTK50	691542	A.77	EP102ULH2B16	690229	A.65	EP102ULH4D13	682379	A.63	EP103TK0.5	691381	A.75
EP102UCTK63	691543	A.77	EP102ULH2B20	690230	A.65	EP102ULH4D15	682380	A.63	EP103TK01	691382	A.75
EP102UCTZ0.5	691544	A.77	EP102ULH2B25	690231	A.65	EP102ULH4D16	682381	A.63	EP103TK02	691383	A.75
EP102UCTZ01	691545	A.77	EP102ULH2B30	690232	A.65	EP102ULH4D20	682382	A.63	EP103TK03	691384	A.75
EP102UCTZ02	691551	A.77	EP102ULH2B32	690233	A.65	EP102ULH4D25	682383	A.63	EP103TK04	691385	A.75
EP102UCTZ03	691547	A.77	EP102ULH2B35	682219	A.65	EP102ULH4D30	682384	A.63	EP103TK06	691386	A.75
EP102UCTZ04	691548	A.77	EP102ULH2B40	682220	A.65	EP102ULH4D32	682385	A.63	EP103TK08	691387	A.75
EP102UCTZ06	691549	A.77	EP102ULH2B50	682221	A.65	EP102ULH4D35	682386	A.63	EP103TK1.6	691388	A.75
EP102UCTZ08	691550	A.77	EP102ULH2B60	682222	A.65	EP102ULH4D40	682387	A.63	EP103TK10	691389	A.75
EP102UCTZ1.6	691546	A.77	EP102ULH2B63	682223	A.65	EP102Z0.5	682791	A.31	EP103TK16	691390	A.75
EP102UCTZ10	691552	A.77	EP102ULH2C0.5	690281	A.65	EP102Z01	682792	A.31	EP103TK20	691391	A.75
EP102UCTZ16	691553	A.77	EP102ULH2C01	690282	A.65	EP102Z02	682794	A.31	EP103TK25	691392	A.75
EP102UCTZ20	691554	A.77	EP102ULH2C02	690283	A.65	EP102Z03	682795	A.31	EP103TK32	691393	A.75
EP102UCTZ25	691555	A.77	EP102ULH2C03	690284	A.65	EP102Z04	682796	A.31	EP103TK40	691394	A.75
EP102UCTZ32	691556	A.77	EP102ULH2C04	690285	A.65	EP102Z06	682797	A.31	EP103TK50	691395	A.75
EP102UCTZ40	691557	A.77	EP102ULH2C05	690286	A.65	EP102Z08	682798	A.31	EP103TK63	691396	A.75
EP102UCTZ50	691558	A.77	EP102ULH2C06	690287	A.65	EP102Z10	682799	A.31	EP103ULB05	686836	A.67
EP102UCTZ63	691559	A.77	EP102ULH2C08	690288	A.65	EP102Z11	682799	A.31	EP103ULB06	686837	A.67
EP102UCZ0.5	682951	A.37	EP102ULH2C10	690289	A.65	EP102Z16	682800	A.31	EP103ULB10	686838	A.67
EP102UCZ01	682952	A.37	EP102ULH2C13	690290	A.65	EP102Z20	682801	A.31	EP103ULB13	686839	A.67
EP102UCZ02	682954	A.37	EP102ULH2C15	690291	A.65	EP102Z25	682802	A.31	EP103ULB15	686840	A.67
EP102UCZ03	682955	A.37	EP102ULH2C16	690292	A.65	EP102Z32	682803	A.31	EP103ULB16	686841	A.67
EP102UCZ04	682956	A.37	EP102ULH2C20	690293	A.65	EP102Z40	682804	A.31	EP103ULB20	686842	A.67
EP102UCZ06	682957	A.37	EP102ULH2C25	690294	A.65	EP102Z50	682805	A.31	EP103ULB25	686843	A.67
EP102UCZ08	682958	A.37	EP102ULH2C30	690295	A.65	EP102Z63	682806	A.31	EP103ULB30	686844	A.67
EP102UCZ1.6	682953	A.37	EP102ULH2C32	690296	A.65	EP103B06RAIL	681452	A.71	EP103ULB32	686845	A.67
EP102UCZ10	682959	A.37	EP102ULH2C35	682234	A.65	EP103B10RAIL	681453	A.71	EP103ULB40	686846	A.67
EP102UCZ16	682960	A.37	EP102ULH2C40	682235	A.65	EP103B16RAIL	681454	A.71	EP103ULB50	686847	A.67
EP102UCZ20	682961	A.37	EP102ULH2C50	682236	A.65	EP103B20RAIL	681455	A.71	EP103ULB60	6868	



By catalogue number

A
B
C
D
E
F
G
X

Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page
EP103ULC01	686903	A.67	EP103ULH2D50	682256	A.65	EP104K10	672473	A.31	EP104ULD0.5	686997	A.67
EP103ULC02	686904	A.67	EP103ULH2D60	682257	A.65	EP104K16	672475	A.31	EP104ULD01	686998	A.67
EP103ULC03	686905	A.67	EP103ULH2D63	682258	A.65	EP104K20	672476	A.31	EP104ULD02	686999	A.67
EP103ULC04	686906	A.67	EP103ULH4B05	682285	A.63	EP104K25	672477	A.31	EP104ULD03	687000	A.67
EP103ULC05	686907	A.67	EP103ULH4B06	682286	A.63	EP104K32	672478	A.31	EP104ULD04	687001	A.67
EP103ULC06	686908	A.67	EP103ULH4B08	682287	A.63	EP104K40	672479	A.31	EP104ULD05	687002	A.67
EP103ULC10	686909	A.67	EP103ULH4B10	682288	A.63	EP104K50	672480	A.31	EP104ULD06	687003	A.67
EP103ULC13	686910	A.67	EP103ULH4B13	682289	A.63	EP104K63	672481	A.31	EP104ULD10	687004	A.67
EP103ULC15	686911	A.67	EP103ULH4B15	682290	A.63	EP104TB06	691397	A.75	EP104ULD13	687005	A.67
EP103ULC16	686912	A.67	EP103ULH4B16	682291	A.63	EP104TB08	691398	A.75	EP104ULD15	687006	A.67
EP103ULC20	686913	A.67	EP103ULH4B20	682292	A.63	EP104TB10	691399	A.75	EP104ULD16	687007	A.67
EP103ULC25	686914	A.67	EP103ULH4B25	682293	A.63	EP104TB13	691400	A.75	EP104ULD20	687008	A.67
EP103ULC30	686915	A.67	EP103ULH4B30	682294	A.63	EP104TB16	667247	A.75	EP104ULD25	687009	A.67
EP103ULC32	686916	A.67	EP103ULH4B32	682295	A.63	EP104TB20	691401	A.75	EP104ULD30	687010	A.67
EP103ULC40	686917	A.67	EP103ULH4B35	682296	A.63	EP104TB25	691402	A.75	EP104ULD32	687011	A.67
EP103ULC50	686918	A.67	EP103ULH4B40	682297	A.63	EP104TB32	691403	A.75	EP104ULD40	687012	A.67
EP103ULC60	686919	A.67	EP103ULH4C0.5	682334	A.63	EP104TB40	691404	A.75	EP104ULD50	687013	A.67
EP103ULC63	686920	A.67	EP103ULH4C01	682335	A.63	EP104TB50	691405	A.75	EP104ULD60	687014	A.67
EP103ULD0.5	686978	A.67	EP103ULH4C02	682336	A.63	EP104TB63	691406	A.75	EP104ULD63	687015	A.67
EP103ULD01	686979	A.67	EP103ULH4C03	682337	A.63	EP104TC0.5	691407	A.75	EP104Z0.5	682839	A.31
EP103ULD02	686980	A.67	EP103ULH4C04	682338	A.63	EP104TC01	691408	A.75	EP104Z01	682840	A.31
EP103ULD03	686981	A.67	EP103ULH4C05	682339	A.63	EP104TC02	691409	A.75	EP104Z02	682842	A.31
EP103ULD04	686982	A.67	EP103ULH4C06	682340	A.63	EP104TC03	691410	A.75	EP104Z03	682843	A.31
EP103ULD05	686983	A.67	EP103ULH4C08	682341	A.63	EP104TC04	691411	A.75	EP104Z04	682844	A.31
EP103ULD06	686984	A.67	EP103ULH4C10	682342	A.63	EP104TC06	691412	A.75	EP104Z06	682845	A.31
EP103ULD10	686985	A.67	EP103ULH4C13	682343	A.63	EP104TC08	691413	A.75	EP104Z08	682846	A.31
EP103ULD13	686986	A.67	EP103ULH4C15	682344	A.63	EP104TC1.6	691414	A.75	EP104Z1.6	682841	A.31
EP103ULD15	686987	A.67	EP103ULH4C16	682345	A.63	EP104TC10	691415	A.75	EP104Z10	682847	A.31
EP103ULD16	686988	A.67	EP103ULH4C20	682346	A.63	EP104TC13	691416	A.75	EP104Z16	682848	A.31
EP103ULD20	686989	A.67	EP103ULH4C25	682347	A.63	EP104TC16	691417	A.75	EP104Z20	682849	A.31
EP103ULD25	686990	A.67	EP103ULH4C30	682348	A.63	EP104TC20	691418	A.75	EP104Z25	682850	A.31
EP103ULD30	686991	A.67	EP103ULH4C32	682349	A.63	EP104TC25	691419	A.75	EP104Z32	682851	A.31
EP103ULD32	686992	A.67	EP103ULH4C35	682350	A.63	EP104TC32	691420	A.75	EP104Z40	682852	A.31
EP103ULD40	686993	A.67	EP103ULH4C40	682351	A.63	EP104TC40	691421	A.75	EP104Z50	682853	A.31
EP103ULD50	686994	A.67	EP103ULH4D0.5	682388	A.63	EP104TC50	691422	A.75	EP104Z63	682854	A.31
EP103ULD60	686995	A.67	EP103ULH4D01	682389	A.63	EP104TC63	691423	A.75	EP121UCC20	673327	A.37
EP103ULD63	686996	A.67	EP103ULH4D02	682390	A.63	EP104TK0.5	691424	A.75	EP61K0.5	681600	A.27
EP103ULH2B05	690234	A.65	EP103ULH4D03	682391	A.63	EP104TK01	691425	A.75	EP61K01	681601	A.27
EP103ULH2B06	690235	A.65	EP103ULH4D04	682392	A.63	EP104TK02	691426	A.75	EP61K02	681603	A.27
EP103ULH2B08	682213	A.65	EP103ULH4D05	682393	A.63	EP104TK03	691427	A.75	EP61K03	681604	A.27
EP103ULH2B10	690236	A.65	EP103ULH4D06	682394	A.63	EP104TK04	691428	A.75	EP61K04	681605	A.27
EP103ULH2B13	290237	A.65	EP103ULH4D08	682395	A.63	EP104TK06	691429	A.75	EP61K06	681606	A.27
EP103ULH2B15	290238	A.65	EP103ULH4D10	682396	A.63	EP104TK08	691430	A.75	EP61K08	681607	A.27
EP103ULH2B16	690239	A.65	EP103ULH4D13	682397	A.63	EP104TK1.6	691431	A.75	EP61K1.6	681602	A.27
EP103ULH2B20	690240	A.65	EP103ULH4D15	682398	A.63	EP104TK10	691432	A.75	EP61K10	681608	A.27
EP103ULH2B25	690241	A.65	EP103ULH4D16	682399	A.63	EP104TK16	691433	A.75	EP61K16	681609	A.27
EP103ULH2B30	690242	A.65	EP103ULH4D20	682400	A.63	EP104TK20	691434	A.75	EP61K20	681610	A.27
EP103ULH2B32	690243	A.65	EP103ULH4D25	682401	A.63	EP104TK25	691435	A.75	EP61K25	681611	A.27
EP103ULH2B35	682224	A.65	EP103ULH4D30	682402	A.63	EP104TK32	691436	A.75	EP61K32	681612	A.27
EP103ULH2B40	682225	A.65	EP103ULH4D32	682403	A.63	EP104TK40	691437	A.75	EP61K40	681613	A.27
EP103ULH2B50	682226	A.65	EP103ULH4D35	682404	A.63	EP104TK50	691438	A.75	EP61K50	681614	A.27
EP103ULH2B60	682227	A.65	EP103ULH4D40	682405	A.63	EP104TK63	691439	A.75	EP61K63	681615	A.27
EP103ULH2B63	682228	A.65	EP103Z0.5	682807	A.31	EP104UCB10	690200	A.37	EP61ULB05	686600	A.69
EP103ULH2C0.5	690297	A.65	EP103Z0.5N	682823	A.31	EP104UCB16	688029	A.37	EP61ULB06	686601	A.69
EP103ULH2C01	690298	A.65	EP103Z01	682808	A.31	EP104UCB20	688026	A.37	EP61ULB10	686602	A.69
EP103ULH2C02	690299	A.65	EP103Z01N	682824	A.31	EP104UCB25	691580	A.37	EP61ULB13	686603	A.69
EP103ULH2C03	690300	A.65	EP103Z02	682810	A.31	EP104UCB32	691581	A.37	EP61ULB15	686604	A.69
EP103ULH2C04	690301	A.65	EP103Z02N	682826	A.31	EP104UCB40	688027	A.37	EP61ULB16	686605	A.69
EP103ULH2C05	690302	A.65	EP103Z03	682811	A.31	EP104UCB63	688028	A.37	EP61ULB20	686606	A.69
EP103ULH2C06	690303	A.65	EP103Z03N	682827	A.31	EP104ULB05	686850	A.67	EP61ULB25	686607	A.69
EP103ULH2C08	690304	A.65	EP103Z04	682812	A.31	EP104ULB06	686851	A.67	EP61ULB30	686608	A.69
EP103ULH2C10	690305	A.65	EP103Z04N	682828	A.31	EP104ULB10	686852	A.67	EP61ULB32	686609	A.69
EP103ULH2C13	690306	A.65	EP103Z06	682813	A.31	EP104ULB13	686853	A.67	EP61ULB40	686610	A.69
EP103ULH2C15	690307	A.65	EP103Z06N	682829	A.31	EP104ULB15	686854	A.67	EP61ULB50	686611	A.69
EP103ULH2C16	690308	A.65	EP103Z08	682814	A.31	EP104ULB16	686855	A.67	EP61ULB60	686612	A.69
EP103ULH2C20	690309	A.65	EP103Z08N	682830	A.31	EP104ULB20	686856	A.67	EP61ULB63	686613	A.69
EP103ULH2C25	690310	A.65	EP103Z1.6	682809	A.31	EP104ULB25	686857	A.67	EP61ULC0.5	686656	A.69
EP103ULH2C30	690311	A.65	EP103Z1.6N	682825	A.31	EP104ULB30	686858	A.67	EP61ULC01	686657	A.69
EP103ULH2C32	690312	A.65	EP103Z10	682815	A.31	EP104ULB32	686859	A.67	EP61ULC02	686658	A.69
EP103ULH2C35	682239	A.65	EP103Z10N	682831	A.31	EP104ULB40	686860	A.67	EP61ULC03	686659	A.69
EP103ULH2C40	682240	A.65	EP103Z16	682816	A.31	EP104ULB50	686861	A.67	EP61ULC04	686660	A.69
EP103ULH2C50	682241	A.65	EP103Z16N	682832	A.31	EP104ULB60	686862	A.67	EP61ULC05	686661	A.69
EP103ULH2C60	682242	A.65	EP103Z20	682817	A.31	EP104ULB63	686863	A.67	EP61ULC06	686662	A.69
EP103ULH2C63	682243	A.65	EP103Z20N	682833	A.31	EP104ULC0.5	686921	A.67	EP61ULC10	686663	A.69
EP103ULH2D0.5	690345	A.65	EP103Z25	682818	A.31	EP104ULC01	686922	A.67	EP61ULC13	686664	A.69
EP103ULH2D01	690346	A.65	EP103Z25N	682834	A.31	EP104ULC02	686923	A.67	EP61ULC15	686665	A.69
EP103ULH2D02	690347	A.65	EP103Z32	682819	A.31	EP104ULC03	686924	A.67	EP61ULC16	686666	A.69
EP103ULH2D03	690348	A.65	EP103Z32N	682835	A.31	EP104ULC04	686925	A.67	EP61ULC20	686667	A.69
EP103ULH2D04	690349	A.65	EP103Z40	682820	A.31	EP104ULC05	686926	A.67	EP61ULC25	686668	A.69
EP103ULH2D05	690350	A.65	EP103Z40N	682836	A.31	EP104ULC06	686927	A.67	EP61ULC30	686669	A.69
EP103ULH2D06	690351	A.65	EP103Z50	682821	A.31	EP104ULC10	686928	A.67	EP61ULC32	686670	A.69
EP103ULH2D08	690352	A.65	EP103Z50N	682837	A.31	EP104ULC13	686929	A.67	EP61ULC40	686671	A.69
EP103ULH2D10	690353	A.65	EP103Z63	682822	A.31	EP104ULC15	686930	A.67	EP61ULC50	686672	A.69
EP103ULH2D13	690354	A.65	EP103Z63N	682838	A.31	EP104ULC16	686931	A.67	EP61ULC60	686673	A.69
EP103ULH2D15	690355	A.65	EP104K0.5	672466	A.31	EP104ULC20	686932	A.67	EP61ULC63	686674	A.69
EP103ULH2D16	690356	A.65	EP104K01	672467	A.31	EP104ULC25	686933	A.67	EP61ULD0.5	686732	A.69
EP103ULH2D20	690357	A.65	EP104K02	672468	A.31	EP104ULC30	686934	A.67	EP61ULD01	686733	A.69
EP103ULH2D25	690358	A.65	EP104K03	672469	A.31	EP104ULC32	686935	A.67	EP61ULD02	686734	A.69
EP103ULH2D30	690359	A.65	EP104K04	672470	A.31	EP104ULC40	686936	A.67	EP61ULD03	686735	A.69
EP103ULH2D32	690360	A.65	EP104K06	672471	A.31	EP104ULC50	686937	A.67	EP61ULD04	686736	A.69
EP103ULH2D35	682254	A.65	EP104K08	672472	A.31	EP104ULC6					



Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page
EP61ULD10	686739	A.69	EP63K32	681644	A.27	EP64ULC06	686719	A.69	EPC 452 C40	692535	A.95
EP61ULD13	686740	A.69	EP63K40	681645	A.27	EP64ULC10	686720	A.69	EPC 453 B02	692617	A.95
EP61ULD15	686741	A.69	EP63K50	681646	A.27	EP64ULC13	686721	A.69	EPC 453 B04	692618	A.95
EP61ULD16	686742	A.69	EP63K63	681647	A.27	EP64ULC15	686722	A.69	EPC 453 B06	692619	A.95
EP61ULD20	686743	A.69	EP63LB05	686628	A.69	EP64ULC16	686723	A.69	EPC 453 B10	692620	A.95
EP61ULD25	686744	A.69	EP63LB06	686629	A.69	EP64ULC20	686724	A.69	EPC 453 B16	692621	A.95
EP61ULD30	686745	A.69	EP63LB10	686630	A.69	EP64ULC25	686725	A.69	EPC 453 B20	692622	A.95
EP61ULD32	686746	A.69	EP63LB13	686631	A.69	EP64ULC30	686726	A.69	EPC 453 B25	692623	A.95
EP61ULD40	686747	A.69	EP63LB15	686632	A.69	EP64ULC32	686727	A.69	EPC 453 B32	692624	A.95
EP61ULD50	686748	A.69	EP63LB16	686633	A.69	EP64ULC40	686728	A.69	EPC 453 C02	692536	A.95
EP61ULD60	686749	A.69	EP63LB20	686634	A.69	EP64ULC50	686729	A.69	EPC 453 C04	692537	A.95
EP61ULD63	686750	A.69	EP63LB25	686635	A.69	EP64ULC60	686730	A.69	EPC 453 C06	692538	A.95
EP62K0.5	681616	A.27	EP63LB30	686636	A.69	EP64ULC63	686731	A.69	EPC 453 C10	692539	A.95
EP62K01	681617	A.27	EP63LB32	686637	A.69	EP64ULD0.5	686789	A.69	EPC 453 C16	692540	A.95
EP62K02	681619	A.27	EP63LB40	686638	A.69	EP64ULD01	686790	A.69	EPC 453 C20	692541	A.95
EP62K03	681620	A.27	EP63LB50	686639	A.69	EP64ULD02	686791	A.69	EPC 453 C25	692542	A.95
EP62K04	681621	A.27	EP63LB60	686640	A.69	EP64ULD03	686792	A.69	EPC 453 C32	692543	A.95
EP62K06	681622	A.27	EP63LB63	686641	A.69	EP64ULD04	686793	A.69	EPC 454 B02	692626	A.95
EP62K08	681623	A.27	EP63LCO.5	686694	A.69	EP64ULD05	686794	A.69	EPC 454 B04	692627	A.95
EP62K1.6	681618	A.27	EP63LCO1	686695	A.69	EP64ULD06	686795	A.69	EPC 454 B06	692628	A.95
EP62K10	681624	A.27	EP63LCO2	686696	A.69	EP64ULD10	686796	A.69	EPC 454 B10	692629	A.95
EP62K16	681625	A.27	EP63LCO3	686697	A.69	EP64ULD13	686797	A.69	EPC 454 B16	692630	A.95
EP62K20	681626	A.27	EP63LCO4	686698	A.69	EP64ULD15	686798	A.69	EPC 454 B20	692631	A.95
EP62K25	681627	A.27	EP63LCO5	686699	A.69	EP64ULD16	686799	A.69	EPC 454 B25	692632	A.95
EP62K32	681628	A.27	EP63LCO6	686700	A.69	EP64ULD20	686800	A.69	EPC 454 B32	692633	A.95
EP62K40	681629	A.27	EP63LCO10	686701	A.69	EP64ULD25	686801	A.69	EPC 454 C02	692545	A.95
EP62K50	681630	A.27	EP63LCO13	686702	A.69	EP64ULD30	686802	A.69	EPC 454 C04	692546	A.95
EP62K63	681631	A.27	EP63LCO15	686703	A.69	EP64ULD32	686803	A.69	EPC 454 C06	692547	A.95
EP62ULB05	686614	A.69	EP63LCO16	686704	A.69	EP64ULD40	686804	A.69	EPC 454 C10	692548	A.95
EP62ULB06	686615	A.69	EP63LCO20	686705	A.69	EP64ULD50	686805	A.69	EPC 454 C16	692549	A.95
EP62ULB10	686616	A.69	EP63LCO25	686706	A.69	EP64ULD60	686806	A.69	EPC 454 C20	692550	A.95
EP62ULB13	686617	A.69	EP63LCO30	686707	A.69	EP64ULD63	686807	A.69	EPC 454 C25	692551	A.95
EP62ULB15	686618	A.69	EP63LCO32	686708	A.69	EPC 32 C02	692500	A.93	EPC 454 C32	692552	A.95
EP62ULB16	686619	A.69	EP63LCO40	686709	A.69	EPC 32 C04	692501	A.93	EPC 611 B02	692689	A.91
EP62ULB20	686620	A.69	EP63LCO50	686710	A.69	EPC 32 C06	692502	A.93	EPC 611 B04	692690	A.91
EP62ULB25	686621	A.69	EP63LCO60	686711	A.69	EPC 32 C10	692503	A.93	EPC 611 B06	692691	A.91
EP62ULB30	686622	A.69	EP63LCO63	686712	A.69	EPC 32 C16	692504	A.93	EPC 611 B10	692692	A.91
EP62ULB32	686623	A.69	EP63ULD0.5	686770	A.69	EPC 32 C20	692505	A.93	EPC 611 B13	692693	A.91
EP62ULB40	686624	A.69	EP63ULD01	686771	A.69	EPC 32 C25	692506	A.93	EPC 611 B16	692694	A.91
EP62ULB50	686625	A.69	EP63ULD02	686772	A.69	EPC 32 C32	692507	A.93	EPC 611 B20	692695	A.91
EP62ULB60	686626	A.69	EP63ULD03	686773	A.69	EPC 32 C40	692508	A.93	EPC 611 C02	692699	A.91
EP62ULB63	686627	A.69	EP63ULD04	686774	A.69	EPC 33 C02	692509	A.93	EPC 611 C04	692700	A.91
EP62ULCO.5	686675	A.69	EP63ULD05	686775	A.69	EPC 33 C04	692510	A.93	EPC 611 C06	692701	A.91
EP62ULCO1	686676	A.69	EP63ULD06	686776	A.69	EPC 33 C06	692511	A.93	EPC 611 C10	692702	A.91
EP62ULCO2	686677	A.69	EP63ULD10	686777	A.69	EPC 33 C10	692512	A.93	EPC 611 C13	692703	A.91
EP62ULCO3	686678	A.69	EP63ULD13	686778	A.69	EPC 33 C16	692513	A.93	EPC 611 C16	692704	A.91
EP62ULCO4	686679	A.69	EP63ULD15	686779	A.69	EPC 33 C20	692514	A.93	EPC 611 C20	692705	A.91
EP62ULCO5	686680	A.69	EP63ULD16	686780	A.69	EPC 33 C25	692515	A.93	EPC 61N B02	692819	A.89
EP62ULCO6	686681	A.69	EP63ULD20	686781	A.69	EPC 33 C32	692516	A.93	EPC 61N B04	692820	A.89
EP62ULCO10	686682	A.69	EP63ULD25	686782	A.69	EPC 34 C02	692518	A.93	EPC 61N B06	692821	A.89
EP62ULCO13	686683	A.69	EP63ULD30	686783	A.69	EPC 34 C04	692519	A.93	EPC 61N B10	692822	A.89
EP62ULCO15	686684	A.69	EP63ULD32	686784	A.69	EPC 34 C06	692520	A.93	EPC 61N B13	692604	A.89
EP62ULCO16	686685	A.69	EP63ULD40	686785	A.69	EPC 34 C10	692521	A.93	EPC 61N B16	692823	A.89
EP62ULC20	686686	A.69	EP63ULD50	686786	A.69	EPC 34 C16	692522	A.93	EPC 61N B20	692824	A.89
EP62ULC25	686687	A.69	EP63ULD60	686787	A.69	EPC 34 C20	692523	A.93	EPC 61N B25	692825	A.89
EP62ULC30	686688	A.69	EP63ULD63	686788	A.69	EPC 34 C25	692524	A.93	EPC 61N B32	692826	A.89
EP62ULC32	686689	A.69	EP64K0.5	681648	A.27	EPC 34 C32	692525	A.93	EPC 61N B40	692827	A.89
EP62ULC40	686690	A.69	EP64K01	681649	A.27	EPC 451N B02	692810	A.88	EPC 61N C02	692791	A.89
EP62ULC50	686691	A.69	EP64K02	681651	A.27	EPC 451N B04	692811	A.88	EPC 61N C04	692792	A.89
EP62ULC60	686692	A.69	EP64K03	681652	A.27	EPC 451N B06	692812	A.88	EPC 61N C06	692793	A.89
EP62ULC63	686693	A.69	EP64K04	681653	A.27	EPC 451N B10	692813	A.88	EPC 61N C10	692794	A.89
EP62ULD0.5	686751	A.69	EP64K06	681654	A.27	EPC 451N B16	692814	A.88	EPC 61N C13	692795	A.89
EP62ULD01	686752	A.69	EP64K08	681655	A.27	EPC 451N B20	692815	A.88	EPC 61N C16	692796	A.89
EP62ULD02	686753	A.69	EP64K1.6	681650	A.27	EPC 451N B25	692816	A.88	EPC 61N C20	692797	A.89
EP62ULD03	686754	A.69	EP64K10	681656	A.27	EPC 451N B32	692817	A.88	EPC 61N C25	692798	A.89
EP62ULD04	686755	A.69	EP64K16	681657	A.27	EPC 451N B40	692818	A.88	EPC 61N C32	692799	A.89
EP62ULD05	686756	A.69	EP64K20	681658	A.27	EPC 451N C02	692781	A.88	EPC 61N C40	692800	A.89
EP62ULD06	686757	A.69	EP64K25	681659	A.27	EPC 451N C04	692782	A.88	EPC 62 B02	692635	A.97
EP62ULD10	686758	A.69	EP64K32	681660	A.27	EPC 451N C06	692783	A.88	EPC 62 B04	692636	A.97
EP62ULD13	686759	A.69	EP64K40	681661	A.27	EPC 451N C10	692784	A.88	EPC 62 B06	692637	A.97
EP62ULD15	686760	A.69	EP64K50	681662	A.27	EPC 451N C16	692786	A.88	EPC 62 B06 + CA UNS/H G	693643	A.97
EP62ULD16	686761	A.69	EP64K63	681663	A.27	EPC 451N C20	692787	A.88	EPC 62 B10	692638	A.97
EP62ULD20	686762	A.69	EP64ULB05	686642	A.69	EPC 451N C25	692788	A.88	EPC 62 B10 + CA UNS/H G	693642	A.97
EP62ULD25	686763	A.69	EP64ULB06	686643	A.69	EPC 451N C32	692789	A.88	EPC 62 B16	692639	A.97
EP62ULD30	686764	A.69	EP64ULB10	686644	A.69	EPC 451N C40	692790	A.88	EPC 62 B20	692640	A.97
EP62ULD32	686765	A.69	EP64ULB13	686645	A.69	EPC 452 B02	692608	A.95	EPC 62 B25	692641	A.97
EP62ULD40	686766	A.69	EP64ULB15	686646	A.69	EPC 452 B04	692609	A.95	EPC 62 B32	692642	A.97
EP62ULD50	686767	A.69	EP64ULB16	686647	A.69	EPC 452 B06	692610	A.95	EPC 62 B40	692643	A.97
EP62ULD60	686768	A.69	EP64ULB20	686648	A.69	EPC 452 B10	692611	A.95	EPC 62 C02	692554	A.97
EP62ULD63	686769	A.69	EP64ULB25	686649	A.69	EPC 452 B16	692612	A.95	EPC 62 C02 + CA UNS/H G	693636	A.97
EP63K0.5	681632	A.27	EP64ULB30	686650	A.69	EPC 452 B20	692613	A.95	EPC 62 C04	692555	A.97
EP63K01	681633	A.27	EP64ULB32	686651	A.69	EPC 452 B25	692614	A.95	EPC 62 C04 + CA UNS/H G	693635	A.97
EP63K02	681635	A.27	EP64ULB40	686652	A.69	EPC 452 B32	692615	A.95	EPC 62 C06	692556	A.97
EP63K03	681636	A.27	EP64ULB50	686653	A.69	EPC 452 B40	692616	A.95	EPC 62 C06 + CA UNS/H G	693634	A.97
EP63K04	681637	A.27	EP64ULB60	686654	A.69	EPC 452 C02	692527	A.95	EPC 62 C10	692557	A.97
EP63K06	681638	A.27	EP64ULB63	686655	A.69	EPC 452 C04	692528	A.95	EPC 62 C10 + CA UNS/H G	693637	A.97
EP63K08	681639	A.27	EP64ULCO.5	686713	A.69	EPC 452 C06	692529	A.95	EPC 62 C16	692558	A.97
EP63K1.6	681634	A.27	EP64ULCO1	686714	A.69	EPC 452 C10	692530	A.95	EPC 62 C16 + CA UNS/H G	693638	A.97
EP63K10	681640	A.27	EP64ULCO2	686715	A.69	EPC 452 C16	692531	A.95	EPC 62 C20	692559	A.97
EP63K16	681641	A.27	EP64ULCO3	686716	A.69	EPC 452 C20	692532	A.95	EPC 62 C25	692560	A.97
EP63K20	681642	A.27	EP64ULCO4	686717	A.69	EPC 452 C25	692533	A.95	EPC 62 C25 + CA UNS/H G	693641	A.97
EP63K25	681643	A.27	EP64ULCO5	686718	A.69	EPC 452 C32	692534	A.95	EPC 62 C32	692561	A.97

Numerical Index

A

B

C

D



By catalogue number

A

B

C

D

E

F

G

X

Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page
EPC 62 C32 + CAUNS/H/G	693644	A.97	EPP102C63	678321	A.111	EPP62B10	678183	A.109	FPAUL 240/500	608385	B.55
EPC 62 C40	692562	A.97	EPP103B06	678282	A.111	EPP62B13	678184	A.109	FPAUL 263/030	608386	B.55
EPC 62R B02	693645	A.99	EPP103B10	678283	A.111	EPP62B16	678185	A.109	FPAUL 263/100	608387	B.55
EPC 62R B04	693646	A.99	EPP103B13	678284	A.111	EPP62B20	678186	A.109	FPAUL 263/500	608388	B.55
EPC 62R B06	693647	A.99	EPP103B16	678285	A.111	EPP62B25	678187	A.109	FPAUL 263/500	608401	B.55
EPC 62R B10	693648	A.99	EPP103B20	678286	A.111	EPP62B32	678188	A.109	FPAUL 425/030	608389	B.55
EPC 62R B16	693649	A.99	EPP103B25	678287	A.111	EPP62B40	678189	A.109	FPAUL 425/100	608390	B.55
EPC 62R B20	693650	A.99	EPP103B32	678288	A.111	EPP62B50	678190	A.109	FPAUL 425/300	608391	B.55
EPC 62R B25	693651	A.99	EPP103B40	678289	A.111	EPP62B63	678191	A.109	FPAUL 425/500	608392	B.55
EPC 62R B32	693652	A.99	EPP103B50	678290	A.111	EPP62C06	678232	A.109	FPAUL 440/030	608393	B.55
EPC 62R C02	693653	A.99	EPP103B63	678291	A.111	EPP62C10	678233	A.109	FPAUL 440/100	608394	B.55
EPC 62R C04	693654	A.99	EPP103C06	678322	A.111	EPP62C13	678234	A.109	FPAUL 440/300	608395	B.55
EPC 62R C06	693655	A.99	EPP103C10	678323	A.111	EPP62C16	678235	A.109	FPAUL 440/500	608396	B.55
EPC 62R C10	693656	A.99	EPP103C13	678324	A.111	EPP62C20	678236	A.109	FPAUL 463/030	608397	B.55
EPC 62R C16	693657	A.99	EPP103C16	678325	A.111	EPP62C25	678237	A.109	FPAUL 463/100	608398	B.55
EPC 62R C20	693658	A.99	EPP103C20	678326	A.111	EPP62C32	678238	A.109	FPAUL 463/300	608399	B.55
EPC 62R C25	693659	A.99	EPP103C25	678327	A.111	EPP62C40	678239	A.109	FPAUL 463/500	608400	B.55
EPC 62R C32	693660	A.99	EPP103C32	678328	A.111	EPP62C50	678240	A.109	FPB 2 16/030	565353	B.33
EPC 63 B02	692644	A.97	EPP103C40	678329	A.111	EPP62C63	678241	A.109	FPB 2 16/100	565354	B.33
EPC 63 B04	692645	A.97	EPP103C50	678330	A.111	EPP63B06	678192	A.109	FPB 2 16/300	565355	B.33
EPC 63 B06	692646	A.97	EPP103C63	678331	A.111	EPP63B10	678193	A.109	FPB 2 16/500	565356	B.33
EPC 63 B10	692647	A.97	EPP103NB06	678292	A.111	EPP63B13	678194	A.109	FPB 2 25/030	565357	B.33
EPC 63 B16	692648	A.97	EPP103NB10	678293	A.111	EPP63B16	678195	A.109	FPB 2 25/100	565358	B.33
EPC 63 B20	692649	A.97	EPP103NB13	678294	A.111	EPP63B20	678196	A.109	FPB 2 25/300	565359	B.33
EPC 63 B25	692650	A.97	EPP103NB16	678295	A.111	EPP63B25	678197	A.109	FPB 2 25/500	565360	B.33
EPC 63 B32	692651	A.97	EPP103NB20	678296	A.111	EPP63B32	678198	A.109	FPB 2 40/030	565361	B.33
EPC 63 C02	692653	A.97	EPP103NB25	678297	A.111	EPP63B40	678199	A.109	FPB 2 40/100	565362	B.33
EPC 63 C04	692654	A.97	EPP103NB32	678298	A.111	EPP63B50	678200	A.109	FPB 2 40/300	565363	B.33
EPC 63 C06	692655	A.97	EPP103NB40	678299	A.111	EPP63B63	678201	A.109	FPB 2 40/500	565364	B.33
EPC 63 C10	692656	A.97	EPP103NB50	678300	A.111	EPP63C06	678242	A.109	FPB 2 63/030	565365	B.33
EPC 63 C16	692657	A.97	EPP103NB63	678301	A.111	EPP63C10	678243	A.109	FPB 2 63/100	565366	B.33
EPC 63 C20	692658	A.97	EPP103NC06	678332	A.111	EPP63C13	678244	A.109	FPB 2 63/300	565367	B.33
EPC 63 C25	692659	A.97	EPP103NC10	678333	A.111	EPP63C16	678245	A.109	FPB 2 63/500	565368	B.33
EPC 63 C32	692660	A.97	EPP103NC13	678334	A.111	EPP63C20	678246	A.109	FPB 2 80/030	565369	B.33
EPC 64 B02	692653	A.97	EPP103NC16	678335	A.111	EPP63C25	678247	A.109	FPB 2 80/100	565370	B.33
EPC 64 B04	692654	A.97	EPP103NC20	678336	A.111	EPP63C32	678248	A.109	FPB 2 80/300	565371	B.33
EPC 64 B06	692655	A.97	EPP103NC25	678337	A.111	EPP63C40	678249	A.109	FPB 2 80/500	565372	B.33
EPC 64 B10	692656	A.97	EPP103NC32	678338	A.111	EPP63C50	678250	A.109	FPB 4 16/030	565373	B.33
EPC 64 B16	692657	A.97	EPP103NC40	678339	A.111	EPP63C63	678251	A.109	FPB 4 16/100	565374	B.33
EPC 64 B20	692658	A.97	EPP103NC50	678340	A.111	EPP63NB06	678202	A.109	FPB 4 16/300	565375	B.33
EPC 64 B25	692659	A.97	EPP103NC63	678341	A.111	EPP63NB10	678203	A.109	FPB 4 16/500	565376	B.33
EPC 64 B32	692660	A.97	EPP104B06	678725	A.111	EPP63NB13	678204	A.109	FPB 4 25/030	565377	B.33
EPC 64 C02	692572	A.97	EPP104B10	678726	A.111	EPP63NB16	678205	A.109	FPB 4 25/100	565378	B.33
EPC 64 C04	692573	A.97	EPP104B13	678727	A.111	EPP63NB20	678206	A.109	FPB 4 25/300	565379	B.33
EPC 64 C06	692574	A.97	EPP104B16	678728	A.111	EPP63NB25	678207	A.109	FPB 4 25/500	565380	B.33
EPC 64 C10	692575	A.97	EPP104B20	678729	A.111	EPP63NB32	678208	A.109	FPB 4 40/030	565341	B.33
EPC 64 C10 + CAUNS/H/G	693639	A.97	EPP104B25	678730	A.111	EPP63NB40	678209	A.109	FPB 4 40/100	565342	B.33
EPC 64 C16	692576	A.97	EPP104B32	678731	A.111	EPP63NB50	678210	A.109	FPB 4 40/300	565343	B.33
EPC 64 C16 + CAUNS/H/G	693640	A.97	EPP104B40	678732	A.111	EPP63NB63	678211	A.109	FPB 4 40/500	565344	B.33
EPC 64 C20	692577	A.97	EPP104B50	678733	A.111	EPP63NC06	678252	A.109	FPB 4 63/030	565345	B.33
EPC 64 C25	692578	A.97	EPP104B63	678734	A.111	EPP63NC10	678253	A.109	FPB 4 63/100	565346	B.33
EPC 64 C32	692579	A.97	EPP104C06	678735	A.111	EPP63NC13	678254	A.109	FPB 4 63/300	565347	B.33
EPP	669486	A.78	EPP104C10	678736	A.111	EPP63NC16	678255	A.109	FPB 4 63/500	565348	B.33
EPP101B06	678262	A.111	EPP104C13	678737	A.111	EPP63NC20	678256	A.109	FPB 4 80/030	565349	B.33
EPP101B10	678263	A.111	EPP104C16	678738	A.111	EPP63NC25	678257	A.109	FPB 4 80/100	565350	B.33
EPP101B13	678264	A.111	EPP104C20	678739	A.111	EPP63NC32	678258	A.109	FPB 4 80/300	565351	B.33
EPP101B16	678265	A.111	EPP104C25	678740	A.111	EPP63NC40	678259	A.109	FPB 4 80/500	565352	B.33
EPP101B20	678266	A.111	EPP104C32	678741	A.111	EPP63NC50	678260	A.109	FPF 2 25/030	565373	B.35
EPP101B25	678267	A.111	EPP104C40	678742	A.111	EPP63NC63	678261	A.109	FPF 2 40/030	565374	B.35
EPP101B32	678268	A.111	EPP104C50	678743	A.111	EPP64B06	678705	A.109	FPF 2 63/030	565375	B.35
EPP101B40	678269	A.111	EPP104C63	678744	A.111	EPP64B10	678706	A.109	FPF 2 80/030	565376	B.35
EPP101B50	678270	A.111	EPP61B06	678172	A.109	EPP64B13	678707	A.109	FPF 4 25/030	565377	B.35
EPP101B63	678271	A.111	EPP61B10	678173	A.109	EPP64B16	678708	A.109	FPF 4 40/030	565378	B.35
EPP101C06	678302	A.111	EPP61B13	678174	A.109	EPP64B20	678709	A.109	FPF 4 63/030	565379	B.35
EPP101C10	678303	A.111	EPP61B16	678175	A.109	EPP64B25	678710	A.109	FPF 4 80/030	565380	B.35
EPP101C13	678304	A.111	EPP61B20	678176	A.109	EPP64B32	678711	A.109	FPPA225/030	678359	B.59
EPP101C16	678305	A.111	EPP61B25	678177	A.109	EPP64B40	678712	A.109	FPPA225/100	678360	B.59
EPP101C20	678306	A.111	EPP61B32	678178	A.109	EPP64B50	678713	A.109	FPPA225/300	678371	B.59
EPP101C25	678307	A.111	EPP61B40	678179	A.109	EPP64B63	678714	A.109	FPPA240/030	678360	B.59
EPP101C32	678308	A.111	EPP61B50	678180	A.109	EPP64C06	678715	A.109	FPPA240/100	678366	B.59
EPP101C40	678309	A.111	EPP61B63	678181	A.109	EPP64C10	678716	A.109	FPPA240/300	678372	B.59
EPP101C50	678310	A.111	EPP61C06	678212	A.109	EPP64C13	678717	A.109	FPPA263/030	678361	B.59
EPP101C63	678311	A.111	EPP61C10	678213	A.109	EPP64C16	678718	A.109	FPPA263/100	678367	B.59
EPP102B06	678272	A.111	EPP61C13	678214	A.109	EPP64C20	678719	A.109	FPPA263/300	678373	B.59
EPP102B10	678273	A.111	EPP61C16	678215	A.109	EPP64C25	678720	A.109	FPPA425/030	678362	B.59
EPP102B13	678274	A.111	EPP61C20	678216	A.109	EPP64C32	678721	A.109	FPPA425/100	678368	B.59
EPP102B16	678275	A.111	EPP61C25	678217	A.109	EPP64C40	678722	A.109	FPPA425/300	678374	B.59
EPP102B20	678276	A.111	EPP61C32	678218	A.109	EPP64C50	678723	A.109	FPPA440/030	678363	B.59
EPP102B25	678277	A.111	EPP61C40	678219	A.109	EPP64C63	678724	A.109	FPPA440/100	678369	B.59
EPP102B32	678278	A.111	EPP61C50	678220	A.109	EV-G.1.2.80-90°	624993	D.72	FPPA440/300	678375	B.59
EPP102B40	678279	A.111	EPP61C63	678221	A.109	EV-G.1.3.80-90°	644893	D.72	FPPA463/030	678364	B.59
EPP102B50	678280	A.111	EPP61NC06	678222	A.109	EV-G.1.4.80-90°	568106	D.72	FPPA463/100	678370	B.59
EPP102B63	678281	A.111	EPP61NC10	678223	A.109	EV-G.1.8.80-90°	644897	D.72	FPPA463/300	678376	B.59
EPP102C06	678312	A.111	EPP61NC13	678224	A.109	F...			FPPS240/300	678377	B.59
EPP102C10	678313	A.111	EPP61NC16	678225	A.109	FPAUL 216/010	608377	B.55	FPPS263/300	678378	B.59
EPP102C13	678314	A.111	EPP61NC20	678226	A.109	FPAUL 225/030	608378	B.55	FPPS440/300	678379	B.59
EPP102C16	678315	A.111	EPP61NC25	678227	A.109	FPAUL 225/100	608379	B.55	FPPS463/300	678380	B.59
EPP102C20	678316	A.111	EPP61NC32	678228	A.109	FPAUL 225/300	608380	B.55	G...		
EPP102C25	678317	A.111	EPP61NC40	678229	A.109	FPAUL 225/500	608381	B.55	G101B06		



Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page
G101B20	674955	A.29	G102C16	674895	A.29	G104D06	675085	A.29	G42B16	674567	A.23
G101B25	674956	A.29	G102C20	674896	A.29	G104D10	675087	A.29	G42B20	674568	A.23
G101B32	674957	A.29	G102C25	674897	A.29	G104D13	675088	A.29	G42B25	674569	A.23
G101B40	674958	A.29	G102C32	674898	A.29	G104D16	675089	A.29	G42B32	674570	A.23
G101B50	674959	A.29	G102C40	674899	A.29	G104D20	675090	A.29	G42B40	674571	A.23
G101B63	674960	A.29	G102C50	674900	A.29	G104D25	675091	A.29	G42C02	674506	A.23
G101C0.5	674854	A.29	G102C63	674901	A.29	G104D32	675092	A.29	G42C04	674508	A.23
G101C01	674855	A.29	G102D0.5	675048	A.29	G104D40	675093	A.29	G42C06	674509	A.23
G101C02	674856	A.29	G102D01	675049	A.29	G104D50	675094	A.29	G42C10	674511	A.23
G101C03	674857	A.29	G102D02	675050	A.29	G104D63	675095	A.29	G42C16	674513	A.23
G101C04	674858	A.29	G102D03	675051	A.29	G31B06	674443	A.21	G42C20	674514	A.23
G101C06	674859	A.29	G102D04	675052	A.29	G31B10	674445	A.21	G42C25	674515	A.23
G101C10	674861	A.29	G102D06	675053	A.29	G31B16	674447	A.21	G42C32	674516	A.23
G101C13	674862	A.29	G102D10	675055	A.29	G31B20	674448	A.21	G42C40	674517	A.23
G101C16	674863	A.29	G102D13	675056	A.29	G31B25	674449	A.21	G43B06	674574	A.23
G101C20	674864	A.29	G102D16	675057	A.29	G31B32	674450	A.21	G43B10	674576	A.23
G101C25	674865	A.29	G102D20	675058	A.29	G31B40	674451	A.21	G43B16	674578	A.23
G101C32	674866	A.29	G102D25	675059	A.29	G31C02	674381	A.21	G43B20	674579	A.23
G101C40	674867	A.29	G102D32	675060	A.29	G31C04	674383	A.21	G43B25	674580	A.23
G101C50	674868	A.29	G102D40	675061	A.29	G31C06	674384	A.21	G43B32	674581	A.23
G101C63	674869	A.29	G102D50	675062	A.29	G31C10	674386	A.21	G43B40	674582	A.23
G101D0.5	675016	A.29	G102D63	675063	A.29	G31C16	674388	A.21	G43C02	674522	A.23
G101D01	675017	A.29	G103B06	674983	A.29	G31C20	674389	A.21	G43C04	674524	A.23
G101D02	675018	A.29	G103B10	674985	A.29	G31C25	674390	A.21	G43C06	674525	A.23
G101D03	675019	A.29	G103B13	674986	A.29	G31C32	674391	A.21	G43C10	674527	A.23
G101D04	675020	A.29	G103B16	674987	A.29	G31C40	674392	A.21	G43C16	674529	A.23
G101D06	675021	A.29	G103B20	674988	A.29	G32B06	674454	A.21	G43C20	674530	A.23
G101D10	675023	A.29	G103B25	674989	A.29	G32B10	674456	A.21	G43C25	674531	A.23
G101D13	675024	A.29	G103B32	674990	A.29	G32B16	674458	A.21	G43C32	674532	A.23
G101D16	675025	A.29	G103B40	674991	A.29	G32B20	674459	A.21	G43C40	674533	A.23
G101D20	675026	A.29	G103B50	674992	A.29	G32B25	674460	A.21	G44B06	674585	A.23
G101D25	675027	A.29	G103B63	674993	A.29	G32B32	674461	A.21	G44B10	674587	A.23
G101D32	675028	A.29	G103C0.5	674902	A.29	G32B40	674462	A.21	G44B16	674589	A.23
G101D40	675029	A.29	G103C01	674903	A.29	G32C02	674397	A.21	G44B20	674590	A.23
G101D50	675030	A.29	G103C02	674904	A.29	G32C04	674399	A.21	G44B25	674591	A.23
G101D63	675031	A.29	G103C03	674905	A.29	G32C06	674400	A.21	G44B32	674592	A.23
G101NB06	674961	A.29	G103C04	674906	A.29	G32C10	674402	A.21	G44B40	674593	A.23
G101NB10	674963	A.29	G103C06	674907	A.29	G32C16	674404	A.21	G44C02	674538	A.23
G101NB13	674964	A.29	G103C10	674909	A.29	G32C20	674405	A.21	G44C04	674540	A.23
G101NB16	674965	A.29	G103C13	674910	A.29	G32C25	674406	A.21	G44C06	674541	A.23
G101NB20	674966	A.29	G103C16	674911	A.29	G32C32	674407	A.21	G44C10	674543	A.23
G101NB25	674967	A.29	G103C20	674912	A.29	G32C40	674408	A.21	G44C16	674545	A.23
G101NB32	674968	A.29	G103C25	674913	A.29	G33B06	674466	A.21	G44C20	674546	A.23
G101NB40	674969	A.29	G103C32	674914	A.29	G33B10	674468	A.21	G44C25	674547	A.23
G101NB50	674970	A.29	G103C40	674915	A.29	G33B16	674470	A.21	G44C32	674548	A.23
G101NB63	674971	A.29	G103C50	674916	A.29	G33B20	674471	A.21	G44C40	674549	A.23
G101NC02	674872	A.29	G103C63	674917	A.29	G33B25	674472	A.21	G61B06	674692	A.25
G101NC03	674873	A.29	G103D0.5	675064	A.29	G33B32	674473	A.21	G61B10	674694	A.25
G101NC04	674874	A.29	G103D01	675065	A.29	G33B40	674474	A.21	G61B16	674696	A.25
G101NC06	674875	A.29	G103D02	675066	A.29	G33C02	674413	A.21	G61B20	674697	A.25
G101NC10	674877	A.29	G103D03	675067	A.29	G33C04	674415	A.21	G61B25	674698	A.25
G101NC13	674878	A.29	G103D04	675068	A.29	G33C06	674416	A.21	G61B32	674699	A.25
G101NC16	674879	A.29	G103D06	675069	A.29	G33C10	674418	A.21	G61B40	674700	A.25
G101NC20	674880	A.29	G103D10	675071	A.29	G33C16	674420	A.21	G61B50	674701	A.25
G101NC25	674881	A.29	G103D13	675072	A.29	G33C20	674421	A.21	G61B63	674702	A.25
G101NC32	674882	A.29	G103D16	675073	A.29	G33C25	674422	A.21	G61C02	674598	A.25
G101NC40	674883	A.29	G103D20	675074	A.29	G33C32	674423	A.21	G61C04	674600	A.25
G101NC50	674884	A.29	G103D25	675075	A.29	G33C40	674424	A.21	G61C06	674601	A.25
G101NC63	674885	A.29	G103D32	675076	A.29	G34B06	674477	A.21	G61C10	674603	A.25
G101ND0.5	675032	A.29	G103D40	675077	A.29	G34B10	674479	A.21	G61C16	674605	A.25
G101ND01	675033	A.29	G103D50	675078	A.29	G34B16	674481	A.21	G61C20	674606	A.25
G101ND02	675034	A.29	G103D63	675079	A.29	G34B20	674482	A.21	G61C25	674607	A.25
G101ND03	675035	A.29	G104B06	674994	A.29	G34B25	674483	A.21	G61C32	674608	A.25
G101ND04	675036	A.29	G104B10	674996	A.29	G34B32	674484	A.21	G61C40	674609	A.25
G101ND06	675037	A.29	G104B13	674997	A.29	G34B40	674485	A.21	G61C50	674610	A.25
G101ND10	675039	A.29	G104B16	674998	A.29	G34C02	674429	A.21	G61C63	674611	A.25
G101ND13	675040	A.29	G104B20	674999	A.29	G34C04	674431	A.21	G61D02	674760	A.25
G101ND16	675041	A.29	G104B25	675000	A.29	G34C06	674432	A.21	G61D04	674762	A.25
G101ND20	675042	A.29	G104B32	675001	A.29	G34C10	674434	A.21	G61D06	674763	A.25
G101ND25	675043	A.29	G104B40	675002	A.29	G34C16	674436	A.21	G61D10	674765	A.25
G101ND32	675044	A.29	G104B50	675003	A.29	G34C20	674437	A.21	G61D16	674767	A.25
G101ND40	675045	A.29	G104B63	675004	A.29	G34C25	674438	A.21	G61D20	674768	A.25
G101ND50	675046	A.29	G104C0.5	674918	A.29	G34C32	674439	A.21	G61D25	674769	A.25
G101ND63	675047	A.29	G104C01	674919	A.29	G34C40	674440	A.21	G61D32	674770	A.25
G102B06	674972	A.29	G104C02	674920	A.29	G41B06	674552	A.23	G61D40	674771	A.25
G102B10	674974	A.29	G104C03	674921	A.29	G41B10	674554	A.23	G61D50	674772	A.25
G102B13	674975	A.29	G104C04	674922	A.29	G41B16	674556	A.23	G61D63	674773	A.25
G102B16	674976	A.29	G104C06	674923	A.29	G41B20	674557	A.23	G61NB06	674703	A.25
G102B20	674977	A.29	G104C10	674925	A.29	G41B25	674558	A.23	G61NB10	674705	A.25
G102B25	674978	A.29	G104C13	674926	A.29	G41B32	674559	A.23	G61NB16	674707	A.25
G102B32	674979	A.29	G104C16	674927	A.29	G41B40	674560	A.23	G61NB20	674708	A.25
G102B40	674980	A.29	G104C20	674928	A.29	G41C02	674490	A.23	G61NB25	674709	A.25
G102B50	674981	A.29	G104C25	674929	A.29	G41C04	674492	A.23	G61NB32	674710	A.25
G102B63	674982	A.29	G104C32	674930	A.29	G41C06	674493	A.23	G61NB40	674711	A.25
G102C0.5	674886	A.29	G104C40	674931	A.29	G41C10	674495	A.23	G61NB50	674712	A.25
G102C01	674887	A.29	G104C50	674932	A.29	G41C16	674497	A.23	G61NB63	674713	A.25
G102C02	674888	A.29	G104C63	674933	A.29	G41C20	674498	A.23	G61NC02	674614	A.25
G102C03	674889	A.29	G104D0.5	675080	A.29	G41C25	674499	A.23	G61NC04	674616	A.25
G102C04	674890	A.29	G104D01	675081	A.29	G41C32	674500	A.23	G61NC06	674617	A.25
G102C06	674891	A.29	G104D02	675082	A.29	G41C40	674501	A.23	G61NC10	674619	A.25
G102C10	674893	A.29	G104D03	675083	A.29	G42B06	674563	A.23	G61NC16	674621	A.25
G102C13	674894	A.29	G104D04	675084	A.29	G42B10	674565	A.23	G61NC20	674622	A.25

A

B

C

D

E

F

G





By catalogue number

A
B
C
D
E
F
G
X

Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page
G61NC25	674623	A.25	G64C16	674669	A.25	GT102C02	675130	A.33	GT104C63	675175	A.33
G61NC32	674624	A.25	G64C20	674670	A.25	GT102C03	675131	A.33	GT104D0.5	675268	A.33
G61NC40	674625	A.25	G64C25	674671	A.25	GT102C04	675132	A.33	GT104D01	675269	A.33
G61NC50	674626	A.25	G64C32	674672	A.25	GT102C06	675133	A.33	GT104D02	675270	A.33
G61NC63	674627	A.25	G64C40	674673	A.25	GT102C10	675135	A.33	GT104D03	675271	A.33
G61ND02	674776	A.25	G64C50	674674	A.25	GT102C13	675136	A.33	GT104D04	675272	A.33
G61ND04	674778	A.25	G64C63	674675	A.25	GT102C16	675137	A.33	GT104D06	675273	A.33
G61ND06	674779	A.25	G64D02	674824	A.25	GT102C20	675138	A.33	GT104D10	675275	A.33
G61ND10	674781	A.25	G64D04	674826	A.25	GT102C25	675139	A.33	GT104D13	675276	A.33
G61ND16	674783	A.25	G64D06	674827	A.25	GT102C32	675140	A.33	GT104D16	675277	A.33
G61ND20	674784	A.25	G64D10	674829	A.25	GT102C40	675141	A.33	GT104D20	675278	A.33
G61ND25	674785	A.25	G64D16	674831	A.25	GT102C50	675142	A.33	GT104D25	675279	A.33
G61ND32	674786	A.25	G64D20	674832	A.25	GT102C63	675143	A.33	GT104D32	675280	A.33
G61ND40	674787	A.25	G64D25	674833	A.25	GT102D0.5	675236	A.33	GT104D40	675281	A.33
G61ND50	674788	A.25	G64D32	674834	A.25	GT102D01	675237	A.33	GT104D50	675282	A.33
G61ND63	674789	A.25	G64D40	674835	A.25	GT102D02	675238	A.33	GT104D63	675283	A.33
G62B06	674714	A.25	G64D50	674836	A.25	GT102D03	675239	A.33	GT251B06	675348	A.35
G62B10	674716	A.25	G64D63	674837	A.25	GT102D04	675240	A.33	GT251B10	675350	A.35
G62B16	674718	A.25	GLX+ GEO BUS	687465	D.44	GT102D06	675241	A.33	GT251B16	675352	A.35
G62B20	674719	A.25	GLX+ IR	687456	D.44	GT102D10	675243	A.33	GT251B20	675353	A.35
G62B25	674720	A.25	GLX+ LUX WALL	687473	D.49	GT102D13	675244	A.33	GT251B25	675354	A.35
G62B32	674721	A.25	GLX+LSS EXT	687471	D.49	GT102D16	675245	A.33	GT251B32	675355	A.35
G62B40	674722	A.25	GLX-Q 11COM 16A 2M ASTIR	687454	D.44	GT102D20	675246	A.33	GT251B40	675356	A.35
G62B50	674723	A.25	GLX-Q 11COM 16A 2M DW	687450	D.44	GT102D25	675247	A.33	GT251B50	675357	A.35
G62B63	674724	A.25	GLX-Q 11COM 16A 2M DW IR	687452	D.44	GT102D32	675248	A.33	GT251B63	675358	A.35
G62C02	674630	A.25	GLX-Q 11COM 16A 3M Y BUS	687464	D.44	GT102D40	675249	A.33	GT251C0.5	675284	A.35
G62C04	674632	A.25	GLX-Q 12COM 16A 2M ASTIR	687455	D.44	GT102D50	675250	A.33	GT251C01	675285	A.35
G62C06	674633	A.25	GLX-Q 12COM 16A 2M DW	687451	D.44	GT102D63	675251	A.33	GT251C02	675286	A.35
G62C10	674635	A.25	GLX-Q 12COM 16A 2M DW IR	687453	D.44	GT103B06	675198	A.33	GT251C04	675288	A.35
G62C16	674637	A.25	GLX-Q 151COM 16A 72x72 W	687469	D.47	GT103B10	675200	A.33	GT251C06	675289	A.35
G62C20	674638	A.25	GLX-Q 301COM 16A 2M DANA	687447	D.43	GT103B13	675201	A.33	GT251C10	675291	A.35
G62C25	674639	A.25	GLX-Q 301COM 16A 2M WANA	687448	D.43	GT103B16	675202	A.33	GT251C16	675293	A.35
G62C32	674640	A.25	GLX-Q 301NA 16A 1M ASTD	687446	D.43	GT103B20	675203	A.33	GT251C20	675294	A.35
G62C40	674641	A.25	GLX-Q 301NA 16A 1M D	687444	D.43	GT103B25	675204	A.33	GT251C25	675295	A.35
G62C50	674642	A.25	GLX-Q 301NA 16A 1M W	687445	D.43	GT103B32	675205	A.33	GT251C32	675296	A.35
G62C63	674643	A.25	GLX-Q 4COM 8A 4M BUS	687466	D.44	GT103B40	675206	A.33	GT251C40	675297	A.35
G62D02	674792	A.25	GLX-Q AST30 1NA 16A 2M DANA	687449	D.43	GT103B50	675207	A.33	GT251C50	675298	A.35
G62D04	674794	A.25	GLX-Q LUX 1NA 16A 1M	687470	D.49	GT103B63	675208	A.33	GT251C63	675299	A.35
G62D06	674795	A.25	GLX-Q LUX/T1COM16A2M	687472	D.49	GT103C0.5	675144	A.33	GT251D0.5	675392	A.35
G62D10	674797	A.25	GRDT+TOP	665394	B.63	GT103C01	675145	A.33	GT251D01	675393	A.35
G62D16	674799	A.25	GT101B06	675176	A.33	GT103C02	675146	A.33	GT251D02	675394	A.35
G62D20	674800	A.25	GT101B10	675178	A.33	GT103C03	675147	A.33	GT251D04	675396	A.35
G62D25	674801	A.25	GT101B13	675179	A.33	GT103C04	675148	A.33	GT251D06	675397	A.35
G62D32	674802	A.25	GT101B16	675180	A.33	GT103C06	675149	A.33	GT251D10	675399	A.35
G62D40	674803	A.25	GT101B20	675181	A.33	GT103C10	675151	A.33	GT251D16	675401	A.35
G62D50	674804	A.25	GT101B25	675182	A.33	GT103C13	675152	A.33	GT251D20	675402	A.35
G62D63	674805	A.25	GT101B32	675183	A.33	GT103C16	675153	A.33	GT251D25	675403	A.35
G63B06	674725	A.25	GT101B40	675184	A.33	GT103C20	675154	A.33	GT251D32	675404	A.35
G63B10	674727	A.25	GT101B50	675185	A.33	GT103C25	675155	A.33	GT251D40	675405	A.35
G63B16	674729	A.25	GT101B63	675186	A.33	GT103C32	675156	A.33	GT251D50	675406	A.35
G63B20	674730	A.25	GT101C0.5	675112	A.33	GT103C40	675157	A.33	GT251D63	675407	A.35
G63B25	674731	A.25	GT101C01	675113	A.33	GT103C50	675158	A.33	GT252B06	675359	A.35
G63B32	674732	A.25	GT101C02	675114	A.33	GT103C63	675159	A.33	GT252B10	675361	A.35
G63B40	674733	A.25	GT101C03	675115	A.33	GT103D0.5	675252	A.33	GT252B16	675363	A.35
G63B50	674734	A.25	GT101C04	675116	A.33	GT103D01	675253	A.33	GT252B20	675364	A.35
G63B63	674735	A.25	GT101C06	675117	A.33	GT103D02	675254	A.33	GT252B25	675365	A.35
G63C02	674646	A.25	GT101C10	675119	A.33	GT103D03	675255	A.33	GT252B32	675366	A.35
G63C04	674648	A.25	GT101C13	675120	A.33	GT103D04	675256	A.33	GT252B40	675367	A.35
G63C06	674649	A.25	GT101C16	675121	A.33	GT103D06	675257	A.33	GT252B50	675368	A.35
G63C10	674651	A.25	GT101C20	675122	A.33	GT103D10	675259	A.33	GT252B63	675369	A.35
G63C16	674653	A.25	GT101C25	675123	A.33	GT103D13	675260	A.33	GT252C0.5	675300	A.35
G63C20	674654	A.25	GT101C32	675124	A.33	GT103D16	675261	A.33	GT252C01	675301	A.35
G63C25	674655	A.25	GT101C40	675125	A.33	GT103D20	675262	A.33	GT252C02	675302	A.35
G63C32	674656	A.25	GT101C50	675126	A.33	GT103D25	675263	A.33	GT252C04	675304	A.35
G63C40	674657	A.25	GT101C63	675127	A.33	GT103D32	675264	A.33	GT252C06	675305	A.35
G63C50	674658	A.25	GT101D0.5	675220	A.33	GT103D40	675265	A.33	GT252C10	675307	A.35
G63C63	674659	A.25	GT101D01	675221	A.33	GT103D50	675266	A.33	GT252C16	675309	A.35
G63D02	674808	A.25	GT101D02	675222	A.33	GT103D63	675267	A.33	GT252C20	675310	A.35
G63D04	674810	A.25	GT101D03	675223	A.33	GT104B06	675209	A.33	GT252C25	675311	A.35
G63D06	674811	A.25	GT101D04	675224	A.33	GT104B10	675211	A.33	GT252C32	675312	A.35
G63D10	674813	A.25	GT101D06	675225	A.33	GT104B13	675212	A.33	GT252C40	675313	A.35
G63D16	674815	A.25	GT101D10	675227	A.33	GT104B16	675213	A.33	GT252C50	675314	A.35
G63D20	674816	A.25	GT101D13	675228	A.33	GT104B20	675214	A.33	GT252C63	675315	A.35
G63D25	674817	A.25	GT101D16	675229	A.33	GT104B25	675215	A.33	GT252D0.5	675408	A.35
G63D32	674818	A.25	GT101D20	675230	A.33	GT104B32	675216	A.33	GT252D01	675409	A.35
G63D40	674819	A.25	GT101D25	675231	A.33	GT104B40	675217	A.33	GT252D02	675410	A.35
G63D50	674820	A.25	GT101D32	675232	A.33	GT104B50	675218	A.33	GT252D04	675412	A.35
G63D63	674821	A.25	GT101D40	675233	A.33	GT104B63	675219	A.33	GT252D06	675413	A.35
G64B06	674736	A.25	GT101D50	675234	A.33	GT104C0.5	675160	A.33	GT252D10	675415	A.35
G64B10	674738	A.25	GT101D63	675235	A.33	GT104C01	675161	A.33	GT252D16	675417	A.35
G64B16	674740	A.25	GT102B06	675187	A.33	GT104C02	675162	A.33	GT252D20	675418	A.35
G64B20	674741	A.25	GT102B10	675189	A.33	GT104C03	675163	A.33	GT252D25	675419	A.35
G64B25	674742	A.25	GT102B13	675190	A.33	GT104C04	675164	A.33	GT252D32	675420	A.35
G64B32	674743	A.25	GT102B16	675191	A.33	GT104C06	675165	A.33	GT252D40	675421	A.35
G64B40	674744	A.25	GT102B20	675192	A.33	GT104C10	675167	A.33	GT252D50	675422	A.35
G64B50	674745	A.25	GT102B25	675193	A.33	GT104C13	675168	A.33	GT252D63	675423	A.35
G64B63	674746	A.25	GT102B32	675194	A.33	GT104C16	675169	A.33	GT253B06	675370	A.35
G64C0.5	674660	A.25	GT102B40	675195	A.33	GT104C20	675170	A.33	GT253B10	675372	A.35
G64C02	674662	A.25	GT102B50	675196	A.33	GT104C25	675171	A.33	GT253B16	675374	A.35
G64C04	674664	A.25	GT102B63	675197	A.33	GT104C32	675172	A.33	GT253B20	675375	A.35
G64C06	674665	A.25	GT102C0.5	675128	A.33	GT104C40	675173	A.33	GT253B25	675376	A.35
G64C10	674667	A.25	GT102C01	675129	A.33	GT104C50	675174	A.33	GT253B32	675377	A.35



Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page
GT253B40	675378	A.35	Hti 104 B100	671523	A.39	HTI-361D100	671058	A.49	HTI+TELEL110	678089	A.58
GT253B50	675379	A.35	Hti 104 B125	671524	A.39	HTI-361D125	671057	A.49	HTI+TELEL220	678085	A.58
GT253B63	675380	A.35	Hti 104 B80	671522	A.39	HTI-361D80	671059	A.49	HTI+TELEL48	678090	A.58
GT253C0.5	675316	A.35	Hti 104 C080	671546	A.39	HTI-362B100	671043	A.49	HTI+TELEU24	678086	A.59
GT253C01	675317	A.35	Hti 104 C100	671547	A.39	HTI-362B125	671042	A.49	HTI+TELEU20	678092	A.59
GT253C02	675318	A.35	Hti 104 C125	671548	A.39	HTI-362B80	671044	A.49	HTI+TELEU48	678091	A.59
GT253C04	675320	A.35	Hti 104 D080	671570	A.39	HTI-362C100	671031	A.49	KS	624929	A.78
GT253C06	675321	A.35	Hti 104 D100	671571	A.39	HTI-362C125	671030	A.49	LD011	544339	A.121
GT253C10	675323	A.35	Hti 104 D125	671572	A.39	HTI-362C80	671032	A.49	LD013	544340	A.121
GT253C16	675325	A.35	Hti H	671597	A.41	HTI-362D100	671055	A.49	LD021	544332	A.121
GT253C20	675326	A.35	Hti H/S	671599	A.41	HTI-362D125	671054	A.49	LD023	544333	A.121
GT253C25	675327	A.35	Hti HH/HS	671600	A.41	HTI-362D80	671056	A.49	LD02AD01	544338	A.121
GT253C32	675328	A.35	Hti HSR	671602	A.41	HTI-363B100	671040	A.49	LD02P20	544334	A.121
GT253C40	675329	A.35	Hti S	671598	A.41	HTI-363B125	671039	A.49	LD02P25	544335	A.121
GT253C50	675330	A.35	HTI-161B100	671142	A.45	HTI-363B80	671041	A.49	LD02P35	544336	A.121
GT253C63	675331	A.35	HTI-161B125	671141	A.45	HTI-363C100	671028	A.49	LD02P50	544337	A.121
GT253D0.5	675424	A.35	HTI-161B80	671143	A.45	HTI-363C125	671027	A.49	LT1 N	676910	A.121
GT253D01	675425	A.35	HTI-161C100	671106	A.45	HTI-363C80	671029	A.49	LT3 N	676911	A.121
GT253D02	675426	A.35	HTI-161C125	671105	A.45	HTI-363D100	671052	A.49	MOD218D	619105	F.10
GT253D04	675428	A.35	HTI-161C80	671107	A.45	HTI-363D125	671051	A.49	MOD2DB120	619103	F.9
GT253D06	675429	A.35	HTI-161D100	671178	A.45	HTI-363D80	671053	A.49	MOD2DB180	619104	F.9
GT253D10	675431	A.35	HTI-161D125	671177	A.45	HTI-364B100	671037	A.49	MOD2DB240	619122	F.9
GT253D16	675433	A.35	HTI-161D80	671179	A.45	HTI-364B125	671036	A.49	MOD2DB40	619100	F.9
GT253D20	675434	A.35	HTI-162B100	671139	A.45	HTI-364B80	671038	A.49	MOD2DB60	619101	F.9
GT253D25	675435	A.35	HTI-162B125	671138	A.45	HTI-364C100	671025	A.49	MOD2DB80	619102	F.9
GT253D32	675436	A.35	HTI-162B80	671140	A.45	HTI-364C125	671024	A.49	MOD2DC	619115	F.9
GT253D40	675437	A.35	HTI-162C100	671103	A.45	HTI-364C80	671026	A.49	MOD2DIL125	619114	F.9
GT253D50	675438	A.35	HTI-162C125	671102	A.45	HTI-364D100	671049	A.49	MOD2DIL125/	619124	F.9
GT253D63	675439	A.35	HTI-162C80	671104	A.45	HTI-364D125	671048	A.49	MOD2DIL200	619110	F.10
GT254B06	675381	A.35	HTI-162D100	671175	A.45	HTI-364D80	671050	A.49	MOD2HDGP	619116	F.10
GT254B10	675383	A.35	HTI-162D125	671174	A.45	HTI-501B100	671118	A.51	MOD2IS03	619111	F.9
GT254B16	675385	A.35	HTI-162D80	671176	A.45	HTI-501B125	671117	A.51	MOD2MC200A	619109	F.10
GT254B20	675386	A.35	HTI-163B100	671136	A.45	HTI-501B80	671119	A.51	MOD2MC200NA	619107	F.10
GT254B25	675387	A.35	HTI-163B125	671135	A.45	HTI-501C100	671082	A.51	MOD2MCB100	619606	F.9
GT254B32	675388	A.35	HTI-163B80	671137	A.45	HTI-501C125	671081	A.51	MOD2MCB63	619605	F.9
GT254B40	675389	A.35	HTI-163C100	671100	A.45	HTI-501C80	671083	A.51	MOD2MCRCD	619108	F.10
GT254B50	675390	A.35	HTI-163C125	671099	A.45	HTI-501D100	671154	A.51	MOD2PA120	619180	F.9
GT254B63	675391	A.35	HTI-163C80	671101	A.45	HTI-501D125	671153	A.51	MOD2PA180	619181	F.9
GT254C0.5	675332	A.35	HTI-163D100	671172	A.45	HTI-501D80	671155	A.51	MOD2PA240	619192	F.9
GT254C01	675333	A.35	HTI-163D125	671171	A.45	HTI-502B100	671115	A.51	MOD2PA40	619177	F.9
GT254C02	675334	A.35	HTI-163D80	671173	A.45	HTI-502B125	671114	A.51	MOD2PA60	619178	F.9
GT254C04	675336	A.35	HTI-164B100	671133	A.45	HTI-502B125A/300	671513	A.55	MOD2PA80	619179	F.9
GT254C06	675337	A.35	HTI-164B125	671132	A.45	HTI-502B125Ai/030	671507	A.55	MOD2RCDA	619119	F.9
GT254C10	675339	A.35	HTI-164B80	671134	A.45	HTI-502B80	671116	A.51	MOD2RCDB	619112	F.9
GT254C16	675341	A.35	HTI-164C100	671097	A.45	HTI-502C100	671079	A.51	MOD2RCDBTD	619120	F.9
GT254C20	675342	A.35	HTI-164C125	671096	A.45	HTI-502C125	671078	A.51	MOD2RCDC	619113	F.9
GT254C25	675343	A.35	HTI-164C80	671098	A.45	HTI-502C125A/300	671514	A.55	MOD2SB1	619106	F.10
GT254C32	675344	A.35	HTI-164D100	671169	A.45	HTI-502C125Ai/030	671508	A.55	MOD2SPK1	618300	F.9
GT254C40	675345	A.35	HTI-164D125	671168	A.45	HTI-502C80	671080	A.51	MSC SE	686069	D.7
GT254C50	675346	A.35	HTI-164D80	671170	A.45	HTI-502D100	671151	A.51	MSC SEP	666501	D.7
GT254C63	675347	A.35	HTI-251B100	671130	A.47	HTI-502D125	671150	A.51	MSC SPP	666502	D.7
GT254D0.5	675440	A.35	HTI-251B125	671129	A.47	HTI-502D125A/300	671515	A.55	MT+ AP 3F 2M	665396	D.55
GT254D01	675441	A.35	HTI-251B80	671131	A.47	HTI-502D125Ai/030	671509	A.55	MT+AA 4M	665264	D.57
GT254D02	675442	A.35	HTI-251C100	671094	A.47	HTI-502D80	671152	A.51	MT+AA10 4M	665266	D.57
GT254D04	675444	A.35	HTI-251C125	671093	A.47	HTI-503B100	671112	A.51	MT+AA15 4M	665267	D.57
GT254D06	675445	A.35	HTI-251C80	671095	A.47	HTI-503B125	671111	A.51	MT+AA20 4M	665268	D.57
GT254D10	675447	A.35	HTI-251D100	671166	A.47	HTI-503B125A/300	671525	A.55	MT+AA25 4M	665269	D.57
GT254D16	675449	A.35	HTI-251D125	671165	A.47	HTI-503B125Ai/030	671519	A.55	MT+AA30 4M	665270	D.57
GT254D20	675450	A.35	HTI-251D80	671167	A.47	HTI-503B80	671113	A.51	MT+AA5 4M	665265	D.57
GT254D25	675451	A.35	HTI-252B100	671127	A.47	HTI-503C100	671076	A.51	MT+AF 4M	665273	D.57
GT254D32	675452	A.35	HTI-252B125	671126	A.47	HTI-503C125	671075	A.51	MT+AH110 2M	665274	D.57
GT254D40	675453	A.35	HTI-252B80	671128	A.47	HTI-503C125A/300	671526	A.55	MT+AH230 2M	665275	D.57
GT254D50	675454	A.35	HTI-252C100	671091	A.47	HTI-503C125Ai/030	671520	A.55	MT+AH24 2M	665276	D.57
GT254D63	675455	A.35	HTI-252C125	671090	A.47	HTI-503C80	671077	A.51	MT+AV300 4M	665271	D.57
H...			HTI-252C80	671092	A.47	HTI-503D100	671148	A.51	MT+AV500 4M	665272	D.57
Hti 101 B080	671504	A.39	HTI-252D100	671163	A.47	HTI-503D125	671147	A.51	MT+CT100	665372	D.59
Hti 101 B100	671505	A.39	HTI-252D125	671162	A.47	HTI-503D125A/300	671527	A.55	MT+CT1000	665381	D.59
Hti 101 B125	671506	A.39	HTI-252D80	671164	A.47	HTI-503D125Ai/030	671521	A.55	MT+CT1200	665382	D.59
Hti 101 C080	671528	A.39	HTI-253B100	671124	A.47	HTI-503D80	671149	A.51	MT+CT150	665373	D.59
Hti 101 C100	671529	A.39	HTI-253B125	671123	A.47	HTI-504B100	671109	A.51	MT+CT1500	665383	D.59
Hti 101 C125	671530	A.39	HTI-253B80	671125	A.47	HTI-504B125	671108	A.51	MT+CT200	665374	D.59
Hti 101 D080	671552	A.39	HTI-253C100	671088	A.47	HTI-504B125A/300	671537	A.55	MT+CT2000	665384	D.59
Hti 101 D100	671553	A.39	HTI-253C125	671087	A.47	HTI-504B125Ai/030	671531	A.55	MT+CT250	665375	D.59
Hti 101 D125	671554	A.39	HTI-253C80	671089	A.47	HTI-504B80	671110	A.51	MT+CT2500	665924	D.59
Hti 102 B080	671510	A.39	HTI-253D100	671160	A.47	HTI-504C100	671073	A.51	MT+CT300	665376	D.59
Hti 102 B100	671511	A.39	HTI-253D125	671159	A.47	HTI-504C125	671072	A.51	MT+CT3200	665925	D.59
Hti 102 B125	671512	A.39	HTI-253D80	671161	A.47	HTI-504C125A/300	671538	A.55	MT+CT40	665368	D.59
Hti 102 C080	671534	A.39	HTI-254B100	671121	A.47	HTI-504C125Ai/030	671532	A.55	MT+CT400	665377	D.59
Hti 102 C100	671535	A.39	HTI-254B125	671120	A.47	HTI-504C80	671074	A.51	MT+CT4000	665926	D.59
Hti 102 C125	671536	A.39	HTI-254B80	671122	A.47	HTI-504D100	671145	A.51	MT+CT50	665369	D.59
Hti 102 D080	671558	A.39	HTI-254C100	671085	A.47	HTI-504D125	671144	A.51	MT+CT500	665378	D.59
Hti 102 D100	671559	A.39	HTI-254C125	671084	A.47	HTI-504D125A/300	671539	A.55	MT+CT60	665370	D.59
Hti 102 D125	671560	A.39	HTI-254C80	671086	A.47	HTI-504D125Ai/030	671533	A.55	MT+CT600	665379	D.59
Hti 103 B080	671516	A.39	HTI-254D100	671157	A.47	HTI-504D80	671146	A.51	MT+CT80	665371	D.59
Hti 103 B100	671517	A.39	HTI-254D125	671156	A.47	HTI-H	678082	A.56	MT+CT800	665380	D.59
Hti 103 B125	671518	A.39	HTI-254D80	671158	A.47	HTI-H/S	678083	A.57	MT+D BASIC 4M	665393	D.55
Hti 103 C080	671540	A.39	HTI-361B100	671046	A.49	HTI-KS	678084	A.61	MT+D DV500 DA5 F 4M	665387	D.55
Hti 103 C100	671541	A.39	HTI-361B125	671045	A.49	HTI-RH-A500	678093	A.61	MT+D PRI BASIC 2M	665395	D.55
Hti 103 C125	671542	A.39	HTI-361B80	671047	A.49	HTI-RH-BLACK	678088	A.61	MT+D TOPI 4M	665391	D.55
Hti 103 D080	671564	A.39	HTI-361C100	671034	A.49	HTI-RH-DRIVE	678094	A.61	MT+D TOPIRS485 4M	665392	D.55
Hti 103 D100	671565	A.39	HTI-361C125								



By catalogue number

A
B
C
D
E
F
G
X

Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page	Cat. No.	Ref. No.	Page
MT+D11 32 1M	665248	D.53	PULSAR1611048A	685805	D.22	REC TOP EP102 C16	677187	C.19	REC2 S 440/300	677075	C.15
MT+D11 45 1M MID	665249	D.53	PULSAR1611115A	685806	D.22	REC TOP EP102 C20	677188	C.19	REC2 S 463/300	677076	C.15
MT+D11 63 2M	665250	D.53	PULSAR161115A	685791	D.22	REC TOP EP102 C25	677189	C.19	REC2 S 480/300	677077	C.15
MT+D11 63 2M MID	665251	D.53	PULSAR161123060	685808	D.22	REC TOP EP102 C32	677190	C.19	SA BLOCK I 100 2M	660495	D.70
MT+D3N485 63 4M	665256	D.53	PULSAR1611230A	685807	D.22	REC TOP EP102 C40	677191	C.19	SA BLOCK I 50 2M	660494	D.70
MT+D3N485 63 4MMID	665257	D.53	PULSAR1611240A	685809	D.22	REC TOP EP102 C50	677192	C.19	SA BLOCK I and II 100	667486	D.72
MT+D3N485 x/5 4M	665260	D.53	PULSAR16123060	685785	D.22	REC TOP EP102 C63	677193	C.19	SA BLOCK I and II 100N	667487	D.72
MT+D3N485 x/54MMID	665261	D.53	PULSAR161230A	685792	D.22	REC TOP EP104 B10	677194	C.19	SA BLOCK I and II 65	667517	D.72
MT+D3Ni 63 4M	665254	D.53	PULSAR161240A	685793	D.22	REC TOP EP104 B16	677195	C.19	SA BLOCK I and II 65N	667518	D.72
MT+D3Ni 63 4M MID	665255	D.53	PULSAR1620008A	685794	D.22	REC TOP EP104 B20	677196	C.19	SA BLOCK II 15/230 LLE	667489	D.72
MT+D3Ni x/5 4M	665258	D.53	PULSAR1620012A	685795	D.22	REC TOP EP104 B25	677197	C.19	SA BLOCK II 15/230 LNE	667488	D.72
MT+D3Ni x/5 4M MID	665259	D.53	PULSAR1620024A	685796	D.22	REC TOP EP104 B32	677198	C.19	SA BLOCK II 15/400 3L+NE	667494	D.72
MT+ImpCon	665262	D.53	PULSAR1620048A	685797	D.22	REC TOP EP104 B40	677199	C.19	SA BLOCK II 15/400 4L/NE	667495	D.72
MT+RS485/Ethernet	665389	D.53	PULSAR162008A	685810	D.22	REC TOP EP104 B50	678026	C.19	SA BLOCK II 15LN	667483	D.72
MT+RSC TOP	665390	D.53	PULSAR1620115A	685798	D.22	REC TOP EP104 B63	678027	C.19	SA BLOCK II 40/230 LLE	667491	D.72
MT+S4 3M	665385	D.57	PULSAR162012A	685811	D.22	REC TOP EP104 C10	678028	C.19	SA BLOCK II 40/230 LNE	667490	D.72
MT+S7 3M	665386	D.57	PULSAR162023060	685799	D.22	REC TOP EP104 C16	678029	C.19	SA BLOCK II 40/400 3L+NE	667496	D.72
MT+SP100	665287	D.57	PULSAR1620230A	685800	D.22	REC TOP EP104 C20	678030	C.19	SA BLOCK II 40/400 4L/NE	667497	D.72
MT+SP1000	665296	D.57	PULSAR1620240A	685801	D.22	REC TOP EP104 C25	678031	C.19	SAM I+II 100N	660393	D.70
MT+SP150	665288	D.57	PULSAR162024A	685812	D.22	REC TOP EP104 C32	678032	C.19	SAM I+II 12.5/230	660294	D.70
MT+SP200	665289	D.57	PULSAR162048A	685813	D.22	REC TOP EP104 C40	678033	C.19	SAM I+II 25/230	660199	D.70
MT+SP250	665290	D.57	PULSAR162115A	685814	D.22	REC TOP EP104 C50	678034	C.19	SAM I+II 25N	660296	D.70
MT+SP300	665291	D.57	PULSAR162230A	685815	D.22	REC TOP EP104 C63	678035	C.19	SAM I+II 50N	660274	D.70
MT+SP40	665283	D.57	PULSAR162240A	685816	D.22	REC TOP TT 25	678036	C.19	SAM II 20/230	660297	D.71
MT+SP400	665292	D.57	PULSAR3210008A	685817	D.22	REC TOP TT 35	678037	C.19	SAM II 20N	660299	D.71
MT+SP50	665284	D.57	PULSAR3210012A	685818	D.22	REC2 A 2100/30	676990	C.15	SAM II 40/1000PV	660379	D.78
MT+SP500	665293	D.57	PULSAR3210024A	685819	D.22	REC2 A 2100/300	676998	C.15	SAM II 40/1500PV	660498	D.78
MT+SP60	665285	D.57	PULSAR3210048A	685820	D.22	REC2 A 225/30	676986	C.15	SAM II 40/230	660373	D.71
MT+SP600	665294	D.57	PULSAR3210115A	685821	D.22	REC2 A 225/300	676994	C.15	SAM II 40/400	660374	D.71
MT+SP80	665286	D.57	PULSAR3210230A	685822	D.22	REC2 A 240/30	676987	C.15	SAM II 40/600PV	660378	D.78
MT+SP800	665295	D.57	PULSAR3210240A	685823	D.22	REC2 A 240/300	676995	C.15	SAM II 40N	660375	D.71
MT144UD	665196	D.65	PULSAR3220008A	685824	D.22	REC2 A 263/30	676988	C.15	SAMII30750	660634	D.75
MT144UM	665195	D.65	PULSAR3220012A	685825	D.22	REC2 A 263/300	676996	C.15	SAMII40175	660631	D.75
MT144UMD	665194	D.65	PULSAR3220024A	685826	D.22	REC2 A 280/30	676989	C.15	SAMII40275	660632	D.75
MT485Enet	665245	D.65	PULSAR3220048A	685827	D.22	REC2 A 280/300	676997	C.15	SAMII40320	660633	D.75
MT8I40	665198	D.65	PULSAR3220115A	685828	D.22	REC2 A 4100/30	677046	C.15	SAP1 I+II 100N	660391	D.70
MT8I40R	665199	D.65	PULSAR3220230A	685829	D.22	REC2 A 4100/300	677074	C.15	SAP1 I+II 25/230	660125	D.70
MT8I80	665197	D.65	PULSAR3220240A	685830	D.22	REC2 A 425/30	677042	C.15	SAP1 I+II 25/230 C	660127	D.70
MT961	665190	D.63	PULSARAUX11	685879	D.23	REC2 A 425/300	677050	C.15	SAP1 II 20N	660169	D.71
MT961HARCOM	665193	D.63	PULSARX20	685880	D.23	REC2 A 440/30	677043	C.15	SAP1 II 40/230	660158	D.71
MT962	665191	D.63	PULSARX	685881	D.23	REC2 A 440/300	677071	C.15	SAP1 II 40/230 C	660160	D.71
MT962COM	665192	D.63	PULSARC161 024A	685839	D.23	REC2 A 463/30	677044	C.15	SAP1 II 40/400	660159	D.71
MTAdapt	665244	D.61	PULSARC1610008A	685831	D.23	REC2 A 463/300	677072	C.15	SAP1 II 40/400 C	660162	D.71
MTDIN1	665010	D.61	PULSARC1610012A	685832	D.23	REC2 A 480/30	677045	C.15	SAP1 II 40N	660163	D.71
MTDIN1HARCOM	665012	D.61	PULSARC1610024A	685833	D.23	REC2 A 480/300	677073	C.15	SAP1II40175	660608	D.75
MTDIN2	665011	D.61	PULSARC1610048A	685834	D.23	REC2 Ai 225/30	676991	C.15	SAP1II40175C	660612	D.75
MTDIN2COM	665155	D.61	PULSARC161008A	685837	D.23	REC2 Ai 240/30	676992	C.15	SAP1II40275	660609	D.75
MTMBUS	665239	D.65	PULSARC161012A	685838	D.23	REC2 Ai 263/30	676993	C.15	SAP1II40275C	660613	D.75
MTPBUS	665243	D.65	PULSARC1610230A	685835	D.23	REC2 Ai 425/30	677047	C.15	SAP1II40320	660611	D.75
MTSDMEM	665240	D.65	PULSARC1610240A	685836	D.23	REC2 Ai 440/30	677048	C.15	SAP1II40320C	660614	D.75
MTUSB485	665246	D.65	PULSARC161048A	685840	D.23	REC2 Ai 463/30	677049	C.15	SAP2 I+II 12.5 TNS	660143	D.70
NDF2 15/45	585016	B.69	PULSARC161230A	685841	D.23	REC2 DPCA100B10/030	677174	C.17	SAP2 I+II 12.5 TNS C	660144	D.70
NDF2 30/60	585020	B.69	PULSARC161240A	685842	D.23	REC2 DPCA100B10/300	677180	C.17	SAP2 I+II 12.5 TT	660139	D.70
NDF2 60/90	585025	B.69	PULSARC1620008A	685843	D.23	REC2 DPCA100B16/030	677175	C.17	SAP2 I+II 12.5 TT C	660140	D.70
NDF4 10/30	585031	B.69	PULSARC1620012A	685844	D.23	REC2 DPCA100B16/300	677181	C.17	SAP2 II 20/230 TNS	660177	D.71
NDF4 30/60	585036	B.69	PULSARC1620024A	685845	D.23	REC2 DPCA100B20/030	677176	C.17	SAP2 II 20/230 TNSC	660178	D.71
NDFS2 15/45	585017	B.69	PULSARC1620048A	685846	D.23	REC2 DPCA100B20/300	677182	C.17	SAP2 II 20/230 TT	660173	D.71
NDFS2 30/60	585021	B.69	PULSARC162008A	685849	D.23	REC2 DPCA100B25/030	677177	C.17	SAP2 II 20/230 TTC	660174	D.71
NDFS2 60/90	585026	B.69	PULSARC162012A	685850	D.23	REC2 DPCA100B25/300	677183	C.17	SAP2 II 40/230 TNS	660175	D.71
NDFS4 10/30	584032	B.69	PULSARC1620230A	685847	D.23	REC2 DPCA100B32/030	677178	C.17	SAP2 II 40/230 TNSC	660176	D.71
NDFS4 30/60	584037	B.69	PULSARC1620240A	685848	D.23	REC2 DPCA100B32/300	677184	C.17	SAP2 II 40/230 TT	660171	D.71
NDP2 10/30	585014	B.69	PULSARC162024A	685851	D.23	REC2 DPCA100B40/030	677179	C.17	SAP2 II 40/230 TTC	660172	D.71
NDP2 30/60	585019	B.69	PULSARC162048A	685852	D.23	REC2 DPCA100B40/300	677185	C.17	SAP2II40175	660615	D.75
NDP2 5/5	585008	B.69	PULSARC162230A	685853	D.23	REC2 DPCA100C10/030	677150	C.17	SAP2II40175C	660617	D.75
NDP4 10/30	585030	B.69	PULSARC162240A	685854	D.23	REC2 DPCA100C10/300	677156	C.17	SAP2II40320	660616	D.75
NDPS2 10/30	585013	B.69	PULSARC3210008A	685855	D.23	REC2 DPCA100C16/030	677151	C.17	SAP2II40320C	660618	D.75
NDPS2 30/60	585018	B.69	PULSARC3210012A	685856	D.23	REC2 DPCA100C16/300	677157	C.17	SAP3 I+II 12.5 TNC	660147	D.70
NDPS4 10/30	585029	B.69	PULSARC3210024A	685857	D.23	REC2 DPCA100C20/030	677152	C.17	SAP3 I+II 12.5 TNC C	660148	D.70
NDPS4 30/60	585035	B.69	PULSARC3210048A	685858	D.23	REC2 DPCA100C20/300	677158	C.17	SAP3 II 20/400 TNC	660181	D.71
PBS	672572	C.9	PULSARC3210230A	685859	D.23	REC2 DPCA100C25/030	677153	C.17	SAP3 II 20/400 TNCC	660182	D.71
PLC/CTX SP	686059	D.23	PULSARC3210240A	685860	D.23	REC2 DPCA100C25/300	677159	C.17	SAP3 II 40/400 TNC	660179	D.71
PLS / CTX SP	686069	A.78	PULSARC3220008A	685861	D.23	REC2 DPCA100C32/030	677154	C.17	SAP3 II 40/400 TNCC	660180	D.71
PLS + / CTX + SP	666499	D.9	PULSARC3220012A	685862	D.23	REC2 DPCA100C32/300	677160	C.17	SAP3II30750	660624	D.75
PLT+ASUNI16A1CO	685996	D.31	PULSARC3220024A	685863	D.23	REC2 DPCA100C40/030	677155	C.17	SAP3II30750C	660626	D.75
PLT+MF230V16A1CO	685993	D.31	PULSARC3220230A	685864	D.23	REC2 DPCA100C40/300	677161	C.17	SAP3II40175	660619	D.75
PLT+MFUNI16A1CO	685994	D.31	PULSARC3220240A	685865	D.23	REC2 DPCA100C10/030	677162	C.17	SAP3II40175C	660621	D.75
PLT+MFUNI8A3CO	685995	D.31	PULSARC3230008A	685867	D.23	REC2 DPCA100C10/300	677168	C.17	SAP3II40320	660620	D.75
PULSAR SC 1-15 16A 1M	687474	D.24	PULSARC3230012A	685868	D.23	REC2 DPCA100C16/030	677163	C.17	SAP3II40320C	660622	D.75
PULSAR1610008A	685779	D.22	PULSARC3230024A	685869	D.23	REC2 DPCA100C16/300	677169	C.17	SAP4 I+II 12.5 TNS	660152	D.70
PULSAR1610012A	685780	D.22	PULSARC3230048A	685870	D.23	REC2 DPCA100C20/030	677164	C.17	SAP4 I+II 12.5 TNS C	660156	D.70
PULSAR1610024A	685781	D.22	PULSARC3230230A	685871	D.23	REC2 DPCA100C20/300	677170	C.17	SAP4 I+II 12.5 TT	660150	D.70
PULSAR1610048A	685782	D.22	PULSARC3230240A	685872	D.23	REC2 DPCA100C25/030	677165	C.17	SAP4 I+II 12.5 TT C	660151	D.70
PULSAR161008A	685787	D.22	PULSARCAP	685885	D.23	REC2 DPCA100C25/300	677171	C.17	SAP4 II 20/400 TNS	660189	D.71
PULSAR1610115A	685783	D.22	PULSARCAPM	685884	D.23	REC2 DPCA100C32/030	677166	C.17	SAP4 II 20/400 TNSC	660190	D.71
PULSAR161012A	685788	D.22	PULSARM	685882	D.23	REC2 DPCA100C32/300	677172	C.17	SAP4 II 20/400 TT	660185	D.71
PULSAR1610230A	685784	D.22	PULSARPU1620024A	685875	D.23	REC2 DPCA100C40/030	677167	C.17			



Cat. No.	Ref. No.	Page
SAP4II40320	660627	D.75
SAP4II40320C	660628	D.75
SAPVII40/1000	660197	D.78
SAPVII40/1000C	660198	D.78
SAPVII40/1500	660496	D.78
SAPVII40/1500C	660497	D.78
SAPVII40/600	660195	D.78
SAPVII40/600C	660196	D.78
SF1/10x38	676558	A.113
SF1/14x51	676564	A.113
SF1/14X51IM	679556	A.113
SF1/22x58	676570	A.113
SF1/22X58IM	679559	A.113
SF1/8x31	676552	A.113
SF1N/10x38	676559	A.113
SF1N/14x51	676565	A.113
SF1N/22x58	676571	A.113
SF2/10x38	676560	A.113
SF2/14x51	676566	A.113
SF2/14X51IM	679557	A.113
SF2/22x58	676572	A.113
SF2/22X58IM	679560	A.113
SF2/8x31	676554	A.113
SF3/10x38	676561	A.113
SF3/14x51	676567	A.113
SF3/14X51IM	679558	A.113
SF3/22x58	676573	A.113
SF3/22X58IM	679561	A.113
SF3/8x31	676555	A.113
SF3N/10x38	676562	A.113
SF3N/14x51	676568	A.113
SF3N/22x58	676574	A.113
SF3N/8x31	676556	A.113
SFN/14x51	676563	A.113
SFN/22x58	676569	A.113
SFN/8x31	676551	A.113
SFU1N/10x38	679590	A.113
SFUL1/10X38	679568	A.119
SFUL1/10X38I	679569	A.119
SFUL1/10X38IS	679571	A.119
SFUL1/10X38S	679570	A.119
SFUL1/30CC	679562	A.115
SFUL1/30ICC	679565	A.115
SFUL1/30J	679583	A.117
SFUL1/60J	679586	A.117
SFUL2/30CC	679563	A.115
SFUL2/30ICC	679566	A.115
SFUL2/30J	679584	A.117
SFUL2/60J	679587	A.117
SFUL3/30CC	679564	A.115
SFUL3/30ICC	679567	A.115
SFUL3/30J	679585	A.117
SFUL3/60J	679588	A.117
TELE L 110	624945	A.41
TELE L 24	624946	A.41
TELE L-1	672573	C.9
TELE L-2	672574	C.9
TELE LT-1	667252	C.11
TELE LT-2	667253	C.11
TELE MP	672580	C.7
Tele REC PLUS Motor	677132	C.20
TELE U-12	672576	C.9
TELE U-230	672575	C.9
TELE U-24	672577	C.9
TELE U-48	672578	C.9
TOR+110	665917	B.63
TOR+28	665297	B.63
TOR+35	665298	B.63
TOR+60	665299	B.63
TR&KT+C3MOD	665918	D.51
TR&KT+C6MOD	665919	D.51
TR+ B 5	665900	D.51
TR+B 8	665901	D.51
TR+B10	665902	D.51
TR+B15	665903	D.51
TR+B16	665904	D.51
TR+B30	665905	D.51
TR+S15	665909	D.51
TR+S25	665910	D.51
TR+S40	665911	D.51
TR+S63	665912	D.51

A

B

C

D

E

F

G

X

* Indicates a trademark of the General Electric Company. All other trademarks are the property of their respective owners.
© 2017 General Electric Company.

The policy of GE is one of continuous improvement. The right is reserved to alter the design or any structural details of the products at any time without giving notice.
June 2017 - GE Energy Connections



Visit ex.geindustrial.com and click on

Product Selector

Product Selector

A

B

C

D

E

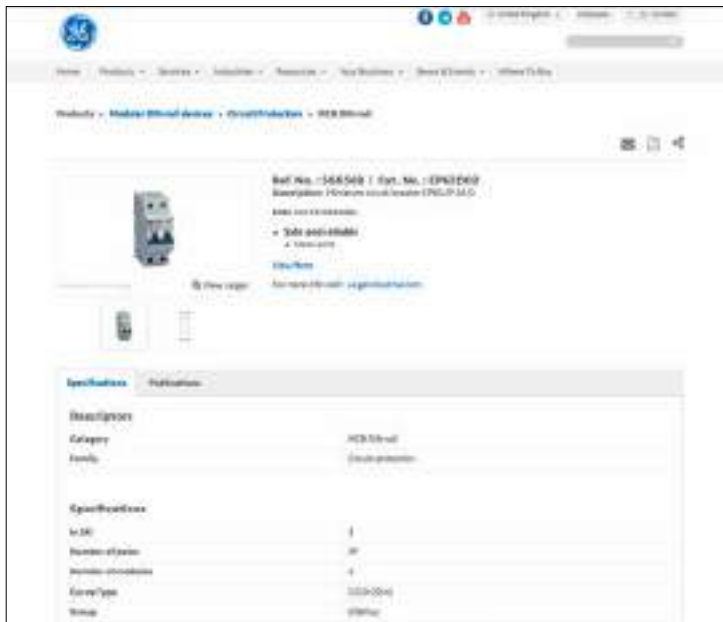
F

G

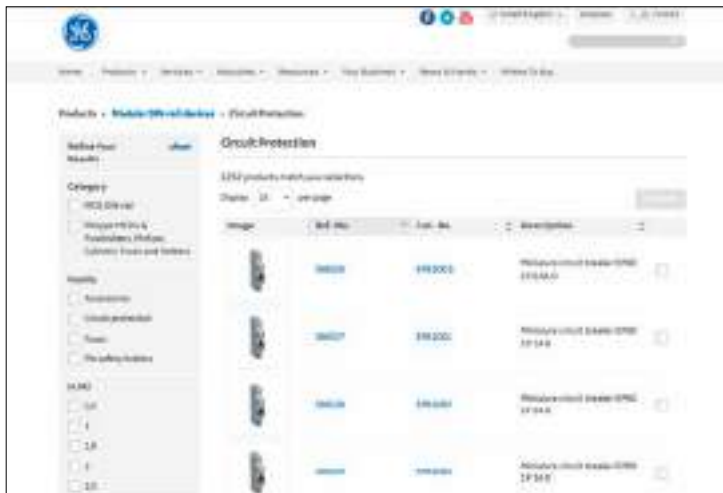
X



- All product info available in one central place
- All product info is available to download, print or e-mail
- Always the latest up-to-date info



- Use the **Quick-search** using a **part number** or **keyword**
- Find a product by using the **parametric search**, simply enter the technical characteristics you are looking for
- **Compare** up to 4 products and view the technical data and accessories on a single page
- **High resolution images** are available by clicking on the small product image
- Product pages contain all available data: **technical specifications, dimensional drawings, product descriptions, ...**
- **CAD drawings** are available for download into product pages
- The data also displays the **available functions and accessories** for each product



High resolution images available



Since Thomas Edison patented the world's first circuit breaker, Industrial Solutions has been transforming the future of electrification. We design electrical solutions at the crossroads of digital and industrial – smart, rugged and equipped to control electricity from the grid to its point of use. Every day, we partner with our customers to solve their toughest energy challenges and reimagine industry in a way that only the world's digital industrial company can.

Belgium

GE Industrial Belgium
Nieuwevaart 51
B-9000 Gent
Tel. +32 (0)9 265 21 11

Finland

GE Industrial Solutions
Kuortaneenkatu 2
FI-00510 Helsinki
Tel. +358 (0)10 394 3760

France

GE Industrial Solutions
204, Rue du Rond-Point du Pont de Sèvres
F-92100 Boulogne-Billancourt
Tel. +33 (0)800 912 816

Germany

GE Industrial Solutions
Robert-Bosch Str. 3
D-50354 Hürth-Efferen
Tel. +49 (0) 2233/ 9719-0

Hungary

GE Hungary Kft.
Váci ut 81-83.
H-1139 Budapest
Tel. +36 1 447 6050

Italy

GE Industrial Solutions
Centro Direzionale Colleoni
Via Paracelso 16
Palazzo Andromeda B1
I-20864 Agrate Brianza (MB)
Tel. +39 039 637 371

Netherlands

GE Industrial Solutions
Parallelweg 10
NL-7482 CA Haaksbergen
Tel. +31 (0)53 573 03 03

North Africa

General Electric International, sq Inc. (Succursale)
Crystal Building 3,
3rd Floor, Marina Casablanca,
20050 Casablanca, Morocco
Tel. +212 529 025 502

Norway

GE Industrial Solutions
Drammensveien 165
0277 Oslo
Tel. +47 (0)8 001 72 56

Poland

GE Power Controls
Ul. Towarowa 25A, lp
00-869 Warszawa
Tel. +48 22 520 53 53

Rudawka 96

43-382 Bielsko-Biała
Tel. +48 33 828 62 33

Russia

GE Industrial Solutions
27/8, Elektrozavodskaya street
Moscow, 107023
Tel. +7 495 937 11 11

South Africa

GE Industrial Solutions
Unit 4, 130 Gazelle Avenue
Corporate Park Midrand 1685
P.O. Box 76672 Wendywood 2144
Tel. +27 11 238 3000

Spain

GE POWER CONTROLS IBÉRICA, S.L.
Calle Miño 122 Naves E-F
Polígono Industrial Santa Margarita
08223 Terrassa (Barcelona)
Tel. +34 900 993 625

Sweden

GE Industrial Slutions
Vendevägen 89
SE-182 32 Danderyd
Tel. +46 (0)20 79 16 70

United Arab Emirates

GE Industrial Solutions
Injaz Building, 3rd Floor
Dubai Internet City
PO Box 11549, Dubai
Tel. +971 4 4546912

United Kingdom

GE Industrial Solutions
2 The Arena, Downshire Way
Bracknell, Berkshire
RG12 1PU
Tel. +44 (0)800 587 1239

