

Description

Single and two pole magnetic circuit breakers with trip-free mechanism and push/pull on/off manual actuation. A choice of fast magnetic only or hydraulically delayed switching characteristics (S-type MO or HM CBE to EN 60934) ensures suitability for a wide range of applications. Convenient threadneck panel or plug-in mounting, and with a white push button indicator band showing clearly the tripped/off position. Available with auxiliary contacts (1 x N/O, 1 x N/C) for status signalling and fitted with an unprotected shunt tap terminal as standard. Approved to CBE standard EN 60934 (IEC 60934).

Typical application

Control equipment, communications systems, power semiconductors.

Standard current ratings and typical internal resistance values

Current rating (A)	Internal resistance (Ω) per pole		
	curve -F4	curves -E1/H1	curves -H2/R2
0.02	583	2441	2449
0.05	94	376	365
0.08	35.8	148	144
0.1	23	94	84
0.15	9.9	39	38
0.2	5	30.5	22.4
0.3	2.44	9.9	9.7
0.5	0.79	3.16	3.1
0.75	0.39	1.55	1.51
1	0.25	0.79	0.77
1.25	0.15	0.58	0.56
1.5	0.10	0.37	0.36
1.75	0.083	0.30	0.29
2	0.059	0.20	0.24
2.5	0.044	0.146	0.138
3	0.028	0.10	0.099
4	< 0.02	0.059	0.057
5	< 0.02	0.040	0.038
6	< 0.02	0.026	0.026
8	< 0.02	< 0.02	< 0.02
10	< 0.02	< 0.02	< 0.02
12	< 0.02	< 0.02	< 0.02
15	< 0.02	< 0.02	< 0.02
16	< 0.02	< 0.02	< 0.02
20	< 0.02	< 0.02	< 0.02
25	< 0.02*	< 0.02	< 0.02
30	< 0.02*	< 0.02	< 0.02
40		< 0.02	
50		< 0.02	

* 50 % ON duty / 60 min.

Approvals

Authority	Voltage ratings	Current ratings
VDE (EN 60934)	3 AC 415 V; AC 240 V; DC 80 V	0.02...30 A
	DC 80 V	0.02...50 A 1-pole
UL 1077, CSA	DC 80 V	0.02...50 A 1/2-pole
	3 AC 250 V; AC 250 V	0.02...30 A 1,2-pole
CCC	3 AC 415 V; AC 240 V	0.02...30 A
	DC 80 V	0.02...50 A 1/2-pole



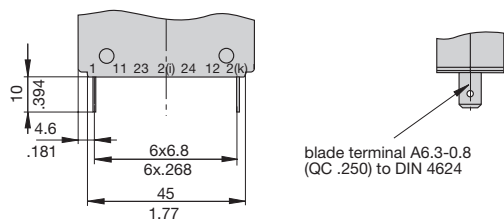
Technical data

For further details please see chapter: Technical Information

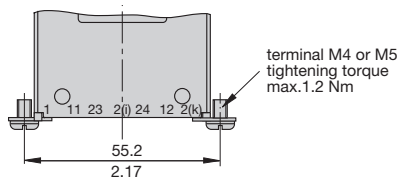
Voltage rating	3 AC 415 V; AC 240 V, 50/60 Hz; DC 80 V (higher DC voltages to special order)		
Current ratings	0.02...50 A single pole (40+50 A DC only) 0.02...30 A double pole		
Auxiliary circuit	1 A, AC 240 V/DC 65 V 0.5 A, DC 80 V		
Typical life			
3 AC 415 V, AC 240 V:	0.02...30 A	6,000 operations at 1 x I _N , inductive 10,000 operations at 1 x I _N , resistive	
DC 80 V:	0.02...25 A	6,000 operations at 1 x I _N , inductive	
	0.02...30 A	10,000 operations at 1 x I _N , resistive	
	40 + 50 A	5,000 operations at 1 x I _N , resistive	
Ambient temperature	-40...+85 °C (-40...+185 °F)		
Insulation co-ordination (IEC 60664 and 60664A)	rated impulse withstand voltage 2.5 kV reinforced insulation in operating area	pollution degree 2	
Dielectric strength (IEC 60664 and 60664A)	test voltage		
operating area	AC 3,000 V		
pole to pole (2 + 3-pole)	AC 1,500 V		
main to auxiliary circuit	AC 1,500 V		
aux. circuit 11-12/23-24	AC 1,000 V		
switching to trip circuit (-X)	AC 1,500 V		
Insulation resistance	> 100 MΩ (DC 500 V)		
Interrupting capacity IEC 60934 - test sequence E	4 x I _N at AC; 4 x I _N at DC		
Interrupting capacity (UL 1077)	I _N	0.02...20 A	25...30 A
	AC:		
	1-pole	AC 250 V/3,500A	AC 250 V/3,500A
	2-pole	AC 250 V/3,500A	AC 250 V/5,000A
	DC:		
	1-pole	0.02...50 A	DC 80 V/3,500 A
	2-pole	0.02...30 A	DC 80 V/3500 A
Degree of protection (IEC 60529/DIN 40050)	operating area IP40 terminal area IP00		

Terminal design

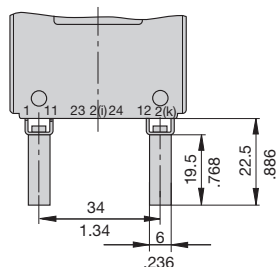
Terminal design -P1



Terminal design -K4

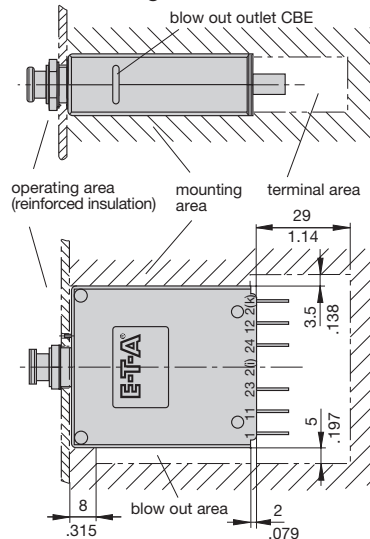


Terminal design -R1

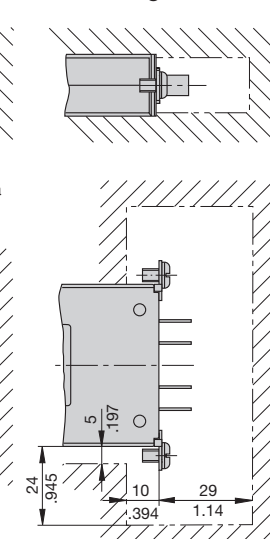


Installation drawings

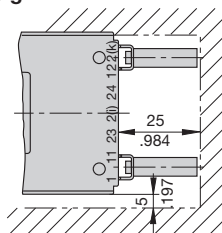
Terminal design -P



Terminal design -K

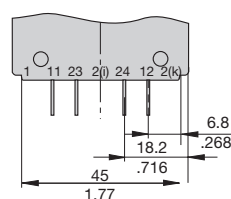


Terminal design -R

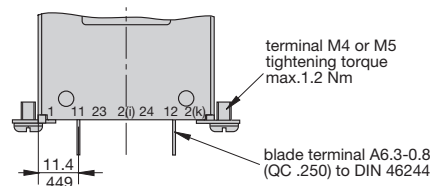


Auxiliary contact terminal design

1 N/O, 1 N/C

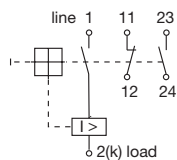


1 N/C

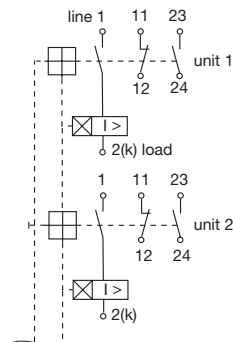


Internal connection diagrams

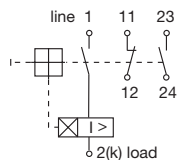
1-pole, protected magnetically



double pole



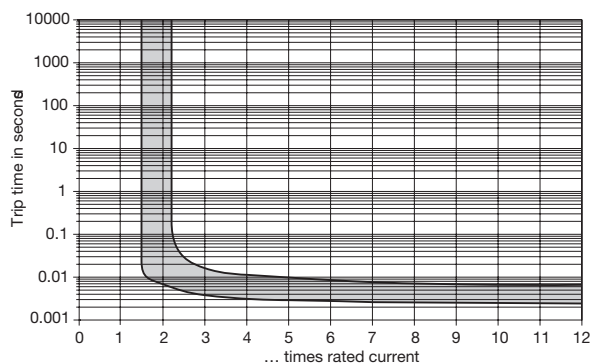
1-pole, protected hydraulic-magnetically



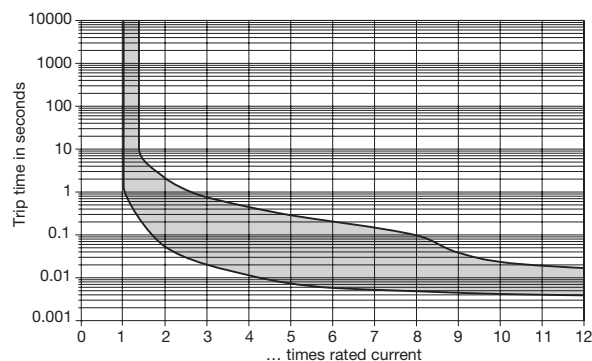
Typical time/current characteristics

Curve F4 for DC, magnetic (undelayed)

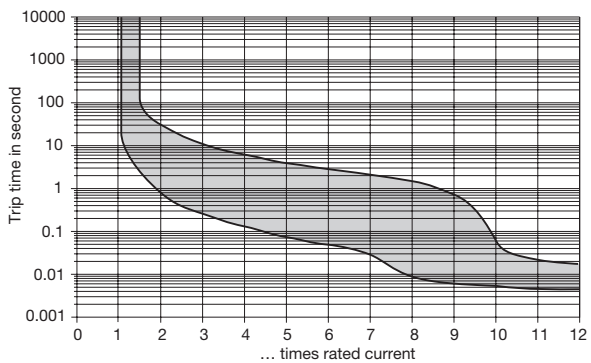
($I_N > 20$ A, 50% ON period, 60 min.) at +23 °C / +73.4 °F



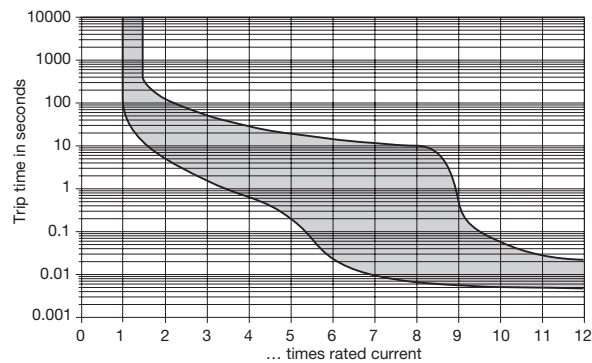
Short delay curves E1 for DC hydraulic-magnetic



Medium delay curves H1 for DC and H2 for AC 50/60 Hz, hydraulic-magnetic



Long delay curves R2 for AC 50/60 Hz, hydraulic-magnetic



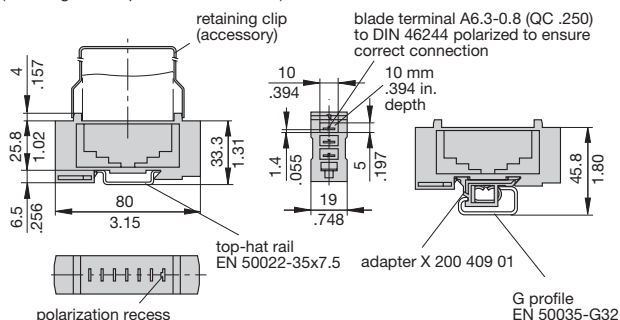
N.B. Curves E1, H1, H2 and R2 will only be maintained if the escutcheon is mounted on a vertical surface.

Other curves upon request (e. g. impulse delay).

Accessories

Socket 18-P10-Si

(for ratings >16 A please contact E-T-A)



Polarized socket with adapter 18-P10-Si-20025

blade terminal A6.3-0.8 (QC .250) to DIN 46244 polarized to ensure correct connection

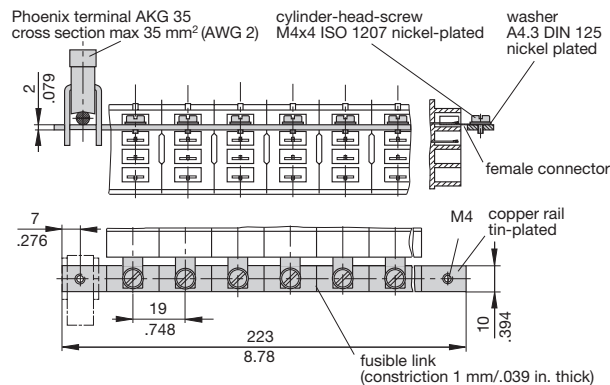
Bus bar (10-way) (supplied as a complete package)

for type 18 socket

(for max. 100 A continuous load), more positions available on request

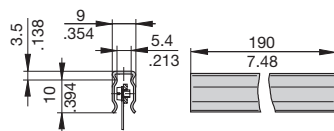
X 211 158 01 with terminal

X 211 158 02 without terminal



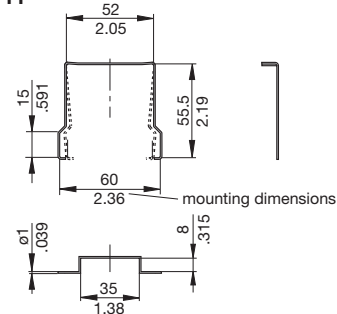
Insulated sleeving for bus bars

Y 303 824 11



Retaining clip for socket 18-P10-Si

Y 300 579 11



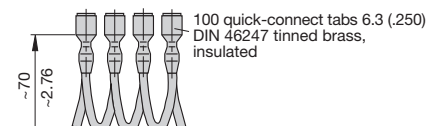
Connector bus link -P10

X 210 588 01/1.5 mm² (AWG 16), brown (up to 13 A max. load)

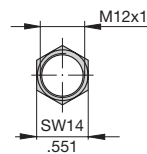
X 210 588 02/2.5 mm² (AWG 14), black (up to 20 A max. load)

X 210 588 03/2.5 mm² (AWG 14), red (up to 20 A max. load)

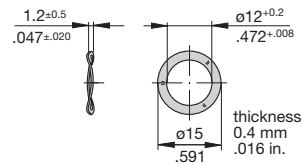
X 210 588 04/2.5 mm² (AWG 14), blue (up to 20 A max. load)



Hex nut Y 300 116 02



Spring washer Y 300 118 03

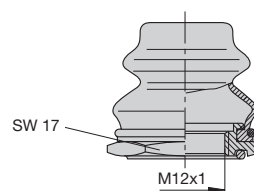


Accessories for push button

Splash cover with hex nut and O ring (IP66 and IP67)

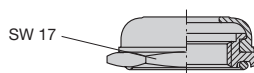
X 200 801 08 (nickel plated hex nut M12x1, splash cover transparent)

X 200 801 03 (black finish hex nut M12x1, splash cover black)



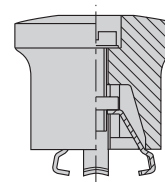
Splash seal, black, hex nut and O ring (IP54)

X 200 802 01 (nickel plated hex nut M12x1, splash seal black)

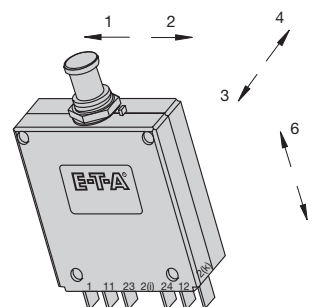


Actuator extension

X 200 803 01 (black button)



Shock directions / Mounting attitudes



This is a metric design and millimeter dimensions take precedence ($\frac{\text{mm}}{\text{inch}}$)

All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved. Product markings may not be exactly as the ordering codes. Errors and omissions excepted.