

## 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. Reliable tripping with even the smallest overcurrents. Approved to CBE standard EN 60934 (IEC 60934).

## Typical application

Railway vehicles, telecommunications, process control.

## Standard current ratings and typical internal resistance values

Current rating (A)	Internal resistance ( $\Omega$ ) per pole	
	curve -F4	curves -E1/H1/R1
0.02	583	2441
0.05	94	376
0.08	34	148
0.1	23	94
0.15	25.1	39
0.2	14.6	30.5
0.3	6.32	9.9
0.5	0.79	3.16
0.75	0.39	1.55
1	0.25	0.79
1.5	0.27	0.37
2	0.059	0.20
2.5	0.044	0.146
3	0.028	0.10
4	0.04	0.059
5	< 0.02	0.040
6	< 0.02	0.026
8	< 0.02	< 0.02
10	< 0.02	< 0.02
12	< 0.02	< 0.02
15	< 0.02	< 0.02
16	< 0.02	< 0.02
20	< 0.02	< 0.02
25	< 0.02*	< 0.02
30	< 0.02*	< 0.02
40		< 0.02
50		< 0.02

\* 50 % ON duty / 60 min.



## Technical data

For further details please see chapter: Technical Information

Voltage rating	DC 110 V $\pm$ 25 %	
Current ratings	0.02...50 A single pole 0.02...30 A 2-pole	
Auxiliary circuit	AC 240 V/DC 65 V 1 A DC 110 V $\pm$ 25 % 0,3 A	
Typical life	DC 110 V: 0.02...35 A 10,000 operations at 1 x I <sub>N</sub> 40 + 50 A 3,000 operations at 1 x I <sub>N</sub> 0.02...30 A 5,000 operations at 2 x I <sub>N</sub>	
Ambient temperature	-40...+85 °C (-40...+185 °F)	
Insulation co-ordination (IEC 60664 and 60664A)	rated impulse withstand voltage 2.5 kV	pollution degree 2 reinforced insulation in operating area
Dielectric strength (IEC 60664 and 60664A)	test voltage	
	operating area	AC 3,000 V
	pole to pole (2-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 M $\Omega$ (DC 500 V)	
Interrupting capacity I <sub>cn</sub>	1,000 A	
Degree of protection (IEC 60529/DIN 40050)	operating area IP40 terminal area IP00	
Vibration		
	with button down:	10 g (57-2000 Hz), $\pm$ 0.76 mm (10-57 Hz) at 0.9 x I <sub>N</sub>
	other mounting planes:	10 g (57-2000 Hz) at I <sub>N</sub> to IEC 60068-2-6, test Fc 10 frequency cycles/axis
Shock	100 g (11 ms) at 1 x I <sub>N</sub> , directions 1,2,3,4,5 100 g (11 ms) at 0.8 x I <sub>N</sub> , direction 6 to IEC 60068-2-27, test Ea	
Corrosion	96 hours at 5 % salt mist, to IEC 60068-2-11, test Ka	
Humidity	240 hours at 95 % RH to IEC 60068-2-78, test Cab	
Mass	approx. 70 g per pole	

## Ordering information

### Type No.

8340 Magnetic push/pull circuit breaker

### Mounting

G threadneck panel mounting

### Threadneck design

2 M12x1

### Number of poles (main current paths)

1 single pole, protected

2 two pole, protected

5 two pole, protected on one pole only

### Panel hardware

0 without panel hardware

1 with hex nut M12x1 and washer 12/15

### Terminal design

P1 blade terminals A6.3-0.8 mm (QC.250)

K3 screw terminals M4 recommended for  $I_N > 20$  A

K4 screw terminals M5 recommended for  $I_N > 40$  A

R1 round connectors  $\phi 6$

X1 blade terminals A6.3-0.8 mm (QC.250), separate switching and trip circuit

### Characteristic curve

F4 instantaneous trip: magn.  $1.5-2.2 \times I_N$

E1 short delay: magn.-hydr.  $1.01-1.4 \times I_N$

H1 medium delay: magn.-hydr.  $1.01-1.4 \times I_N$

R1 long delay: magn.-hydr.  $1.01-1.5 \times I_N$

### Actuator colour

A black with white trip indicator band

### Actuator marking

4 rated current

(legible with location pin above) standard

7 rated current

(legible with location pin below)

### Auxiliary contacts

H0 without auxiliary contacts

H1 with auxiliary contacts

H2 with auxiliary contacts

on pole 1 only (2- and 3-pole types)

### Auxiliary contact function

1 one each N/O and N/C

2 1 pair N/O (23/24)

3 1 pair N/C (11/12)

### Auxiliary contact terminal design

1 blade terminals A6.3-0.8 mm

### Voltage rating

D DC 110 V

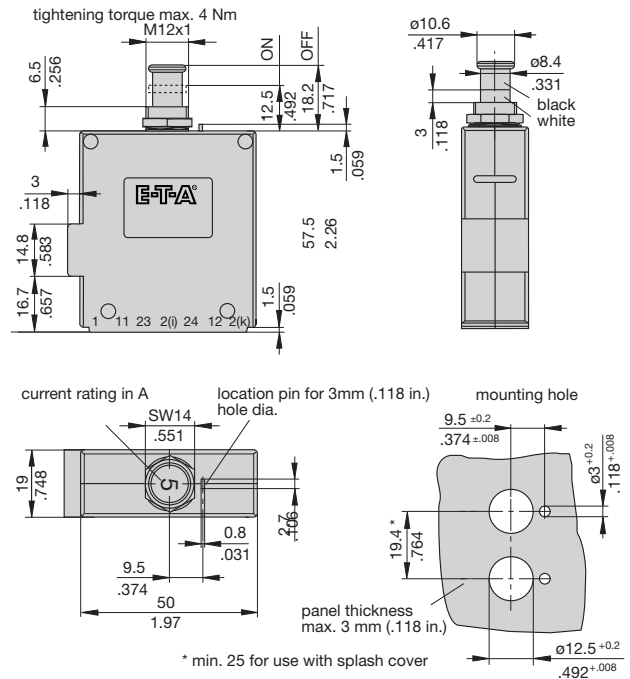
E DC 110 V + higher flammability rating

### Current ratings

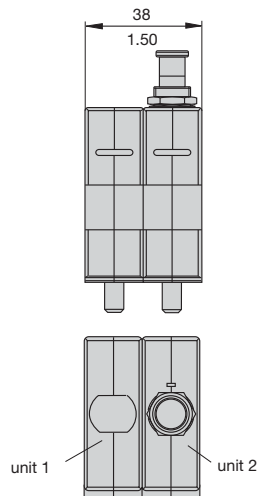
0.02...50 A

8340 - G 2 1 1 - P1 H1 - A 4 H1 1 1 D - 8 A ordering example

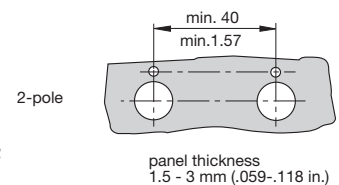
## Dimensions (1-pole)



## 2-pole

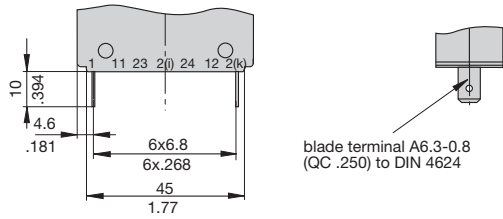


### Cut-out dimensions:

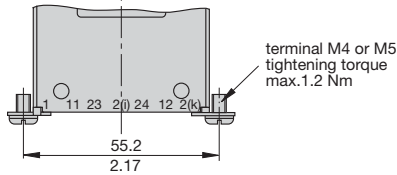


## Terminal design

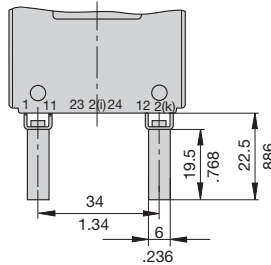
### Terminal design -P1



### Terminal design -K3/-K4

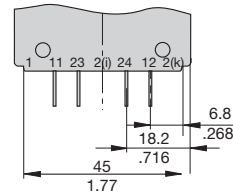


### Terminal design -R

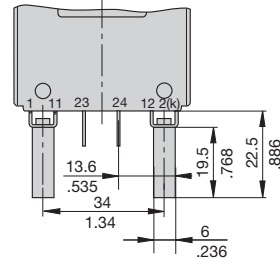


## Auxiliary contact terminal design

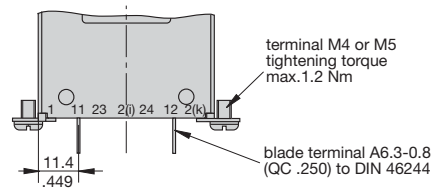
### 1 N/O, 1 N/C



### 1 N/O

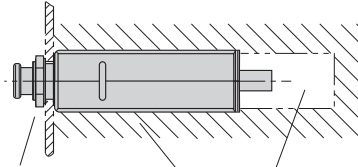


### 1 N/C

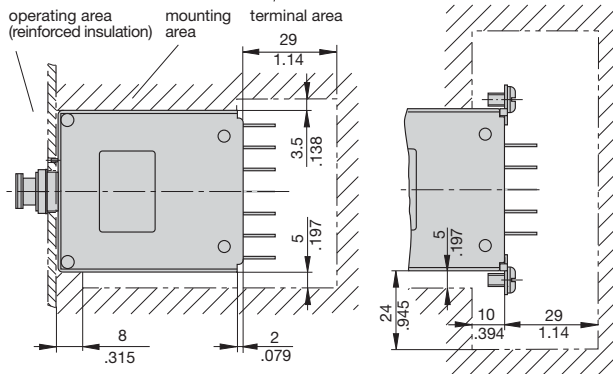
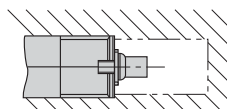


## Installation drawings

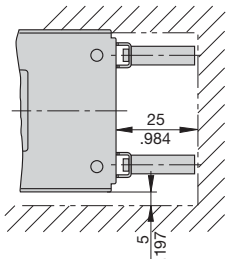
### Terminal design -P



### Terminal design -K

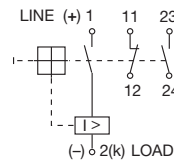


### Terminal design -R

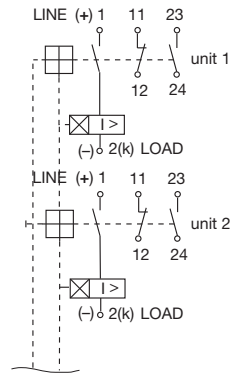


## Internal connection diagrams

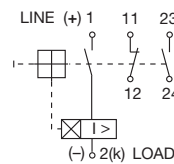
### 1-pole, protected magnetically



### 2-pole



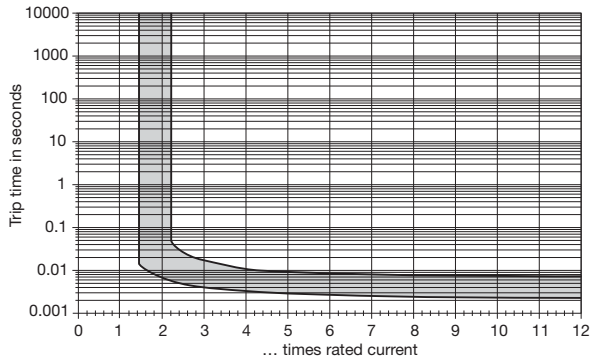
### 1-pole, protected hydraulic-magnetically



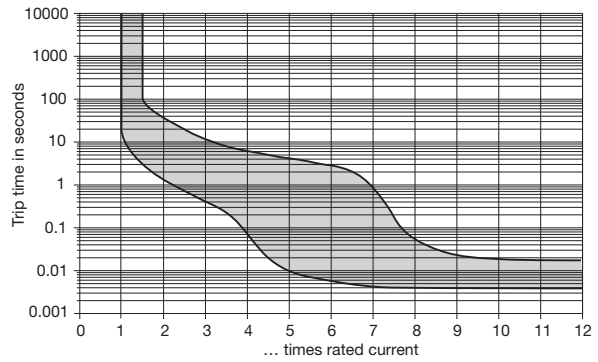
This is a metric design and millimeter dimensions take precedence ( $\frac{\text{mm}}{\text{inch}}$ )

## Typical time/current characteristics

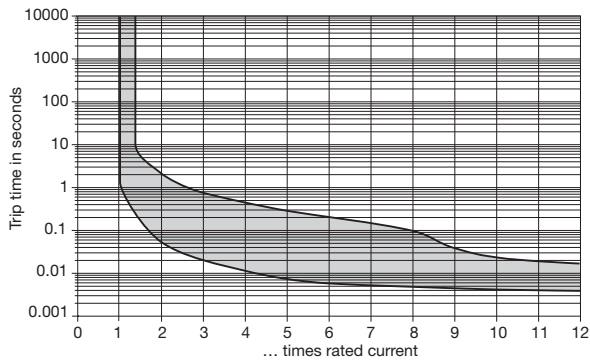
**Curve F4, magnetic (undelayed)**  
at +23 °C / +73.4 °F



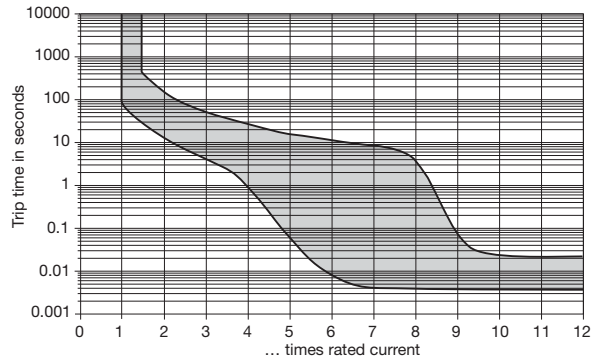
**Medium delay curve H1, hydraulic-magnetic**



**Short delay curve E1, hydraulic-magnetic**



**Long delay curve R1, hydraulic-magnetic**



**N.B.** Curves E1, H1 and R1 will only be maintained if the escutcheon is mounted on a vertical surface.

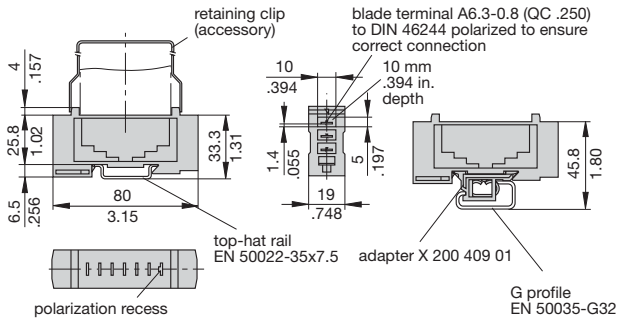
**Other curves upon request (e.g. impulse delay).**

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## Accessories

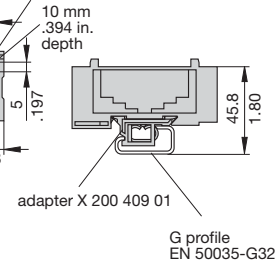
### Socket 18-P10-Si

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



### Polarized socket with adapter 18-P10-Si-20025

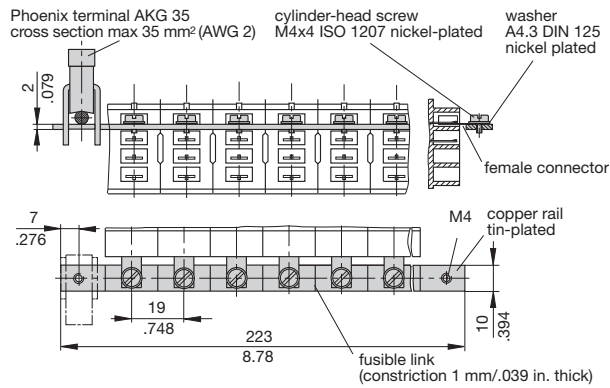
blade terminal A6.3-0.8 (QC .250) to DIN 46244 polarized to ensure correct connection



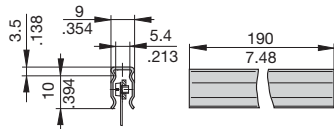
### Bus bar (10-way) (supplied as a complete package) for type 18 socket

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

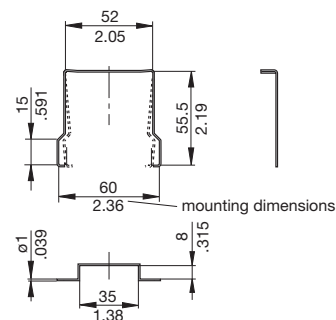
X 211 158 01 with terminal  
X 211 158 02 without terminal



### Insulated sleeving for bus bars Y 303 824 11

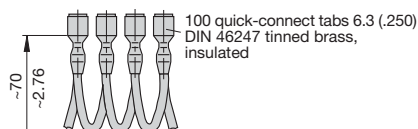


### Retaining clip for socket 18-P10-Si Y 300 579 11

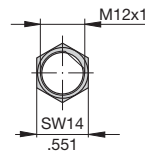


### Connector bus link -P10

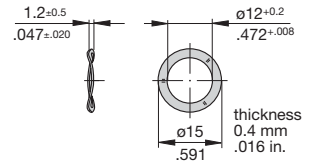
X 210 588 01/1.5 mm<sup>2</sup> (AWG 16), brown (up to 13 A max. load)  
X 210 588 02/2.5 mm<sup>2</sup> (AWG 14), black (up to 20 A max. load)  
X 210 588 03/2.5 mm<sup>2</sup> (AWG 14), red (up to 20 A max. load)  
X 210 588 04/2.5 mm<sup>2</sup> (AWG 14), blue (up to 20 A max. load)



### Hex nut Y 300 116 02



### Spring washer Y 300 118 03

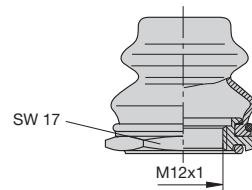


### Accessories for push button

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

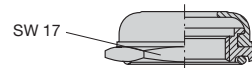
X 200 801 08 (nickel plated hex nut M12x1, splash cover transparent)

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



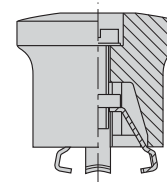
Splash seal, black, hex nut and O ring (IP54)

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

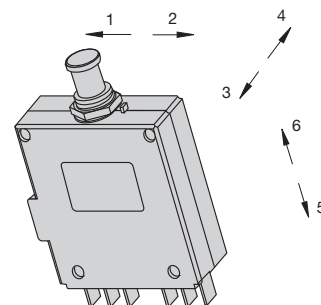


### Actuator extension

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.