

Description

Single pole thermal-magnetic circuit breaker with tease-free, trip-free, snap action mechanism and two button operation (M-type TM CBE to EN 60934). Designed for plug-in mounting with E-T-A sockets 17-P10-Si, 23-P10-Si, 63-P10-Si; or panel mounting using E-T-A clips. Featuring an unprotected shunt tap terminal and optional auxiliary contacts. Type 3900 offers lower internal resistance values and is fitted as standard with auxiliary contacts and an intermediate reset position in which all contacts are isolated. Approved to CBE standard EN 60934 (IEC 60934).

Typical applications

Process control systems, instrumentation, communications systems, rail vehicles.

Ordering information

Type No.

3600 standard version with shunt tap terminal -3

3900 low-resistance version

Terminal design

P10 blade terminals 6.3-0.8 (QC .250)

Auxiliary contacts (3900: intermediate position as standard)
Si with blade terminals 6.3-0.8, one each NO/NC,

Current ratings

0.05...16 A (type 3600)

0.05...10 A (type 3900)

3600 - P10 - Si - 10 A ordering example

The exact part number required can be built up from the table of choices shown above. Ordering references for optional features should be omitted if not required.

Please be informed that we have minimum ordering quantities to be observed.

Preferred types

Preferred types	Standard current ratings (A)						
	0.5	1	2	4	8	10	16
3600-P10-Si-	x	x	x	x	x	x	x
3900-P10-Si-	x	x	x	x			

Standard current ratings and typical internal resistance values

Current ratings (A)	Internal resistance (Ω)		Current ratings (A)	Internal resistance (Ω)	
	3600	3900		3600	3900
0.05	447	211	3	0.19	0.054
0.1	131	48	4	0.090	0.035
0.2	40	12.4	5	0.061	0.025
0.3	19.3	5.4	6	0.041	≤ 0.02
0.4	10.4	3.1	7	0.034	≤ 0.02
0.5	7.1	2.0	8	≤ 0.02	≤ 0.02
0.6	4.3	1.32	10	≤ 0.02	≤ 0.02
0.8	2.5	0.76	12	≤ 0.02	
1	1.67	0.49	14	≤ 0.02	
1.5	0.61	0.21	15	≤ 0.02	
2	0.38	0.101	16	≤ 0.02	
2.5	0.24	0.078			



3600
standard type

3900
low-resistance type

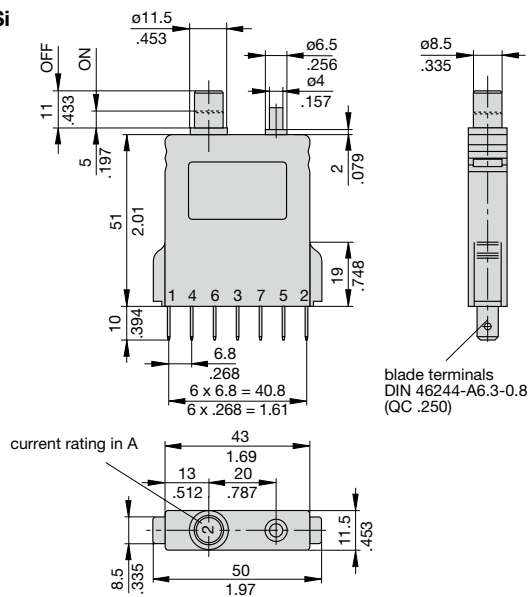
Technical data

For further details please see: http://www.e-t-a.de/ti_e

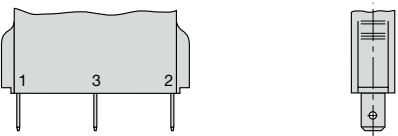
Voltage rating	AC 240 V, 50/60 Hz; DC 65 V (UL: AC 250 V; DC 65 V)		
Current rating range	3600: 0.05...16 A 3900: 0.05...10 A		
Auxiliary circuit	1 A, AC 240 V / DC 65 V min. 10 V/10 mA		
Typical life	5,000 operations at 1 x I _N , inductive 5,000 operations at 2 x I _N , resistive		
Ambient temperature	-30...+60 °C (-22...+140 °F)		
Insulation co-ordination (IEC 60664 and 60664 A)	rated impulse withstand voltage 2.5 kV reinforced insulation in operating area	pollution degree 2	
Dielectric strength (IEC 60664 and 60664A) operating area main/aux. circuit aux. circuit 4-5/6-7	test voltage AC 3,000 V AC 1,500 V AC 840 V		
Insulation resistance	>100 MΩ (DC 500 V)		
Interrupting capacity I _{cn}	3600 0.05...0.8 A 1...2 A 2.5...16 A	3900 0.05...0.2 A 0.3...2 A 2.5...10 A	self-limiting 200 A 400 A
Interrupting capacity (UL 1077) type 3600:	I _N 0.05...16 A 0.05...16 A	U _N AC 250 V DC 80 V	1,000 A 1,000 A
Degree of protection (IEC 60529/DIN 40050)	operating area IP40 terminal area IP00		
Vibration	5 g (57-500 Hz), ± 0.38 mm (10-57 Hz) to IEC 60068-2-6, test Fc 10 frequency cycles/axis		
Shock	25 g (11 ms) 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. 45 g		

Dimensions

-P10-Si

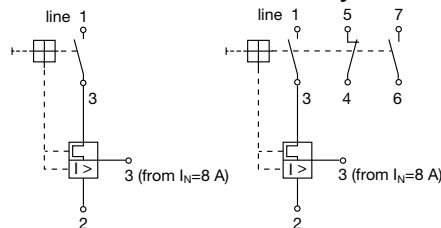


Terminal design -P10

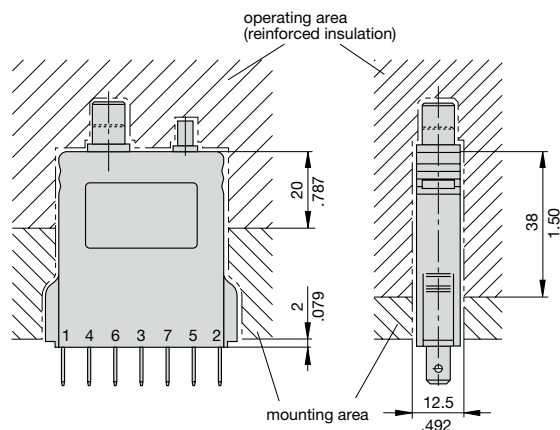


Internal connection diagrams

with shunt terminal (standard) and auxiliary contacts (-Si) only 3600



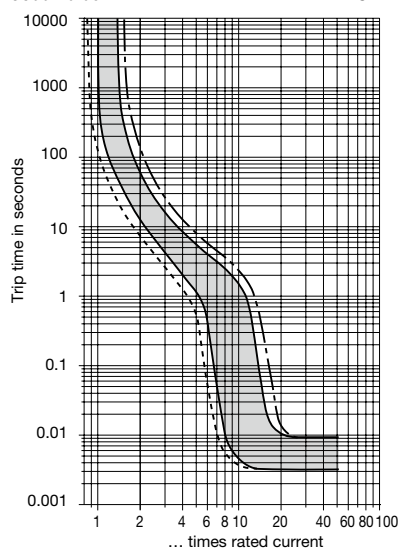
Installation drawing



Typical time/current characteristics

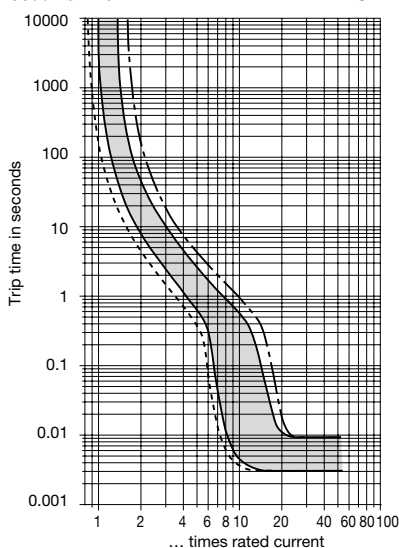
3600 0.05...7 A

AC ¹⁾



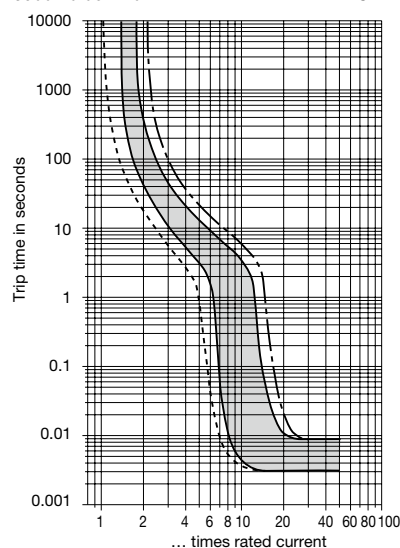
3600 8...16 A

AC ¹⁾



3900 0.05...10 A

DC ²⁾



--- +60 °C
+140 °F

— +23 °C
+73.4 °F

--- -30 °C
-22 °F

¹⁾ Magnetic tripping currents are increased by 20 % on DC supplies.

²⁾ Magnetic tripping currents are decreased by 20 % on AC supplies.

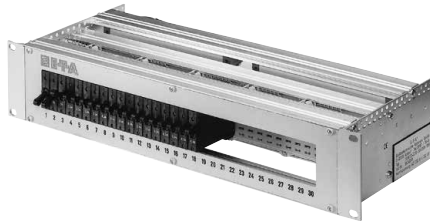
The time/current characteristic curve depends on the ambient temperature prevailing. In order to eliminate nuisance tripping, please multiply the circuit breaker current ratings by the derating factor shown below. See also section Technical information.

Ambient temp. °F	-22	-4	+14	+32	+73.4	+104	+122	+140
°C	-30	-20	-10	0	+23	+40	+50	+60
Derating factor	0.76	0.79	0.83	0.88	1	1.08	1.16	1.24

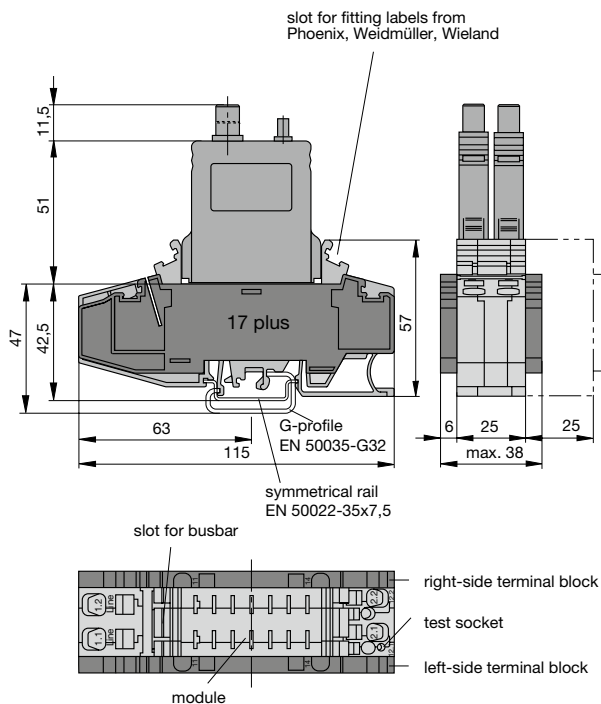
This is a metric design and millimeter dimensions take precedence ($\frac{\text{mm}}{\text{inch}}$)

Accessories

Power-D-Box with sockets pre-wired 19BGT2 2U
for 18, 24 or 30 circuits.
For technical data see product group Power Distribution Systems.



Module 17plus
For technical data see section Power Distribution Systems



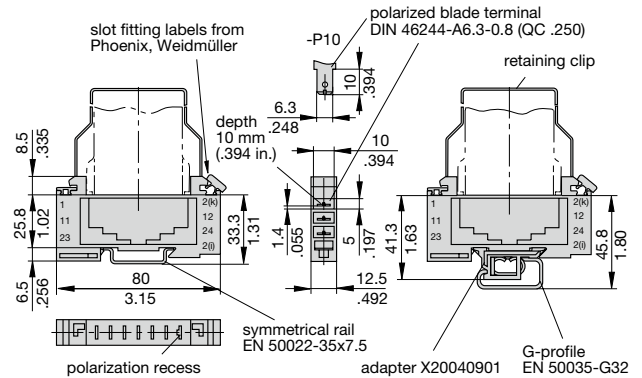
Approvals

Authority	Standard	Voltage ratings	Current ratings
3600:			
VDE	IEC/EN 60934	AC 240 V DC 65 V	0.05...16 A 0.05...16 A
UL	UL 1077	AC 250 V DC 80 V	0.05...16 A 0.05...16 A
CSA	C22.2 No. 235	AC 250 V DC 80 V	0.05...16 A 0.05...16 A
3900:			
VDE	IEC/EN 60934	AC 240 V DC 65 V	0.05...10 A 0.05...10 A

Sockets

17-P10-Si
(up to 16 A max. load)
Retaining clip Y 300 581 11 to special order.

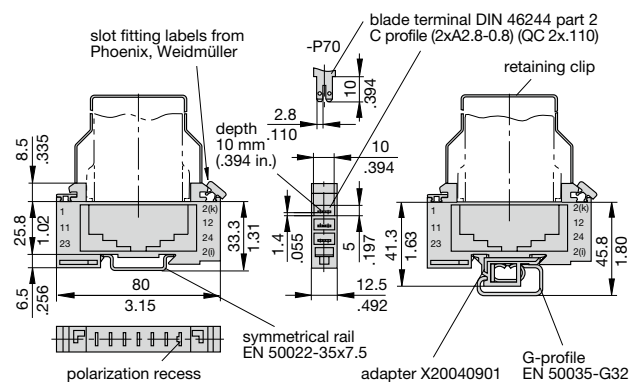
17-P10-Si-20025
mounted with adapter
Retaining clip Y 300 581 11 to special order.



Sockets

17-P70-Si
(up to 16 A max. load)
Retaining clip Y 300 581 11 to special order.

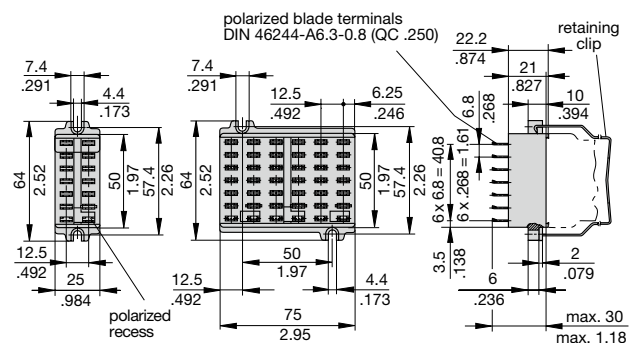
17-P70-Si-20025
mounted with adapter
Retaining clip Y 300 581 11 to special order.



Sockets

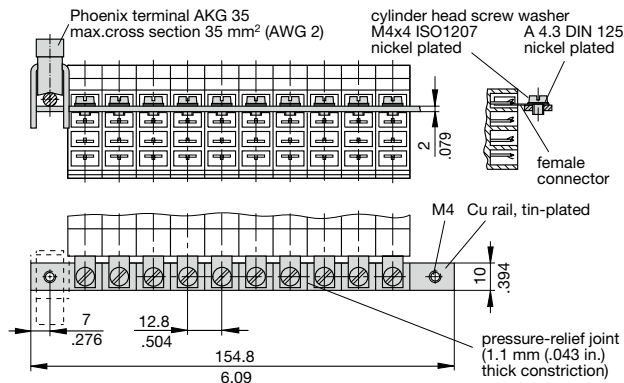
23-P10-Si
(up to 16 A max. load)
Retaining clip Y 300 581 03 to special order.

63-P10-Si

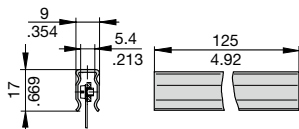


Accessories

Bus bar (10-way) (supplied as a complete package)
for socket 17 (for max. 100 A continuous load)
X 211 157 01 with terminal
X 211 157 02 without terminal
 (more positions available on request)

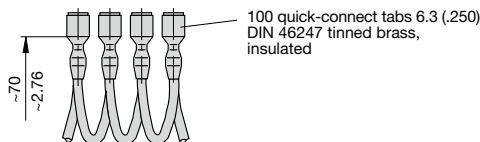


Insulate sleeving for bus bar
Y 303 824 01

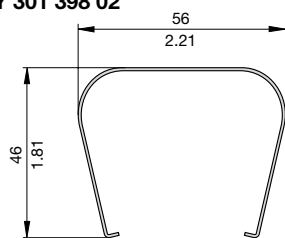


Connector bus links -P10

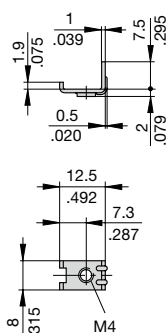
X 210 588 01/ 1.5 mm² (AWG 16), brown up to 13 A max. load
X 210 588 02/ 2.5 mm² (AWG 14), black up to 20 A max. load
X 210 588 03/ 2.5 mm² (AWG 14), red up to 20 A max. load
X 210 588 04/ 2.5 mm² (AWG 14), blue up to 20 A max. load



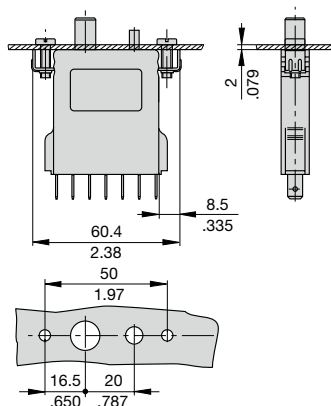
Extraction tool
Y 301 398 02



Mounting clip
Y 300 504 02
 (2 pcs needed per unit)



Installation drawing with
 mounting clips Y 300 504 02



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.