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E-T-A® Thermal-Magnetic Circuit Breaker 3500

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). Featuring a flange for panel mounting and optional auxiliary contacts. Approved to CBE standard EN 60934 (IEC 60934).

Typical applications

Control systems, instrumentation, medical equipment, machine tools, robotics, communications systems.

Ordering information

Type No.	
3500	standard version
Terminal design	
P10	blade terminals 6.3-0.8 (QC .250), tinned
Auxiliary contacts (optional)	
Si	auxiliary contacts, silver plated terminals one each N/O and N/C
Current ratings	
0.05...16 A	
3500 - 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.

Standard current ratings and typical internal resistance values

Current rating (A)	Internal resistance (Ω)	Current rating (A)	Internal resistance (Ω)
0.05	447	3	0.19
0.1	131	4	0.090
0.2	40	5	0.061
0.3	19.3	6	0.041
0.4	10.4	7	0.034
0.5	7.1	8	≤ 0.02
0.6	4.3	10	≤ 0.02
0.8	2.5	12	≤ 0.02
1	1.67	14	≤ 0.02
1.5	0.61	15	≤ 0.02
2	0.38	16	≤ 0.02
2.5	0.24		

Approvals

Authority	Standard	Rated voltage	Current ratings
VDE	IEC/EN 60934	AC 240 V DC 65 V	0.05...16 A 0.05...16 A
UL	UL 1077 C22.2 No 235	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



3500

Technical data

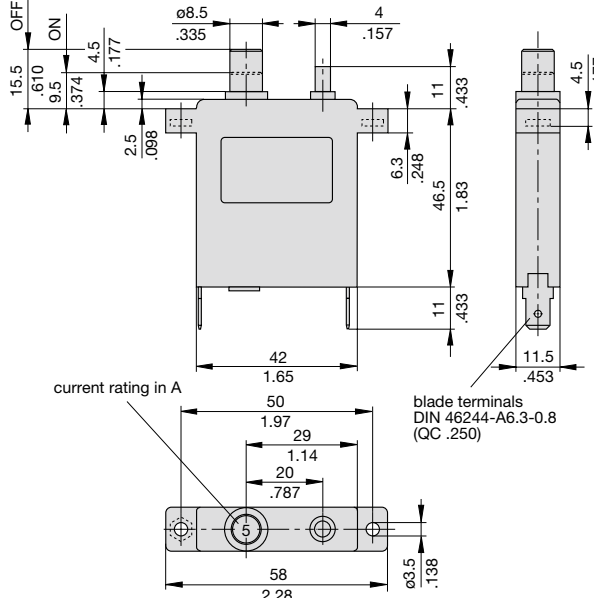
For further details please see chapter: Technical Information

Voltage rating	AC 240 V, 50/60 Hz; DC 65 V (UL: AC 250 V; DC 80 V)		
Current rating range	0.05...16 A		
Auxiliary circuit	1 A, AC 240 V/DC 65 V		
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)	test voltage operating area main/aux. circuit aux. circuit 4-5/6-7	AC 3,000 V AC 1,500 V AC 840 V	
Insulation resistance	> 100 MΩ (DC 500 V)		
Interrupting capacity I _{cn}	0.05...0.8 A 1...2 A 2.5...16 A	self-limiting 200 A 400 A	
Interrupting capacity (UL 1077)	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. 40 g		

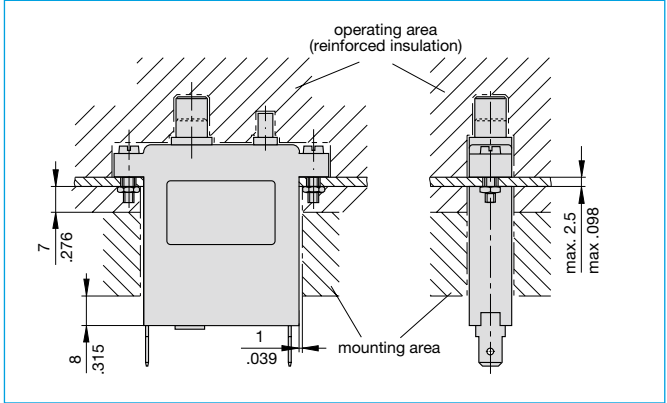
E-T-A Thermal-Magnetic Circuit Breaker 3500

Dimensions

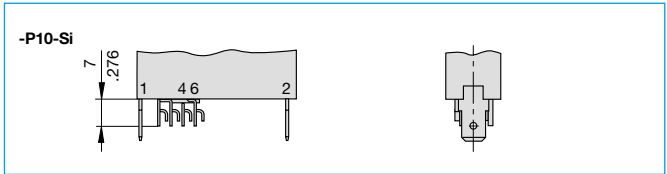
Version -P10



Installation drawing

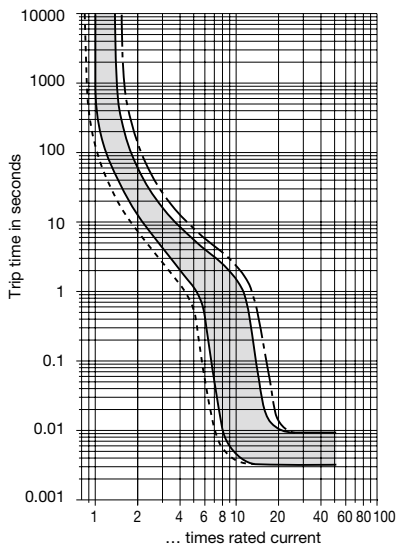


Terminal design

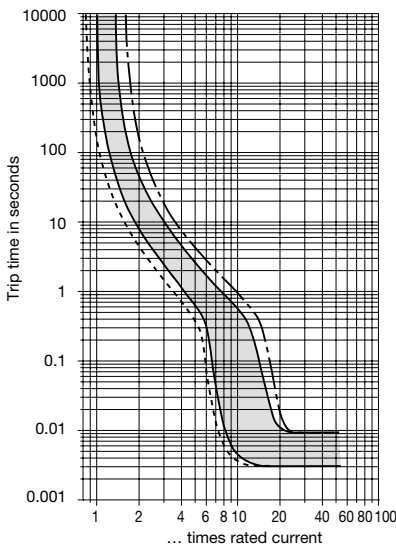


Typical time/current characteristics

3500 0.05...7 A AC¹⁾



3500 8...16 A AC¹⁾



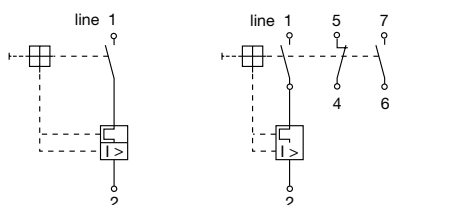
¹⁾ Magnetic tripping currents are increased by 20 % on DC supplies.

--- +60 °C +140 °F ——— +23 °C +73.4 °F - - - -30 °C -22 °F

Ambient temperature °F	-22	-4	+14	+32	+73.4	+104	+122	+140	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.
°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	

Internal connection diagrams

with auxiliary contacts (-Si)



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.