

E-T-A® Thermal Overcurrent Circuit Breaker 1410-F1...

Description

Miniaturised single pole rocker switch/thermal circuit breaker combining ON/OFF switching and extremely fast overload performance in a single component (S-type TO CBE to EN 60934/IEC 934). Under overload conditions an internal neon (filament bulb for low voltages) illuminates to give a clear signal of the tripped status of the mechanism and thereby the cause of power interruption, suffix -B. Alternatively the illumination can be conventionally wired to indicate the ON status of the device, suffix -E. Returning the rocker switch through the OFF position and back ON will reset the mechanism and restore the supply.

Typical applications

Motors, transformers, solenoids, PCBs, hand-held machines, appliances, instrumentation.

Ordering information

Type No.	
1410	snap-in panel mounting type
Mounting	
F	snap-in panel mounting
Size of frame	
1	to fit mounting cut-out 28 x 12.7 mm
Number of poles	
1	single pole, thermally protected
Accessories	
0	without accessories
Terminal design	
P1	blade terminals 2.8-0.8
Characteristic curve	
F1	fast acting
Actuator style	
W	rocker, rounded profile
Actuator colour	
14	red translucent
Actuator markings	
Q	I and 0
Trip/ON illumination	
B	illuminated when tripped
E	illuminated when ON
Voltage range	
2	20-28V marked 24V 35mA
3	90-140V marked 115V <1mA
4	185-275V marked 230V <1mA
Current ratings	
	0.63...8 A

1410 - F 1 1 0 - P1 F1 - W 14 Q E 3 - 2 A ordering example

Standard current ratings and typical internal resistance values

Current rating (A)	Internal resistance (Ω)	Current rating (A)	Internal resistance (Ω)
0.63	1.05	2.5	< 0.1
0.8	1.0	3.15	< 0.1
1	< 1	4	< 0.1
1.5	< 1	5	< 0.1
1.8	< 0.8	6.3	< 0.1
2	< 0.8	8	< 0.1



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Technical data

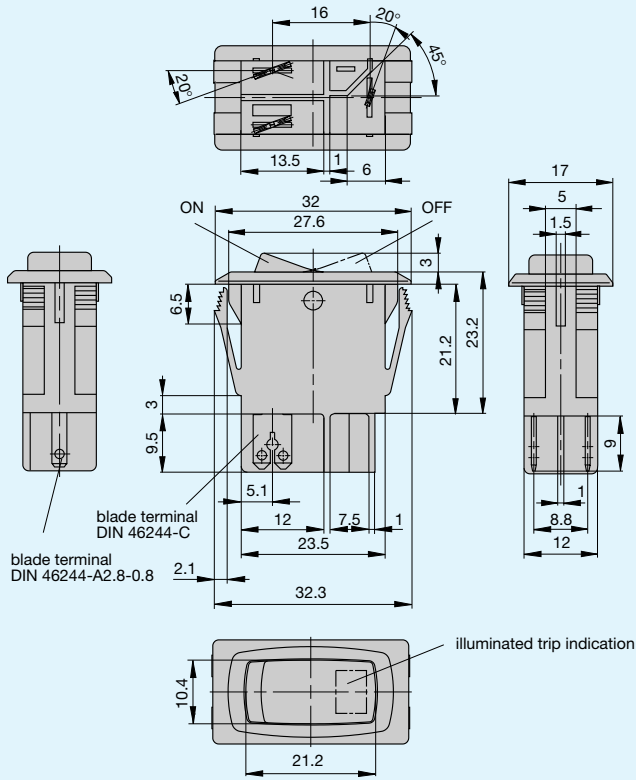
Max. voltage rating	AC 240 V; DC 28 V (DC 48 UL/CSA)	
Current rating range	0.63...8 A	
Protection class (IEC 730-1)	I (II when mounted to the installation drawing)	
Typical life	circuit 1-3 30,000 operations for $I_N < 6.3$ A 10,000 operations for $I_N < 8$ A	
protection circuit 1-2	300 operations at $2 \times I_N$	
Temperature range	-20 ... +55 °C	
Creepage resistance	PTI 250 to IEC 112	
Insulation co-ordination (IEC 664 and 664 A) operating area	Rated impulse withstand voltage 2.5 kV	Pollution degree 2
Dielectric strength (IEC 664 and 664A) operating range	Test voltage AC 2000 V	
Insulation resistance	> 100 MΩ (DC 500 V)	
Interrupting capacity (o-co-co)	0.63...2.5 A $12 \times I_N$ 3.15 ... 8 A $8 \times I_N$, max. 50 A or to UL 1077 at AC 125 V: 200 A	
Environmental protection (IEC 529/DIN 40050)	operating area IP 30 terminal area IP 00	
Vibration	8 g (57-500 Hz) ± 0.61 mm (10-57 Hz), to IEC 68-2-6, Test Fc, 10 frequency cycles/axis	
Shock	20 g (11 ms) to IEC 68-2-27, test Ea	
Corrosion	48 hours at 5 % saltspray, to IEC 68-2-11, test Ka	
Humidity	96 hours at 95 % RH to IEC 68-2-3, test Ca	
Mass	approx. 9 g	

Approvals

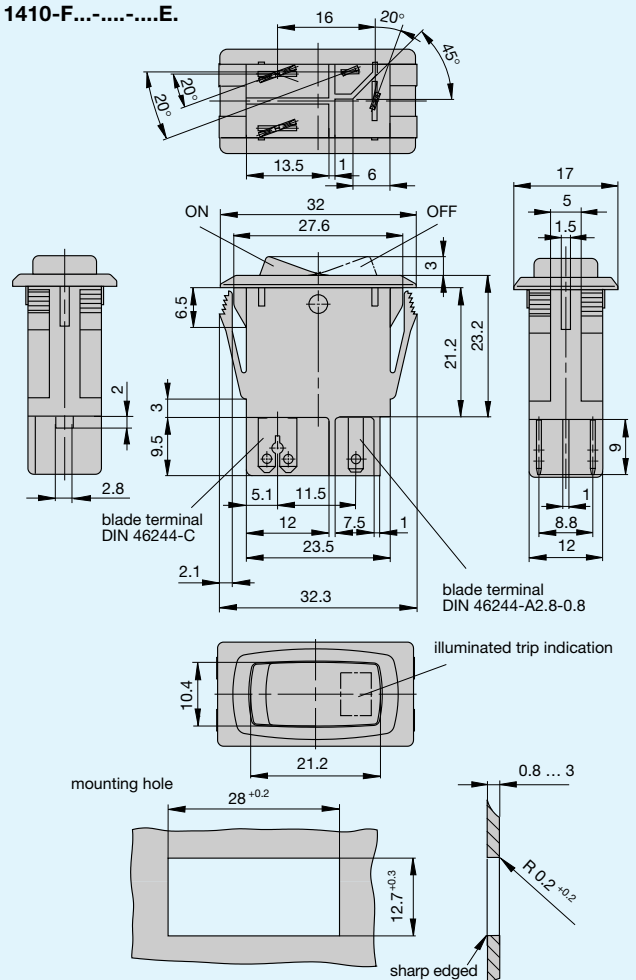
Authority	Voltage ratings	Current ratings
SEV (EN 60 934)	AC 240 V DC 28 V	0.63...4 A 0.63...8 A
CSA, UL	AC 125 V / DC 48 V	0.63...8 A

Dimensions

1410-F...-.....B.

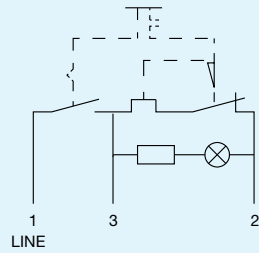


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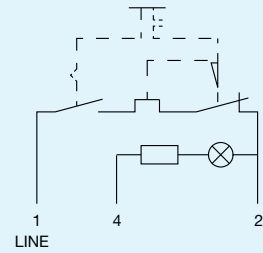


Internal wiring diagram

1410-F...-.....B.

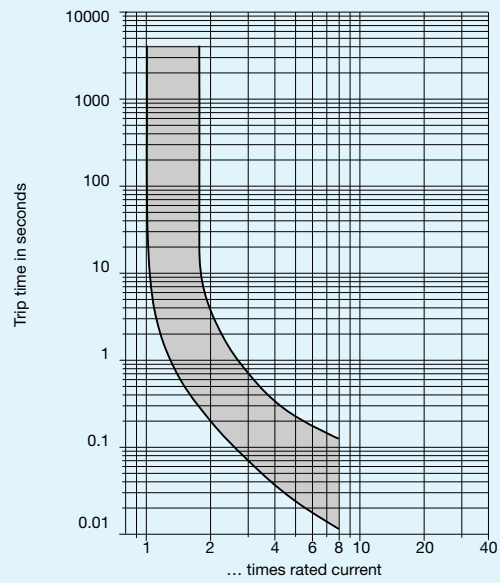


1410-F...-.....E.



N.B.
When the circuit breaker trips electrically terminal 2 (and 3) remain live (illumination voltage).

Typical time/current characteristics at 23 °C



Installation drawing

