

Description

Circuit breaker combined with illuminated ON/OFF rocker switch in a miniaturised design

Features

- For snap-in mounting, actuator design: rocker switch. For other mounting and actuator designs, please refer to the additional 1410 data sheets.
- Current rating range 0.63...10 A
- Rated voltage range AC 125/250 V, DC 28 V, DC 60 V
- Very fast trip curve through globally unique hot wire principle
- Reliable overcurrent trip through snap action and trip-free mechanisms
- Trip behaviour is independent from the ambient temperature
- Rocker illumination

Typical applications

Transformers, motors and gear protection in household appliances and office equipment as well as hand tools

Benefits

- Perfect combination of fuse replacement and ON/OFF switch thanks to compact dimensions and suitable current ratings
- Maximum device availability: after an overcurrent trip, the circuit breaker can be immediately reset, no fuse replacement required
- Fast trip curve ensures on-time disconnection and protection of sensitive components on printed circuit boards
- Rocker illumination indicates the switching status clearly visible. Optionally with illumination after an overcurrent trip

Compliance



Approvals

Approval authority	Standard	Rated voltage	Current rating range
UL	UL 1077	AC 250 V DC 60 V DC 50 V	0.63 A...10 A 0.63 A...5 A 5.5 A...8 A
CSA	C22.2 No 235	AC 125 V DC 48 V	0.63 A...8 A 0.63 A...8 A



1410-F1..

Technical data

For detailed technical information please see www.e-t-a.de/ti_en

Rated voltage	UL: AC 250 V, DC 50 V, DC 60 V CSA: AC 125 V, DC 48 V		
Current rating range	0.63 ... 10 A		
Typical life			
ON/OFF switch	30,000 cycles for $I_N \leq 6.3$ A AC/DC 10,000 cycles for $I_N > 6.3$ A AC 3,000 cycles for $I_N > 6.3$ A DC		
Circuit breakers	500 disconnections at $2 \times I_N$		
Ambient temperature	-20 °C ... +70 °C		
Insulation coordination (IEC 60664, IEC 60934)	Overvoltage category II (Rated impulse voltage 2.5 kV), pollution degree 2		
Dielectric strength			
Degree of protection	II at actuating area, test voltage AC 3000 V		
Insulation resistance	> 100 MOhm (DC 500 V)		
Interrupting capacity I_{cn}	0.63 ... 2 A	12 x I_N	
	2.5 ... 8 A	8 x I_N AC, max. 50 A	
	10 A	6 x I_N	
	3.15 ... 10 A	10 x I_N DC	
Rupture capacity	0.63 ... 10 A	2,000 A	at AC 250V
	0.63 ... 8 A	200 A	at DC 50V
	0.63 ... 5 A	200 A	at DC 60V
UL 1077			
Degree of protection (IEC 60529)	Actuating area IP30 IP00 terminal area		
Vibration resistance	8 g (57-500 Hz), ± 0.61 mm (10-57 Hz), Test according to IEC 60068-2-6, test Fc 10 frequency cycles/axis		
Shock resistance	20 g (11 ms) Test according to IEC 60068-2-27, test Ea		
Corrosion	48 hours at 5 % salt mist, Test according to IEC 60068-2-11, test Ka		
Humidity	96 hrs 95 % RH, test according to IEC 60068-2-78, test Cab		
Mass	9 g		

Ordering number code

Type No.	1410	Circuit breakers with thermal trip principle
Mounting method	F	Snap-in mounting
Size	1	Panel cut-out 28 x 12.7
Number of poles	1	1-pole, thermally protected
Design, accessories	0	none
Terminal design	P1	Blade terminals according to IEC 61210, 2.8 x 0.8 mm/6.3 x 0.8 mm, silver-plated
Characteristic curve	F1	Fast trip curve
Actuator	W	Rocker switch, rounded
Actuator colour	14	red translucent
Actuator marking	Q	I and O on actuator surface
Illumination	E	Rocker illuminated in ON-position
	B	Rocker illuminated after tripping
Illumination voltage (Standard) range	2	20-28 V nominal value 24 V AC/DC
	3	90-140 V nominal value 115 V AC
	4	185-275 V nominal value 230 V AC
Current rating range	0.63 ... 10 A	
1410-F1 1 0 - P1 F1- W14 Q E 3-2 A		
Ordering example		

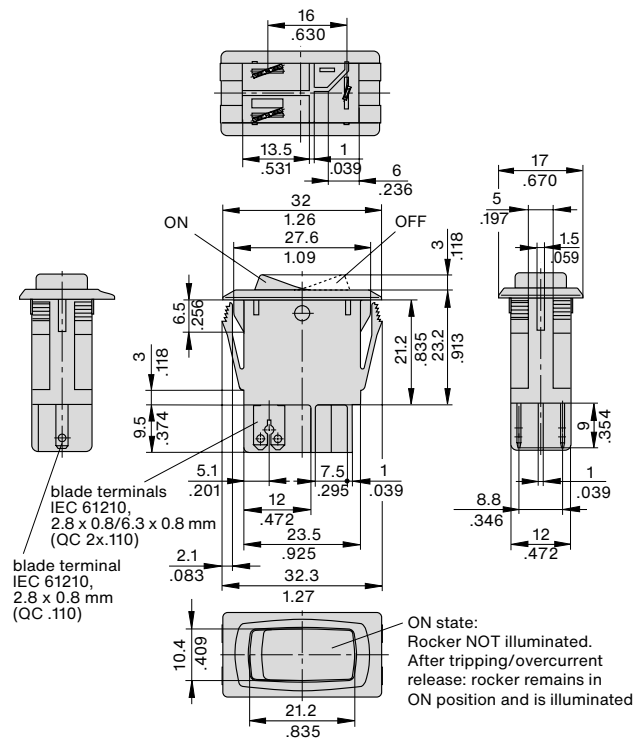
Please observe our minimum order quantities.

Current ratings I_N and typical internal resistance values

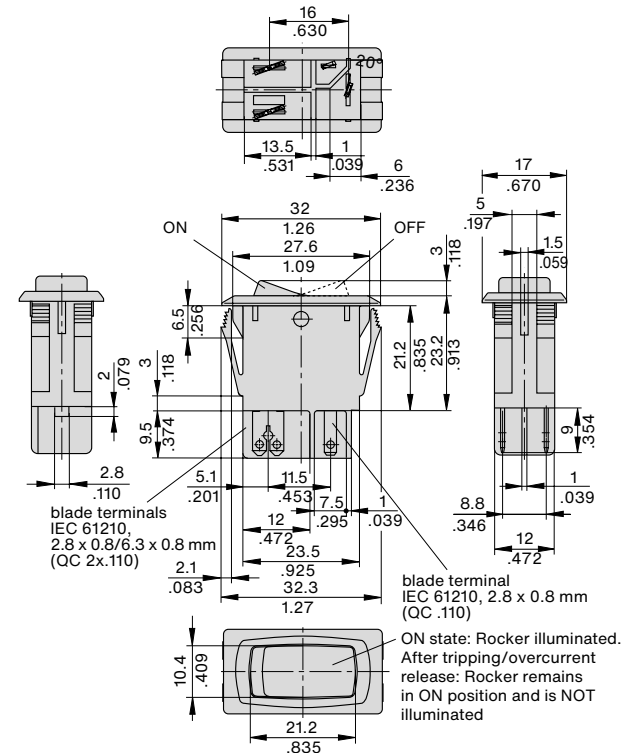
Current rating (A)	Internal resistance (Ω)	Current rating (A)	Internal resistance (Ω)
0.63	1.8	3.15	< 0.12
1	1.3	4	< 0.1
1.5	< 1	5	< 0.1
2	< 1	6.3	< 0.1
2.5	< 0.15	8	< 0.1
		10	< 0.1

Dimensions

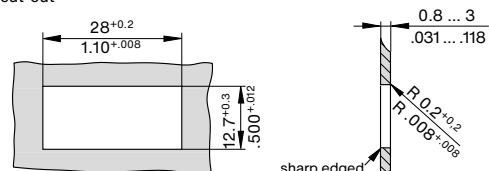
1410-F...-...-...B.



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



panel cut-out

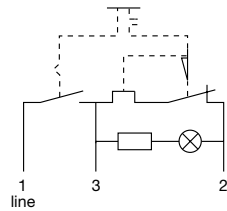


Note

- In the event of an overcurrent release, the rocker remains in ON position. The circuit breaker can be switched on again via the OFF position (reset).
- We recommend illumination version B as overcurrent release indication.

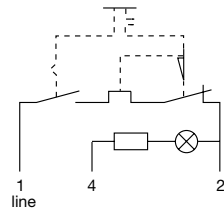
Schematic diagrams

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

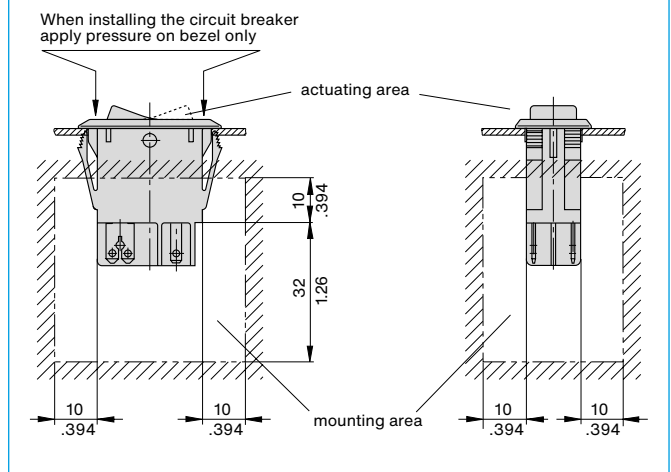


lamp current:
24 V = 35 mA
115 V < 1 mA
230 V < 1 mA

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

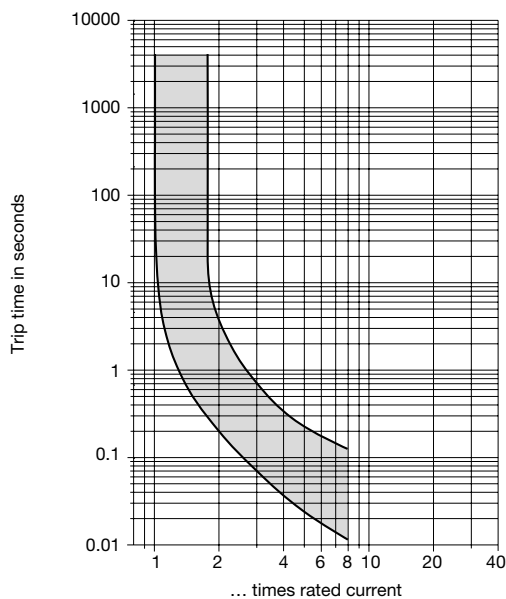


Installation drawing



Time/current characteristics

Ambient temperature 23 °C



All information and data given on our products are accurate and reliable to the best of our knowledge, but E-T-A does not accept any responsibility for the use in applications which are not in accordance with the present specification. E-T-A reserves the right to change specifications at any time in the interest of technical improvement. Dimensions are subject to change without notice. Please enquire for the latest dimensional drawing with tolerances if required. All dimensions, data, pictures and descriptions are for information only and are not binding. Amendments, errors and omissions excepted. Product part numbers may differ from their marking.

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