

## 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](http://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			
<b>Typical life</b>				
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			
<b>Dielectric strength</b>				
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	
	UL 1077	0.63 ... 8 A	200 A	at DC 50V
		0.63 ... 5 A	200 A	at DC 60V
Degree of protection (IEC 60529)	Actuating area IP30 IP00 terminal area			
Vibration resistance	8 g (57-500 Hz), $\pm 0.61$ 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

<b>Type No.</b>	1410	Circuit breakers with thermal trip principle
<b>Mounting method</b>	F	Snap-in mounting
<b>Size</b>	1	Panel cut-out 28 x 12.7
<b>Number of poles</b>	1	1-pole, thermally protected
<b>Design, accessories</b>	0	none
<b>Terminal design</b>	P1	Blade terminals according to IEC 61210, 2.8 x 0.8 mm/6.3 x 0.8 mm, silver-plated
<b>Characteristic curve</b>	F1	Fast trip curve
<b>Actuator</b>	W	Rocker switch, rounded
<b>Actuator colour</b>	14	red translucent
<b>Actuator marking</b>	Q	I and O on actuator surface
<b>Illumination</b>	E	illuminated in ON position
	B	illuminated in OFF position
<b>Illumination voltage (Standard) range</b>	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
<b>Current rating range</b>	0.63 ... 10 A	

1410-F110-P1F1-W14QE3-2A  
Ordering example

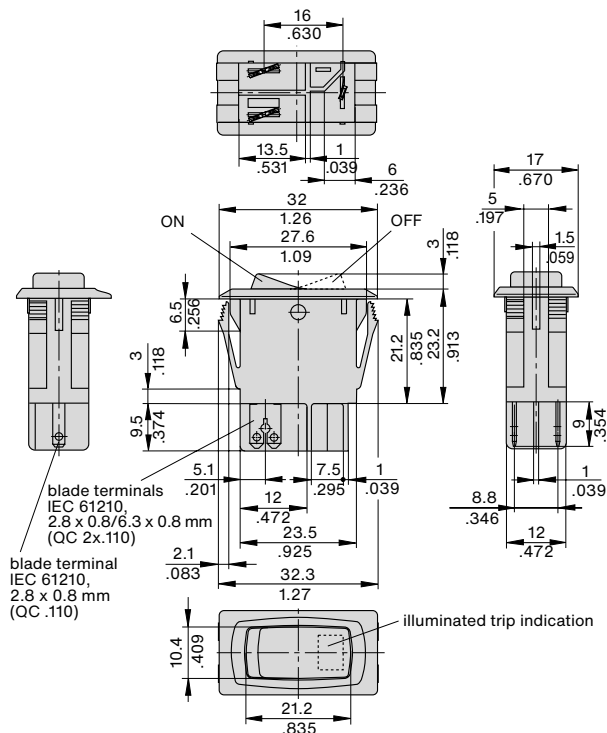
Please observe our minimum order quantities.

## Current ratings $I_N$ and typical internal resistance values

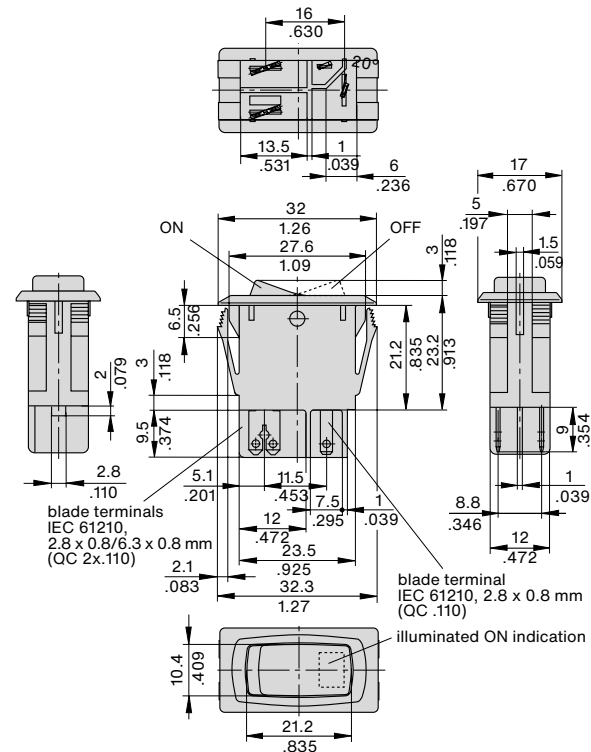
Current rating (A)	Internal resistance ( $\Omega$ )	Current rating (A)	Internal resistance ( $\Omega$ )
0.63	1.8	3.15	< 0.12
1	1.3	4	< 0.1
1.5	< 1	5	< 0.1
2	< 1	6.3	< 0.1
2.5	< 0.15	8	< 0.1
		10	< 0.1

## Dimensions

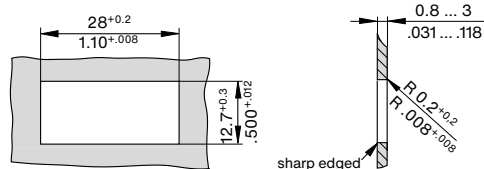
### 1410-F...-...-...B.



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



panel cut-out

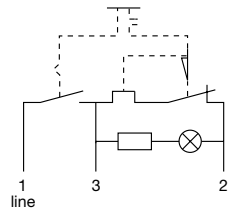


**Note**

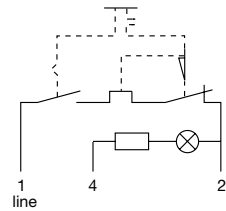
- In the event of an overcurrent release, the rocker remains in ON position. The circuit breaker can be switched on again via the OFF position (reset).
- We recommend illumination version B as overcurrent release indication.

**Schematic diagrams**

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



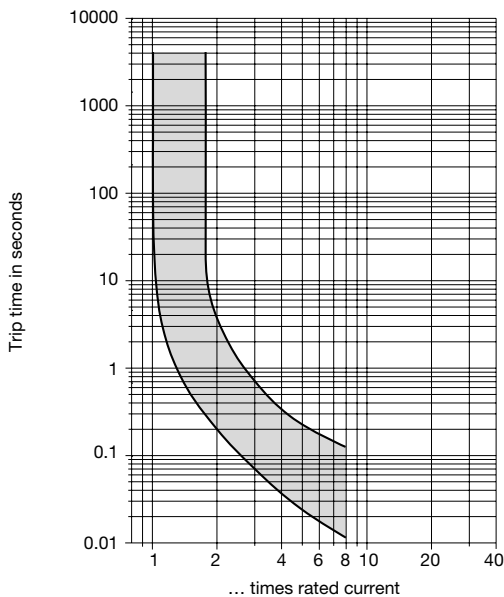
**1410-F...-...-...E.**



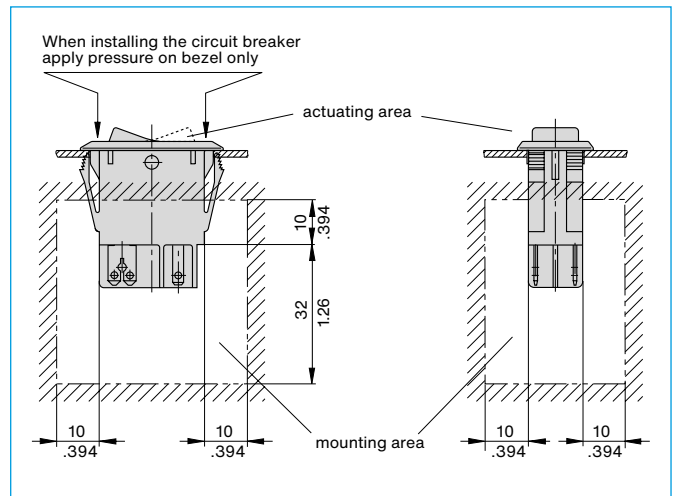
lamp current:  
24 V = 35 mA  
115 V < 1 mA  
230 V < 1 mA

**Time/current characteristics**

Ambient temperature 23 °C



**Installation drawing**



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