

# E-T-A® Thermal Overcurrent Circuit Breaker 1410-L/-G...

## Description

Single pole press-to-reset thermal circuit breaker with extremely fast overload switching performance (R-type TO CBE to EN 60934). Single hole threadneck, PCB or integral mounting with a choice of designs. Miniaturized construction minimizes PCB real estate required. Type 1410-L2 and 1410-G1 versions feature changeover contacts suitable for providing status output signals. Largely temperature-insensitive.

## Typical applications

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

## Ordering information

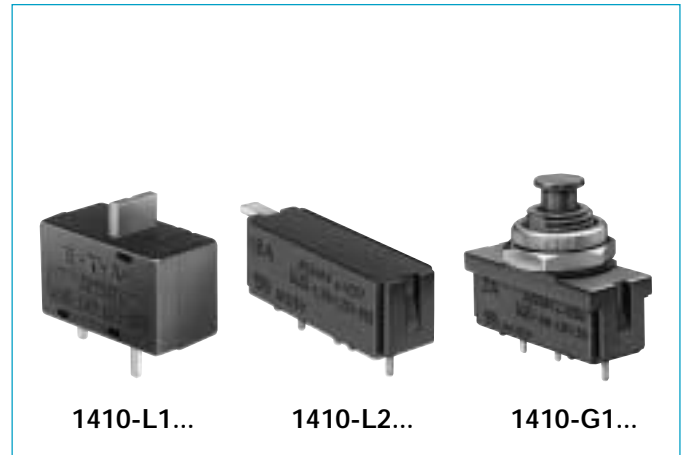
Type No.	
1410	single pole circuit breaker
Configuration	
L	PCB mounting
G	threadneck panel mounting
Mounting	
1	threadneck 3/8-27 UNS-2A (1410-G)
1	PCB 16.3x4.6 grid (1410-L) .642 x .181
2	PCB 10.15x7.6 grid (1410-L) .400 x .299
Number of poles	
1	1 pole, thermally protected
Hardware	
0	without
1	with hex nut and knurled nut (1410-G only) bulk shipped
Terminal design	
L1	solder pins 1.8x0.8 silver-plated (-L1 only)
L2	solder pins 1x0.8 silver-plated (-L2 and -G1 only)
P2	blade terminals A2.8-0.8 (QC .110) silver-plated (-G1 only)
Characteristic curve	
F1	fast acting
Actuator	
S	manual re-set
Actuator colour	
01	black (for -G1.. and -L1..)
02	white (for -L2..)
Current ratings	
0.63 ... 10 A	

1410- L 1 1 0 - L1 F1 - S 01 - 0.8 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	1.8	3.15	< 0.12
0.8	1.7	4	< 0.1
1	1.3	4.5	< 0.1
1.25	< 1	5	< 0.1
1.5	< 1	6.3	< 0.1
1.8	< 1	8	< 0.1
2	< 1	10	< 0.1
2.5	< 0.15		

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.



## Technical data

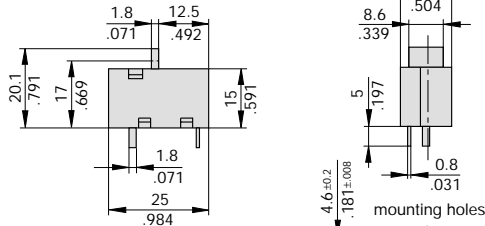
Voltage rating	AC 240 V; DC 28 V (AC 250 V; DC 50 V UL/CSA)	
Current rating range 1-2	0.63...10 A	
Auxiliary circuit 1-3	0.2 x I <sub>N</sub> max. 1 A, AC 250 V style -L2 and -G1 only	
Typical life	300 operations at 2 x I <sub>N</sub> (-L2...) 500 operations at 2 x I <sub>N</sub> (-L1../-G1..)	
Ambient temperature	-20...+100 °C (-4...+212 °F)	
Insulation co-ordination (IEC 60664 and 60664A)	Rated impulse withstand voltage 2.5 kV reinforced insulation in operating area	Pollution degree 2
Dielectric strength (IEC 60664 and 60664A) operating area	Test voltage AC 1,500 V	
Insulation resistance	> 100 MΩ (DC 500 V)	
Interrupting capacity I <sub>cn</sub> (o-o-o)	0.63...2 A 12 x I <sub>N</sub> 2.5 ...8 A 8 x I <sub>N</sub> , AC max. 50 A 10 A 6 x I <sub>N</sub> , AC 3.15...10 A 10 x I <sub>N</sub> , DC	
Interrupting capacity (UL 1077)	0.63...10 A 2,000 A AC 250 V 0.63...10 A 200 A DC 50 V	
Degree of protection (IEC 60529/DIN 40050)	operating area IP 40 terminal area IP 00	
Vibration	8 g (57-500 Hz) ±0.61 mm (10-57 Hz), to IEC 60068-2-6, Test Fc, 10 frequency cycles/axis	
Shock	20 g (11 ms) to IEC 60068-2-27, test Ea	
Corrosion	48 hours at 5 % salt mist, to IEC 60068-2-11, test Ka	
Humidity	96 hours at 95 % RH to IEC 60068-2-3, test Ca	
Mass	approx. 5 g	

## Approvals

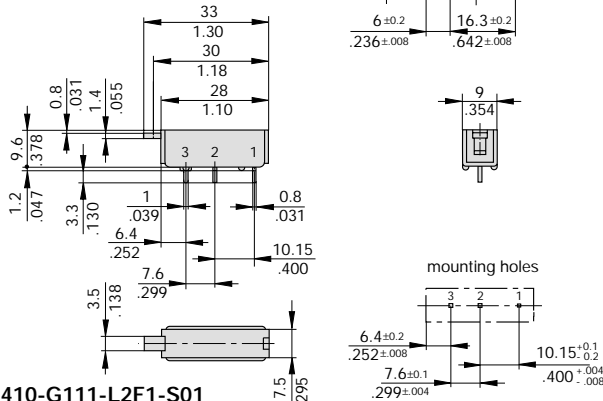
Authority	Voltage rating	Current ratings
VDE	AC 240 V	0.63...10 A
	DC 50 V	0.63...2.5 A
	DC 28 V	2.5 ...10 A
UL, CSA	AC 250 V; DC 50 V	0.63...10 A

## Dimensions

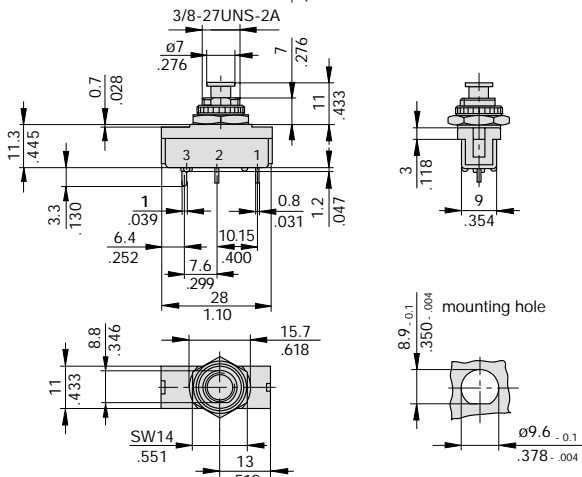
### 1410-L110-L1F1-S01



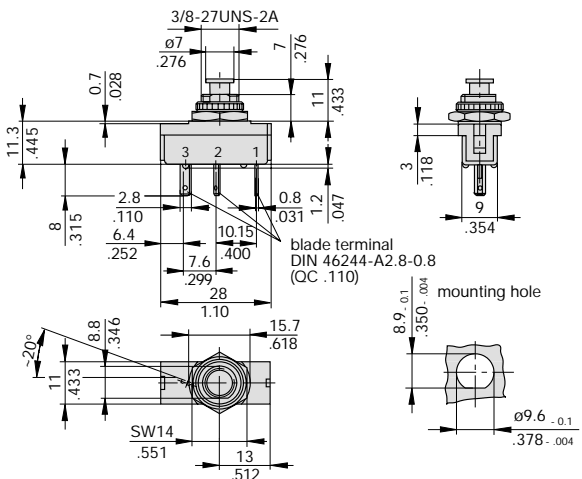
### 1410-L210-L2F1-S02



### 1410-G111-L2F1-S01

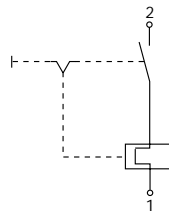


### 1410-G111-P2F1-S01

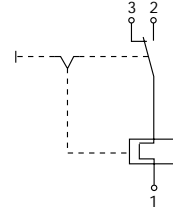


## Internal connection diagrams

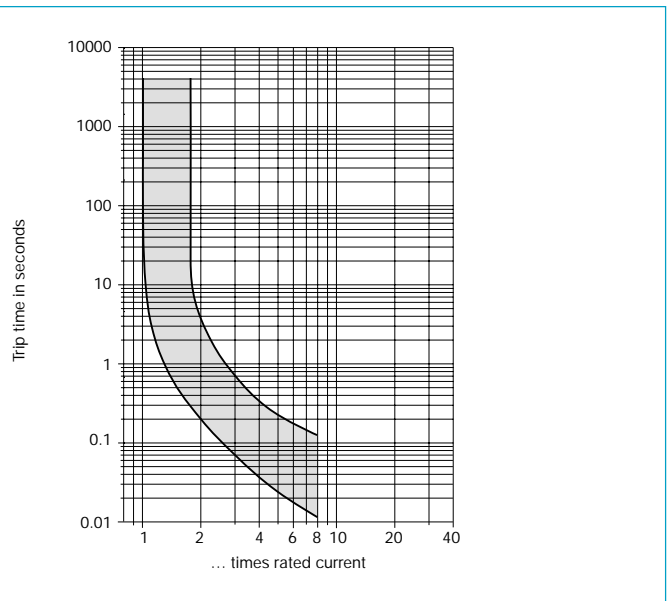
### 1410-L11...



### 1410-L21... 1410-G11...

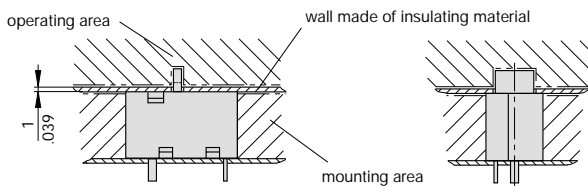


## Typical time/current characteristics at +23°C/+73.4°F

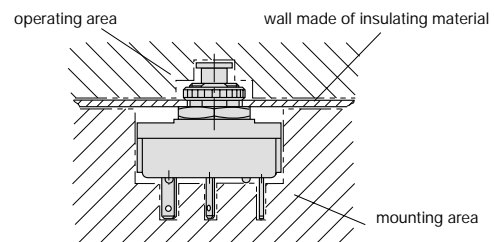


## Installation drawings

### 1410-L11...



### 1410-G...



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