

Description

The 1180 is a thermal circuit breaker in a very compact design. It is designed as a replacement for conventional fuses in equipment for the AC and DC voltage range. It features reliable switching behaviour, snap action and positively trip-free mechanisms. Compared to conventional blade fuses, the 1180 significantly increases system availability thanks to its reset option. The plug-in type device is suitable for standard terminal blocks for DIN rail mounting.

For maintenance purposes, the load can be directly switched off at the circuit breaker via push-push button. As the 1180 remains within the terminal block for this time, a loss of the device is prevented. Various accessories, such as bridging connectors and jumpers, are available for quick and easy LINE and GND wiring.

It meets the requirements of the EN 60934 (IEC 60934) circuit breaker standard: S-Type, TO.



1180-...

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Typical applications

Protection of loads in power distribution systems in control cabinets and process control.

Features and benefits

- Easy mounting due to plug-in design matching standard terminal blocks
- Fine grading of current ratings, particularly in the range of small ratings
- Very small width of only 8.2 mm
- Universally suitable for AC and DC applications

Your benefits

- Increased system availability by resetting the device after tripping and quick troubleshooting thanks to error detection message and/or auxiliary contacts.
- Saves space and weight in the equipment thanks to the compact design of only 8.2 mm mounting width.
- Saves maintenance costs, as the circuit breaker isolates the load path and can remain in the terminal block.

Preferred types – for more details on all configurations please see order numbering code

Preferred types are E-T-A products most frequently used by E-T-A customers. We manufacture E-T-A preferred types in particularly high

volumes. Our preferred types are supplied at shorter lead times than non-standard versions.

Preferred types	Standard current ratings (A)											
	0.5	1	1.5	2	2.5	3	4	5	6	8	10	
1180-01-	x	x	x	x	x	x	x	x	x	x	x	x

Approvals



Information online

The current data sheet is available on our website: www.e-t-a.de/e004

Compliances



Technical data

Voltage rating	AC 250 V; DC 65 V (UL, UL Canada: AC 250 V; DC 72 V)																						
Current ratings	0.1...10 A																						
Typical life	6,000 operations at 1 x I _n (low-inductance) 3,000 operations at 1 x I _n (inductive) 500 operations at 2 x I _n (inductive)																						
Ambient temperature	-20...+60 °C (T 60) -4...+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 60664 A)	test voltage operating area AC 3,000 V installation area AC 1,500 V																						
Insulation resistance	> 100 MΩ (DC 500 V)																						
Rupture capacity I _{cn}	<table border="1"> <tr> <td>0.1...5 A</td> <td>6 x I_n</td> <td>AC 250 V, DC 65 V</td> </tr> <tr> <td>6...10 A</td> <td>8 x I_n</td> <td>AC 250 V, DC 65 V</td> </tr> <tr> <td>0.1...5 A</td> <td>8 x I_n</td> <td>AC 120 V</td> </tr> <tr> <td>6...10 A</td> <td>12 x I_n</td> <td>AC 120 V</td> </tr> <tr> <td>0.1...0.7 A</td> <td>25 x I_n</td> <td>DC 30 V</td> </tr> <tr> <td>0.8...6 A</td> <td>10 x I_n</td> <td>DC 30 V</td> </tr> <tr> <td>7...10 A</td> <td>20 x I_n</td> <td>DC 30 V</td> </tr> </table>		0.1...5 A	6 x I _n	AC 250 V, DC 65 V	6...10 A	8 x I _n	AC 250 V, DC 65 V	0.1...5 A	8 x I _n	AC 120 V	6...10 A	12 x I _n	AC 120 V	0.1...0.7 A	25 x I _n	DC 30 V	0.8...6 A	10 x I _n	DC 30 V	7...10 A	20 x I _n	DC 30 V
0.1...5 A	6 x I _n	AC 250 V, DC 65 V																					
6...10 A	8 x I _n	AC 250 V, DC 65 V																					
0.1...5 A	8 x I _n	AC 120 V																					
6...10 A	12 x I _n	AC 120 V																					
0.1...0.7 A	25 x I _n	DC 30 V																					
0.8...6 A	10 x I _n	DC 30 V																					
7...10 A	20 x I _n	DC 30 V																					

Technical data

Rupture capacity (UL 1077)	AC 250 V 2,000 A DC 72 V 2,000 A
Degree of protection (IEC 60529/DIN 40050)	operating area IP40 terminal area IP00
Vibration without terminal block	5 g (57-500 Hz) ± 0.38 mm (10-57 Hz) to IEC 60068-2-6, test Fc, 10 frequency cycles/axis and to EN 50155
Shock without terminal block	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. 10 g

Note: When several devices are mounted together, each device should only carry 80 % of its rating or it must be overrated accordingly. Follow the link to „Technical Information“: www.e-t-a.de/ti_e

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volumes. Our preferred types are supplied at shorter lead times than non-standard versions.

Preferred types	Standard current ratings (A)										
	0.5	1	1.5	2	2.5	3	4	5	6	8	10
1180-01-	x	x	x	x	x	x	x	x	x	x	x

Ordering information

Type No.	1180 single pole thermal circuit breaker, plug-in mounting
Versions	01 with switching function, without label 02 reset function only, without label
Current rating range	0.1...10 A
1180 - 01 - 1 A	ordering example

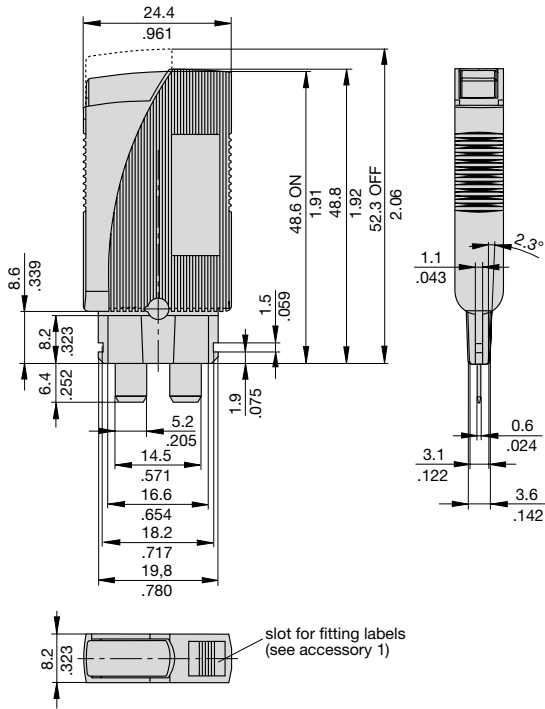
Standard current ratings and typical internal resistance values

Current rating (A)	Internal resistance (Ω)	Current rating (A)	Internal resistance (Ω)
0.1	81	2	0.25
0.2	22	2.5	0.18
0.25	14	3	0.11
0.3	8.7	3.5	0.08
0.4	5.5	4	0.07
0.5	3.4	5	≤ 0.05
0.6	2.5	6	≤ 0.05
0.7	1.7	7	≤ 0.05
0.8	1.5	8	≤ 0.05
1	0.9	10	≤ 0.05
1.5	0.4		

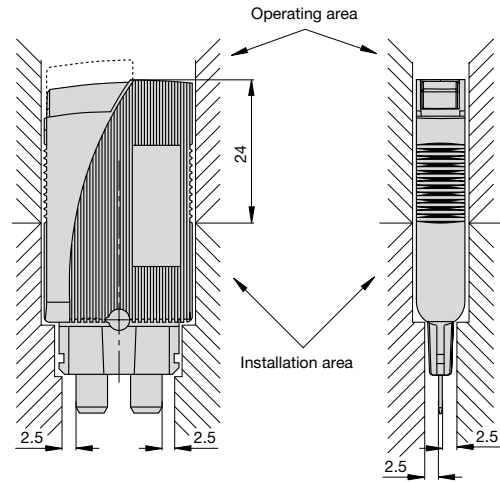
Approvals

Authority	Standard	Rated voltage	Current ratings
VDE	IEC/EN 60934	AC 250 V DC 65 V	0.1 A...10 A 0.1 A...10 A
UL	UL 1077 C22.2 No 235	AC 250 V / 50/60 Hz DC 72 V	0.1 A...10 A 0.1 A...10 A
CSA	C22.2 No 235	AC 250 V DC 72 V	0.1 A...10 A 0.1 A...10 A
CQC	GB/T17701	AC 250 V, DC 65 V	0.1...10 A

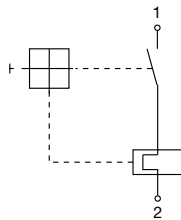
Dimensions



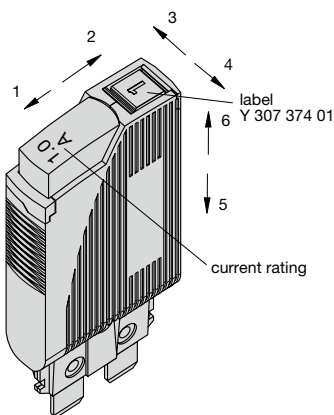
Installation drawing



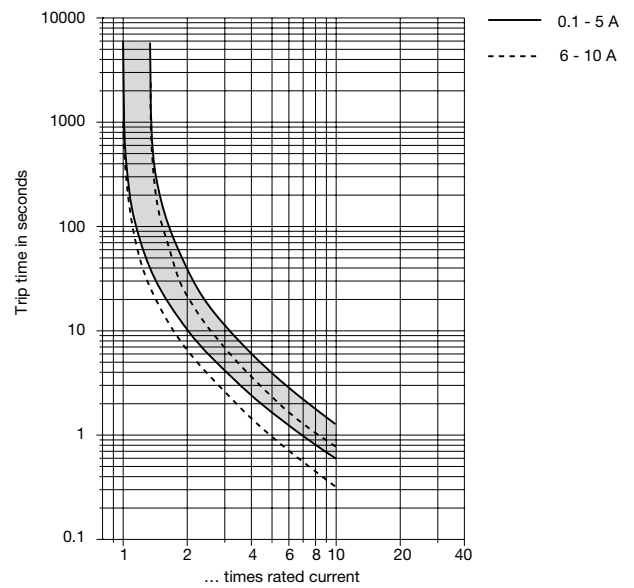
Internal connection diagram



Shock directions



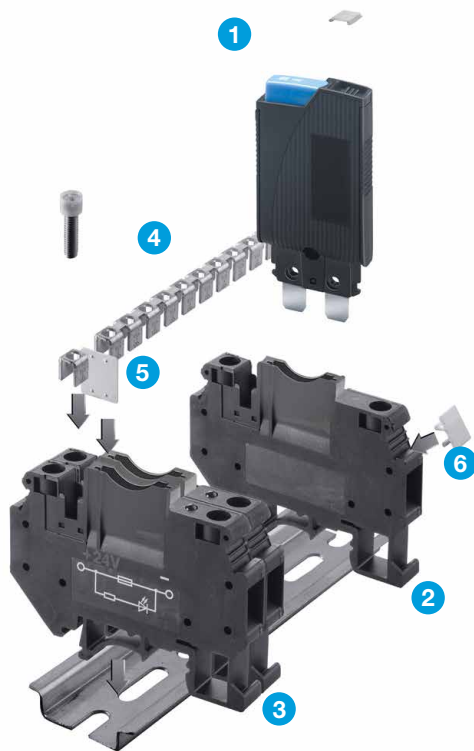
Typical time/current characteristics at +23 °C/+73.4 °F



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.

Ambient temperature °F	-4	+14	+32	+73,4	+104	122	+140
°C	-20	-10	0	+23	+40	+50	+60
Derating factor	0.76	0.84	0.92	1	1.08	1.16	1.24

Accessories - Terminal block with screw terminals



1 Label for circuit breaker 1180, surface for marking 4.5 x 5 mm (packaging quantity 120 pcs)
Y30737401

2 Terminal block for DIN rail mounting, with screw terminals up to 6 mm² conductor, width 8.2 mm, tightening torque: 1.5...1.6 Nm stripping length: 10 mm dimensions 64 x 42.5 x 8.2 mm, headroom over the upper rail edge with circuit breaker fitted (OFF position) 84 mm.
Approvals: UL File E197598
X22223301

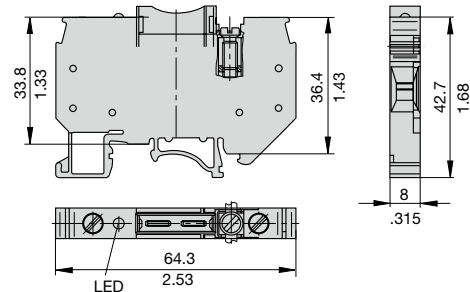
3 Terminal block for DIN rail mounting see item 2, but with LED DC 24 V (lighted after tripping); current rating LED 2 mA
Approvals: UL File E197598
X22223302

4 Bus connection for potential bridging of several terminal blocks see item 2 and 3 (10-pole, separable, mounting hardware included), max. current rating 34 A
X22223201

5 Insulation barriers for insertion between two circuits (packaging quantity 10 pcs)
Y30737301

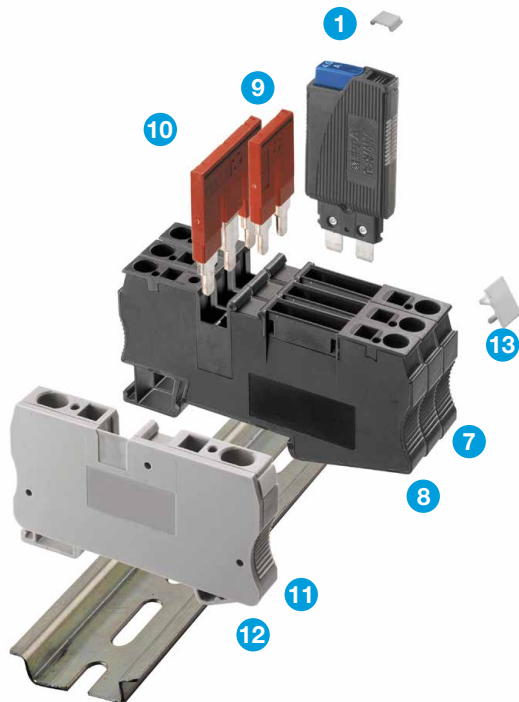
6 Label for terminal block, see item 2 and 3, surface for marking 8 x 10 mm (packaging quantity 10 pcs)
Y30737501

Dimensions X 222 233 02



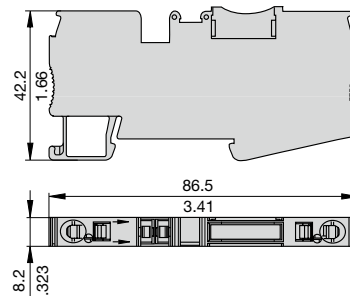
Vibration	with terminal block X22223301 and X22223302 5 g (57-500 Hz), ± 0.38 mm (10-57 Hz) to IEC 60068-2-6, test Fc, 10 frequency cycles/axis and EN 50155
Shock	with terminal block X22223301 and X22223302 25 g (11 ms) to IEC 60068-2-27, test Ea

Accessories - Terminal block with spring-loaded terminals



- 1 Label** for circuit breaker 1180, surface for marking 4.5 x 5 mm (packaging quantity 120 pcs)
Y30737401
- 7 Terminal block** for DIN rail mounting, with spring-loaded terminals up to 4 mm² conductor, width 8.2 mm, dimensions up to 68.5 x 36.5 x 8.2 mm, stripping length: 8...10 mm, headroom over the upper rail edge with circuit breaker fitted (OFF position) 82 mm. Approvals: UL File E197598
X22231601
- 8 Terminal block** for DIN rail mounting see item 7, but with LED DC 24 V (lighted after tripping); current rating LED 2 mA Approvals: UL File E197598
X22231502
- 9 Jumper 2pole**, max. current rating 32 A for terminal blocks items 7 and 8 and feed supply terminal item 11.
X22231801
- 10 Jumper 3pole**, max. current rating 32 A for terminal blocks items 7 and 8 and feed supply terminal item 11.
X22231802
- 11 Feed supply terminal** with spring-loaded terminals up to 6 mm² conductor, width 8.2 mm, suitable for use with jumpers items 9 and 10 (power distribution).
X22231701
- 12 Cover** for feed supply terminal item 11 for closing the open side at the end of an assembly.
Y30750701
- 13 Label** for terminal block items 7 and 8, and feed supply terminal item 11, surface for marking 7.5 x 5 mm (packaging quantity 50 pcs)
Y30750801

Dimensions X 222 316 01



Vibration	with terminal blocks X22231601 and X22231502 vibration axis 3-4: 3 g (57-500 Hz), ± 0.38 mm (10-57 Hz) other axes: 5 g (57-500 Hz), ± 0.38 mm (10-57 Hz) to IEC 60068-2-6, test Fc, 10 frequency cycles/axis and EN 50155
Shock	with terminal blocks X22231601 and X22231502 25 g (11 ms) to IEC 60068-2-27, test Ea

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.