E-T-A Thermal Overcurrent Circuit Breaker 1658-...

Description

Very cost effective design to meet international requirements. No exposed metal parts which are, or could become, current-carrying except for terminals. R-type TO CBE to EN 60934.

- Manual reset, cycling trip free mechanism
- Extremely small and lightweight
- UL, CSA, VDE and EN 60934 (IEC 60934) approved

Typical applications

Battery chargers, consumer products, power supplies, motors.

Ordering information

Type No.

1658 single pole thermal circuit breaker

Threadneck design

- **G21** manual reset type, 3/8"-27 threadneck
- **A00** auto reset type, without threadneck

Hardware

- **00** no hardware
- **01** one PAL nut, bulk
- **02** one PAL nut, one knurled nut, bulk

Terminals

- **P10** blade terminals A6.3-0.8 (QC .250)
- **P13** blade terminals A6.3-0.8 (QC .250), 90°

Current ratings

5 ...30 A

1658 - G21 - 02 - P10 - 5 A Ordering example

* Screws and lock washers bulk shipped

Preferred types

NEW

Preferred types	Standard current ratings (A)											
	5	6	7	8	9	10	12	15	16	20	25	30
1658-G21-02-P10-	x	x	x	x	x	x	x	x	x	x	x	x
1658-G21-02-P13-	x	x	x	x	x	x	x	x	x			
1658-A00-00-P10-	x	x	x	x	x	x	x	x	x			

Standard current ratings and typical voltage drop values

Current rating (A)	voltage drop values (mV)	Current rating (A)	voltage drop values (mV)
5	≤ 250	12	≤ 250
6	≤ 250	15	≤ 250
7	≤ 250	16	≤ 250
8	≤ 250	20	≤ 250
9	≤ 250	25	≤ 250
10	≤ 250	30	≤ 250

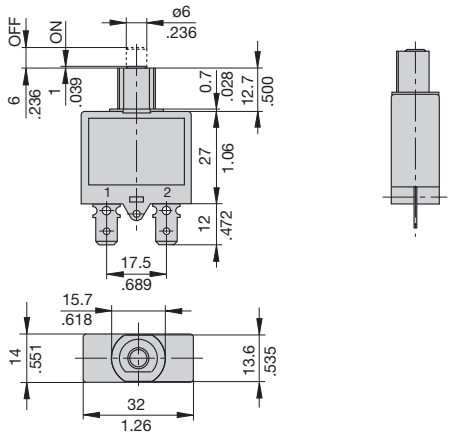
1658-...

Technical data

For further details please see chapter: Technical Information

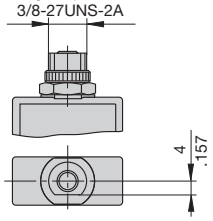
Voltage rating	AC 240 V; DC 28 V			
Current ratings	5...30 A			
Typical life AC + DC	5...16 A	1,000 operations at 2 x I_N, inductive		
	17...25 A	1,000 operations at 2 x I_N, resistive		
Behaviour at rated switching capacity (EN 60934; test sequence D)	operat.	I_N	U_N	
	40	5...16 A	AC 240 V	6 x I_N ind
	40	5...16 A	DC 28 V	4 x I_N ind
	40	17...25 A	AC 240 V	120 A resistive
	40	17...25 A	DC 28 V	120 A resistive
Ambient temperature	-20...+60 °C (-4...+140 °F), ≤ 7 A max. +40 °C (+104 °F)			
Insulation co-ordination (IEC 60664 and 60664 A)	rated impulse withstand voltage 2.5 kV	pollution degree 2		
	reinforced insulation in operating area			
Dielectric strength (IEC 60664 and 60664A)	test voltage operating area	AC 3,000 V		
Insulation resistance	> 100 MΩ (DC 500 V)			
Interrupting capacity I_{cn}	5...7 A	180 A		
	8...30 A	200 A		
Interrupting capacity (UL 1077/EN 60934 PC1)	I_N	U_N		
	5...16 A	AC 240 V	2,000 A	
	5...30 A	AC 120 V	2,000 A	
	5...30 A	DC 32 V	2,500 A	
	5...30 A	DC 28 V	2,000 A (1658-A..)	
Degree of protection (IEC 60529/DIN 40050)	operating area IP40 terminal area IP00			
Vibration	8 g (57-500 Hz) ± 0.61 mm (10-57 Hz), to IEC 60068-2-6, test Fc, 10 frequency cycles/axis			
Shock	30 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. 16 g			

Dimensions



A00

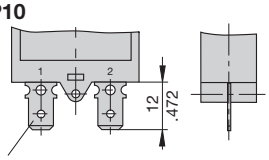
G21 tightening torque max. 0.8 Nm
3/8-27UNS-2A



See ordering information for mounting hardware.

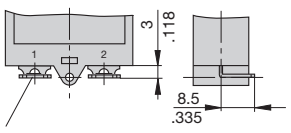
Terminal design

P10



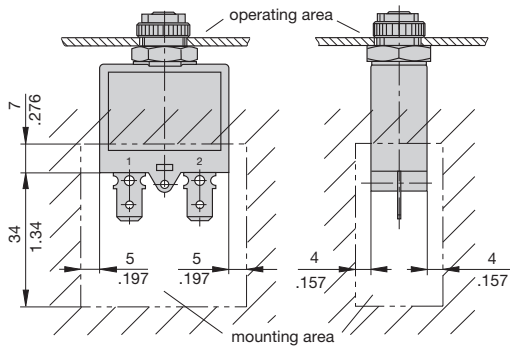
blade terminals DIN 46244-A6.3-0.8
(QC .250)

P13

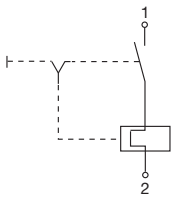


blade terminals DIN 46244-A6.3-0.8 (QC .250)
angled 90°

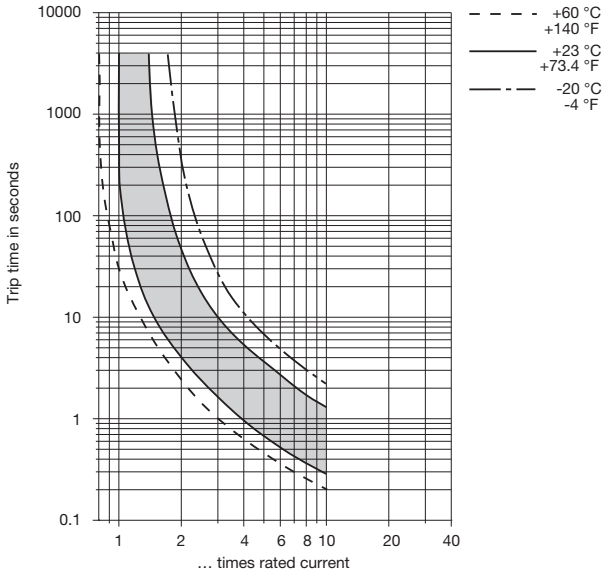
Installation drawing



Internal connection diagram



Typical time/current characteristics



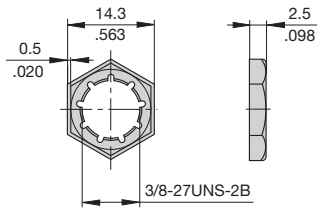
The time/current characteristic curve depends on the ambient temperature prevailing. In order to eliminate nuisance tripping, please multiply the circuit breaker current ratings by the derating factor shown below. See also section Technical information.

Ambient temp. °F Ambient temp. °C	-4 -20	+14 -10	+32 0	+73.4 +23	+104 +40	+122 +50	+140 +60
Derating factor I_N > 7A	0.83	0.85	0.9	1	1.1	1.18	1.25
I_N < 7A	0.74	0.76	0.82	1	1.23	-	-

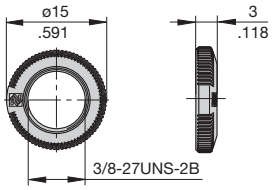
This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

Accessories

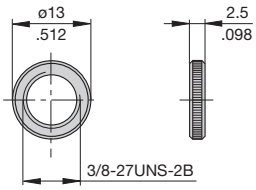
Mounting nut 3/8", 27-thread
Y 306 671 01



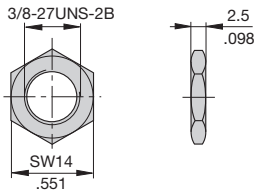
Knurled nut 3/8", 27-thread
plastic (standard)
Y 307 117 02



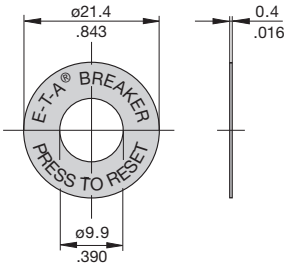
Knurled nut 3/8", 27-thread
nickel-plated brass
Y 300 190 03



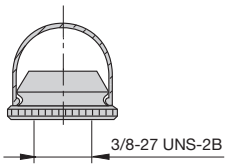
Hex nut 3/8", 27-thread
nickel-plated brass
Y 300 192 01



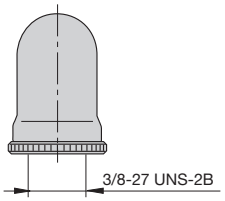
Press to Reset Plate for 3/8"
thread, aluminium
Y 301 059 02



Reset button seal for 3/8", 27-thread,
short
X 201 285 01

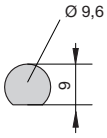


long
X 200 799 01



Panel cut out

1658-3/8-27 UNS-2A



Approvals

Authority	Voltage ratings	Current ratings
VDE (EN 60934)	AC 240 V; DC 28 V	5...25 A
UL	AC 240 V AC 120 V AC 120 V DC 32 V DC 28 V	5...16 A *1658-G..* 18...30 A *1658-G..* 5...30 A *1658-A..* 5...30 A *1658-G..* 5...30 A *1658-A..*

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

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.

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