

Description

Single pole thermal reset circuit breaker in a miniaturised design intended for thread neck mounting. Easy and quick reset after tripping due to overcurrent. Trip-free mechanism and automatic disconnection in the event of an overcurrent, even with a blocked actuator button. R-Type TO CBE to EN60934. Very cost effective design to meet international requirements.

- Manual reset, trip free mechanism
- Extremely small and lightweight

Typical applications

Power tools, Industrial equipment, Medical equipment, Power generators, Motors, Battery chargers, UPS.

Ordering information

Type No.

1657 single pole thermal circuit breaker, black body

Threadneck design

G11 M11x1,0 (Plastic), white push-to-reset button

G12 M11x1,0 (Plastic), black push-to-reset button

G21 3/8"-24 UNF (Plastic), white push-to-reset button

G22 3/8"-24 UNF (Plastic), black push-to-reset button

Hardware

00 no hardware

01 one integrated knurled nut (plastic),
Y 310 777 01 for M11, Y 310 778 01 for 3/8", bulk

Terminals

P10 blade terminals A6.3-0,8 (QC .250)

P13 blade terminals A6.3-0,8 (QC .250), 90°

S83 bent screw terminals 8-32 UNC

Current ratings

5/6/7/8/10/12/15/20 A

1657-G21 -01 - P10 -5 A Ordering example

Standard current ratings and typical resistance

Current rating (A)	Typical Resistance (Ω)	Current rating (A)	Typical Resistance (Ω)
5 A	0.225	10 A	0.125
6 A	0.175	12 A	0.125
7 A	0.175	15 A	0.050
8 A	0.175	20 A	0.040

Approvals

Authority	Standard	Voltage rating	Current ratings
UL	UL 1077 (E67320)	AC 250 V DC 50 V	5 A...20 A 5 A...20 A
TÜV SÜD	EN 60934 / IEC 60934	AC 250 V DC 32 V	5 A...12 A 5 A...20 A
UL	UL 1500	AC 250 V DC 50 V	5 A...20 A 5 A...20 A



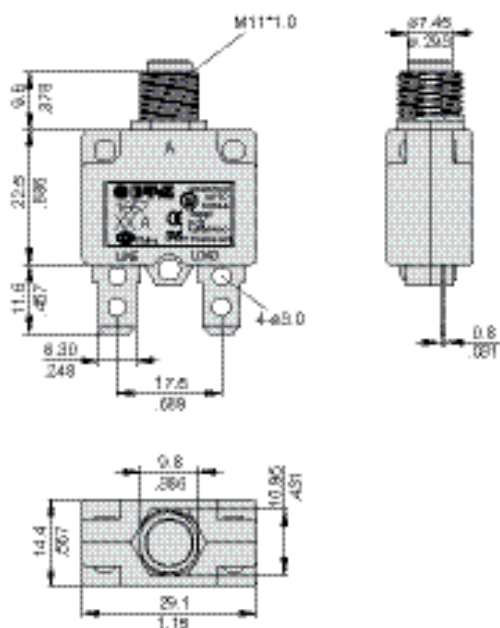
1657-...

Technical data

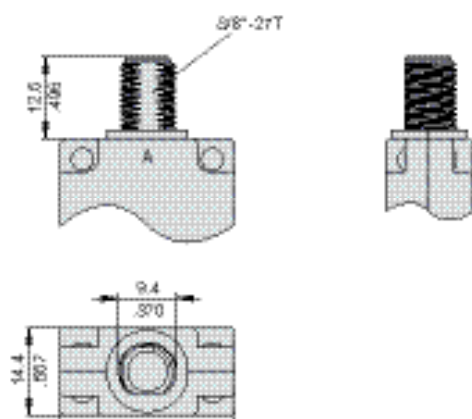
Voltage rating	AC 250 V, DC 32 V		
Current ratings	5...12 A inductive load 13...20 A resistive load		
Typical life	500 operations at 1.5 x I _n resistive AC 125 V		
Behaviour at rated switching capacity (EN 60934; test sequence D)	operat.	I _N	U _N
	40	5...12 A	AC 250 V 6 x I _n ind.
Ambient temperature	40	5...20 A	DC 32 V 4 x I _n ind.
	-10 °C to +60 °C (+14...+140° F)		
Insulation co-ordination (IEC 60664)	2,5 kV/2 reinforced insulation in operating area		
Dielectric strength operating area	test voltage AC 3,000 V		
Insulation resistance	> 500 MΩ		
Interrupting capacity (I _{cn})	I _N	U _N	
	5...12 A	AC 250 V	6 x I _n
Interrupting capacity (UL 1077)	5...20 A	DC 32 V	6 x I _n
	I _N	U _N	I _{NC}
Degree of protection (IEC 60529)	5...20 A	AC 250 V	1000 A, C, 1
	5...20 A	AC 250 V	400 A, U, 3
Vibration	5...20 A	DC 50 V	300 A, C, 1
	operating area IP40 terminal area IP00		
Shock	57 Hz acceleration 30m/s ² (3 g) in X.Y.Z. direction (2 times/min.)		
Mass	300m/s ² (30 g) in X.Y.Z. direction		
	approx. 14 g		

Dimensions

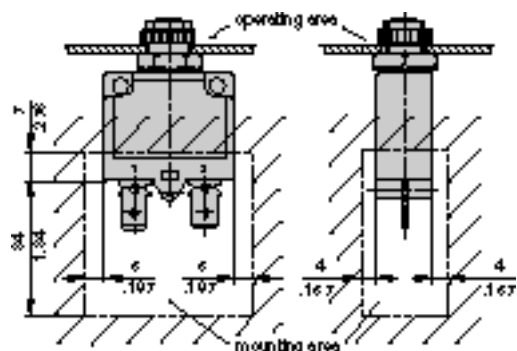
1657-G11/-G12



1657-G21/-G22

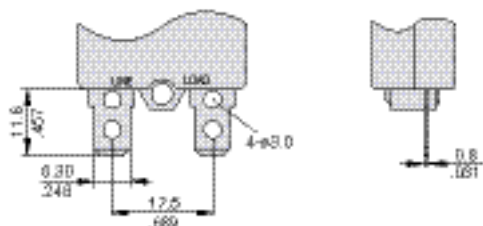


Installation drawing

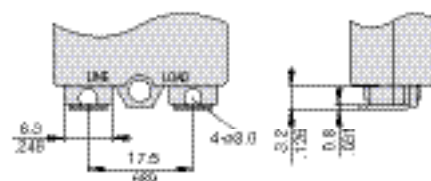


Terminal design

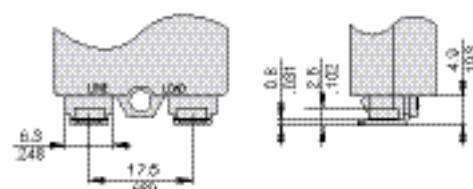
...-P10



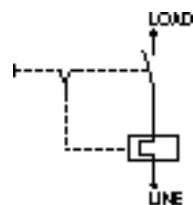
...-P13



...-S83

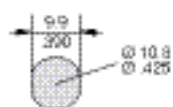


Internal connection diagram

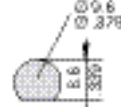


Panel cut out

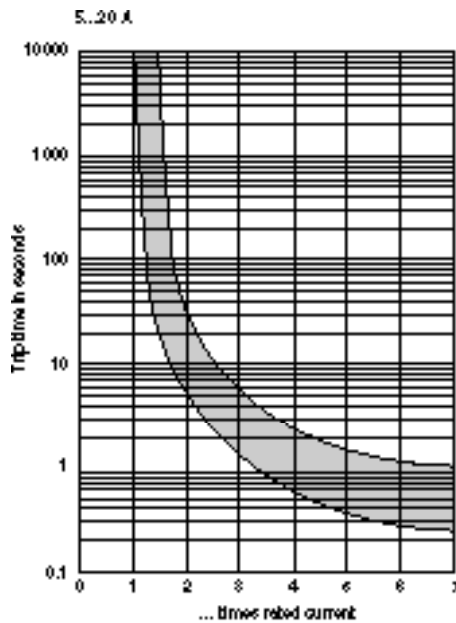
1657-G11/-G12



1657-G21/-G22



Typical time/current characteristics



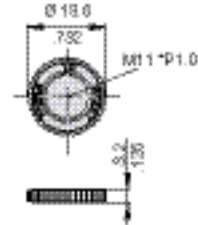
The time/current characteristic curve depends on the ambient temperature prevailing. In order to eliminate nuisance tripping, please multiply the circuit breaker current ratings by the derating factor shown below. See also section Technical information.

Ambient temp. °F	+14	+32	+50	+77	+95	+104	+122	+140
Ambient temp. °C	-10	0	10	25	35	40	50	60
Derating factor	0.77	0.83	0.91	1	1.06	1.18	1.37	1.47

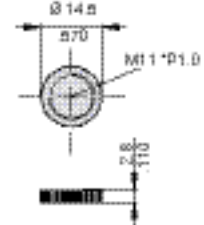
Accessories

Nuts

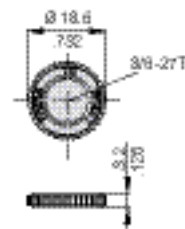
Plastic Nut
Ref. Y 310 777 01



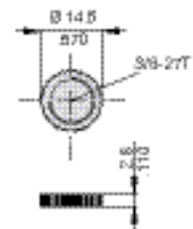
Plastic Nut
Ref. Y 310 775 01



Plastic Nut
Ref. Y 310 776 01

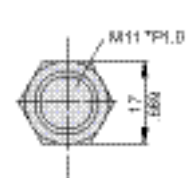
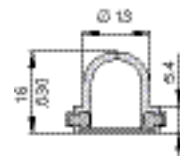


Plastic Nut
Ref. Y 310 776 01



Watersplash protection

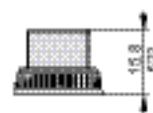
Ref. X 223 356 01



Ref. X 223 357 01



Ref. X 223 355 01



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.

