

TEKNIC

Supplementary Protector / Circuit Breaker for equipment - TR 11

The TR11 circuit breaker for equipment (CBE) is a single pole, push to reset, thermally operated overload protector, providing reliable trip free operation on overloads and short circuits within maximum breaking capacity specified. The trip mechanism is of a latch type and a high contact force can be maintained until the unit trips. This prevents contact bounce & reduces the risk of contact welding.

Application : Main applications are protection of single phase motor, transformers, UPS, Power strips, Solenoids etc., against damage due to overcurrent conditions.

Operation : The mechanism of the circuit breaker is designed to open the contacts in the event of a current flow in excess of the rated current according to the time/current characteristics of the device. A thermo bimetal strip, which has the advantage of being immune to high inrush currents and line transients, is heated by an overcurrent and deflects, thereby releasing the latch mechanism. The contacts open even if the reset button is manually held in the closed position. This is known as 'trip free' mechanism. The contacts open and close with a positive snap action and the tripped state is clearly indicated by the extended projection of the reset button.

Shunt Terminal (N) : An optional additional terminal can be provided as a parallel circuit to the main current sensing circuit, for circuit breakers provided with heater winding, that is up to a rating of 6A. The shunt circuit between terminal 1 & 3 may be used for any signals which may be required in addition to the main circuit. However, since the circuit makes use of the bimetal as a current carrying path, the trip time of the circuit breaker may be slightly influenced.

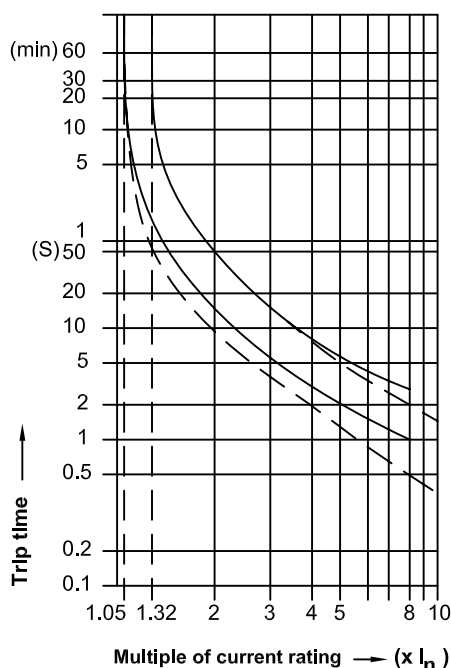
Time Current Characteristics : The standard characteristic is valid for ambient temperature of 23°C. If the device is to be used in an ambient temperature other than +23°C, allowance must be made when selecting the current rating according to the following guide lines:

Ambient temp. °C	-20	-5	0	+10	+20	+30	+40	+50	+60
Multiplication Factor	0.8	0.88	0.9	0.96	1	1.05	1.12	1.2	1.3

Example :

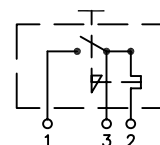
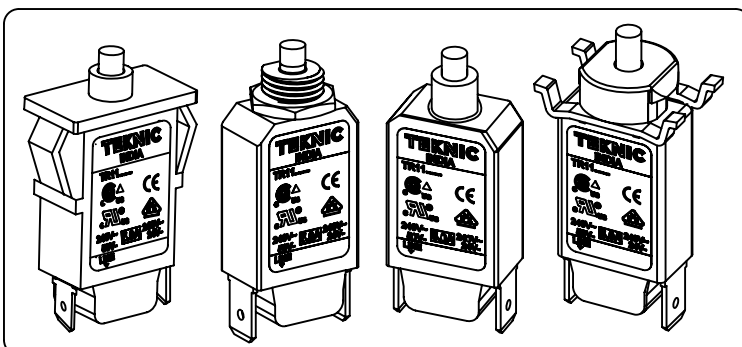
Normal Continuous Current : 1.8 A
Ambient Temperature : 40°C
Multiplication Factor : 1.12
Recommended Current Rating : $1.8 \times 1.12 = 2.016$
Select the nearest : 2 A

Operating Characteristic :



Multiple of current rating $\rightarrow (x I_n)$

Rated current
— — — — — < 6 A
— — — — — ≥ 6 A
Ambient Temperature 23°C



Technical Data

Current Rating in(Amp)	: 0.1 -16A
Standard Current Rating in(Amp)	: 0.1, 0.25, 0.5, 0.9, 1.0, 1.2, 1.5, 1.8, 2.0, 2.2, 2.5, 2.7, 3.0, 3.3, 4.0, 5.0, 6.0, 6.5, 7.0, 8.0, 9.0, 10.0, 12.0, 15.0, 16.0
Rated Voltage	: 240V~ 50/60 Hz, 50V DC / 24V DC (VDE)
Initial insulation resistance (500 V DC)	: > 100 Megohms. (As per EN 60934)
Dielectric strength	: 1.5 KV for One minute. (As per EN 60934)
Overload Switching Capacity	: 6 In AC up to 9.0A 4 In DC up to 12.0A (As per EN 60934) 60A AC/DC Max. from 10.0A to 12.0A
Maximum Breaking Capacity	: 8x In AC/DC for <6.0A, 60 A AC/DC MAX. for > 6.0A,
Power Loss	: 1 - 2 Watts
Operating Temperature	: Maximum 60°C Amb.
Operational Life at 2xI _n	: 1000 Cycles
Rated conditional short circuit current capacity I _{nc1} (PC1)	: SC :1KA, C1, 240V AC 50 V DC Ref.: EN60934 Ref.: CSA22.2 No.235-04, UL-1077
Tripping current code(TC)	: TC 2 Ref.: CSA22.2 No.235-04
Over load rating	: OLO 240 V AC, 50 V DC, Ref.: CSA22.2 No.235-04
Application type	: General Industrial Ref.: CSA22.2 No.235-04
Method of tripping	: Thermal 'TO' Trip free
Type of actuation	: Reset type 'R'
Applicable Standards	: CSA 22.2 No. 235-04, UL-1077, EN 60934,
Weight	: approx. 11g
Approvals	: 0.1 - 16.0A 240 V AC 50 V DC 0.5 - 12.0A 240 V AC 24 V DC

Ordering Example :

TR11	B	X	63	R	1	A	7.0A
Product type							CURRENT RATING 0.1 TO 16.0A
MOUNTING TYPE:	TERMINAL CONFIGURATION	TERMINAL SIZE	SLIDER MARKING	Mouting Nut			
Body Mouting - B	Terminal 1&2 - X	6.3 - 63	0 - None	N - None			
Central nut - C	upto I _n 12A	4.8 - 48	1 - Vertical	A - Knurled metal nut			
Snap fit - S	Terminal 2&3 - Y	2.8 - 28	2 - Horizontal	B - Slotted knurled metal nut			
Wing clip - W	I _n > 6A	PCB - 10		C - Hex metal nut			
Wing clip - D	Shunt terminal - N			D - Sealing knurled boot			
Wing clip - D1	Terminal 1, 2 & 3						
PCB - P	Upto I _n 6A						
		COLOUR OF THE SLIDER WITHOUT TRIP BAND	COLOUR OF THE SLIDER WITH TRIP BAND				
		Red - R, Black - B, White - W	Red - RB (Red slider with white trip band)				
			Black - BB (Black slider with white trip band)				
			White - WB (White slider with black trip band)				

NOTE :

Terminal size 2.8 available upto I_n 6A

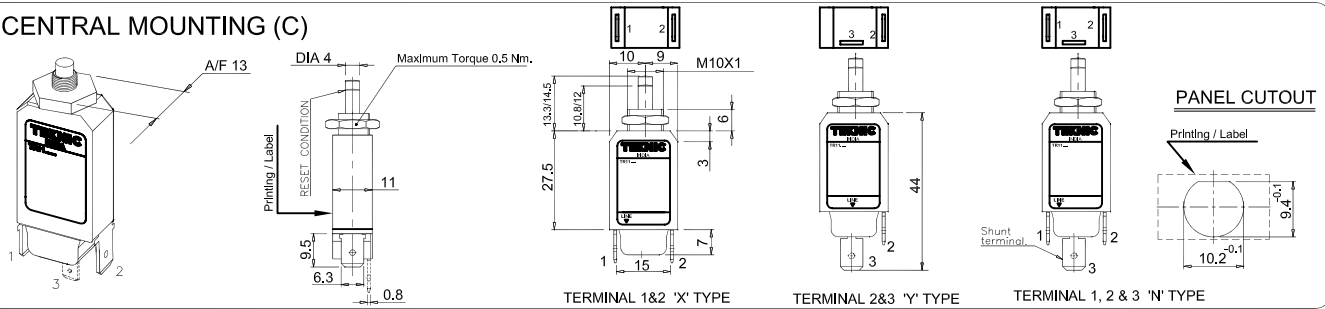
Terminal size 4.8 available in X-type only upto I_n 12A.

Terminal 1 & 2 with PCB pins available only upto I_n 12A.

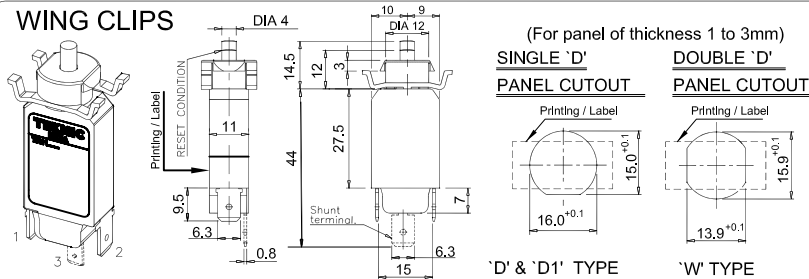
D & D1 wing clip types are with slider printing of current rating (horizontal).

MOUNTING OPTIONS

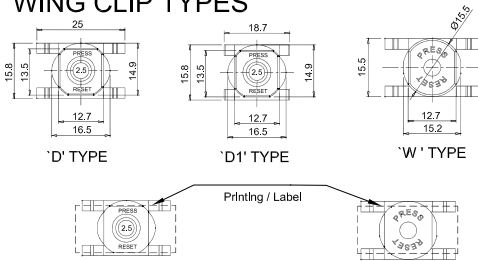
CENTRAL MOUNTING (C)



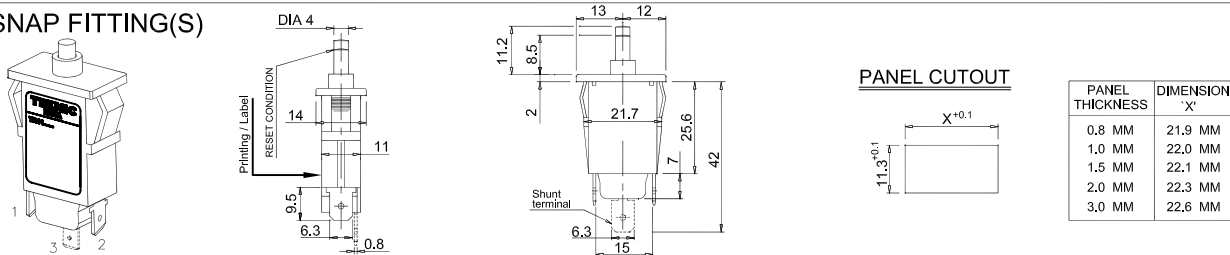
WING CLIPS



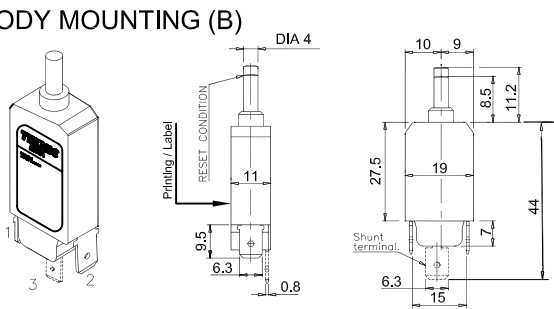
WING CLIP TYPES



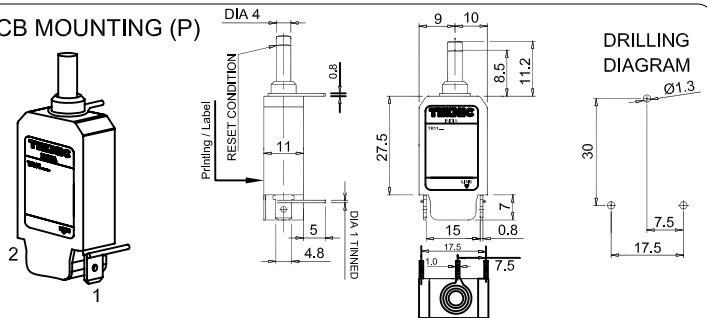
SNAP FITTING(S)



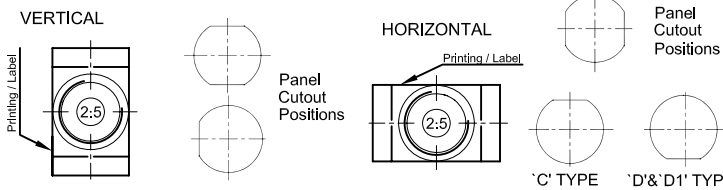
BODY MOUNTING (B)



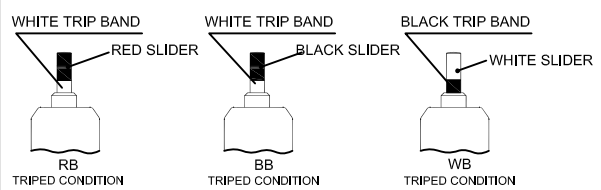
PCB MOUNTING (P)



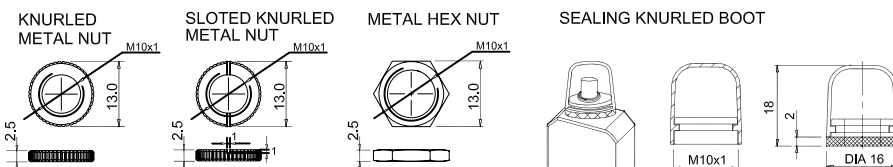
SLIDER PRINTING FOR CURRENT RATING



SLIDER COLOUR WITH TRIP BAND



ACCESSORIES



A sealing boot for central mounting Type (C) Circuit breaker to provide dust & splash protection (IP 54).