

Resettable Thermal Circuit Breaker, Single Pole, 3–16 A

new



T9-211: Threaded neck with nut PA 66



T9-311: Threaded neck with nut nickel plated



T9-611: Snap-in from front side



T9-711: Snap-in from back side



Description

- Thermal circuit breaker
- Supplementary protector for general industrial use
- Cycling trip-free release
- Reset type
- Single pole
- Mounting style: T9-211: Threaded neck with nut PA 66
T9-311: Threaded neck with nut nickel plated
T9-611: Snap-in front side
T9-711: Snap-in rear side

Standards

- IEC 60934 (4–16 A)
- UL 1077 (3–16 A)
- CSA C22.2 235 (3–16 A)
- GB 17701 (4–16 A)

Applications

- Power supplies
- UPS
- Power tools
- Household appliances
- Industrial appliances
- Medical diagnostic appliances
- HVAC

Weblinks

Approvals: <http://www.schurter.com/approvals>
RoHS: <http://www.schurter.com/rohs>

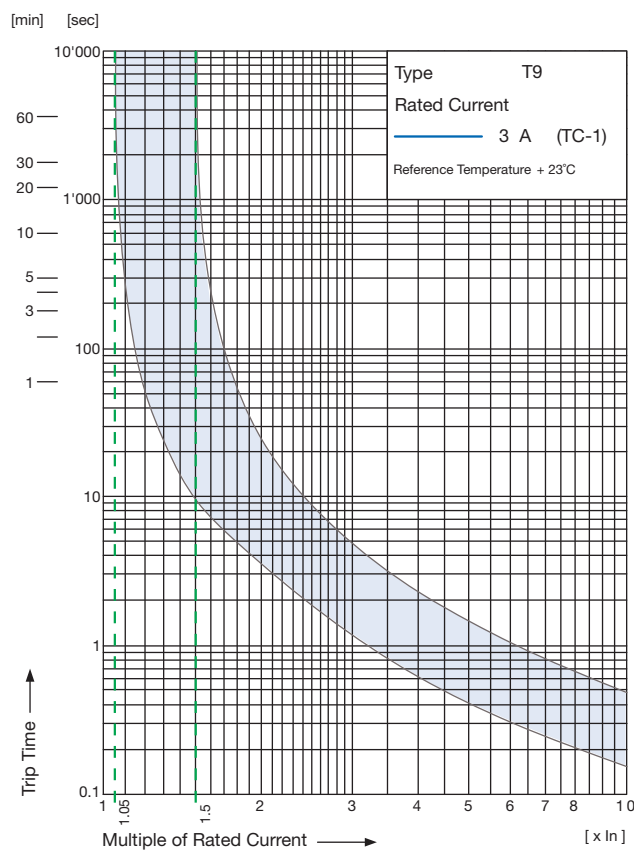
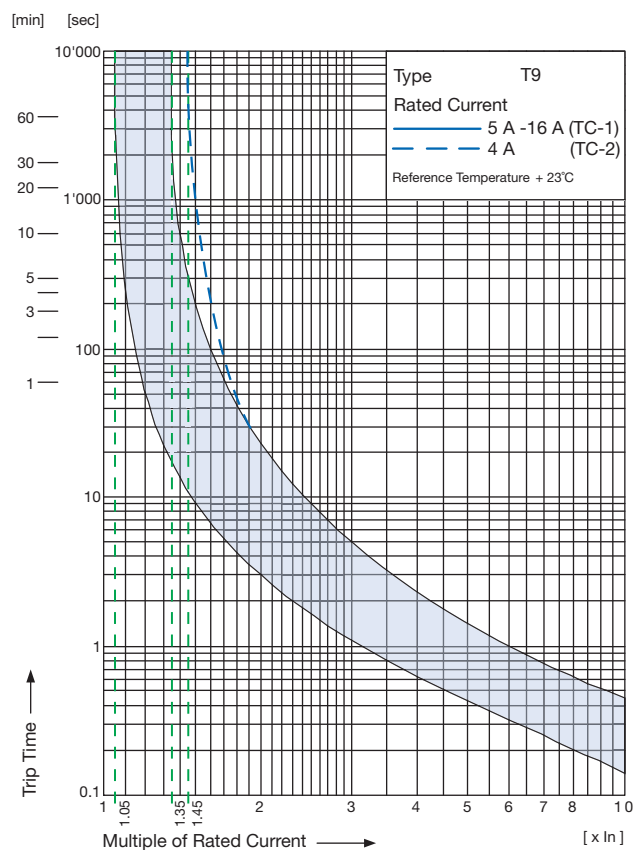
Technical Data

Rated voltage	(see approvals)	AC 240 V, 50/60 Hz DC 48/32 V
Rated current		3–16 A
Conditional short circuit capacity	IEC: Inc, PC1, AC 240 V UL / CSA: SC, AC 240 V / DC 48/32 V	2 kA 2 kA, C1
Overload rating	UL / CSA	OL0 240 VAC OL0 48 VDC and 32 VDC
Degree of protection	Accessible range Termination range	IP 40 IP 00
Endurance minimum	IEC: 200% I _n , cos phi 0.6	min. 50 cycles
Endurance typical	3–8 A: 150% I _n , cos phi 0.9 10–16 A: 150% I _n , cos phi 0.9	2500 cycles 6000 cycles
Dielectric strength		AC 1500 V
Insulation resistance	DC 500 V	> 1000 MΩ
Ambient temperature	5–16 A 4 A 3 A	-30 °C to 60 °C -30 °C to 50 °C -5 °C to 60 °C
Type of actuation	Reset Type (manual)	R
Type of tripping		Cycling trip-free
Weight		9 – 13 g

Typical internal resistance

Rated current	Internal resistance (mΩ)	Rated current	Internal resistance (mΩ)
3 A	65.0	10 A	7.3
4 A	21.6	12 A	7.0
5 A	23.6	14 A	4.8
6 A	16.3	15 A	4.3
7 A	15.3	16 A	3.9
8 A	12.9		

Tripping Characteristics



Effect of ambient temperature

The units are calibrated for an ambient temperature of +23°C. To determine the rated current for a lower or higher ambient temperature, use a correction factor (typical value) from the table below:

Ambient temperature (°C)	Correction factor
-5	0,85
+10	0,95
+23	1,00
+40	1,08
+60	1,21

Example

Rated current at +23°C	10,0 A
Ambient temperature	+60°C
Correction factor	1,21
Chosen rated current at +60°C ambient temperature	$10,0 \text{ A} \times 1,21 = 12,1 \text{ A}$

Approvals

		Rated currents	Rated voltage AC	Rated voltage DC
UL	UL 1077	3–12 A	240 V	48 V
		14–16 A	240 V	32 V
UL	CSA C22.2 235	3–12 A	240 V	48 V
		14–16 A	240 V	32 V
VDE	IEC 60934	4–12 A + 3 A pending	240 V	48 V
		14–16 A	240 V	32 V
CCC	GB 17701	4–12 A + 3 A pending	240 V	48 V
		14–16 A	240 V	32 V

Order Code

	Basic type
	T9 single pole, thermal overload switch, cycling trip-free
	Mounting style
	2 Threaded neck type with nut PA 66
	3 Threaded neck type with nut nickel-plated
	6 Snap-in type from front side (0.8...2.0 mm)
	7 Snap-in type from rear side (0.5...3.0 mm)
	Actuation type
	1 Reset Type (R-type)
	Terminal type
	1 6.3 x 0.8 mm quick connect terminals IEC 61210
	Front printing
	C rated current not marked
	P rated current printed on front (T9-611 only)
	Rated current
	3 A 10 A
	4 A 12 A
	5 A 14 A
	6 A 15 A
	7 A 16 A
	8 A

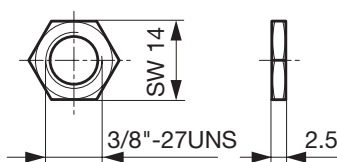
T9 - 6 1 1 P - 10A

Accessories

Protection cover TZZ31 for IP 65 for type T9-211/311:



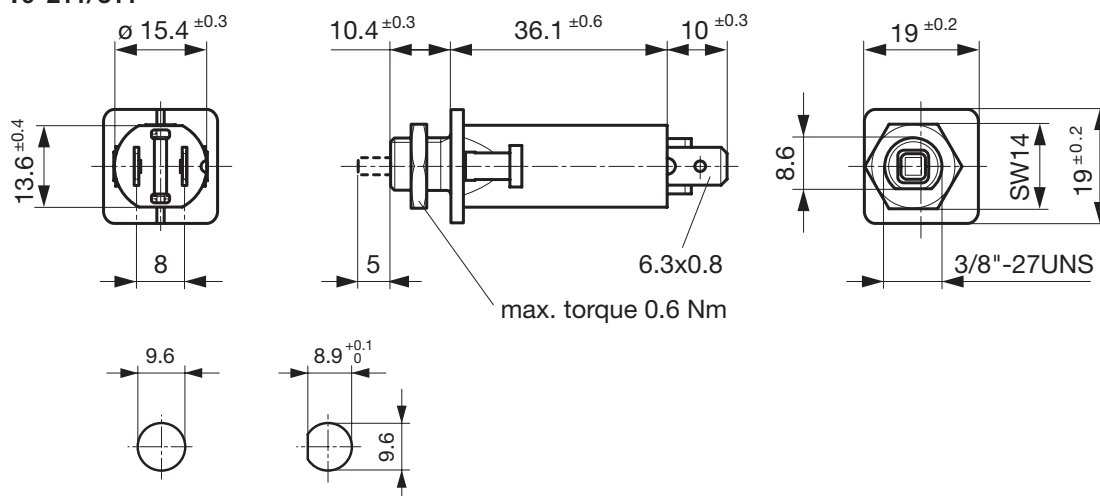
Hexagonal nut TZZ12 / TZZ51:



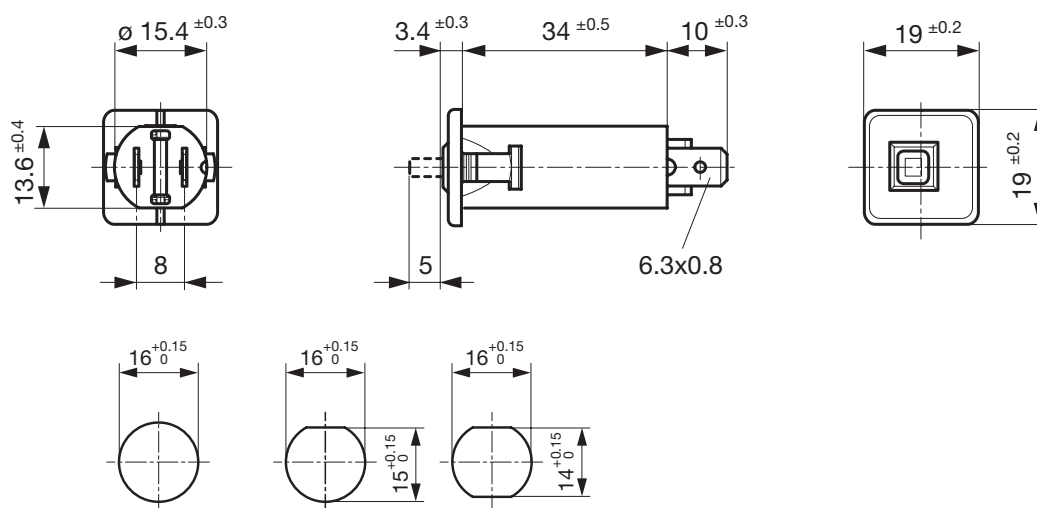
Order number	Type description
4404.0039	TZZ31 Protection cover for IP 65
4400.0420	TZZ11 Knurled nut nickel-plated
4400.0559	TZZ11-414 Knurled nut black
4400.0425	TZZ12 Additional hexagonal nut nickel-plated
4404.0072	TZZ51 Additional hexagonal nut PA 66

Dimensions

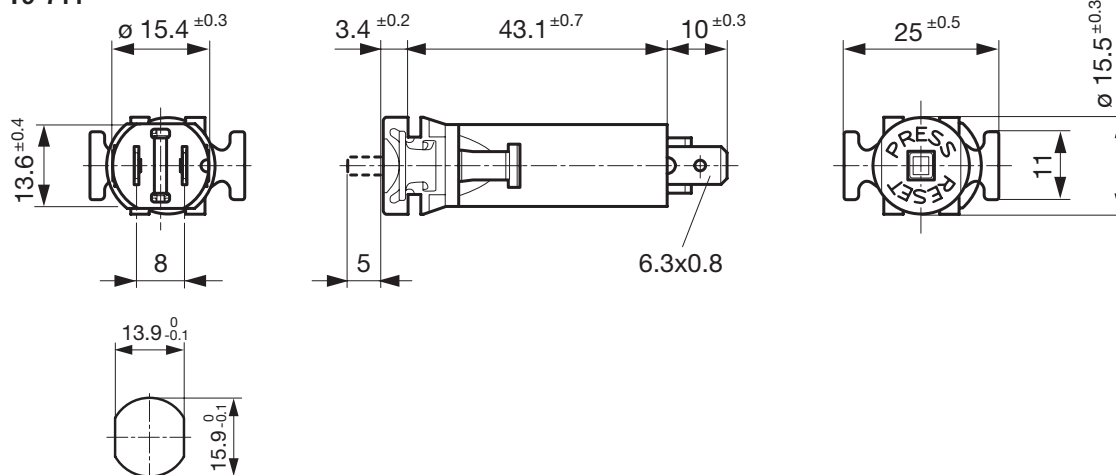
T9-211/311

Panel thickness $S = 0.8-5.5 \text{ mm}$

T9-611

Panel thickness $S = 0.8-2.0 \text{ mm}$ Recommended panel thickness: $0.8/1.2/1.6/2.0 \text{ mm}$

T9-711

Panel thickness $S = 0.5-3.0 \text{ mm}$