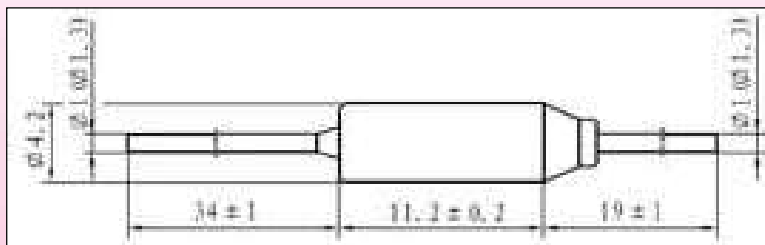


# Thermal cut outs, 10 and 16A 250V, axial wires, type 5MA3

## DIMENSIONS



## TECHNICAL FEATURES

**Main application:** Overheat protection of electrical or electronic equipment, home appliances, electrical coils and heating components.

**Important notice:** The proper function of this component not only depends of its rated temperature, but also of its assembly position, connection and electrical current.

**Housing:** Silver plated copper. This is a non-insulated electric life part. Protect from human contact and use appropriate design to avoid electrical shocks and hazards. Do not bend or make holes in housing

**Ingress protection:** TCO are not waterproof, do not immerse in liquid.

**Insulation:** 95% alumina, epoxy sealed. Do not submit epoxy sealing to temperature over 200°C

**Melting pellet:** Organic compound

**Mechanism type:** spring operated movable contact, operated by the melting pellet

**Terminals:** tin plated copper wires

**Wiring rules:**

**Mechanical resistance:** do not submit TCO wires to pulling force over 16N or pushing force over 4N

**Bending:** do not bend or cut wires at less than 6 mm from epoxy sealing or housing

**Crimping:** Do not submit to impact or mechanical force during terminals crimping. Wrong crimping will overheat the wire by Joule effect, fuse will melt, and epoxy seal will burn down.

Parts crimped to TCO wires must have enough mechanical strength and hardness to withstand normal vibration and impact, and it must not cause stresses due to heat dilatation

**Tin welding:** it is not allowed to use tin welding for fuse with rated temperature under 184°C without proper wire cooling solution to avoid fuse to melt.

**Electrical welding:** proper wire cooling solution must be used to avoid fuse to melt wire, and welding current cannot go through the fuse;

**Shrinkable sleeves:** do not use shrinkable sleeves, it will melt down the TCO during the shrinking process

**Environment corrosion:** TCO must be protected from corrosive environment, air or fumes.

**Rated voltage:** 250V(AC)

**Rated current:** 10A and 16A (2 different types)

The rated current is the max current that the TCO can carry without opening or change in calibration temperature, when submitted at a limited temperature named "Holding temperature" (Th), during a limited time.

**Rated temperature (Tf):** it is the fuse contact opening temperature measured inside calibration oven, with a current lower than 10 mA and a temperature rise of 0.5 to 1°C/min. Opening temperature cannot be below Tf-10°C and not higher than Tf. It is this temperature that is printed on the TCO.

**Holding temperature (TC):** TCO must not open or be destroyed when submitted during 168 hours at Th-6°C, at nominal voltage and rating

**Max ultimate temperature (Tm):** It is the maximum temperature that the fuse can withstand, after opening, without change in its mechanical and insulation properties

**Electrical strength between contacts after opening:** ≥500V

**Insulation resistance between contacts after opening:** ≥ 0.2MΩ under 500 V.

**Joule effect temperature increase:** lower than 15°C measured at the center of the fuse under nominal load.

**Standard:** DIN EN60691(VDE 0821):2007-09  
EN60691:2003+A1: 2007.IEC60691(ed.3);am1

**Product identification:**

SPF169: model number

TF172C: rated operation temperature (Tf)

10A250V: rated current and voltage

088: production number

**Installation and safety instructions:**

- Choose TCO temperature fuse which electrical insulation will not be effected by equipment overheat.
- TCO replacement must be made by exactly the same model of the same supplier

## Main references

Reference with 10A rating	Reference with 16A rating	Rated functioning temperature °C/°F (Tf)	Holding temperature °C/°F (Th)	Maximum temperature °C/°F (Tm)
5MA3SPF070019340	5MA3SPF070H19340	73°C/163.4°F	45°C/113°F	115°C/239°F
5MA3SPF077019340	5MA3SPF077H19340	79°C/174.2°F	52°C/125.6°F	125°C/257°F
5MA3SPF084019340	5MA3SPF084H19340	85°C/185°F	57°C/134.6°F	125°C/257°F
5MA3SPF091019340	5MA3SPF091H19340	94°C/201.2°F	66°C/150.8°F	140°C/284°F
5MA3SPF096019340	5MA3SPF096H19340	99°C/210.2°F	71°C/159.8°F	140°C/284°F
5MA3SPF106019340	5MA3SPF106H19340	108°C/226.4°F	77°C/170.6°F	145°C/293°F
5MA3SPF109019340	5MA3SPF109H19340	113°C/235.4°F	84°C/183.2°F	150°C/302°F
5MA3SPF121019340	5MA3SPF121H19340	122°C/251.6°F	94°C/201.2°F	175°C/347°F
5MA3SPF129019340	5MA3SPF129H19340	133°C/271.4°F	101°C/213.8°F	175°C/347°F
5MA3SPF139019340	5MA3SPF139H19340	142°C/287.6°F	114°C/237.2°F	185°C/365°F
5MA3SPF152019340	5MA3SPF152H19340	157°C/314.6°F	127°C/260.6°F	195°C/383°F
5MA3SPF165019340	5MA3SPF165H19340	167°C/332.6°F	130°C/266°F	205°C/401°F
5MA3SPF169019340	5MA3SPF169H19340	172°C/341.6°F	145°C/293°F	215°C/419°F
5MA3SPF182019340	5MA3SPF182H19340	184°C/363.2°F	156°C/312.8°F	225°C/437°F
5MA3SPF188019340	5MA3SPF188H19340	192°C/377.6°F	164°C/327.2°F	245°C/473°F
5MA3SPF216019340	5MA3SPF216H19340	216°C/420.8°F	189°C/372.2°F	280°C/536°F
5MA3SPF227019340	5MA3SPF227H19340	227°C/440.6°F	190°C/374°F	295°C/563°F
5MA3SPF240019340	5MA3SPF240H19340	240°C/464°F	190°C/374°F	305°C/581°F