FLTSN-PXXXP100

Passive temperature probe

Description

FLTSN-PXXXP100 are passive temperature probes (Resistance Temperature Detectors), which function by measuring the change in electrical resistance of a material as its temperature changes. They have a positive linear temperature coefficient of resistance: when the measured temperature rises, the resistance rises as well.

The passive temperature probes FLTSN-PXXXP100 provide the following benefits:

- Stability: Reliable temperature measurements due to the platinum sensor element used.
- Robustness: The sensing element is coated with waterproof acrylic coating and enclosed in ABS (Acrylonitrile Butadiene Styrene) plastic tube.
- User-Friendliness: Simpler connection with two cores — Line and Neutral.

With their simplicity and practicality, the passive temperature probes FLTSN-PXXXP100 can be implemented effortlessly in various HVAC applications.

Key Features

- Sensing element:
  - Coated in acrylic and enclosed in a plastic tube
- Positive linear temperature coefficient:
  - Enhanced readability of temperature changes
  - Relatively constant change of resistance per degree
  - No calibration required
  - Suitable for various applications
- Tinned connections:
  - Improved solderability
  - Prevention of fraying of stranded wires
  - Reduced corrosion
- Cable sheath:
  - Colour: white
- Plastic tube:
  - Colour: black
  - Material: ABS (Acrylonitrile Butadiene Styrene) plastic
- Sensing element characteristics:
  - Standardised characteristics according to IEC 60751
  - Short reaction times down to t0.9 ≤ 5 s (flowing air, 3.0 m/s)
  - Outstanding stability of temperature characteristic

Technical Specifications

Temperature coefficient (0 – 100°C) [ppm/K]	3850
Long-term stability [%]	< ± 0,04
Flying leads length [m]	1
Flying leads cross section [mm²]	0.5
Operating temperature [°C]	-20 – 60
Operating relative humidity [% rH]	< 95

Area of Use

- Temperature measurement in HVAC applications
- Indoor and outdoor applications

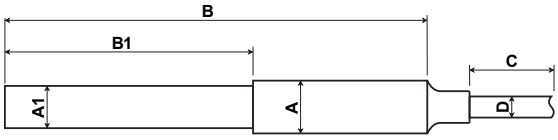
Standards

- Low Voltage Directive 2014/35/EU
- Electromagnetic Compatibility (EMC) Directive 2014/30/EU
- WEEE Directive 2012/19/EU
- Commission Delegated Directive (EU) 2015/863 (RoHS 3) of 31 March 2015 amending Annex II to Directive 2011/65/EU of the European Parliament and of the Council as regards the list of restricted substances

Article Codes

Article code	Measurement current [mA]
FLTSN-P500P100	0.1—0.4
FLTSN-P1K0P100	0.1—0.25

Fixing and Dimensions

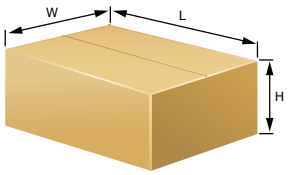


Article code	A1	A	B1	B	C	D
FLTSN-PXXXP100	8 mm	9 mm	53 ± 2 mm	89 mm	1000 mm	4 mm

Global Trade Item Numbers 14 (GTIN 14)

Article	Unit	Carton	Box
FLTSN-P500P100	5401003019016	5401003303023	5401003504468
FLTSN-P1K0P100	5401003019023	5401003303030	5401003504475

Packaging



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight [kg]	Gross weight [kg]
FLTSN-P500P100	Unit (1 pc.)	-	-	-	0,04	0,04
	Carton (24 pcs.)	492	182	84	0,96	1,96
	Box (144 pcs.)	590	380	280	5,76	12,68
FLTSN-P1K0P100	Unit (1 pc.)	-	-	-	0,04	0,04
	Carton (24 pcs.)	492	182	84	0,86	1,11
	Box (144 pcs.)	590	380	280	5,18	7,58

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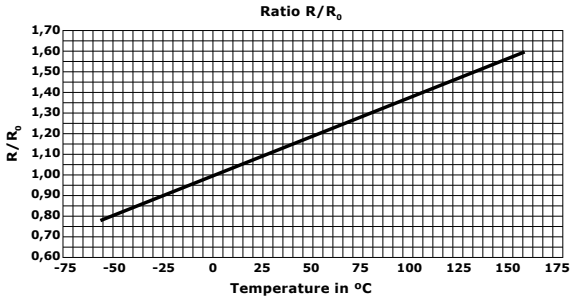
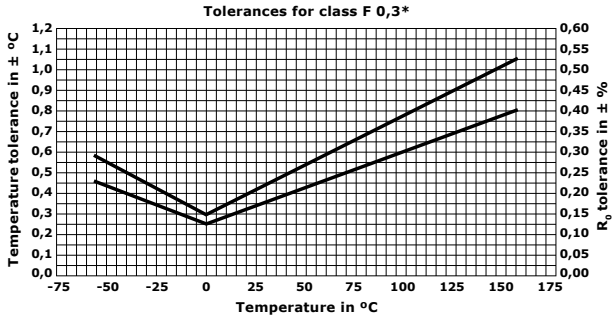
Operational Diagrams

Resistance values



The diagram above shows how the resistance of a platinum RTD changes with temperature without referring to a specific RTD. It is normalised so that at 0°C, the ratio (R/R_0) is 1. The advantage of this diagram is that all RDTs (PT500, PT1000, etc.) lie on the same curve or in other words, the diagram is applicable for all of the devices from the FLTSN-PXXXP100 series. The curve is described by the following formula, where T_0 is 0°C: $R/R_0 = 1 + 3850 \cdot (T - T_0)$.
To use it, multiply ($1 + 3850 \cdot (T - T_0)$) — the normalised value at specific temperature — by R_0 — the nominal resistance at 0°C — to get the real resistance.

Tolerance values



The diagram above shows the temperature and resistance tolerances for RTDs at different temperatures.

*__Class F 0,3__ refers to measuring resistor classes (specified by IEC 60751), which define how accurate temperature measurements can be in accordance with the actual temperature that is being measured. Or in other words, the classes show the permissible difference between those values. In **class F 0,3**, the permissible deviation is ± 0.3 °C at 0 °C.