COMET TR050M Temperature Sensor Instruction Manual

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Instruction Manual in Czech language is available here: www.cometsystem.cz/sondy.htm, or can be obtained from your supplier.

SENSIT s.r.o.
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Fax: +420 571 625 572 Company is incorporated in the Companies Register at the Regional Court in Ostrava, Section C, File 13728, sensit@sensit.cz, www.sensit.cz

Legal regulations and standards:

- Electrical connection of the detector may only be carried out by a competent person with electrician qualification who is familiarized with the “Instruction Manual” in detail.
- The Instruction Manual is part of the product and it is necessary to keep it for the entire service life of the product.
- The Instruction Manual must be transferred to any other owner or user of the product.

- The disposal must be performed in compliance with the Directive 2008/98/EC of the European Parliament and of the Council – on waste and the Directive 2012/19/EU of the European Parliament and of the Council – on waste electrical and electronic equipment (WEEE), as amended.
- The sensors are delivered in packages, which guarantee resistance to mechanical influences and that meet the conditions with the European Parliament and Council Directive 94/62/EC on packaging and packaging waste), as amended.
- The final metrological inspection – comparison with standards or working instruments – is carried out for all the products. Continuity of the standards and working measuring instruments is ensured within the meaning of the Section 5 of Act no.505/1990 on metrology. The manufacturer offers a possibility to supply the sensors calibrated in SENSIT s.r.o. laboratory (according to EN ISO/IEC 17025 standard) or in an Accredited laboratory.

Application:

The temperature sensors TR050M are designed for measuring temperatures of gaseous and liquid substances. The temperature range for application of the sensor is -50°C to 400 °C, the maximum temperature may be exceeded up to 450°C in a short time – relates to active measuring part of sensor which is determinated by spacer ring. The sensors may be used for all control systems compatible with the Pt 1000 temperature sensor with a temperature coefficient of 3850 ppm / °C. Temperature sensors are developed for measuring temperature of smoke and flue gases in the flue fireplaces, stoves and boilers. They meet the ingress protection IP64 according to the EN 60 529 standard. The sensors are suitable for temperature measurement in chemically non-aggressive environments, the using must be chosen with regard to temperature and chemical resistant housing and a cable.

Recommended use and location of sensors:

- Operating position is arbitrary
- For correct function and long lifetime of the sensor it is necessary to keep insertion of the stem into the combustion throat at least 50 mm and also connected the sensor with a combustion throat of boiler
- Around the lead in cable with Teflon insulation must not be temperature higher than 260 °C

Contents

Warnings and restrictions

The sensors must not be used for measuring in locations:

- Where the specified technical parameters and operating conditions are not adhered
- Where the sensor is exposed to mechanical action
- With explosion hazard

- For measuring temperatures of subjects under voltage
- With chemically aggressive environment
- Where the sensor is exposed to flooding or jetting liquid

It is not suitable to use the sensors for measuring temperature in locations:

- Where sufficient contact with the measured fluid is not secured (low submersion of the sensor, effects of the surroundings).
- Where the supply cable might run parallel to mains cables (risk of interference signal induction and the measurement results may be influenced), the safe distance from mains power cables when cables run parallel can be as much as 0,5 m according to the nature of interfering fields.
- Where the sensor might be exposed to effects of strong organic and inorganic acids with medium and strong concentrations at high temperatures, weak organic acids with high concentrations and high temperatures, chlorinated hydrocarbons, and undiluted alkaline substances.

Failure to follow the said recommendations will negatively affect measurement accuracy, reliability and service life of the temperature sensor.

Declaration of conformity
SENSIT s.r.o. provides the product with the EU Declaration of Conformity issued according to Act No. 22/1997 Coll., as subsequently amended. The product is in accordance with the following directives:

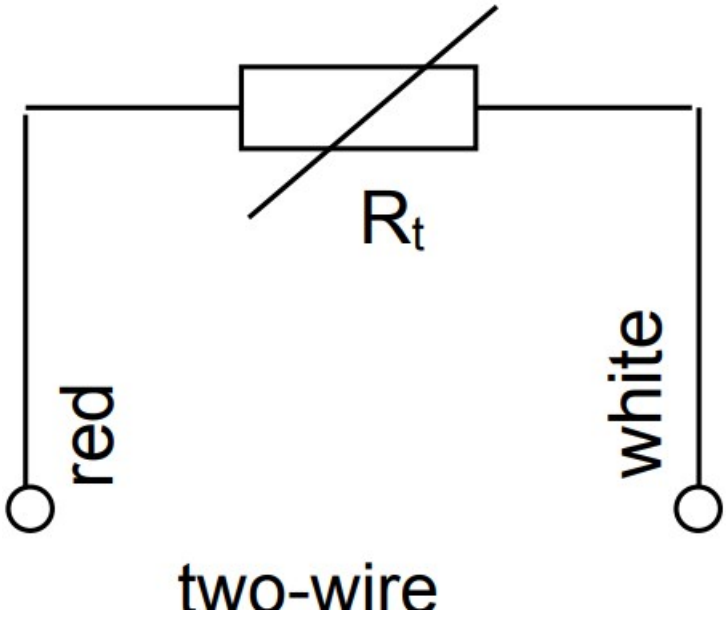
- Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment, as amended (current version 1.9.2020) Product safety and technical parameters were evaluated according to the following standards and norms, as amended:
- EN 60751, EN 60529, EN 60730-1, EN 60730-2-9

Sensor description:
The sensor consists of a metallic housing with the sensing element inside and a supply cable. The sensor housing is made of stainless steel DIN 1.4301. The sensors are connected as two-wire probes. The supply cable has external teflon insulation and is shielded. The shielding is not connected with the housing or with the temperature element. The length of the housing can be chosen from 60 up to 200 mm.

Sensor installation:

1. Install the sensor in the measured location. For correct function and long lifetime of the sensor it is necessary to keep insertion of the stem into the combustion throat at least 50 mm and also connected the sensor with a combustion throat of boiler.
2. Connect the wires of the supply cable to the evaluation unit according the wiring diagram. The supply cable shielding is not conductively connected with the external housing of the sensor or with the temperature element.
3. After installation and connection to the consequential electrical measuring device, the sensor is ready for operation. The sensor does not require any special manipulation or maintenance.

Wiring diagram



Technical parameters

Type of element	Pt 1000 / 3850 ppm / °C
Accuracy class of element *	± (0,15 + 0,002½t½) in °C for range -50 to 250°C ± (0, 3 + 0,005½t½) in °C for range above 250°C
Temperature element wiring	Two-wire configuration
Measuring range **	-50 °C to 400 °C (450°C in short time)
Power supply	SELV or PELV
Max. / recomm. measuring current	Cl. A: 0,5 mA / 0,2 mA Cl. B: 0,8 mA / 0,3 mA
Sensor IP code	IP 64 according to EN 60 529
Housing material	Stainless steel DIN 1.4301
Housing diameter	6.0 ± 0.1 mm
Housing length	90/130 mm
Spacer ring diamete	8 mm
Dielectric strength	500 VAC according to EN 60730-1
Insulation resistance	> 200 MW at 500VDC, 25 ± 3 °C
Supply cable type	shielded teflon 2 x 0,22 m
Supply cable length	1 m
Supply leads resistance	0,161 W / 1 m at a temperature of 25 °C
External pressure endurance	2,5 MPa
Weight	0,07 kg / 1 m

* for two wire connection the influence of the cable resistance must be add to measured value, for example at temperature 25°C must be add the value 0,042 °C / 1m.
** applies to active measurement part of the case to the spacer ring

Operating conditions:

- temperature round the supply cable: -50 °C to 260 °C
- relative humidity of the surroundings: 10 to 100 %
- atmospheric pressure: 70 to 106 kPa

Storage

- Ambient temperature 5 to 40 °C
- Humidity 5 to 85%

Delivery

Each delivery contains the following unless otherwise agreed by the customer:

- Sensor according to purchase order
- Instruction Manual, including Guarantee Certificate
- Delivery Note

Complaints and repairs:
Guarantee and after-guarantee repairs of sensors are ensured by the manufacturer. The product must be delivered including a copy of the Guarantee Certificate, duly packed and fit to shipment so as not to get damaged during transportation.

GUARANTEE CERTIFICATE

The product is covered by guarantee for 12 months from the date of purchase.

In this period, the manufacturer will remove all material or manufacturing defects arisen demonstrably during the applicable warranty period. The manufacturer is liable for the technical and operational parameters of the product given in the user manual. Any identified defects will be claimed by the buyer without undue delay after their identification or, as appropriate, after the buyer was able to identify them during his routine care. A completed Warranty Certificate with a brief description of the defect plus the product must be submitted with the claim.

Warranty does not cover a product:

- That was damaged during transport and inappropriate storage, improper commissioning and/or that has been used for a purpose other than specified
- That has been used in an improper manner, inconsistent with the user manual and/or generally applicable technical standards or safety regulations
- That is worn or damaged as a result of normal use of the product, without loss of its operational characteristics and guaranteed technical parameters
- Into which unskilled intervention, unauthorised structural or other changes (reprogramming, resetting of set parameters, etc.) have been made
- That is mechanically damaged, e.g. by fall, being hit by a hard object, cleaning with unsuitable agents, power cord tearing/breaking, breaking or other damage of individual product parts
- That has been exposed to adverse external influence, e.g. object intrusion, wrong supply voltage, influence of

chemical processes, electrical surge (obviously burnt components or printed circuits), dusty, dirty, aggressive or otherwise unsuitable environment, except normal variation

- That has been damaged by an incidental or natural disaster or as a result of natural or external phenomena, such as storm, fire, water, excessive heat
- That is claimed without the Warranty Certificate or nameplate.

Rights and obligations regarding the rights arising from defective performance will be governed by the applicable legislations and the applicable Business Terms and Conditions of SENSIT s.r.o. and this Warranty Certificate.

Documents / Resources

	COMET TR050M Temperature Sensor [pdf] Instruction Manual TR050M Temperature Sensor, TR050M, Temperature Sensor, Sensor

References

- Teplotní čidla, sondy a snímače | SENSIT výrobce snímačů