

OPERATION MANUAL



Temperature probe with transducer Series TF-GLT

Description



Typ INT
for duct mounting,
probe installed



Typ EXT
with cable,
probe sold



Typ AF
for wall mounting,
probe sold

Characteristic features

- Standard signal 0...10 V or 4...20 mA
- 3 point calibrated and linearised output
- High long term stability, innovative technique
- Sensor in stainless steel protection tube
- High quality housing enclosure IP 65
- Model 0...10 V with AC/DC-voltage
- Optional with extended probe (-EXT)

Areas of application

- Building instrumentation
- Industrial measurement and control systems
- Temperature logging

Attention

Please avoid extreme mechanical and inappropriate exposure.

The device/product is not suitable for potential explosive areas and medical-technical applications.

Technical data

Temperature measurement	
Measuring range	-30 ... +70 °C
Sensor element	Platinum resistance Pt1000
Accuracy	±0.3 K (from 0...50 °C)
Output scaling	-30...+70 °C
General	
CE-conformance	2014/30/EU
EMV-Noise emission	EN 61000-6-3:2011
EMV-Noise withstanding	EN 61000-6-1:2007
Protection tube housing	Stainless steel 1.4571
Electronics housing	Plastic
Connection	Screw terminals 0.75 mm ²
Connection cable	Type -EXT 1500 mm
Operating voltage	Type -10V: 12 ... 24 V AC / DC Type -20MA: 12 ... 24 V DC
Over voltage protection	Varistor and RC-Filter
Other scaling and signal voltage available on enquiry!	
Rights reserved for change in technical data!	

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Application range

In the area of building instrumentation, there is a requirement for reasonably priced temperature probes which are suitable for continuous operation and protected against over voltage and transients. Further aspects are AC/DC supply, high long term stability as well as a good measuring accuracy in the application. The B+B temperature probes of -GLT series are developed for these requirements and are specially suitable for application in this area due to the modern sensor technology and innovative construction with an ASIC.

The measurement of temperature is done with a precise and long term stable platinum resistance with industrial suitability. The processing of resistance curve is linearised over a second order polynomial as per DIN 47115. With electronic signal processing, the temperature values are converted into a standard signal of 0 ... 10 V or 4 ... 20mA. The voltage supply for the 0 ... 10 V model can be done alternatively with AC or DC supply. The 4 ... 20 mA model is meant for only DC supply.

The sensor is mounted in a protection tube of high grade stainless steel 1.4571 and is also suitable for measurement in liquid media or for mounting in ventilation ducts. Because of the extended probe and thermally insulated electronics, self heating is avoided and hence a higher precision level is achieved in temperature measurement.

Supply

For 4 ... 20 mA model, only DC supply is possible. The 0 ... 10 V model can be alternatively fed with either DC or AC voltage and also with unfiltered rectified voltage.

In case of AC supply, the neutral point of the transformer must be connected to signal ground and the connection of further probes must be absolutely done with phase balance. In case of supply with rectified unfiltered voltage, the minus must be connected to reference ground and plus to be connected to +DC / AC 24 V. Wrong connection leads to malfunctioning or can cause damage to the electronics!

Calibration

The measuring probes are calibrated by a precision resistance decade with reproducibility of PTB National standard. Calibration certificate as per ISO 9000 standard is also available with some extra charges.

Setting

Because of the high grade platinum sensor element, the probe is long term stable and maintenance free. Hence, a re-calibration is not required as per practice.

The calibration connector is preserved only for factory purpose and must not be connected.

Measurement of signal voltage

In order to avoid measuring error in the 0 ... 10 V model due to line resistance and current flow through the grounding wire, a separate grounding wire is to be used for the signal voltage. The voltage measurement should be with a four wire system.

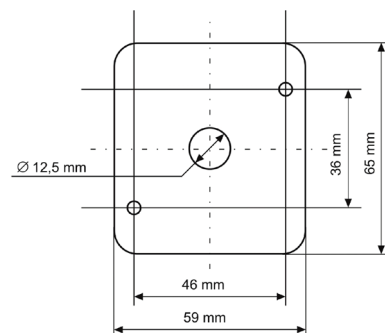
Connection

Preferably shielded connection cable should be used for the connection. First of all, it is to be noted that in EMI disturbed environment, the shielding should be grounded. Check before connection, whether the supply voltage is as per operating voltage specification mentioned in the data sheet.

Mounting of measuring probes

For mounting of external measuring probes, commercially available bayonet connectors or mounting flanges can be used. Please ask for our accessories overview. Because of the protection tube, the probe is liquid proof and pressure tight. The projected measuring probe type -INT can be directly mounted on the ventilation ducts. Drill holes for the probe and two mounting screws with the help of enclosed drilling template. Directly mount the probe on the ventilation duct with a gasket in between. Alternatively, a mounting flange is available with clamping ring / clamping screws.

Drilling template for measuring amplifier



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Product variants

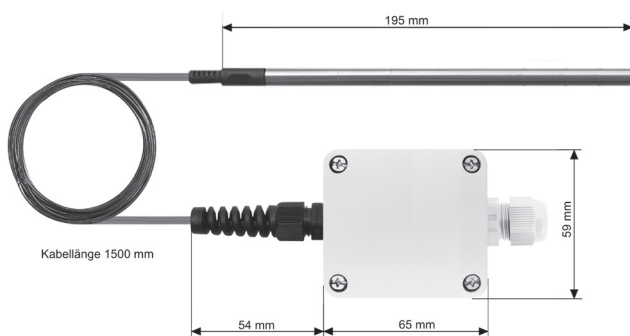
Type INT:

The protection tube with the temperature sensor is solidly attached to the evaluation electronics. Other protection tube lengths (max. 500 mm) are available on inquiry.



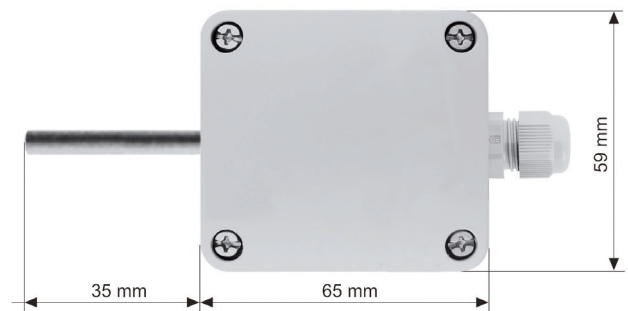
Type EXT:

The measuring probe is connected to the evaluation electronics through a solidly mounted cable (approx. 1.5 m). The cable length is compensated. Other cable lengths (max. 5 m) and protection tubes are available on enquiry.



Type AF:

Model for wall mounting, for example, as external probe. In this type, the measuring probe is horizontally flanged (at the front side) to the evaluation electronics. The protection tube length is around 35 mm.



Order

Temperature probe with transducer	Order No.
Typ INT - 0 ... 10V	TF-GLT-10V-INT-T1
Typ INT - 4 ... 20mA	TF-GLT-20MA-INT-T1
Typ EXT - 0 ... 10V	TF-GLT-10V-EXT-T1
Typ EXT - 4 ... 20mA	TF-GLT-20MA-EXT-T1
Typ AF - 0 ... 10V	TF-GLT-10V-AF-T1
Typ AF - 4 ... 20mA	TF-GLT-20MA-AF-T1

Accessories	
Mounting flange for 6 mm sensor, stainless steel Aisi 304	0554 0359
Mounting flange 73 mm, Inner Ø6,2 mm	0170 0680-20

Guarantee

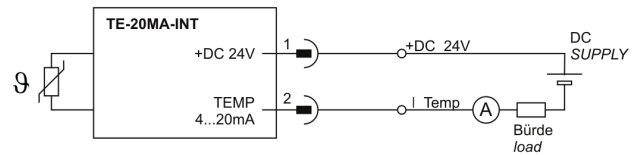
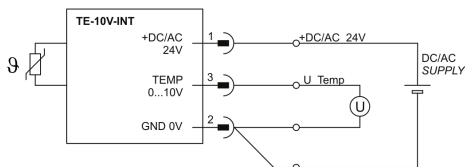
On our high quality measuring probes, you get a guarantee of 24 months. Mechanically damaged sensors or tampering into electronics makes the sensors devoid of guarantee claims. Calibration services are not covered in the guarantee.

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Plug configuration



Pin	Function	Description
1	+DC / AC 24 V	Operating voltage
2	GND 0 V	Reference potential
3	TEMP 0 ... 10 V	Temperature-Signal 0 ... 10 V

Pin	Function	Description
1	+DC 24V	Operating voltage
2	TEMP 4 ... 20 mA	Temperature signal 4...20 mA



The measurement of the output signal should be done with separate signal ground, in order to avoid measuring error due to voltage drop at the supply ground.

The shielding (SHIELD) is to be optionally covered. Connection through shielded lines is recommended.