TT05 Series RTD Temperature Transducer with CANopen output

The TT05 series is a RTD temperature transducer designed to comply with CANopen which is a cost effective way to control complex machines and offer benefits such as diagnostic and communication. The installation type ensures the reliable seals for vacuum and overpressure applications. The measured temperature value is digitalized, linearized, and made available for further processing through the CANopen serial bus protocol (CAN slave). A large number of additional useful functions are achieved with the DS404 device profile. All settings can be made using standard CANopen software tools.

Features

- Vibration-resistant construction
- For temperatures from -50 to 450 °C
- Single/double RTD temperature probe
- Limit value monitoring function
- Setting via standard CANopen software tools

Advantages

- Fast measurements
- Enhanced precision and repeatability
- Wide temperature measuring range
- Reliable preformance, and high flexibility

Applications

- Wind turbine
- Medical technology
- Mechanical engineering
- Drive technology
- Commercial vehicles
- Railroad systems

Standards

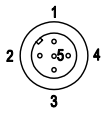
- DIN EN IEC 60751
- DIN EN 60529
- DIN EN 60068-2-6
- DIN EN 60068-2-27
- DIN EN 61326

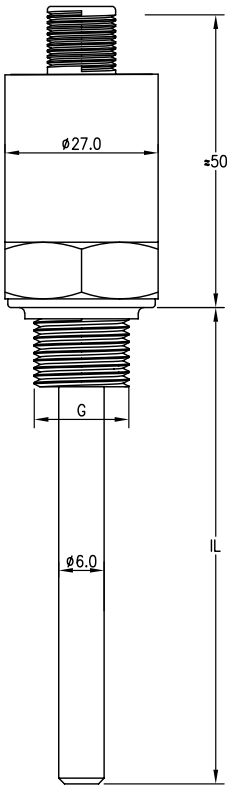
Specification

Parameter	Description
Terminal head	DIN EN 175301-803
Process connection	Thread, stainless steel AISI 316L
Protection tube	Stainless steel AISI 316L, Ø 6 and Ø 8 mm
Protection type	IP65
Measuring insert	RTD temperature resistance, DIN EN IEC 60751, class B
Measuring temperature range	-50 to 450 °C
Sensor element	PT1000
Response time	$t_{0.5}$ = 5 s, $t_{0.9}$ = 12 s, in water 0.4 m/s, Ø 6 mm $t_{0.5}$ = 40 s, $t_{0.9}$ = 110 s, in air 3.0 m/s, Ø 6 mm
Accuracy of sensor element	±(0.3 + 0.005 * t) °C (class B per IEC 60751)
Accuracy of electronics	±0.3 % of measuring span
Overall accuracy	Overall accuracy = accuracy of sensor element + accuracy of electronics Example: Medium temperature t = 100 °C, measuring range 0 ...200 °C Accuracy: ±(0.3 + 0.005 * 100) + 0.3/100 * 200 = ±1.4 °C
Ambient operating temperature	-40 to 85 °C
Storage temperature	-40 to 85 °C
Ambient operating humidity	0 to 95 % RH
Shock	50 g /11 ms, 30 g/6ms
Vibrations	4 g sine function 5 – 200 Hz
EMC	EN 61326-1
Electrical protection	Short circuit reverse polarity protection
Power supply	10 to 30 VDC
Current consumption	Max. approx. 45 mA
Output signal	CANopen
CANopen protocol	CiA DS 301, V4.02, CANopen slave
CANopen profile	CiA DS 404, V1.2 measuring devices and Close-Loop controllers
Baud rate	20 kBaud to 1 MBaud, setting via LSS or SDO

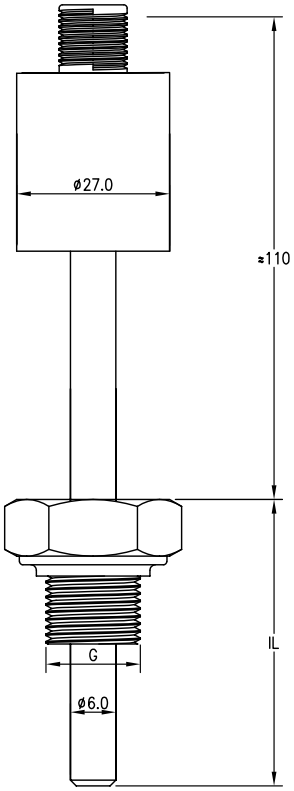
Dimension (mm)

Electrical connector
M12*1 5 Pin





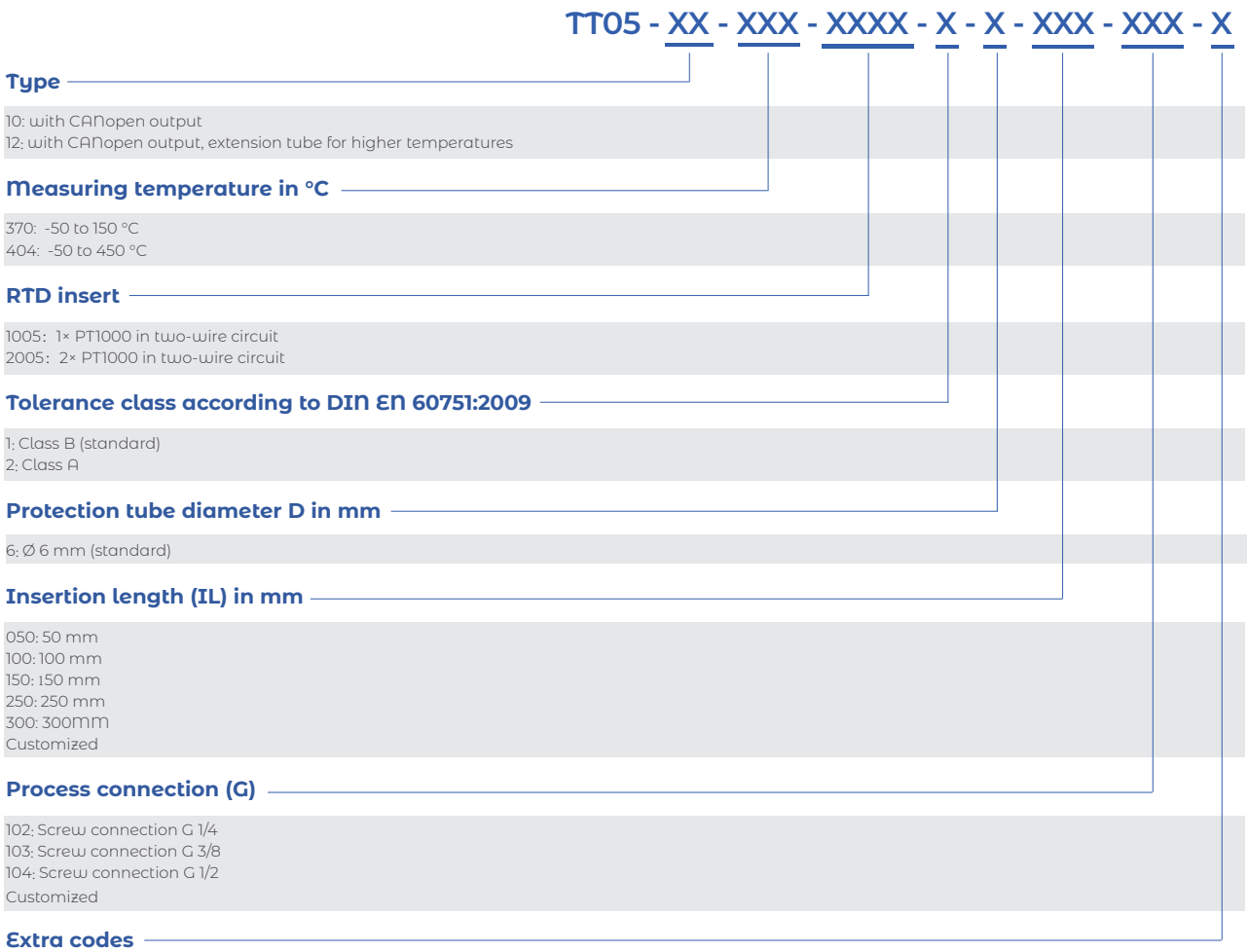
Type Code 10
Continuous protection tube



Type Code 12
Extention and
Continuous protection tube

Pin	Connection	Symbol
1	Output	Schielding
2	Voltage supply DC 10 to 30V	$+V_{DD}$
3		$-V_{DD}$
4	CANopen	CAN_H
5		CAN_L

Name Guide Description



Notes

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Safety and Environment

The product is to be installed by manufacturer trained personnel or competent person trained in accordance with manufacturer installation instructions.

With respect to applicable standards IEC 61010-1/ EN 61010-1 *safety requirements for electrical equipment for measurement, control and laboratory use part 1 general requirements*, the product should be used in limited energy secondary circuits.

Risk of electrical shock

Certain parts of the module can carry hazardous voltage during the operation process of the product because hazardous live voltage of primary conductor, power supply occurs, injury and/or serious damage will be caused if this warning is ignored.

Conducting parts must be inaccessible after installation of the product. Additional protection including shield or protective housing could be used according to IEC 60664 Insulation coordination for equipment within low-voltage supply systems.

Disconnection of the main supply will protect against possible injury and serious damage.

ESD protection

Damage from an ESD event will occur if the personnel is not well grounded when handling.

Important notice

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