

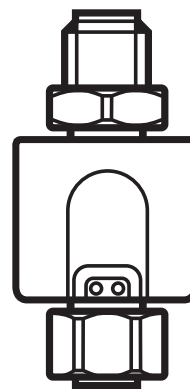


Operating instructions
Measured signal converter
for temperature sensors

TTD-20-N40160F-H
TTD-20-N40300F-H

02/2011

704998/00



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1 Preliminary note

1.1 Symbols used

▶ Instruction

> Reaction, result

→ Cross-reference

 Important note

Non-compliance can result in malfunction or interference.

2 Safety instructions

- Please read this document prior to set-up of the unit. Ensure that the product is suitable for your application without any restrictions.
- Improper or non-intended use may lead to malfunctions of the unit or to unwanted effects in your application. That is why installation, electrical connection, set-up, operation and maintenance of the unit must only be carried out by qualified personnel authorised by the machine operator.

3 Functions and features

In connection with a temperature probe the unit monitors the system temperature in machines and plants.

Connectable temperature probe:

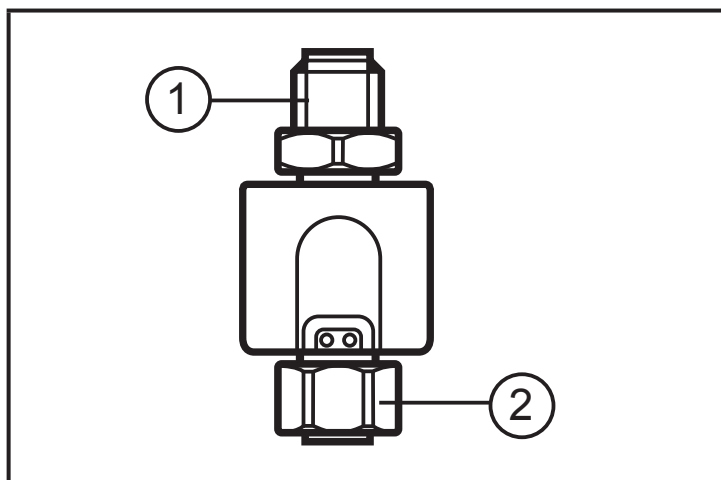
Resistance thermometer RTD PT100.

4 Function

- The unit converts the measured signal into a temperature-proportional analog signal: 4...20 mA.

5 Installation

- ▶ Connect the unit to a temperature probe.



- 1: Connection for voltage supply and output signals
- 2: Connection for temperature probe

6 Electrical connection

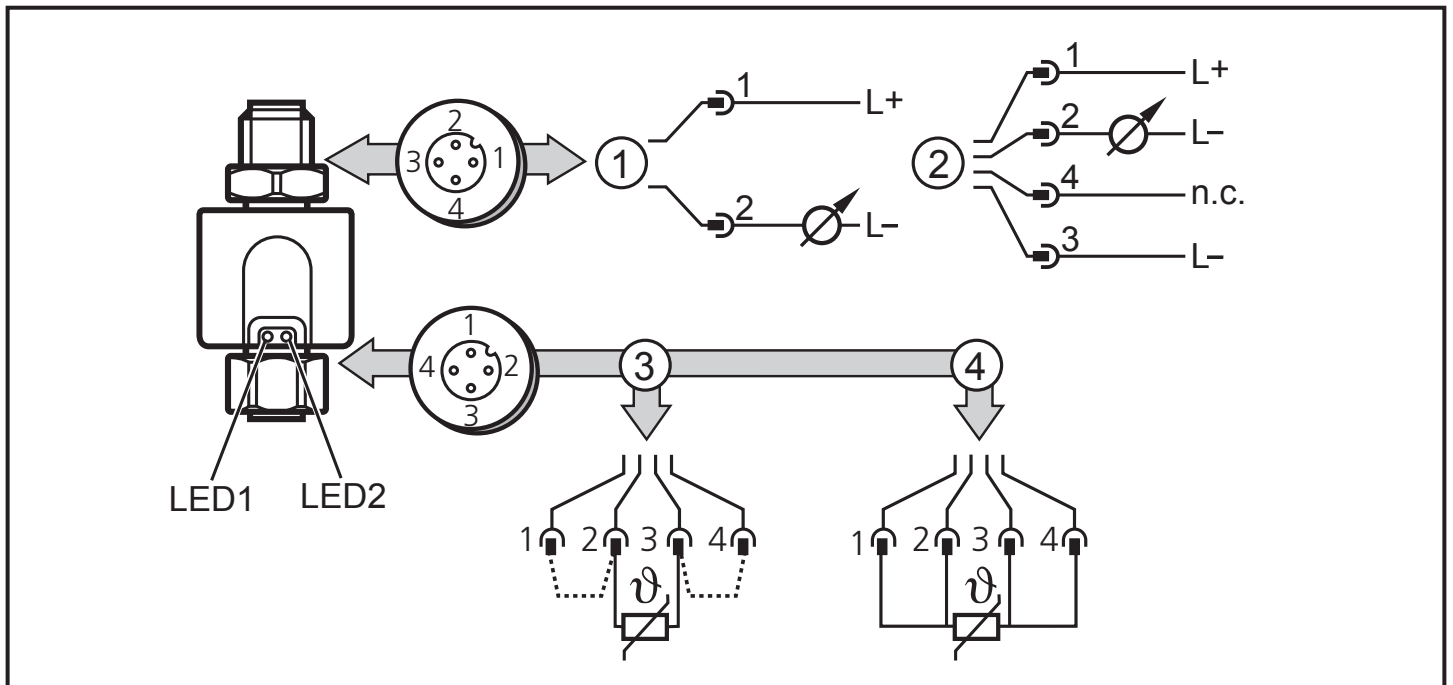


The unit must be connected by a qualified electrician.

The national and international regulations for the installation of electrical equipment must be adhered to.

cULus - Class 2 source required.

- ▶ Disconnect power.
- ▶ Connect the unit as follows:



n.c. = not connected

1: Connection Ub and output signals (operation as 2-wire unit)

2: Connection Ub and output signals (operation as 3-wire unit)

3: Connection of a 2-wire measuring probe;

links between 1 / 2 and 3 / 4.

4: Connection of a 4-wire measuring probe.

LED 1: lit in case of operation as 3-wire unit.

LED 2: lit in case of a load on the analog output.

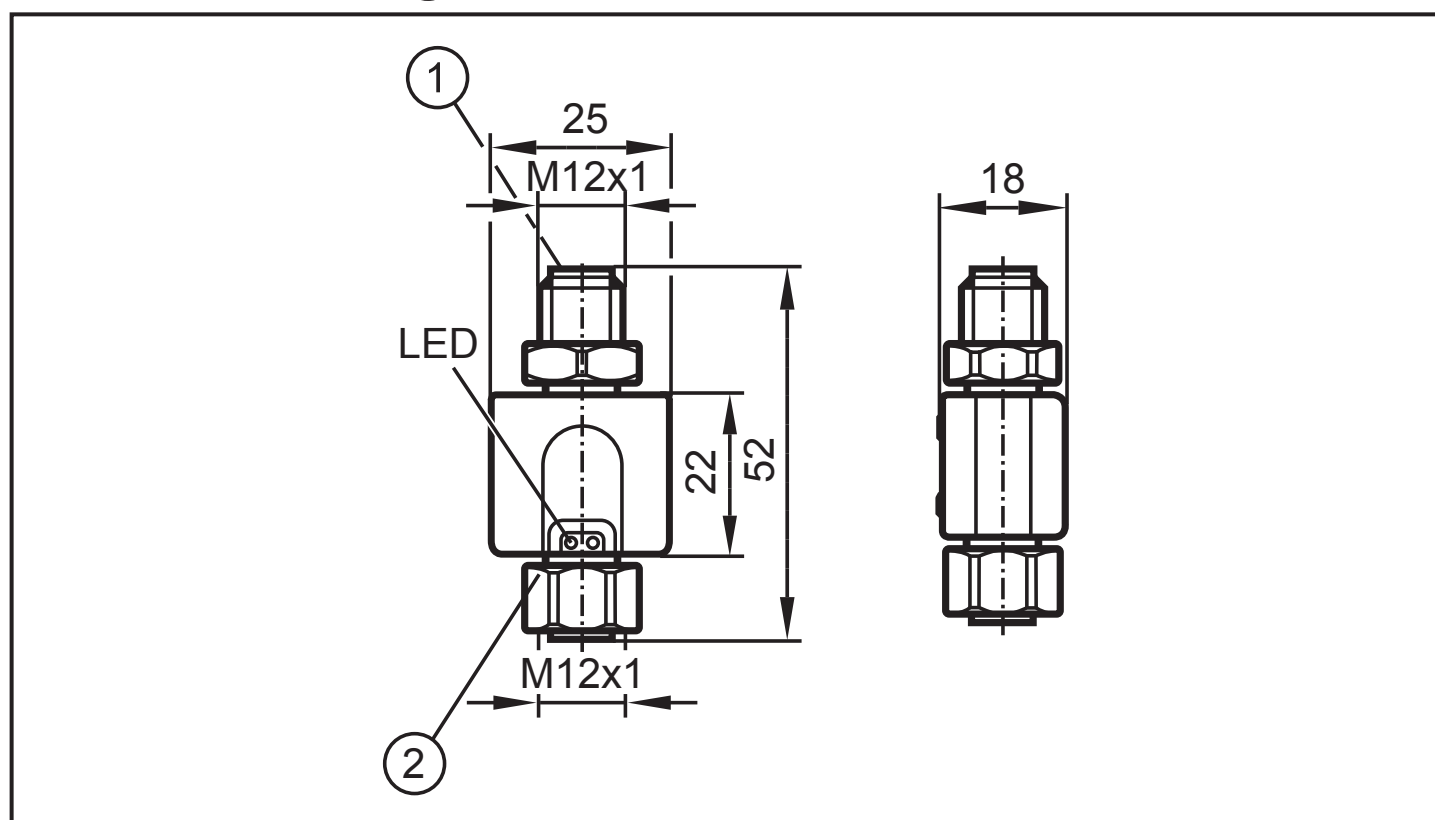
7 Operation

After power on, the unit is in the Run mode (= normal operating mode).

Response of the analog output in case of a fault:

| | |
|---|--|
| Value below the set measuring range | The output signal falls to min. 3.8 mA. |
| Value above the set measuring range | The output signal rises to max. 20.5 mA. |
| Value below or above the detection zone of the sensor | The output signal falls to min. 3.5 mA |

8 Scale drawing



Dimensions in mm

1: Connection for voltage supply and output signals

2: Connection for temperature sensor

9 Technical data

| | |
|---|---|
| Measuring range [°F] | |
| - TTD-20-N40160F-H | -40...160 |
| - TTD-20-N40300F-H | -40...300 |
| Operating voltage [V]..... | 20...32 DC |
| Short-circuit protection (pulsed); reverse polarity protection, overload protection | |
| Integrated watchdog | |
| Analog output | 4 ... 20 mA |
| Max. load [Ω] | 300 |
| Rise time analog output [ms] | 400 |
| Accuracy | |
| Analog output [K]..... | ± 0.3 + (± 0.1 % of the measuring span) |
| Resolution [K] | ≤ 0.1 |
| Temperature coefficient (in % of the span per 10 K) | 0.1 |
| Housing materials..... | PA PACM 12 (TROGAMID); PET; sealing: FPM (Viton); |
| | coupling nut: stainless steel 316L / 1.4404; connector: TPU |
| Ambient temperature [°C]..... | -25...70 |
| Storage temperature [°C] | -40...85 |
| Protection rating | IP 67 |
| Protection class | III |
| Shock resistance [g]..... | 50 (DIN / IEC 68-2-27, 11 ms) |
| Vibration resistance [g]..... | 20 (DIN / IEC 68-2-6, 10 - 2000 Hz) |
| EMC | EN 61326-1 |