

TE42 || Digital Temperature Transmitter

The TE42 is the latest generation 4-20 mA output digital head transmitter for temperature measurement of fluids and gases.

It accepts an input signal from resistance thermometers (RTD). It is easily installed in any industry-standard terminal head (form B, BUS, BUSH, S79, BBK).

Programmable Configuration

The TE42 is programmed for a particular application with the help of a programming kit and a PC. This can be done either before installation (off-line) or after installation (on-line). It can also be factory programmed per user requirements (see Ordering Code) prior to delivery. The configuration settings are stored in the transmitter's non-volatile memory (EEPROM)

TZ41 Programming Kit

The TZ41 Programming Kit consists of a PC software package, a communication adaptor unit, and a PC connection cable.

The communication adaptor electrically isolates the transmitter from the PC.

Bi-directional data communication allows the TE42's configuration details and tag number to be called from the PC, using the programming kit.

Input

Resistance Type Temperature Sensor: The TE42 is compatible with Pt-100 RTD temperature sensors con. to EN 60751. Lead-wire compensation is possible up to 20Ω.

Output

User programmable for 4-20mA or 20-4mA output, with 2-wire loop connection. Sensor open or short condition results in output signal being driven downscale or upscale (user programmable) per NAMUR NE43 specifications.

The device is protected against reverse polarity.

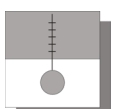


Important Features

- 2-wire 4-20 mA output
- Compatible with Pt-100 RTD sensors acc. to EN 60751 (IEC 751, DIN 43760)
- Unaffected by EMI
- Conform to EMC norms
- High accuracy
- Very low temperature coefficient
- PC programmable
- Sealed against moisture / humidity
- Sensor fault detection

Applications

- Food processing industries
- Heating, ventilation, air-conditioning
- Environmental systems
- Chemical process industries
- Petrochemicals



Specifications

	General
Power supply	24 V DC (10-35 V DC)
Min. input current	< 3.5 mA
Current limit	< 23.0 mA
Switch on delay	4 sec
Response time	2 sec
Sensor rupture	<3.6 mA or >21.0 mA (configurable)
Influence of power supply	± 0.01 %/V
Connection type	2-wire
Current output	4-20 mA or 20-4 mA
Max. load	$(V_{ref} - 10V) / 0.022 A$
Long term stability	< 0.1 K / year
Linearity error	< 0.1 %
Temperature drift	0.1 % / K
Calibration temperature	23°C ± 5 %
Adjustable zero range	< 50% FS
Damping (programmable)	0-60 sec
Ambient temperature	-40...+85°C
Climatic class	Cl. C, EN 60654-1
Weight	40 g
Protection class	IP 66 / IP 00
EMC immunity	Acc. to EN 61326-1
Vibration protection	4g / 2...150 Hz

Resistance Thermometer (RTD) Input			
Type	Min. Temperature	Max. Temperature	Min. Temp. Range
Pt 100	-200°C	850°C	10 K

Accuracy	0.2 K or 0.08 %
Sensor excitation current	< 0.6 mA
max. RTD lead resistance	11 Ω
Lead wire compensation (2-wire)	max. 20 Ω

Adjustment Features

By means of PC configuration kit TZ41

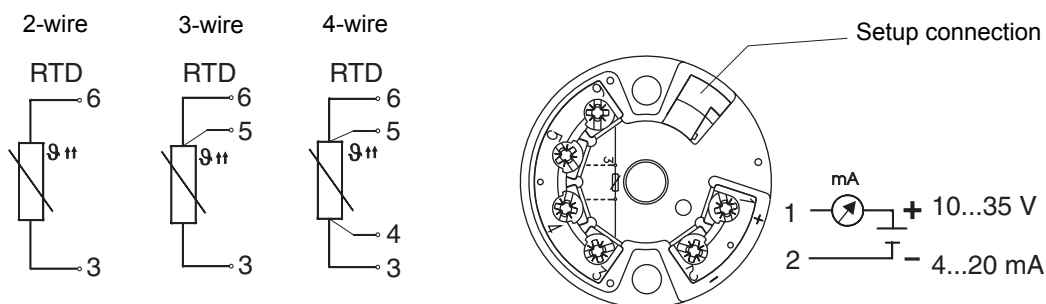
Input

Resistance Thermometer (RTD)
Pt100 acc. to DIN EN 60751
2 wire 3 wire 4 wire
Measuring range ___ - ___ °C
Extended Adjustments
Cable resistance compensation: ___ Ω (0...20 Ω) (2 wire RTDs only)
TAG no.: _____ (max. 8 digits)

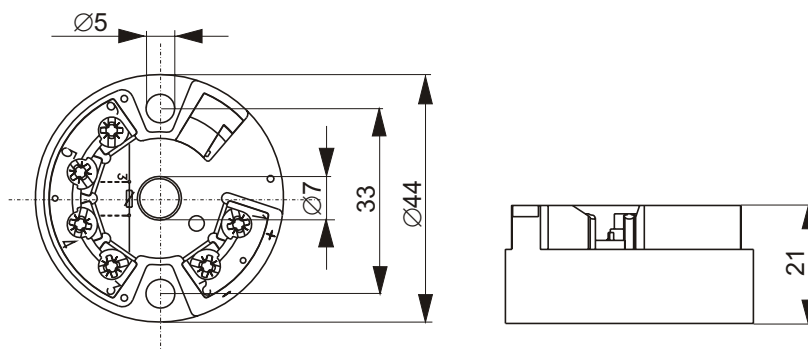
Output

Fault Signal	Signal	Damping
< 3.6 mA (NAMUR)	4-20 mA	0-60 sec
> 21.0 mA (NAMUR)	20-4 mA	

Terminal Connections



Dimensions (all units in mm unless stated otherwise)



Ordering Code

Digital Temperature Transmitter **TE 42**

Programming

None..... > 0 0 0

Input

Input Pt100, 2-wire (please state lead wire resistance: max. 20Ω) > 1

Input Pt100, 3-wire > 2

Input Pt100, 4-wire > 3

Output

4-20 mA..... > 1

20-4 mA..... > 2

Sensor Fault Action

< 3.6 mA (NAMUR) > 2

> 21.0 mA (NAMUR) > 3

Measuring Range _____ - _____ °C

Lead Wire Resistance . _____ Ω

TAG Number _____

Accessories: Programming Kit TZ41