

HART® head temperature transmitter

- Type TE 52 -



FEATURES

- UNIVERSALLY PROGRAMMABLE WITH HART® PROTOCOL FOR PT100, THERMOELEMENTS AND VOLTAGE TRANSMITTERS
- HART®-PROTOCOL FOR DEVICE CONTROL ON SITE OR FROM A CONTROL STATION WITH A HAND-HELD DEVICE OR PC
- 2-WIRE TECHNOLOGY, ANALOGUE OUTPUT 4...20 MA
- HIGH ACCURACY IN THE WHOLE MEASURING RANGE
- USABLE WITH ALL PT 100 DESIGN TYPES
- LINEARISATION, ADAPTATION TO CHARACTERISTICS, GALVANIC SEPARATION

DESCRIPTION

The HART® head-temperature transmitter **Type TE 52** is used for electronic sensing and conversion of various input signals for industrial temperature measurement with application areas such as measuring, control and regulating technology to control industrial processes. The HART® head-temperature transmitter is a 2-wire measuring transmitter with an analogue output for resistance thermometers in 2-, 3- or 4-wire circuits, for thermo-elements or voltage transmitters. Setting or programming is performed with the HART® protocol using a hand-held device or a PC with special programming and operating software. Additional benefits of the TE 52 are customer-specific linearisation, adaptation to characteristics as well as failure information in the event of a sensor breakage.

TECHNICAL DATA

Supply voltage	11.5...35 V DC (standard), Reverse polarity protected	Measuring ranges:	- Pt 100 - acc. to type IEC 751	Measuring limit ranges: 200 to 650 °C Measuring limit ranges: -50 to 250 °C
Output	4...20mA / 20...4 mA, analog, Impressed direct current	Impact and vibration resistance	4g / 2... 150 HZ, acc. to IEC 60 068-2-6	
Breakdown signal	- Measuring under-range: linear drop up to 3.8 mA - Measuring over-range: linear rise up to 20.5 mA - Sensor breakage, sensor short circuit $\leq 3,6 \text{ mA}$ or $\geq 21,0 \text{ mA}$	Resistance thermometer	- 2-, 3- or 4- wire connection - Compensation of the of the line resistance is possible (0 to 20 Ω) - Sensor line resistance max. 11 Ω each line - Sensor current: $\leq 0,6 \text{ mA}$	
Working resistance	max. ($V_{\text{supply}} - 11,5 \text{ V}$) / 0,022 mA	Accuracy:	- Pt 100 - acc. to type IEC 751	0,2 K or 0,08 % 0,1 K or 0,08 %
Effect of the load	$\leq \pm 0,02 \%$ / 100 Ω (on max. value of measuring range)	Circuit type		2-wire technology
Linearisation/ transmission behaviour	Temperature linear, resistance linear, voltage linear	Material		- Housing: PC - Casting material: PUR
Galvanic isolation	U = 2 kV AC (input/output)	Thermal runaway		0,01 % / K
Power requirement	$\leq 3,5 \text{ mA}$	Calibrating temperature		23 °C $\pm 5 \text{ K}$
Current limit	$\leq 23,0 \text{ mA}$	Configurable start of range		< 50% final value
Switch-on delay	4 s	Installation		Cable conductors up to 1,75 mm ²
Response time	1 s (TC), 1,5 s (Pt100)	Long-term stability		$\leq \pm 0,1 \text{ K} / \text{year}$
Permissible environmental temperature	-40...+85°C			
Climate class	Class C, acc. to EN 60654-1	Type of protection		IP66 installed / IP00
Dewing	permissible	EMC compatibility		acc. to IEC 61326, NAMUR NE 21
Effect of voltage change	$\leq \pm 0,01\% / V$ of 24	CE conformity		acc. to EN 61326-1,
Load resistance	($V_{\text{ref}} - 10V$) / 0,022 A	Weight		approx. 40 g

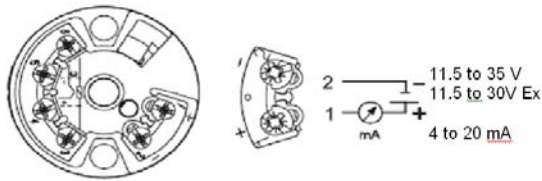
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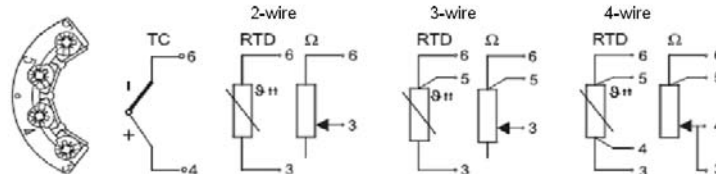
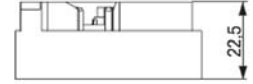
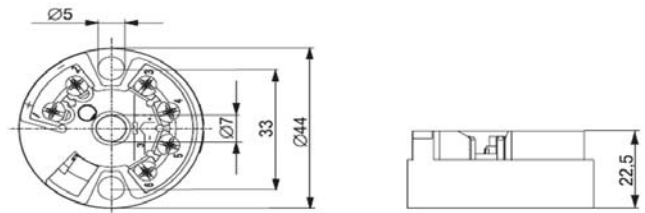
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TERMINAL ALLOCATION



DIMENSIONAL DRAWINGS



ORDER INFORMATION

Options

- 0 Standard
- 1 EEx ia II CT 6 / ATEX

Configuration (with PC)

- 0 No presetting ex factory
- Plant configuration / measuring element:**
- 1 Pt 100
- 2 Ni 100
- 3 Pt 500
- 4 Ni 500
- 5 Pt 1000
- 6 Ni 1000
- 7 linear resistance
- 8 One-wire direct current
- B Thermoelement type B
- C Thermoelement type C
- D Thermoelement type D
- E Thermoelement type E
- J Thermoelement type J
- K Thermoelement type K
- L Thermoelement type L
- N Thermoelement type N
- R Thermoelement type R
- S Thermoelement type S
- T Thermoelement type T
- U Thermoelement type U

Input at resistance thermometers

- 1 Input R / Pt 100 / Ni 100 2-wire (Please specify cable resistance)
- 2 Input R / Pt 100 / Ni 100 3-wire
- 3 Input R / Pt 100 / Ni 100 4-wire

Input at thermoelements

- 4 Internal reference point
- 5 Constant, external reference point (Please specify reference temperature)

Output signal

- 1 4 - 20 mA
- 2 20 - 4 mA

Error message

- 29 < 3,6 mA (Namur)
- 39 > 21.0 mA (Namur)

TE52

Our equipment is currently being developed, therefore we reserve the right to make amendments.

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