

TEMPERATURE TRANSMITTER

Type: Ex for zone 0, 1 or 2, EEx ia IIC
 T1...T6, programmable
 Input: Pt100...Pt1000 or Ni100...Ni1000

Type:
TT-5332D

Sheet No.
 6-5 V2.1

10122-E010818V2.1

**Application:**

- Temperature linearised measurement with Pt100...Pt1000 or Ni100...Ni1000.
- Conversion of linear resistance change to standard analogous current signal, e.g. from valves or ohmic level sensors

Properties:

- High measurement accuracy
- RTD- 2, 3 or 4 conductor attachment
- The RTD and resistance inputs have cable compensation for 3 conductor attachments
- Programmable sensor error value
- Can be programmed within a few seconds by 2-way configuration (Windows), to measure temperatures within all RTD ranges defined by the norms
- TAG No: 15 character configurable
- Degree of protection (case/clamp): IP68 / IP00
- Measurements: Ø44 x 20.2mm
- Mounting/ installation: can be mounted in DIN form B sensor head or on DIN track with special clamp

**TECHNICAL DATA:****INPUT:**

| Type | Min temp. | Max temp. | Min span | Norm |
|--------|-----------|-----------|----------|-------------|
| Pt100 | -200°C | +850°C | 25°C | DIN IEC 751 |
| Ni100 | -60°C | +250°C | 25°C | |
| Lin. R | 0Ω | 10000ohm | 30ohm | |

COMMUNICATION INTERFACE:

Loop link 5905

MECHANICAL DATA:

Measurements: Ø 44 x 20,2 mm
 Degree of protection (case/clamp): IP68/ IP100

ENVIROMENTAL CONDITIONS:

Operating temperature: -40°C to +85°C
 Humidity: < 95% RH (non-cond.)

TECHNICAL DATA:**OUTPUT:**

Signal range: 4 - 20 mA

ACCURACY:

| Type: | Basic accuracy: | Temperature coefficient: |
|-------|-----------------|--------------------------|
| RTD | ≤±0,2°C | ≤±0,01°C/°C |
| LIN R | ≤±0,1ohm | ≤±10mohm/°C |

COMMON SPECIFICATIONS:

Supply voltage: DC: 7,2...35 V
Voltage drop: 7,2 VDC
Reaction time (programmable): 0,33...60 s

SENSOR TROUBLE SHOOTING:

Programmable: 3.5...23 mA
NAMUR NE43 Upscale: 23 mA
NAMUR NE43 Downscale: 3,5 mA

Ordering details: Please state If the transmitter should be programmed

| Transmitter Input Type: | | | |
|-------------------------|----|---------|----|
| 4 mA = | C° | 20 mA = | C° |



2-wire programmable RTD transmitter

5332D

- RTD or Ohm input
- Accuracy: Better than 0.05% of selected range
- Programmable sensor error value
- For DIN form B sensor head mounting



Application

- Linearized temperature measurement with Pt100...Pt1000 or Ni100...Ni1000 sensor.
- Conversion of linear resistance variation to a standard analog current signal, for instance from valves or Ohmic level sensors.

Technical characteristics

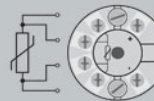
- Within a few seconds the user can program PR5332D to measure temperatures within all ranges defined by the norms.
- Dedicated programmable non-isolated 4-wire RTD transmitter.
- RTD and resistance inputs have cable compensation for 2-, 3- and 4-wire connection.
- Continuous check of vital stored data for safety reasons.

Mounting / installation

- For DIN form B sensor head mounting.

Applications

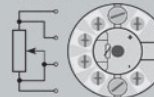
RTD to 4...20 mA



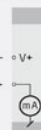
2-wire installation in control room



Resistance to 4...20 mA



2-wire installation in control room



Order

| Type | Version |
|------|---|
| 5332 | Hazardous area, Zone 0 / Div. 0, ATEX, IECEx, FM, CSA : D |

Environmental Conditions

| | |
|---|----------------------|
| Operating temperature..... | -40°C to +85°C |
| Calibration temperature..... | 20...28°C |
| Relative humidity..... | < 95% RH (non-cond.) |
| Protection degree (encl./terminal)..... | IP68 / IP00 |

Mechanical specifications

| | |
|----------------------------|---------------------------------------|
| Dimensions..... | Ø 44 x 20.2 mm |
| Weight approx..... | 50 g |
| Wire size..... | 1 x 1.5 mm ² stranded wire |
| Screw terminal torque..... | 0.4 Nm |

Common specifications**Supply**

| | |
|---------------------------------|---------------|
| Supply voltage..... | 7.2...30 VDC |
| Internal power dissipation..... | 25 mW...0.7 W |

Response time

| | |
|--|-------------------------------------|
| Response time (programmable)..... | 1...60 s |
| Voltage drop..... | 7.2 VDC |
| Warm-up time..... | 5 min. |
| Programming..... | Loop Link |
| Signal / noise ratio..... | Min. 60 dB |
| EEPROM error check..... | < 3.5 s |
| Accuracy..... | Better than 0.05% of selected range |
| Signal dynamics, input..... | 20 bit |
| Signal dynamics, output..... | 16 bit |
| Effect of supply voltage change..... | < 0.005% of span / VDC |
| EMC immunity influence..... | < ±0.5% of span |
| Extended EMC immunity: NAMUR NE21, A criterion, burst..... | < ±1% of span |

Input specifications**Common input specifications**

| | |
|------------------|----------------------------|
| Max. offset..... | 50% of selected max. value |
|------------------|----------------------------|

RTD input

| | |
|--|----------------------|
| RTD type..... | Pt100, Ni100, lin. R |
| Cable resistance per wire..... | 5 Ω (max.) |
| Sensor current..... | Nom. 0.2 mA |
| Effect of sensor cable resistance (3-/4-wire)..... | < 0.002 Ω / Ω |
| Sensor error detection..... | Yes |

Linear resistance input

| | |
|-----------------------------------|--------------|
| Linear resistance min....max..... | 0 Ω...5000 Ω |
|-----------------------------------|--------------|

Output specifications**Common output specifications**

| | |
|--------------------|--------|
| Updating time..... | 440 ms |
|--------------------|--------|

Current output

| | |
|-----------------------------------|-----------------------------------|
| Signal range..... | 4...20 mA |
| Min. signal range..... | 16 mA |
| Load (@ current output)..... | ≤ (Vsupply - 7.2) / 0.023 [Ω] |
| Load stability..... | ≤ 0.01% of span / 100 Ω |
| Sensor error indication..... | Programmable 3.5...23 mA |
| NAMUR NE43 Upscale/Downscale..... | 23 mA / 3.5 mA |
| of span..... | = of the presently selected range |

I.S. / Ex marking

| | |
|-------------|---|
| ATEX..... | II 1 G Ex ia IIC T4...T6 Ga, II 1 D Ex ia IIIC Da, I M1 Ex ia Ma |
| IECEx..... | Ex ia IIC T4...T6 Ga, Ex ia IIIC Da, Ex ia I Ma |
| FM, US..... | Cl. I, Div. 1, Gp. A, B, C, D T4/T6; Cl. I Zone 0, AEx ia IIC T4/T6; Cl. 1, Div. 2, Gp. A, B, C, D, T4/T6 |
| CSA..... | Cl. I, Div. 1, Gp. A, B, C, D Ex ia IIC, Ga |

Observed authority requirements**Directives**

| | |
|-------------|----------------|
| EMC..... | 2014/30/EU |
| ATEX..... | 2014/34/EU |
| RoHS..... | 2011/65/EU |
| EAC..... | TR-CU 020/2011 |
| EAC Ex..... | TR-CU 012/2011 |

Approvals

| | |
|------------|------------------|
| ATEX..... | KEMA 06ATEX0062X |
| IECEx..... | DEK 13.0035X |
| FM..... | FM17US0013X |
| CSA..... | 1125003 |