

# Programmable 2-wire transmitter T2FR 5333



- Input: Pt 100  $\Omega$  at 0 °C or resistor
- Current output: 4/20 mA or 20/4 mA
- Connection to 3-wire sensors
- For DIN B probe head
- Option: Programming kit

## APPLICATIONS

- Linearized temperature measurement with a Pt100...Pt1000, Ni100...Ni1000 sensor.
- Conversion of a linear resistance into a standard analog current signal for measuring, for example, the level (continuous level transmitter type RTM, doc 586-01).

It also allows ohmic inputs to be converted into a standard 4-20 mA current signal.

## DESCRIPTION

The T2F 5333 two-wire transmitter is a programmable electronic device that measures ohmic resistance and converts it into a standard current on a scale of 4-20 mA or 20-4 mA.

Key features:

- Inputs: Pt100  $\Omega$ , Pt1000  $\Omega$ , and other resistances.
- Programming: Via a computer.
- Current output: 4-20 mA or 20-4 mA.

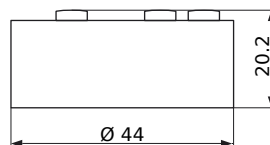
The T2F 5333 prevents data loss in the event of a power failure. It saves calibration data and the current configuration in an EEPROM memory. This ensures that critical parameters are retained and the transmitter resumes normal operation after power is restored.

The T2F 5333 is delivered pre-configured according to user specifications. This simplifies installation and commissioning.

## CODE NUMBERS AND REFERENCES

| Code    | Reference     | Description                                   |
|---------|---------------|-----------------------------------------------|
| 601 333 | T2FR 5333-1   | Standard transmitter with programmable scale  |
| 601 339 | BPR-5905      | PC programming kit                            |
| 601 157 | T2FR 5333-50  | Transmitter with measuring range: 0...+50 °C  |
| 601 158 | T2FR 5333-100 | Transmitter with measuring range: 0...+100 °C |
| 601 159 | T2FR 5333-200 | Transmitter with measuring range: 0...+200 °C |

## DIMENSIONS



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Programmable 2-wire  
transmitter  
**T2FR 5333**

22-06-2025

D-601.02-EN-AB

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## TECHNICAL FEATURES

### Environmental conditions

|                                            |                           |
|--------------------------------------------|---------------------------|
| Operating temperature                      | -40 °C à +85 °C           |
| Calibration temperature                    | 20...28 °C                |
| Relative humidity                          | < 95% RH (non-condensing) |
| Protection rating (housing/terminal block) | IP68 / IP00               |

### Mechanical specifications

|                                      |                                       |
|--------------------------------------|---------------------------------------|
| Weight                               | 50 g                                  |
| Wire size                            | 1 x 1.5 mm <sup>2</sup> stranded wire |
| Max. torque before screw deformation | 0.4 Nm                                |

### Electrical Specifications

|                            |                                     |
|----------------------------|-------------------------------------|
| Power supply voltage       | 8.0...35 VDC                        |
| Internal power consumption | 25 mW...0.8 W                       |
| Response time              | 0.33...60 s (programmable)          |
| Voltage drop               | 8.0 VDC                             |
| Accuracy                   | Better than 0.1% of configured span |
| Programmable response time | From 0.33 to 60 s                   |

### Input Specifications

|             |                                  |
|-------------|----------------------------------|
| Max. offset | 50% of selected full-scale value |
|-------------|----------------------------------|

### RTD Input

|                                    |                                 |
|------------------------------------|---------------------------------|
| RTD type                           | Pt100, Ni100, linear resistance |
| Line resistance per wire           | Max. 10 Ω                       |
| Sensor current                     | > 0.2 mA, < 0.4 mA              |
| Effect of line resistance (3-wire) | < 0.002 Ω / Ω                   |
| Sensor break detection             | Yes                             |

### Linear Resistance Input

|                      |               |
|----------------------|---------------|
| Min...Max resistance | 0Ω...10,000 Ω |
|----------------------|---------------|

### Output Specifications

|                              |                                                 |
|------------------------------|-------------------------------------------------|
| Signal range                 | 4...20 mA                                       |
| Minimum signal span          | 16 mA                                           |
| Load (current output)        | $\leq (V_{\text{supply}} - 8) / 0.023 [\Omega]$ |
| Load stability               | $\leq 0.01\%$ of configured span / 100 Ω        |
| Sensor break indication      | Programmable from 3.5 to 23 mA                  |
| NAMUR NE43 upscale/downscale | 23 mA / 3.5 mA                                  |

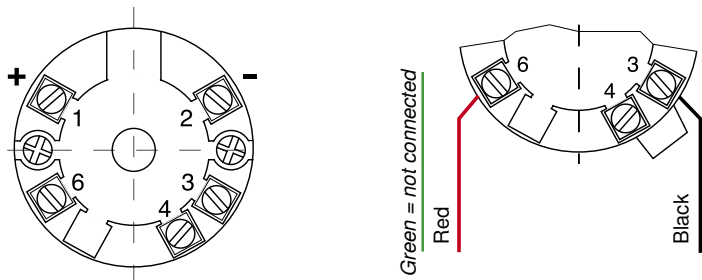
**EC Conformity:** The instrument meets the legal requirements of the current European Directives

### Measurement range:

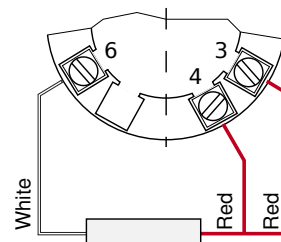
| Input type        | Min. value | Max. value | Shortest range | Output    | Min. range | Default, Low | Default, High |
|-------------------|------------|------------|----------------|-----------|------------|--------------|---------------|
| Pt 100            | -200 °C    | +850 °C    | 25 °C          | 0/4-20 mA | 16 mA      | 3.5 ... 4 mA | 20 ... 23 mA  |
| Ni 100            | -60 °C     | +250 °C    | 25 °C          | 0/4-20 mA | 16 mA      | 3.5 ... 4 mA | 20 ... 23 mA  |
| Linear resistance | 0Ω         | 10 kΩ      | 30 Ω           | 0/4-20 mA | 16 mA      | 3.5 ... 4 mA | 20 ... 23 mA  |

## CONNECTIONS

Wiring for Magnetic reed switch transmission chain



Wiring for Pt 100 Ω



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