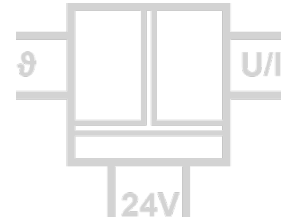


# Temperature Transmitter DR 44 / DR 48 / DR 49

Temperature Measuring  
with Pt100/Pt1000-Sensors



The Temperature Transmitters DR 44, DR 48 and DR 49 convert the sensor signal on input to temperature linear standard signal and makes it galvanic isolated available on output.

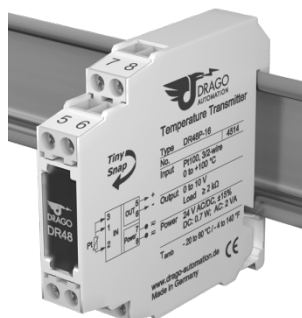
For applications where one measuring range only is used, the Temperature Transmitters DR 44, DR 48 und DR 49 offers a cost-effective alternative.

A cross-connector for the auxiliary power supply ensures fast and easy installation. The slim housing with 11.2 mm width saves significant space on the DIN-rail. If required a measuring range compensation can be performed at the Zero/Scan potentiometers behind the front cover.

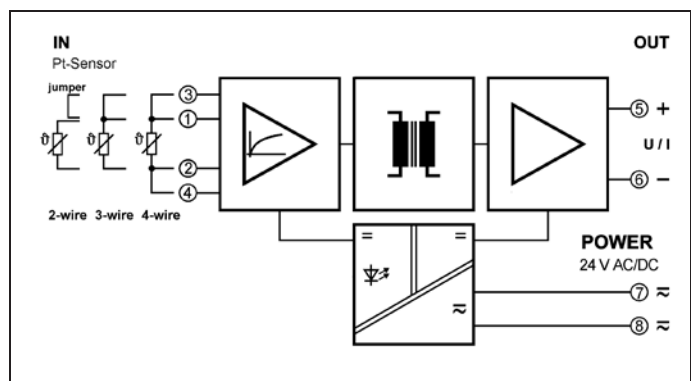
Analog signal processing guarantees precise measured values with short response times and outstanding signal reproduction at the output.

Protective Separation and the 24 V AC/DC power supply make the Temperature Transmitters DR 44, DR 48 und DR 49 universally applicable for all measurement and industrial applications, as well as for building automation.

- **Cost optimized design**  
Economical temperature measuring for standard applications with 2-wire or 3-wire connection, DR 44 for Pt100 with 4-wire connection
- **Only 60 mm installation depth, 11.2 mm wide**  
Can be installed in economical standard terminal boxes
- **Fixed ranges, easy to use**  
Ready to use without any settings or adjustments
- **Zero/Span compensation on front panel**  
for readjustment of sensor signal or measuring equipment
- **True 3-port separation**  
Protection against erroneous measurements due to parasitic voltages or ground loops
- **Protective Separation acc. to EN 61140**  
Protects service personnel and downstream devices against impermissibly high voltage
- **Unlimited use with 24 V AC/DC power supply**  
Universally applicable for all measurement and industrial applications
- **5 Years Warranty**  
Defects occurring within 5 years from delivery date shall be remedied free of charge at our plant (carriage and insurance paid by sender)



Block diagram



## Technical Data

| Input   |  |        |  |                       |                       |
|---|--|--------|--|-----------------------|-----------------------|
| Sensor  |  | Type   | Connection                                 |                       |                       |
|   | DR 44  | Pt100  | 4-wire                                     |                       |                       |
|   | DR 48  | Pt100  | 3-wire, 2-wire with bridge terminal 1 to 3 |                       |                       |
|   | DR 49  | Pt1000 | 3-wire, 2-wire with bridge terminal 1 to 3 |                       |                       |
| Measuring range                                   | Fixed ranges within - 100 to + 450 °C  |        |  | see order information |                       |
| Measuring error                                   | < 0.1 K + 0.05 % of span   |        |  |                       |                       |
| Sensor wire resistance                            | 25 Ω / wire at 4- and 3-wire sensor connection   |        |  |                       |                       |
| Sensor current                                    | 1 mA   |        | 0.1 mA                                     |                       |                       |
| Output  |  |        |  |                       |                       |
| Output signal                                     | 0 to 20 mA   |        | 0 to 5 V                                   | 0 to 10 V             | see order information |
|   | 4 to 20 mA   |        | 1 to 5 V                                   | 2 to 10 V             |                       |
| Load  | Current output   |        | ≤ 500 Ω                                    |                       |                       |
|   | Voltage output   |        | ≥ 2 kΩ                                     |                       |                       |
| Residual ripple                                   | < 10 mV <sub>rms</sub>   |        |  |                       |                       |
| General Data                                      |  |        |  |                       |                       |
| Transmission error                                | < 0.1 % full scale   |        |  |                       |                       |
| Temperature coefficient <sup>1)</sup>             | < 0.025 %/K  |        |  |                       |                       |
| Zero/Span compensation                            | ± 3 %  |        |  |                       |                       |
| Response time T <sub>99</sub>                     | < 2 ms   |        |  |                       |                       |
| Test voltage                                      | 3 kV AC, 50 Hz, 1 min.   |        | input against output against power supply  |                       |                       |
| Working voltage <sup>2)</sup> (Basic Insulation)  | 600 V AC/DC for overvoltage category II and pollution degree 2 acc. to EN 61010-1  |        |  |                       |                       |
| Protection against electrical shock <sup>2)</sup> | Protective separation according to EN 61140 by reinforced insulation in accordance with EN 61010-1 up to 300 V AC/DC for overvoltage category II and pollution degree 2 between all circuits |        |  |                       |                       |
| Ambient temperature                               | Operation  |        | - 20 to + 60 °C (- 4 to + 140 °F)          |                       |                       |
|   | Transport and storage  |        | - 35 to + 85 °C (- 31 to + 185 °F)         |                       |                       |
| Power supply                                      | 24 V AC/DC, ± 15 %   |        | AC: 48 to 62 Hz, approx. 2 VA,             |                       | DC: approx. 0.7 W     |
| EMC <sup>3)</sup>                                 | EN 61326-1   |        |  |                       |                       |
| Construction                                      | 11.2 mm (0.44") housing, protection class: IP 20, mounting on 35 mm DIN rail acc. to EN 60715  |        |  |                       |                       |
| Weight  | Approx. 50 g   |        |  |                       |                       |

1) Average TC related to full scale value in specified operating temperature range, reference temperature 23 °C

2) For applications with high working voltages, ensure there is sufficient spacing or isolation from neighboring devices and protection against electric shocks.

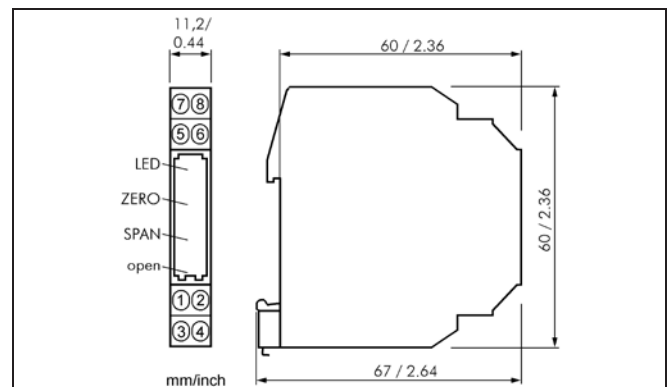
3) Minor deviations possible during interference

## Product line

| Devices                  |   | Order No.   |   |
|--------------------------|---|-------------|---|
| Temperature-Transmitter  | Pt100, 4-wire   | DR 44 P - X | X |
|                          | Pt100, 2/3-wire   | DR 48 P - X | X |
|                          | Pt1000, 2/3-wire  | DR 49 P - X | X |
| Input                    | 0 to + 50 °C  | 0           |   |
|                          | 0 to + 100 °C   | 1           |   |
|                          | 0 to + 200 °C   | 2           |   |
|                          | 0 to + 300 °C   | 3           |   |
|                          | 0 to + 400 °C   | 4           |   |
|                          | - 50 to + 150 °C  | 5           |   |
|                          | - 50 to + 100 °C  | 6           |   |
|                          | - 50 to + 50 °C   | 7           |   |
|                          | Further input ranges see extended measuring range table             | ?           |   |
| Output                   | 0 to 20 mA  | 2           |   |
|                          | 4 to 20 mA  | 4           |   |
|                          | 0 to 5 V  | 5           |   |
|                          | 1 to 5 V  | 8           |   |
|                          | 0 to 10 V   | 6           |   |
|                          | 2 to 10 V   | 7           |   |
| cross-connector (2 pcs.) | for looping through the power supply for up to 10 units, splittable | DZU 0801    |   |

Subject to change!

## Dimensions



### Connection

Captive plus-minus clamp screws  
Wire cross-section max. 2.5 mm<sup>2</sup> / AWG 14  
Stripped length 6 ... 8 mm / 0.28 in  
Screw terminal torque 0.5 Nm / 4.5 lbf in

### Terminal assignments

|                |                  |
|----------------|------------------|
| 1 Input Pt     | 5 Output +       |
| 2 Input Pt     | 6 Output -       |
| 3 Input 3-wire | 7 Power supply ≡ |
| 4 Input 4-wire | 8 Power supply ≡ |

## Extended Measuring Range Table

| from \ to | -50 | 0 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 °C |
|-----------|-----|---|----|-----|-----|-----|-----|-----|-----|-----|--------|
| -100 °C   | Q   | R | S  | T   | U   | V   | W   | Y   |     |     |        |
| -50 °C    |     | 8 | 7  | 6   | 5   | 9   | A   | B   | C   |     |        |
| 0 °C      |     |   | 0  | 1   | D   | 2   | E   | 3   | F   | 4   |        |
| +50 °C    |     |   |    | G   | H   | J   | K   | L   | M   | N   | P      |