

Resistance Transmitter DR 41

Measuring of Resistors with Fixed Setting

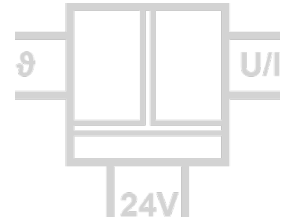
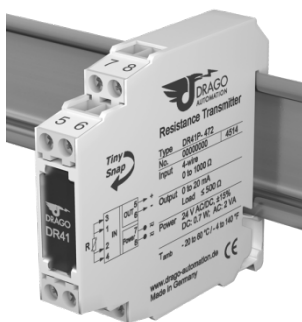
The Resistance Transmitter DR 41 converts the sensor resistance value to a standard signal and makes it galvanic isolated available on output.

For applications where one measuring range only is used, the Resistance Transmitters DR 41 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.

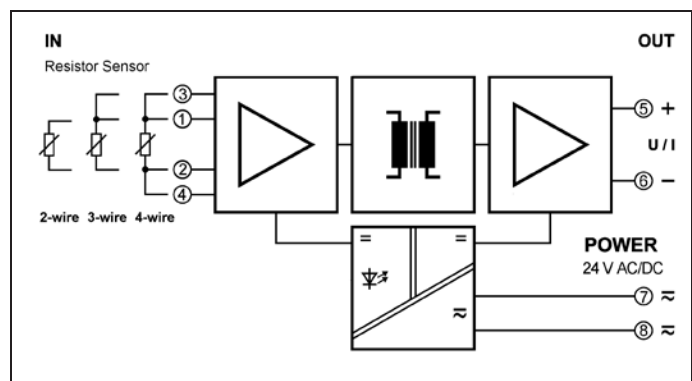
Analog signal processing guarantees precise measured values with short response times and outstanding signal reproduction at the output.

Protective Separation and the 24 V AC/DC power supply make the DR 41 universally applicable for all measurement and industrial applications, as well as for building automation.



- **Cost optimized resistance measuring**
in 2-, 3- and 4-wire sensor 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/Scan compensation on front panel**
for readjustment of sensor and measuring equipment or line compensation at 2-wire sensor connection
- **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 | | | | |
|---|--|----------------------|--|------------------|
| Measuring range | Fixed ranges within 20 Ω ... 1 MΩ | | see product line | |
| Sensor connection | 2-wire, 3-wire, 4-wire sensor connection | | see product line | |
| Sensor wire resistance | < 25 Ω / wire, maximum 5 % of final value at 2-wire connection | | | |
| Sensor current | 0.1 μA ... 5 mA, depends on measuring range | | | |
| Output | | | | |
| Output signal | 0 to 20 mA 4 to 20 mA | 0 to 5 V 1 to 5 V | 0 to 10 V 2 to 10 V | see product line |
| Load | Current output ≤ 500 Ω Voltage output ≥ 2 kΩ | | | |
| Residual ripple | < 10 mV _{rms} | | | |
| General Data | | | | |
| Transmission error | < 0.2 % full scale | | | |
| Temperature coefficient ¹⁾ | < 0.025 %/K | | | |
| Zero/Span compensation | ± 5 % | | | |
| Response time T ₉₉ | < 2 ms | | | |
| Test voltage | 3 kV AC, 50 Hz, 1 min. | | input against output against power supply | |
| Working voltage ²⁾ (Basic Insulation) | 600 V AC/DC for overvoltage category II and pollution degree 2 acc. to EN 61010-1 | | | |
| Protection against electrical shock ²⁾ | 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 ³⁾ | 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

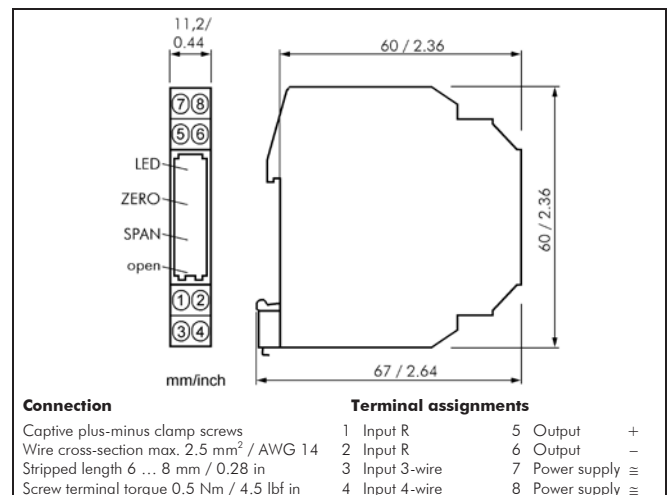
2) For applications with high working voltages, ensure there is sufficient spacing or isolation from neighboring devices and protection against electric shocks.

3) Minor deviations possible during interference

Product line

| Device | Sensor connection | Order No. |
|----------------------------|--|-----------------|
| Resistance | 2-wire connection | DR 41 P - 2 X X |
| Transmitter | 3-wire connection | DR 41 P - 3 X X |
| | 4-wire connection | DR 41 P - 4 X X |
| | | ↓ |
| Input | 0 ... 20 Ω | 2 |
| | 0 ... 50 Ω | 3 |
| | 0 ... 100 Ω | 4 |
| | 0 ... 200 Ω | 5 |
| | 0 ... 500 Ω | 6 |
| | 0 ... 1000 Ω | 7 |
| | 0 ... 2000 Ω | 8 |
| | 0 ... 5000 Ω | 9 |
| | 0 ... 10 k Ω | A |
| | 0 ... 20 k Ω | B |
| | 0 ... 50 k Ω | C |
| | 0 ... 100 k Ω | D |
| | 0 ... 200 k Ω | E |
| | 0 ... 500 k Ω | F |
| | 0 ... 1 M Ω | G |
| | | ↓ |
| Output | 0 ... 20 mA | 2 |
| | 4 ... 20 mA | 4 |
| | 0 ... 5 V | 5 |
| | 1 ... 5 V | 8 |
| | 0 ... 10 V | 6 |
| | 2 ... 10 V | 7 |
| Cross-connector (2 pcs) | for looping through the power supply for up to 10 units, splittable | DZU 0801 |

Dimensions



Connection

Captive plus-minus clamp screws
Wire cross-section max. 2.5 mm² / AWG 14
Stripped length 6 ... 8 mm / 0.28 in
Screw terminal torque 0.5 Nm / 4.5 lbf in

Terminal assignments

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

Subject to change!