

Potentiometer Transmitter DR 4310

Isolation and Conversion of Potentiometer Position Signals

The Potentiometer Transmitter DR 4310 is used for isolation and conversion of potentiometer position signals.

Due to the easy configuration, the new universal power pack and the ultra-small housing the Isolation Amplifier is suitable for flexible use.

The ratiometric measuring method allows the acquisition of potentiometer signals without range selection. Unipolar and bipolar output signals can be selected with a DIP switch. Subsequent readjustment or measured range compensation can then be performed at the zero/scan potentiometers on the front panel.

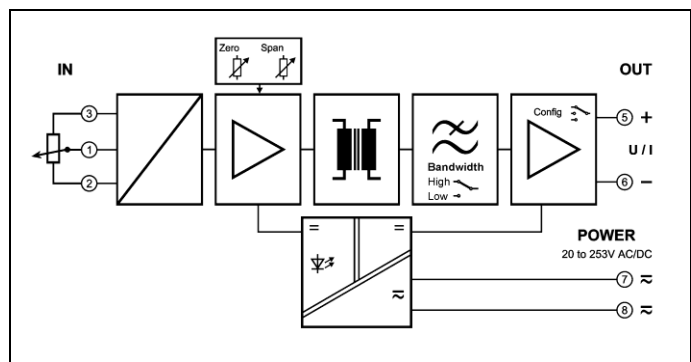
The small housing with 12.5 mm width saves space in your switch cabinet and facilitates by the practical plug-in screw terminal blocks the assembly. For range setting a simple housing unblocking is installed which makes it possible to reach easily all control elements on the mounting rail.

The new universal power pack for 20 ... 253 V AC/DC means the DR 4310 can be used anywhere in the world, with all mains power supplies. The unit's high efficiency contributes significantly to reducing the unit's own heat generation. This is reflected in extremely high reliability and long-term stability. A green LED on the front of the unit has been provided to monitor the power supply.

- **Easy configuration**
Conversion of potentiometric position signals without range selection
- **Universal power supply for 20...253 V AC/DC**
Applicable world-wide for all common supply voltages
- **3-port isolation**
Protection against erroneous measurements due to parasitic voltages or ground loops
- **Ultra small sized housing**
12.5 mm housing with plug-in screw terminal blocks
- **High bandwidth; high accuracy**
No distortion; no falsification of measured signal
- **Protective Separation**
Protects service personnel and downstream devices against impermissibly high voltage
- **Maximum reliability**
No maintenance costs
- **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	
Input signals	Potentiometer 100 Ω ... 100 kΩ
Sensor supply	1.2 V (limited to max. 15 mA)
Potentiometer connection	3 wire connection
Input resistance wiper contact	> 10 MΩ
Output	
	Voltage
Output signals	± 10 V 0 ... 10 V 2 ... 10 V
(switch selectable)	± 5 V 0 ... 5 V 1 ... 5 V
	Current
Load	± 20 mA 0 ... 20 mA 4 ... 20 mA
	± 10 mA 0 ... 10 mA 2 ... 10 mA
	≤ 10 mA (1 kΩ at 10 V) ≤ 12 V (600 Ω at 20 mA)
Linear transmission range	Unipolar: - 2 ... + 110 % bipolar: - 110 ... + 110 %
Residual ripple	< 10 mV _{rms}
General Data	
Transmission error	< 0.1 % full scale
Temperature coefficient ¹⁾	< 100 ppm/K
Zero/Span compensation	Start value: 0 - 20 %; End value: 80 - 100 % Minimum span: 80 %
Cut-off frequency -3 dB (switchable)	10 kHz 30 Hz
Response time T ₉₉	80 μs 20 ms
Test voltage	4 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 + 70 °C (- 4 to + 158 °F) Transport and storage - 35 to + 85 °C (- 31 to + 185 °F)
Power supply	20 ... 253 V AC/DC AC 48 ... 62 Hz, approx. 2 VA DC approx. 1.0 W
EMC ³⁾	EN 61326-1
Construction	12.5 mm (0.49") housing, protection class IP 20, mounting on 35 mm DIN rail acc. to EN 60715
Weight	Approx. 100 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.

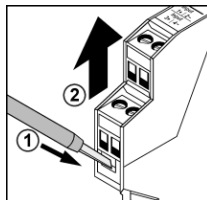
3) Minor deviations possible during interference

Configuration

A screwdriver with a width of 2.5 mm is required to open and adjust the unit and to connect the wires to the screw clamp terminals.

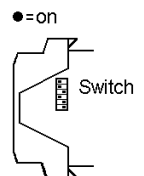
Opening The Unit: Using a screwdriver, release the snap fittings of the upper part of the housing on both sides. The upper part of the housing and the electronics can now be pulled out by approximately 3 cm.

Settings: Setting via DIP switches according to the table. After each range change, a zero/span adjustment is carried out on the front potentiometers.



Output	Switch					
	1	2	3	4	5	6
± 10 V						
○ 0 to 10 V			●		●	●
2 to 10 V			●		●	●
± 5 V			●		●	●
0 to 5 V			●		●	●
1 to 5 V			●		●	●
± 20 mA			●		●	●
0 to 20 mA						
4 to 20 mA				●		
± 10 mA			●		●	●
0 to 10 mA			●		●	●
2 to 10 mA			●		●	●
○ Bandwidth 1 kHz						
Bandwidth 30 Hz	●					

○:factory setting ●:customer setting



Order Information

Product	Part No.
Potentiometer Transmitter, configurable	DR 4310 AG

Subject to change!

Dimensions

Terminal assignments	
1 Input Wiper	5 Output +
2 Input Pot -	6 Output -
3 Input Pot +	7 Power supply ≡
4	8 Power supply ≡

Connection cross-section max. 2,5 mm²

Multi-conductor connection max. 1 mm²
(two conductors of equal cross-section)