

2-WIRE RTD-TRANSMITTER



- Programmable via PC
- Input for Pt100, Ni100 or Ohm
- Linearised 4...20 mA analogue output
- 2-wire connexion
- 1- or 2-channel version
- DIN-rail mounting



Application:

Linearised temperature measurement with Pt100 or Ni100 sensor. • Conversion of linear resistance change to standard analogue current / voltage signal from e.g. valves or linear movements with attached potentiometer. • 4...20 mA signal simulator via externally mounted 10-turn potentiometer.

Technical characteristics:

General:

The transmitter may be configured to the requested signal type by means of a DOS-based PC with the configuration program PReset 5000 and the communications unit Loop Link 5905. The configuration of the transmitter may be done without connexion of supply voltage as the communications unit supplies the required power. The supply voltage of 10...35 VDC is converted to a 4...20 mA signal in the 2-wire connexion. The output has voltage supply ground as reference and is protected against polarity reversal. The sensor connexion is always a 3-wire connexion with cable compensation for up to 50 Ω in each wire. If a 2-wire connexion is requested, pins 43 and 42 (channel 1) or 53 and 52 (channel 2) must be short-circuited in the connexion plug (no cable compensation). Sensor error detection is as standard set to Upscale, Downscale or entered to special output value.

Input:

Linearised Pt100 temperature input according to IEC 751 within the range -200...+850°C. Linearised Ni100 temperature input according to DIN 43760 within the range -50...+250°C. Linear resistance input within the range 0...10 k Ω . Min. span for the RTD input is 50°C, for linear resistance 30 Ω . The RTD input can be delivered set up in multiples of the main type (e.g. Pt1000). The input can be reversed so that 0% e.g. is 150°C and 100% is 0°C.

Output:

Analogue 2-wire current output of 4...20 mA. Maximum load resistance depends on the supply voltage as $R_{load} = (V_{supply} - 10) / 0.02 [\Omega]$.

Electrical specifications:

Specifications range:

(@ -20°C to +60°C)

Common specifications:

Supply voltage.....	10...35 VDC
Internal consumption	40 mW...0.5 W
Warm-up time.....	< 5 min.
Communications interface	Loop Link 5905
Signal / noise ratio.....	Min. 60 dB
Response time (0...90%, 100...10%)	< 165 ms
Signal dynamics, input	17 bit
Signal dynamics, output.....	16 bit
Calibration temperature.....	20...28°C
Temperature coefficient.....	< $\pm 0.01\%$ / °Camb.
Linearity error	< 0.1% of span
EMC immunity influence	< $\pm 0.5\%$ of span
Screw terminal torsion	0.5 Nm
Relative air humidity	< 95% RH (non-cond.)
Dimensions (HxWxD).....	109 x 23.5 x 130 mm
DIN-rail type	DIN 46277
Tightness (enclosure / terminal)	IP50 / IP20
Weight	170 g

Input:

Type	Min. value	Max. value	Min. span	Norm
Pt100	-200°C	+850°C	50°C	IEC 751
Ni100	-50°C	+250°C	50°C	DIN 43760
Lin.R	0 Ω	10 k Ω	30 Ω	-----

Max. offset.....	50% of selec. max. value
Cable resistance per wire (Prog.)	Max. 10...50 Ω
Sensor current.....	> 0.2, < 0.4 mA
Basic accuracy.....	< $\pm 0.3^\circ\text{C}$
Temp. coefficient for span < 100°C.....	< $\pm 0.01^\circ\text{C}$ / °Camb.
Sensor error detection.....	Upscale / Downscale / selec. value

Output:

Signal range	4...20 mA
Min. signal range	16 mA
Load resistance (max.)	$(V_{supply} - 10) / 0.02 [\Omega]$
Load stability	< 0.01% of span / 100 Ω
Current limit.....	< 28 mA
Upscale / Downscale	$\geq 23 \text{ mA} / \leq 3.6 \text{ mA}$

Observed authority requirements:

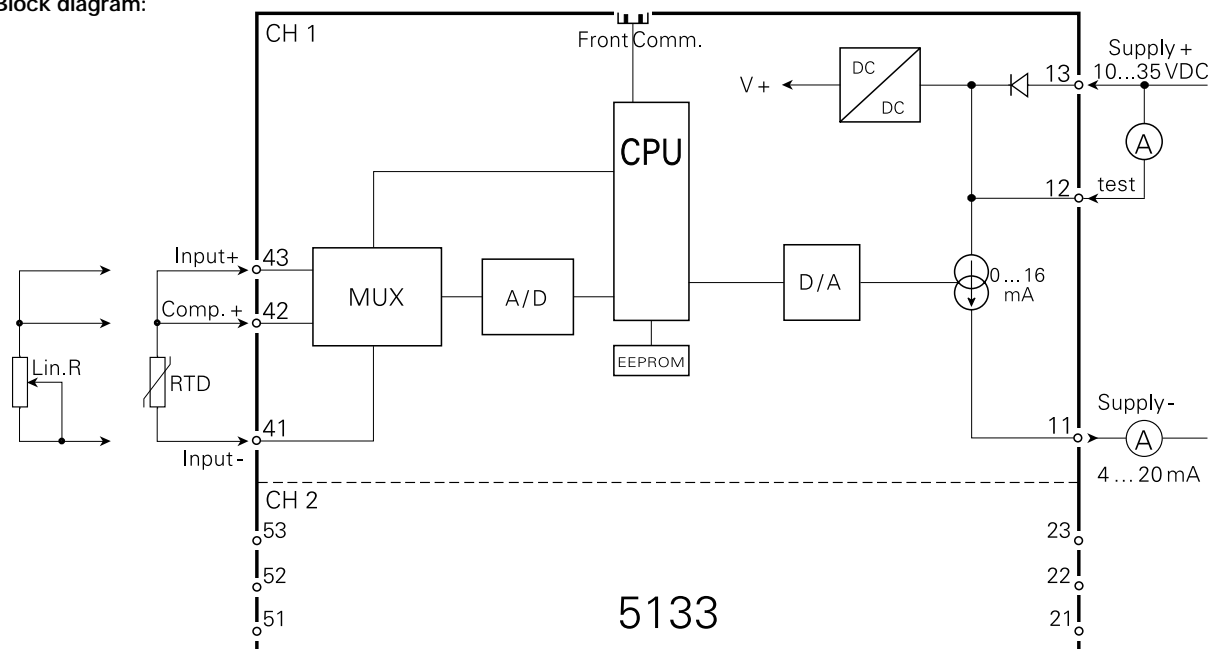
Standard:	
EMC 89/336/EEC, Emission	EN 50 081-1, EN 50 081-2
Immunity	EN 50 082-2, EN 50 082-1
Emission and immunity	EN 61 326

Of span = Of the presently selected range

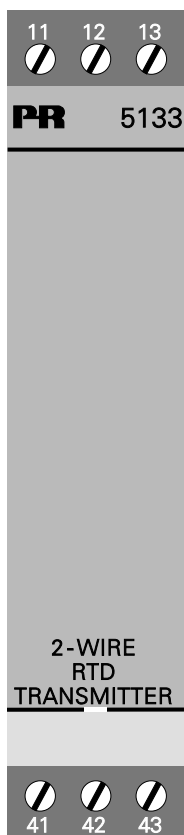
Order: 5133

Type	Channels	
5133	1 channel	: A
	2 channels	: B

Block diagram:



Front layout:



5133 connexion to Loop Link 5905:

