2-WIRE PROGRAMMABLE TRANSMITTER

- **RTD or Ohm input**
- **High measurement accuracy**
- **3-wire connection**
- **Programmable sensor error value**
- **For DIN form B sensor head mounting**

Application:

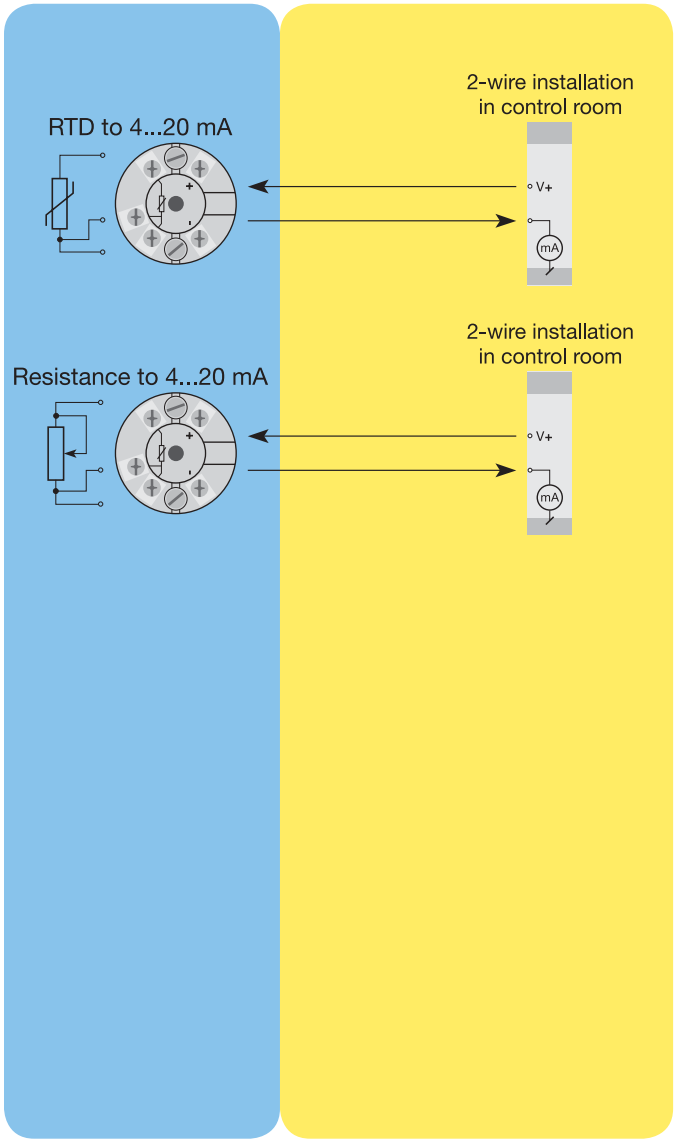
- Linearised temperature measurement with Pt100...Pt1000 or Ni100...Ni1000 sensor.
- Conversion of linear resistance variation to a standard analogue current signal, for instance from valves or Ohmic level sensors.

Technical characteristics:

- Within a few seconds the user can program PR5333B, C & D to measure temperatures within all RTD ranges defined by the norms.
- The RTD and resistance inputs have cable compensation for 3-wire connection.

Mounting / installation:

- For DIN form B sensor head mounting.
- **NB:** As Ex barrier we recommend 5104B, 5111B, or 5114B.



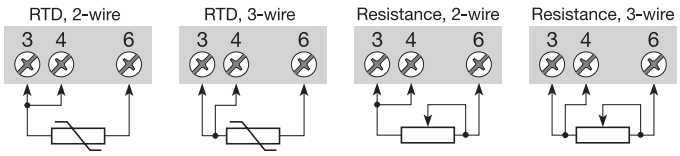
PR electronics
DS CERTIFIED Quality System DS/EN ISO 9001
Lerbakken 10 · DK-8410 Rønde
Tlf. 8637 2677 · Fax 8637 3085
www.prelectronics.dk

Order: 5333

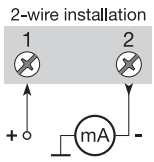
Type	Version	
5333	ATEX	: B
	FM and ATEX	: C
	CSA, FM and ATEX	: D

Connections:

Input:



Output:



Electrical specifications:

Specifications range:
-40°C to +85°C

Common specifications:

Supply voltage, DC ..... 8.0...28 V
Internal consumption..... 25 mW...0.8 W
Voltage drop ..... 8 VDC
Warm-up time..... 5 min.
Communications interface ..... Loop Link 5905A
Signal / noise ratio..... Min. 60 dB
Response time (programmable)..... 0.33...60 s
Signal dynamics, input ..... 19 bit
Signal dynamics, output..... 16 bit
Calibration temperature..... 20...28°C
Accuracy, the greater of general and basic values:

General values		
Input type	Absolute accuracy	Temperature coefficient
All	≤ ±0.1% of span	≤ ±0.01% of span / °C

Basic values		
Input type	Basic accuracy	Temperature coefficient
RTD	≤ ±0.3°C	≤ ±0.01°C / °C
Lin.R	≤ ±0.2 Ω	≤ ±20 mΩ / °C

EMC immunity influence ..... ≤ ±0.5% of span

Effect of supply voltage variation ..... ≤ 0.005% of span / VDC
Vibration ..... IEC 68-2-6 Test FC
Lloyd's specification no. 1..... 4 g / 2...100 Hz
Max. wire size..... 1 x 1.5 mm²
Humidity ..... < 95% RH (non-cond.)
Dimensions..... Ø 44 x 20.2 mm
Tightness (enclosure / terminal) ..... IP68 / IP00
Weight ..... 50 g

Electrical specifications, input:

RTD and linear resistance input:

RTD type	Min. value	Max. value	Min. span
Pt100	-200°C	+850°C	25°C
Ni100	-60°C	+250°C	25°C
Lin.R	0 Ω	10000 Ω	30 Ω

Max. offset..... 50% of selec. max. value
Cable resistance per wire (max.)..... 10 Ω
Sensor current..... > 0.2 mA, < 0.4 mA
Effect of sensor cable resistance (3-wire)..... < 0.002 Ω / Ω
Sensor error detection..... Yes

Output:

Current output:

Signal range ..... 4...20 mA
Min. signal range ..... 16 mA
Updating time..... 135 ms
Load resistance ..... ≤ (V_{supply} - 8) / 0.023 [Ω]
Load stability ..... < ±0.01% of span/100 Ω

Sensor error detection:

Programmable..... 3.5...23 mA
Namur NE43 Upscale..... 23 mA
Namur NE43 Downscale ..... 3.5 mA

Ex data:

U_i ..... : 28 VDC
I_i ..... : 120 mADC
P_i ..... : 0.84 W
L_i ..... : 10 µH
C_i ..... : 1.0 nF

EEx / I.S. approval:

KEMA 03 ATEX 1535..... Ex II 1 G D
EEx ia IIC T1...T6
Max. amb. temperature for T1...T4 ... 85°C
Max. amb. temperature for T5 and T6.. 60°C
Applicable in zone ..... 0, 1, 2, 20, 21 or 22
FM ..... IS, CL. I, DIV. 1, GP. A-D
Entity, FM Control Drawing No..... 5300Q502
CSA..... Class I, Zone 0/1, Gr. IIC
Installation Drawing No. 533XQC03

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
ATEX 94/9/EC.....	EN 50 014, EN 50 020, EN 50 281-1-1 and EN 50 284
FM, ASCN	3600, 3810, 3611, 3610
CSA, CAN / CSA	E79-15, E79-11

Of span = Of the presently selected range