

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:

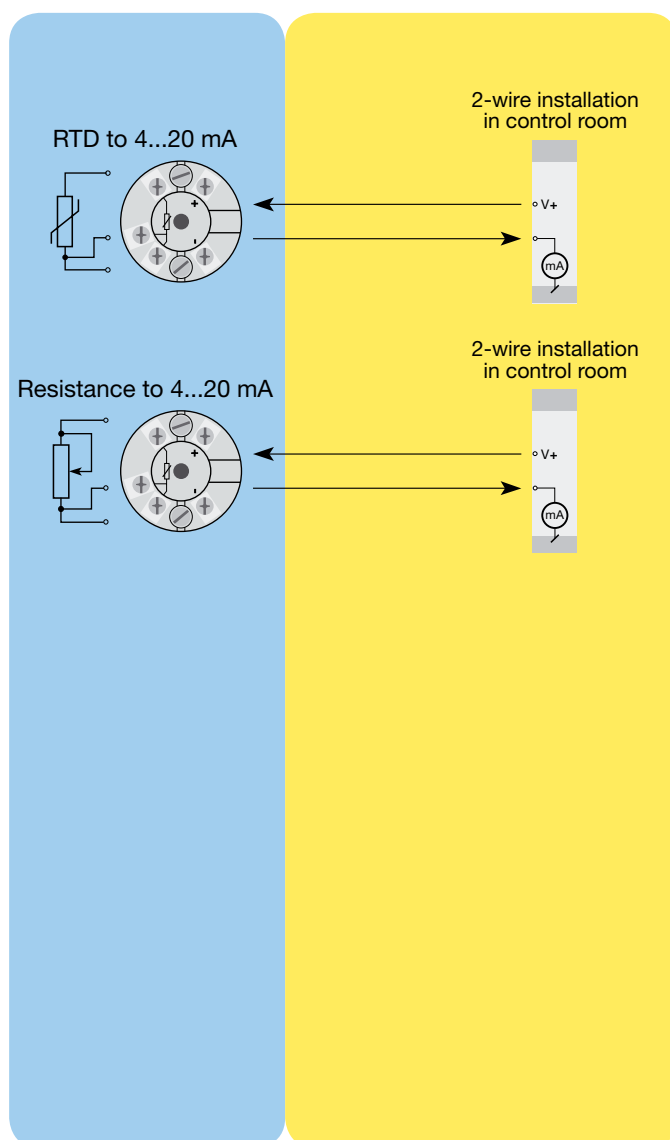
- Linearised temperature measurement with Pt100...Pt1000 or Ni100...Ni1000 sensor.
- Conversion of linear resistance variation to a standard analogue current signal, for instance from valves or Ohmic level sensors.

Technical characteristics:

- Within a few seconds the user can program PR5333D 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, 5114B, or 5116B.

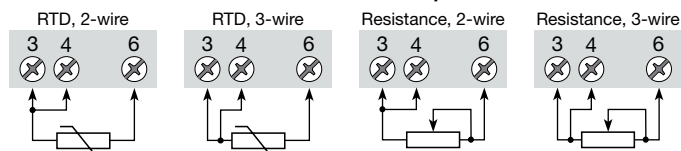


Order: 5333

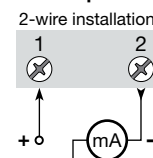
Type	Version
5333	CSA, FM & ATEX : D

Connections:

Input:



Output:



Electrical specifications:

Specifications range:

-40°C to +85°C

Common specifications:

Supply voltage.....	8.0...30 VDC
Internal consumption.....	25 mW...0.8 W
Voltage drop	8 VDC
Warm-up time.....	5 min.
Communications interface	Loop Link
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	$\leq \pm 0.1\%$ of span	$\leq \pm 0.01\%$ of span / °C

Basic values		
Input type	Basic accuracy	Temperature coefficient
RTD	$\leq \pm 0.3^\circ\text{C}$	$\leq \pm 0.01^\circ\text{C}/^\circ\text{C}$
Lin. R	$\leq \pm 0.2 \Omega$	$\leq \pm 20 \text{ m}\Omega / ^\circ\text{C}$

EMC immunity influence	$< \pm 0.5\%$ of span
Effect of supply voltage variation	$\leq 0.005\%$ of span / VDC
Vibration	IEC 60068-2-6 Test FC
Lloyd's specification no. 1	4 g / 2...100 Hz
Max. wire size.....	1 x 1.5 mm ² stranded wire
Humidity	$< 95\%$ RH (non-cond.)
Dimensions.....	Ø 44 x 20.2 mm
Protection degree (encl. / terminal) ...	IP68 / IP00
Weight	50 g

Electrical specifications, input:

RTD and linear resistance input:

RTD type	Min. value	Max. value	Min. span	Standard
Pt100	-200°C	+850°C	25°C	IEC 60751
Ni100	-60°C	+250°C	25°C	DIN 43760
Lin. R	0 Ω	10000 Ω	30 Ω	-----

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

Output:

Current output:

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

Sensor error detection:

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

Ex / I.S. approval:

KEMA 03ATEX1535	II 1 G Ex ia IIC T4 or T6 II 1 D Ex iaD
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Max. amb. temperature for T1...T4....	85°C
Max. amb. temperature for T5 and T6 ..	60°C
ATEX, applicable in zone	0, 1, 2, 20, 21 or 22
ATEX Installation Drawing No.	5333QA01

FM, applicable in	IS, Class I, Div. 1, Group A, B, C, D IS, Class I, Zone 0, AEx ia IIC
FM Installation Drawing No.....	5300Q502

CSA, applicable in	IS, Class I, Div. 1, Group A, B, C, D, Ex ia IIC IS, Class I, Zone 0, AEx ia IIC
CSA Installation Drawing No.....	533XQC03

Marine approval:

Det Norske Veritas, Ships & Offshore ..	Stand. for Certific. No. 2.4
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GOST R approval:

VNIIFTRI, Cert No.....	www.prelectronics.com
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Observed authority requirements: Standard:

EMC 2004/108/EC	EN 61326-1
ATEX 94/9/EC	EN 60079-0, -11, -26 EN 61241-0, -11
FM	3600, 3611, 3610
CSA, CAN / CSA	C22.2 No. 157, E60079-11, UL 913

Of span = Of the presently selected range