TEMPERATURE TRANSMITTER Type: **HART 5 protocol** Input: RTD, TC, Ohm, mV	**Type:** **TT-5335A**	Sheet No. 6-2 V2.1 **10122-E010818V2.1**

Application:

- Linearized temperature measurement with Pt100...Pt1000, Ni100...Ni1000, or TC sensor.
- Difference or average temperature measurement of 2 resistance or TC sensors.
- Conversion of linear resistance variation to a standard analog current signal, for instance from valves or Ohmic level sensors.
- Amplification of a bipolar mV signal to a standard 4...20 mA current sigr
- Connection of up to 15 transmitters to a digital 2-wire signal with HART® communication.

Properties:

- Within a few seconds the user can program PR5335A to measure temperatures within all ranges defined by the norms.
- The RTD and resistance inputs have cable compensation for 2-, 3- and 4-wire connection.
- The 5335A has been designed according to strict safety requirements and is therefore suitable for application in SIL 2 installations.
- Continuous check of vital stored data for safety reasons
- Sensor error detection according to the guidelines in NAMUR NE89

TECHNICAL DATA:

INPUT:

Type	Min temp.	Max temp.	Min span	Norm
Pt100	**-200°C**	**+850°C**	**25°C**	**DIN IEC 751**
Ni100	**-60°C**	**+250°C**	**25°C**	
Lin. R	**0Ω**	**10000ohm**	**30ohm**	
B	**+400°C**	**+1820°C**	**200°C**	**IEC584**
E	**-100°C**	**+1000°C**	**50°C**	**IEC584**
J	**-100°C**	**+1200°C**	**50°C**	**IEC584**
K	**-180°C**	**+1372°C**	**50°C**	**IEC584**
L	**-100°C**	**+900°C**	**50°C**	**DIN43710**
N	**-180°C**	**+1300°C**	**100°C**	**IEC584**
R	**-50°C**	**+1760°C**	**200°C**	**IEC584**
S	**-50°C**	**+1760°C**	**200°C**	**IEC584**
T	**-200°C**	**+400°C**	**50°C**	**IEC584**
U	**-200°C**	**+600°C**	**75°C**	**DIN4370**
W3	**0°C**	**+2300°C**	**200°C**	**ASTM E988-90**
W5	**0°C**	**+2300°C**	**200°C**	**ASTM E988-90**

COMMUNICATION INTERFACE:
Loop link 5905

MECHANICAL DATA:
Measurements: Ø 44 x 20,2 mm
Degree of protection (case/clamp): IP68/ IP100

ENVIROMENTAL CONDITIONS:
Operating temperature: -40°C to +85°C
Humidity: < 95% RH (non-cond.)

TECHNICAL DATA:

OUTPUT:
Signal range: ..... 4 - 20 mA

ACCURACY:

Type:	Basic accuracy:	Temperature coefficient:
RTD	≤±0,2°C	≤±0,01°C/°C
LIN R	≤±0,1ohm	≤±10mohm/°C
Volt	≤±10µV	≤±1µV /°C
TC Type: E, J, K, L, N, T, UB	≤±1°C	≤±0,05°C/°C
TC Type: B, R, S, W3, W5E	≤±2°C	≤±0,2°C/°C

COMMON SPECIFICATIONS:
Supply voltage: DC: 7,2…35 V
Voltage drop: 7,2 VDC
Reaction time (programmable): 0,33…60 s

SENSOR TROUBLE SHOOTING:
Programmable: 3.5…23 mA
NAMUR NE43 Upscale: 23 mA
NAMUR NE43 Downscale: 3,5 mA

Ordering details: **Please** state If the transmitter should be programmed

Transmitter Input Type:				
4 mA =		C°	**20 mA =**	C°

Save Print Submit

Kjaerulf Pedersen a/s, Taastrupgaardsvej 8-10, DK-2630 Taastrup, Tel.: +45 39760203, Fax: +45 39760501, sensor@kp-as.com, www.kp-as.com

PERFORMANCE MADE SMARTER

2-wire transmitter with HART protocol

5335A

– RTD, TC, Ohm, or mV input
– Extremely high measurement accuracy
– HART 5 protocol
– Programmable sensor error value
– For DIN form B sensor head mounting

Application

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Technical characteristics

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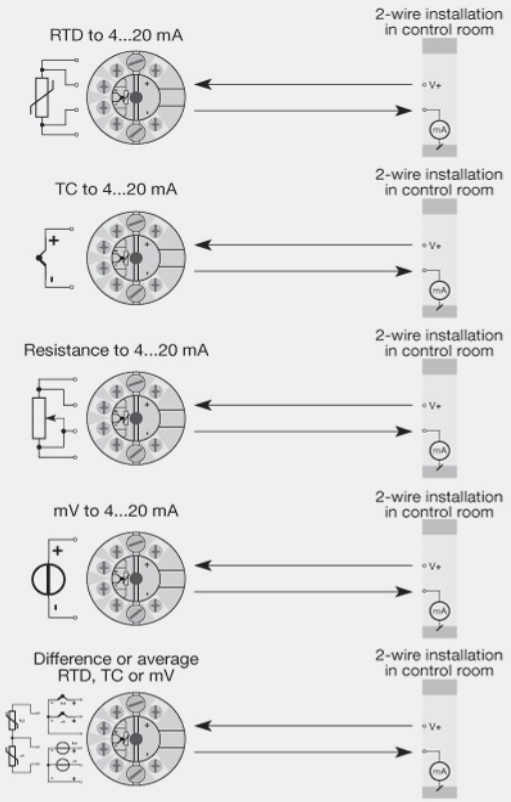
Mounting / installation

- For DIN form B sensor head or DIN rail mounting with the PR fitting type 8421.

Applications



Order:

Type
5335A

Environmental Conditions

Operating temperature	-40°C to +85°C
Calibration temperature	20...28°C
Relative humidity	< 95% RH (non-cond.)
Protection degree (encl./terminal)	IP68 / IP00

Mechanical specifications

Dimensions	Ø 44 x 20.2 mm
Weight approx.	50 g
Wire size	1 x 1.5 mm^2 stranded wire
Screw terminal torque	0.4 Nm
Vibration	IEC 60068-2-6
2...25 Hz	±1.6 mm
25...100 Hz	±4 g

Common specifications

Supply

Supply voltage	8.0...35 VDC

Isolation voltage

Isolation voltage, test / working	1.5 kVAC / 50 VAC

Response time

Response time (programmable)	1...60 s
Warm-up time	30 s
Programming	Loop Link & HART
Signal / noise ratio	Min. 60 dB
Accuracy	Better than 0.05% of selected range
Signal dynamics, input	22 bit
Signal dynamics, output	16 bit
Effect of supply voltage change	< 0.005% of span / VDC
EMC immunity influence	< ±0.1% of span
Extended EMC immunity: NAMUR NE21, A criterion, burst	< ±1% of span

Input specifications

Common input specifications

Max. offset	50% of selected max. value

RTD input

RTD type	Pt100, Ni100, lin. R
Cable resistance per wire	5 Ω (up to 50 Ω per wire is possible with reduced measurement accuracy)
Sensor current	Nom. 0.2 mA
Effect of sensor cable resistance (3-/4-wire)	< 0.002 Ω / Ω
Sensor error detection	Yes

TC input

Thermocouple type	B, E, J, K, L, N, R, S, T, U, W3, W5
Cold junction compensation (CJC)	< ±1.0°C
Sensor error detection	Yes
Sensor error current: When detecting / else	Nom. 33 µA / 0 µA

Voltage input

Measurement range	-800...+800 mV
Min. measurement range (span)	2.5 mV
Input resistance	10 MΩ

Output specifications

Current output

Signal range	4…20 mA
Min. signal range	16 mA
Load (@ current output)	≤ (Vsupply - 8) / 0.023 [Ω]
Load stability	≤ 0.01% of span / 100 Ω
Sensor error indication	Programmable 3.5…23 mA
NAMUR NE43 Upscale/Downscale	23 mA / 3.5 mA
of span	= of the presently selected range

Observed authority requirements

EMC	2014/30/EU
EAC	TR-CU 020/2011

Approvals

ATEX	KEMA 03ATEX1508 X
IECEx	KEM 10.0083X
INMETRO	DEKRA 18.0002X
DNV-GL Marine	Stand. f. Certific. No. 2.4
SIL	Hardware assessed for use in SIL applications