TEMPERATURE TRANSMITTER

Type: Ex for zone 0, 1 or 2, EEx ia IIC T1…T6,
HART 5 protocol or HART 7 protocol
Input: RTD, TC, Ohm, mV

Type: TT-5337D

Sheet No.
6-2 V2.1

10122-E010818V2.1

Application

- Linearized temperature measurement with TC and RTD sensors e.g. Pt100 and Ni100.
- HART communication and 4...20 mA analog PV output for individual, difference or average temperature measurement of up to two RTD or TC input sensors.
- Conversion of linear resistance to a standard analog current signal, e.g. from valves or Ohmic level sensors.
- Amplification of bipolar mV signals to standard 4...20 mA current signals.
- Up to 63 transmitters (HART 7) can be connected in a multidrop communication setup.

Technical characteristics

- HART protocol revision can be changed by user configuration to either HART 5 or HART 7 protocol.
  The HART 7 protocol offers: · Long Tag numbers of up to 32 characters. · Enhanced Burst Mode and Event notification with time stamping. Device variable and status mapping to any dynamic variable PV, SV, TV or QV. Process signal trend measurement with logs and summary data. · Automatic event notification with time stamps. Command aggregation for higher communication efficiency.
- 5337A is designed according to strict safety requirements and is therefore suitable for applications in SIL installations.
- Continuous check of vital stored data.
- Meeting the NAMUR NE21 recommendations, the 5337 HART transmitter ensures top measurement performance in harsh EMC environments.
- Additionally, the 5337 meets NAMUR NE43 and NE89 recommendations.

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

5337D

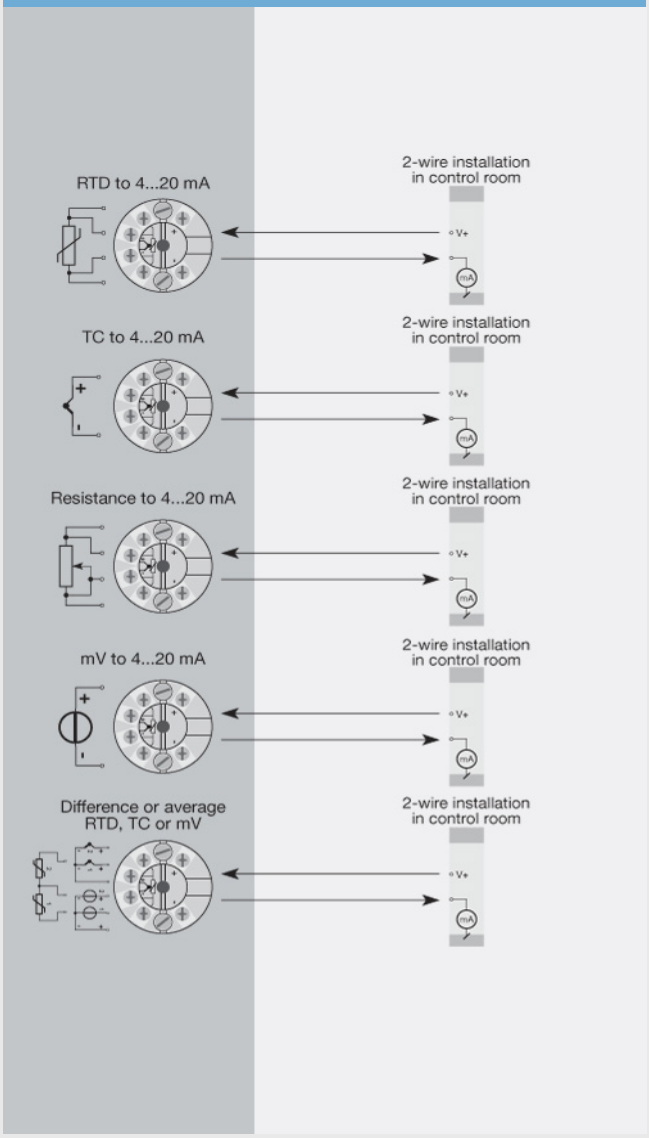
– RTD, TC, Ohm, and bipolar mV input
– 2 analog inputs and 5 device variables with status available
– HART protocol revision selectable from HART 5 or HART 7
– Hardware assessed for use in SIL applications
– Mounting in hazardous gas and dust area

Application
- Linearized temperature measurement with TC and RTD sensors e.g. Pt100 and Ni100.
- HART communication and 4...20 mA analog PV output for individual, difference or average temperature measurement of up to two RTD or TC input sensors.
- Conversion of linear resistance to a standard analog current signal, e.g from valves or Ohmic level sensors.
- Amplification of bipolar mV signals to standard 4...20 mA current signals.
- Up to 63 transmitters (HART 7) can be connected in a multidrop communication setup.

Technical characteristics
- HART protocol revision can be changed by user configuration to either HART 5 or HART 7 protocol.
- The HART 7 protocol offers: · Long Tag numbers of up to 32 characters.· Enhanced Burst Mode and Event notification with time stamping.· Device variable and status mapping to any dynamic variable PV, SV, TV or QV.· Process signal trend measurement with logs and summary data.· Automatic event notification with time stamps.· Command aggregation for higher communication efficiency.
- 5337D is designed according to strict safety requirements and is therefore suitable for applications in SIL installations.
- Continuous check of vital stored data.
- Meeting the NAMUR NE 21 recommendations, the 5337 HART transmitter ensures top measurement performance in harsh EMC environments. Additionally, the 5337D meets NAMUR NE43 and NE89 recommendations.

Mounting / installation
- For DIN form B sensor head mounting.
- Configuration via standard HART communication interfaces or by PR 5909 Loop Link.

Applications



Order:

Type
5337D

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...30 VDC

Isolation voltage

Isolation voltage, test / working	1.5 kVAC / 50 VAC

Response time

Response time (programmable)	1...60 s
Voltage drop	8.0 VDC
Programming	Loop Link & HART
Signal / noise ratio	> 60 dB
Accuracy	Better than 0.05% of selected range
Signal dynamics, input	22 bit
Signal dynamics, output	16 bit
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	Pt50/100/200/500/1000; Ni50/100/120/1000
Cable resistance per wire	5 Ω (up to 50 Ω per wire is possible with reduced measurement accuracy)
Sensor current	Nom. 0.2 mA

TC input

Thermocouple type	B, E, J, K, L, N, R, S, T, U, W3, W5, LR
Cold junction compensation (CJC)	Constant, internal or external via a Pt100 or Ni100 sensor

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]
Sensor error indication	Programmable 3.5…23 mA
NAMUR NE43 Upscale/Downscale	23 mA / 3.5 mA

Common output specifications

Updating time	440 ms
HART protocol revisions	HART 7 and HART 5

Observed authority requirements

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

Approvals

ATEX	KEMA 03ATEX1537
IECEx	KEM 10.0083X
FM	FM17US0013X
CSA	1125003
INMETRO	DEKRA 18.0002X
EAC Ex	RU C-DK.GB08.V.00410
DNV-GL Marine	Stand. f. Certific. No. 2.4
SIL	Hardware assessed for use in SIL applications