

# PROFIBUS® PA/FOUNDATION™ FIELDBUS TRANSMITTER



- PROFIBUS® PA ver. 3.0
- FOUNDATION™ Fieldbus ver. ITK 4.6
- Automatic switch between protocols
- Basic or LAS capability with F.F.
- 1- or 2-channel version



**Application:**

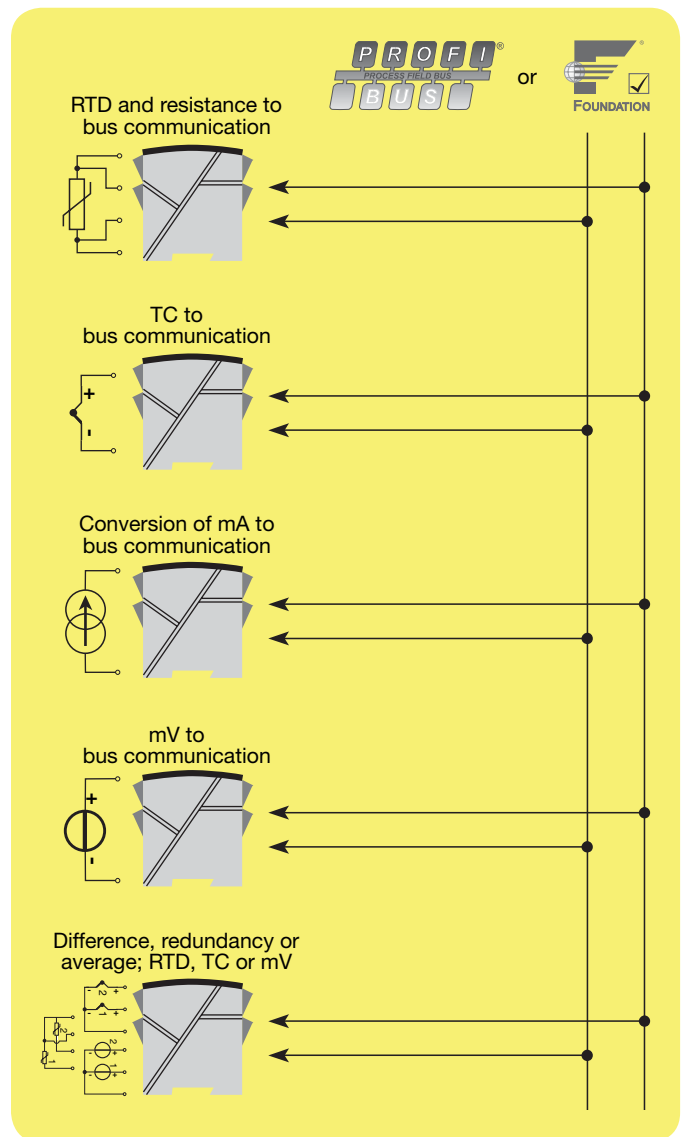
- Linearised temperature measurement with RTD or TC sensor.
- Converts analogue mA signals into digital values on the bus communication.
- Difference, average or redundancy temperature measurement with RTD or TC sensor.
- Linear resistance, potentiometer and bipolar mV measurement.

**Technical characteristics:**

- Bus transmitter with both PROFIBUS® PA and FOUNDATION™ Fieldbus communication. A unique switch function ensures automatic shift between the two communication protocols.
- Set-up for PROFIBUS® PA can be done via Siemens Simatic® PDM®, ABB Melody / Harmony and Metso DNA software and for FOUNDATION™ Fieldbus via Emerson DeltaV, Yokogawa CS 1000 / CS 3000, ABB Melody / Harmony and Honeywell Experion software.
- Built-in simulation mode function.
- Polarity-independent bus connection.
- 24 bit A/D converter ensures high resolution.
- PROFIBUS® PA function blocks:  
2 analogue.
- FOUNDATION™ Fieldbus function blocks:  
2 analogue and 1 PID.
- FOUNDATION™ Fieldbus capability:  
Basic or LAS.

**Mounting / installation:**

- Mounted vertically or horizontally on a DIN rail. Using the 2-channel version up to 84 channels per metre can be mounted.

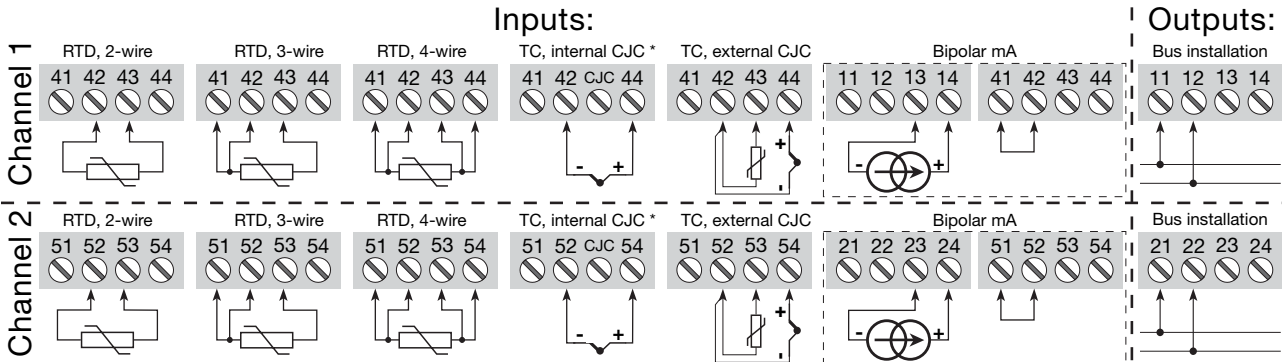


Type	Galvanic isolation	Channels
6350A	1500 VAC : 2	Single : A Double : B

**\*NB!** Please remember to order CJC connectors type 5910 (channel 1) and 5913 (channel 2) for TC inputs with an internal CJC.

**Connections:**

All connection options are shown in the user manual.



**Electrical specifications:**

**Specifications range:**

-40°C to +60°C

**Common specifications:**

- Supply voltage..... 9.0...32 VDC
- Internal consumption, per channel.... < 11 mA
- Isolation voltage, test / operation..... 1.5 kVAC / 50 VAC
- Signal / noise ratio..... Min. 60 dB
- Updating time..... < 400 ms
- Execution time, PID controller..... < 200 ms
- Execution time, analogue input..... < 50 ms
- Signal dynamics, input..... 24 bit
- Calibration temperature..... 20...28°C

Accuracy, the greater of general and basic values:

General values		
Input type	Absolute accuracy	Temperature coefficient
mA	≤ ±0.05% of reading	≤ ±0.003% of reading / °C
Other types	≤ ±0.05% of reading	≤ ±0.002% of reading / °C

Basic values		
Input type	Basic accuracy	Temperature coefficient
Pt100 and Pt1000	≤ ±0.1°C	≤ ±0.002°C / °C
Ni100...Ni1000	≤ ±0.15°C	≤ ±0.002°C / °C
Cu10	≤ ±1.3°C	≤ ±0.02°C / °C
Lin. R	≤ ±0.05 Ω	≤ ±0.002 Ω / °C
mA	≤ ±1 μA	≤ ±0.06 μA / °C
mV	≤ ±10 μV	≤ ±0.2 μV / °C
TC type: E, J, K, L, N, T, U	≤ ±0.5°C	≤ ±0.010°C / °C
TC type: B, R, S, W3, W5	≤ ±1°C	≤ ±0.025°C / °C

EMC immunity influence .....	< ±0.1% of reading
Extended EMC immunity: NAMUR NE 21, A criterion, burst.....	< ±1% of reading

- Humidity..... < 95% RH (non cond.)
- Dimensions (H x B x D)..... 109 x 23.5 x 104 mm
- Tightness (enclosure / terminal)..... IP50 / IP20
- Weight (1 / 2 channels)..... 145 / 185 g

**Electrical specifications, input:**

**RTD and linear resistance input:**

RTD type	Min. value	Max. value	Standard
Pt25...Pt1000	-200°C	+850°C	IEC 60751 / JIS C 1604
Ni25...Ni1000	-60°C	+250°C	DIN 43760
Cu10...Cu1000	-200°C	+260°C	α = 0.00427
Lin. resistance	0 Ω	10 kΩ	-
Potentiometer	0 Ω	100 kΩ	-

- Cable resistance per wire..... 50 Ω
- Sensor current..... Nom. 0.2 mA
- Effect of sensor cable resistance (3- / 4-wire)..... < 0.002 Ω / Ω
- Sensor error detection..... Yes
- Short circuit detection..... < 15 Ω

**Bipolar current input:**

- Measurement range..... -100...+100 mA
- Input resistance..... 10 Ω + PTC < 20 Ω
- Cable breakage detection (4...20 mA)..... < 0,3 mA

**TC / mV input:**

Type	Min. value	Max. value	Standard
B	+400°C	+1820°C	IEC 60584-1
E	-100°C	+1000°C	IEC 60584-1
J	-100°C	+1200°C	IEC 60584-1
K	-180°C	+1372°C	IEC 60584-1
L	-200°C	+900°C	DIN 43710
N	-180°C	+1300°C	IEC 60584-1
R	-50°C	+1760°C	IEC 60584-1
S	-50°C	+1760°C	IEC 60584-1
T	-200°C	+400°C	IEC 60584-1
U	-200°C	+600°C	DIN 43710
W3	0°C	+2300°C	ASTM E988-90
W5	0°C	+2300°C	ASTM E988-90
Ext. CJC	-40°C	+135°C	IEC60751
mV	-800	+800	-

- Cold junction compensation (CJC) ... < ±0.5 °C
- Sensor error detection..... Yes
- Sensor error current:  
when detecting..... Nom. 2 μA  
else..... 0 μA
- Short circuit detection..... < 3 mV

**Output:**

**PROFIBUS® PA connection:**

- PROFIBUS® PA protocol standard .... EN 50170 vol. 2
- PROFIBUS® PA address (at delivery). 126
- PROFIBUS® PA function blocks ..... 2 analogue

**FOUNDATION™ Fieldbus connection:**

- FOUNDATION™ Fieldbus version..... ITK 4.6
- FOUNDATION™ Fieldbus capability..... Basic or LAS
- FOUNDATION™ F. function blocks..... 2 analogue and 1 PID

**EEx approval:**

- KEMA 03ATEX1011 X..... II 3 G
- EEx nA [L] II C T4...T6

- Max. amb. temperature for T1...T4 ... 85°C
- Max. amb. temperature for T5..... 75°C
- Max. amb. temperature for T6..... 60°C
- ATEX, applicable in zone ..... 2

- FM and CSA, applicable in..... IS, Cl. I, Div. 2, Gr. A, B, C, D  
IS, Cl. I, Zone 2, Gr. IIC

**GOST R approval:**

- VNIIM, Cert. No. .... Ross DK.ME48.V01899

**Observed authority requirements: Standard:**

- EMC 2004/108/EC
- Emission and immunity ..... EN 61326
- ATEX 94/9/EC..... EN 50014, EN 50021
- FM ..... 3600, 3611
- CSA, CAN / CSA ..... C22.2 No. 142, No. 213
- CAN / CSA..... E60079-0, E79-15