

Profibus® PA/Foundation™ Fieldbus Transmitter

Model 5350B

- PROFIBUS® PA Ver. 3.0
- FOUNDATION™ Fieldbus Ver. ITK 4.6
- Automatic Switch Between Protocols
- FISCO Certified
- Basic or LAS Capability with Foundation Fieldbus
- Complies with European ATEX & CSA/FM Requirements for Hazardous Location Installation

Application:

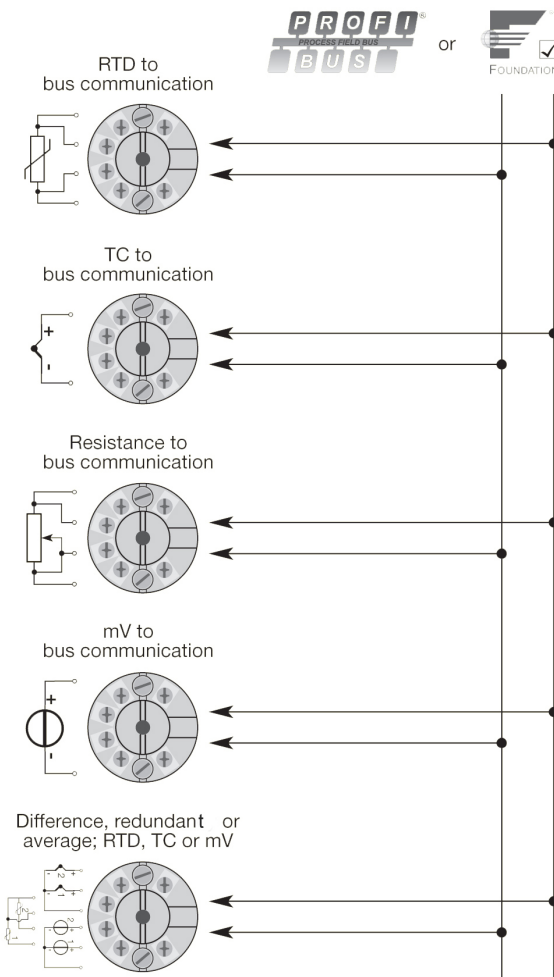
- Linearized temperature measurement with RTD or TC sensor.
- Difference, average or redundant temperature measurement with RTD or TC sensor.
- Linear resistance, potentiometer and bipolar mV measurement.

Technical Characteristics:

- Bus transmitter with both PROFIBUS® PA and FOUNDATION™ Fieldbus communication. A unique switch function ensures automatic shift between the two 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.
- The simulation mode function can be activated by way of a magnet.
- Polarity-independent bus connection.
- 24 bit A/D converter ensures high resolution.
- PROFIBUS® PA function blocks: 2 analog.
- FOUNDATION™ Fieldbus function blocks: 2 analog and 1 PID.
- FOUNDATION™ Fieldbus capability: Basic or LAS .

Mounting/Installation:

- DIN Form B sensor head compatible.
- Supplied with 2 x M4 screws on a 33 mm(1.3") BC (optional 6-32 screws available).

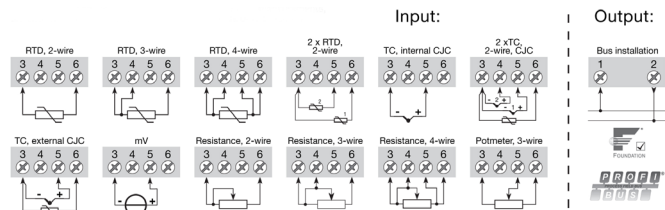


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Specifications

Order: 5350B



Electrical Specifications

Specifications Range:

-40°C to +85°C

Common Specifications:

Supply voltage	9...30 VDC
In FISCO installations	9...17.5 VDC
Consumption	< 11 mA
Isolation voltage, test / operation	1.5 kVAC / 50 VAC
Signal / noise ratio	Min. 60 dB
Response time (programmable)	1...60 s
Updating time	< 400 ms
Execution time, analog 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
All	$\leq \pm 0.05\%$ of reading	$\leq \pm 0.002\%$ of reading / °C

Basic Values		
Input Type	Basic Accuracy	Temperature Coefficient
Pt100, Pt1000	$\leq \pm 0.1^\circ\text{C}$	$\leq \pm 0.002^\circ\text{C}/^\circ\text{C}$
Ni 100	$\leq \pm 0.15^\circ\text{C}$	$\leq \pm 0.002^\circ\text{C}/^\circ\text{C}$
Cu 10	$\leq \pm 1.3^\circ\text{C}$	$\leq \pm 0.02^\circ\text{C}/^\circ\text{C}$
Lin. R	$\leq \pm 0.05 \Omega$	$\leq \pm 0.002 \Omega/^\circ\text{C}$
Volt	$\leq \pm 10 \mu\text{V}$	$\leq \pm 0.2 \mu\text{V}/^\circ\text{C}$
TC type: E, J, K, L, N, T, U	$\leq \pm 0.5^\circ\text{C}$	$\leq \pm 0.010^\circ\text{C}/^\circ\text{C}$
TC type: B, R, S, W3, W5	$\leq \pm 1^\circ\text{C}$	$\leq \pm 0.025^\circ\text{C}/^\circ\text{C}$

EMC immunity influence	< $\pm 0.1\%$ of reading
Extended EMC immunity: NAMUR NE 21, A criterion, burst	< $\pm 1\%$ of reading

Vibration (DIN Class B)	IEC 60068-2-6, IEC 60068-2-64 4 g / 2...100 Hz
Max wire size	1 x 1.5mm ² (16 AWG) stranded wire
Humidity	< 95% RH (non-cond.)
Dimensions	Ø 44 x 20.2 mm
Protection degree (encl. / terminal)	IP68 / IP00

Electrical Specifications, Input:

TC Input:

TC type	B, E, J, K, L, N, R, S, T, U, W3, W5
Cold junction compensation (CJC)	$\leq \pm 0.5^\circ\text{C}$
Sensor error detection	Yes
Sensor error current:	
when detecting	Nom. 4 μA
else	0 μA
Short circuit detection	< 3 mV

Voltage Input:

Measurement range	-800...+800 mV
Input resistance	10 M Ω

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	-50°C	+200°C	$\alpha = 0.00427$
Lin. Resistance	0 Ω	10 k Ω	-----
Potentiometer	0 Ω	100 k Ω	-----

Cable resistance per wire	50 Ω
Sensor current	Nom. 0.2 mA

Output:

FOUNDATION™ Fieldbus Connection:

Version	ITK 4.6
Capability	Basic or LAS
Function blocks	2 analog and 1 PID

PROFIBUS® PA Connection:

Protocol standard	EN 50170 vol. 2
Function blocks	2 analog

EEx / I.S. Approval*:

KEMA 02ATEX1318	II 1 GD or II 2 (1)GD T65°C...T105°C EEx ia IIC or EEx ib [ia] IIC T4...T6
Applicable in zone	0, 1, 2, 20, 21, 22
FM, UL and CSA	IS, Cl. I, Div. 1, Gr. A, B, C, D IS, Cl. I, Zone 0/1, Gr. IIC IS, Cl. I, Div. 2, Gr. A, B, C, D BR-Ex ia IIC T4, T5, T or BR-Ex ib [ia] IIC T4, T5, T6
INMETRO 08/UL-BRCO-0019	GY J04406X
NEPSI	Ex ia IIC T4...T6, Ex ib (ia) IIC T4...T6

EEx / I.S. Data*:

Zone 0, EEx ia IIC, Entity / Fisco				
IS, Class I, Division 1, Group A, B, C, D - Entity / Fisco				
Unit	Barrier where $P_o < 0.84 \text{ W}$	Barrier where $P_o < 1.3 \text{ W}$	Suitable for FISCO Systems	Suitable for FISCO Systems
U_i	30 VDC	30 VDC	17.5 VDC	15 VDC
I_i	120 mADC	300 mADC	250 mADC	900 mADC
P_i	0.84 W	1.3 W	2.0 W	5.32 W
L_i	1 μH	1 μH	1 μH	1 μH
C_i	2.0 nF	2.0 nF	2.0 nF	2.0 nF
T1...T4	Tamb. < 85°C	Tamb. < 75°C	Tamb. < 85°C	Tamb. < 85°C
T5	Tamb. < 70°C	Tamb. < 65°C	Tamb. < 60°C	Tamb. < 60°C
T6	Tamb. < 60°C	Tamb. < 45°C	Tamb. < 45°C	Tamb. < 45°C

Zone 1, EEx ib IIC, Entity / Fisco		
IS, Class I, Division 2, Group A, B, C, D Entity / Fisco		
Unit	Barrier where $P_o \leq 5.32 \text{ W}$	FISCO Segment Coupler
U_i	30 VDC	17.5 VDC
I_i	250 mADC	All
P_i	5.32 W	All
L_i	1 μH	1 μH
C_i	2.0 nF	2.0 nF
T1...T4	Tamb. < 85°C	Tamb. < 85°C
T5	Tamb. < 75°C	Tamb. < 75°C
T6	Tamb. < 60°C	Tamb. < 60°C

GOST R Approval*: Certificate available upon request.

Observed Authority Requirements: Standard:

EMC 2004/108/EC	EN 61326-1
ATEX 94/9/EC	EN 50014, EN 50020, EN 60079-15, EN 50284, IEC 60079-27 (FISCO)
FM	3600, 3610, 3611
UL	UL 508, UL 913
CSA, CAN / CSA	C22.2 No. 142, No. 157
CAN / CSA	E79-0, -11
INMETRO	IEC 60079-0, IEC 60079-11
NEPSI	GB3836.1-2000, GB3836.4-2000

Of Span = Of the presently selected range.

IS = Intrinsically Safe

FISCO = Fieldbus Intrinsically Safe Concept.

*The transmitter is manufactured by PR electronics. All approvals listed are recognized under the PR name.

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