

Fieldbus Temperature Transmitter Model 5350, for FOUNDATION Fieldbus and PROFIBUS PA

WIKAI Data Sheet TE 53.01



Applications

- Process industry
- Machinery, plant construction

Special Features

- FOUNDATION™ Fieldbus ITK 4.6
- PROFIBUS® PA Profile 3
- Automatic switch between protocols
- Explosion protection, EEx i, intrinsically safe / FISCO
- Explosion protection, EEx n, FNICO



Fieldbus Temperature Transmitter Model 5350 B

Description

Fieldbus Transmitter with FOUNDATION™ and PROFIBUS® PA Fieldbus Communication for temperature measurement with resistance thermometers and thermocouples.

Difference, average or redundancy temperature measurement. Resistance and mV-measurements with or without customer specific linearisation of functions.

FOUNDATION Fieldbus with LAS-Functionality (Link Active Scheduler) and PID-Regulation. This functionality allows for Master-independent regulations in the field device.

Polarity-independent bus connection.

Small dimensions, suitable for DIN form B sensor head mounting.

Delivered with a basic configuration (according to the ordering options) or customer specific configuration in line with the configuration options.

Specifications		Model 5350						
Input	configurable	Sensor			Measuring range		Standard	
Resistance thermometer		Pt25 ... Pt1000 ($\alpha = 0,00385$)			-200 °C ... +850 °C		IEC 60 751	
		Pt25 ... Pt1000 ($\alpha = 0,003916$)			-200 °C ... +850 °C		JIS C1604	
		Ni25 ... Ni1000			-60 °C ... +250 °C		DIN 43 710	
		Cu10 ... Cu1000			-50 °C ... +200 °C		$\alpha = 0,00427$	
Thermocouples		B			+400 °C ... +1820 °C		IEC 584	
		E			-100 °C ... +1000 °C		IEC 584	
		J			-100 °C ... +1200 °C		IEC 584	
		K			-180 °C ... +1372 °C		IEC 584	
		L			-200 °C ... +900 °C		DIN 43 710	
		N			-180 °C ... +1300 °C		IEC 584	
		R			-50 °C ... +1760 °C		IEC 584	
		S			-50 °C ... +1760 °C		IEC 584	
		T			-200 °C ... +400 °C		IEC 584	
		U			-200 °C ... +600 °C		DIN 43 710	
		W3			0 °C ... +2300 °C		ASTM E988-90	
		W5			0 °C ... +2300 °C		ASTM E988-90	
External CJC (cold junction compensation)		-40 °C ... +135 °C						
Resistance sensor		0 ... 10 k Ω						
Potentiometric resistance sensor		0 ... 100 k Ω						
mV - sensor		-800 ... +800 mV						
Basic configuration		Pt100, 3 wire 0 °C ... 100 °C						
Sensor current		typically 0.2 mA						
Max. cable resistance		50 Ω per wire						
Accuracy, at 24 °C $\pm$ 4 K		Sensor		Base accuracy		Temperature coefficient		
		Pt100 und Pt1000		$\leq \pm 0.1$ °C		$\leq \pm 0.002$ °C / °C		
		Ni100		$\leq \pm 0.15$ °C		$\leq \pm 0.002$ °C / °C		
		Cu10		$\leq \pm 1.3$ °C		$\leq \pm 0.02$ °C / °C		
		Lin. R.		$\leq \pm 0.05$ Ω		$\leq \pm 0.002$ Ω / °C		
		Volt		$\leq \pm 10$ μ V		$\leq \pm 0.2$ μ V / °C		
		TE-Typ: E, J, K, L, N, T, U		$\leq \pm 0.5$ °C		$\leq \pm 0.01$ °C / °C		
		TE-Typ: B, R, S, W3, W5		$\leq \pm 1$ °C		$\leq \pm 0.025$ °C / °C		
Error cold junction compensation (CJC)		$\leq \pm 0.5$ °C						
Output		FOUNDATION™ Fieldbus				PROFIBUS ® PA		
Version		Version ITK 4.6				EN 50 170 vol. 2 / profile 3		
Functionality		Basic or LAS						
Fieldbus function blocks		2 analogue and 1 PID				2 analogue		
Execution time, PID-controller		< 200 ms						
Power supply		9 ... 32 VDC (maximum values specified in the type-examination certificate are to be observed)						
Supply voltage		9 ... 32 VDC (maximum values specified in the type-examination certificate are to be observed)						
Current consumption		< 11 mA						
Explosion protection		Model 5350 B					Model 5350 A	
Ex-protection (ATEX)		Zone 0/1, category 1G, 2G			Zone 1, category 2G		Zone 2, category 3G	
Ignition protection type		EEx ia IIC T4/T5/T6			EEx ib IIC T4/T5/T6		EEx nA[L] IIC T4/T5/T6	
EC- type-examination certificate		KEMA 02 ATEX 1318					KEMA 03 ATEX 1011X	
FM		IS, Class I, Division 1, Group A, B, C, D					Non-Incendive, Class I,	
		Non-Incendive, Class I, Division 2, Group A, B, C, D					Div. 2, Group A, B, C, D	
Installation Drawing		5350QE01					5350QE01	
UL		Class I, Division 2, Group A, B, C, D					Class 1, Division 2,	
		Class I, Zone 0 & 1 Group IIC,					Group A, B, C, D	
		Class II, Division 1, Group E, F & G					Cl. I, Zone 2 Group IIC	
CSA		IS, Class I, Division 1,			IS, Class I, Div.2,		Non-Incendive, Class I,	
		Groups A, B, C, D			Groups A, B, C, D		Div.2, Group A, B, C, D	
Certificate No.		1418937					1418937	
Maximum values for connection of the current loop circuit		Po < 0.84 W	Po < 1.3 W	FISCO	FISCO	Po < 5.32 W	FISCO	FNICO
Supply voltage Ui		30 VDC	30 VDC	17,5	15 VDC	30 VDC	17.5	32 VDC
Ampacity Ii		120 mA	300 mA	250 mA		250 mA		
Power rating Pi		0.84 W	1.3 W	2.0 W		5.32 W		
Internal capacitance Ci		2 nF				2 nF		
Internal inductance Li		1 μ H				1 μ H		
Medium temperature/ ambient temperature		T4: < 85 °C	T4: < 75 °C	T4: < 85 °C		T4: < 85 °C		T4: < 85 °C
		T5: < 75 °C	T5: < 65 °C	T5: < 60 °C		T5: < 75 °C		T5: < 75 °C
		T6: < 60 °C	T6: < 45 °C	T6: < 45 °C		T6: < 60 °C		T6: < 60 °C
Maximum values for connection of the sensor circuit								
Supply voltage Uo		5.7 V						
Ampacity Io		8.4 mA						
Power rating Po		12 mW						
Capacitance Co		40 μ F						
Inductance Lo		200 mH						

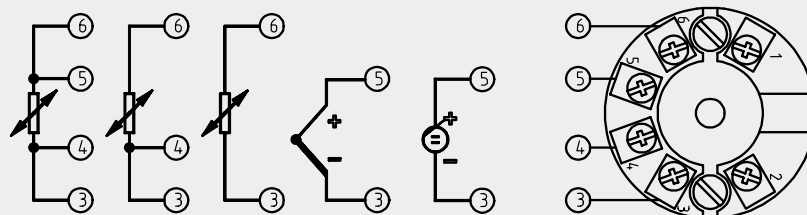
Further specifications

Model 5350

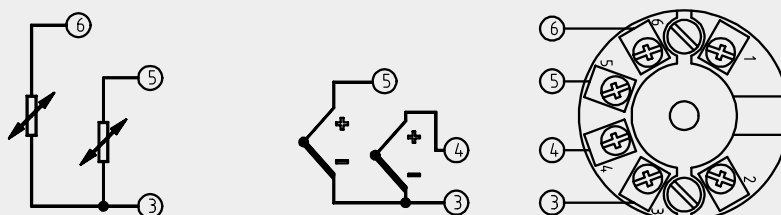
Electromagnetic compatibility (EMC)	per EMC Directive 89/336/EWG DIN EN 61 326:2002 and NAMUR NE 21
Ambient conditions	
Ambient and storage temperature	Standard range: -40 ... +85 °C
Maximum permissible humidity	95 % relative humidity, without moisture condensation
Vibration	2 ... 100 Hz 4 g DIN EN 60 068-2-6
Special features	
Isulation voltage, test / operation	1.5 kVAC / 50 VAC
Response time (programmable)	1 ... 60 s
Updating time	< 400 ms
Case	Head mounting design, incl. spring-loaded mounting screws
Material	Plastic, PBT, glass fibre reinforced
Ingress protection case	IP 68 IEC 529 / EN 60 529
terminal	IP 00 IEC 529 / EN 60 529
Cross section of terminal connectors	0.14 ... 1.5 mm ²
Weight	Approx. 0.05 kg

Designation of terminal connectors

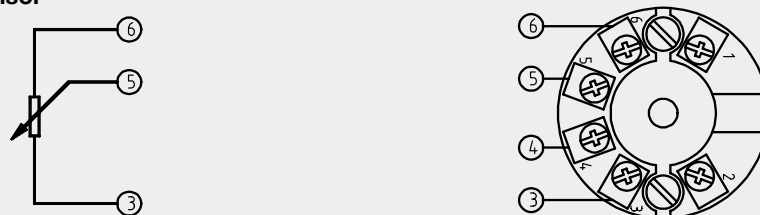
1 Sensor



2 Sensors



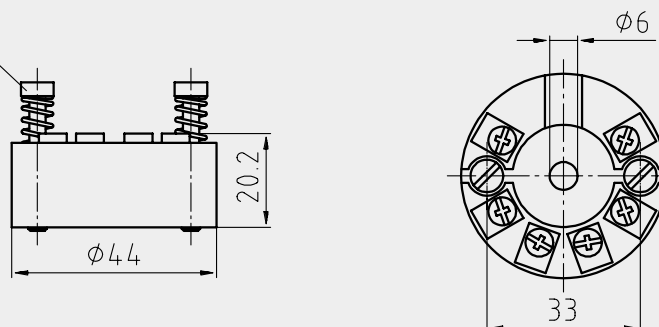
Potentiometric sensor



Clamp 1 and 2: Connection FOUNDATION™ Fieldbus or PROFIBUS® PA (protected against reverse polarity)

Dimensions in mm

Screw M4
approx. 30 mm
spring-loaded

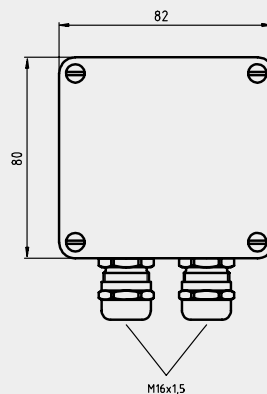


Accessory

Field Communicator FC375



Field case



Assembly accessories

- Adapter, plastic/stainless steel
- Adapter, steel tin galvanized
- Adapter, steel zinc galvanized

Accessory (please order separately)	Order No.
Field Communicator FC375 English for HART® and FOUNDATION™ fieldbus, ATEX II 2G (1GD) EEX IA IIC T4, FM CLASS I, DIVISION1, GROUPS A,B,C AND D T4, CSA EX IA IIC NiMH battery, with power supply 90 - 240 VAC, with EASY UPGRADE OPTION	2133702
Field case, plastic (ABS), IP 65, for mounting of a head mounting transmitter, permissible ambient temperature: -40 °C ... +80 °C, 82x80x55 mm (WxLxH), with two cable glands M16x1.5	33 01732
Adapter for mounting on a DIN rail, plastic/stainless steel	35 93789
Adapter for mounting on a DIN rail, steel tin galvanized	36 19851
Adapter for mounting on a DIN rail, steel zinc galvanized	23 73633

Ordering information

Field No.	Code	Features
Explosion protection		
1	A	II 3 G EEx nA[L] II C T4/T5/T6, CSA/FM/UL Division 2
	B	II 1 G EEx ia IIC / II 2 G EEx ib IIC T4/T5/T6, CSA/FM/UL Division 1
Measuring range		
5	GK	basic configuration ¹⁾
	KO	customer's specification ²⁾ <i>please state as additional text</i>
Additional order info		
6	YES	additional text <i>Please state as clearly understandable text!</i>
	NO	
	T	Z

1) Basic configuration: Pt100, 3 wire, 0 ... 100 °C

2) Please pay attention to the sensors and the limits of measuring ranges on page 2.

Order code:

T5350 -

1

2

3

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Additional text: _____

Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing. Modifications may take place and materials specified may be replaced by others without prior notice.



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