SENSE

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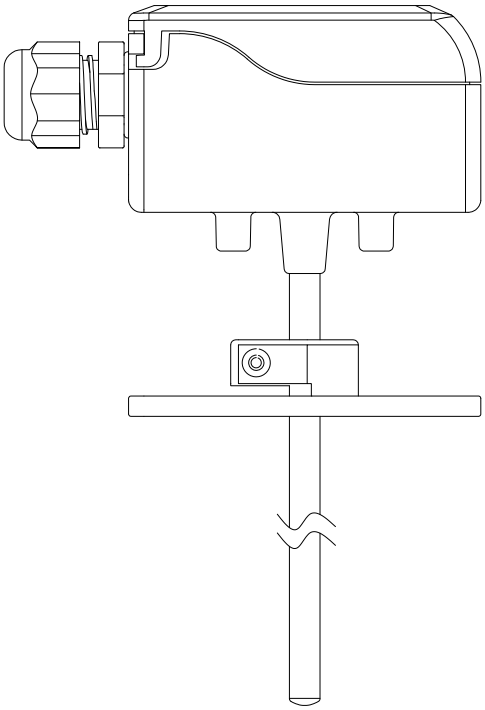


Temperature Sensor & Transmitters

issue date: 12.May.2026, ST Datasheet v33

Content

Applications

- HVAC supply or extract air measuring
- Pool, greenhouse or hencoop applications
- Air quality applications

Passive Temperature Sensors

Features

- Maintenance-free, high-quality PT and NTC passive sensing elements
- Simple and fast mounting
- IP65 protection, STR is IP41

Ordering Codes

model	*mounting*	*sensing element*	*probe length for STD & STI*
ST	D duct	11 NTC 1.8k	1 50 mm
	I immersion	12 NTC 2.2k	2 100 mm
	R room	13 NTC 3k	3 150 mm
	C clamp-on	14 NTC 5k	4 200 mm
	O outdoor	15 NTC 10k (1)	S special
	W wall	16 NTC 20k	
		17 NTC 10k-II (2)	
		21 PT 100	
		22 PT 1000	
		23 Ni 1000	

(1) Beta Value : 3435 @ 25/85 °C
(2) Beta Value : 3950 @ 25/50 °C

Resistance Temperature Table

T(°C)	NTC 1.8K	NTC 10K	NTC 10K-II	NTC 20K	PT 100	PT 1000
-50	-	-	-	-	80,31	803,1
-40	39.024,0	188.500,0	336.095,0	813.440,0	84,29	842,9
-30	22.284,0	111.300,0	176.801,0	415.480,0	82,22	822,2
-20	13.192,2	67.770,0	97.007,0	221.300,0	92,16	921,6
-10	8.067,6	42.470,0	55.303,0	122.474,0	96,09	960,9
0	5.085,0	27.280,0	32.651,0	70.204,0	100,00	1.000,0
10	3.294,0	17.960,0	19.903,0	41.562,0	103,90	1.039,0
20	2.188,8	12.090,0	12.493,0	25.346,0	107,79	1.077,9
25	1.800,0	10.000,0	10.000,0	20.000,0	109,73	1.097,3
30	1.488,6	8.313,0	8.056,0	15.885,6	111,67	1.116,7
40	1.034,5	5.827,0	5.325,0	10.211,6	115,54	1.155,4
50	733,3	4.160,0	3.601,0	6.719,6	119,40	1.194,0
60	529,4	3.020,0	2.487,0	4.518,6	123,24	1.232,4
70	388,8	2.228,0	1.752,0	3.100,4	127,07	1.270,7
80	290,2	1.668,0	1.256,0	2.167,4	130,89	1.308,9
90	219,6	1.266,0	916,0	1.541,9	134,70	1.347,0
100	168,7	973,0	678,0	1.114,9	138,50	1.385,0
110	131,0	758,0	510,0	818,4	142,29	1.422,9
120	103,1	597,0	388,0	609,4	146,06	1.460,6
130	82,1	474,0	300,0	459,8	149,82	1.498,2
140	65,9	381,0	234,0	351,3	153,58	1.535,8
150	53,6	-	-	271,5	157,31	1.573,1

Temperature Transmitters with MCU

Features

- MCU integrated high-resolution measurements
- 4-20mA/3wire output or 0-10V output
- 7-segment LED display option except for STR
- 24V AC/DC supply
- Simple and fast mounting
- IP65 protection except for STR, STR is IP41

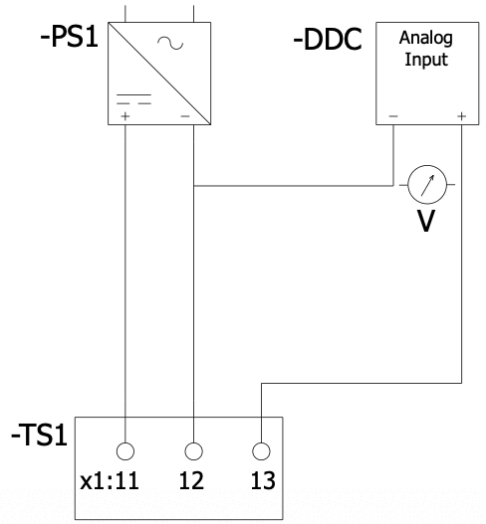
Ordering Codes

MCU integrated Temperature Transmitters

model	*mounting*	*analog output, all 3wire*	*probe length*	*options*
ST	D duct I immersion R room C clamp-on O outdoor W wall	32 4-20 mA 41 0-10 V 42 2-10 V 43 0-5 V 44 1-5 V	1 50 mm 2 100 mm 3 150 mm 4 200 mm S special	D display

Technical Data

Electrical	Power Supply	AC 24V (± %5), 50-60 Hz DC 14…35 V
	Power Consumption	< 1 W
Outputs	Current Output	4…20 mA, maximum 500 Ω
	Voltage Output	0…10 Vdc, minimum 1.000 Ω 0…5 Vdc, minimum 1.000 Ω
Accuracy	Temperature	0.5 °C
General Data	Sensing Element	NTC or PT type
	Media	Air or non-aggressive gasses
	Operating Temperature	-40 …100 °C
	Storage Temperature	-10 …40 °C
Ranges	Temperature	-40 …100 °C, please define while ordering
Material	Body	ABS plastic
	Probe	Stainless Steel
Connections	Terminal	Fixed screw terminal
	Cable Gland	PG9
Protection	room type	IP41 or NEMA 3
	all others	IP65 or NEMA 4
Standards	EMC Directive	EN 61326-1
Dimensions	see page 7	
Weight Packed	see page 7	



Temperature Transmitters with XTR

Features

- XTR integrated high-resolution measurements
- 4-20mA/2wire output or 2-10V/3wire output
- 12-35 VDC supply
- Simple and fast mounting
- IP65 protection except for STR, STR is IP41

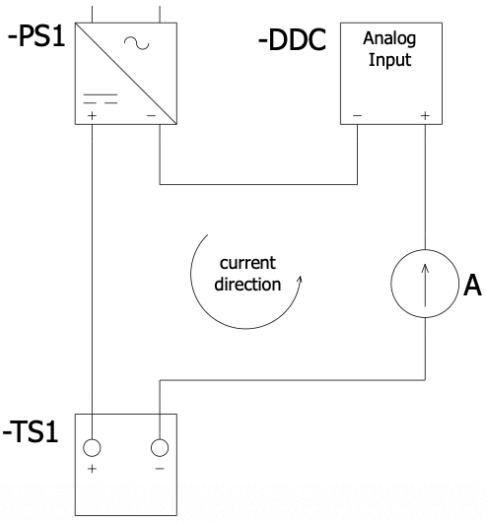
Ordering Codes

XTR integrated Temperature Transmitters

model	*mounting*	*analog output*	*probe length*
ST	D duct I immersion R room C clamp-on O outdoor W wall	33 4-20mA / 2wire 34 4-20mA / 2wire or 2-10V / 3wire field selectable	1 50 mm 2 100 mm 3 150 mm 4 200 mm S special

Technical Data

Electrical	Power Supply	DC 12…35 V
	Power Consumption	< 1 W
Outputs	Current Output	4…20 mA, maximum 500 Ω
	Voltage Output	0…10 Vdc, minimum 1.000 Ω
Accuracy	Temperature	0.5 °C
General Data	Sensing Element	Digital microchip
	Media	Air or non-aggressive gasses
	Operating Temperature	-40 …100 °C
	Storage Temperature	-10 …40 °C
Ranges	Temperature	-40 …100 °C, please define while ordering
Material	Body	ABS plastic
	Probe	Stainless Steel
Connections	Terminal	Fixed screw terminal
	Cable Gland	PG9
Protection	room type	IP41 or NEMA 3
	all others	IP65 or NEMA 4
Standards	EMC Directive	EN 61326-1
Dimensions	see page 7	
Weight Packed	see page 7	



Modbus Temperature Transmitters

Features

- Modbus RTU, RS485 protocol
- 32 devices in a loop
- 24V AC/DC supply
- Simple and fast mounting
- IP65 protection except for STR, STR is IP41

Ordering Codes

model	*mounting*	*communication*	*option*	*probe length*
ST	D duct I immersion R room C clamp-on O outdoor W wall	M Modbus RTU RS485	L light intensity	1 50 mm 2 100 mm 3 150 mm 4 200 mm S special

Modbus RS485 Protocol

Default Settings: Modbus ID:1, 9600, 8bit, None, 1. Register Table starts from Base 1.

Use Function 3 for Reading and Function 6 for Writing Holding Registers. Whenever writing to any Modbus Parameter, the new parameter is activated instantly and you should have to configure the master device according to the new parameters. Unlisted registers are for some system parameters. Please do not change unlisted registers.

Register	R/W	Range	Description
1	R & W	1…254	Modbus Address
2	R & W	0 or 1	Baudrate, 0: 9.600, 1: 19.200
3	R & W	0…3	Bit_Parity_Stop, 0: 8bit_None_1, 1 8bit_None_2, 2: 8bit_Even_1, 3: 8bit_Odd_1
4	R		Blank
5	R		Blank
6	R		Blank
7	R & W	0…200	Offset, 0: -10,0 ºC, 100: 0,0 ° C, 200: +10,0 ºC, default value 100
8	R & W	1…10	Response time, 1: 1 sec., 10: 10 sec.
9	R		Temperature as C x10, divide by 10 for exact value
10	R		Temperature as C x100, divide by 100 for exact value

Technical Data

- Please refer to the technical data on page 6

Setpoint & Temperature Transmitters

Features

- 2 analog outputs
- LCD display, custom design
- Modbus/RS485, 2x Relay and Buzzer options
- 24V AC/DC supply
- Simple and fast mounting

Ordering Codes

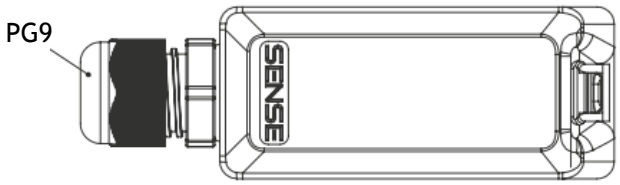
Setpoint & Temperature Transmitters

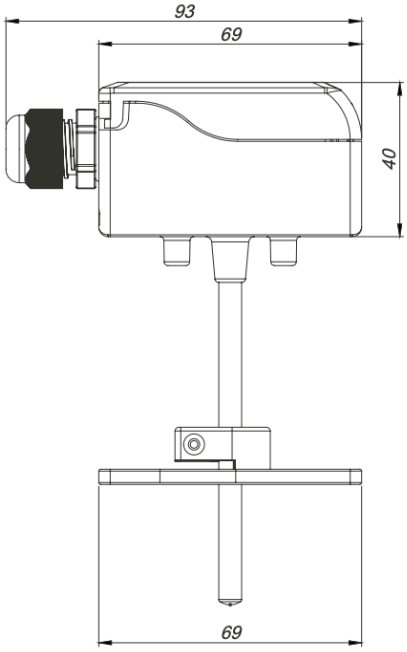
model	*mounting*	*model*	*output 1 - TEMP.*	*output 2 - TEMP. or SET*	*options*
ST	R room	T Temperature only	0 no output 1 0…10 V 2 2…10 V 3 0…5 V 4 1…5 V 5 4…20 mA	0 no output 1 0…10 V 2 2…10 V 3 0…5 V 4 1…5 V 5 4…20 mA	M modbus D display R relay 1x RR relay 2x B buzzer
		S Setpoint & Temperature			

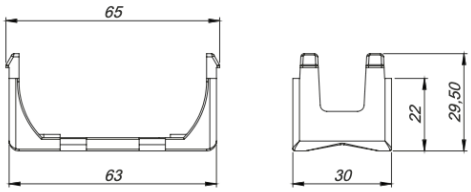
Technical Data

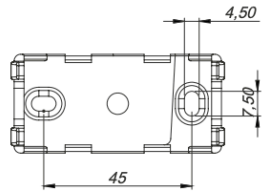
Electrical	Power Supply	AC 24V (± %5), 50-60 Hz DC 14…35 V
	Power Consumption	< 1 W
Outputs	Current Output	4…20 mA, maximum 500 Ω
	Voltage Output	0…10 Vdc, minimum 1.000 Ω 0…5 Vdc, minimum 1.000 Ω
Accuracy	Temperature	0.5 °C
General Data	Sensing Element	NTC or PT type
	Media	Air or non-aggressive gasses
	Operating Temperature	-40 …100 °C
	Storage Temperature	-10 …40 °C
Ranges	Temperature	please define while ordering, min= -40 °C, max= 100 °C
Material	Body	ABS plastic
Connections	Terminal	Fixed screw terminal
Protection	room type	IP41 or NEMA 3
	all others	IP65 or NEMA 4
Standards	EMC Directive	EN 61326-1
Dimensions	see page 8	
Weight Packed	see page 7	

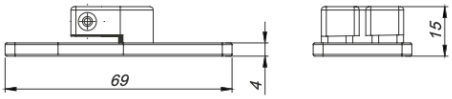
Drawings

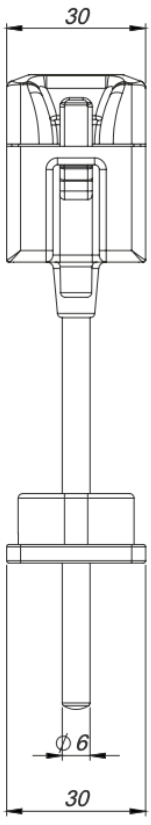


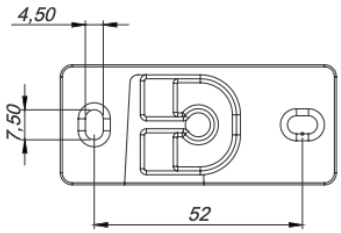




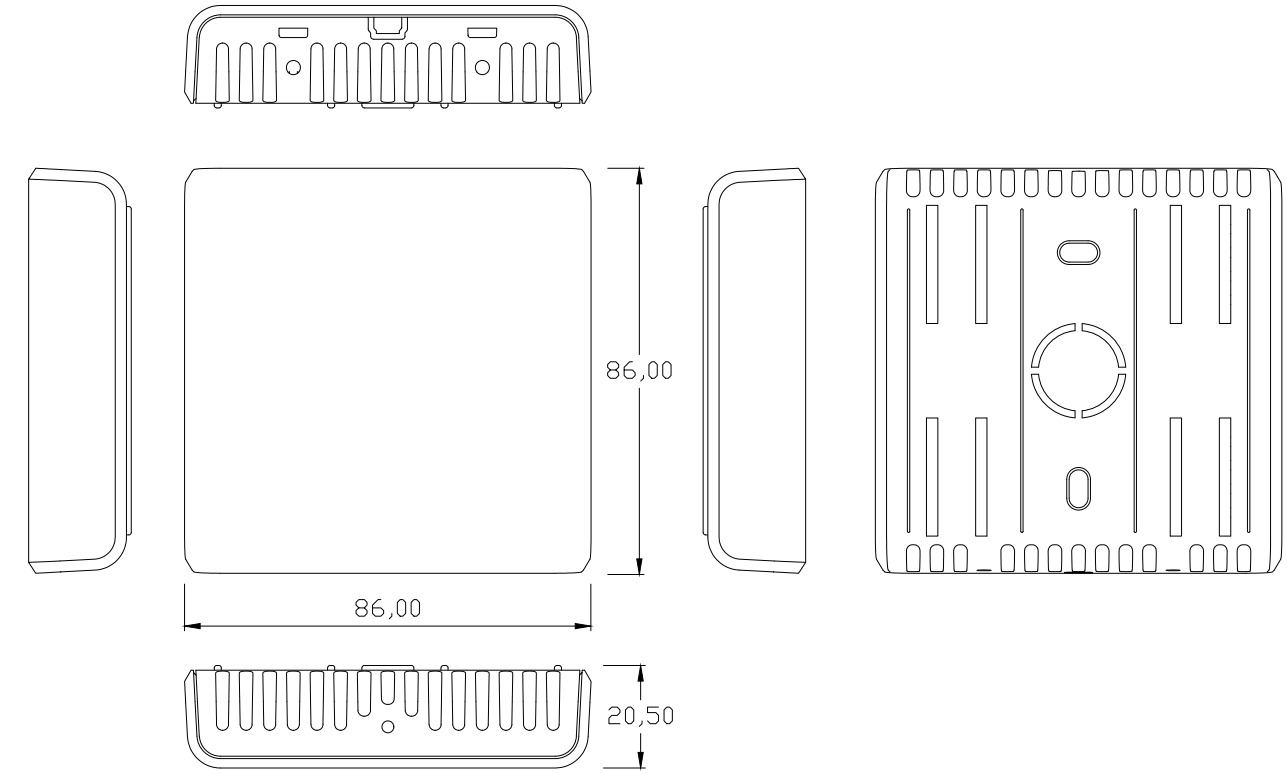








model	*mounting*	*weight*
STD	duct	93
STI	immersion	74
STR	room	55
STC	clamp-on	72
STO	outdoor	69
STW	wall	69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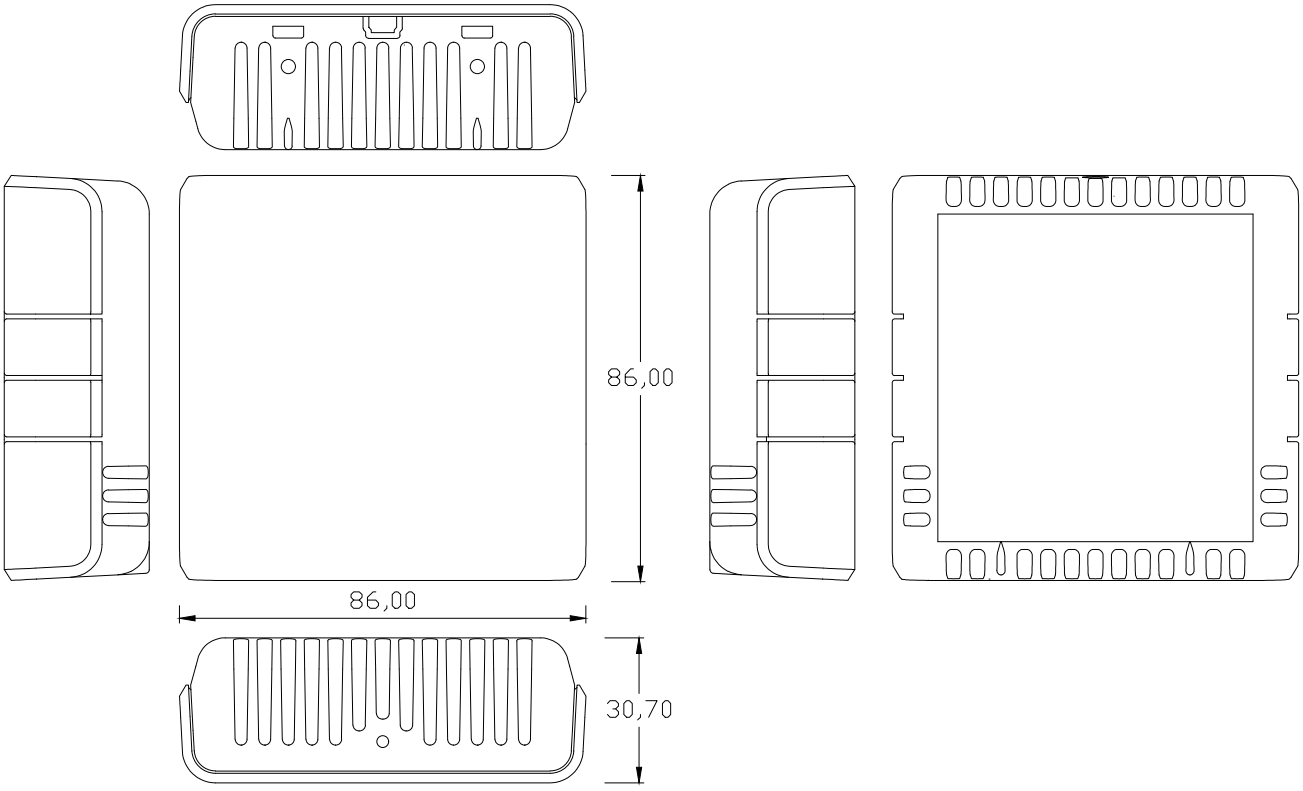
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