

SDB - T - 1

Duct temperature sensor

Features

- ☒ Thermistor, PT and NI sensing elements to fit your system
- ☒ Simple and secure installation
- ☒ Wide range of temperature probes
- ☒ Compact size and modern design

Applications

- ☒ On return air ducts to measure room temperatures
- ☒ On supply air ducts to measure heating/cooling supply air
- ☒ In heat exchangers and air handling units to control heating/cooling coils
- ☒ As frost protection sensor

Temperature sensor

The sensor measures the temperature by use of a NTC, PT, or NI-sensing element. The sensing element is either a glass packed thermistor with a negative temperature coefficient, a platinum film or a nickel thin layer based probe. Its resistance changes according to the temperature. The change follows a specified curve. Contact our sales department for curves not yet listed below.

Ordering

Item name	Article #	Probe type	Definition	Length	Comments
SDB-Tn3-12-1	40-20 0123	NTC 3 kΩ at 25 °C (77 °C)	B _{25/50} 3935	120mm (4.7in)	Vector standard
SDB-Tn10-12-1	40-20 0124	NTC 10 kΩ at 25 °C (77 °C)	B _{25/50} 3935	120mm (4.7in)	
SDB-Tn11-12-1	40-20 0125	NTC 10 kΩ at 25 °C (77 °C)	B _{25/50} 3630	120mm (4.7in)	
SDB-Tn12-12-1	40-20 0126	NTC 10 kΩ at 25 °C (77 °C)	B _{25/50} 3380	120mm (4.7in)	
SDB-Tn20-12-1	40-20 0127	NTC 20 kΩ at 25 °C (77 °C)	B _{25/50} 4200	120mm (4.7in)	
SDB-Tn100-12-1	40-20 0128	NTC 100 kΩ at 25 °C (77 °C)	B _{25/50} 4200	120mm (4.7in)	
SDB-Tp1-12-1	40-20 0129	PT100	EN60751	120mm (4.7in)	
SDB-Tp2-12-1	40-20 0130	PT1000	EN60751	120mm (4.7in)	
SDB-Tk5-12-1	40-20 0131	NI1000, 5000 ppm/K	DIN 43760	120mm (4.7in)	

SDB-Tn3-20-1	40-20 0132	NTC 3 kΩ at 25 °C (77 °C)	B _{25/50} 3935	200mm (7.9in)	Vector standard
SDB-Tn10-20-1	40-20 0133	NTC 10 kΩ at 25 °C (77 °C)	B _{25/50} 3935	200mm (7.9in)	
SDB-Tn11-20-1	40-20 0134	NTC 10 kΩ at 25 °C (77 °C)	B _{25/50} 3630	200mm (7.9in)	
SDB-Tn12-20-1	40-20 0135	NTC 10 kΩ at 25 °C (77 °C)	B _{25/50} 3380	200mm (7.9in)	
SDB-Tn20-20-1	40-20 0136	NTC 20 kΩ at 25 °C (77 °C)	B _{25/50} 4200	200mm (7.9in)	
SDB-Tn100-20-1	40-20 0137	NTC 100 kΩ at 25 °C (77 °C)	B _{25/50} 4200	200mm (7.9in)	
SDB-Tp1-20-1	40-20 0138	PT100	EN60751	200mm (7.9in)	
SDB-Tp2-20-1	40-20 0139	PT1000	EN60751	200mm (7.9in)	
SDB-Tk5-20-1	40-20 0140	NI1000, 5000 ppm/K	DIN 43760	200mm (7.9in)	

Accessories

Depending on installation requirements add conduit connector.

SDB-T does not include conduit connectors. They need to be ordered separately.

Item name	Article #	Length
AMC-2	20-10 0067	Conduit connector NPT 1/2

Combine with AMI immersion stainless steel pocket for use as immersion sensor.

Spring loaded		Fixing screw		Immersion length (L)
Item name	Article #	Item name	Article #	
AMI-S05	40-51 0001	AMI-S05-1	40-51 0012	5 cm (2")
AMI-S07	40-51 0002	AMI-S07-1	40-51 0013	7.5 cm (3")
AMI-S10	40-51 0003	AMI-S10-1	40-51 0014	10 cm (4")
AMI-S15	40-51 0004	AMI-S15-1	40-51 0015	15 cm (5.9")
AMI-S20	40-51 0021	AMI-S20-1	40-51 0016	20 cm (7.9")
AMI-S30	40-51 0019	AMI-S30-1	40-51 0017	30 cm (11.8")
AMI-S40	40-51 0020	AMI-S40-1	40-51 0018	40 cm (15.7")

Installation

Duct probes should be installed directly on the duct, in an area where the air stream is well mixed:

- ☒ Locate a supply air sensor two or three meters downstream from the nearest fan and coil.
- ☒ Mount the return air sensor close to the air inlet but downstream from a return fan if one is present.
- ☒ To install the sensor, drill one 8mm (5/16 in) hole and two 3mm (1/8 in) holes on a diameter of 25mm (1 in) in the duct.
- ☒ Use two self-tapping sheet metal screws to tighten the mounting plate to the duct.
- ☒ Remove cover by turning the four screws counter clock wise
- ☒ Connect the wires according to the wiring diagram to the measuring circuit in the cover:
 - The Thermistors require two conductors; normally 18 ga unshielded twisted pair.
 - The PT100, PT1000 and NI1000 sensors come with each two terminal connectors in order to connect up to four conductors for compensating conductor resistance.
- ☒ Replace cover and tighten the four screws with equal force. Make sure sealing is clean and in place.
- ☒ Insert the assembled probe through the center opening of the mounting plate into the air stream.
- ☒ Tighten the horizontal screw on the mounting plate to fix the probe to the duct.

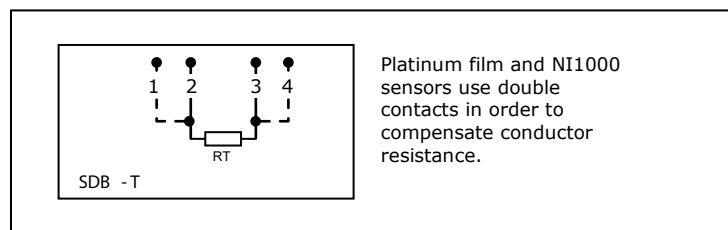
To install immersion sensors,

- ☒ Weld a nut to the water pipe according to local regulations.
- ☒ Fix an AMI immersion pocket to the nut
- ☒ Insert the probe into the immersion pocket
- ☒ For AMI-Sx-1 only: Secure the probe with the horizontal fixing screw of the AMI immersion pocket.

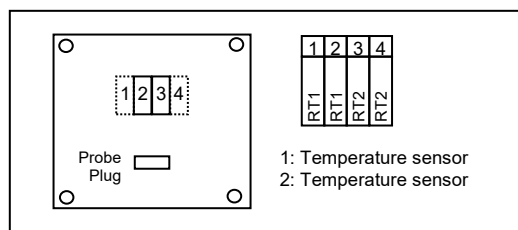
Technical specification

Sensing probe	Thermistor:	NTC
	Range: (Probe only)	-40...100 °C (-94...212 °F)
	Accuracy	0.5 K
	Platinum-film:	PT according EN 60751
	Accuracy	EN 60751, Class B +/- 0.3 at 0 °C (32 °F), 0.005 x t[K] for values away from 0 °C (32 °F).
	Nickel thin layer:	1000 Ω at 0 °C (32°F), 5000 ppm/K
	Accuracy	DIN 43760 +/- 0.4 at 0 °C (32 °F), <0 °C(32 °F) 0.028 x t[K], >0 °C(32 °F) 0.007 x t[K]
Connection	Terminal connectors	For wires 0.34...2.5 mm ² (AWG 22...13)
Environment	Operation	To IEC 721-3-3
	Climatic conditions	class K5
	Temperature (Housing)	-40...100 °C (-40...212 °F)
	Humidity	< 95% RH non-condensing
	Transport & storage	To IEC 721-3-2 and IEC 721-3-1
	Climatic conditions	class 3K3 and class 1K3
	Temperature	-40...100 °C (-40...212 °F)
	Humidity	< 95% RH non-condensing
	Mechanical conditions	class 2M2
Standards	CE conformity	2004/108/EC
	EMC directive	2006/95/EC
	Low voltage directive	EN 60 730-1
	Automatic electrical controls for household and similar use	EN 60 730-2-9
	Special requirement on temperature dependent controls	
	Pollution class	Normal acc. to EN 60730, RoHS compliant
	Degree of protection	IP65 to EN 60529
	Safety class	III (IEC 60536)
	Material cover & mounting plate	Fire proof ABS plastic (UL94 class V-0)
Housing	Material probe	Stainless steel
	Standard color	White: RAL 9003
	Dimensions (H x W x D)	Cover: 33 x 60 x 50 mm (1.3 x 2.4 x 2 in)
	(Diameter x L)	Probe: ø 6 x YY (ø 0.2 x YY/2.54 in)
	Weight (including package)	114 g (4.0 oz)

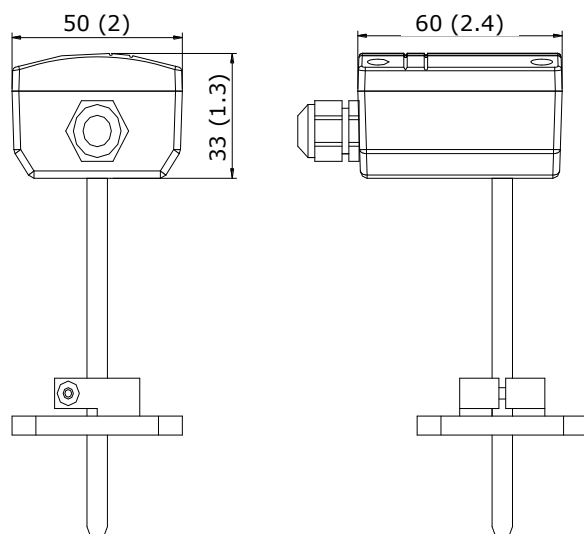
Wiring diagram



Terminal connections



Dimension



Mounting plate

