Data sheet



Temperature sensor

MBT 3560

Industrial temperature transmitter

Description

With MBT 3560 we have combined the technology of our standard temperature sensors and the electrical connections from our MBS pressure transmitters with a new developed electronics which has resulted in a compact temperature sensor with a built-in transmitter.

The MBT 3560 is designed for use in harsh industrial enviroments where reliable, robust and accurate equipment is required.

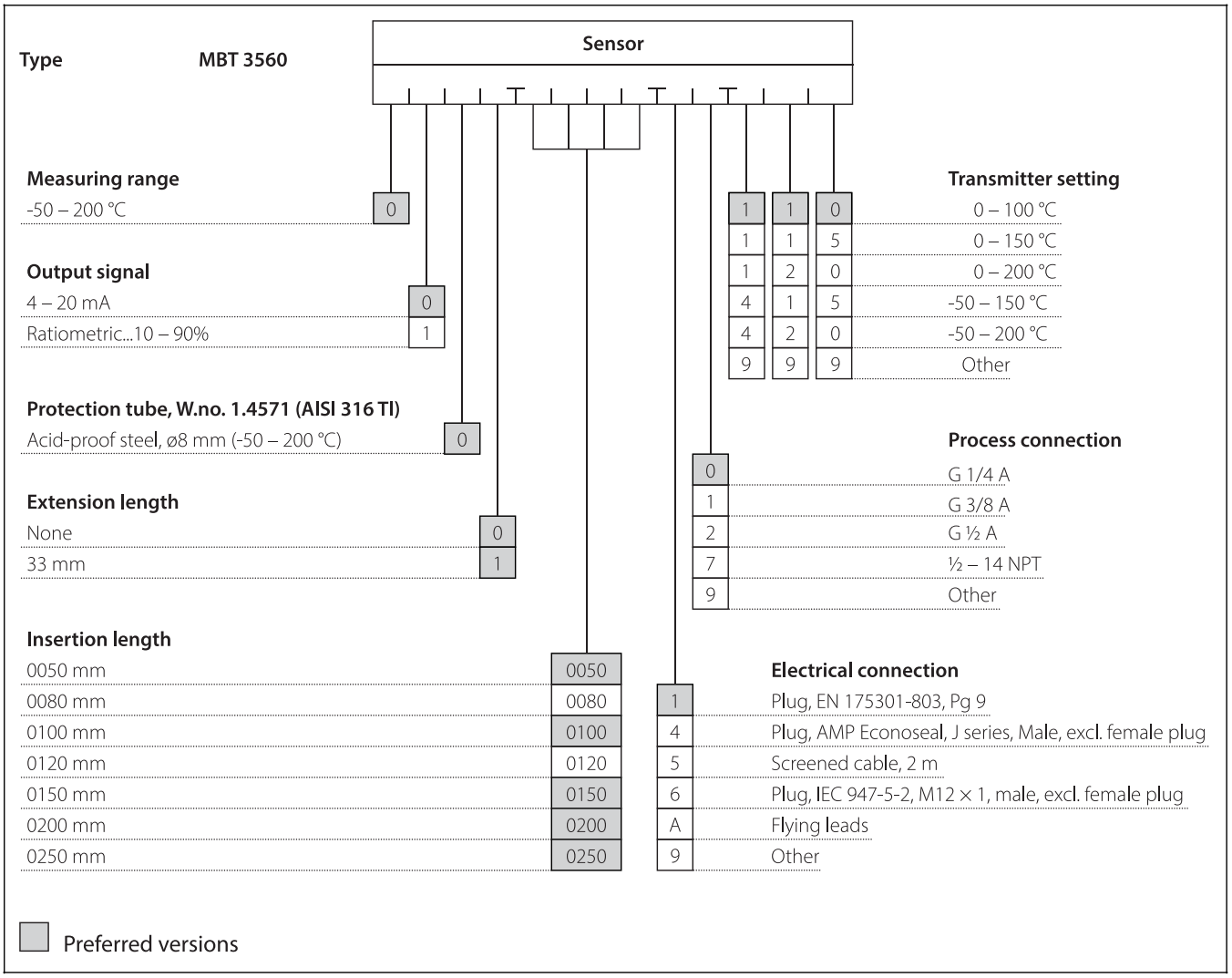
Available with a wide selection of process and electrical connections. Can be delivered with a 33 mm extension length which makes it possible to measure temperatures up to 200 °C without damaging the built-in electronics.

Features & benefits

- Designed for use in harsh industrial environments where reliable, robust and accurate equipment is required
- All metal enclosure parts made of stainless steel (AISI 316)
- Output signals: 4 – 20 mA or Ratiometric 10 – 90%
- A wide selection of process and electrical connections
- Ultra compact design
- Temperature range -50 – 200 °C
- Sensor pockets available for applications where emptying the system is not an option
- Based on Pt 1000 technology

Ordering

Product code numbers



Note: Non-standard build-up combinations may be selected. However, minimum order quantities may apply. Please contact your local Danfoss office for further information or request on other versions.

Note: For a detailed overview of our existing code numbers, please visit the Danfoss Product Store at store.danfoss.com. You can use the filtering options to find the right sensor for your specific needs.

Product details

General data

Main specifications

Features	Description
Process connections	See Ordering
Measuring ranges	Any combinations between -50 – 200 °C
Minimum span	25 °C
Output signals	4 – 20 mA or Ratiometric 10 – 90%
Electrical connections	See Electrical connection

Performance

Features	Indicative response times			
	Water 0.2 m/s		Air 1 m/s	
	$t_{0.5}$	$t_{0.9}$	$t_{0.5}$	$t_{0.9}$
ø8 mm	10 s	35 s	95 s	310 s
Accuracy	Typical: < ± 0.5% FS, Maximum: < ± 1.0% FS			
Max. load protection tube	100 bar			

Electrical specifications

Features	Nom. Output signal (short-circuit protected)	
	4 – 20 mA	Ratiometric 10 – 90% of supply voltage
Supply voltage [U_S] polarity protected	10 – 30 V DC	4.75 – 8 V DC 5 V DC (Nom.)
Supply – current consumption	-	< 4 mA at 5 V DC
Insulation resistance	> 100 MΩ at 100 V DC	> 100 MΩ at 100 V DC
Supply voltage dependency	< ± 0.05% FS/10 V	-
Current limitation	30 mA	-
Output impedance	-	< 25 Ω
Load [R_L]	R_L<(U_S-10) / (0.02 A) ohm	R_L> 5 kohm at 5 V DC

Environmental conditions

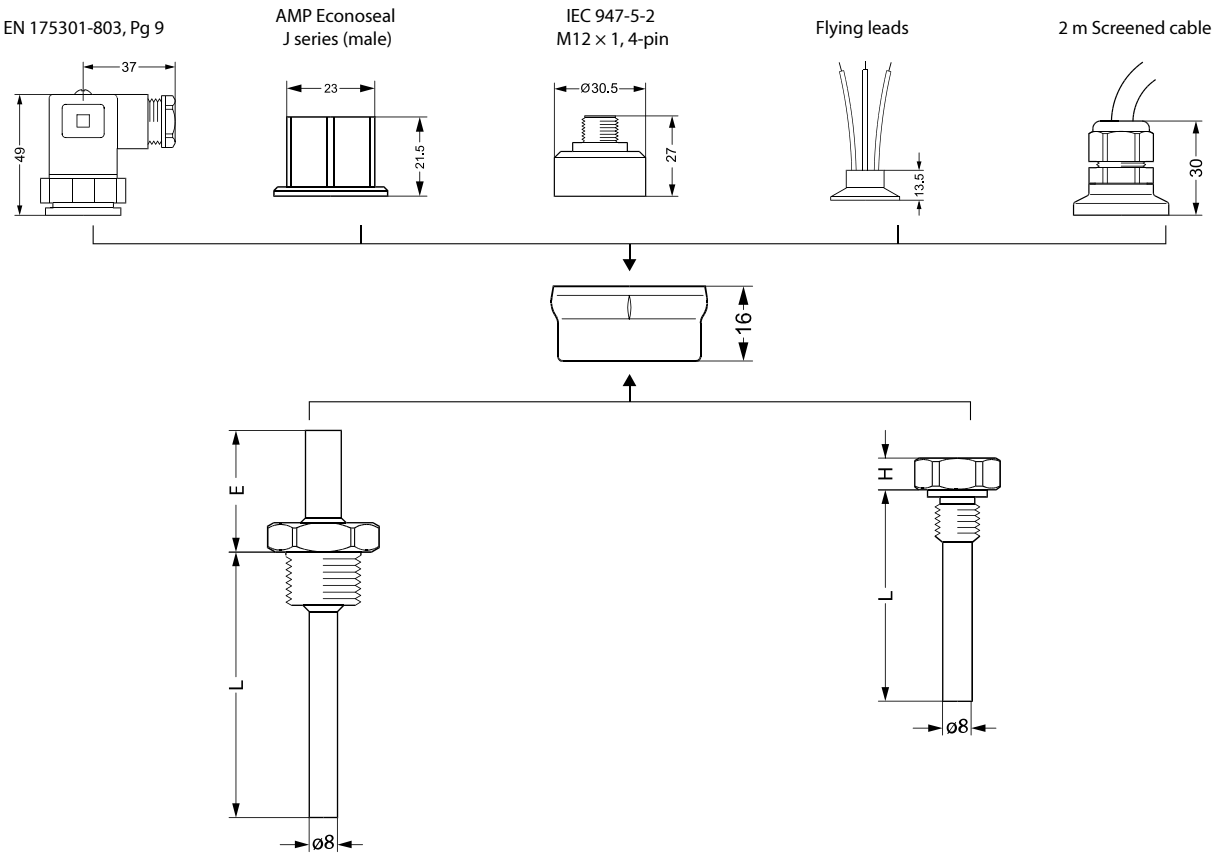
Features	Description
Media temperature (max. 120 °C without extension length)	-50 – 200 °C
Temperature on electronics [1]	-40 – 85 °C
Transport temperature range	-50 – 85 °C
EMC – Emission	EN 61000-6-3
EMC – Immunity	EN 61000-6-2
Vibration stability	Sinusoidal 15.9 mm-pp, 5 – 25 Hz 4 g, 25 Hz – 2 kHz Random 7.5 g_{rms}, 5 Hz – 1 kHz IEC 60068-2-6 IEC 60068-2-34, IEC 60068-2-36
Shock resistance	Shock 500 g/1 ms Free fall IEC 60068-2-27 IEC 60068-2-32
Enclosure (depending on electrical connections)	See Electrical connection

[1] Temperature of the electronics depends on the media temperature, extension length, ambient temperature and air velocity.

Mechanical characteristics

Features	Specifications	
Materials:	Wetted parts	W.no. 1.4571 (AISI 316 Ti)
	Enclosure	W.no. 1.4404 (AISI 316 L)
Measuring insert	fixed	
Net weight (depending on design)	0.1 – 0.15 kg	

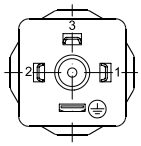
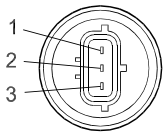
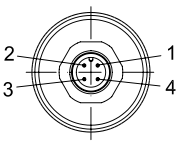
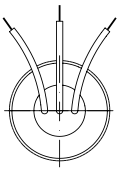
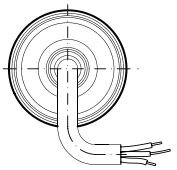
Dimensions



E	Extension length = 33 mm
L	Insertion length
H	9 mm

Connections

Electrical connection

EN 175301-803	AMP Econoseal J series (male)	IEC 947-5-2 M12 × 1	Flying leads	2 m screened cable
				
Enclosure				
IP65	IP67	IP67	IP67	IP67
Materials				
Glass filled polyamid, PA 6.6	Glass filled polyamid, PA 6.6	Glass filled polyamid, PA 6.6	Glass filled polyamid, PA 6.6	PUR
Electrical connection, 4 – 20 mA output (2 wire)				
Pin 1: +supply Pin 2: ÷supply Pin 3: Not used Earth: Not connected to MBT housing	Pin 1: +supply Pin 2: ÷supply Pin 3: Not used	Pin 1: +supply Pin 2: Not used Pin 3: Not used Pin 4: ÷supply	Red wire: +supply Black wire: ÷supply	Red wire: +supply White wire: ÷supply Red/black wire: Not used Screen: Not connected to MBT housing
Electrical connection, Ratio metric (3-wire) 10 – 90%				
Pin 1: +supply Pin 2: ÷supply Pin 3: Output Earth: Not connected to MBT housing	Pin 1: +supply Pin 2: ÷supply Pin 3: Output	Pin 1: +supply Pin 2: not used Pin 3: Output Pin 4: ÷supply	Red wire: +supply Black wire: ÷supply Blue wire: Output	Red wire: +supply White wire: ÷supply Red/ Black wire: Output Screen: Not connected to MBT housing

Certificates, declarations and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

When you click on the link you will be directed to the latest version of the 'Declaration of Conformity'. Products developed and sold before this date of issue conform to the directives/standards in force at the time of their sale.

Approval type	Title	Issuer	Approval topic
Manufacturer's Declaration	Danfoss MD 084R1022.01	Danfoss	China RoHS
Pressure Safety Certificate	TSSA CRN 0F22934.52367890YTN	TSSA - Technical Standards & Safety Authority	CRN
EU-UK Declaration	Danfoss EU-UK 084R1019.04	Danfoss	EMC, EU RoHS, UK RoHS
Manufacturer's Declaration	Simple Apparatus	Danfoss	Simples apparatus
Export Control Declaration	Pressure & Temperature Sensors	Danfoss	
EU Declaration	PPWR_Packaging EU PL04	Danfoss	Packaging

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