

SPRING-LOADED CONTACT SENSOR, HART



- SPRING-LOADED TIP
- SPRING TRAVEL 14 MM
- 4...20 MA HART
- MEDIUM UP TO +150 °C
- NO PROCESS PRESSURE



KEY DATA

Property	Value	Property	Value
Input	Pt100 · Pt1000 · type K, crossed tape	Medium	-50 ... +150 °C
Output	4...20 mA HART · resistance direct	Ambient	-20 ... +80 °C with transmitter (1)
Accuracy	0.3 % of span	without transmitter	-20 ... +100 °C
Spring travel	14 mm, ±1 mm	System pressure	not possible (2)
Fitting length	45 · 65 mm · other	Product code	MK (3)

A temperature sensor with a spring-loaded tip for bearing and surface temperatures: the spring presses the tip against the measuring point and keeps contact even when the part moves or expands. It holds no process pressure — see note (2).



TECHNICAL DATA

INPUT AND OUTPUT

Sensor	1x or 2x Pt100 · Pt1000
Thermocouple	1x type K with crossed tape
Sensor connection	2-, 3- or 4-wire
Classes	A · B · AA
Maximum range	-50 ... +150 °C, smallest span 50 K
Current output	4 ... 20 mA with HART, 2-wire loop
Current range	3.8 ... 20.5 mA
Fault signal low	3.6 mA on short circuit or underrange
Fault signal high	21 mA on break or overrange
Without transmitter	resistance directly on the connector

PERFORMANCE

Total accuracy	0.3 % of span
Resolution	16 bit
Filter	0 ... 99 s
Measuring rate	10 measurements/s
Response time	20 ms
Switch-on delay	< 5 s
Transfer characteristic	linear with temperature
Setting	by software over HART
Spring travel	14 mm, ±1 mm
Weight	approx. 200 g (1/2", 45 mm, M12)

SUPPLY AND ENVIRONMENT

Supply	HART current loop 12 ... 40 VDC
Load	$R = (U_B - 12 \text{ V}) / 21 \text{ mA}$
Reverse polarity	protected, no destruction
Ambient with transmitter	-20 ... +80 °C (1)
Ambient without transmitter	-20 ... +100 °C
Medium	-50 ... +150 °C
Storage	-40 ... +85 °C
System pressure	not possible (2)
Condensation	harmless

MECHANICS

Process connection	3/8" · 1/2" · 3/4" — no sealing effect (2)
Fitting length	45 mm · 65 mm · customer-specific
Spring travel	14 mm, ±1 mm
Sensor tube	Ø 6 mm, stainless steel 1.4571
Knurled screw	stainless steel 1.4541
Compression spring	spring steel 1.4310
Insulating body	PTFE white
Protection	IP 65 electronics · IP 68 sensor, potted inside

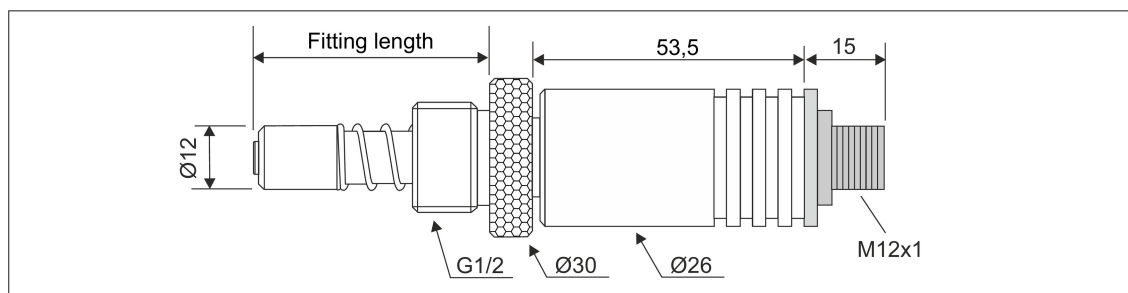
- (1) The ambient temperature is not the medium temperature.
 (2) This sensor holds no process pressure: the process connection has no sealing effect. It measures at a surface and in a bearing, not in a closed medium. The spring-loaded tip presses against the measuring point over 14 mm of travel.
 (3) Other versions carry the product code MK as well, with a different meaning of the following positions. When ordering, the product designation belongs in plain text, not just the code.

ELECTRICAL CONNECTION

Ten electrical connections are available: M12x1 four-, five- and eight-pole, Deutsch DT04 three- and four-pole, Super Seal 1.5 three-pole, bayonet (DIN) four-pole, valve plug to EN 175301-803 type A, MIL six-pole and cable. The pin assignment depends on the number of wires and on the connector. Two sensors do not fit every connector: the Super Seal and the Deutsch DT04 three-pole carry one only.



DIMENSIONS



Dimensions in mm.



CONFORMITY

Protection	IP 65 electronics, IP 68 sensor
Material at the measuring point	stainless steel 1.4571

ORDER INFORMATION

Accessories

- HART interface with USB and software, order number 01310-00220. The HART tool is a menu-driven operating program for commissioning, configuration, signal analysis, data backup and documentation. When communicating through a HART modem a resistance of 250 Ω has to be taken into account.

ORDER KEY

Field	Value	Meaning
Product code	MK	stands at the beginning of every order code
Transmitter	I · K	none · 4...20 mA HART
Sensor	1 ... 5	Pt100 · Pt1000 · 2x Pt100 · 2x Pt1000 · type K with crossed tape
Sensor connection	1 · 2 · 3	2-wire · 3-wire · 4-wire
Accuracy	1 · 2 · 3	class A · B · AA
Fitting length	45 · 65 · X	45 mm · 65 mm · other length, please state (5 mm steps)
Diameter	6	Ø 6 mm
Process connection	2 · 3 · 4	3/8" · 1/2" · 3/4" (2)
Connector insert	1 · 2	plastic · metal
Electrical connection	1 ... A	M12x1 4/5/8-pole · Deutsch DT04 3/4-pole · Super Seal · bayonet · valve · cable 2 m · MIL
Configuration	0 · 1 · 2	none · factory setting -50...150 °C, span 0...100 °C · customer-specific
Special model	0 · 1	no · yes, please state

The order code is formed from the product code and the fields of the key.

