

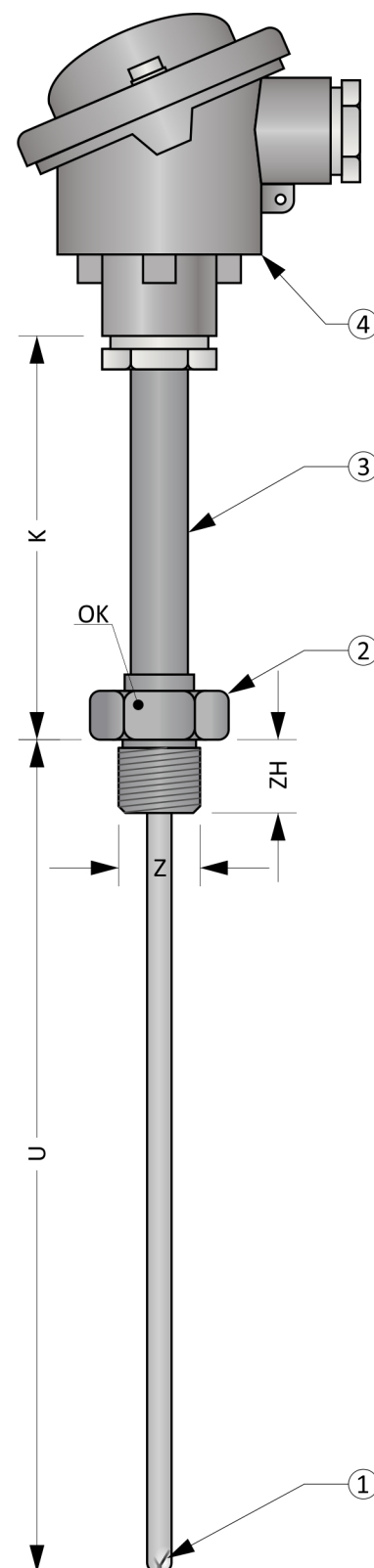
MTC8J

THERMOCOUPLE ASSEMBLIES WITH MEASURING INSERT INTO SUMP

MTC8J series temperature sensors are designed for installation in protective wells.

The measuring element is a thermocouple of the J, K or N type, which uses the dependence of the thermoelectric voltage on the temperature to measure the temperature. The output signal is a thermoelectric voltage, the value of which is according to the ČSN EN 60584-1 ed. 2.

The assembly consists of head, extension tube and measuring insert. The head is equipped with a cable gland for connecting the compensation cable.



General Information (Table 8J.1)

	Insulation class acc. ČSN EN 60529	IP54 (head) IP54 (extension tube) IP6X (measuring part in length U)
	Base metal thermocouple measuring insert	
①	Design	Mineral insulated metal-sheathed thermocouple according to the ČSN EN 61515 ed.2
	Threaded fitting	
②	Material	Stainless steel 1.4541
	Extension tube	
③	Material	Stainless steel 1.4541
	Outer / inner diameter	14 / 10 mm
	Head	
④	Material	Aluminium alloy
	Cable bushing	M20 x 1,5

Figure 8J.1: MTC8J

Optional Parameters Including the Creation of an Order Code (Table 8J.2)

Pos.	Code	MTC8J - ① ② - ③ - ④ - ⑤ ⑥ ⑦
①	Measuring insert with dia. 6,0 mm (thermocouples acc. ČSN EN 60584-1 ed. 2)	
	2	1 x „K“, sheath material 2.4816
	3	1 x „J“, sheath material 1.4541
	8	2 x „K“, sheath material 2.4816
	9	2 x „J“, sheath material 1.4541
	E	1 x „N“, sheath material 2.4816
	H	2 x „N“, sheath material 2.4816
	Measuring insert with dia. 4,5 mm (thermocouples acc. ČSN EN 60584-1 ed. 2)	
	4	1 x „K“, sheath material 2.4816
	5	1 x „J“, sheath material 1.4541
	A	2 x „K“, sheath material 2.4816
	B	2 x „J“, sheath material 1.4541
	D	1 x „N“, sheath material 2.4816
	G	2 x „N“, sheath material 2.4816
	Type of measuring insert with a diameter of 3.0 mm (thermocouples acc. ČSN EN 60584-1 ed. 2)	
	0	1 x „K“, sheath material 2.4816
	1	1 x „J“, sheath material 1.4541
	6	2 x „K“, sheath material 2.4816
	7	2 x „J“, sheath material 1.4541
	C	1 x „N“, sheath material 2.4816
	F	2 x „N“, sheath material 2.4816
②	Accuracy class acc. ČSN EN 60584-1 ed. 2 and measuring end design	
	0	Accuracy class 2, thermocouple isolated from the sheath
	1	Accuracy class 1, thermocouple isolated from the sheath
	2	Accuracy class 2, thermocouple grounded to the sheath
	3	Accuracy class 1, thermocouple grounded to the sheath
③	Immersion depth U [mm]	
	xxx	Selectable range from 10 mm to 3000 mm (in 1 mm increments)
	xxx	Selectable range from 3001 do 10000 mm (in 100 mm increments)
④	Extension tube length K [mm]	
	xxx	Selectable range from 80 mm to 1500 mm (in 5 mm increments)
⑤	Threaded fitting	
	0	Welded threaded fitting Z = M27 x 2, ZH = 26 mm, WAF36
	1	Welded threaded fitting Z = M20 x 1,5, ZH = 17 mm, WAF30
	2	Welded threaded fitting Z = G½“, ZH = 17 mm, WAF30
Continuation of table 8J.2 on the next page		

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Pos.	Code	MTC8J - ① ② - ③ - ④ - ⑤ ⑥ ⑦
⑥	Head type	
	0	B
	1	BH
	2	BUZ with screws with leaden seal holes
	3	BUZ with snap lock
	4	BUZH with screws with leaden seal holes
	5	BUZH with snap lock
⑦	Transmitter (only for single thermocouple)	
	0	Without transmitter
	8	INOR APAQ C130 TC
	3	INOR miniPAQ - HLP
	5	INOR IPAQ C520
	6	INOR IPAQ C330
	7	INOR IPAQ C530
	A	With another transmitter (e.g. supplied by the customer)

Order code example: MTC8J-01-500-250-200

... 1 x „K“, sheath material 2.4816
... Accuracy class 1 acc. ČSN EN 60584-1 ed. 2
... Immersion depth U = 500 mm
... Extension tube length K = 250 mm
... Welded threaded fitting G½
... Head A
... Without transmitter

Approximate weight of the product: MTC8J-01-500-250-300 ... 1,0 kg

Recommended Maximum Temperatures of Sensor Parts (Table 8J.3)

Sensor part	Continuous operation	Short-term operation
Head / head with transmitter	< 100 °C / < 85 °C	-
Extension tube, threaded fitting	< 800 °C	-
„J“, sheath dia. 3,0 mm	< 470 °C	< 520 °C
„K“, sheath dia. 3,0 mm	< 980 °C	< 1050 °C
„N“, sheath dia. 3,0 mm	< 980 °C	< 1050 °C
„J“, sheath dia. 4,5 mm	< 550 °C	< 620 °C
„K“, sheath dia. 4,5 mm	< 1080 °C	< 1140 °C
„N“, sheath dia. 4,5 mm	< 1080 °C	< 1140 °C
„J“, sheath dia. 6,0 mm	< 650 °C	< 720 °C
„K“, sheath dia. 6,0 mm	< 1140 °C	< 1200 °C
„N“, sheath dia. 6,0 mm	< 1140 °C	< 1200 °C

Notes: Operating temperatures are related to temperature measurement in a chemically inert environment. The values are determined empirically.

Length Tolerances (Table 8J.4)

Length U, K	Length tolerance U	Length tolerance K
U, K ≤ 1500 mm	± 2 mm	± 2 mm
1500 < U ≤ 2500 mm	± 3 mm	---
U > 2500 mm	± 10 mm	---

Diameter tolerance (Table 8J.5)

Stem diameter A	Tolerance A
A ≤ 4,5 mm	± 0,05 mm
4,5 < A mm	± 0,06 mm

Head mounted transmitter (Table 8J.6)

The transmitter is installed in the head and replaces the terminal block. When using a head with a raised lid (version BH, BUZH), the terminal block is preserved and the transmitter is placed in the lid.

Typ	Input	Output	Setting	Notes
INOR APAQ C130 TC	Thermocouple - B, E, J, K, N, R, S, T	4 ... 20 mA	INOR CONNECT (NFC)	
INOR miniPAQ - HLP	Thermocouple - B, C, E, J, K, L, N, R, S, T, U RTD	4 ... 20 mA	PC WIN ConSoft (ICON USB adapter)	
INOR IPAQ C330	Thermocouple - B, C, D, E, J, K, N, R, S, T RTD, mV	4 ... 20 mA, galvanic isolated	PC WIN ConSoft (ICON USB adapter) INOR CONNECT (NFC, Bluetooth®)	
INOR IPAQ C530	Thermocouple - B, C, D, E, J, K, N, R, S, T RTD, mV	4 ... 20 mA, HART, galvanic isolated	INOR CONNECT (NFC, Bluetooth®) PC WIN ConSoft (ICON USB adapter)	
INOR IPAQ C520	Thermocouple - B, C, D, E, J, K, N, R, S, T RTD, mV	4 ... 20 mA, HART, galvanic isolated	PC WIN ConSoft (ICON USB adapter)	2 inputs (redundancy) SIL 2, ATEX certificate

Notes: Detailed information about the transmitters can be found in the respective data sheets.

Head types

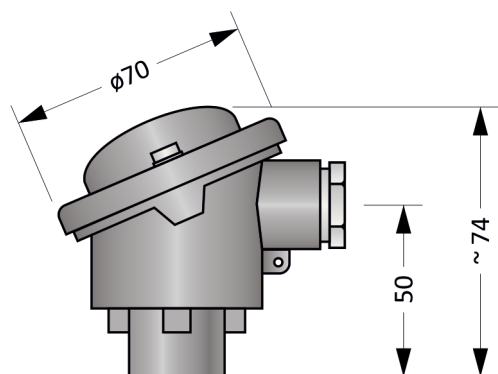


Figure 8J.2: Head B

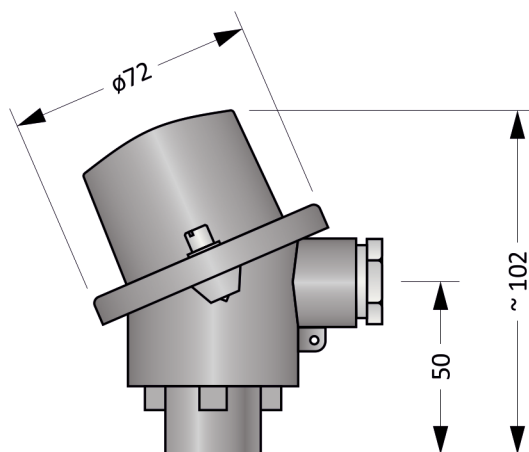


Figure 8J.3: Head BH

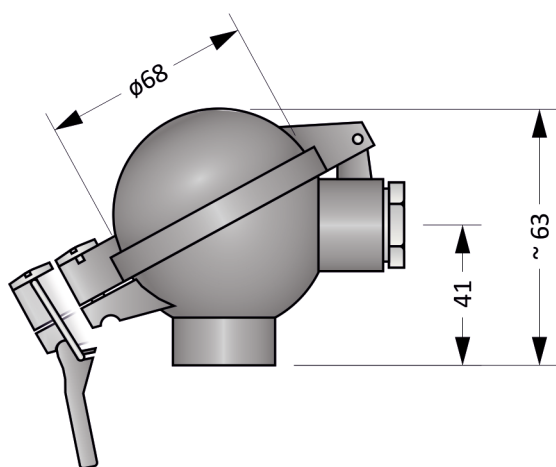


Figure 8J.4: Head BUZ

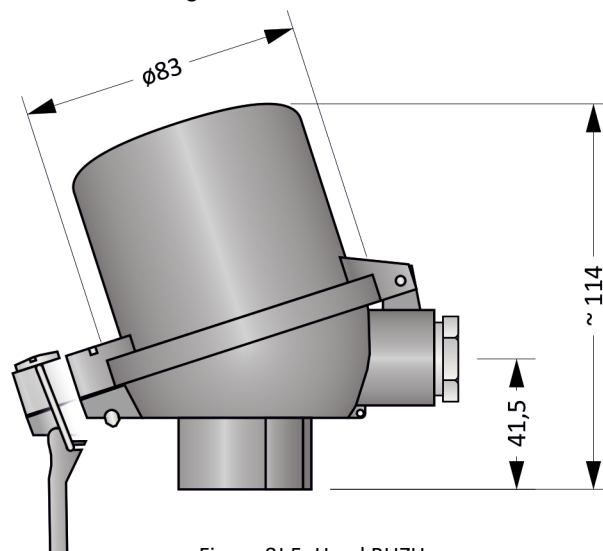


Figure 8J.5: Head BUZH

Installation And Operating Instructions

Use welded fitting for mounting. Other parts cannot be used. The longest lifetime of the sensor can be achieved by mounting it vertically.

To ensure IP54 protection of the head, it is necessary to install the sensor in a vertical position with the head in the upper position.

The electrical connection of sensor with the transmitter is shown in Figure 8J.8.

Electrical connection of the sensor without transmitter is shown in the Figures 8J.6 a 8J.7. The output signal is thermoelectric voltage. The dependence of temperature on thermoelectric voltage is given by the standard ČSN EN 60584-1 ed. 2.

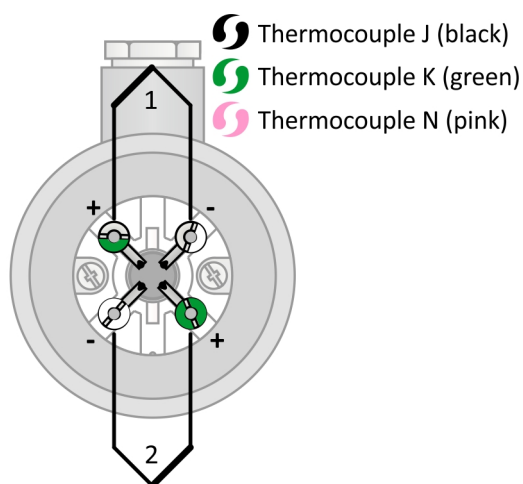


Figure 8J.6: Double thermocouple wiring diagram

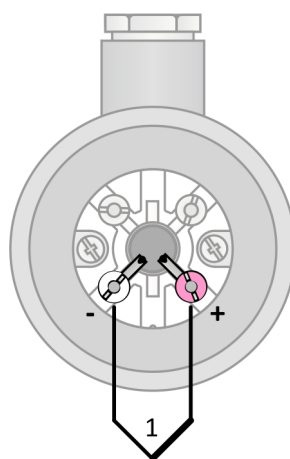


Figure 8J.7: Single thermocouple wiring diagram

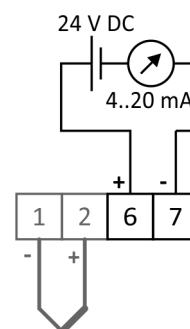


Figure 8J.8: Transmitter wiring diagram

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