

MTC22

THERMOCOUPLE WITH CERAMIC TUBE AND WITH HEAD

Temperature sensors of the MTC22 series are designed as a cost-effective alternative to robust industrial designs. The small tube diameter and overall small size make the sensors suitable for applications with limited mounting space.

The measuring element is a thermocouple of the S, 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 sensor consists of a head, a ceramic protective tube and a capillary tube.

General Information (Table 22.1)

	Insulation class acc. ČSN EN 60529	IP54 (head) IP5X (measuring part in length N)
	Precious or base metal thermocouple	
①	Design	Insulated by ceramic beads or in capillary
	Protection ceramic tube	
②	Material	Ceramic C610
	Outer / inner diameter	8 / 5 mm
	Holding pipe	
③	Material	Stainless steel
	Head	
④	Material	Aluminium alloy
	Typ	F
	Cable bushing	M20 x 1,5

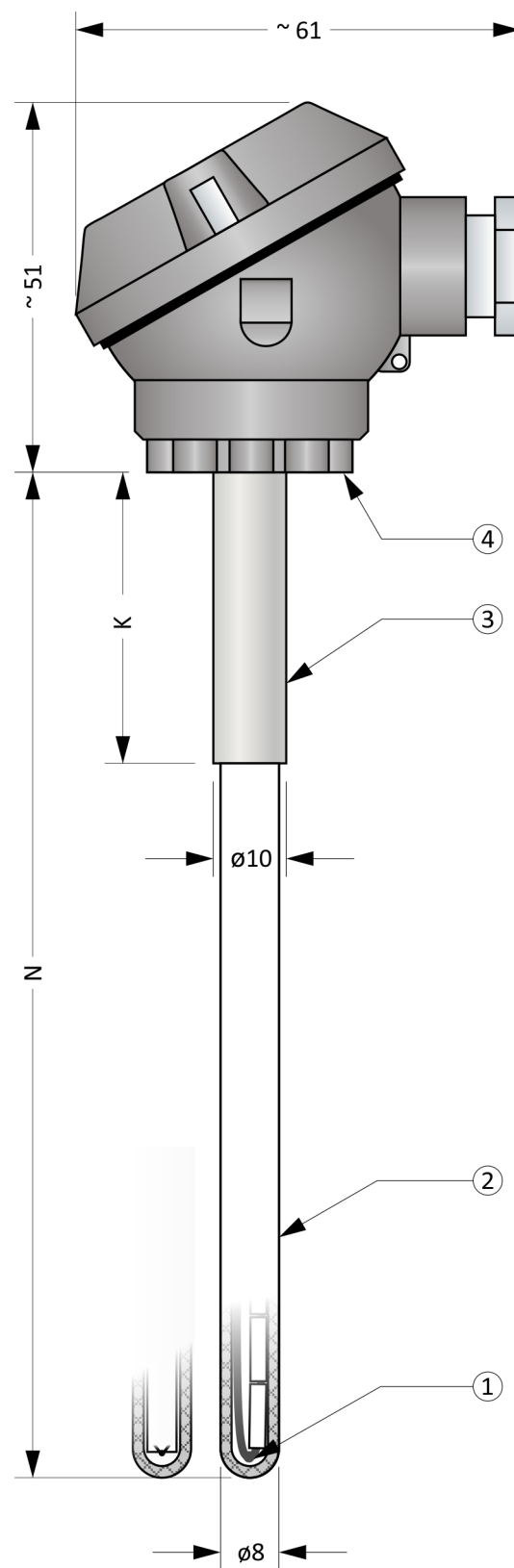


Figure 22.1: Sensor MTC22

Optional Parameters Including the Creation of an Order Code (Table 22.2)

Pos.	Code	MTC22 - ① - ② - ③
①	Thermocouple type (acc. ČSN EN 60584-1 ed. 2)	
	0	1 x „S“, accuracy class 1, wire diameter 0,35 mm
	1	1 x „S“, accuracy class 1, wire diameter 0,20 mm
	2	1 x „K“, accuracy class 2, wire diameter 1,38 mm
	3	1 x „N“, accuracy class 2, wire diameter 1,30 mm
②	Nominal length N [mm]	
	xxx	Selectable range from 120 mm to 500 mm (in 5 mm increments)
	120	Length 120 mm*
	150	Length 150 mm*
	180	Length 180 mm*
	210	Length 210 mm*
	250	Length 250 mm*
	300	Length 300 mm*
	500	Length 500 mm*
③	Holding pipe length K [mm]	
	xxx	Selectable range from 40 mm to (N-30) mm (in 1 mm increments)
	50	Length 50 mm*

Notes: (*) ... discounted price and shortened delivery time

Order code example: MTC22-2-120-50

... 2 x „K“, accuracy class 2, wire diameter 1,38 mm

... Nominal length N = 120 mm

... Holding pipe length K = 50 mm

Approximate weight of the product: MTC22-2-120-50 ... 0,5 kg

Length Tolerances (Table 22.3)

Length tolerance N	Length tolerance K
± 2 mm	± 1 mm

Recommended Maximum Temperatures of Sensor Parts (Table 22.4)

Sensor part	Continuous operation	Short-term operation
Head	< 100 °C	-
Holding pipe	< 500 °C	-
Ceramic parts (measuring part)	< 1350 °C	-
„S“, wire dia. 0,35 mm	< 1300 °C	< 1400 °C
„S“, wire dia. 0,2 mm	< 1150 °C	< 1300 °C
„K“, wire dia. 1,38 mm	< 900 °C	< 1020 °C
„N“, wire dia. 1,3 mm	< 950 °C	< 1090 °C

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

Installation And Operating Instructions

For mechanical installation, a metal holder is used. Other parts cannot be used.

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 measuring part of the sensor is allowed to be exposed to a temperature gradient up to 60 °C/min.

Exceeding this value may damage the sensor.

The electrical connection of the sensor is shown in Figure 22.2. The output signal is thermoelectric voltage. The dependence of temperature on thermoelectric voltage is given by the standard ČSN EN 60584-1 ed. 2.

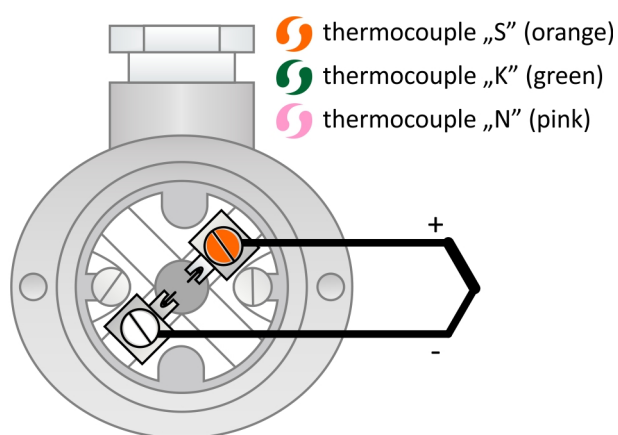


Figure 22.2: Wiring diagram

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