

MTC21

THERMOCOUPLE WITH CERAMIC TUBE AND WITHOUT HEAD

Temperature sensors of the MTC21 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 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 consist of ceramic tube, metal holder with terminal block and thermocouple insulated by ceramic beads.

General Information (Table 21.1)

	Insulation class acc. ČSN EN 60529	IP00 (terminal) IP5X (measuring part)
①	Base metal thermocouple	
	Design	Insulated by ceramic beads
	Protection ceramic tube	
②	Material	Ceramic C610
	Outer / inner diameter	8 / 5 mm
	Holder	
③	Material	Stainless steel
	Terminal block	
④	Material	Keramika

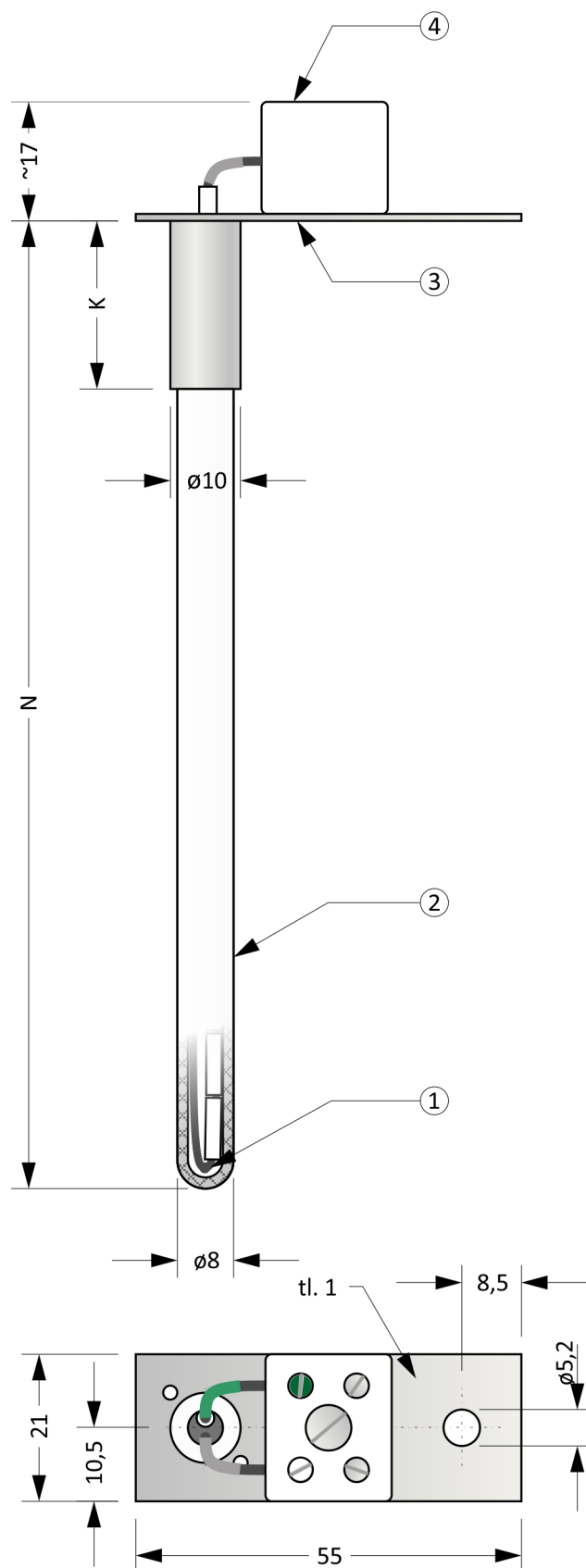


Figure 21.1: MTC21

Optional Parameters Including the Creation of an Order Code (Table 21.2)

Pos.	Code	MTC21 - ① - ② - ③
①	Thermocouple type (acc. ČSN EN 60584-1 ed. 2)	
	0	1 x „K“, accuracy class 2, wire diameter 1,38 mm
	1	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 20 mm to (N-30) mm (in 1 mm increments)
	24	Length 24 mm*

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

Order code example: MTC21-0-120-24
 ... 1 x „K“, accuracy class 2, wire diameter 1,38 mm
 ... Nominal length N = 120 mm
 ... Holding pipe length K = 24 mm

Approximate weight of the product: MTC21-0-120-24 ... 0,3 kg

Length Tolerances (Table 21.3)

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

Recommended Maximum Temperatures of Sensor Parts (Table 21.4)

Sensor part	Continuous operation	Short-term operation
Terminal block	< 100 °C	-
Holder	< 220 °C	-
Ceramic parts (measuring part)	< 1350 °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.

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 21.2. The output signal is thermoelectric voltage. The dependence of temperature on thermoelectric voltage is given by the standard ČSN EN 60584-1 ed. 2.

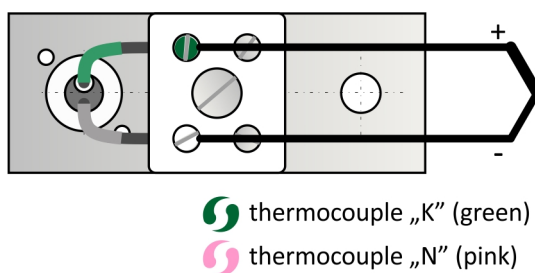


Figure 21.2: wiring diagram

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