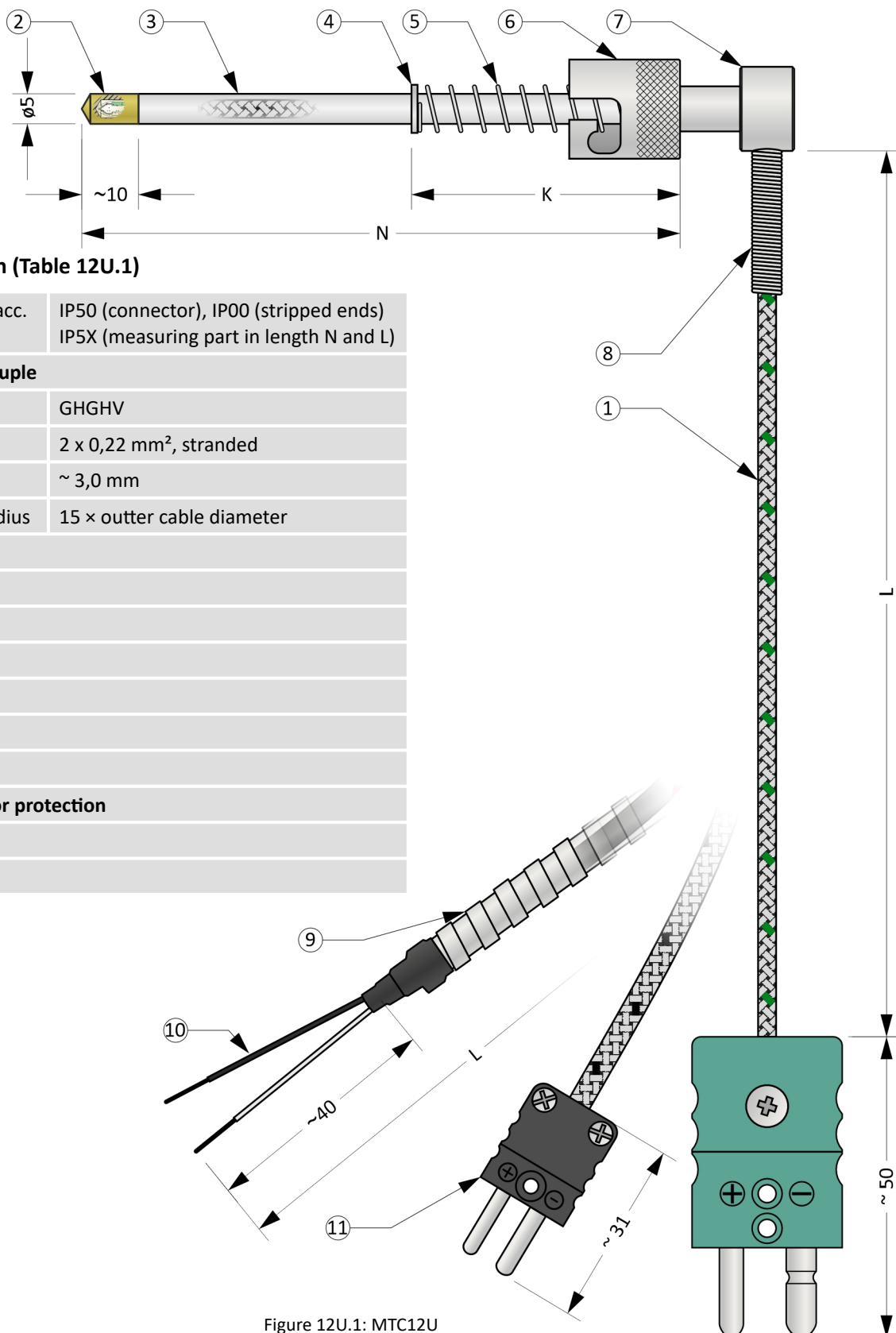


MTC12U

CABLE THERMOCOUPLES

Temperature sensors of the MTC12U series are cable temperature sensors in angular design, providing pressure to the measured surface by a spring. The angled design is advantageous in applications with limited installation space.

The measuring element is a thermocouple of the J, K, L 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 or DIN 43 710 for L thermocouple.



General Information (Table 12U.1)

	Insulation class acc. ČSN EN 60529	IP50 (connector), IP00 (stripped ends) IP5X (measuring part in length N and L)
	Cable thermocouple	
	Cable insulation	GHGHV
①	Wires	2 x 0,22 mm ² , stranded
	Cable diameter	~ 3,0 mm
	Min. bending radius	15 x outer cable diameter
②	Brass tip	
③	Protection tube	
④	Spring stop	
⑤	Bayonet spring	
⑥	Bayonet cap	
⑦	Transition part	
⑧	Spring	
⑨	Additional armor protection	
⑩	Stripped ends	
⑪	Connector	

Figure 12U.1: MTC12U

Optional Parameters Including the Creation of an Order Code (Table 12U.2)

Pos.	Code	MTC12U - ① - ② - ③ - ④ - ⑤ ⑥
①	Thermocouple type	
	1	1 x „J“, accuracy class 2 acc. ČSN EN 60584-1 ed. 2
	0	1 x „K“, accuracy class 2 acc. ČSN EN 60584-1 ed. 2
	2	1 x „L“, acc. DIN 43 710
	3	1 x „N“, accuracy class 2 acc. ČSN EN 60584-1 ed. 2
②	Length N [mm]	
	xxx	Selectable range from (K+25) mm to 1000 mm (in 1 mm increments)
③	Length K [mm]	
	0	Without spring
	xxx	Selectable range from 35 mm to 190 mm (in 1 mm increments)
④	Length L [cm]	
	xxx	Selectable range from 10 cm to 450 cm (in 1 cm increments)
	xxx	Selectable range from 460 cm to 999 cm (in 10 cm increments)
	Axxx	Additional armor protection, selectable range from 10 cm to 450 cm (in 1 cm increments)
	Axxx	Additional armor protection, selectable range from 460 cm to 600 cm (in 10 cm increments)
⑤	Design of the cold junction	
	0	Stripped ends, length 40 mm
	1	Standard connector, MTCK-S type, plug
	2	Standard connector, MTCK-S type, plug + socket
	3	Miniature connector, MTCK-M type, plug
	4	Miniature connector, MTCK-M type, plug + socket
	5	Ceramic standard connector, MTCK-CS type, plug
	6	Ceramic standard connector, MTCK-CS type, plug + socket
	7	Ceramic miniature connector, MTCK-CM type, plug
	8	Ceramic miniature connector, MTCK-CM type, plug + socket
⑥	Bayonet cap	
	0	Inner diameter C = 12 mm, 2 slot, with a spring of dia. 8 mm
	1	Inner diameter C = 15 mm, 2 slot, with a spring of dia. 8 mm

Order code example: MTC12U-0-100-50-500-00

- ... Thermocouple type K, accuracy class 2
- ... Length N = 100 mm
- ... Length K = 50 cm
- ... Length L = 500 cm
- ... Stripped ends
- ... Inner diameter C = 12 mm

Approximate weight of the product: MTC12U-0-100-50-500-00 ... 0,4 kg

Length Tolerances (Table 12U.3)

Length K, L, N	Tolerance K	Tolerance L	Tolerance N
(K, L, N) ≤ 250 cm	± 3 mm	± 1 cm	± 2 mm
250 < L ≤ 500 cm	-	± 1,5 cm	-
500 < L cm	-	± 0,5 % z L	-

Recommended Maximum Temperatures of Sensor Parts (Table 12U.4)

Sensor part	Continuous operation	Short-term operation
Thermocouple - measuring end, cable	-40 ... 600 °C	-
Spring stop, spring, bayonet cap, transition part	< 500 °C	-
Connectors MTCK-S, MTCK-M	< 220 °C	-
Connectors MTCK-CS, MTCK-CM	< 600 °C	-

Design of the transition part (Table 12U.5)

①	Transition part	
	Material	Stainless steel
	Spring	
②	Note	Reduces wear on the cable at the point of exit from the transition.
	Material	Stainless steel
	Additional armor protection	
③	Note	It increases the mechanical resistance of the cable.
	Material	Stainless steel
	Properties	Flexible, does not prevent the ingress of moisture

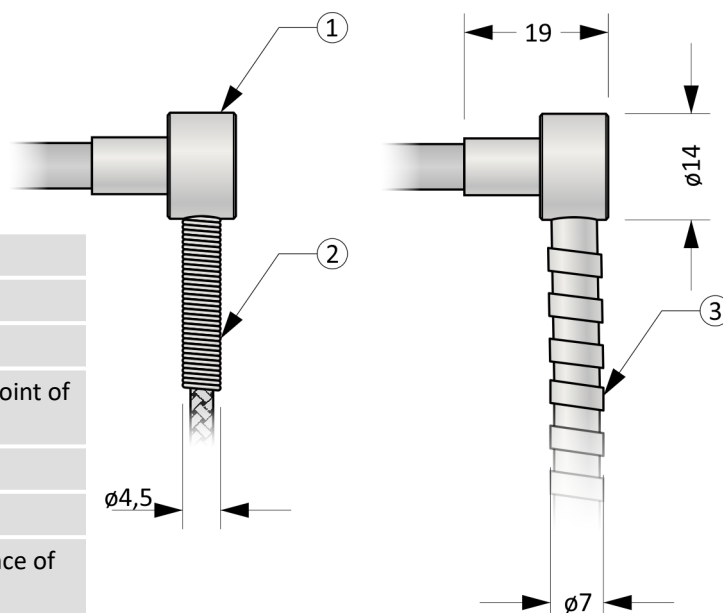


Figure 12U.4: Transition part design options.

Bayonet part design (Table 12U.6)

The spring compressibility is 50 % (e.g. if we have a spring with a length of 100 mm, then its length after maximum compression will be 50 mm).

④	Bayonet cap	
	Material	Stainless steel
⑤	Bayonet spring	
	Material	Stainless steel

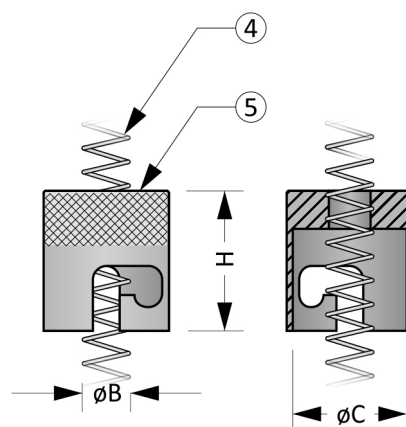


Figure 12U.5: Bayonet cap

Dimensions of the bayonet cap (Table 12U.7)

øC	H	øB
12,0 mm	18 mm	8 mm
15,0 mm	18 mm	8 mm

Installation And Operating Instructions

The sensor stem with bayonet cap is used for mechanical fixing

The electrical connection of the sensor is shown in Figures 12U.6 and 12U.7. The output signal is a

thermoelectric voltage, the value of which is according to the ČSN EN 60584-1 ed. 2 or DIN 43 710 for L thermocouple.

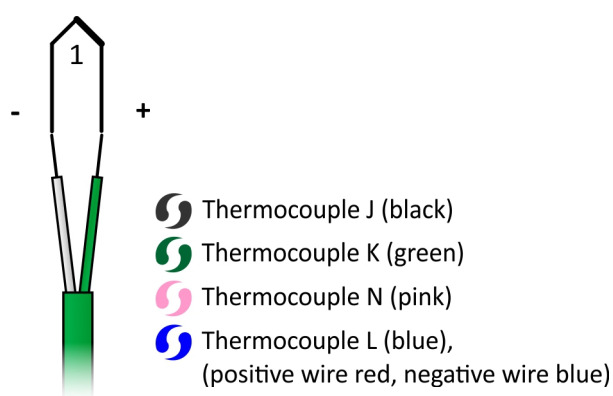


Figure 12U.6: Single thermocouple wiring diagram

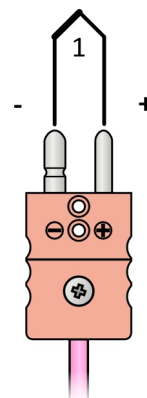


Figure 12U.7: Connector wiring diagram