

Thermocouple Probe TCP KC

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Invented for life



- ▶ Thermocouple Type K
- ▶ Thermo material: NiCr-Ni
- ▶ Measurement range: 0 to 1,250°C
- ▶ Analog output (0 to 5 V) or CAN

This sensor is designed to measure exhaust gas temperatures up to 1,250°C.

Thermocouples are temperature sensors that supply a temperature corresponding voltage without any additional external energy source. The thermocouple has a metal mantle that includes two isolated inner wires made of thermo material NiCr-Ni Type K.

The voltage is amplified by an electronic circuit powered by 12 V. Please note that the operating temperature of the external electronics is from 0 to 120°C.

The sensing element is protected by a single-walled housing made of Nimonic 75 to enable its placement before turbo chargers.

The benefits of this sensor are the combination of high quality production part, robust design and its integrated amplifier at more attractive price.

Application

Application	0 to 1,250°C
Max. vibration	Vibration profile 1 (see www.bosch-motorsport.com)
Operating temp. range (ext. electronics)	0 to 120°C

Technical Specifications

Mechanical Data

Male thread	M8x1
Wrench size	11 mm
Installation torque	12 Nm
Weight w/o wire	Ca. 18 g

Electrical Data

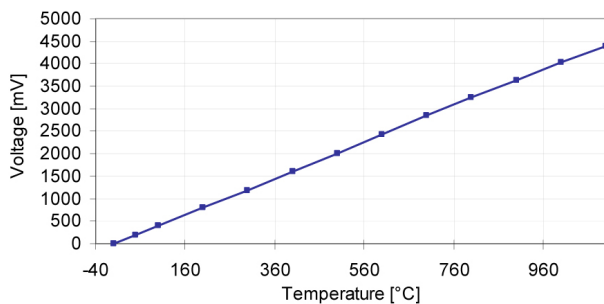
Voltage supply	12 V
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Analog Variant

Full scale output	0 to 5 V
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T [°C]	U [mV]
0	0
50	197
100	399
200	793
300	1,190
400	1,598
500	2,012

Analog Variant	
600	2,427
700	2,839
800	3,243
900	3,638
1,000	4,022
1,100	4,396
1,200	4,759
1,250	5,000



CAN Variant	
CAN Message	
CAN ID 0x3F0 (default)	
Byte	Value
0	Thermocouple Temperature
1	
2	Ambient Temperature
3	
CAN Signals	
Length	16 Bit
Byte order	Motorola (Big Endian)
Bit mask	Signed
Factor	0.1°C/Bit
Offset	0.0
CAN Parameter	
CAN speed	1 Mbaud/s or 500 kbaud/s (default 1 Mbaud)
CAN frequency	100 Hz Thermocouple Temp. 1 Hz Ambient Temp.

CAN Variant	
Phys. unit	Degrees Celsius (default) or Degrees Fahrenheit
CAN Frame ID	0x1 to 0x7F0 (default 0x3F0)
Please specify the requested CAN parameters with your order in the calibration sheet.	

Connectors and Wires

Sleeve	DR-15
Sleeve from amplifier to connector	DR-25
Wire size	AWG 24
Wire length L	20 to 92 cm

Analog Variant	
Connector	ASU 6-03-03PD-HE
Mating connector	ASU 0-03-03SD-HE
Pin 1	Power supply 5 to 16 V
Pin 2	Gnd
Pin 3	Signal 0 to 5 V

CAN Variant	
Connector	ASU 6-03-05PB-HE
Mating connector	F 02U 000 207-01
ASU 0-03-05SB-HE	
Pin 1	U _s
Pin 2	Gnd
Pin 3	CAN High
Pin 4	CAN Low
Pin 5	Not connected

Installation Notes

The TCP KC can be connected to Bosch Motorsport ECUs with a 0 to 5 V analog signal input (w/o pull-up resistor) or to external data logging devices.

The sensor can be mounted individually according to the customer's request.

Please note that the operating temperature range of the external electronics is from 0 to 120°C.

Recommended bending radius of the wire of the sensor element is minimum 20 mm to ensure the sensor works properly and for a longer lifespan of the sensor.

Any mounting orientation is possible.

Safety Note

The sensor is not intended to be used for safety related applications without appropriate measures for signal validation in the application system.

Ordering Information

Thermocouple Probe TCP KC

Analog Variant

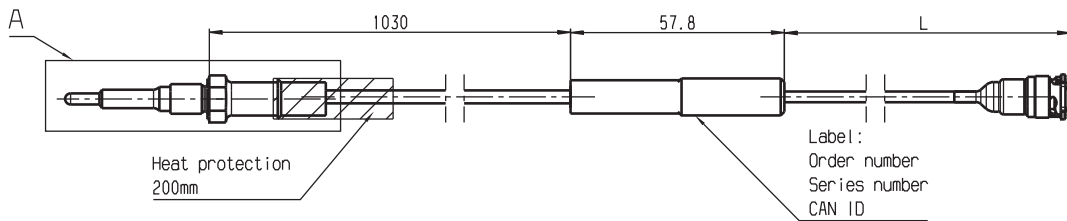
Order number **F 02U V02 041-01**

Thermocouple Probe TCP KC

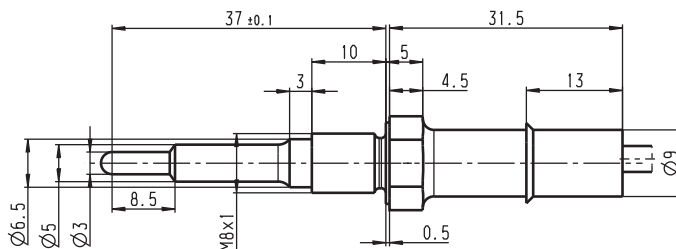
CAN Variant

Order number **F 02U V02 423-01**

Dimensions

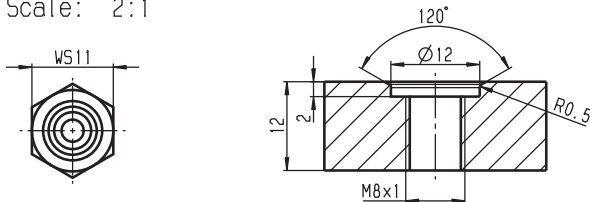


Detail A
Scale: 2:1



Front view
Scale: 2:1

Recommended mounting hole



CAN Variant (Analog Variant: see website)

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