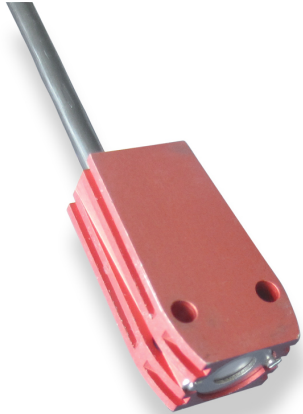


Temperature Sensor Infrared TI-20-r-8

www.bosch-motorsport.com



BOSCH
Invented for life



- ▶ Non-contact temperature measurement
- ▶ Measurement range: -20 to 200°C
- ▶ CAN protocol with 8 channels
- ▶ Compact size and robust aluminum housing

This infrared temperature sensor is designed for non-contact surface temperature measurement of various parts (e.g. tires) based on IR radiation. Using ruggedized silicon-coated optics with internal electronics and cabling packaged inside stainless steel housing, this sensor measures the emitted infrared radiation of an object and calculates its temperature. The main features of this sensor are its compact size, robust design, high signal quality and its high speed 1Mbaud/s CAN-signal output. In addition, it offers the ability to change several parameters such as CAN speed, refresh rate, CAN ID and measurement unit by request.

Application

Application	-20 to 200°C
Measurement	8 channels in line
Operating temp. range (sensing head)	-20 to 100°C
Storage temperature range	-40 to 125°C
Max. vibration any axis	Vibration Profile 1 (see Appendix or www.bosch-motorsport.com)

Technical Specifications

Mechanical Data

Protection class	IP64
Dimensions	31 x 17 x 11 mm
Weight without wire	15 g

Electrical Data

Power supply U_s	6 to 16 V
Current I_S	17 mA
Response time	260 ms at FS

Characteristic

Emissivity for rubber	0.95
Optical resolution	6.5 : 1
Spectral range	8 to 14 μm
Resolution	0.1°C/Bit
Accuracy at FS	$\pm 2.2^\circ\text{C}$ or $\pm 1\%$ FS
Frequency	10 Hz or 1 Hz on request (default 10 Hz)

Connectors and Wires

Connector	ASX 6-02-05PA-HE
Mating connector ASX 0-02-05SA-HE	F 02U 0003 319-01
Pin 1	U _s
Pin 2	Gnd
Pin 3	CAN H
Pin 4	CAN L
Pin 5	Not connected
Various motorsport and automotive connectors are available on request.	
Sleeve	EPD 116760A
Wire size	AWG 26
Wire length L	150-1000 mm
Please specify the requested wire length with your order.	

CAN Message

CAN ID 0x03F0	
Byte	Value
0	Channel 1
1	
2	Channel 2
3	
4	Channel 3
5	
6	Channel 4
7	
CAN ID 0x03F4	
Byte	Value
0	Channel 5
1	
2	Channel 6
3	
4	Channel 7
5	
6	Channel 8
7	

CAN Signal

Channel x	
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)
Please specify the requested frequency and CAN speed with your order	

Measurement Distance

Distance (mm)	∅ target per channel (mm)	Total width (mm)
200	30	152
300	45	228
400	60	304
500	75	380
600	90	456
700	105	532

Installation Notes

The TI-20-r-8 can be connected directly to most control units and data logging systems.

The predefined emissivity can differ from the real emissivity.

Sensor can be mounted in any orientation.

Do not disconnect the electronics housing from the sensor.

Please avoid abrupt temperature changes.

Please ensure that the environmental conditions do not exceed the sensor specifications.

To clean the lens, use only a soft, wet (water or water based glass cleaner) cloth -> NO DISSOLVER cleaner!

Please find further application hints in the offer drawing at our homepage.

Please deliver the calibration sheet with your order placement.

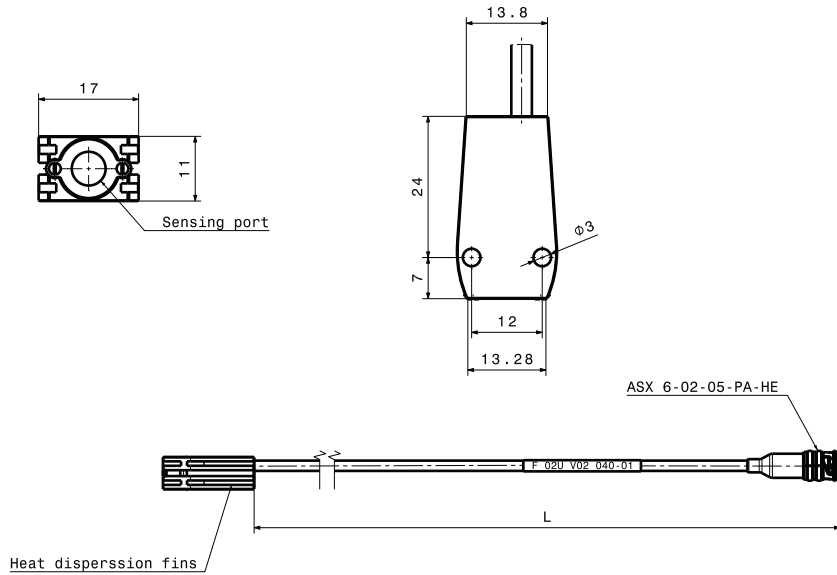
Safety Note

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

Ordering Information

Temperature Sensor Infrared TI-20-r-8
Order number **F 02U V02 040-01**

Dimensions



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