

The Izze-Racing single-point infrared sensor is designed for non-contact temperature measurement in motorsport and automotive applications. Common uses include the temperature measurement of tires, asphalt, and cabin interiors. The sensor is capable of measuring temperatures from -70 to 380°C , using CAN 2.0A protocol, and priced to be affordable to all tiers of motorsport.

The sensor is offered as a PCB assembly, without an enclosure, amounting to a significant reduction in cost and allowing the end user to package the sensor according to their specific needs.



SENSOR SPECIFICATIONS

Temperature Measurement Range, T_o	-70 to 380°C
Package Temperature Range, T_p	-40 to 85°C
Accuracy	$< \pm 1\%$ Full-Scale (typ. $\pm 1.0^{\circ}\text{C}$)
Noise Equivalent Temperature Difference, NETD	0.18°C
Field-of-View, FOV	35°
Sampling Frequency	8Hz
Spectral Range	8 to $14\ \mu\text{m}$

ELECTRICAL SPECIFICATIONS

Supply Voltage, V_{in}	5 to 8 V
Supply Current, I_s (typ)	30 mA
Features	<ul style="list-style-type: none"> Reverse polarity protection Over-temperature protection (125°C)

MECHANICAL SPECIFICATIONS

Weight	$< 2\ \text{g}$
L x W x H (max)	28.7 x 15 x 10.2 mm

CAN SPECIFICATIONS

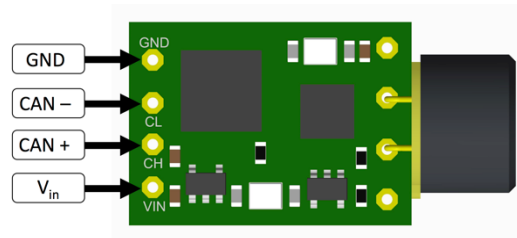
Standard	CAN 2.0A (11-bit identifier), ISO-11898
Bit Rate	1 Mbit/s
Byte Order	Big-Endian / Motorola
Data Conversion	0.1 °C per bit, -100 °C offset, unsigned
CAN ID (Default)	1240 (Dec) / 0x4D8 (Hex)
Termination	None

CAN ID: 0x4D8 (Default)

Object Temperature		Sensor Temperature		Unused		Unused	
Byte 0 (MSB)	Byte 1 (LSB)	Byte 2 (MSB)	Byte 3 (LSB)	Byte 4 (MSB)	Byte 5 (LSB)	Byte 6 (MSB)	Byte 7 (LSB)

PCB PINOUT:

PCB Label	Description
GND	Ground
CL	CAN -
CH	CAN +
V _{in}	V _{in} (5-8V)



(Recommended Wire: 26 AWG M22759/32, DR25 jacket)

SENSOR CONFIGURATION:

To modify the sensor's configuration, send the following CAN message at 1Hz for at least 10 seconds and then reset the sensor by disconnecting power for 10 seconds:

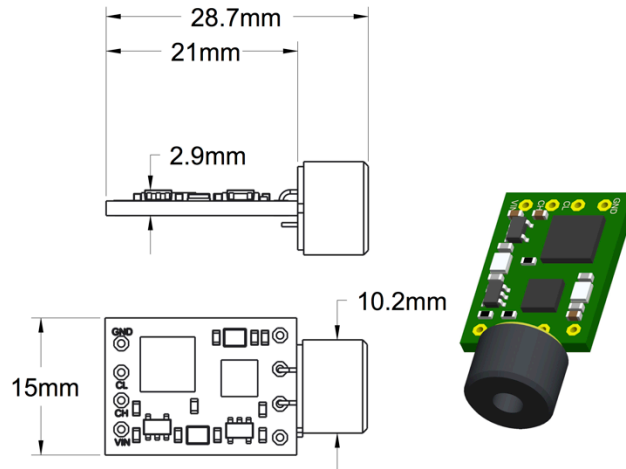
CAN ID: Current CAN ID

Programming Constant		New CAN ID (11-bit)		Unused			
Byte 0 (MSB)	Byte 1 (LSB)	Byte 2 (MSB)	Byte 3 (LSB)	Byte 4	Byte 5	Byte 6	Byte 7
30000 = 0x7530		1 = 0x001					
		⋮					
		2047 = 0x7FF					

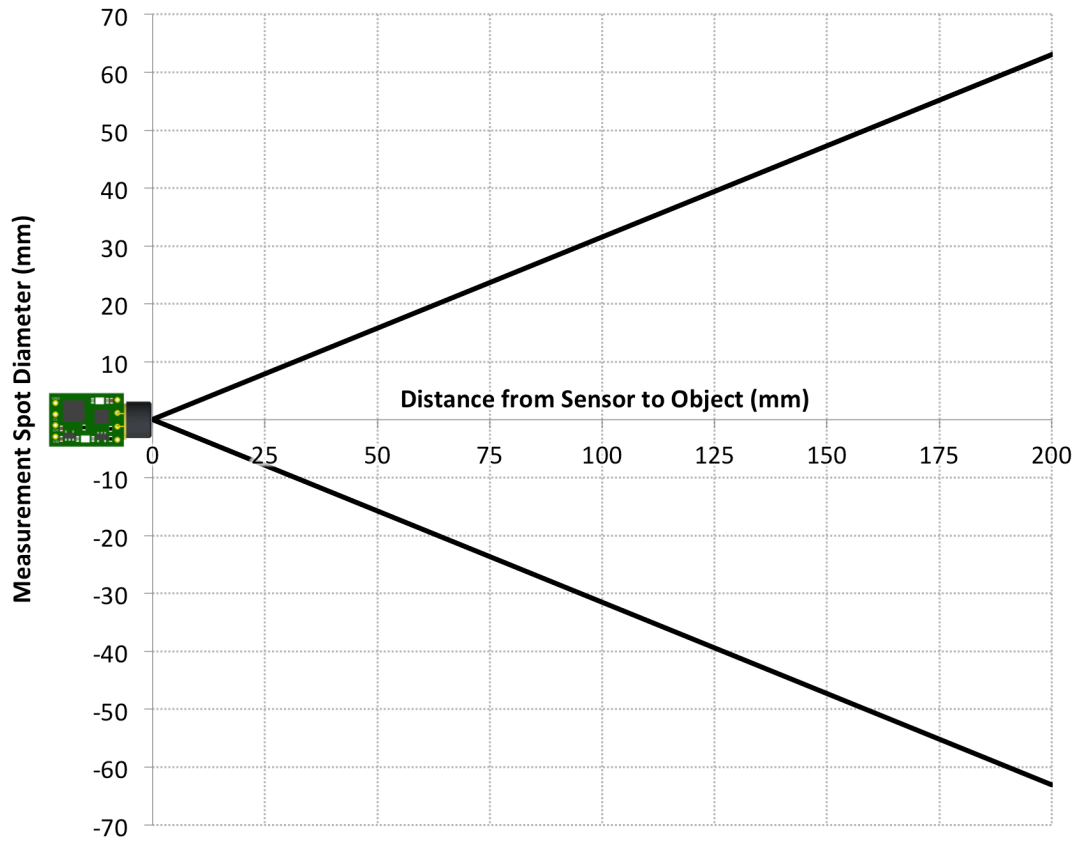
CAN messages should only be sent to the sensor during the configuration sequence.

DO NOT continuously send CAN messages to the sensor.

DIMENSIONS:



FIELD-OF-VIEW (FOV):





ADDITIONAL INFORMATION:

- Stated accuracy is under isothermal package conditions; for utmost accuracy, avoid abrupt temperature transients and gradients across the sensor's package.
- Point the sensor in the downstream direction (e.g., facing the front face of a tire) to avoid contamination, pitting, and/or destruction of the sensor's lens from debris.

WARRANTY:

All sensors come with a 30-day return policy and have a 1-year warranty from manufacturing defects. If there is ever an issue, please contact us at support@izzeracing.com