SP-001 & SP-002

Ultra-Miniature IR Smart Probe

layer by OMEGA

- **Ultra-miniature, non-contact Smart Temperature Probe**
- **Measured temperature range from -70 to 380ºC (-94 to 716ºF)**
- **5:1 or 10:1 optical field of view**
- **Software configurable through SYNC configuration software**
- **Software adjustable response time**
- **Built in data logging**
- **Modular M12 connection**
- **CE and ROHS compliant**

Mounting nuts included

The Omega Smart IR Temperature Probe is a miniature infrared sensor that measures the surface temperature of a solid or liquid without contact. It can measure non-metal surfaces between -70 to 380°C (-94 to 716°F). It also features a built-in sensor to measure the ambient temperature of the probe itself.

Materials including paper, thick plastics, rubber, food and organic materials, as well as painted metals and most dirty, rusty or oily surfaces, are measured accurately, safely and cleanly.

The Smart Probe is packaged into a rugged 12 mm OD x 67 mm long compact, stainless steel, IP67 (NEMA 6) housing - designed for heavy industrial use while taking up the least amount of space for easy installation.

Standard features include: easy configuration through free SYNC configuration software, adjustable emissivity and filtering, and a wide operating temperature range of 40°C to 85°C.

We've integrated an advanced suite of IIoT centric electronics called Smart Core. These features enable plug and play connectivity, fully featured alarms and notifications, data assurance, and data storage of up to 1499 sensor readings.

Specifications

Temperature Range: -70 to 380°C (-94 to 716°F)
Accuracy @ Ambient of 0 to 50°C (32 to 122°F): 1°C (1.8°F) or 1% of reading, whichever is greater
Accuracy Over Entire Ambient Operating Range: 4°C (7.2°F) or 3% of reading, whichever is greater
Repeatability: 1°C (1.8°F) or 1% of reading
Emissivity: 0.01 to 1.00, software adjustable
Response Time: 1 second
Spectral Response: 5.5 to 14 microns
Supply Power: 3.3 V_{DC}, 0.05 W max
Field of View: SP-001 is 6:1, SP-002 is 10:1

Mechanical

Construction: Stainless Steel
Sensor Length:
12 mm OD x 67 mm L (0.47" x 4.49")
Thread Mounting Dimensions:
12 mm OD x 33.5 mm L (0.47" x 1.31")
Weight: 35 g (1.2 oz)

Environmental

Environmental Rating: NEMA 6 IP67
Operating Temperature: -40 to 85°C (-40 to 185°F) less than 95% RH, non-condensing
Vibration: 10 Gs from 10 Hz to 500 Hz

General

Agency Approvals: CE, EMC 2014/30/EU, LVD 2014/35/EU
Configuration: Configurable via IF-001 and SYNC configuration software
Software: Compatible with OEG and SYNC configuration software

Variants

The Smart IR Temperature Probe is available with two choices of optical field of view, either 6:1 or 10:1. Versions with 2 configurable digital I/O pins are also available. These can be configured as either Inputs or Outputs and can be used for a myriad of applications including driving relays, physical alarms, or sensing dry contacts like door switches. The probe can be configured to act as an edge controller, generating local alarm and control signals based on sensor inputs.

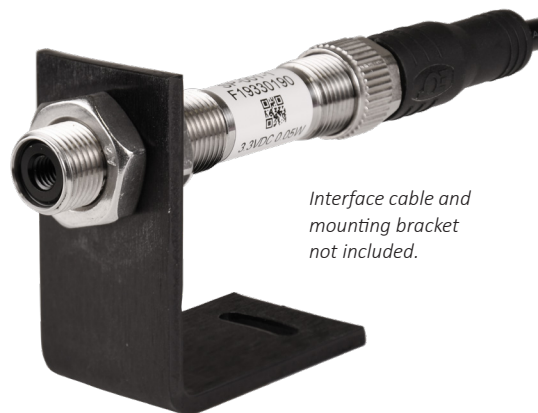| Model Number	FOV	Discrete I/O Pins	Description
SP-001-0	6:1	None	Smart Probe IR, 6:1 field of view
SP-001-1	6:1	2	Smart Probe IR, 6:1 field of view, with discrete I/O
SP-002-0	10:1	None	Smart Probe IR, 10:1 field of view
SP-002-1	10:1	2	Smart Probe IR, 10:1 field of view, with discrete I/O

Layer N Smart Interface

Layer N Smart Probes require a Layer N Smart Interface to operate and connect to your Layer N Ecosystem. There are both wired and wireless options.

Model Number	Description
IF-001	USB Smart Interface
IF-002	RS485/Modbus Smart Interface
XW-ED	2.4 GHz Wireless Transmitter, Smart Probes
XW-ED-PRO	2.4 GHz Wireless Transmitter and Edge Controller, Smart Probes

Accessories

M12-8 Pin Splitter and Connector for Access to Probe I/O pins

M12.8-T-SPLIT	Smart Probe M12-8 pin shielded T-Splitter - enables access to I/O pins
M12.8-S-M-FM	M12-8 pin Straight Plug Field install connector with screw terminals
SP-001-MB	Mounting Bracket for SP-001 and SP-002

Interface cable and mounting bracket not included.

M12-8 Pin Extension Cables for Probes

DM12CAB-8-1-RA	1m (3.3') cable dual M12-8 connector, right angle terminator
DM12CAB-8-3-RA	3m (9.8') cable dual M12-8 connector, right angle terminator
DM12CAB-8-5-RA	5m (16.4') cable dual M12-8 connector, right angle terminator
DM12CAB-8-1	1m (3.3') cable dual M12-8 straight connector
DM12CAB-8-3	3m (9.8') cable dual M12-8 straight connector
DM12CAB-8-5	5m (16.4') cable dual M12-8 straight connector