

SP-003 / SP-004

Environmental Monitoring Smart Probe



- Measured Temperature Range from:
-40 to 85°C (-40 to 185°F)
- Humidity: 0 to 100% RH
- Barometric Pressure: 10 to 1200 mbar
- 2x Digital I/O
- Modular M12 construction
- OMEGA Smart Core enabled
 - Data Logging
 - Integrated Alarm and Control
 - Plug and Play Device Detection
 - Sensor health monitoring



The Layer N SP-003 / SP-004 Environmental Monitoring Smart Probe provides temperature, relative humidity, and barometric pressure readings. The SP-003/SP-004 accepts Layer N Smart Interfaces through its M12 8-pin connector.

Intuitive Configuration

Configure your Layer N Smart Probe using SYNC's intuitive configuration interface. Additionally, an integrated command line interface allows for quick serial setup of your Smart Probe and Smart Interface using standard terminal emulators.

Smart Core Enabled

Smart Core is integral to all Layer N Smart Probes. This powerful suite of advanced features enable plug and play connectivity, alarms and notifications, data assurance, data logging, and storage.

Edge Control and Built in I/O

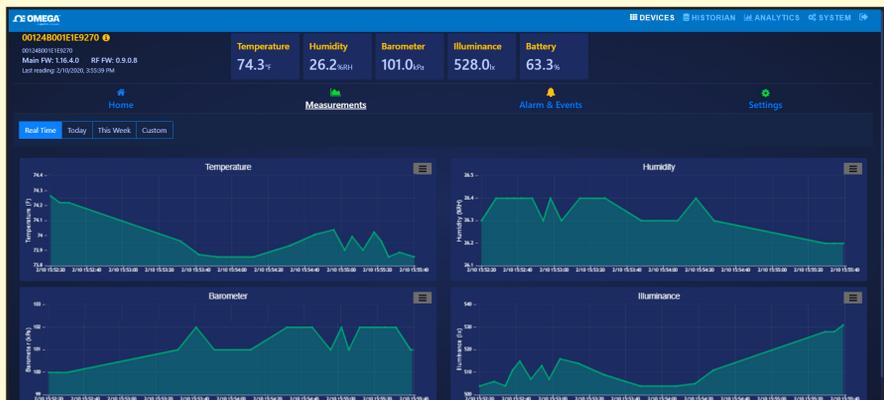
The Layer N SP-003/SP-004 features 2 configurable digital I/O pins. These can be used for a myriad of applications including driving relays, physical alarms, or sensing dry contacts like door switches. The SP-003/SP-004 can also be utilized as an edge controller, with autonomous independent decision-making capabilities to generate local alarms or provide control outputs based on sensor inputs.

Smart Interface Modularity

Customize your Layer N Ecosystem with modular Smart Interfaces that connect and transmit data from your Smart Probe to the Layer N Cloud.

Your Data at a Glance with Layer N Cloud

Layer N Cloud consolidates and brings your data to you when you need it, wherever you are. The intuitive cloud interface allows you to monitor and store your data, set alarms and alerts, and provides insights on device activity. Visit the OMEGA website for more details.



Specifications

TEMPERATURE

Range: -40 to 85°C (-40 to 185°F)

Accuracy: ±0.3°C (±0.6°F)

Response Time: Less than 1 second

RELATIVE HUMIDITY

Accuracy: ±2.5% (0 to 80%),

±3.5% (80 to 100%)

Hysteresis: ±0.8%

Response Time: 8 seconds

BAROMETRIC PRESSURE

Accuracy Over Full Range: ±6 mbar from 300 to 1100 mbar

Accuracy @ 25°C: ±4 mbar from 700 to 1100 mbar

INPUT POWER

Voltage: 2.8 V_{DC} - 3.3 V_{DC}

DIO DIGITAL INPUTS

$V_{inHighThreshold} = 2.2 V_{MAX}$

$V_{inLowThreshold} = 0.3 V_{MIN}$

$V_{inMAX} = 30 V_{DC}$

DIO DIGITAL INPUTS

2x Open Drain 100 mA max

$V_{MAX} = 30 V_{DC}$

ENVIRONMENTAL

Operating Temperature: -40 to 85°C (-40 to 185°F)

Rating: IP67 when mated

MECHANICAL

Tube Housing

Construction: Stainless Steel

Dimensions: 72 mm L x 15.9 mm OD (2.83" x 0.62")

Bulkhead Housing

Construction: Aluminium

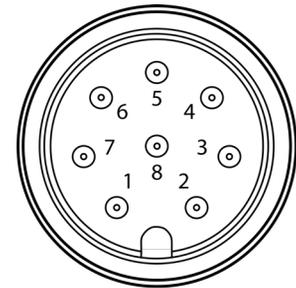
Dimensions: 73 mm L x 15.9 mm OD x 18.5 mm Panel Opening (2.83" x 0.62" x 0.72")

GENERAL

Agency Approvals: CE, EMC 2014/30/EU, LVD 2014/35/EU

Compatibility: Compatible with OEG, SYNC configuration software, Layer N Cloud, and Modbus Networks

M12 8-Pin Wiring



Pin	Name	Function
Pin 1	DIO 0	Discrete I/O Signal 0
Pin 2	INTR	Interrupt Signal
Pin 3	SCL	I2C Clock Signal
Pin 4	SDA	I2C Data Signal
Pin 5	Shield	Shield Ground
Pin 6	DIO 1	Discrete I/O Signal 1
Pin 7	GND	Power Ground
Pin 8	3.3VDD	Power Supply

Layer N SP-003 / SP-004 Variants

Model Number	Description
SP-003-1	Temperature, Humidity, Barometric Pressure Smart Probe with discrete I/O - Tube Housing
SP-004-1	Temperature and Humidity Smart Probe with discrete I/O - Tube Housing
SP-004-4	Temperature and Humidity Smart Probe with discrete I/O - Bulkhead Housing

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 - requires ZW-REC
XW-ED-PRO	2.4 GHz Wireless Transmitter and Edge Controller, Smart Probes - requires ZW-REC

Accessories

Model Number	Description
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
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