

SP-010 Series



Omega Link Load Cell Smart Probe

- Provides excitation for 250 ohm - 15000 ohm strain bridges
- Auto-adjusted activation current
- Hardware and software TARE function
- 2-point Linearization
- 2x Digital I/O (Input or Output)
- Software configurable through SYNC configuration software
- Modular M12 construction
- 10,000+ Sample data/event logging
- Integrated alarm and control
- Secure authentication and password protection



SP-010: Introduction

The Omega Link SP-010 Load Cell Smart Probe provides an easy way to integrate your bridge devices to the Omega Link Ecosystem. The SP-010 accepts 4-wire load cell sensors through its M12 4-pin connector and Omega Link Smart Interfaces through its M12 8-pin connector. The SP-010 determines the bridge impedance and applies an optimized pulsed bridge excitation current during measurements to minimize self-heating effects. The bridge voltage is then used to determine the applied force using bridge characteristics provided by the user.

A 2-point linearization correction may be applied with the ability to capture the measured values. TARE weight adjustment can be triggered through software or external switch closures.

Smart Core Enabled

Smart Core is integral to all Omega Link Smart Sensing Devices. In addition to allowing for modular integration to the Omega Link Ecosystem using any Omega Link Smart Interface, this powerful suite of advanced features enable plug-and-play connectivity, alarm and notifications, data logging, SYNC configuration, and storage of 10,000 data points and events.

Modularity

Customize your Omega Link Ecosystem by taking advantage of discrete I/O features accessible through the modular addition of an M12.8-T-SPLIT and M12.8-S-M-FM terminal.

Edge Control and Built in I/O

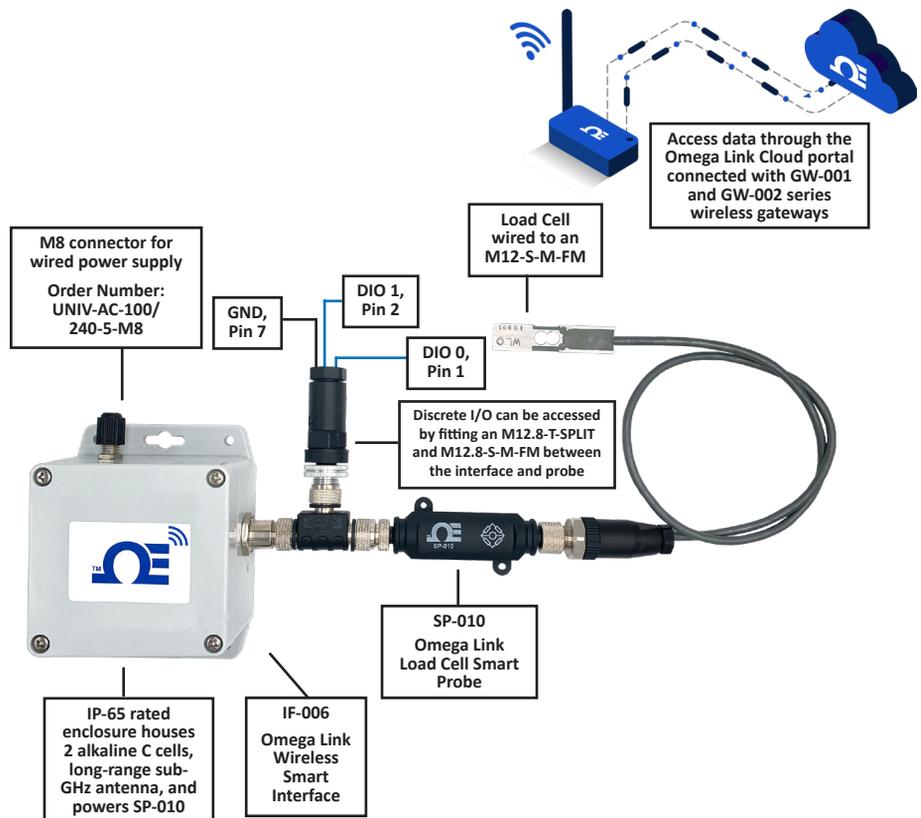
The Omega Link SP-010 features 2 discrete I/O pins. These can be used for a myriad of applications including driving relays, physical alarms, or sensing dry contacts like door switches. The SP-010 can also be utilized as an edge controller, with autonomous independent decision-making capabilities to generate local alarms or provide control outputs based on sensor inputs.

Long-Range Wireless Solution

Pairing the SP-010 with the IF-006 Series interface produces a self-contained, long-range, wireless solution. This setup can also be externally powered by adding the UNIV-AC100/240-M8 power adaptor.

**Note: IF-006 must be paired with an Omega Link wireless gateway*

Wireless Configuration for Smart Probe with Optional DIO



Specifications

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}

MEASUREMENTS

Reading Rate: 1 sample per second max

Supported Strain Gauges

Bridge Sensitivity: 1 to 15 mV/V

Bridge Resistance: 250 to 15000 Ohm

Accuracy

Linearity Error: ±0.03% FSO @ 25°C

Thermal Error: ±0.005% FSO/C

ENVIRONMENTAL

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

Rating: IP67 when mated

MECHANICAL

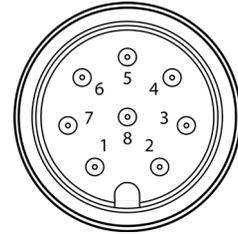
Dimensions: 22.1 mm W x 96.7 mm L (0.87" x 3.80") not including mounting tabs

GENERAL

Agency Approvals: CE, UKCA

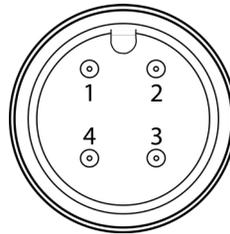
Compatibility: Compatible with OEG, SYNC configuration software, Omega Link Cloud, and Modbus Networks

M12 8-Pin Male Connector



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	3.3 VDD	Power Supply

M12 4-Pin Male Connector



Pin	Name	Function
Pin 1	Exc -	Excitation return
Pin 2	Sense +	Bridge Output
Pin 3	Sense -	Bridge Output
Pin 4	Exc +	Bridge Excitation

Omega Link SP-010 Ordering Guide

Model Number	Description
SP-010-1	Load Cell Smart Probe with discrete I/O

Omega Link Smart Interface

Omega Link Smart Sensing devices require an Omega Link Smart Interface to operate and connect to your Omega Link Ecosystem. There are both wired and wireless options.

Model Number	Description
IF-001	Wired USB Smart Interface
IF-002	Wired RS485/Modbus Smart Interface
IF-006-1-NA	Wireless Sub GHz Wireless Interface -915 MHz
IF-006-1-EU	Wireless Sub GHz Wireless Interface -868 MHz

Omega Link Gateways

An Omega Link Gateway is **required** to connect your Smart Probe to the Omega Link Cloud or Omega Enterprise Gateway.

Model Number	Description
GW-001-0	Wired IIoT Gateway Standard, Ethernet connectivity, Modbus RTU RS232/RS485 and Modbus TCP
GW-001-2-NA	Wireless IIoT Gateway Standard, Ethernet connectivity, connects up to 100 Omega Link Smart Sensors- 915 MHz
GW-001-2-EU	Wireless IIoT Gateway Standard, Ethernet connectivity, connects up to 100 Omega Link Smart Sensors- 868 MHz
GW-001-3-NA	Wireless IIoT Gateway Pro, Ethernet connectivity, power over Ethernet, connects up to 100 Omega Link Smart Sensors, Modbus RTU RS232/RS485 and Modbus TCP, 2x USB ports- 915 MHz
GW-001-3-EU	Wireless IIoT Gateway Pro, Ethernet connectivity, power over Ethernet, connects up to 100 Omega Link Smart Sensors, Modbus RTU RS232/RS485 and Modbus TCP, 2x USB ports- 868 MHz
GW-002-1-LTE	Wireless LTE IIoT Gateway Pro connects up to 40 Omega Link Smart Sensors, Modbus RTU RS232/RS485 and Modbus TCP, 1x RJ45 port, 1x USB port - 915 MHz

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

Your Data at a Glance with the Omega Link Cloud

The Omega Link 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.

