Specifications

Input Power

Voltage: 8 V_{DC} - 28 V_{DC} (loop powered)

Max Loop Resistance:
R_{max} (Ω)= (V_{supply} -8V)/0.24 A

Analog Output

Current: 4 to 20 mA

User scalable analog output, default scaling 0-100°C

Process Parameters

Process Medium: Water, water-based fluids (others upon request)

Pipe Materials: PVC, CPVC, PP, PFA

Nominal Pipe Size:
1", 2" nominal
(others upon request)

Process Temperature Range:
0 to 100ºC liquid

Performance

Accuracy with fluid flowing:
±1.5°C from factory and improved accuracy possible with in-situation 1 or 2-point calibration

Response Time (t63): 30 seconds

Response Time (t90): 60 seconds

Environmental

Ambient Operating Temperature:
0 to 40°C (32 to 104°F)

Rating: IP65 when mated

Mechanical

Dimensions:
60.3 W x 64.31 L x 51.54 mm H
(2.38 W x 2.53 L x 2.03" H)

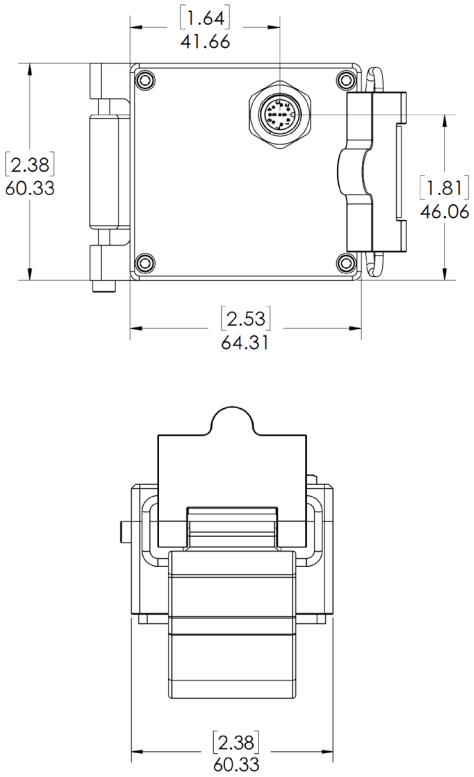
Materials: PA12, silicone rubber, nickel-plated brass, stainless steel

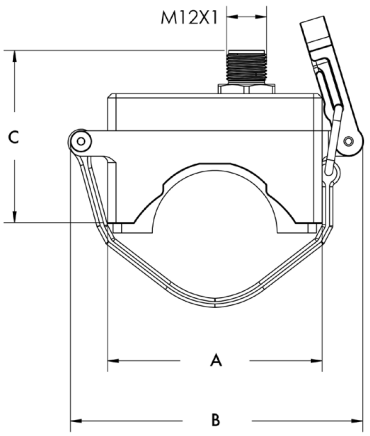
General

Agency Approvals: CE, EMC, UKCA, 2014/30/EU, LVD 2014/35/EU class II product, (low voltage 8 to 28 V_{DC})

Smart Core Enabled

Smart Core is integral to all Layer N integrated Smart Sensing devices. In addition to allowing for modular integration using any Layer N Smart Interface, this powerful suite of advanced features enables alarms and notifications, data assurance, data logging, storage, wireless connectivity and SYNC configuration.





Sensor Pipe Diameters	A	B	C
1.0, 2.0	64.3 (2.53)	87.6 (3.45)	51.5 (2.03)

Sensor Dimensions: mm (in)

Frequently Asked Questions

How can a HANI™ temperature sensor have faster response times and better accuracy than a surface sensor?

Omega's innovative HANI™ Clamp Sensor includes multiple sensors along with a proprietary algorithm to achieve faster response times and better accuracy than a surface sensor.

Will ambient temperature affect the reading of the HANI™ Clamp Sensor?

Ambient temperature will not affect the reading of the HANI™ Clamp Sensor. Operating temperature for the clamp-on sensor is 0 to 40°C (32 to 104°F).

Is there any special preparation required to properly setup and mount the HANI™ Clamp Sensor?

There is no special preparation or tools required to setup and mount the sensor, however, when setting up any sensor ensure the mounting area is clean, dry, and free from any debris.

How should the sensor be oriented on the pipe?

The sensor can be mounted on any straight pipe at least 2.5" long. It is suggested to mount the sensing surface on the bottom half of the pipe for best results.

Are other pipe diameters / sizes available?

Yes, other diameters / sizes are available. Please contact us to discuss your specific application.

How can I improve the accuracy of ±1.5°C with my industrial pipe application?

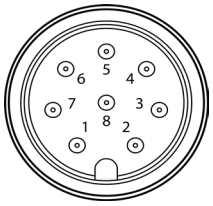
Industrial pipes have a wide variety of tolerances, surface finishes, and coatings which can affect the accuracy. An in-situation user calibration can be done to improve the accuracy for your specific application. Use the free Omega Sync software to do a 1 or 2-point calibration with the HANI™ Clamp Sensor and an in place immersion sensor. See the user manual for additional details.

Other than water-based process mediums, can other liquids and viscosities be measured?

Yes, please contact us to discuss your specific application.

M12 8-Pin Wiring

Pin	Name	Function	Wiring
Pin 1	Loop -	4 to 20 mA Return	4 to 20 mA
Pin 2	INTR	Interrupt Signal	Layer N
Pin 3	SCL	I2C Clock Signal	Layer N
Pin 4	SDA	I2C Data Signal	Layer N
Pin 5	Shield	Shield Ground	Layer N
Pin 6	Loop +	4 to 20 mA Source	4 to 20 mA
Pin 7	GND	Power Ground	Layer N
Pin 8	3.3VDD	Power Supply	Layer N



HANI™ Clamp Temperature Sensor for Industrial Plastic Pipes

Model Number	Process Temp Range	Pipe Size	Accuracy	Response Time	Features
HANI-C-1.0I-P-MA	0° (32°F) to 100°C (212°F)	1.0"	±1.5°C	30 sec (t63), 60 sec (t90)	—
HANI-C-1.0I-P-MA-CAL-3	0° (32°F) to 100°C (212°F)	1.0"	±1.5°C	30 sec (t63), 60 sec (t90)	Cal/Cert
HANI-C-2.0I-P-MA	0° (32°F) to 100°C (212°F)	2.0"	±1.5°C	30 sec (t63), 60 sec (t90)	—
HANI-C-2.0I-P-MA-CAL-3	0° (32°F) to 100°C (212°F)	2.0"	±1.5°C	30 sec (t63), 60 sec (t90)	Cal/Cert

CAL-3 option is a 3 point calibration at 10°, 50° and 90° C. CAL-4 option is a user selected number and value of temperature points, please contact us for a quote.

Layer N Smart Interface

Layer N Smart Sensing devices require an Layer N Smart Interface to operate and connect to your Layer N Ecosystem. There are both wired and wireless options. Omega Sync software is free and enables you to read the fluid temperature digitally in just a few seconds.

Model Number	Description
IF-001	USB Smart Interface
IF-002	RS485/Modbus Smart Interface
IF-006-1-NA	Wireless Interface 915 MHZ (for North America)
IF-006-1-EU	Wireless Interface 868 MHZ (for Europe)

Layer N Gateway

An Layer N Gateway is required to connect the Smart Interface and sensing device to the Layer N ecosystem.

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 Layer N Smart Sensors- 915 MHz
GW-001-2-EU	Wireless IIoT Gateway Standard, Ethernet connectivity, connects up to 100 Layer N Smart Sensors- 868 MHz
GW-001-3-NA	Wireless IIoT Gateway Standard, Ethernet connectivity, connects up to 100 Layer N Smart Sensors- 915 MHz
GW-001-3-EU	Wireless IIoT Gateway Standard, Ethernet connectivity, connects up to 100 Layer N Smart Sensors- 868 MHz
GW-002-1-LTE	Wireless LTE IIoT Gateway Pro connects up to 40 Layer N 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-F-FM	M12-8 pin female 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