HANI™ Tank Sensor - High Accuracy Non-Invasive Temperature Sensor for Metal Tank Applications

OE OMEGA™

Hybrid temperature sensing on metal tanks integrated with Omega Link connectivity

- Non-invasive temperature measurement
- Measure the fluid temperature inside of a metal tank
- Accuracy for Metal Tanks: ±0.5°C (±0.9°F) (stainless steel) ±1.0°C (±1.8°F) (other metals)
- Response time[1] = 5 sec (t63) / 10 sec (t90)
- 4 to 20 mA loop powered analog output
- 0 to 100°C process temperature range
- Available for metal tanks 2 feet in diameter or larger
- Omega Smart Core enabled
    - Data logging
    - Plug and play device detection
- IP65 environmental rating
- Patent pending

Ease of Installation

No cutting or drilling required

Unlike invasive sensors, HANI™ Tank Sensors mount to the outside of a metal tank and read the temperature of the process media inside the tank.

- No drilling
- No cutting
- No downtime

Non-Invasive & Non-Contact Operation

No penetration, no risk of contamination

The HANI™ Tank Sensor mounts to the outside of the tank and never comes into contact with the process media inside of the tank. This means there is no risk of contamination to the process during sensor installation or operation.

High Accuracy & Fast Response Times

Outperforms a surface sensor

Omega's patent pending *Hybrid Temperature Sensing* platform uses multiple sensors and a proprietary algorithm to achieve better accuracy and faster response times than a surface sensor.

Common Applications

New and retrofitting existing systems

Lower the total cost of ownership and reduce contamination risk without sacrificing performance by upgrading to a HANI™ Tank Sensor.

Specifications

Input Power

Voltage: 8 V DC - 28 V DC (loop powered)

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

Analog Output

Current: 4 to 20 mA
User scalable analog output, default scaling 0-100°C (32-212°F)

Process Parameters

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

Tank Materials: SS, CS, GS, CU, BR, AL

Tank Diameter: 2 ft or larger

Process Temperature Range: 0 to 100°C liquid (32-212°F)

Performance

Accuracy with fluid filled tank: ±0.5°C from factory and improved accuracy possible with in-situation 1 or 2-point calibration

Response Time (t63): 5 seconds

Response Time (t90): 10 seconds

Environmental

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

Rating: IP65 when mated

Mechanical

Dimensions:
111.1 W x 65.9 L x 43.8 mm H (4.38 W x 2.60 L x 1.72" 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 Omega Link integrated Smart Sensing devices. In addition to allowing for modular integration using any Omega Link Smart Interface, this powerful suite of advanced features enables alarms and notifications, data assurance, data logging, storage, wireless connectivity and SYNC configuration.

Frequently Asked Questions

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

Omega's innovative HANI™ Tank 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™ Tank Sensor?

Ambient temperature will not affect the reading of the HANI™ Tank Sensor. Operating temperature for the tank sensor is 0 to 40°C (32 to 104°F).
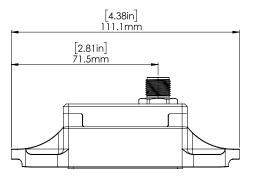
How should the sensor be oriented on the pipe?

The sensor can be mounted on any tank with a diameter of 2 feet or larger. It is suggested to mount the tank sensor with the studs oriented vertically.
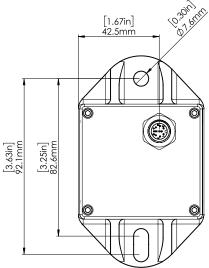
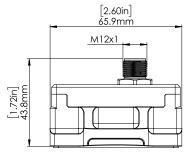### How can I improve the accuracy of the tank sensor in my tank application?

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™ Tank 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?

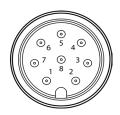Yes, please contact us to discuss your specific application.

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	Omega Link
Pin 3	SCL	I2C Clock Signal	Omega Link
Pin 4	SDA	I2C Data Signal	Omega Link
Pin 5	Shield	Shield Ground	Omega Link
Pin 6	Loop +	4 to 20 mA Source	4 to 20 mA
Pin 7	GND	Power Ground	Omega Link
Pin 8	3.3VDD	Power Supply	Omega Link

HANI™ Bolt-On Temperature Sensor for Metal Tank

Model Number	Process Temp Range	Tank Diameter
HANI-B-TANK-M-MA	0° (32°F) to 100°C (212°F)	≥ 2 ft

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. 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)

Omega Link Gateway

An Omega Link Gateway is required to connect the Smart Interface and sensing device to the Omega Link 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 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 Standard, Ethernet connectivity, connects up to 100 Omega Link Smart Sensors- 915 MHz
GW-001-3-EU	Wireless IIoT Gateway Standard, Ethernet connectivity, connects up to 100 Omega Link Smart Sensors- 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-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