

The SS-002-1 offers a configurable mix of any three of the four internal sensors: Temperature, Humidity, Barometric Pressure, Ambient Light, **AND** one external sensor option: Thermocouple, RTD, or DIN (contact closure).

### Setting Alarms

To configure the alarms in your SS-002 using SYNC, follow these steps:

**Step 1:** Click the  icon next to the input you wish to set an alarm for.

**Step 2:** Set the parameters for your alarm and click Save.

Condition:	High Threshold	Duration (s)
Sensor:	Above 0 for 0	
Input:	0	0
Action:	Transmit Notification	Turn On
Change:	Transmission interval to 0 (s)	Output
Recovery:	Clear Alarm	After 0 And Reset
	Transmission interval	
	Save	Cancel

### SYNC - Device Settings

Users can perform functions such as firmware updates and factory resets of the SS-002 by navigating to the **Device Settings** tab of SYNC configuration software.

## SS-002 USB Powered Range Boost

### Range Boost Mode

When the SS-002 (-NA) device is powered directly by a micro USB 2.0, the Smart Sensor will also enter a Range Boost mode which will enhance the wireless range or coverage of the Smart Sensor up to 3.2 km\*.

\*Clear line of sight. Actual range may vary depending on environment.

## FCC Statement

Contains FCC ID: WR3SS001XNA

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**FCC Caution:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

### FOR MOBILE DEVICE USAGE (>20cm/low power)

#### Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

## Industry Canada Statement

Contains IC ID: 8205A-SS001XNA

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.	Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
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## WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

**OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by the company will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY:** The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

**CONDITIONS:** Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

## RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair or calibration,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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MQS5823/1022



## SS-002 (-NA)

### Layer N Wireless TC and RTD Smart Sensor with Cloud Connectivity



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The information contained in this document is believed to be correct, but OMEGA accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

## Introduction

**Important:** Do not power on the Layer N Gateway or Smart Sensor before Gateway registration is complete.

Use this Quick Start Guide to set up your Layer N SS-002 TC and RTD Smart Sensor.

## Materials

### Included with your SS-002

- Layer N SS-002 unit
- Quick start guide
- 2x AA alkaline batteries
- Sub GHz Antenna
- Terminal block connector

### Additional Materials Needed

- A Windows 7,8, 9, 10, or 11 OS PC or laptop with Omega's free SYNC configuration software
- A compatible Layer N Gateway
- A Layer N Cloud account or a qualifying Omega Enterprise Gateway license tier (Pro, Business, or Business Pro)

### Optional Materials

- External TC, RD, or Contact Closure
- Micro USB 2.0 (for SYNC configuration)
- SYNC Configuration software  
-Downloadable on the OMEGA website

## Before you Begin

Before you begin setting up your SS-002, ensure you have created a Layer N Cloud or Omega Enterprise Gateway account and registered the Layer N Gateway that will be paired with the SS-002 device.

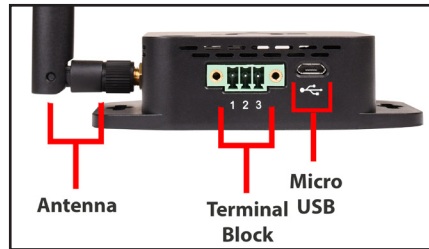
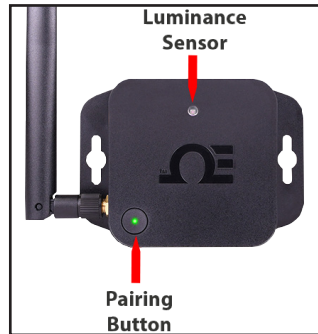
During the gateway setup process, the gateway will automatically download the latest firmware and re-boot. Once the gateway is registered and the pairing button LED is green you may continue with the SS-002 installation.

## SS-002 Hardware Setup

**Step 1:** Install the antenna to the side of the connector on the SS-002 unit.

**Step 2:** Insert the 2x AA batteries into the battery compartment located on the underside of the SS-002 unit.

## Layer N SS-002 Overview



**Important:** The battery polarity is marked inside the compartment. Promptly remove dead batteries to prevent loss of data and potential damage due to leaking batteries.

External Sensor	Pin 1	Pin 2	Pin 3
Thermocouple	TC1 +	TC1 -	Not Used
RTD	2-Wire	Color 1	Color 2
	3-Wire	Color 1	Color 2
	4-Wire	Color 1	Color 2
Dry Contact	Switch	Not Used	Common

**Note:** For RTD connections, Pin 3 is the excitation constant current source. For **2-Wire** RTD connections, a short copper wire is needed from Pin 1 to Pin 3. For **4-Wire** RTD connection, only connect one "Color 2" wire at Pin 2. The second "Color 2" wire needs to be cut.

The **Pairing Button** of the Smart Sensor will power up to a solid orange LED light in the center of the pairing button indicating that the device has been successfully powered on. Refer to the LED Status indicator table below:

LED Color	Status
Amber/Orange (solid)	SS-002 is powered on; not connected to a Gateway
Green (blinking repeatedly)	SS-002 is in Pairing Mode
Amber/Orange (blinking repeatedly)	SS-002 is reconnecting to a paired Gateway
Green (flash periodically)	SS-002 is communicating to a Gateway
Green (solid)	SS-002 is performing a radio firmware update
Red (solid)	The reset button has been held for a radio factory reset
Red and Green (blinking)	A password error has occurred
No Light	The SS-002 is asleep or the battery is drained

## Pairing to your Layer N Gateway

Once the **Pairing Button** displays a solid orange LED light in the center of the pairing button, your Smart Sensor is ready to be connected to a Layer N Gateway. Pairing your SS-002 with a Layer N Gateway is made easy with a one-button pairing system between the two devices.

**Step 1:** Push the pairing button once on your SS-002 unit. The LED status indicator will blink green indicating the device is in Pairing Mode.

**Step 2:** Quickly push the pairing button on the Layer N Gateway. The LED on the gateway will blink green indicating the gateway is in Pairing Mode.

When the Smart Sensor has been successfully paired to your Layer N Gateway, the green LEDs on both devices will stop flashing within 2 minutes.

The Smart Sensor LED will periodically flash green each time data is transmitted to the gateway.

As measurements are transmitted, you will begin to see data appearing on the Layer N Cloud or OEG interface. The transmission interval can be adjusted from the Layer N Cloud Interface or from the OEG interface, depending on which platform the Gateway is connected to.

## View Readings on Layer N Cloud or OEG

Once your SS-002 has successfully paired to your registered Layer N Gateway, the SS-002 will appear on the Layer N Cloud interface or the OEG interface and begin transmitting data.



For additional information on the customizable features made available through the micro USB connector, continue to the sections titled **Advanced Configuration with SYNC and Smart Sensor USB Connector**.

## Advanced Configuration with SYNC

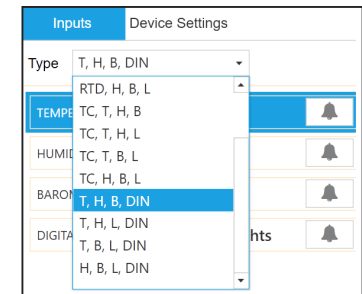
**Note:** SYNC configuration software is downloadable on the OMEGA website.

The SS-002 can be configured using SYNC configuration software by connecting through the micro USB 2.0 port. SYNC can be used to configure alarms in the sensor, set device passwords, and update firmware.

### Sensor Mix Configuration

To configure the sensor mix in your SS-002, connect a micro USB 2.0 cable from your Smart Sensor device to your PC or laptop running SYNC configuration software.

**Step 1:** Once your device has been auto-detected by SYNC, click the **Type** dropdown in the Inputs interface.



The **SS-002-0** offers a configurable choice of one external thermocouple, RTD, or DIN (contact closure).