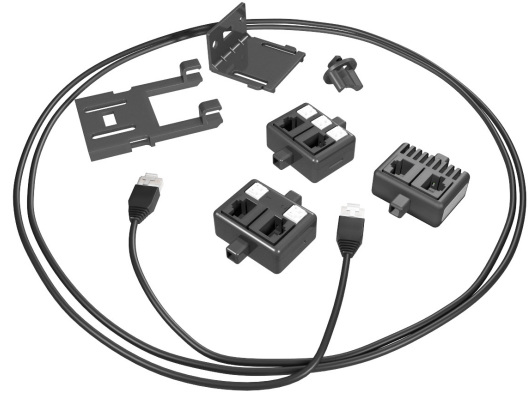# LIEBERT® SN™ MODULAR SENSORS
Quick-Start Guide

Description

This guide provides installation instructions for the following Liebert SN **modular sensor** models:

- **SN-T** - Single temperature probe   1 probe
- **SN-TH** - Single temperature probe   2 probes
  plus single humidity probe
- **SN-2D** - Door switch, 2 inputs   1 probe
- **SN-3C** - Digital input, 3 inputs   1 probe

Each modular sensor is shipped with a 6.6 ft. (2m) cable for connection to a Liebert monitoring product.

- Liebert SN sensors may be connected in a string, including a combination of modular and integrated sensors. **Integrated sensors** are attached to a single cable, available in these versions: one temperature probe, three temperature probes and three temperature probes plus one humidity probe (4 probes).
- The maximum string length is 65.6 ft. (20m); the maximum number of probes that may be connected depends on the Liebert monitoring product (see the Liebert product user manual for details).

Liebert SN sensors may be placed in any area—for example, in a Knurr® rack—to monitor temperature and humidity levels, door switches and digital inputs such as smoke or water detectors.

What's Included

Liebert SN modular sensors are shipped with the following components:

Description	Quantity for Model:				Description	Quantity for Model:			
	SN-T	SN-TH	SN-2D*	SN-3C		SN-T	SN-TH	SN-2D*	SN-3C
Number and Type of Sensors:					Dual Lock™ Fastener 0.5 ft. (0.15m)		1		
Temperature Sensor	1	—	—	—					
Temperature & Humidity Sensor	—	1	—	—	Cable Tie		2		
Door Switch, 2 Inputs*	—	—	1	—	RJ45 to RJ45 Cable 6.6 ft. (2m)		1		
Digital Input, 3 Inputs	—	—	—	1					
Number of Probes	1	2	1	1	Alcohol Pad		1		
Sensor Bracket - Base	1				Fastener 1/4 Turn High Pro		1		
Sensor Bracket - Support	1								
Screw 8-32 x 7/16	2				Quick-Start Guide		1		

* The SN-2D sensor will work with a kit available from Emerson Network Power (P/N AD-2D-DCM) or with a generic door switch.

Installation

Follow these four steps to mount and connect sensors.

Step 1   Record the Sensor Address

During configuration, the Web interface will display the addresses of all connected sensors. You will need to be able to identify which address belongs to each sensor.

Be sure to make a note of each sensor's address before mounting and connecting sensors.

The sensor address can be found on the sensor itself (modular sensors) or the RJ45 end of the sensor cable (integrated sensors), shown in the examples at right.

MODULAR SENSOR
Address for one sensor:
  1 temperature sensor (T)
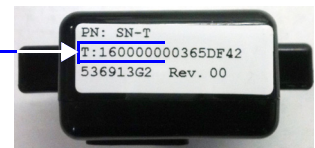
INTEGRATED SENSOR
Addresses for four sensors:
  3 temperature (T1, T2, T3)
  1 humidity (H2)
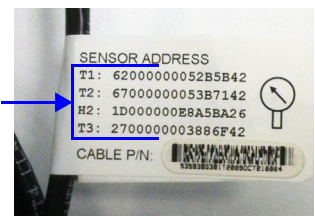
Step 2   Mount the Sensor

The sensor may be mounted in a Knurr rack or another type of rack. For temperature and humidity sensors, be sure to choose a place with unobstructed airflow—for example, on the rack door. Check to make sure that the sensor does not cover any vents that might impede airflow.

A factory-supplied bracket and several types of fasteners offer various options for rack mounting:

Use in:	Materials Needed	Factory-Supplied
• All mounting options: A - D	• Bracket base & sensor support	✔
• Option A - Mount on a Knurr Rack Frame 19-Inch Rail	• Quarter-turn tool-less fastener	✔
• Option B - Mount the Sensor on the Rack Door	• Screws *(Knurr Rack only)*	✔
	• Cable ties *(all types of racks)*	✔
• Option C - Mount the Sensor on a Flat Surface	• Dual Lock fasteners	✔
• Option D - Mount the Sensor on the Rack Rails	• Standard panhead rack screw	Not supplied

Assemble the Sensor and Bracket

If using the factory-supplied bracket, follow these steps to assemble the two parts of the bracket and attach the sensor to the bracket:

- The factory-supplied bracket has two parts—the support base and the sensor support, as shown at right. Insert the support base into one end of the sensor support.
- Snap the sensor into the other end of the sensor support.
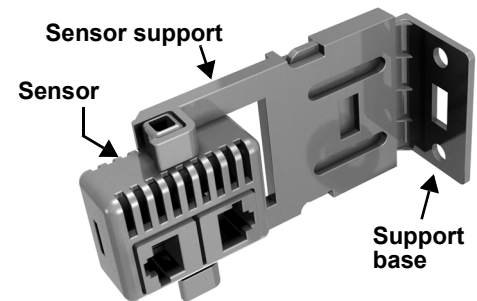
Choose a Rack Mounting Option

Determine where to place the sensor in the rack and use one of the following methods:

- ### Option A   Mount on a Knurr Rack Frame 19-Inch Rail

  To mount the sensor on the frame or optional 19-inch rail of a Knurr rack, use the factory-supplied quarter-turn, tool-less fastener to secure the sensor and bracket to the frame or rail (see **Figure A**).

  - Place the sensor in the factory-supplied bracket (see **Assemble the Sensor and Bracket**).
  - Insert the quarter-turn tool-less fastener through the slots in the sensor support or the base of the assembled bracket to mount the sensor on the rack frame or optional 19-inch rails.
  - As the name signifies, the quarter-turn fastener requires only a 1/4 turn clockwise to fasten the sensor securely in place.

**Figure A   Sensor mounted on Knurr rack frame**
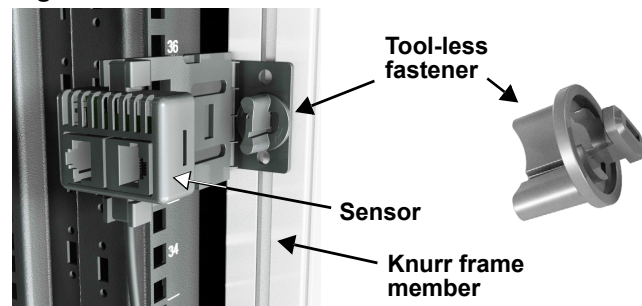
- ### Option B   Mount the Sensor on the Rack Door

  To mount the sensor on a rack door, use the factory-supplied screws (Knurr rack only) or cable ties (all types of racks) to secure the sensor and bracket to the door (see **Figure B**).

  - Place the sensor in the factory-supplied bracket (see **Assemble the Sensor and Bracket**).
  - *For Knurr racks:*
    - Use the factory-supplied screws or cable ties to mount the sensor and bracket on the rack door.

      If the door has a slot similar to the one on the Knurr rack frame member (see **Option A**), you can attach the sensor support bracket by inserting the quarter-turn tool-less fastener through the center slot in the bracket.
  - *For other types of racks:*
    - Use the factory-supplied cable ties to mount the sensor and bracket on the rack door. (The bracket is not necessary if the sensor is mounted on the door's perforated holes using cable ties.)

Figure B   Sensor mounted on rack door
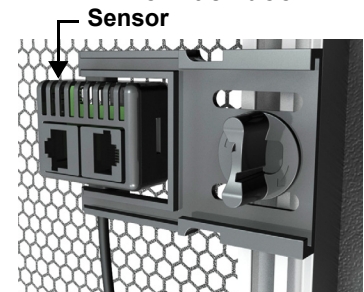
- **Option C   Mount the Sensor on a Flat Surface**

    To mount the sensor on a flat surface in any rack:

    - Place the sensor in the factory-supplied bracket (see **Assemble the Sensor and Bracket**).
    - Use the provided alcohol pads to clean the rack surface and bracket prior to affixing the factory-supplied Dual Lock fasteners.
    - Use the Dual Lock fasteners to affix the sensor and bracket to any flat surface in the rack or on the door.

- **Option D   Mount the Sensor on the Rack Rails**

    To mount the sensor on the rails of any rack:

    - Place the sensor in the factory-supplied bracket (see **Assemble the Sensor and Bracket**).
    - Use the factory-supplied bracket and a standard panhead rack screw (not supplied) to mount the bracket on the rack rails.
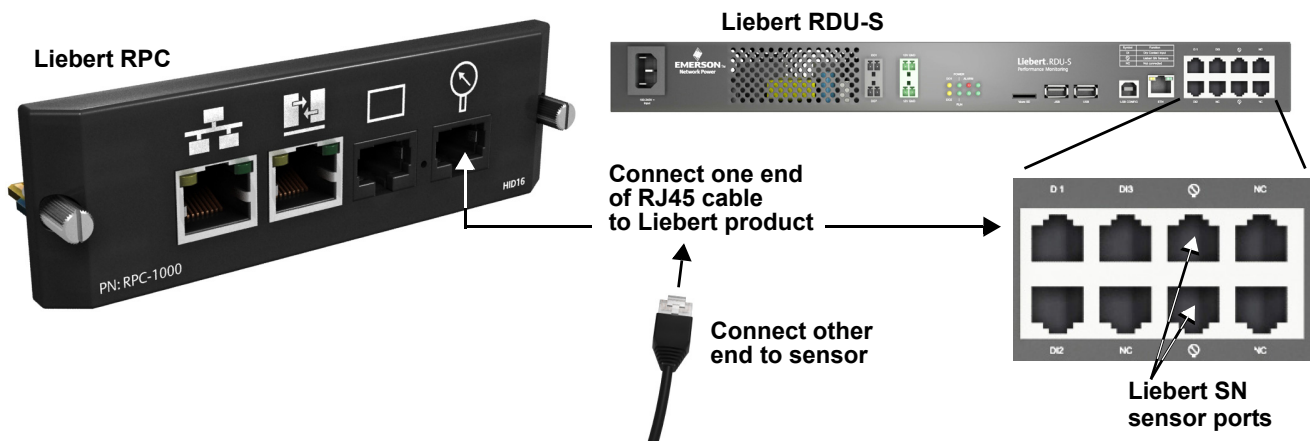
Step 3   Connect the Sensor

Each sensor is shipped with a cable to connect to the Liebert SN sensor port on your Liebert product. You may use this cable or another standard straight-through cable to connect to the Liebert monitoring device or to another modular or integrated sensor.

To connect a sensor or string of sensors to a Liebert product:

- After securely mounting the sensor (**Step 2**), look for the sensor icon on the Liebert product to identify the Liebert SN sensor port.

Icon	Description	Purpose
	Liebert SN sensor port	Use this port **ONLY** to plug in optional sensor accessories.

- Insert either end of an RJ45 connector on the factory-supplied RJ45-RJ45 cable (or user-supplied cable) into the Liebert SN sensor port on the Liebert product (see user manual). Some examples are shown below.
- Connect the other end to the sensor. If using multiple sensors, connect them in a string using the factory-supplied RJ45-RJ45 cables or other straight-through cables. See the user manual for your Liebert product to determine the maximum number of sensors that may be connected on a string.

Step 4   Configure the Sensor

Use the Web interface to acknowledge the connection and configure sensor parameters. You will need the sensor address recorded in **Step 1** during configuration. Examples of parameters to be configured include:

- Assign a label to each sensor.
- Configure temperature or humidity thresholds or other parameters to trigger warnings and alarms.

Refer to the user manual of your Liebert product for detailed configuration instructions.

Specifications

Dimensions - W x D x H, in. (mm)	2 x 3/4 x 1-5/8 (51 x 19 x 41)
Weight, lb. (kg)	
Net Weight	0.25 (0.11)
Shipping Weight	0.44 (0.2)
Temperature (SN-T and SN-TH models), °F (°C)	
Ambient Operating Environment	41 to 131 (5 to 55)
Temperature Sensor Range	41 to 131 (5 to 55)
Accuracy	±1.1 (±0.5)
Humidity (SN-TH models)	
Humidity	10 to 95% RH (non-condensing)
Accuracy	±3.5% RH
Altitude, ft. (m)	Up to 6,500 (2000)
Door Switch Supports (SN-2D models)	Non-powered door switch contact rated for minimum of 5V, 1mA
Dry Contact Supports (SN-3C models)	Non-powered contact rated for minimum of 5V, 1mA

User Manuals

This guide is designed to provide the information needed to install a Liebert SN modular sensor in a Liebert product. For complete details on installing and configuring the sensor with your Liebert product, consult the user manual for your Liebert product, available online at www.liebert.com.

Emerson Network Power highly recommends that new users consult the user manual.

Compatible Liebert Products

Liebert SN modular sensors are compatible with many Liebert products. Some examples are:

- The Liebert MPX™ is an Adaptive Rack PDU (power distribution unit) built with modular and scalable components that can be installed and reconfigured on-site to meet varying input and output power connectivity needs. The Liebert RPC™ (Rack PDU Card) is an optional accessory for the Liebert MPX, but is required for connecting the Liebert SN.
- The Liebert MPH™ is a single unit with fixed capacity, input and output. The Liebert RPC is factory-installed in the Liebert MPH.
- The Liebert RDU-S is an Ethernet-ready, Web-enabled device designed to provide a consolidated view of your monitored environment. The Liebert RDU-S is capable of monitoring temperature, humidity, door status, digital inputs, digital outputs, cameras and more.

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