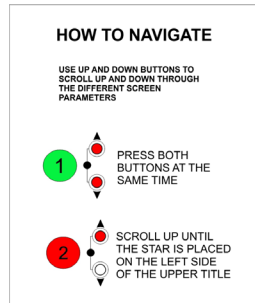


## NAVIGATION MAP

The HSM is equipped with a simple LCD display and a set of buttons which allow for navigation as well as basic data display and configuration as shown below.

UPPER LEVEL MENU	SUBMENU	PARAMETER MODIFICATION



Installation of the GraceSense™ Hot Spot Monitor (HSM) has been engineered to be simple and straightforward. This document will describe in detail the 3 steps needed for installation. No specialized knowledge of fiber optics is necessary. A basic understanding of electrical equipment topology and mounting methods is required.

## REQUIRED FOR INSTALLATION

### Tools for Fiber Mounting:

- Adjustable Wrench
- 1.5 mm Allen Key
- Guillotine Cutter

### Components for Hardware Installation:

- 35 mm DIN rail (6"-8") and mounting hardware
- CAT5 Ethernet cable (if connecting to SCADA or computer.)

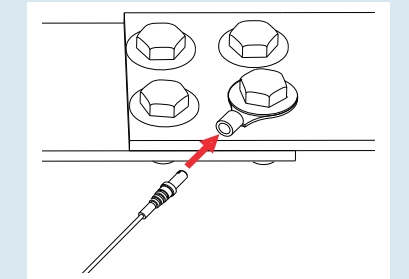
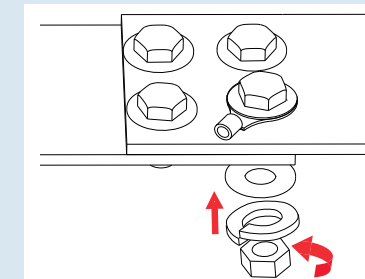
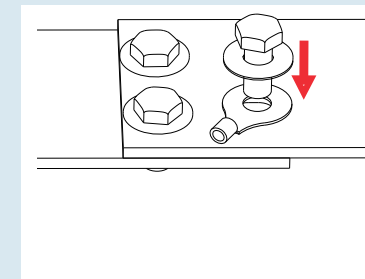
### Power Supply Requirements:

- Voltage: 12-24 VDC (0.12A@24VDC)
- Power: 3 Watts (Max)

## 1. MOUNTING AND FIBER INSTALLATION

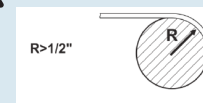
### A. Secure the mounting fixture to Busbar and Connect Fiber

- I. Insert the screw with the washer through the ring-type connector and busbar.
- II. Insert the washers and secure it with a nut. Ensure the hole for fiber insertion is pointed in the direction of the fiber routing.
- III. Insert fiber into the holding fixture and secure it with a 1.5mm hex screwdriver.



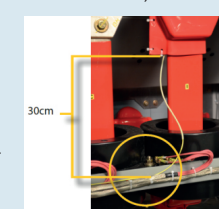
### B. Route the fiber to Low-Voltage Compartment

**!** DO NOT bend fiber tighter than 12mm (1/2") radius

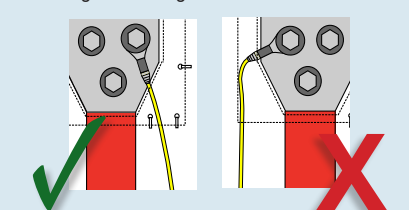


**!** Keep away from sources of excessive heat whenever possible. Fiber probe shall not be attached to surfaces with temperatures exceeding 120°C or 248°F unless used along with the high temperature probe (sold separately).

**!** DO NOT fasten or attach ANY mounting hardware (tie-wraps, etc.) to at least a 30cm (12") length of fiber between the portion of the probe at high voltage and its first non-energized point of contact.



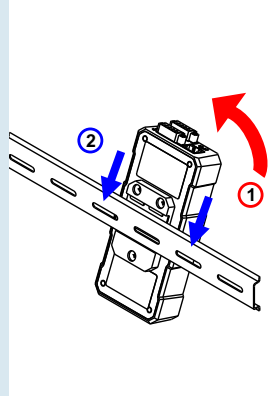
**!** Avoid running fibers on sharp edges or in the direction of the fold of the boot to minimize bending and damage to the fiber.



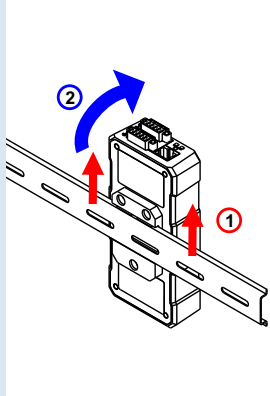
## 2. HARDWARE INSTALLATION

### A. Mount on 35 mm DIN Rail

Installing

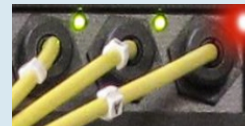
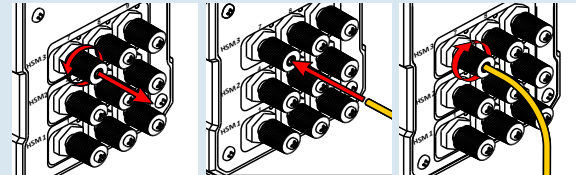


Removing



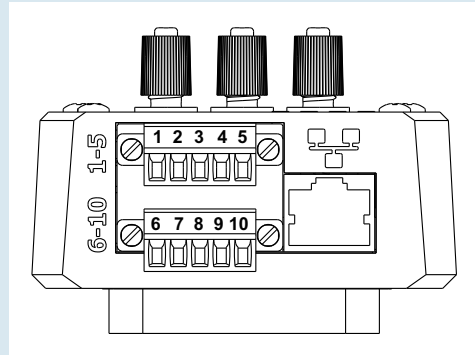
### B. Insert the Fibers

- I. Loosen the connectors by turning them counter clockwise. Remove the white plastic inserts within the connectors being used.
- II. Insert the fibers until they come to a hard stop. DO NOT apply excessive force.
- III. Secure fiber retention nuts by screwing them clockwise.



View LEDs above the connectors to determine if a connection has been established. If a light remains red, ensure the probe is inserted properly and the fiber cut is clean. Re-cut if necessary.

### C. Connect Network and Power Wiring

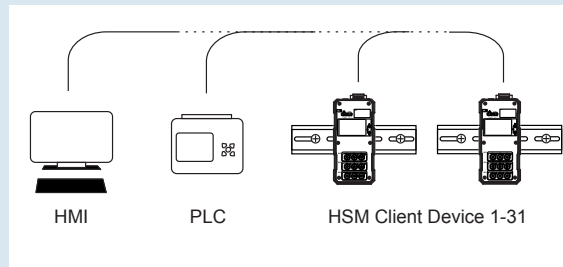


Terminals 1-5			Terminals 6-10		
Terminal Number	Name	Function	Terminal Number	Name	Function
1	V-	Input Voltage Negative	6	V-	Input Voltage Negative
2	V+	Input Voltage Positive	7	V+	Input Voltage Positive
3	Rx-	Inverting, 2-wire, RS-485	8	PE	Chassis Grounding
4	Tx+	Non-Inverting, 2-wire, RS-485	9	COM	Relay: Common Terminal
5	Shd	Shielding of Communication Pair	10	NO	Relay: Normally Open

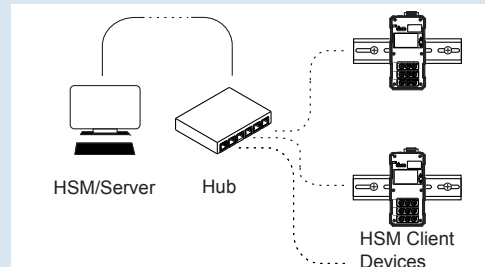
### D. Typical Network Connections

(within cabinet) or connecting with twisted pair cables (cabinet to cabinet)

Typical Serial Topology (MODBUS RTU)



Star Topology (Ethernet)



FOR MORE INFORMATION VISIT [GRACESENSE.COM](http://GRACESENSE.COM) OR CALL 1.800.280.9517

## 3. CONFIGURE THE COMMUNICATION SETTINGS

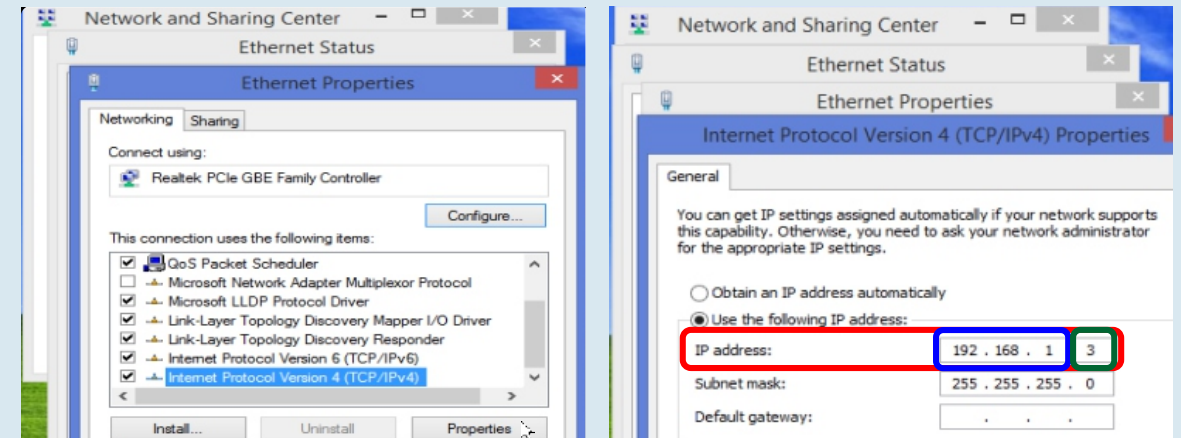
### A. Connect to the Device

- I. Connect a CAT5 Ethernet Cable directly between the Ethernet ports on the router and HSM to be configured.
- II. Ensure the power is connected to the device and a link is established, indicated by the LEDs.
- III. Type in the IP address in the browser (default: 192.168.1.50). A field has been provided on the back sticker in case it has been changed
- IV. From the home page you can navigate throughout the rest of the site by using the navigation bar on the left.
- V. For additional information on how to navigate the web utility, refer to: [gracesense.com](http://gracesense.com), product support section - where you can find helpful video tutorials.

**Note:** that if connecting via Ethernet to a computer directly, the Internet Protocol Version 4 IP address must be set in the network setting on the computer.

To do this, open Network and Sharing Center on the computer. Open the Ethernet Connection (or Local Area Connection) labeled "Unidentified network", then open Properties. From the List, select Internet Protocol Version 4 and then click Properties, where the IP address can be set.

The first 3 numbers (separated by periods) of the Internet Protocol Version 4 IP address should match that of the HSM being used, while the last number remains different. For example, if the HSM IP address is the default 192.168.1.50, the Internet Protocol Version 4 IP address can be set to 192.168.1.3.



### B. Factory Reset

To perform a factory reset:

- I. Insert an object, such as the end of a probe, into the hole labeled "RST" in the top left corner of the device and depress the concealed button while applying power to the device. Keep the button depressed until both the "SYS" and "COM" LEDs stay green (about 5 seconds).
- II. Release the button and the device will restart with its default values.

**GRACE SENSE Hot Spot Monitor HSM**  
HSM Web Utility

**Overview**

- Hardware Part Number: 10121
- Firmware: 60082-2.02.47
- Web Revision: 2.02.46
- Device Type: G-HSM-9SM
- Device S/N: 300326
- Channel 1-3 S/N: 207580
- Channel 4-6 S/N: 207581
- Channel 7-9 S/N: 207579
- Channel 10-12 S/N: N/A
- Channel 13-15 S/N: N/A
- Channel 16-18 S/N: N/A
- MCS 1 S/N: N/A
- MCS 2 S/N: N/A
- Slave ID: 1
- Modbus Port: 502
- Modbus Serial Baud: 19200
- IP Address: 192.168.1.50
- Subnet Mask: 255.255.255.0

