smart CHARGING TECHNOLOGIES

IoTAh

Quick Forklift Installation Guide

IoT TRUCK MONITOR

ELECTRICAL ACCESSORY FOR USE IN INDUSTRIAL TRUCKS
AS TO FIRE AND ELECTRIC SHOCK HAZARD ONLY

CLASSIFIED
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IoTAh

SMART CHARGING TECHNOLOGIES LLC
ORLANDO, FL USA
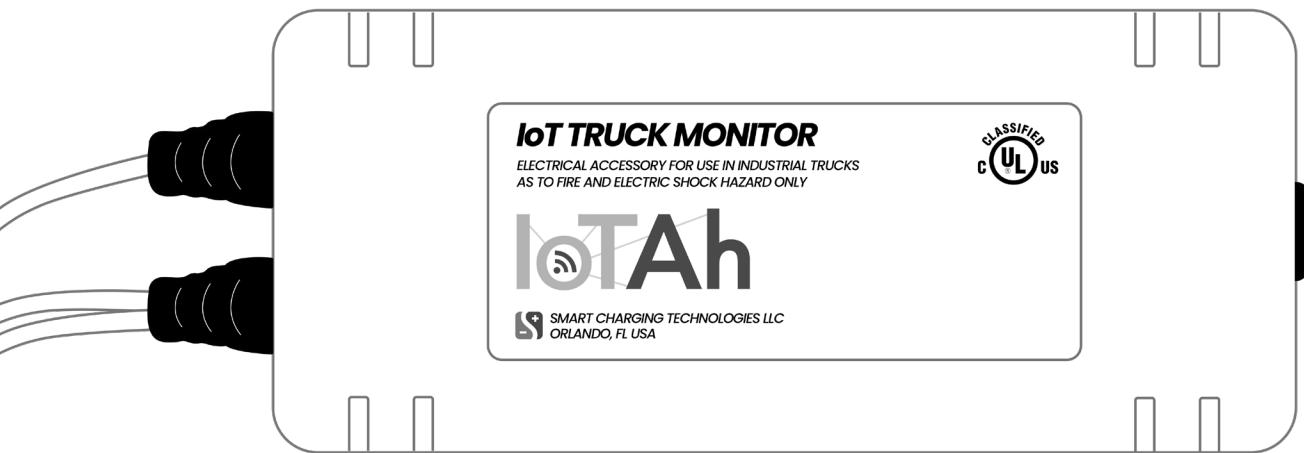
In the Box:

1x IoTAh unit
8x Zip ties
1x Quick Installation Guide
Double Sided Tape

Additional Tools Maybe Required:

Phillips head screwdriver
Wire cutter
Clean Cloth

Important Safety Instructions

While every care has been taken to ensure the completeness and accuracy of this manual, Smart Charging Technologies LLC assumes no responsibility or liability for losses or damages resulting from the use of the information contained in this document. Due to technical improvements, some information contained in this manual may change without notice.

Before attempting to install and begin logging data with the IoTAh unit, please read this manual

⚠ WARNING

1. **RISK OF ELECTRICAL SHOCK.** When working with batteries, extreme caution must be exercised. The installation should be performed by qualified personnel. Remove jewelry, wear protective clothing and eyewear (safety glasses), and exercise caution. Always follow the manufacturer's instructions for correctly installing batteries.

2. **RISK OF INJURY. DO NOT TOUCH THE SHARP NAIL PINS OF THE CLAMP-ON CONNECTORS**. The C-clamp connectors incorporate piercing type nail pins that have sharp tips. Be careful when handling and installing the clamp-on connectors to the Charger cables.

⚠ CAUTION

1. **RISK OF ELECTRIC SHOCK AND/OR ELECTRIC ENERGY - HIGH CURRENT LEVELS.** Do not touch uninsulated battery connectors or terminals. Be sure to discharge static electricity from tools and technicians by touching a grounded surface near the batteries but away from the cells and flame arrestors. All tools should be adequately insulated to avoid the possibility of shorting connections. Do not lay tools on top of the battery.

Technical Specifications

Nominal Truck/Battery Output Voltage	24V – 80V
Operating Voltage	12V – 110V
Maximum Charger Current	750A / ± 1A resolution
Operating Temperature	-25°C – 50°C
Communication Interface	Cellular or Wi-Fi
WiFi Range	100-300 ft
Protection	Reverse Polarity Protection
Mechanical	4.9" x 2.2" x 0.85"
Enclosure	Sealed, Splash Proof / UL 94V-5
Certification	UL/cUL

Calibration

The IoTAh unit is calibrated at the factory and no further calibration is needed.

IoTAh Unit Description

The IoTAh unit has two cable clamp-on connectors and a Hall-effect current sensor. The clamp-on connectors have a pin that pierces through the DC cable's insulation and connects to the bare copper conductor.

Hall Effect Current Sensor

Clamp-on Connectors

Power/Voltage Sense
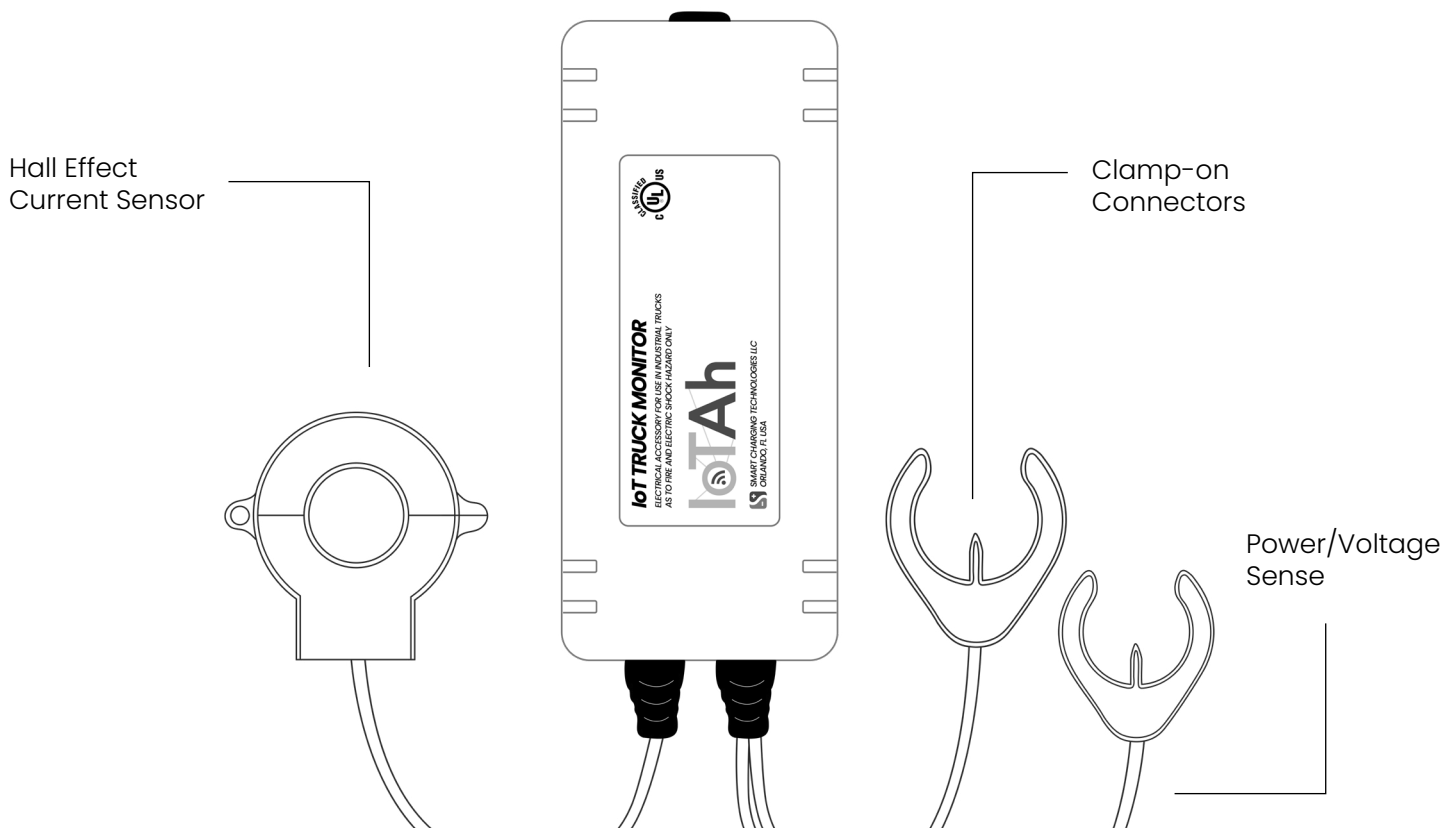
Hall Effect Sensor

The hall effect is a split core current sense device. The core halves can be opened by lessening the screw holding the halves and then tightening it once the hall effect is placed around the cable.
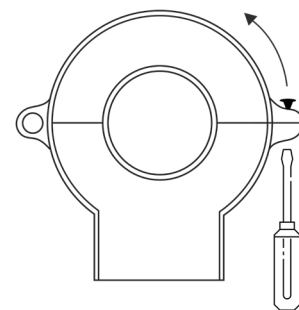
C-Clamp Connectors

⚠️ **WARNING:** The C-clamp connectors incorporate piercing type nail pins that have sharp tips. Be careful when handling and installing the clamp-on connectors to the forklift battery cables.

Sharp Piercing Nail Pin
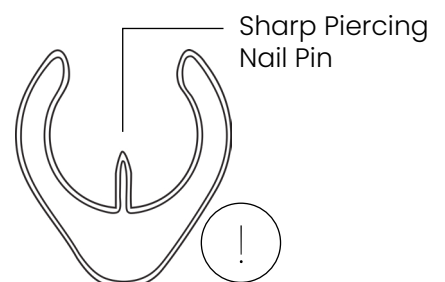
Download the Smart Telemetrics App

Before installing the IoTAh hardware onto a truck, **download the Smart Telemetrics App and create an account to manage devices in the dashboard.**

The Smart Telemetrics App can be found and downloaded from the Apple App Store and the Google Play Store.
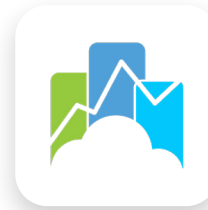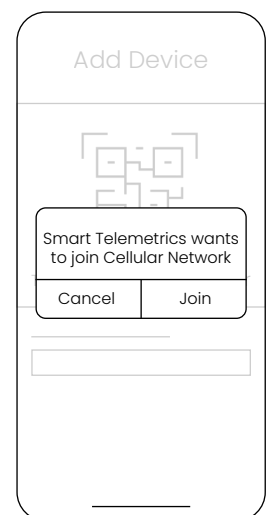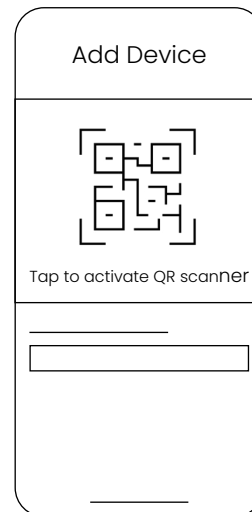

Connect IoTAh with the App

After installing the app and creating an account, go to *Quick Setup* under the main menu, then follow the on-screen instructions to complete the setup process.

1. Scan Device QR Code

On the *Add Device* page, you can either scan the QR code on your device or manually enter its information into the app. For the quickest and simplest setup, we recommend using the QR code scan option.

After scanning the QR code, a notification will appear asking permission for the app to join a Wi-Fi network. This network is the device's *Setup Cellular Network*, which is used to complete the setup process. Tap *Join* to connect to the device's setup network.

Add Device

Tap to activate QR scanner

Add Device

Smart Telemetrics wants to join Cellular Network
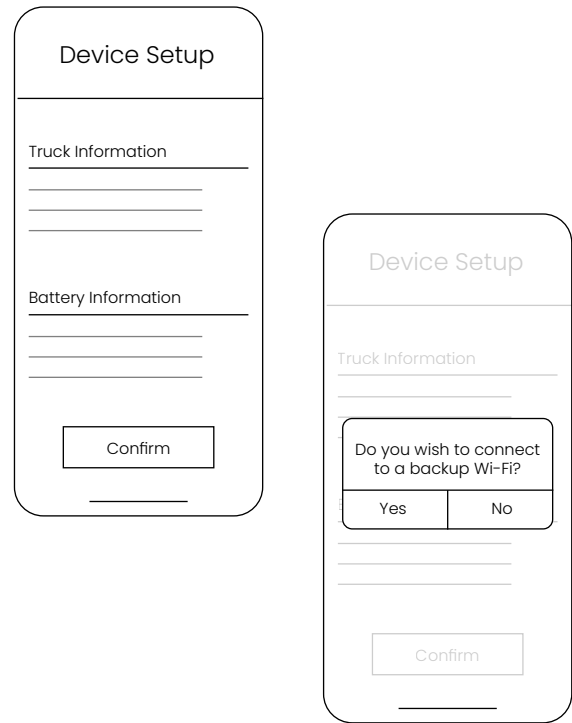
Cancel | Join

2. Device Setup

Once you've successfully joined the device's Setup Network, the app will prompt you to enter specific information about the forklift battery the unit is being installed on.

Providing this information is required to continue and complete the Quick Setup process.

Optional: connecting the device to a Wi-Fi network. If desired, select Yes, enter the Wi-Fi SSID and password, and tap Confirm. Once connected, the app will notify you that the setup is complete, and the device is ready for use.


IoTAh Hardware Installation

Please follow the listed steps below to properly install the IoTAh unit. *It is recommended to install this device on the forklift (truck) to achieve the best results.*
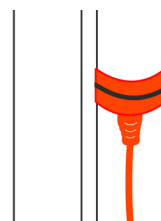
1. Positive Cable Installation

Connect the **RED** positive power/voltage sense lead to the **RED** positive forklift battery cable by gently opening the C-Clamp to fit around the cable and slowly pushing the nail pin of the C-clamp connector into the **RED** positive forklift battery cable.
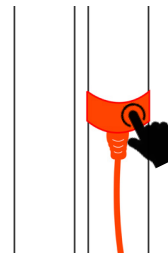
Make sure to firmly press straight down into the truck power cable and not at an angle to avoid nail pin bending and breaking.

Ensure that the nail pin is fully inserted and the C-clamp connector fully surrounds the cable and secured with one of the enclosed PVC tie wraps. Use a wire cutter to remove any excess tie wrap.

Use a wire cutter to remove any excess tie wrap.

2. Negative Cable Installation

Using the same procedure as the *RED* positive power/voltage sense lead installation, connect the **BLACK** negative power/voltage sense lead to the **BLACK** negative forklift battery cable.

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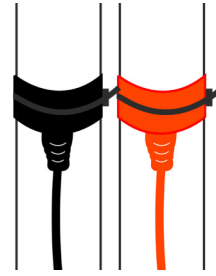
3. Hall-effect Current Sense Installation

Open the Hall Effect sensor and prepare to clamp it around the forklift's negative battery cable.

Install the Hall-effect on the **BLACK** negative forklift battery cable. **Arrow must point in the direction away from the battery toward the truck**.

Close the Hall-effect and tighten the screw. Use a zip tie to secure the cables.

↑ Connector Side ↑

▼ Truck Side ▼

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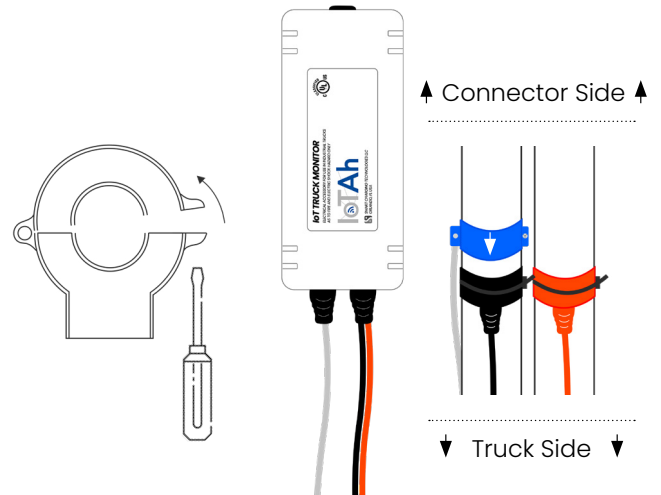
4. IoTAh Mounting

Identify a clean, flat area on the outside of the forklift that is secure and close to the battery compartment or cable exit point. This should be a surface that's protected from direct impact, water spray, or excessive vibration.

Clean the surface thoroughly using a dry cloth or alcohol wipe to ensure proper adhesion.

Use the double-sided tape provided to mount the IoTAh unit securely to this location.

Ensure the label is facing outward and visible for future inspection or replacement.

Once mounted, double-check that the cables are neatly routed and zip-tied to prevent movement or damage during forklift operation.
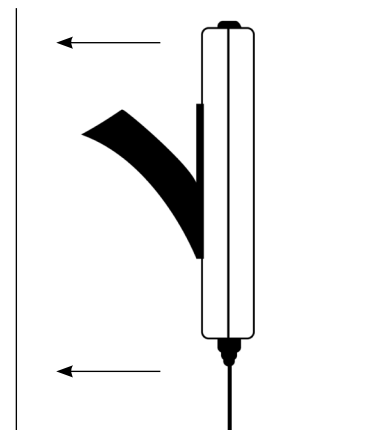
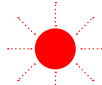# IoTAh Unit Power & Connectivity Test

Once the IoTAh hardware has been installed on the forklift and all connections are secured, power on the forklift to verify connectivity.

Ensure that the IoTAh unit will show a Solid/Blinking **BLUE** LED indicating that the unit is communicating with the access point. If no **BLUE** LED is shown, verify that the access point is plugged in and powered.

If a solid/blinking BLUE LED is shown, the unit is operational and can now be used on a truck.
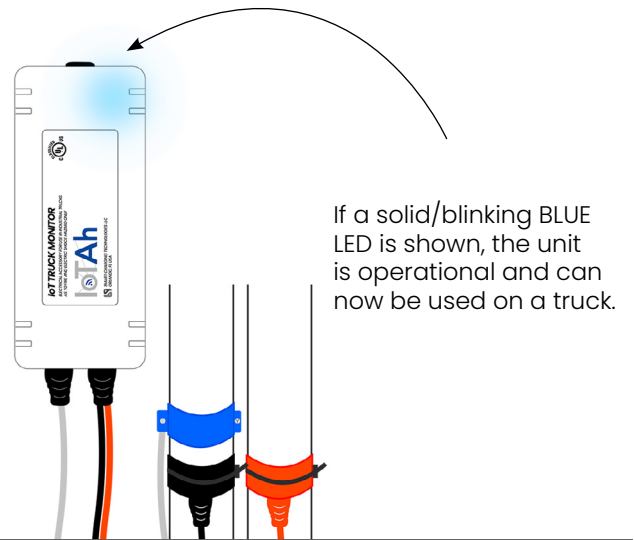
LEDs

Color

● Solid Green - Unit operational but not connected yet.

● Solid/Blinking Blue - Unit operational and connected to Cellular or WiFi router.

● Flashing Red - Hardware fault detected.

○ No Light - No power, check cable connections or contact support.

Thank You for Choosing Smart Charging Technologies

If you have a question about your IoTAh device, contact us by phone or through the Smart Charging Technologies website.

Contact Information

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