Edgecom
Energy

QUICK START
MANUAL

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Enabling responsible energy consumption through data and visibility

Visit edgecom.ai for more information.

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Table of Contents

Please record the DevEUI # on devices for registration later

Installation

1. Connect the Antennas to the Gateway

There are 3 antennas: the large one is for the **LoRa** terminal, the two smaller ones are for **DIV** & **ANT**.

2. Align the Antennas

Make sure to connect the antennas to the proper terminal on the device. Once secure, ensure the antennas are positioned upright for optimal connectivity.

3. Power the Gateway

Choose an area with good cell signal. Connect the AC power adapter to the gateway and plug the power adapter into the wall outlet. Make sure the PWR LED on the back of the device is green.

4. Check the LEDS

- 🟢 PWR LED should be green when plugged in.
- 🟠 DATA LED will flash orange if there is a connection.
- 🔴 DATA LED will flash red if no connection is detected.

Troubleshooting

1. **What happens if DATA+WAN LED is flashing red?**
   a. Change the location of the gateway to a place where your mobile connection works well.
   b. Check LTE antenna connection.

2. **Where is the best location to install the gateway?**

   The optimal location for the gateway is at an elevated position, away from metal enclosures, and within direct line-of-sight to the sensors.

3. **Is it waterproof?**

   The gateway is certified IP65; it is dust and water resistant, but not fully waterproof. We recommend a NEMA enclosure for outdoor installation.

4. **What should be the orientation of the antennas?**

   Antennas should be facing up vertically.

5. **What is the coverage area of each gateway?**

   The range is 300 meters with various obstructions and up to 2 KM in clear line of sight. If the signal is poor, find a location with less concrete obstructions.

PULSE COUNTER (HYDRO)

Installation

1. Connect KYZ

Connect KY or KZ wires from the KYZ output terminals on your utility hydro meter to read kW pulses. These wires should be connected to PINs 3 and 4 on your device, with the red K wire being essential. For KVAR pulse reading, use PINs 5 and 6 instead of PINs 3 and 4 on your device.

2. Power the Pulse Counter

Slide the toggle on; it is on the side of the device.

3. Check the LEDS

- 🔴 STATUS LED will flash in red 5x once turned on
- 🟢 MODE LED will then flash in green
- 🟠 MODE LED will flash orange if no connection is detected

4. Check the Connection

Log into the online portal to check if you are receiving data and that the connection is good.

Note: To ensure data accuracy, calibrate the device via our portal using the calibration coefficient (pulse weight from utility).

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STATUS

MODE

CONFIG

018188
00-04-a3-0b
-01-2a-33-af

Troubleshooting

1. **What happens if LED is red and no connectivity?**
   a. Turn the pulse counter off and on, and check it again.
   b. Bring pulse counter close to gateway (should not be further than 1000 ft).
   c. Ensure the pulse counter is not in a metal enclosure.
   d. Change the battery.

2. **How do I change the battery?**
   Open the lid and change the battery (Battery: 3.6 V, Class D), and turn on/off pulse counter.

3. **Is it waterproof?**
   It is rated IP65 and not completely waterproof. We recommend a NEMA Enclosure for outdoor installation.

4. **What if the value is being received as 0?**
   Ensure that the KY or KZ wires connected to the pulse counter are fully snug and tight. Any loose wires can cause issues reading the data.

Installation

1. Power

Connect the cable from the Pulse Counter to the Battery Pack.

2. Connect Wires

Connect wires from the battery pack to the adapter as follows:

Red wire (Pack) to Red wire (Utility Meter).
Black wire (Pack) to Black wire (Utility Meter).
Yellow wire (Pack) to Green wire (Utility Meter).

3. Check the LEDS

● STATUS LED will flash in red 5x once turned on.
● MODE LED will then flash in green.
● MODE LED will flash orange if no connection is detected.

Troubleshooting

1. **What happens if LED is red and no connectivity?**
   a. Turn the pulse counter off and on, and check it again.
   b. Bring pulse counter close to gateway (should not be further than 1000 ft).
   c. Ensure the pulse counter is not in a metal enclosure.
   d. Change the battery.

2. **What should we do if battery is dead?**
   Open the lid and change the battery (Battery: 3.6 V, Class D), and turn on/off pulse counter.

3. **Is it waterproof?**
   It's IP 65 and not completely waterproof. We do recommend to put into NEMA Enclosure for outdoor installation.

4. **Where is the best place to install the sensor?**
   Out of metal cabinet (metal acts as antenna for Lora module), and on top.

CT METER

Installation

1. Connect wires to CT Meter

The CT meter needs to be connected to the phase wires from your device. Attach the wire clamps connected to CT meter to the equipment you'd like to measure phase wires.

2. Confirm wires are in the correct direction.

The CT meter needs to be connected to the phase wires from your device. Attach the CT meter wire clamps to the equipment you'd like to measure phase wires.

3. Click the Button to Blink Once

Hold the silver button until a solid green LED blinks once (If it does not blink, hold it for 10 s to see solid green staying ON for 5 s). That indicates that the CT is communicating with the Gateway.

How to turn ON: Hold button for 5s until LED is solid green.

How to turn OFF: Hold button for 5s until LED blinks a couple times.

Note: To ensure data accuracy, calibrate the device via our portal.

Troubleshooting

1. **How do I know if CT is ON or OFF?**
To verify if the CT is connected to the gateway, simply press the button once.
- If a green flash occurs, it indicates that the CT is powered on and communicating with the gateway.
- If no green flash occurs, it could indicate:
  - CT is off.
  - CT is on but not communicating with the gateway.
- If there is no light after pressing, then restart the device. Hold down the button. A solid green indicates it is powering on, while flashing green means it's turning off. After turning on, press the button once, if no light appears, then bring the CT closer.

2. What happens if there is no data on the platform?

    a. Turn the CT off and on; check platform again.
    b. Bring the CT close to the gateway (max 1000 ft).
    c. Ensure the CT is not enclosed in a metal cabinet.

3. What if the current is negative on the platform?

Your wire was installed in the wrong direction. Open the CT and reverse the wire direction. (Should be L->K).

4. Why does the CT keeps turning off?

If the CT keeps turning off by itself, it could indicate a faulty battery. Replace the battery with a new 3.6V battery, and test whether the issue is fixed.

CO₂ SENSOR

Installation

1. Batteries

Ensure that there are 2 AA 3.6V Batteries installed.

2. Power On

Hold the Silver button until a Solid Green light appears.

3. Check LEDs

Click the button once. If there is a green light, it is ON and **communicating with gateway.**

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Troubleshooting

1. **What if there is no data on the portal?**
   1. Bring the CO2 sensor closer to the gateway.
   2. Turn it off and on, then check data again.
   3. Do not install inside of metal cabinet.

2. **How do I know if its on or off?**

   If the CO2 is communicating with the gateway, the one way to check is to click the button once, and if it flashes green, it is **ON AND** communicating with the gateway.

   If it doesn't flash green then its either

   1) Off

   2) On but not communicating with the gateway.

3. **Why is the data being sent inconsistent?**

   If CO2 sensor is sending data but does not send it at a consistent rate, bring the CO2 sensor closer. Try to replace the battery with 2 new 3.6V batteries.

4. **Is it waterproof?**

   No it is not waterproof. It has a IP65 rating and is recommended to use a NEMA Enclosure for outdoor installation.

MODBUS CONVERTER

Installation

1. Connect Wires

Locate the RS485 IN terminal on the lower part of the device. Ports A, B, C are labelled for each phase wire connection point. Make sure A (RX+) and B (RX-) of your device are connected to A and B in RS485 IN terminal respectively.

2. Power On

Connect the AC power adaptor of modbus reader to Vin + and -. Make sure the LEDs on the device is blinking, and the Power Sider is set to ON.

3. Check LEDs

- STATUS LED will flash in red once turned on
- MODE LED will then flash in green multiple times
- MODE LED will flash orange if connection is weak
- MODE LED will flash in red if no connection

MODBUS CONVERTER

Troubleshooting

1. **What if there is no data on the portal?**
   1. Bring the modbus closer to the gateway.
   2. Turn it off and on, then check data again
   3. Do not install inside of metal cabinet.

2. **How do I know if its on or off?**
   Click on the config button. If there is some type of light, then it is on.

3. **Why is the data being sent inconsistent?**
   If the modbus reader is sending data but does not send it at a consistent rate, bring the modbus closer.

4. **Is it waterproof?**
   No it is not waterproof. It is recommended to use a NEMA Enclosure for outdoor installation.

POWER METER

Installation

1. Clamp CT Around Wires

Each three-phase device is energized using three cables. Ensure CTs are correctly positioned around these cables.

2. Connect CT Wires to Power Meter

Each CT comes with a pair of wires. Connect the wires for phase A to terminals Ia and Ia*, those for phase B to terminals Ib and Ib*, and those for phase C to terminals Ic and Ic*.

3. Check Voltage Wires

Connect the three-phase voltages from the facility to the terminals labeled Ua, Ub, and Uc. Ensure that the Neutral is securely connected to the N terminal and the power meter display should be on.

4. Check LED of modbus reader

- 🔴 STATUS LED will flash in red once turned on
- 🟢 MODE LED will then flash in green multiple times
- 🟠 MODE LED will flash orange if connection is weak
- 🔴 MODE LED will flash in red if no connection

POWER METER

Troubleshooting

1. **What if there is no data on the portal?**
   1. Bring the gateway closer to the power meter.
   2. Turn off and on the power meter by fuse
   3. Do not install inside of metal cabinet.

2. **How can I understand Power Meter is ON or OFF?**
   Inspect the meter's display to confirm it is active. If there's no display, please examine the voltage wires leading to the meter.

3. **Is it waterproof?**
   No it is not waterproof and is recommended to use a NEMA Enclosure for outdoor installation.

4. **What if current is negative in the platform?**
   Your wire has been gone through CT in reverse (from L - K), you should open the CT and flip it.

5. **What if there is not power in the meter?**
   Check the voltage terminal and fuse on the cable, to make sure it has the power.

NOISE SENSOR

Installation

1. Power
Connect the AC power adapter to a wall outlet.

2. Confirm its on
Once plugged in, it should automatically turn on and the LED should be a solid green for 2 seconds.

3. Check LEDs
● Click the button once. If there is a green light, it is ON and **communicating with gateway**.

NOISE SENSOR

Troubleshooting

1. **What if there is no data on the portal?**
   1. Bring the Noise Sensor sensor closer to the gateway.
   2. Turn it off and on, then check data again
   3. Do not install inside of metal cabinet.

2. **How do I know if its on or off?**

   If the Noise Sensor is already ON and communicating with the gateway, the one way to check is to **click the button once**, and if it flashes green, it is **ON AND** communicating with the gateway.

   If it doesn't flash green then its either

   1) Off

   2) On but not communicating with the gateway.

3 **Is it waterproof?**

   No it is not waterproof. It has a IP65 rating and is recommended to use a NEMA Enclosure for outdoor installation.

Portal Setup

https://portal.edgecom.ai/

1. Create Account

To begin accessing data and information specific to your building, the first step is to set up an account. Customers are advised to follow the provided instructions carefully to create their account, ensuring secure and customized access to all necessary features and data.

2. Verify Account

Upon creating your account, a verification email will be sent to your registered email address. It is essential for you to access your inbox and follow the instructions provided in the email to verify and activate your account.

3. Setup Account

To fully complete your profile setup, you'll need to navigate through four essential categories:

1. **Create Organization:** *Here, you can enter your organization's name and list all the employees who should have access.*

2. **Add Products:** *This step allows you to select and purchase various products that your company needs access to.*

3. **Add Locations:** *Specify your company's building names and their respective locations.*

4. **Add Sensors:** *Input the DevEUI for each product, along with any relevant technical information.*

4. Exploring the Portal

To access the portal, your profile creation must first be approved by Edgecom Energy. Upon receiving approval, you will have the ability to view all data relevant to your building and devices.

Frequently Asked Questions

What is the Hub?

The LoRaWAN Hub acts as the central communication node in a LoRa-based Internet of Things (IoT) network. It functions as a gateway, linking numerous sensor devices within the network to our cloud servers. It supports bidirectional communication, enabling not only the transmission of data from the sensors to the cloud but also the delivery of commands from the cloud back to the sensors.

What is the range of the Gateway?

Our gateway has a range of up to 10km in open space, and around 2 to 5 km between buildings.

Does the Gateway require internet?

Yes. Whether its via LTE SIM or LAN, it requires internet access to send data to the cloud.

What is a Pulse Counter?

A pulse counter serves as a specialized electronic device engineered to count and record pulses generated by various types of sensors and instruments. The primary advantage of using a pulse counter lies in its ability to provide accurate, real-time data that is invaluable for both monitoring and control applications within a facility.

What is the range of the Pulse Counter?

The pulse counter has a maximum range of 16 km in an open and unobstructed space.

What is the range of the Pulse Counter?

The range of the Pulse Counter (Water) is 16km in an open and unobstructed space and 1 to 3 km with obstructions.

What is a CT Meter?

The primary role of these CT meters is to detect and quantify the current flowing through a device, gathering data about the device's power consumption, operational health, and efficiency. Once the CT detects the current, it transforms this data into a format that can be sent back to the hub and back to our servers.

What is a Modbus Converter?

The Modbus Converter acts as a bridge between traditional industrial devices and modern communication networks. Wired Modbus signals are translated and mapped into wireless LoRa signals, enabling older wired devices that support Modbus RS485 interfaces to leverage the long-range capabilities of LoRa, ensuring compatibility with our servers.

Explore Our Energy Solutions

AI Energy CoPilot

Our AI Energy CoPilot is a cutting-edge AI-powered energy management assistant poised to redefine the role of facility managers and owners.

dataTrack™

Fulfill your production potential with real-time energy data, costs, and machine status reports all in one place.

pTrack®

Say goodbye to guesswork, missed peaks, and too many curtailments. Hit 100% of peaks while averaging 9 or fewer curtailment calls using our prediction service.

NeuraCharge

Our AI-powered battery energy storage system (BESS) operator optimizes energy storage assets of different sizes, types, and usages.

Demand Response

Increase your Demand Response revenue and simplify your participation in the Capacity Auction Program.
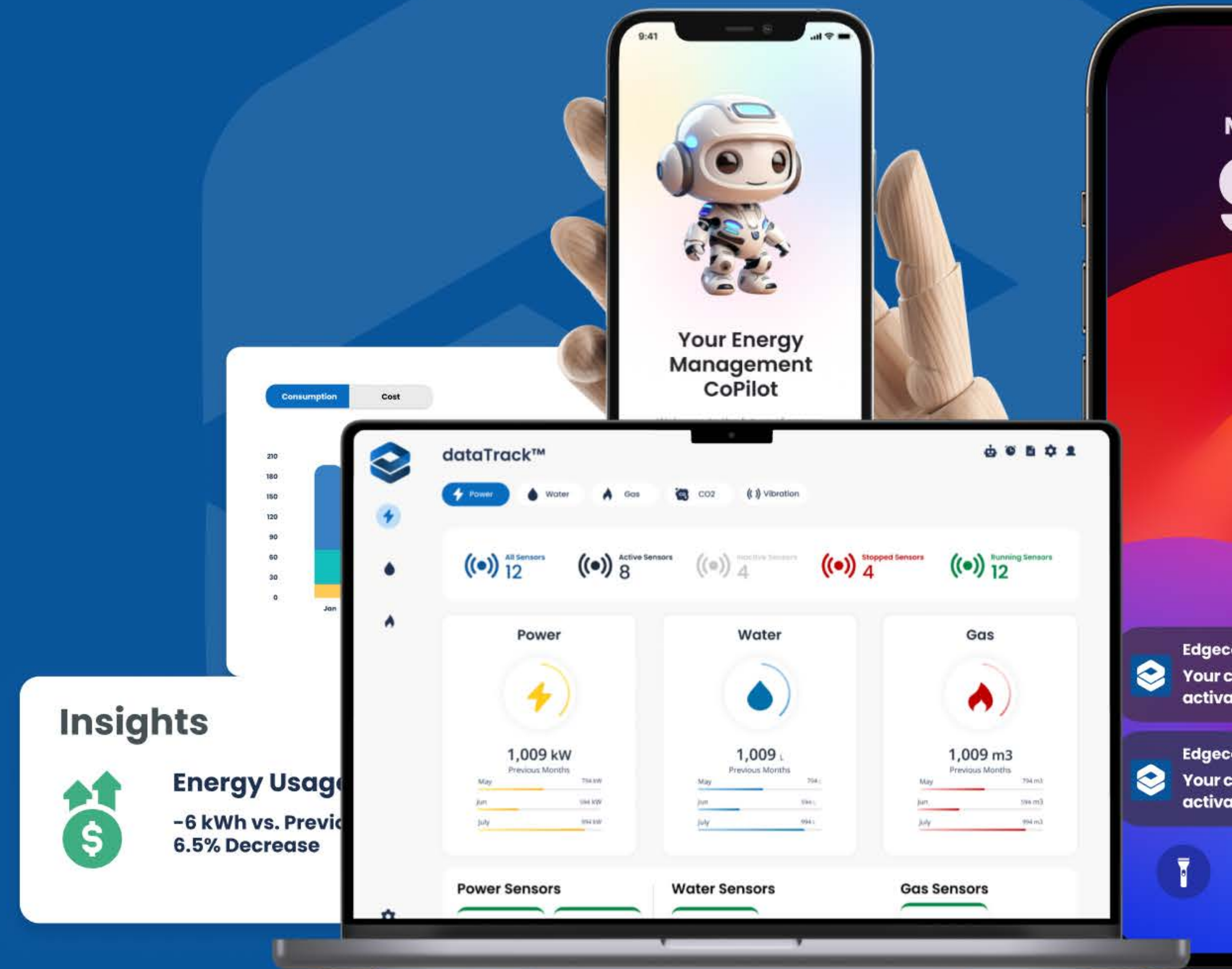
Contact Sales

Interested in one of our other energy solutions? Want to add additional IoT devices to your facility? Contact our sales team and we'd be happy to help!

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