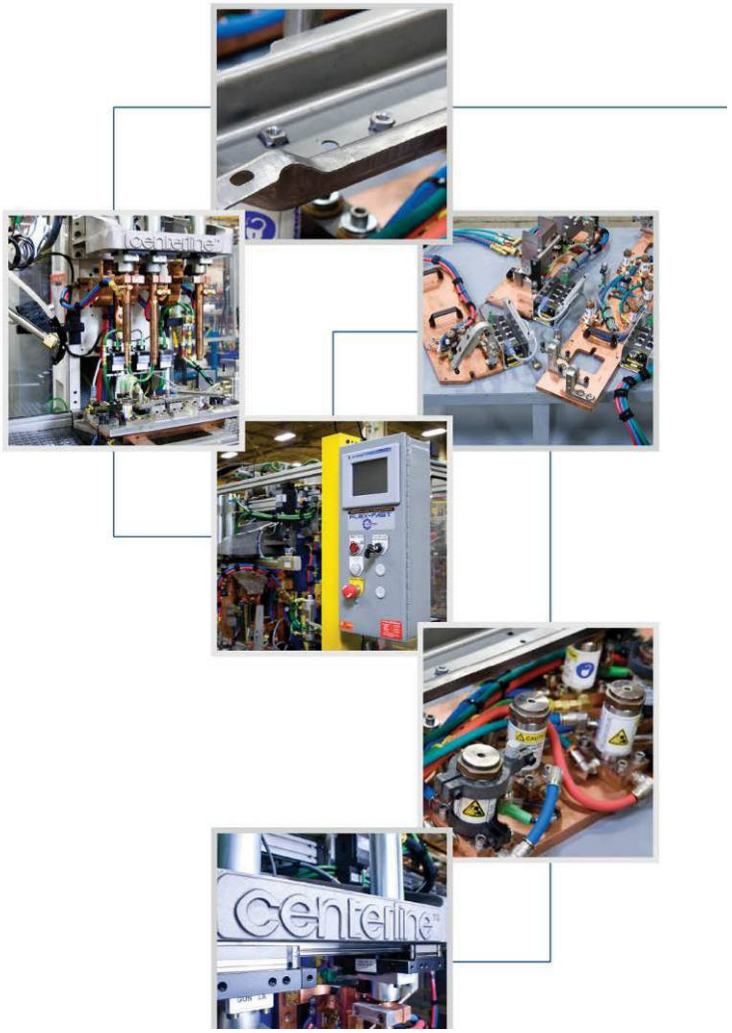

centerline®

Connecting Needs with Capabilities

CenterPoint™
Operational Intelligence to empower your business decisions

CenterPoint™ Edge

User Manual

Ver. 1.1 – October 2023

DP-CP-CPE-UM-1.1-1023

Product Sales and Support

The CenterPoint™ Edge is a device manufactured by:

For current contact information of various departments (Service, Sales, etc.), as well as CenterLine (Windsor) and Global Affiliate locations, please visit the Contact Us page on our website:

www.cntrline.com

Head Office:
CenterLine (Windsor) Limited
415 Morton Drive
Windsor ON N9J 3T8
Canada
CAN. 519.734.8464
U.S. 313.962.1448
Toll Free: 800.820.6977
E-mail: info@cntrline.com

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Preface

Who Should Use This User Manual

Any person installing, using, or maintaining a CenterPoint™ Edge device should use this manual.

Purpose of This Manual

This manual describes the function, installation, and service instructions for the CenterPoint™ Edge. For assistance with any other customized products or non-standard applications, additional support is available from CenterLine. Please refer to the inside front cover of this manual for CenterLine contact information.

	To prevent potentially serious or fatal injury, this manual must be read and understood in its entirety prior to installation, operation, or maintenance of any CenterPoint™ Edge device.
IMPORTANT	While every effort has been made to ensure that the product descriptions, procedures, and installation requirements included in this publication are accurate at the time of printing, CenterLine reserves the right to make product changes that might not be reflected in this document. Should you require additional information, please contact CenterLine, its agents, or distributors for assistance.

Conventions Used in This Manual

This manual uses the following notations:

- Bulleted lists – such as this one – provide information, not procedural steps.
- Numbered lists provide sequential steps to follow or hierarchical information.
- When we refer you to a different section of this manual or to other documentation, the section, chapter, and publication title appear in italics.

Safety Information

FCC Compliance Statement

Product Name: CenterPoint™ Edge
Model Number: 617-04800

Responsible party:
CenterLine (Windsor) Ltd
Address: 415 Morton Drive, Windsor ON N9J 3T8, Canada
Website: http://www.cntrline.com
Tel: 519.734.8464
Fax: 519.734.2004

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense

Important Safety Information

The CenterPoint™ Edge device is used in conjunction with other industrial equipment; therefore, as a supplement to the safety information offered in this manual for the CenterPoint™ Edge, all the safety considerations that pertain to the equipment used in conjunction with this device still apply and must be followed thoroughly.

Furthermore, all the existing plant safety regulations and other safety instructions from suppliers whose components are used with or around the CenterPoint™ Edge must be followed accordingly.

Any instructions contained in this manual that directly conflict with any other known safety procedures should be brought to CenterLine's immediate attention for clarification.

Equipment is not to be modified, adapted, or changed without consulting the relevant sections of this manual or the manufacturer (please refer to the inside front cover of this manual for CenterLine contact information).

Before any installation or maintenance work is started, all sources of energy should be removed from the surrounding equipment using proper LOCKOUT procedures for electrical, pneumatic, and water services.

Pneumatic and cooling water lines of the surrounding equipment represent potential hazards. Ensure all air and water lines are properly connected and secured prior to turning ON these services.

Proper housekeeping procedures must be used to keep the equipment free of dirt and obstructions.

Immediately report any equipment malfunctions and unusual conditions.

All the recommended personal protective equipment must be worn while operating, maintaining, or servicing the CenterPoint™ Edge and surrounding equipment.

Risk of explosion if battery is replaced by an incorrect type.
Dispose of used batteries according to the instructions.

Always read and understand the user manual and other applicable instructions pertaining to your equipment.

Handling the CenterPoint™ Edge

In order to prevent potentially serious personal injury, the CenterPoint™ Edge should be handled, installed, and operated according to the guidelines outlined in this document. Failure to follow the guidelines set forth here will bear unexpected and potentially dangerous results.

Potential Hazards Related to CenterPoint™ Edge

The CenterPoint™ Edge has no specific hazards related to it. However, the CenterPoint™ Edge is used in conjunction with other equipment such as welding equipment and machinery, robot, air supply, etc., therefore the user should be aware of the warnings, hazards, and precautions related to the use of the surrounding equipment.

Lockout Equipment

Before starting to install / uninstall the CenterPoint™ Edge, ensure that the surrounding equipment is disconnected from all sources of power and is in the lockout state.

Before turning ON the equipment, make sure all components are assembled properly.

Equipment Overview and Integration

Intended Use of Equipment

The CenterPoint™ Edge is a device that bridges the PLC network of a machinery and the CenterLine® Web Portal. The CenterPoint™ Edge is capable of storing PLC data, and will transmit data when the internet connection is available.

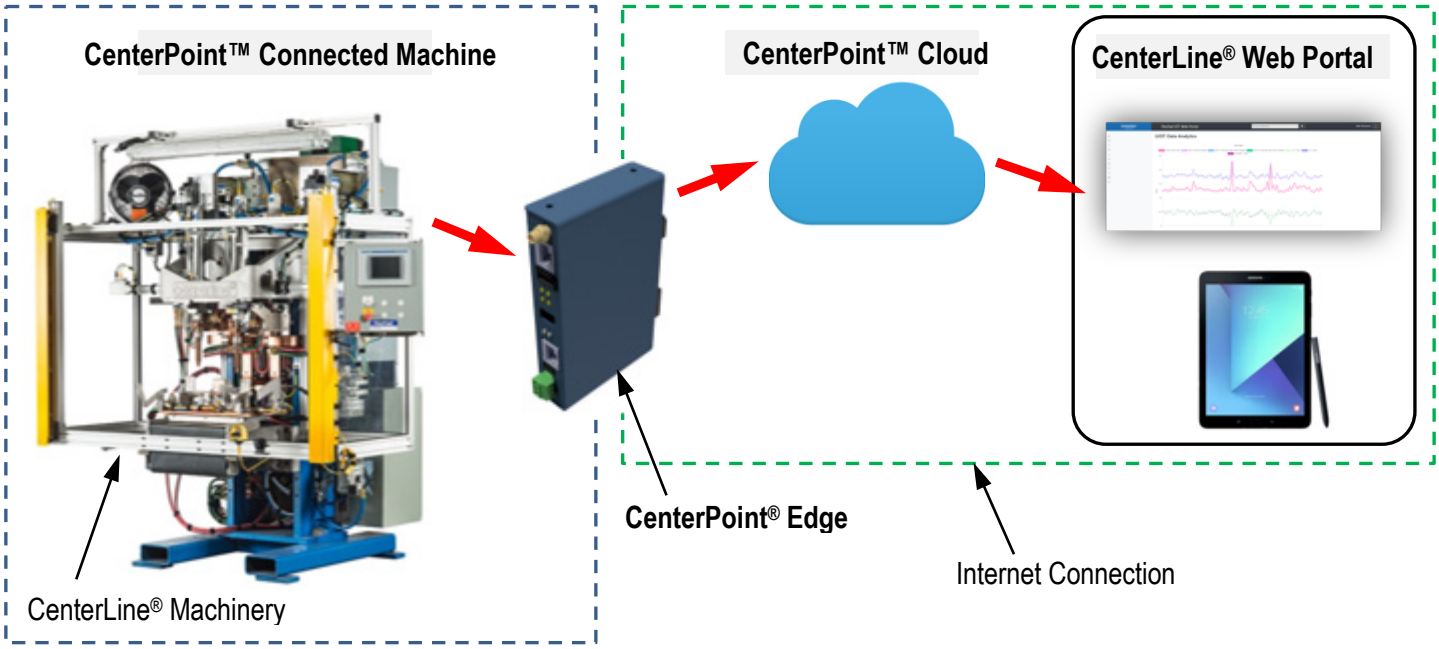


Figure 1 – CenterPoint™ Edge Integration

Technical Specifications

Table 1 – Technical Specifications of CenterPoint™ Edge

Is the USB port used?	Input Voltage	Current
No	18 VDC – 30 VDC	0.2 A @ 24 VDC
Yes	18 VDC – 30 VDC	1.5 A @ 24 VDC
Environmental:		
Operating Temperature Range		0°C to 65°C
Dimensions:		
Enclosure Size (see Figure 2 below)		Height: 128 mm (5 in.) Width: 26.7 mm (1 in.) Depth: 98 mm (3.9 in)

Dimensions of CenterPoint™ Edge

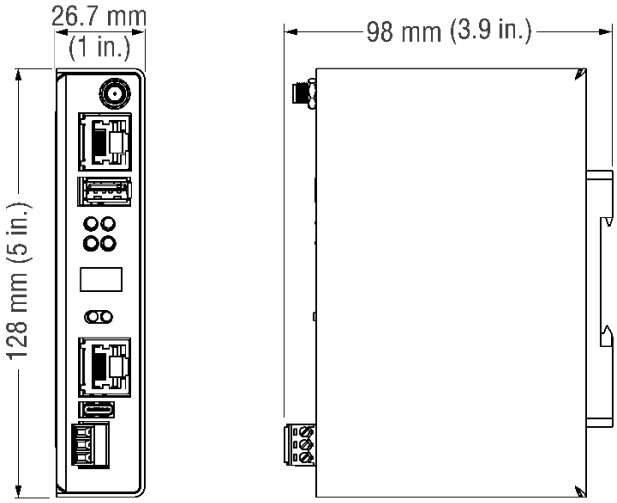


Figure 2 – Dimensions of CenterPoint™ Edge

CenterPoint™ Edge Configuration

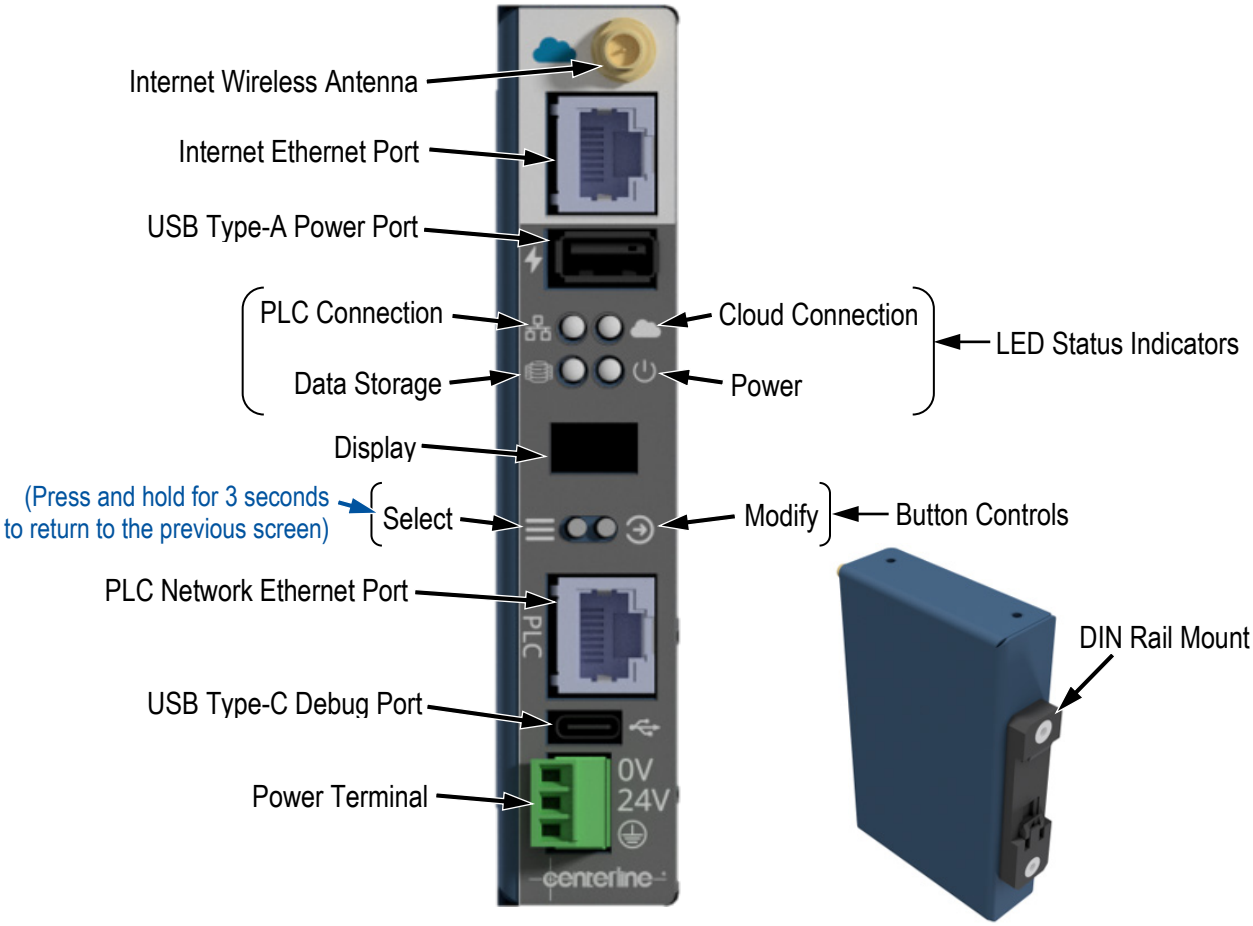


Figure 3 – Configuration of CenterPoint™ Edge (front and back views)

Description of I/O

Refer to Figure 3 on the previous page for visual representation of the ports and terminals described below:

Internet Wireless Antenna Port

The Internet Wireless Antenna Port (WiFi) is meant to have a 2.4 GHz compatible antenna connected directly, or through an extension cable. The antenna gain cannot exceed 1dB.

Internet Ethernet Port

The Internet Ethernet Port is used to connect the CenterPoint™ Edge to an internet capable network. This port is capable of 10/100 MB/s data speeds with Auto MDIX. Configuration of the network parameters for this port is configurable through the Display / Input buttons on the front of the device, or through the webserver dashboard accessible through the Cloud Ethernet / WiFi connection / Access Point mode.

USB Type-A Power Port

The USB Type-A Power Port can be used to supply power to USB devices that might be used with the CenterPoint™ Edge, for example, a USB powered WiFi router / switch.
This port can supply up to 2 A.

PLC Network Ethernet Port

The PLC Network Ethernet Port is used to connect the CenterPoint™ Edge to the machine PLC network. This port is capable of 10/100 MB/s data speeds with Auto MDIX. Configuration of the network parameters for this port is configurable through the Display / Input buttons on the front of the device, or through the webserver dashboard accessible through the Cloud Ethernet / WiFi connection / Access Point mode.

USB Type-C Debug Port

The USB Type-C Debug Port is used by CenterLine® to service the CenterPoint™ Edge.

Power Terminal

This port has the power connections (24 V, 0 V, Ground) which are necessary for proper operation.

LED Status Indicators

Table 2 – LED Status Indicators

Power LED	
Off	CenterPoint™ Edge does not have power supplied to the Power Terminal.
Green	CenterPoint™ Edge has power supplied to the Power Terminal.
Cloud Connection LED	
Red	CenterPoint™ Edge is not connected to a network over WiFi or Cloud Ethernet port.
Green	CenterPoint™ Edge is connected to a network over WiFi or Cloud Ethernet port, but has not connected to the CenterLine® server.
Blue	CenterPoint™ Edge is connected to a network over WiFi or Cloud Ethernet port, and has successfully connected to the CenterPoint server
Flashing Blue/Yellow	CenterPoint™ Edge is connected to a network and is currently posting data to the CenterPoint™ server.
Flashing Green/Red	CenterPoint™ Edge is connected to a network, but does not have access to the CenterPoint™ Cloud Servers.
Flashing Blue/Red	CenterPoint™ Edge is connected to a network, has access to the internet, but the upload subscription is inactive.
PLC Connection LED	
Red	CenterPoint™ Edge is not connected to a network on the PLC Ethernet port.
Flashing Red/Green	CenterPoint™ Edge is attempting to connect to the PLC.
Green	CenterPoint™ Edge is connected to the PLC.
Flashing Green/Yellow	CenterPoint™ Edge is receiving data from the PLC.
Data Storage LED	
Red	Storage is full. Any new data being received by the device is not stored.
Yellow	Storage is 75% full.
Green	Storage is less than 75% full.

Installation Guidelines

Important Safety Information

Please review the *Safety Information* section starting on page 7.

Before the installation procedure for the CenterPoint™ Edge is started, ensure that all services (e.g., power, air, water) provided to the surrounding devices are de-energized and locked out.

CenterLine® recommends that qualified electrical personnel be involved with the setup and operation of the CenterPoint™ Edge.

Mounting the CenterPoint™ Edge

The CenterPoint™ Edge is designed to be mounted to 35 mm DIN Rail. See Figure 3 on page 10 for reference.

Wiring the CenterPoint™ Edge

Option 1 – WiFi Cloud Connection

Establish the necessary connections indicated in Figure 4 below. For parameters of each connection, see the *Description of I/O* section on page 11.

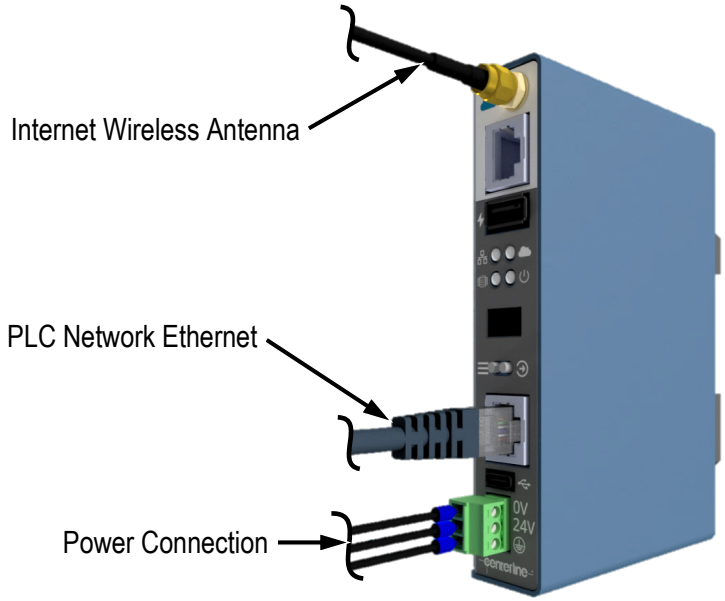


Figure 4 – Connections required for WiFi Cloud Connection

Option 2 – Ethernet Cloud Connection

Establish the necessary connections indicated in Figure 4 above. For the parameters of each connection, see the *Description of I/O* section on page 11.

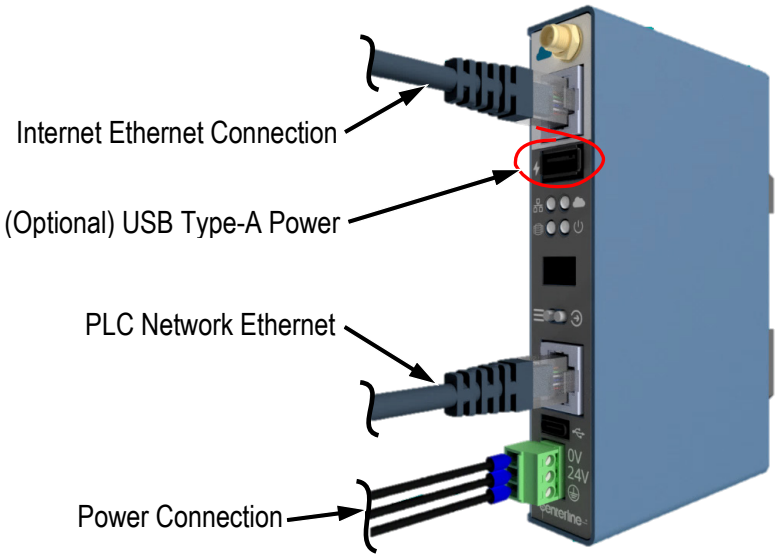


Figure 5 – Connections required for Ethernet Cloud Connection

Setting Up the CenterPoint™ Edge

There are two (2) methods for configuring the CenterPoint™ Edge parameters:

- **Method 1 - Using the Display and Buttons** on the CenterPoint™ Edge device
- **Method 2 - Using the Web Server**. ***IMPORTANT:*** In order to connect, the user must be on the same network (Cloud Ethernet or WiFi).

Through both methods above, the following parameters can be configured:

- PLC Network IP address.
- CenterPoint PLC Network Parameters (DHCP, Static IP, Gateway, Subnet, DNS).
- Cloud Ethernet Network Parameters.
- Cloud WiFi Network Parameters (DHCP, Static IP, Gateway, Subnet, DNS). ***Note:*** The WiFi SSID and Password cannot be set when using the “Display and Buttons” method.
- Cloud WiFi Connection (SSID and password).

Each method is described in more detail below.

Method 1 – Using the Display and Buttons

The Display and Buttons on the CenterPoint™ Edge device can be used to establish the PLC connection and Cloud connection. Setting up the CenterPoint™ Edge in this mode is helpful for making small adjustments and/or verifying the settings; however, it is recommended that the Web Server method (see *Method 2 – Using the Web Server* section starting on page 17) be used for full setup.

The chart in Figure 6 below illustrates the CenterPoint™ Edge menu navigation screens:

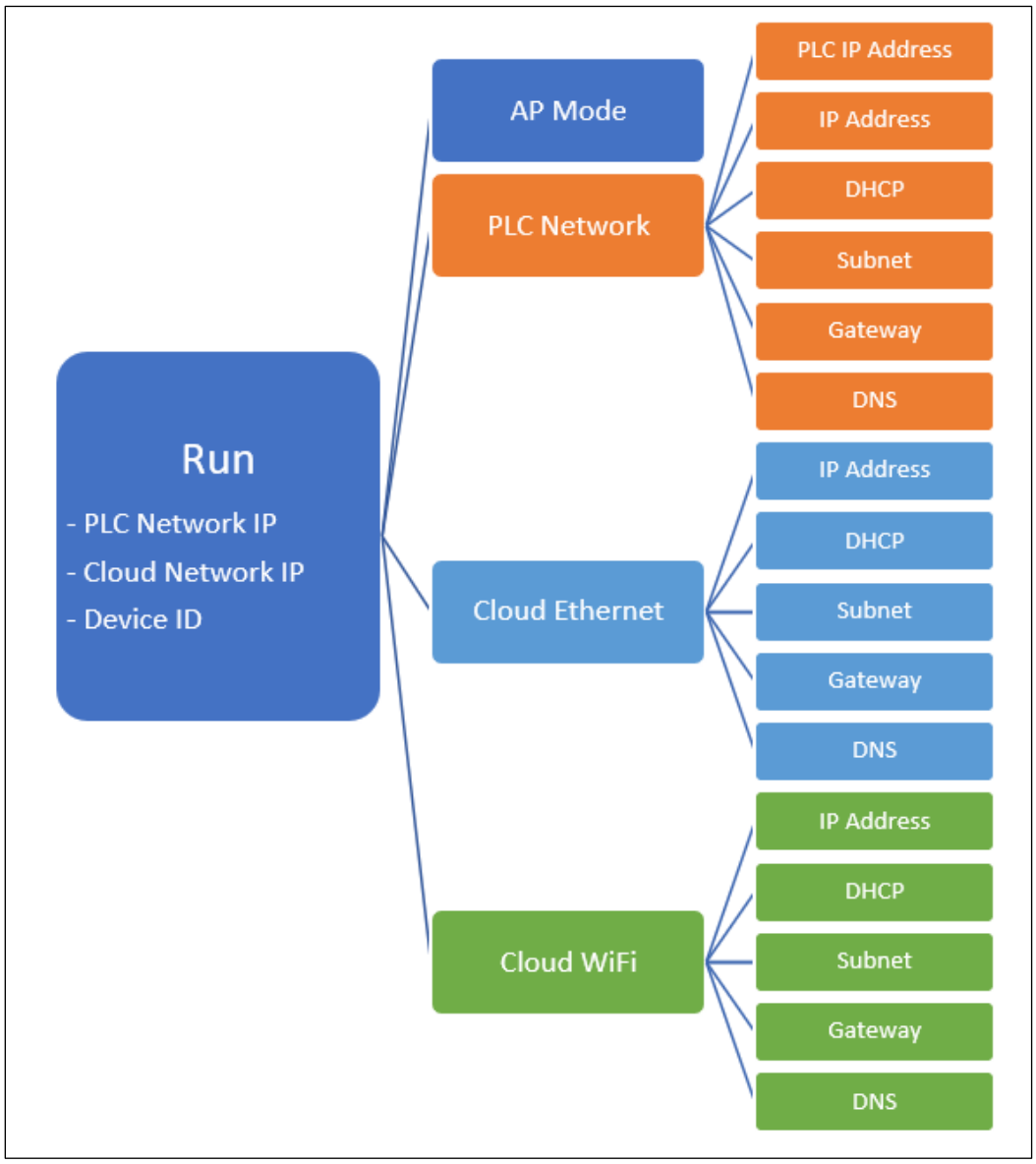


Figure 6 – Screen Menu navigation chart for the CenterPoint™ Edges

Navigation through these screens is controlled from the ***Select*** ( ) and ***Modify*** ( ) buttons situated on the front of the CenterPoint™ Edge device (see the "Button Controls" in Figure 3 on page 10). The functionality of these buttons is described in Table 3 below.

Table 3 – Menu Navigation Buttons on CenterPoint™ Edge

Button	Screen	Function of button according to the screen
(“Select” button)	Run	Navigate to the Main Menu.
	Menu	Return to the previous menu, or to the Run screen if at the Main Menu.
	Parameter Edit Screen	Press the “Select” ( ) button ⇨ Selects the highlighted parameter or sub-parameter. Press and hold the “Select” ( ) button for 3 seconds ⇨ Return to the previous menu.
(“Modify” button)	Run	No behavior.
	Menu	Go to the selected screen.
	Parameter Edit Screen	Modifies the selected parameter or sub-parameter.

Method 2 – Using the Web Server

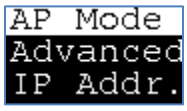
The CenterPoint™ Edge can become a **WiFi hotspot** that allows a direct network connection with a device using a web browser on a phone, tablet, laptop, or another device (see sub-section *2.1 Web Server with CenterPoint™ in Access Point Mode* below),
or
The CenterPoint™ Edge hosts a **web server** that can be accessed through a cloud network connection such as WiFi or Ethernet (see sub-section *2.2 Web Server with CenterPoint™ over Cloud Ethernet or Cloud WiFi network* on page 18).

IMPORTANT: In order to connect, the user must be on the same network (Cloud Ethernet or WiFi).

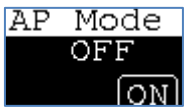
2.1 Web Server with CenterPoint™ in Access Point Mode

To enable the Access Point Mode (AP Mode), use the buttons on the front of CenterPoint™ Edge device (see Figure 3 on page 10 for visual representation) and follow the steps below:

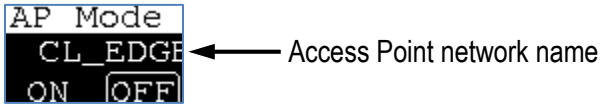
1. Press the ***Select*** ( ) button. The menu items will appear on the Display.
2. Press the ***Select*** ( ) button until the “AP Mode” is highlighted.
3. Press the ***Modify*** ( ) button to select the “AP Mode” menu.



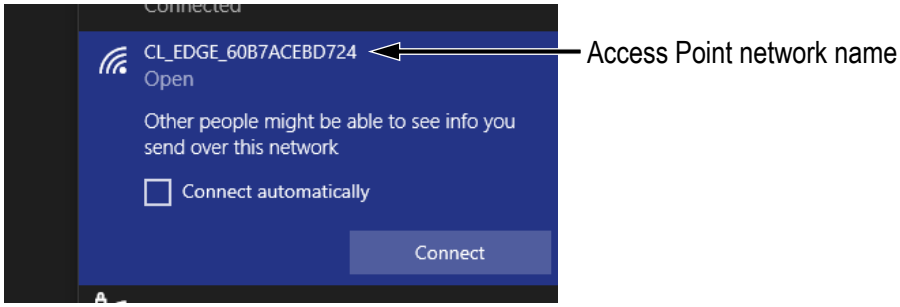
4. Press the ***Modify*** button ( ) to turn the “AP Mode” ON. (Pressing ***Modify*** button again will turn the “AP Mode” OFF). When the “AP Mode” is ON, the Cloud Connection LED will start flashing blue (see Figure 3 on page 10 for components reference).



5. The display will show the Access Point network name:



6. On your device, use the WiFi settings to connect to the Access Point.



7. Once connected, in a web browser go to 192.168.4.1 to access the configuration page.

2.2 Web Server with CenterPoint™ over Cloud Ethernet or Cloud WiFi network

When the CenterPoint™ Edge is on its "Run" screen, the display will cycle automatically between showing the PLC Network IP, Cloud Network IP, and Device ID (see *Figure 6 – Screen Menu navigation chart for the CenterPoint™ Edges* on page 16 for reference). While "Cloud" is displayed, the IP address is also shown scrolling underneath. In a web browser, go the indicated IP address to access the web server.

IMPORTANT: In order to connect, the user must be on the same network (Cloud Ethernet or WiFi).

Through the web server interface that will be displayed (see Figure 7 below), go to the corresponding sub-pages (vertical menu on the left) to configure the various parameters.

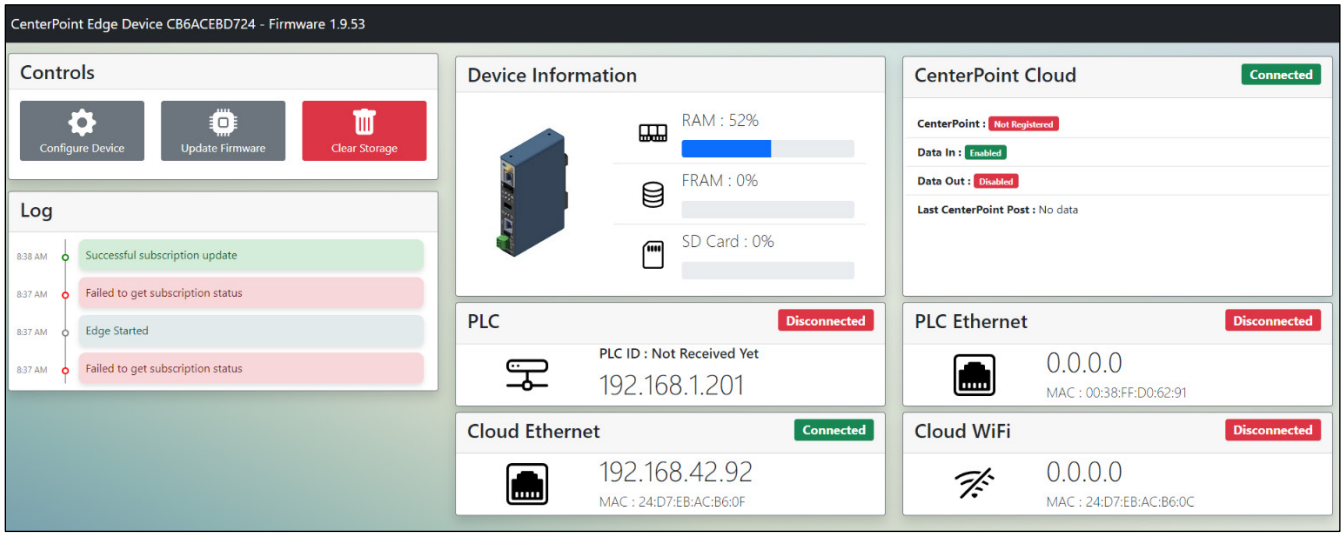


Figure 7 – CenterPoint™ Edge web server interface

Accessing the CenterLine® Web Portal

Once the CenterPoint™ Edge is connected, open a web browser and go to:

https://clportal.azurewebsites.net/

Login with the credentials provided by CenterLine (see Figure 8 below). The screens on the CenterLine® Web Portal are intuitive and easy to use.

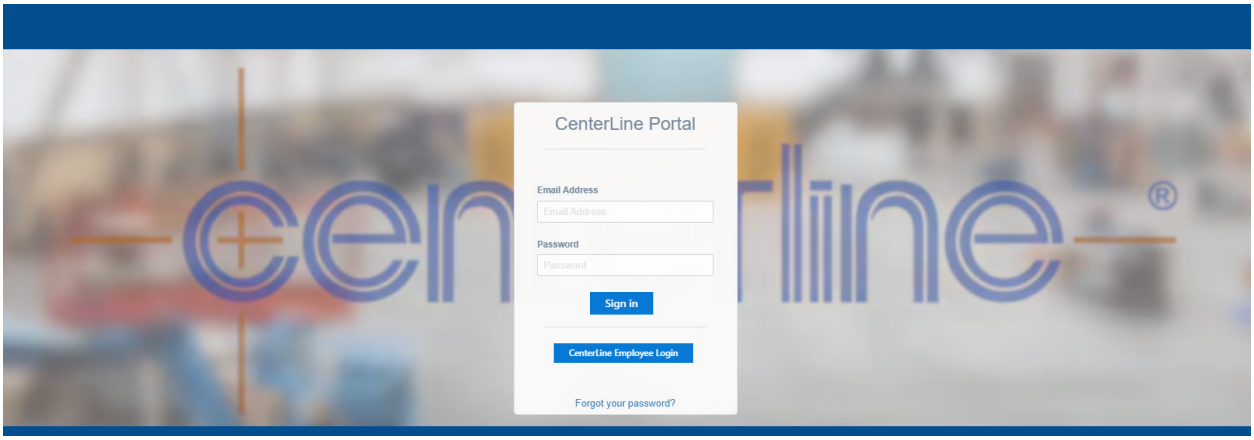


Figure 8 – CenterLine® Web Portal Login Credentials

Maintenance / Troubleshooting

Important Safety Information

Please review the *Safety Information* section starting on page 7.

IMPORTANT

Follow all plant safety procedures and guidelines, as well as all safety instructions given in this manual before performing any troubleshooting procedures. Only certified personnel should perform any troubleshooting tasks on the machinery.

Replacing the Real Time Clock Battery

The lithium battery inside the CenterPoint™ Edge is used for maintaining the Real Time Clock inside the data logging circuitry. If the CenterPoint™ Edge no longer stores the current Date/Time when power is cycled to the unit, please replace the Lithium Battery.

CAUTION! Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

Tools required:

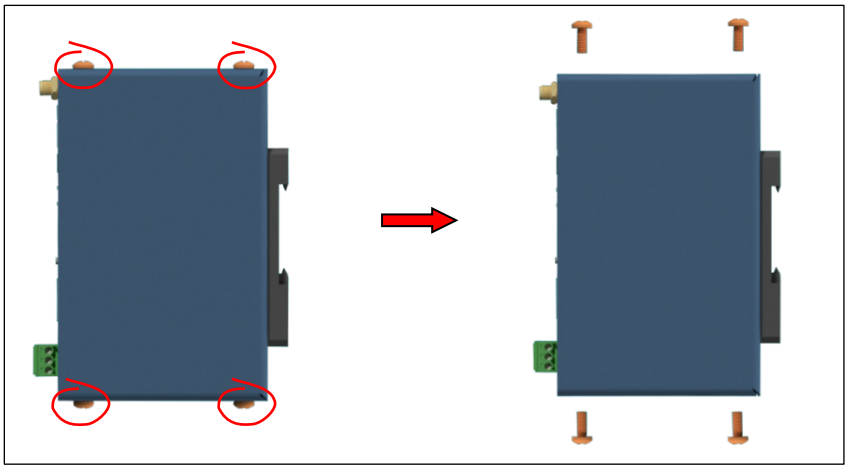
- Philips head screwdriver
- Flat head screwdriver

Material required:

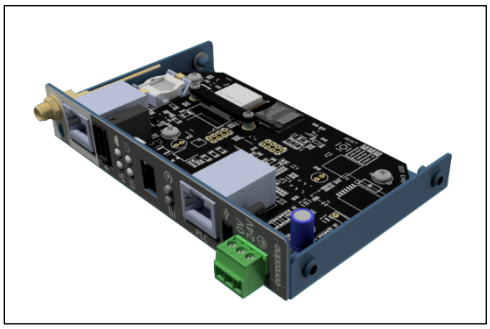
- CR1225 battery

To replace the battery, do the following:

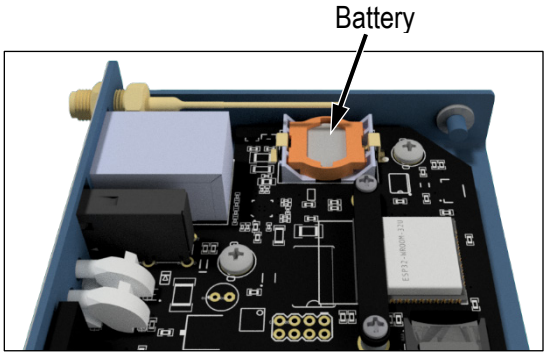
1. Remove the four (4) M4 pan head screws (circled red in the image below) on the outside of the enclosure.



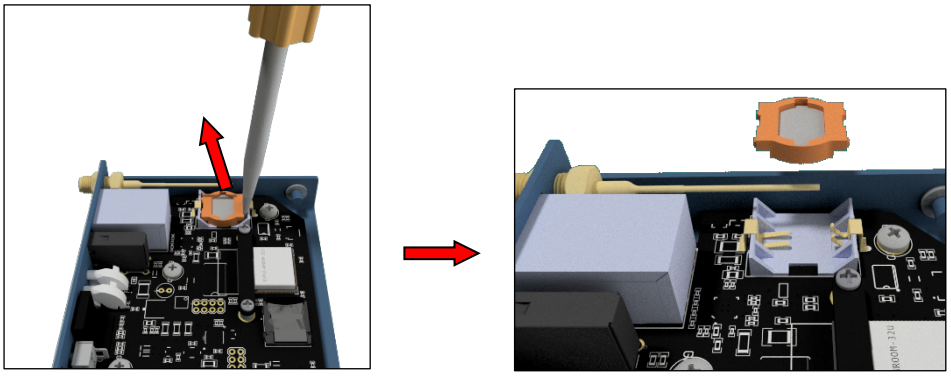
2. Remove the outer enclosure panel to expose the electronics.



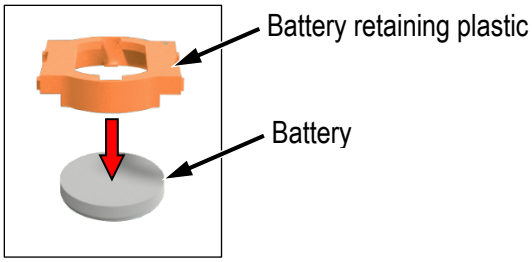
8. Locate the battery.



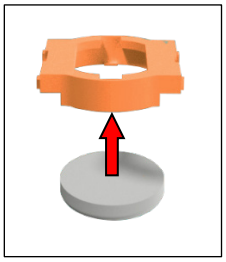
9. Insert a flat head screwdriver into either side of the battery retaining plastic and apply light force to pop the battery out of the battery socket.



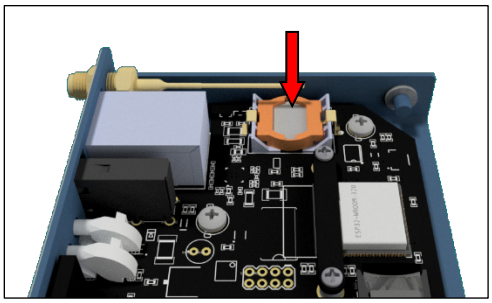
10. Remove the old battery from the retaining plastic and discard according to the battery disposal requirements.



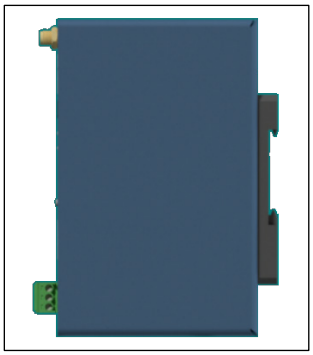
11. Insert the new battery into the retaining plastic (the “+” sign must be on the same side as the “+” on the retaining plastic).



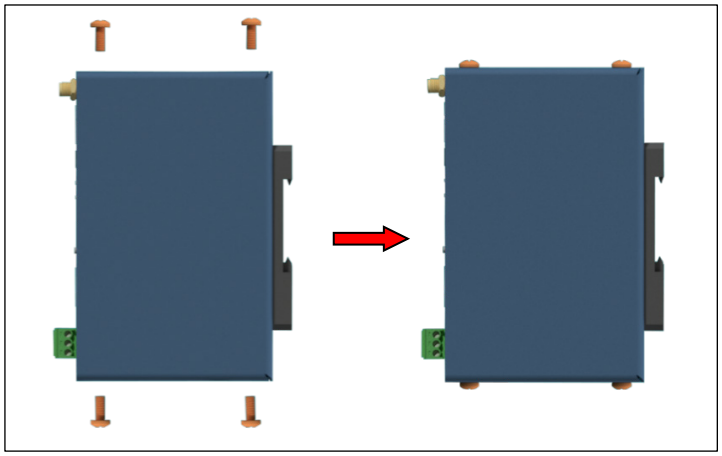
12. Insert the retaining plastic with the new battery into the battery socket.



13. Re-install the outer enclosure panel.



14. Fasten the enclosure with the four (4) M4 pan head screws.



Troubleshooting Quick Guide

Lockout Equipment

- Before starting to troubleshoot the CenterPoint™ Edge, ensure that the surrounding equipment is disconnected from all sources of power and is in the lockout state.
- Before turning ON the surrounding equipment, make sure all components are assembled properly.

Table 4 – Troubleshooting the CenterPoint™ Edge

Problem	Hint	Suggestion
CenterPoint™ Edge not running	Is the CenterPoint™ Edge LEDs not ON?	Check the power source for correct voltage (see *Technical Specifications* section on page 9).
CenterPoint™ Edge not connected to PLC	PLC Connection LED is RED (see Figure 3 on page 10 for reference).	Verify that the PLC Network Ethernet Port (see Figure 3 on page 10 for reference) is connected with an RJ45 cable to the PLC network.
		Verify that the PLC Server IP is configured in the CenterPoint™ Edge Settings.
		Verify that the CenterPoint™ Edge PLC Ethernet port is configured (IP Address, DHCP, Static IP, Gateway, Subnet, DNS).
CenterPoint™ Cloud not receiving data from CenterPoint™ Edge	Cloud Connection LED is Red (see Figure 3 on page 10 for reference).	Verify that the Cloud Ethernet Port is connected with an RJ45 cable to the Internet connected network, if using the Ethernet port.
		Verify that the CenterPoint™ Edge Cloud Ethernet port is configured (IP Address, DHCP, Static IP, Gateway, Subnet, DNS), if using the Ethernet port.
		Verify that the CenterPoint™ Edge has an WiFi network configured, if using the WiFi connection.
		Verify that the CenterPoint™ Edge Cloud WiFi port is configured (IP Address, DHCP, Static IP, Gateway, Subnet, DNS), if using the WiFi connection.
CenterPoint™ Edge storage is full	Data Storage LED is red (see Figure 3 on page 10 for reference).	Verify that the CenterPoint™ Edge is connected to an internet connected network with either the WiFi connection or Ethernet connection.

Decommissioning

Preparing for Storage

The following guidelines should be followed when removing a CenterPoint™ Edge from service:

- Disconnect the CenterPoint™ Edge system from the equipment. Identify the connections to facilitate a future installation.
- The storage location must be clean, dry, and not expose the CenterPoint™ Edge to mechanical or thermal damage.

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