Brightlayer Gateway

Installation & Maintenance Information

IF 1964

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

APPLICATION

The Crouse-Hinds series Gateway is used for data aggregation and transmission to the Eaton Brightlayer™ Cloud from the Smart EBMX series, ACE DG1 variable frequency drives and SCSR portable combination motor starters.

Refer to the nameplate for specific classification information, such as maximum ambient temperature suitability.

Enclosure construction is designed for use indoors and outdoors in environments where moisture, dirt, corrosion, vibration, and rough usage may be present.

Enclosures should be installed, inspected, and maintained by qualified and competent personnel.

INSTALLATION

⚠ WARNING

To avoid risk of electric shock,

Electrical power must be OFF before and during product installation and maintenance. Failure to comply can result in damage to equipment or injury to personnel.

1. Select a mounting location that will provide suitable strength and rigidity for supporting all contained wiring and control devices. Figure 1 shows the mounting dimensions. It is required that the location have a strong and reliable cellular signal present. It is recommended that the location's signal strength be between -50 and -99 dBm (2 bars or more depending on carrier).

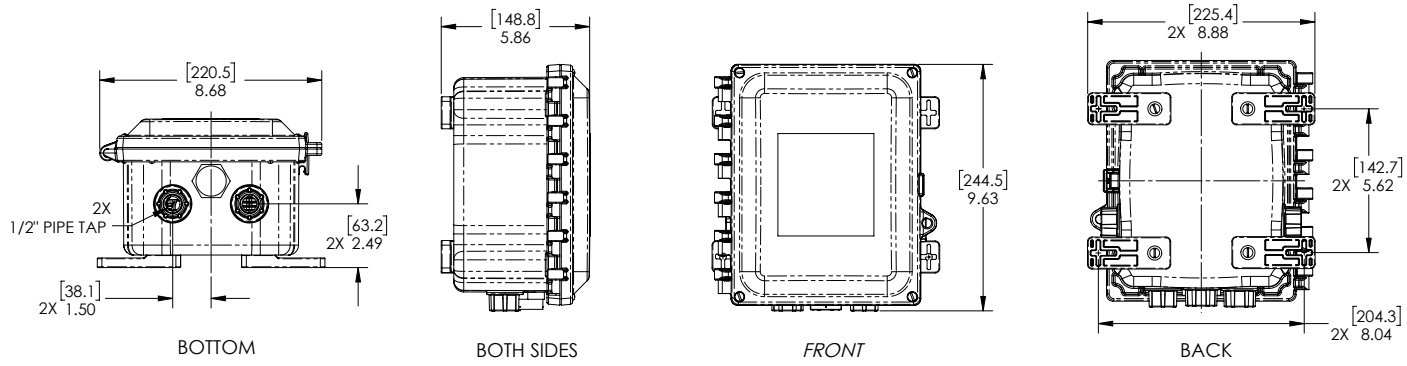
   Perform visual, electrical, and mechanical inspections on a regular basis. The environment and frequency of use should determine this. However, it is recommended that checks be made at least once a year. We recommend an Electrical Preventive Maintenance Program as described in the National Fire Protection Association Bulletin NFPA 70B: Recommended Practice for Electrical Equipment Maintenance (www.nfpa.org).

2. Enclosure must be mounted in the upright position. Securely fasten enclosure to the mounting location, then attach into cable or conduit system. Install approved conduit fittings when required by the National Electrical Code plus any other applicable standards.
3. Loosen and remove the four corner cover screws.
4. Pull wires into enclosure, making sure they are long enough to make the required connections. Make all electrical connections. The internal grounding terminal shall be used as equipment grounding means.

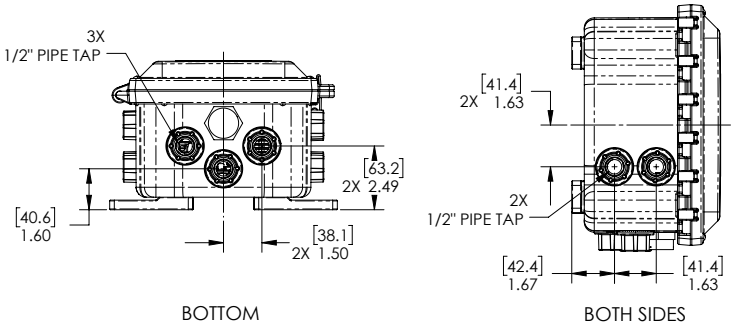
   For ease of wire termination, the terminal block can be removed and reinstalled.

   See figure 2 on page 2 for propers wiring terminations. It is recommended that shielded cable be used for all Modbus RTU (RS-485) communication wiring.
5. Test wiring for correctness with continuity checks and also for unwanted grounds with insulation resistance tester.
6. Close the cover, reinstall, and tighten the four corner cover screws to specified torque (see recommended torque values in the technical data section).

STANDARD



ADDITIONAL ENTRIES



PRIMARY DIMENSIONS ARE IN INCHES. DIMENSIONS IN [ ] ARE IN MILLIMETERS.

Figure 1. Dimensions

⚠ CAUTION

- Hammers or prying tools must not be allowed to damage the surfaces or cover gasket.

⚠ CAUTION

To avoid risk of ignition:

- Clean both surfaces of body and cover before closing. Dirt or foreign material must not accumulate on surfaces. Surfaces must seat fully against each other to provide a proper seal.

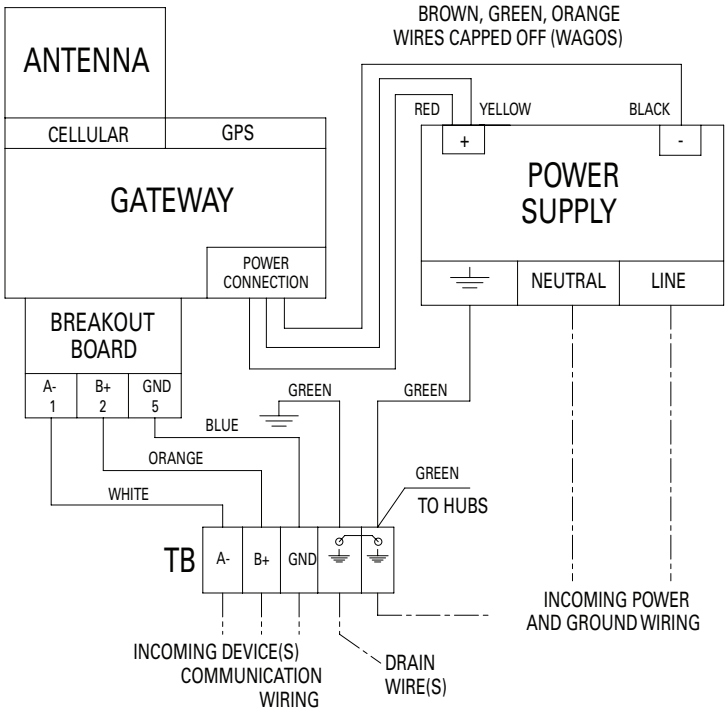


Figure 2. Wiring diagram

COMMISSIONING

- Ensure to have Brightlayer access and necessary access privileges (If not done already contact Eaton Care)
- In Brightlayer Industrial (BLI) make sure organization, location and sites are registered and named according to the organization's device registration requirements
- Ensure gateway is added under the site and configured to see it online on Brightlayer platform
- Ensure devices (DG1, PXR 20/25 or C445) are registered with unique device IDs and (default) Modbus communication parameters under the gateway device
- If the Electrical safety panel consists of –
  - Power XL DG1 variable frequency drive
  - Power Defense Breaker with PXR 20/25
  - Motor Management Relay C445

  Then ensure below RS-485 communication wire termination nodes to establish communication amongst each other

Gateway assembly nodes (terminal)	**Power XL DG1 (terminal)**	**PXR 20/25 (leads)**	**C445 Motor management relay (terminal)**
A-	B(-)	Green/red	D0
B+	A(+)	Green/black	D1
GND (earth)	CMA	Green	C
Device ID preference	1 to 6	11 to 16	21 to 26
Communication parameters (default)	Baud rate – 19200 Parity – even Stop bit – 1 bit Data bits – 8		

- Each device has configurable settings for Modbus RTU protocol and other features; They can be configured using either user interface (HMI) display and keypad module or by using Power Xpert inControl or Power Xpert Protection Manager (PXPM) software's on laptop
- For detail communication interface commands and deployment procedure refer the individual device manuals

TECHNICAL DATA

ENVIRONMENTAL RATINGS

- Type 4X
- IP66

AGENCY CERTIFICATIONS

NEC

- UL 61010-1
- UL 50E

CEC

- CSA C22.2 No. 61010-1
- CSA C22.2 No. 94.2

COMMUNICATIONS PROTOCOL

- Modbus RTU (Remote Terminal Unit) protocol utilizing the RS-485 serial interface.

TEMPERATURE RANGE

- -20C to +47C

WEIGHTS (lbs.)

- Single configuration 5 lbs.
- Multidrop configuration 6 lbs.

CELLULAR CARRIERS SUPPORTED

- AT&T

ELECTRICAL RATINGS

- 100-240 VAC
- 0.064 A Max
- 50/60 Hz

TORQUES in.-lbs. (N-m)

Cover screws	15 (1.7)
Breakout board terminals	2 (0.23)
Power supply terminals	5 (0.56)
Terminal blocks	16 (1.8)
Ground screw	30 (3.4)
Antenna	10 (1.1)
Hubs	300 (34)

WIRE SIZE RANGE

Power supply	12-18 AWG
Breakout board	16-24 AWG
Terminal blocks (communication)	18-22 AWG (1-5 conductors)
Terminal blocks (ground)	16-18 AWG (16 AWG - 1-4 conductors) (18 AWG - 1-5 conductors)
90C Rated Insulation Min.	

REPLACEMENT PARTS

Gateway	HLG K1
Antenna	HLG K2
Power supply	HLG K3
Breakout board	HLG K4
Terminal block	HLG K5

ENCLOSURE CHEMICAL RESISTANCE

A comprehensive list of all chemicals that are incompatible with polycarbonate material would be difficult as it can vary depending on the specific type of polycarbonate and the conditions in which it is exposed to the chemical. However, some common chemicals that can damage or degrade polycarbonate include:

- Strong acids and bases (such as hydrochloric acid, sulfuric acid, and sodium hydroxide)
- Organic solvents (such as acetone, ethyl acetate, and methylene chloride)
- Chlorinated hydrocarbons (such as trichloroethylene and perchloroethylene)
- Aromatic hydrocarbons (such as benzene and toluene)
- Halogenated solvents (such as carbon tetrachloride and chloroform)
- Oxygenated solvents (such as methanol, ethanol, and isopropyl alcohol)
- Polar solvents (such as dimethylformamide and dimethyl sulfoxide)
- High temperature and UV exposure

It's important to note that this list is not exhaustive and the suitability of a chemical for use with polycarbonate should always be determined by consulting the material safety data sheet and/or testing a small sample under the specific conditions of use.

MAINTENANCE GENERAL

1. Perform visual, electrical and mechanical inspections on a regular basis. The environment and frequency of use should determine this. However, it is recommended that checks be made at least once a year. We recommend an Electrical Preventive Maintenance Program as described in the National Fire Protection Association Bulletin NFPA No. 70B: Recommended Practice For Electrical Equipment Maintenance (www.nfpa.org).
2. Visually check for undue heating evidenced by discoloration of wires or other components, damaged parts or leakage evidenced by water or corrosion in the interior. Replace all worn, damaged or malfunctioning components.
3. Electrically check to make sure that all connections are clean and tight. Mechanically check that all parts are properly assembled.
4. Check and re-torque all mounting hardware.

REPLACEMENT PARTS

Eaton's Crouse-Hinds series products are designed to provide years of reliable performance. However, should the need for replacement parts arise, they are available through your authorized Eaton's Crouse-Hinds distributor. Assistance may also be obtained through your local Eaton's Crouse- Hinds representative or the Eaton's Crouse-Hinds Sales Service Department, 1201 Wolf Street, Syracuse, New York 13208, Phone 866-764-5454.

TECHNICAL SUPPORT

CHG Gateway Hardware Support (general inquiry, installation, components, subscription): (866) 764-5454 or email us at crousecustomerctr@eaton.com.

Brightlayer Industrial Application Support (interface/gateway configuration and updates): 877 ETN-CARE (option 2, option 9, option 2) or email us at trc@eaton.com.