EA_Gatekeeper model 2120

Installation instructions
IL42-5037A

General

Within the EnergyAxis® System, the EA_Gatekeeper is the intelligent interface between the EnergyAxis Management System (EA_MS) and the local area network created by the gatekeeper (referred to as the EA_LAN). As the interface, gatekeepers are equipped with WAN and LAN communication capabilities. Depending on the need, utilities have options when choosing how to deploy the EA_Gatekeeper into service. For example, the EA_Gatekeeper module can be installed in an A3 ALPHA® meter if revenue metering is required at a particular site. If deploying meter-based gatekeepers is neither feasible nor desired, the EA_Gatekeeper can be enclosure mounted in different form factors.

This leaflet explains how to install the gatekeeper model 2120.

This model of EA_Gatekeeper is configured for 120VAC operation only and uses a battery for backup gatekeeper operation if AC power fails at site. The EA_Gatekeeper model 2120 uses a NEMA-4 rated polycarbonate enclosure. The EA_Gatekeeper supports different mounting options, including mounting on 18-foot (5-meter) to 35-foot (11-meter) utility poles and telephone poles. Instructions on preparing the EA_Gatekeeper model 2120 for pole mounting are provided in the instructional leaflet IL42-5019.

Figure 1 shows the major components of the EA_Gatekeeper model 2120. Figure 2 shows an illustration of an assembled gatekeeper.

NOTICE

Because of the self discharge rate of the system backup battery, this product must be powered up within 60 days of receiving. If the battery drops below 11.25 VDC for an extended period, the battery may need to be charged with a shop charger or be replaced.

Figure 1. Isometric view of EA_Gatekeeper model 2120

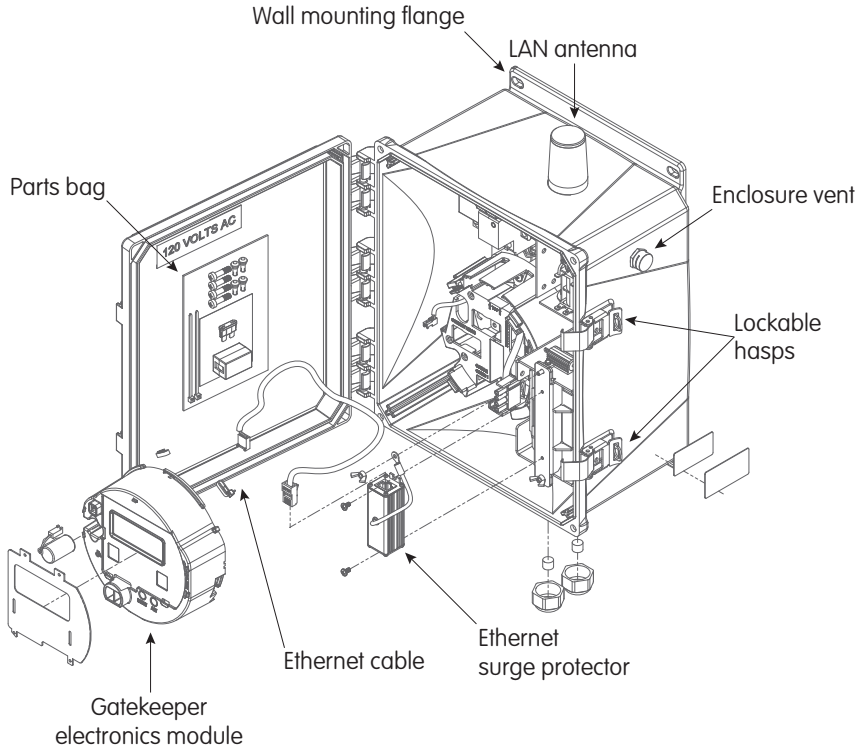
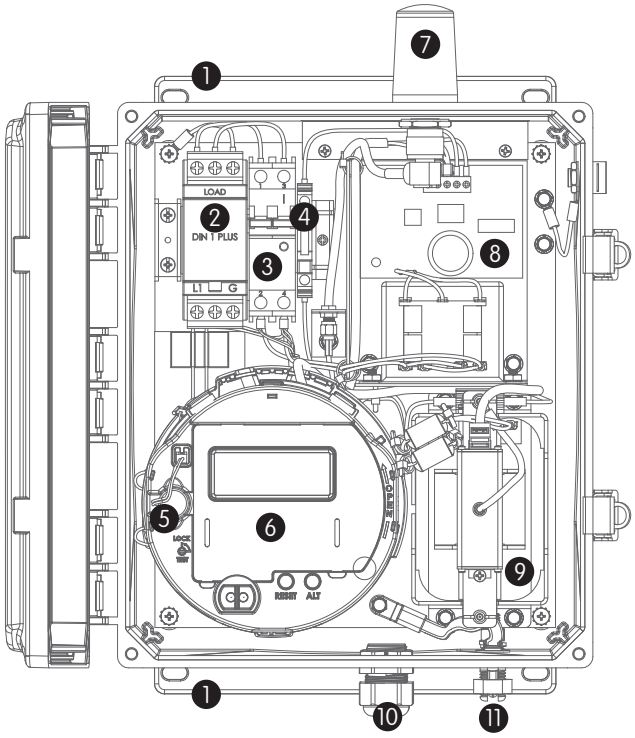
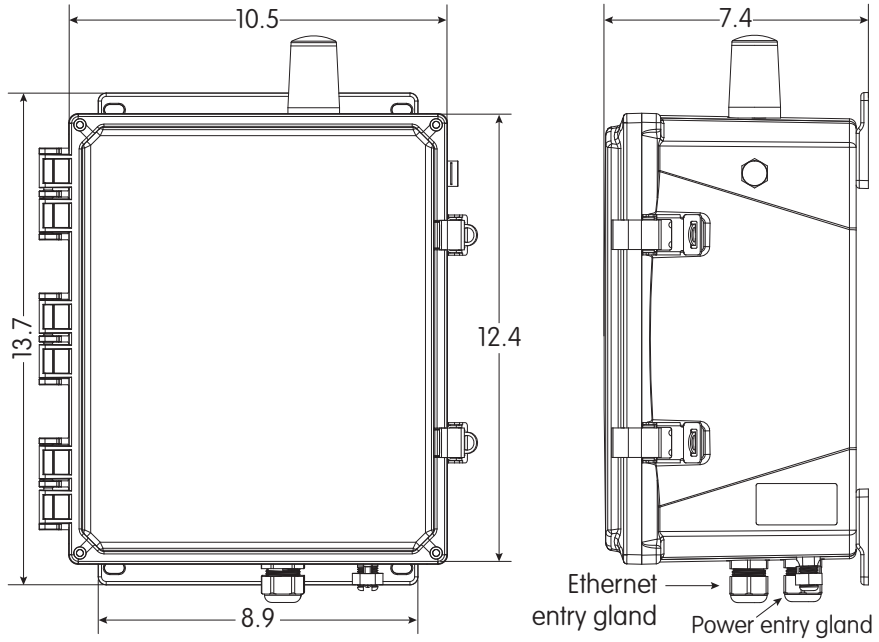


Figure 2. EA_Gatekeeper model 2120



1. Wall mounting flange
2. SPD modules
3. AC line breaker
4. DC fuse holder
5. TOU backup battery
6. Gatekeeper electronics module
7. LAN antenna
8. Operational battery charger
9. Operational backup battery
10. Cable entry gland
11. PE ground lug

Figure 3. Approximate dimensions



Before you install

⚠ WARNING

Use authorized utility procedures when installing the EA_Gatekeeper model 2120. Equipment damage, personal injury, or death can result if authorized utility procedures are not followed when installing the EA_Gatekeeper model 2120.

NOTICE

For optimal performance of the LAN antenna, Elster recommends that the EA_Gatekeeper model 2120 be installed so that the enclosure is at least 5 feet (1.5 meters) off the ground. Failure to meet the minimum ground clearance can result in degraded performance of the EA_Gatekeeper model 2120 communications within the EnergyAxis System.

The EA_Gatekeeper model 2120 supports different mounting options, including mounting on 18-foot (5-meter) to 35-foot (11-meter) utility poles and telephone poles. The gatekeeper may have been shipped with the necessary hardware to support your mounting option, or your utility may have ordered the mounting hardware separately. Regardless of how the mounting hardware is provided, be sure to follow your utility's instructions for mounting the EA_Gatekeeper model 2120 at its installation location.

Pole mounting kit, available from Elster, is required. Contact Elster for ordering information.

The EA_Gatekeeper model 2120 is designed to operate from 120 VAC only. Power is routed through the AC line power entry gland and the wires land on the screw terminals located on the bottom side of the SPD module. The screw terminals should be torqued to 12 inch-pounds. The cable entry gland dome nut must be torqued to 20 inch-pounds.

To maintain the NEMA 4X integrity of the device, steps must be taken to ensure proper sealing of the enclosure features. The cable used for Ethernet communications and to power the EA_Gatekeeper model 2120 must be a smooth round jacketed outdoor rated cable. The enclosure lid screws must be installed in the corners of lid and torqued to 20 inch-pounds. These screws are provided in the parts bag attached to the inside of the enclosure lid. This product is equipped with an anti-condensation heater and must not be installed in the field without being powered for operation. The enclosure should not be opened when ambient temperatures fall below 32 °F (0 °C). Opening the enclosure lid when temperatures are below freezing may result in damage to the enclosure lid gasket compromising the seal. If the enclosure must be opened when temperatures are below freezing, gently warm the enclosure around the lid gasket to ensure the gasket is not frozen to the sealing surface.

LAN Communications

The Antenna is mounted on the unit itself (that is, local external antenna), so no additional steps are required when placing the EA_Gatekeeper model 2120 into service.

WAN Communications

EA_Gatekeeper model 2120 is equipped with an Ethernet communications option board. This option board is connected to an internal Ethernet surge suppressor. The external Ethernet device cable is routed through the Ethernet cable gland and connected into the bottom of the Ethernet surge suppressor. The cable used should be rated for outdoor use, have a minimum of CAT 5 rating and have EMI/RFI shielding with conductive RJ-45 connectors. The cable shielding is connected to ground on the EA_Gatekeeper side and should be left ungrounded on the external equipment side to prevent a ground loop scenario.

Placing the EA_Gatekeeper model 2120 into service

⚠ WARNING

Use authorized utility procedures when installing the EA_Gatekeeper model 2120. Dangerous voltages are present. Equipment damage, personal injury, or death can result if authorized utility procedures are not followed when installing the EA_Gatekeeper.

NOTICE

Be sure to properly ground the EA_Gatekeeper before placing the gatekeeper into service.

The EA_Gatekeeper model 2120 is shipped with most of the wiring connections already made. To complete the wiring and place the gatekeeper into service:

1 Determine the power supply requirements for the site. The EA_Gatekeeper model 2120 is designed to operate on 120 VAC only. Powering this device from anything other than a 120 VAC service will result in product damage or faulty operation.

2 Be sure to properly ground the gatekeeper by connecting the protective earth wires to the ground lug (see Figure 2).

3 After inserting the Ethernet cable through the gland, clamp the ferrite bead around the ethernet cable where it exits the enclosure (see Figure 4 for an illustration). Be sure to secure the ferrite bead with the two wire ties provided.

4 Wire the power and ground to the EA_Gatekeeper. Power is applied to the EA_Gatekeeper by a cable that enters the enclosure through the base of the unit and connects to the AC line SPD. Line

power is connected to the "L1" terminal, neutral is connected to "L2", and ground is connected to the "G" terminal.

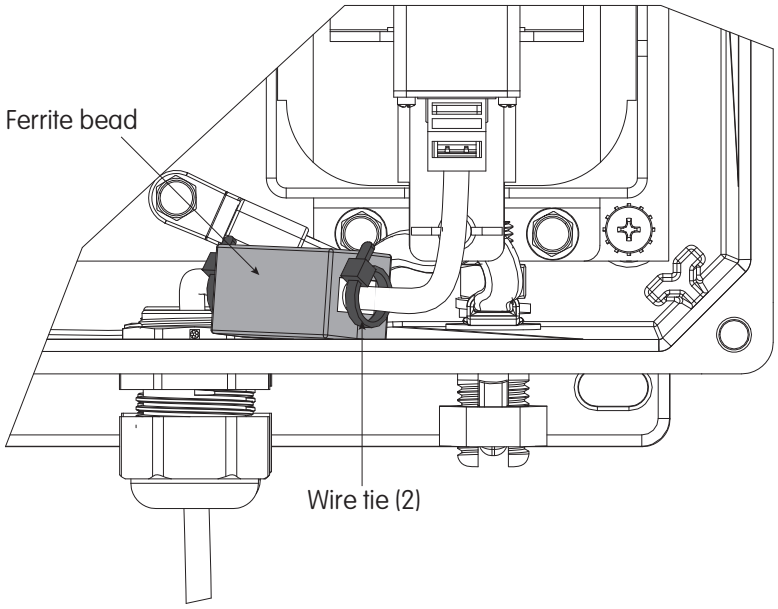
5 Insert the battery fuse into the fuse terminal.

To preserve battery life during shipment and storage, the EA_Gatekeeper is provided without the battery fuse installed. To ensure that the battery is available as a backup power supply, insert the battery fuse into the fuse holder.

6 When you are ready to activate the EA_Gatekeeper, close the circuit breakers.

After completing these steps, verify proper EA_Gatekeeper operation.

Figure 4. Location of ferrite bead



Verifying EA_Gatekeeper operation

In addition to the operation of the LCD on the EA_Gatekeeper electronic assembly, the gatekeeper has two LEDs that indicate the status of the power supply. The green LED is located on the surge suppressor and indicates the presence of AC power. The red LED is located on the battery charger and indicates the status of the backup battery power supply.

LED color	Location	Indicator	Definition
Green	Surge suppressor	On (steady)	Gatekeeper is operating using the main power supply.
		Off	Main power supply is missing or below operating threshold.
Red	Battery charger	On (steady)	Backup battery is charging.
		Blinking	EA_Gatekeeper is operating using the backup battery.
		Off	The backup battery is fully charged. The gatekeeper is operating using the main power supply.

FCC and Industry Canada Compliance

User Information (Part 15.105)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- reorient or relocate the receiving antenna
- increase the separation between the equipment and the receiver
- connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- consult the dealer or an experienced radio/TV technician for help

If you experience trouble with this equipment, please use the Return Material Authorization (RMA) feature available at the Online Customer Services at www.elstersolutions.com. Do not attempt to repair this equipment yourself unless you are replacing the entire module.

Compliance Statement (Part 15.19)

This device complies with Part 15 of the FCC Rules and Class B digital apparatus requirements for ICES-003. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation of the device.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Énoncé de conformité

Cet appareil est conforme à la Partie 15 des règles de la FCC et aux exigences relatives aux appareils numériques de classe B conformément à l'avis sur la compatibilité électromagnétique ACEM-3. L'utilisation de cet appareil est soumise aux deux conditions suivantes : (1) Cet appareil ne doit pas provoquer d'interférences nocives et (2) cet appareil doit accepter toutes les interférences reçues notamment celles pouvant provoquer un fonctionnement intempestif de l'appareil.

Antenna Compliance

To reduce potential interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than permitted for successful communication. Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ouinférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Warning (Part 15.21)

Changes or modifications not expressly approved by Elster could void the user's authority to operate the equipment.

RF Radiation Safety Guidelines

The device should be installed in a location where there will be a separation greater than 20 cm (8 inches) from locations occupied by humans.

Collocation Statement

Collocation of simultaneously-transmitting (co-transmitting) antennas located within 20 cm of each other within a final product is not allowed.

Trademark notices

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