

EA_Gatekeeper model 2210

Ethernet backhaul

Installation instructions
IL42-5039B

General

Within the EnergyAxis® and Connexo systems, the EA_Gatekeeper is the intelligent interface between the EnergyAxis Management System (EA_MS) and Connexo NetSense 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 gatekeepers into service. For example, the gatekeeper 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 gatekeeper can be enclosure-mounted in different form factors.

This leaflet explains how to install the gatekeeper model 2210.

This model of EA_Gatekeeper is configured for 120 VAC to 277 VAC (nominal) operation and uses a battery backup for gatekeeper operation if AC power fails at the site. The EA_Gatekeeper model 2210 uses a NEMA-4X rated polycarbonate enclosure. The gatekeeper supports different mounting options, including mounting on 18-foot (5-meter) to 35-foot (11-meter) utility poles.

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 might need to be charged with a shop charger or need to be replaced.

Figure 1. EA_Gatekeeper model 2210, front and bottom views

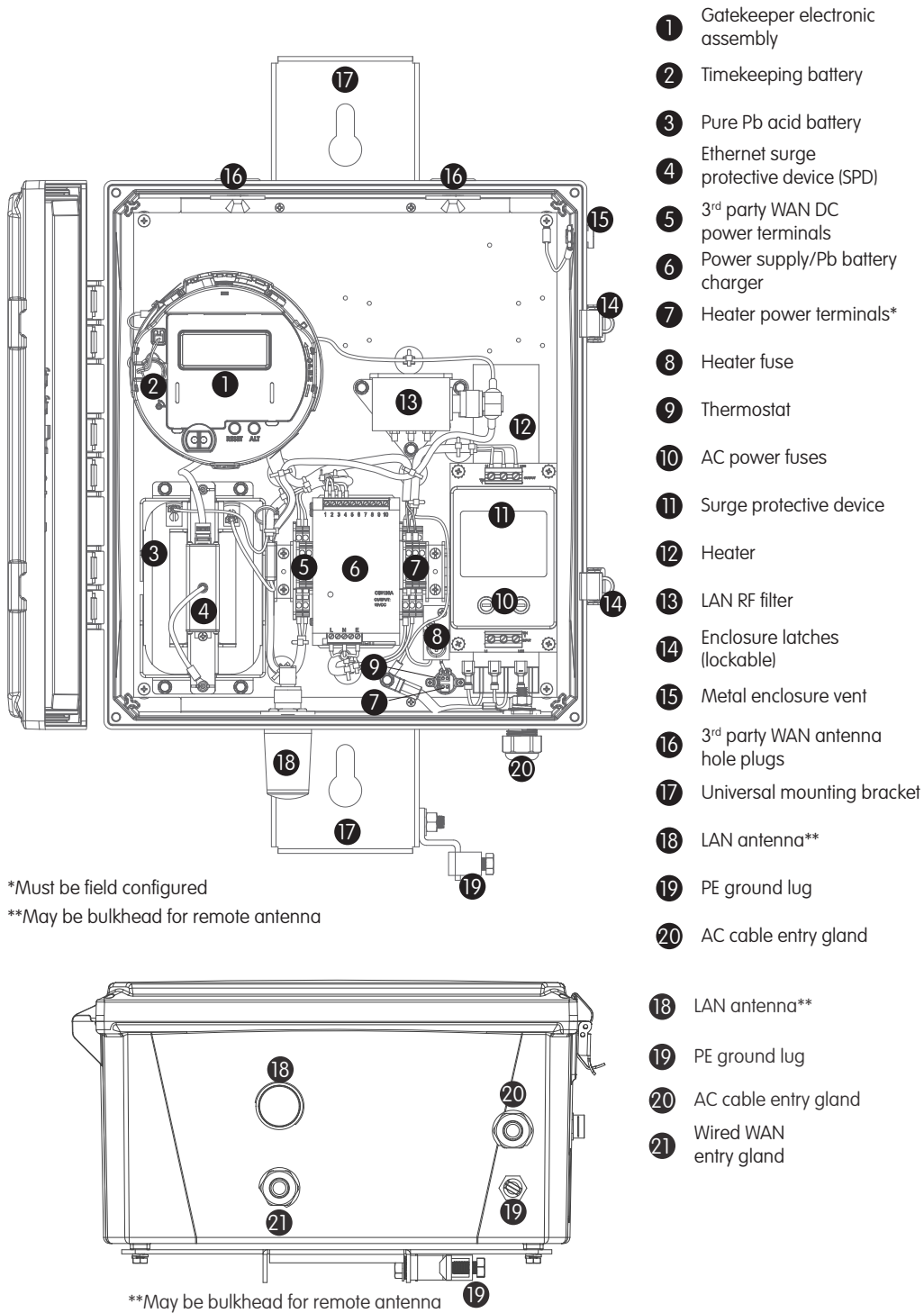
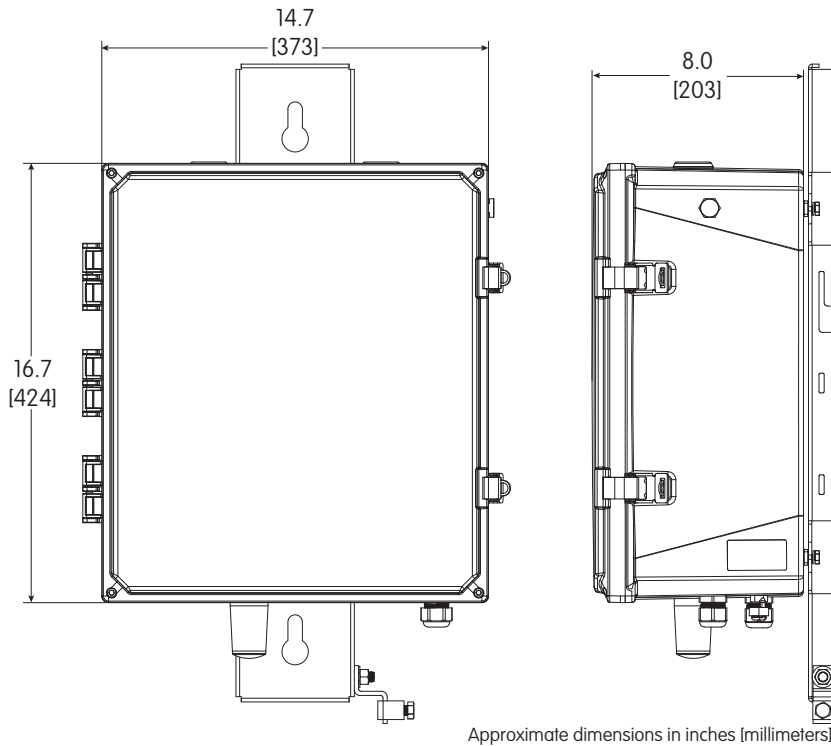


Figure 2. EA_Gatekeeper model 2210 approximate dimensions



Before you install

⚠ WARNING

Use authorized utility procedures when installing the EA_Gatekeeper model 2210. Equipment damage, personal injury, or death can result if authorized utility procedures are not followed when installing the EA_Gatekeeper model 2210.

NOTICE

The EA_Gatekeeper model 2210 is a FCC Part 15 Class A device, and it is not intended for installation in or on a residence. See the FCC Part 15 Class A compliance statement on page 9.

NOTICE

For optimal performance of the LAN antenna, Honeywell recommends that the EA_Gatekeeper model 2210 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 2210 communication within the EnergyAxis or Connexo systems.

The EA_Gatekeeper model 2210 supports different mounting options, including mounting on 18-foot (5-meter) to 35-foot (11-meter) utility poles. Be sure to follow your utility's instructions for mounting the gatekeeper at its installation location.

The EA_Gatekeeper model 2210 is designed to operate from a 120 VAC to 277 VAC (nominal) power supply. 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 6 inch-pounds (0.678 Newton-meters). The cable entry gland dome nut must be torqued to 20 inch-pounds (2.26 Newton-meters).

To maintain the NEMA 4X integrity to the device, steps must be taken to ensure proper sealing of the enclosure features. The cable used for the Ethernet communications and for powering the gatekeeper must be a smooth, round-jacketed, outdoor rated cable. The enclosure lid screws must be installed in the corners of a lid and torqued to 5 inch-pounds (0.565 Newton-meters). 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 be configured in the field before mounted on a pole (see "Placing the EA_Gatekeeper model 2210 into service" on page 5).

NOTICE

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 and compromising the seal. If the enclosure must be opened when temperatures are below freezing, first gently warm the enclosure around the lid gasket to ensure the gasket is not frozen to the sealing surface.

LAN communications

The gatekeeper supports different antenna options. If the antenna is mounted on the unit itself (that is, a local external antenna), no additional steps are required when placing the gatekeeper into service.

If the gatekeeper is to be installed at a location that requires a greater height to overcome blocked signals, a remote antenna is required.¹ Placing the gatekeeper into service requires mounting the remote external antenna in a suitable location. The antenna should be mounted in the clear, as free from conductive or metallic obstructions as possible. The connectors should be sealed for waterproofing.

NOTICE

Do not use a standard RG-8/U cable with solid polyethylene dielectric. The losses in solid dielectric RG-8/U cables in short distances make solid dielectric RG-8/U cables unacceptable.

 **CAUTION**

For assemblies that use a remote mounted antenna, be sure to waterproof the RF cable terminations (such as, using coax sealant) to help prevent water entering the cable terminations.

NOTICE

This device has been designed to operate with the antennas listed below and having a maximum gain of 5.15 dBi. Antennas not included in this list or having a gain greater than 5.15 dBi are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

1. Remote antennas and cables are not supplied with this device. Your Honeywell sales engineer can help you order the correct antennas and cables.

Remote external antennas: PCTEL/MAXRAD P/N MFB9380 (Tessco P/N 61900) for unity gain (2.15 dBi); PCTEL/ MAXRAD P/N MFB 9153 (Tessco P/N 74300) for 3 dB gain (5.15 dBi)

There are several options for remote antenna cabling. The most economical connection to the external remote antenna is the LMR-400 type cable. This type of cable is suitable for distances up to 100 feet (approximately 30 meters). Antenna cables should be ordered with the N-type male connectors on each end. One end attaches to the gatekeeper housing, and the other end attaches to the antenna. You can perform on-site assembly or order pre-assembled cables (for example, from Laird Technologies).

WAN communications

The EA_Gatekeeper model 2210 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 must be rated for outdoor use, have a minimum 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 2210 into service

▲ WARNING

Use authorized utility procedures when installing the EA_Gatekeeper model 2210. 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

The EA_Gatekeeper model 2210 is a FCC Part 15 Class A device, and it is not intended for installation in or on a residence. See the FCC Part 15 Class A compliance statement on page 9.

NOTICE

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

Although the EA_Gatekeeper model 2210 supports nominal power supply ranges from 120 VAC to 277 VAC, you must identify the power supply at the installation site to properly configure the gatekeeper for operation.

- 1 Based on the table and illustration below, configure the heater for operation for the intended AC power input.

Power supply	Figure	Connection instructions
120 VAC	Figure 3	<p>Connect heater wire (23) to thermostat flag terminal (D).</p> <p>Using jumper (Z), connect heater wire (22) and (24) to DIN rail position (B).</p> <p>Torque the DIN rail terminal screw to 5 inch-pounds (0.565 Newton-meters).</p>
240/277 VAC	Figure 4	<p>Heater wire (22) connects to thermostat flag terminal (D).</p> <p>Heater wire (23) connects to DIN rail terminal (C). Use jumper (Y) to make this connection. Torque the DIN rail screw to 5 inch-pounds (0.565 Newton-meters).</p> <p>Heater wire (24) connects to DIN rail terminal (B). Use jumper (X) to make this connection. Torque the DIN rail screw to 5 inch-pounds (0.565 Newton-meters).</p>

Figure 3. 120 VAC heater configuration

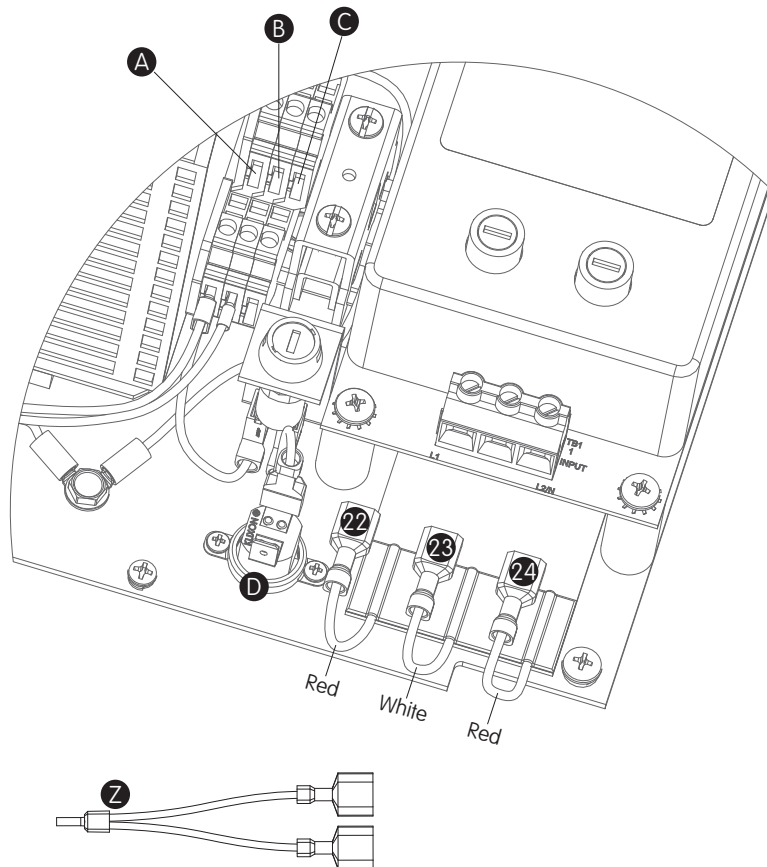
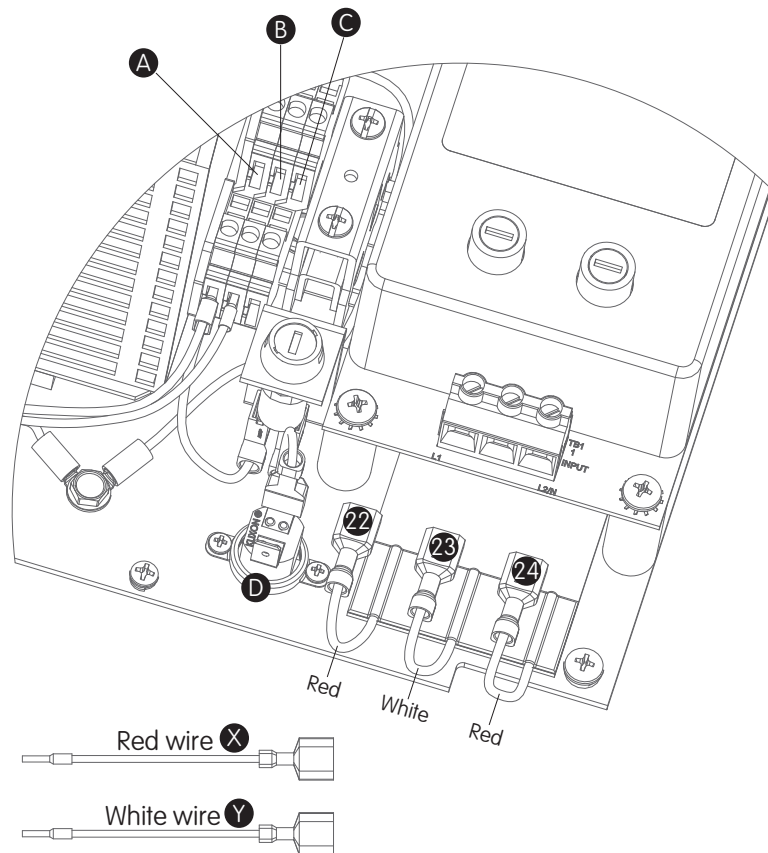


Figure 4. 240/277 VAC heater configuration



- 2 Insert the heater fuse (8). The fuse is located in the parts bag.
- 3 Following your utility's authorized procedures; mount the device at the installation location.
- 4 Connect protective earth to the bracket (19) and to the service post (19) at the bottom of the enclosure.
- 5 If you are using a remote antenna option, mount the external antenna and route the cable through the lightning arrester bulkhead (18). Use coax sealant to waterproof these connections.
- 6 Apply AC power as appropriate for the intended AC power operation. Power is applied to the gatekeeper by a cable that enters the enclosure through the base of the unit (20) and connects to the AC line SPD (11).

After completing these steps, verify that the EA_Gatekeeper is operating correctly.

Verifying EA_Gatekeeper operation

In addition to the operation of the electronic assembly LCD (1), the gatekeeper has two LEDs that indicate the status of the power supply.

Component	LED indicator	Indicator	Definition
Surge protective device (11)	AC power	On (steady)	Normal operation. Gatekeeper has AC power applied and fuses are functioning.
		Off	Main power supply is missing (or below threshold); or, AC line fuses are faulty or missing.
Power supply/Pb battery charger (6)	Mains or backup	On (steady)	AC power is not present at the charger; device is operating from battery power.
		Off	Normal operation. AC power is present at the DC power supply/battery charger.
	Low battery or battery replacement	On	With AC power absent, this indicates the operational backup battery (3) is critically low and on the verge of failure. With AC power present, the battery fuse might be faulty or the battery requires service.
		Off	Normal operation. Battery is within normal parameters and connected to the system.
	Diagnosis	On (1 blink/second)	Normal operation. System idle; battery fully charged.
		On (2 blinks/second)	Normal operation. Battery is charging normally.
On (5 blinks/second)		Battery is charging after being deeply discharged.	
On (2 blinks then pause)		Battery is disconnected or battery fuse is faulty.	
		Off	Gatekeeper is not operating from either AC power or DC power. The system is shut down.

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 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/her own expense.

Warning (Part 15.21)

Changes or modifications not expressly approved by Honeywell 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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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

Notes:

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