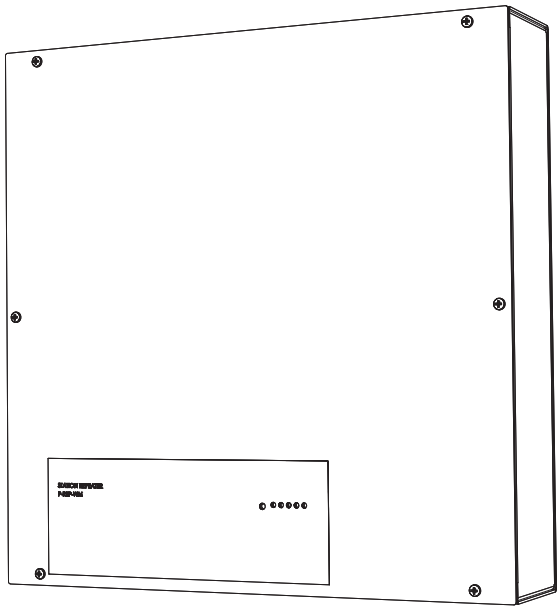
ETC® Setup Guide

Paradigm Wall Mount Repeater Installation

Paradigm Wall Mount Repeater

The Paradigm wall mount repeater enclosure can contain a single or dual repeater. Installation procedures for the single or dual repeater enclosures are identical.



The Paradigm repeater is designed for use with a Paradigm control system to supply LinkPower for up to 62 Paradigm control stations on the topology-free and polarity-independent LinkPower control network.

Wall Mount Enclosure Installation

Mount the Unit to the Wall

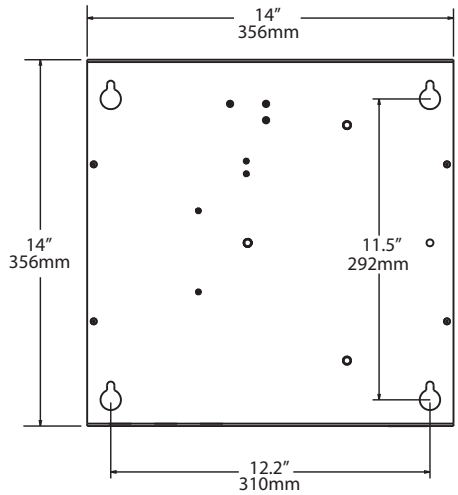
Step 1: Remove the front cover of the unit to reveal the four mounting keyholes.

Step 2: Use the measured keyhole dimensions located in the graphic to mark the hole locations for the mounting hardware.

Step 3: Drill the holes and install the mounting hardware.

- Mounting hardware is not supplied.
- Expose at least 1” (25mm) of threads for mounting the unit.

Step 4: Attach the station power supply to the mounting hardware and tighten the mounting hardware for a secure installation.



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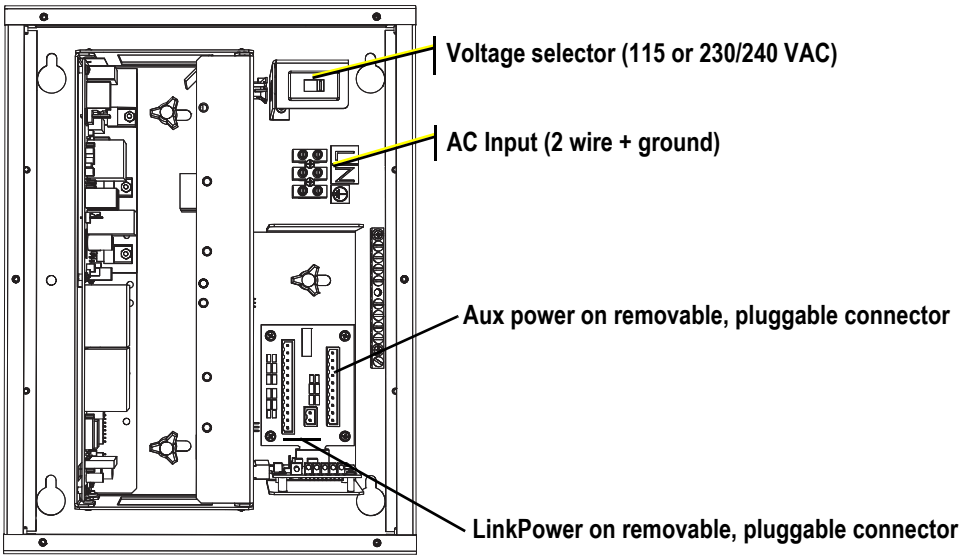
Rough-In Conduit and Wiring

The wall mount enclosure is provided with knockouts on top, bottom, and either side for conduit access into the unit. All wiring terminations are accessible from the front of the unit with the cover removed. Required terminations include -

- A single phase 115 VAC, 230 VAC, or 240 VAC power input (two wire plus ground).
- A LinkPower (Belden 8471 or approved equal) station communication bus. LinkPower includes one pair of wires (data+ and data -). The total combined length of a LinkPower wire run cannot exceed 1,640 feet (500m), with a maximum distance of 1,313 feet (400m) between any two devices.
- Auxiliary power uses two 16 AWG ($1.5mm^2$) stranded wires for 24 Vdc auxiliary power to the control station(s). Auxiliary power is topology-free. Maximum auxiliary voltage runs are dependant by the wire gauge and the distribution of auxiliary load determined by installation. The auxiliary supply is capable is of 36W (1.5A at 24Vdc).

Note: *All low voltage control cables must run in separate conduit from power wires.*

Terminate Wiring



The Paradigm repeater and dual repeater is supplied with a voltage regulator for selection of either 115 VAC or 230/240 VAC operation, a single phase (2 wire plus ground) AC input terminal, and a connector for LinkPower data run to Paradigm controls.

Step 1: Pull the line, neutral, and ground cable to the unit through the conduit openings previously prepared.

Step 2: Insert the line (input feed), neutral wire, and ground wire into the appropriate power input terminal block and secure.

Step 3: Change the voltage selector to either 115 VAC or 230/240 VAC, matching the AC input supplied.

Unison control stations communicate with the Paradigm architectural control processor using the LinkConnect station communication bus from the architectural control processor to the stations. LinkConnect is based on Echelon® LonWorks® with LinkPower.

Throughout this document, LinkConnect is referred to by the protocol it uses, LinkPower.

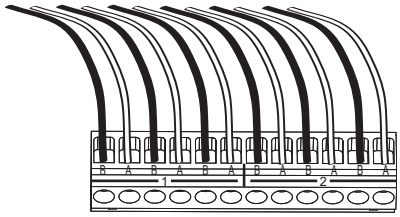
Termination is available for LinkPower (LON) data runs using Belden 8471 cable (or approved equal) plus one 14 AWG ESD drain wire and two 16 AWG wires for auxiliary power. LinkPower wiring is topology-free and polarity independent, you can install your LinkPower data runs in any desired combination of bus, star, loop, and home run. The total combined length of LinkPower wire run cannot exceed 1,640 feet (500m), with a maximum distance of 1,313 feet (400m) between any two un-repeated communicating devices.

To terminate LinkPower:

Step 1: Pull Belden 8471 (or approved equal) control wiring into the enclosure.

Step 2: Strip 3/16” (4.8mm) of insulation from the ends of each wire pair.

Step 3: Remove the LinkPower connector (labeled LON) from the I/O board



Notice the LinkPower/LON connector is labeled to indicate that the connector is split between two LON segments. This is effective only when a Paradigm dual station repeater module (P-DREP) is used. With the standard Paradigm station repeater module (P-REP) all six station home runs connect to the single LON control segment.

Step 4: Loosen the terminal screws for the wire pairs you are terminating.

Step 5: Insert each white (typical) wire from the pairs into a “A” terminal on the connector and tighten the screw(s) firmly to secure the wire into the terminal.

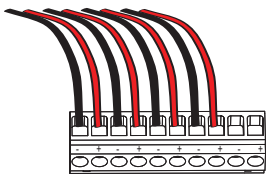
Step 6: Insert each black (typical) wire from the pairs into a “B” terminal on the connector and tighten the screw(s) firmly to secure the wire into the terminal.

Step 7: The 14 AWG ground wire can terminate to the ground bus located inside the enclosure.

Step 8: Replace the connector on the I/O board.

Terminate Auxiliary Power

Auxiliary power is required when you are installing powered Unison control stations. ETC recommends using two 16 AWG stranded wires for 24 Vdc auxiliary power to the control station(s). Auxiliary power is topology-free. Maximum auxiliary voltage runs are dependant by the wire gauge and the distribution of auxiliary load determined by installation. The auxiliary supply is capable of providing 36W (1.5A at 24Vdc).



The auxiliary power connector (labeled Aux Power) provides termination for up to 20 wires in the ten position pluggable connector. Each terminal allows up to two 16 AWG wire and provides 24 Vdc power to Unison control stations.

To terminate auxiliary power:

Step 1: Pull auxiliary control power wiring (typically 16 AWG red / black wire pair) into the enclosure.

Step 2: Strip 3/16” (4.8mm) of insulation from the ends of each wire pair.

Step 3: Remove the auxiliary power connector from the I/O board.

Step 4: Loosen the terminal screws for the auxiliary wire pairs you are terminating.

Step 5: Insert the black (typical) auxiliary power wire from the pair into a “-” terminal on the connector and tighten the screw(s) to secure the wire into the terminal.

Step 6: Insert the red (typical) auxiliary power wire from the pair into a “+” terminal on the connectors and tighten the screw(s) to secure the wire into the terminal.

Step 7: Replace the connector on the I/O board.

Final Installation

Step 1: Replace the front cover to the unit.

Step 2: Supply power to the unit.

Step 3: Check status indicators for faults.

Status Indicators

When power is applied to the Station Repeater Module, the LEDs located on the front panel illuminate, indicating the status of the auxiliary power, LinkPower control network, and connected stations.

The Aux Power and LinkPower LEDs indicate in green when the Paradigm station power module is connected properly and auxiliary power and LinkPower are present. When there is an unbalance in LinkPower the fault indicators illuminate. This condition typically means that the station wiring has a fault, however it could mean a connected device is having an issue. A qualified technician should inspect the system wire and terminations first, then proceed to disconnecting devices to pinpoint the fault and correct it. The power supply will update the fault indicators automatically when the fault condition is cleared.

- If the NET A line has a fault (is shorted or has leakage to ground), the Fault + LED lights.
- If the NET B line has a fault (is shorted or has leakage to ground), the Fault - LED lights.
- If neither fault LED is illuminated the data connections are properly installed and the stations are receiving the data and power required for operation.