Unison ERn Rack-Mount Enclosure

Mk2

Installation Manual

Part Number: 7180M2112 Rev: A

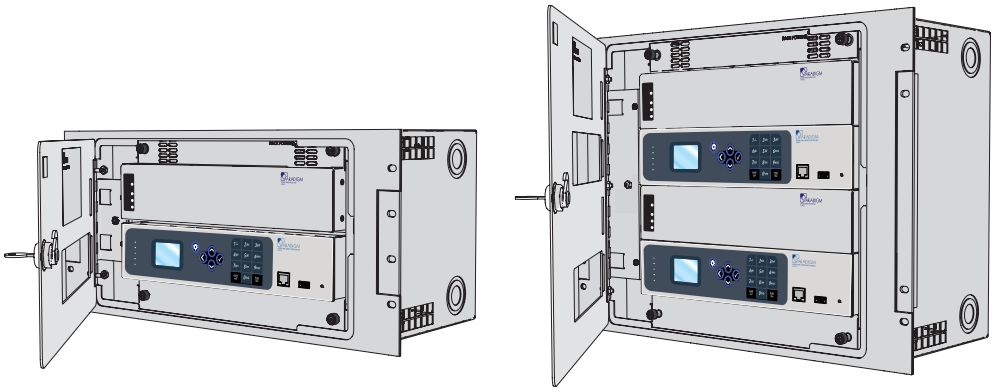
Released: 2025-06

Table of Contents

Introduction

Welcome to the installation manual for the Unison ERn rack-mount external processing enclosure. This manual contains the procedures for safe and efficient installation of ERn series processing racks, including wire termination and option kit installation.

The ERn series enclosure provides Unison architectural control to distributed Unison, Sensor3, or other DMX512 dimming systems. Used stand-alone or in multi-processor network systems, the ERn series enclosure offers elegant low-profile rack-mounting, back-lit control electronics, and the ultimate in architectural lighting control versatility.



The ERn enclosure is available in two sizes, ERn2 (single processor) and ERn4 (dual processor), which can be supplied for surface-mounting on a wall (reference the *Unison ERn Wall-Mount Enclosure Installation Manual*) or with rack-mounting brackets for installation in a standard 19-inch equipment rack. The ERn is available in 120, 230, and 240 VAC models to meet your installation requirements.

ERn2 Enclosure

The ERn2 enclosure supports a single Paradigm Processor Mk2 (P-ACP-E Mk2) and one Paradigm Station Power Module Mk2 (P-SPM-E Mk2) or a blank module (ERn-BM). The accessory tray in the bottom of the enclosure can be used for a blank module or the ERn Redundant Power Supply Mk2 (ERn-RPS Mk2). ERn-RPS Mk2 is not compatible with 230 V ERn enclosures.

ERn2 Mk2 Rack-Mount Enclosure Models

Model	Voltage/Frequency	Notes
ERn2-RM-100-120 Mk2	85–120 VAC, 47–63 Hz (single phase)	Rack-mount control enclosure Mk2 for 19-inch rack-mounting utilizing 5 rack units (or 5U) of rack space. For for use with one P-ACP-E Mk2 and one option module.
ERn2-RM-230 Mk2	180–265 VAC, 47–63 Hz (single phase), CE	
ERn2-RM-240 Mk2	180–265 VAC, 47–63 Hz (single phase)	

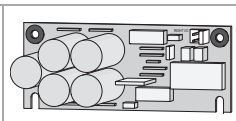
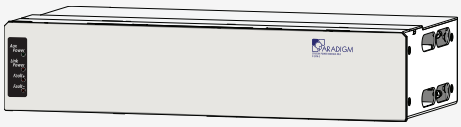
ERn4 Enclosure

The ERn4 enclosure supports up to two Paradigm Processors (P-ACP-E Mk2) and two Paradigm Station Power Modules (P-SPM-E Mk2). The accessory tray in the bottom of the enclosure can be used for a blank module or the ERn Redundant Power Supply Mk2 (ERn-RPS Mk2). ERn-RPS Mk2 is not compatible with 230 V ERn enclosures.

Rack-Mount Enclosure Models

Model	Voltage/Frequency	Notes
ERn4-RM-100-120 Mk2	85–120 VAC, 47–63 Hz (single phase)	Rack-mount control enclosure Mk2 for 19-inch rack-mounting utilizing 8 rack units (or 8U) of rack space. For use with up to two P-ACP-E Mk2 and up to two option modules.
ERn4-RM-230 Mk2	180–265 VAC, 47–63 Hz (single phase), CE	
ERn4-RM-240 Mk2	180–265 VAC, 47–63 Hz (single phase)	

ERn Modules and Options

P-ACP-E Mk2		URTO Mk2	
P-SPM-E Mk2		ERn-RPS Mk2	
ERn-BM			

Model	Description	Notes
P-ACP-E Mk2	Paradigm Processor Mk2	The P-ACP-E Mk2 provides powerful and flexible control for architectural and theatrical applications. The built-in memory and processing power works with vast amounts of lighting control data and it is fast enough to process 2,048 simultaneous fades over any of its native protocols. The P-ACP-E Mk2 supports 2,048 channels of control per processor, and up to 128 Unison control stations over the LinkConnect network with the use of available Paradigm Station Power Supplies/Modules.
P-SPM-E Mk2	Paradigm Station Power Module Mk2	The P-SPM-E Mk2 provides power for up to 63 Unison control stations over the LinkConnect network and provides the station data bus length up to 500 m (1,640 ft).
ERn-BM	Airflow Option Module	The ERn-BM is used to fill empty module space in the ERn series enclosure, maintaining the convection cooled design.
URTO Mk2	Unison Mk2 RideThru Option	The URTO Mk2 provides power for one P-ACP-E Mk2 in the host enclosure for a limited time (minimum of 12 seconds) during brief power outages or drop outs. If installed in an ERn4 enclosure, one URTO Mk2 is required per P-ACP-E Mk2.
ERn-RPS Mk2*	ERn Redundant Power Supply Mk2	The ERn-RPS Mk2 provides an additional rack power supply that powers the ERn enclosure if the primary rack power supply fails. This unit installs into the accessory option slot of a compatible ERn enclosure.

***Note**: ERn-RPS Mk2 is not compatible with 230 V ERn enclosures. 230 V ERn4 control enclosures ship with a rack power supply installed in the top and bottom module slots.

Mk2 Processor and Hardware Compatibility

This installation manual covers installation of the ERn rack-mount control enclosure, its supported Mk2 hardware (P-ACP-E Mk2, P-SPM-E Mk2), and Mk2 accessories.

The original Paradigm Processor (P-ACP Mk1) is incompatible with ERn Enclosure Mk2 hardware. For information about upgrading an original ERn Enclosure with Mk2 hardware, see the *Paradigm ERn Enclosure Mk2 Upgrade Kit Installation Guide*.

Safety

Main Circuit Breaker Protection

Prior to installing the ERn enclosure, make sure you have installed a main circuit breaker cabinet or other readily-accessible input power disconnect device in the same room or in close proximity of the installed ERn control enclosure.

WARNING: RISK OF ELECTRIC SHOCK! Circuits that are installed without an accessible power disconnect device cannot be serviced or operated safely.

AVERTISSEMENT : RISQUE DE DÉCHARGE ÉLECTRIQUE! Il est imprudent d'utiliser ou de réparer les circuits installés sans qu'un dispositif de déconnexion de l'alimentation ne soit accessible.

Maximum Current Input

Maximum current draw of the control enclosure fully populated with modules and options:

- ERn2 control enclosure maximum current is 2.3 amps.
- ERn4 control enclosure maximum current is 4.1 amps.

Document Conventions

This document uses the following conventions to draw your attention to important information.

Note: *Notes are helpful hints and information that is supplemental to the main text.*

CAUTION: ***A Caution statement indicates situations where there may be unwanted consequences of an action, potential for data loss or an equipment problem.***

WARNING: A Warning statement indicates situations where damage may occur, people may be harmed, or there are serious or dangerous consequences of an action.

WARNING: RISK OF ELECTRIC SHOCK! This warning statement indicates situations where there is a risk of electric shock.

All ETC documents are available for free download from our website: etcconnect.com.

Please email comments about this manual to: TechComm@etcconnect.com.

Help from ETC Technical Services

If you have questions that are not answered by this document, try the ETC support website at support.etcconnect.com or the main ETC website at etcconnect.com. If none of these resources are sufficient, visit etcconnect.com/contactETC and contact ETC Technical Services. Emergency service is available from all ETC offices outside of normal business hours.

Please have the following information handy:

- Your location and job name
- A complete list of ETC equipment
- A complete list of other installed products and components connected to the system you are troubleshooting
- DMX control source, if any

Prepare for Installation

Unpack and Inspect

Before you begin installation, check your shipment and confirm it arrived complete and undamaged.

1. Check the shipping container for physical damage.
2. If you find damage, document it to help with a claim against your shipper.
3. Unpack your order and check the contents against the packing list to be sure your order is complete.
4. If you discover a problem, contact ETC for assistance. See *Help from ETC Technical Services on page 8*.

Mounting Specifications

An ERn configured for installation in a 19-inch equipment rack requires 5U of rack space for an ERn2 and 8U of rack space for an ERn4. ERn enclosures are provided with rack-mounting brackets attached to the ERn enclosure at shipment. The locking door attaches to the equipment rack for a secure installation.

Dimensions and Weights

Model	Height		Width		Depth		Weight*	
	mm	in	mm	in	mm	in	kg	lb
ERn2-RM Mk2 (includes rack door)	223	8.8	483	19	244	9.6	7.7	16.6
ERn4 RM Mk2 (includes rack door)	358	14.1	483	19	244	9.6	11	23.8

*Weights listed exclude modules and accessories.

Environment

The ERn must be installed in a clean (not dusty), temperature-controlled environment that meets the following conditions:

- ambient temperature of 0°C to 40°C (32°F to 104°F)
- ambient humidity of 10%–90%, non-condensing

CAUTION: ***HVAC systems must at all times maintain the specified ambient temperature at the Unison ERn enclosure.***

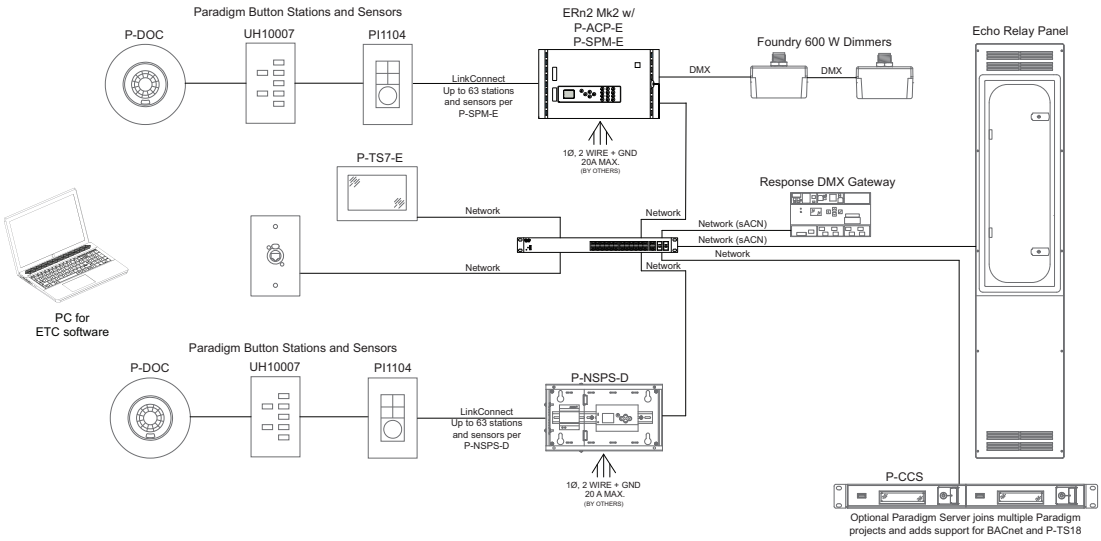
- restricted public access to prevent tampering

Wire Requirements

The rear panel of the Unison ERn rack-mount unit includes a full complement of removable input and output connectors for easy installation. Additionally, an IEC power connector is provided on the rear panel for input power. See *Connect Rear Panel I/O Data Terminations on page 15*.

Control Specifications

The riser below is typical of a system utilizing the ERn with the Paradigm Processor Mk2 (P-ACP-E Mk2) for control. Paradigm systems provide up to two DMX inputs/outputs for control of more advanced systems. A Paradigm system also utilizes Net3 networking for system wide control.



The following table lists the recommended control wire types used in a typical ERn installation and the maximum wire runs allowed using the recommended wire.

Purpose	LinkConnect (Belden 8471)		DMX (Belden 9729)		Network (Ethernet) (Cat5/Belden 1583a)	
	m	ft	m	ft	m	ft
Total length of control wire	500	1,640	487	1,600	100	328
Maximum wire length (between devices/station to station)	400	1,312	487	1,600	N/A	N/A

Data Types and Topologies

LinkConnect

LinkConnect is a bi-directional protocol that uses one pair of wires (data+ and data-) for both data and power. LinkConnect is topology-free and polarity independent, you can install your LinkConnect data runs in any desired combination of bus, star, and home run. ETC recommends using Belden 8471 Class 2 wire (or approved equal - see the ETC cable cross database etcconnect.com/cablecross/ for equal alternatives). The total combined length of a LinkConnect wire run using Belden 8471 may not exceed 500 m (1,640 ft), with a maximum distance of 400 m (1,312 ft) between any two devices. Pull an additional 2.5 mm^2 (14 AWG) wire for grounding when wiring is not installed in grounded metal conduit.

DMX512 (Digital Multiplex)

DMX can address up to 512 channels of control. DMX is installed in a daisy chain topology and includes two twisted pairs plus a shield to carry data (data+ and data-, plus an ISO ground). ETC recommends the use of Belden 9729 (or approved equal - see the ETC cable cross database etcconnect.com/cablecross/ for equal alternatives) with a single end of line termination (120Ω). DMX cable termination instructions are provided with the DMX termination kit. For best DMX performance, twist the wires together as close to the pluggable connector as possible.

Auxiliary 24 VDC

Auxiliary power is required when you are installing powered Unison control stations. ETC recommends using two 1.5 mm^2 (16 AWG) stranded wires for 24 VDC auxiliary power to the compatible control stations. Auxiliary power is topology-free. Maximum auxiliary voltage wire runs are dependent on the wire gauge and the distribution of auxiliary load determined by installation. The auxiliary supply is capable is of 36 W (1.5 A at 24 VDC).

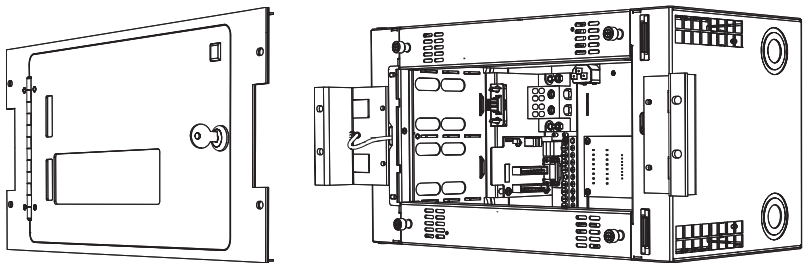
Note: *Terminate LinkConnect and auxiliary power wiring to the ERn that hosts the Paradigm Station Power Module Mk2 (P-SPM-E Mk2).*

Network (Ethernet)

Ethernet is required to network the ERn to the Paradigm system. ETC recommends category cable (Cat5, Cat5e, or approved equal - see the ETC cable cross database etcconnect.com/cablecross/ for equal alternatives). All Ethernet terminations must follow IEEE 802.3af and be terminated to the T568B standard.

Install Enclosure

Install in a 19-Inch Equipment Rack



Rack-mounting brackets are installed on the ERn unit when shipped from the factory. Also included, but not attached to the unit at shipment, is a flush-mounted, locking door. The door provides visibility and access openings for the Paradigm Processor Mk2 (P-ACP-E Mk2) user interface and the related status indicators. Additional access openings are provided for visibility of status indicators on the Paradigm Station Power Modules (P-SPM-E Mk2).

Secure the ERn enclosure to the 19-inch equipment rack using the hardware provided. The ERn2 requires 5U of rack space and the ERn4 requires 8U of rack space.

Complete the entire installation before attaching the flush-mounted, locking door. Reference:

- Preparing and pulling required wire to the rear panel of the ERn enclosure (see *Wire Requirements on page 9* for details on wiring).
- Connecting power to the IEC connector located on the rear panel (see *Connect Wiring on page 13*).
- *Connect Rear Panel I/O Data Terminations on page 15*.
- *Install Rack Options on page 20*.
- Check the system operation (see *Final Installation and Power Up on page 24*).

Attach the door to the mounting brackets using the hardware provided.

Connect Wiring

IEC Power Input Connector

WARNING: RISK OF DEATH BY ELECTRIC SHOCK! Failure to disconnect all power to the panel before working inside could result in serious injury or death.

AVERTISSEMENT : RISQUE D'ÉLECTROCUTION! Travailler à l'intérieur du panneau sans avoir déconnecté le courant peut entrainer des blessures graves, voire mortelles.

De-energize main feed to the panel and follow appropriate Lockout/Tagout procedures as mandated by NFPA 70E or local jurisdiction requirements. It is important to note that electrical equipment such as breaker panels can present an arc flash hazard if improperly serviced. This is due to the high amounts of short-circuit current available on the electrical supply to this equipment. Any work must comply with OSHA Safe Working Practices or local jurisdiction requirements.

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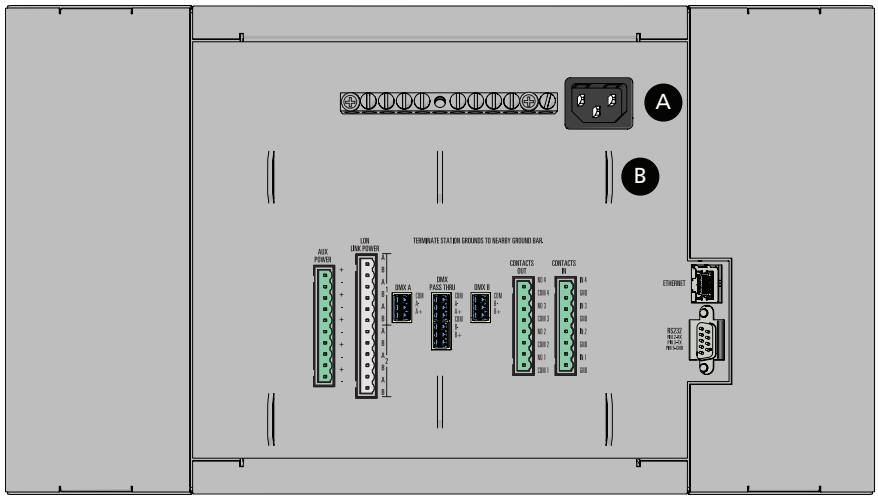
AVERTISSEMENT : RISQUE DE DÉCHARGE ÉLECTRIQUE! Il est imprudent d'utiliser ou de réparer les circuits installés sans qu'un dispositif de déconnexion de l'alimentation ne soit accessible.

ERn Rack-Mount Enclosure Power Input

The ERn enclosures are available in 100–120, 230, and 240 VAC single phase configurations. The ERn requires a single phase, 15 A at 120 VAC or a 15 A at 230 and 240 VAC input feed.

The ERn rack-mount enclosure is provided with an IEC power input connector for easy and convenient installation (A in the illustration below).

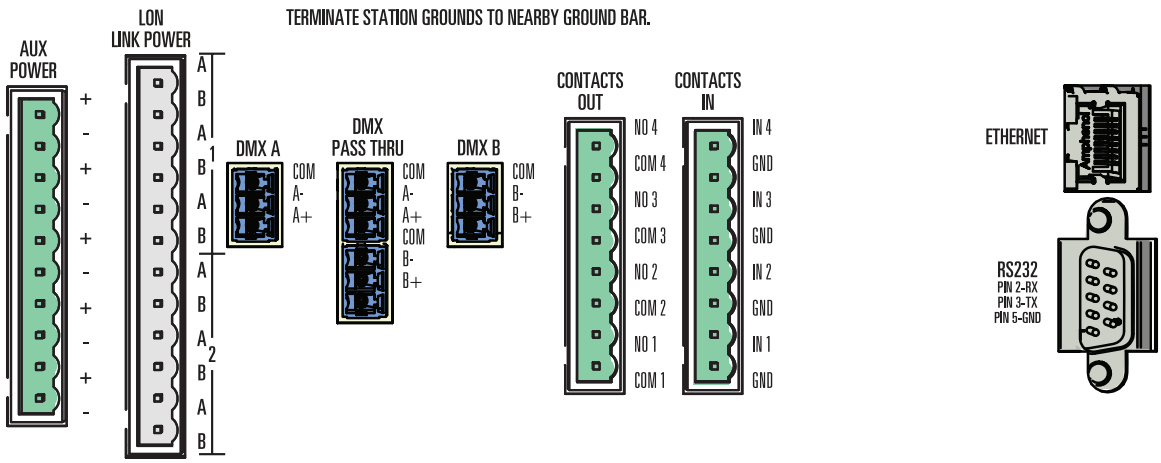
Lance and forms (B in the illustration below) are provided as a way to secure wire ties.



ERn rack-mount enclosure with *[A]* IEC power connector and *[B]* lance and forms

Connect Control Wiring

All low-voltage data and option wiring conveniently connects to removable and pluggable connectors on rear panel of the ERn enclosure.



Note: *Lance and forms are provided as a way to secure wiring with wire ties.*

WARNING: RISK OF DEATH BY ELECTRIC SHOCK! Failure to disconnect all power to the panel before working inside could result in serious injury or death.

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The rear panel provides removable and pluggable connectors for contact inputs and outputs, RS-232 serial, Ethernet control, contact closure input and output terminations, LinkConnect, auxiliary power, DMX In, DMX Out, and DMX through.

Rack options such as the ERn Redundant Power Supply Mk2 (ERn-RPS Mk2) and the Unison Mk2 RideThru Option (URTO Mk2) terminate to the right I/O board located inside the ERn enclosure.

Connect Rear Panel I/O Data Terminations

DMX Control

DMX wire preparation and termination will vary with the type of wire utilized. The Mk2 right I/O board accepts three-position screw terminal style connectors for DMX A In, DMX B In, DMX A Thru, and DMX B Thru.

All required connectors for DMX termination are provided in the DMX Cable Termination Kit. Refer to the instructions supplied with the kit for details on wire preparation and pinout according to the recommended DMX cable type.

When all DMX wires are prepared and fully terminated to the provided connectors, install the connectors to the header on the right I/O.

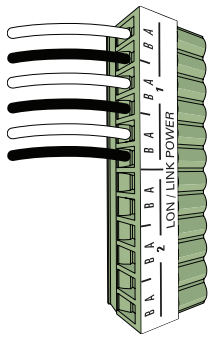
LinkConnect

Unison control stations and sensors communicate over LinkConnect and require a Paradigm Station Power Module Mk2 for power and the Paradigm Processor Mk2 for control.

See *Wire Requirements on page 9*. Termination is available for up to six home runs of LinkConnect data runs utilizing Belden 8471 cable (or its equal) plus one 2.5 mm^2 (14 AWG) ESD drain wire when the data cable is not installed in grounded metal conduit.

Each individual LinkConnect data run supports no more than 63 stations and sensors.

Note: *Terminate your LinkConnect and auxiliary power wiring to the ERn enclosure I/O board that hosts the Paradigm Station Power Module Mk2 (P-SPM-E Mk2) and the Paradigm Processor Mk2 (P-ACP-E Mk2).*



1. Pull Belden 8471 (or approved equal type) control wiring to the rear panel of the ERn enclosure.
2. Strip 7 mm (1/4 in) of insulation from the ends of each wire pair.
3. Remove the LinkConnect connector (labeled LON).
4. Loosen the terminal screws for as many wire pairs you are terminating.
5. Insert each white wire (typical) from the pairs into an "A" terminal on the connector and tighten the screw to secure the wire.
6. Insert each black wire (typical) from the pairs into a "B" terminal on the connector and tighten the screw to secure the wire.
7. The 2.5 mm^2 (14 AWG) ground wire can terminate to the ground bus located on the rear panel of the ERn enclosure. Connect the other end of the ground wire to the green/yellow striped wire connected at the architectural control station using a WAGO connector. Reference the related station installation manual for further details.
8. Replace the connector to the rear panel I/O board.

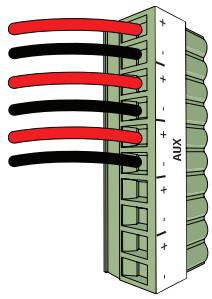
Auxiliary Power

Auxiliary power is required when you are installing powered Unison control stations and sensors. ETC recommends using two 1.5 mm^2 (16 AWG) stranded wires for 24 VDC auxiliary power to the control stations. Auxiliary power is topology-free. Maximum auxiliary voltage runs are dependent on the wire gauge and the distribution of auxiliary load determined by each installation. The auxiliary supply is capable of 36 W (1.5 A at 24 VDC).

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 (1.5 mm^2 [16 AWG]) conductors and provides 24 VDC power to Unison control stations and sensors.

Note: *It is required that you terminate LinkConnect station wiring and the auxiliary power wiring to the ERn enclosure rear panel I/O board that will host the Paradigm Station Power Module Mk2 (P-SPM-E Mk2).*

1. Pull auxiliary control power wiring (typically a red/black wire pair) to the ERn enclosure rear panel.
2. Strip 7 mm (1/4 in) of insulation from the ends of each conductor.
3. Remove the auxiliary power connector from the rear panel I/O board.
4. Loosen the terminal screws for as many auxiliary wire pairs as you are terminating.
5. Insert the negative wire (typically black) into a "-" and the positive wire (typically red) into a "+" terminal on the connector. Tighten each terminal screw to secure the conductors into the connector. Repeat for each wire pair.
6. Replace the connector to the rear panel I/O.



Status Indicators

When power is applied to the ERn enclosure, the Paradigm repeater module LEDs located on the front panel illuminate, indicating the status of the auxiliary power, LinkConnect control network, and connected stations.

The Aux Power and LinkPower LEDs indicate in green when the Paradigm Station Power Module Mk2 is connected properly and Aux and LinkPower are present. When there is an imbalance in LinkPower the fault indicators illuminate. This condition typically means that the station wiring is at fault, however it could mean a connected device is having an issue. A 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.

Serial RS-232

Integrators or users of advanced systems can interface with the Unison system through the RS-232 serial connector located on the rear panel I/O. This connection provides an interface with external devices capable of sending or receiving RS-232. This connection can also receive serial commands from a transmitter and provide rack and system status when queried.

Note: *The RS-232 cable (not supplied) should follow common RS-232 pinout for a DB-9 receptacle (pin 2 is RS-232 Rx, pin 3 is RS-232 Tx, and pin 5 is ground).*

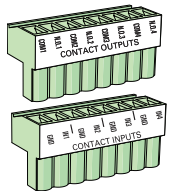
Ethernet RJ45

The network interface to the ERn enclosure is made through the RJ45 connector (labeled Ethernet) located on the rear panel I/O.

All Ethernet terminations must follow IEEE 802.3 and be terminated to the T568B standard.

Contact Wiring

The rear panel I/O provides convenient interface (inputs and outputs) to external devices via contact closure on removable pluggable connectors. Up to four contact inputs are available and can be configured for either maintained or momentary operation. Up to four contact outputs are also available and are preset for normally-open operation.



Reference the *Paradigm Architectural Control Processor Configuration Manual* for details on configuration of each input and output. Documentation is available for download from etcconnect.com/docs/Paradigm-processor-mk2.

Note: *Typical contact I/O wiring is color coded as follows: contact 1 - brown, contact 2 - orange, contact 3 - yellow, contact 4 - green. All commons and ground voltages are typically black or red.*

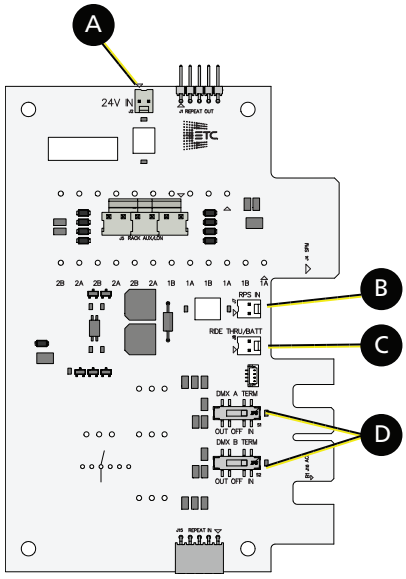
Contact Inputs

1. Remove the contact inputs removable screw terminal connector located on the rear panel I/O. Each connector is labeled for installation convenience.
2. Strip 7 mm (1/4 in) of insulation from the end of each wire pair.
3. Loosen the desired number of contact input screw terminals and related ground screw terminals on the connector.
4. Insert contact closure 1 into the terminal labeled “IN1” on the connector and tighten the screw terminal 0.5 N•m.
5. Insert the related ground wire for contact closure 1 into the terminal labeled “GND” on the connector and tighten the screw terminal.
6. Repeat for each contact input and ground wire pair (up to four total).

Contact Outputs

1. Remove the contact outputs removable screw terminal connector located on the rear panel I/O. Each connector is labeled for installation convenience.
2. Strip 7 mm (1/4 in) of insulation from the end of each wire pair.
3. Loosen the desired number of contact output (normal open) screw terminals and related ground screw terminals on the connector.
4. Insert contact output 1 into the terminal labeled “NO1” on the connector and tighten the screw terminal 0.5 N•m.
5. Insert the related common wire for contact output 1 into the terminal labeled “COM1” on the connector and tighten the screw terminal.
6. Repeat for each contact output and common wire (up to four total).

Right I/O Data Terminations



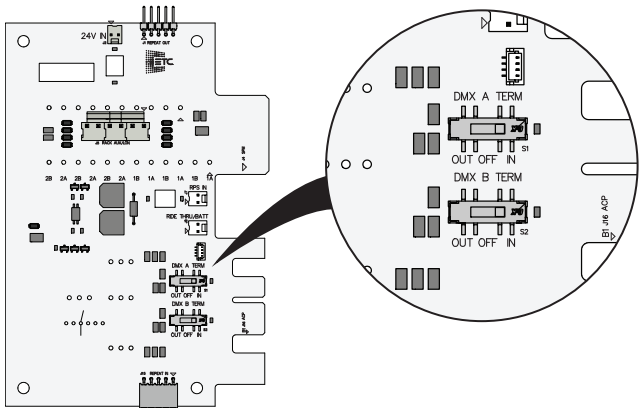
ERn right I/O board. See the table below for descriptions of the labeled items.

A	24 VDC In, connects power from the ERn Power Supply (ERn-PS) to the right I/O board.
B	ERn-RPS Mk2 In. See *Install the Redundant Power Supply on page 23*.
C	Ride Thru/Batt. See *Install the RideThru Option on page 20*.
D	DMX Termination Switches. See *Terminate DMX Signal on page 19*.

Note: *The 24 VDC In connection, labeled [A] in the previous image, is pre-wired for you and connects power from the ERn Power Supply (ERn-PS) to the right I/O board. RideThru/Batt installation and wire termination details are provided in the Install the RideThru Option on page 20. Wiring for the ERn Redundant Power Supply Mk2 (ERn-RPS Mk2) is also pre-wired for you. See Install the Redundant Power Supply on page 23 for option module installation details. The ERn-RPS Mk2 is not compatible with a 230 V ERn enclosure.*

Terminate DMX Signal

DMX requires 120Ω termination at the last DMX device in the control run. An ERn enclosure with a P-ACP-E Mk2 installed supports up to two DMX inputs/outputs (two separate DMX runs).



Notice the two termination switches labeled "DMX A TERM" and "DMX B TERM"on the right I/O board. Each switch has three termination positions:

- OUT = Paradigm is the source
- OFF = No termination (the DMX signal passes through)
- IN = 120 Ω termination

When used as a DMX output port, the termination switch should be set to "OFF".

Install Rack Options

Rack Options

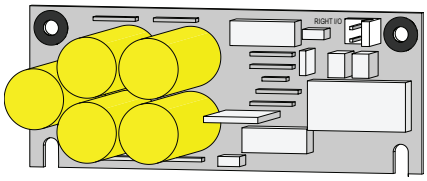
Unison ERn rack-mount unit options include the Unison Mk2 RideThru Option (URTO Mk2) kit and the ERn Redundant Power Supply Mk2 (ERn-RPS Mk2).

Install the RideThru Option

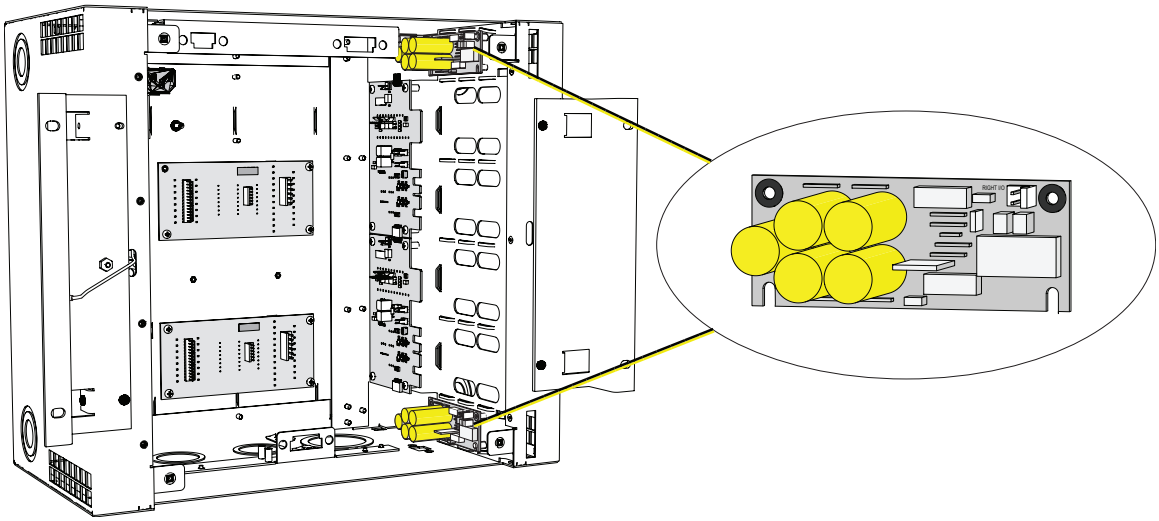
WARNING: RISK OF ELECTRIC SHOCK! The RideThru Option retains an electrical charge even when power to the equipment is off.

AVERTISSEMENT : RISQUE D'ELECTROCUTION! L'Option RideThru conserve une charge électrique même lorsque l'alimentation de l'équipement est coupée.

The Unison Mk2 RideThru Option board (URTO Mk2) provides power to the Paradigm Processor Mk2 for a minimum of 12 seconds during brief power outages or power dropouts. The URTO Mk2 fully charges and is ready for automatic operation within 10 minutes of the ERn being powered.



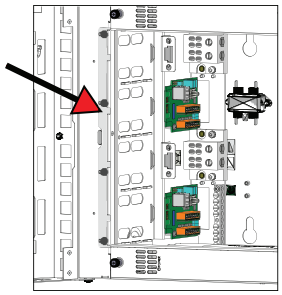
URTO Mk2



Note: *One Unison Mk2 RideThru Option board powers only one P-ACP-E Mk2, therefore an ERn4 with two P-ACPs installed requires two Unison Mk2 RideThru Option boards.*

1. Remove any modules from the ERn enclosure for Unison Mk2 RideThru Option board installation access.

Note: *An ERn 230 VAC (CE) enclosure includes a module retention bar. Before removing any modules, loosen the hardware and slide the module retention bar to the left. Be sure to secure the bar again after the installation is complete and all modules have been returned to their module slots.*

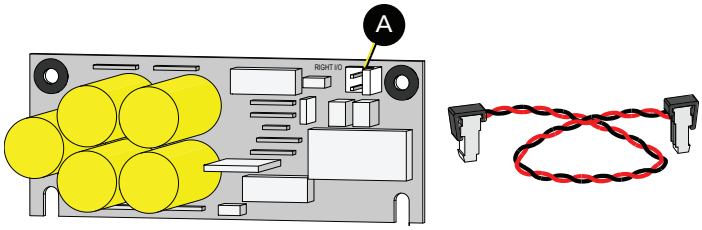


- For an ERn2, remove only the bottom option module from the enclosure.
- For an ERn4 with two P-ACPs, remove the rack power supply (top) and the bottom option module from the enclosure.

2. Align the Unison Mk2 RideThru Option board to the provided mounting studs in the ERn enclosure.
   - Notice the mounting holes on the option board. Two open ended slots are used to set the board in place against the enclosure wall, and the remaining two standard mounting holes are used to secure the board in place.
3. Secure the board in place with the screws provided.

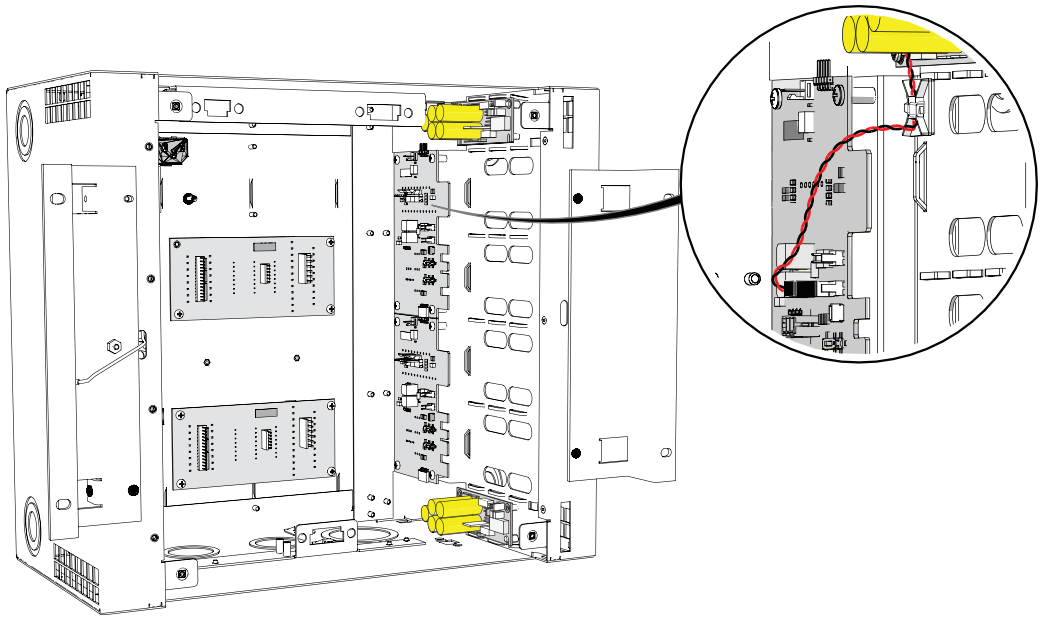
Connect Wiring

The Unison Mk2 RideThru Option board is provided with a wiring harness for connection to the ERn right I/O board.



URTO Mk2 with *[A]* two-pin "Right I/O" receptacle and wiring harness

1. Connect one end of the wiring harness to the two-pin "Right I/O" receptacle on the option board.
2. Connect the other end of the wiring harness to the two pin receptacle labeled “RideThru / Batt” on the ERn right I/O board.
    - When two Unison Mk2 RideThru Option boards are installed, the top Unison Mk2 RideThru Option wiring harness terminates to the respective right I/O board in the top and the bottom Unison Mk2 RideThru Option wiring harness terminates to the I/O board in the bottom of the unit.



3. Secure the wiring harness to the ERn enclosure using the cable tie and cable tie mount provided in the Unison Mk2 RideThru Option board kit to prevent interference with module installation.

Install the Redundant Power Supply

The ERn Redundant Power Supply Mk2 (ERn-RPS Mk2) is an additional rack power supply that powers the ERn enclosure if the primary rack power supply fails.

Note: *The ERn-RPS Mk2 option module is not supported in any ERn 230 V enclosure.*

WARNING: RISK OF ELECTRIC SHOCK! Power must be off when you perform this procedure.

AVERTISSEMENT : RISQUE DE DÉCHARGE ÉLECTRIQUE! L'alimentation doit être éteinte avant d'exécuter cette procédure.

1. Disconnect power to the enclosure.
2. Remove any currently installed option module from the lower option module slot in the rack.
3. Slide the new ERn-RPS Mk2 into the option module slot of the enclosure and secure it in place using the provided thumb screws.
4. Apply power to the enclosure.

ERn enclosure with *[A]* an ERn-RPS Mk2 installed in the bottom option slot.

Status Indicator

When the ERn Redundant Power Supply Mk2 is installed properly and power is applied to the ERn enclosure, a blue LED will indicate. If the LED is off but the primary rack supply status indicator is on, the ERn Redundant Power Supply Mk2 requires servicing.

If the primary rack supply status LED is off, but the ERn Redundant Power Supply Mk2 is on, the primary rack supply requires service.

Contact ETC Technical Services for assistance at etcconnect.com/contactETC.

Final Installation and Power Up

Review the entire installation before applying power to the enclosure.

WARNING: RISK OF ELECTRIC SHOCK! Power must be off when you perform this procedure.

AVERTISSEMENT : RISQUE DE DÉCHARGE ÉLECTRIQUE! L'alimentation doit être éteinte avant d'exécuter cette procédure.

- Clean out all dust and debris from the enclosure interior.
- Check for loose connections, bare or exposed wires, and damaged insulation. Repair any damage that is discovered.

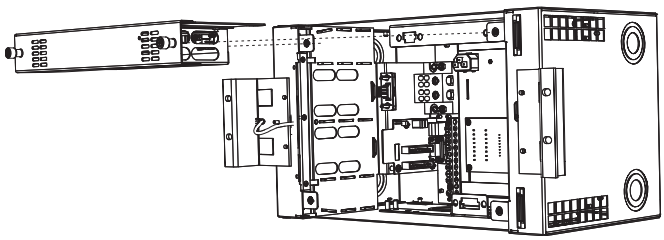
Check Main Power Wiring

Check resistance between line, neutral, and ground with a digital voltmeter (DVM).

- Line to ground resistance should be 10 M Ω or higher.
- Neutral to ground resistance should be 0 Ω.
- Line to neutral resistance should be 10 M Ω or higher.

Re-Install the Rack Power Supply

Re-install the rack power supply into the top slot of the ERn enclosure. For an ERn4 230 VAC enclosure, re-install both rack power supplies into the enclosure. One rack power supply installs in the standard top slot and the other in the lower option module slot.



Check Line Voltages

Check the voltage on your input terminals using a digital voltmeter (DVM) before installing modules.

WARNING: RISK OF ELECTRIC SHOCK! Working inside the ERn Rack-Mount Enclosure with power applied exposes you to the possibility of dangerous currents and voltages.

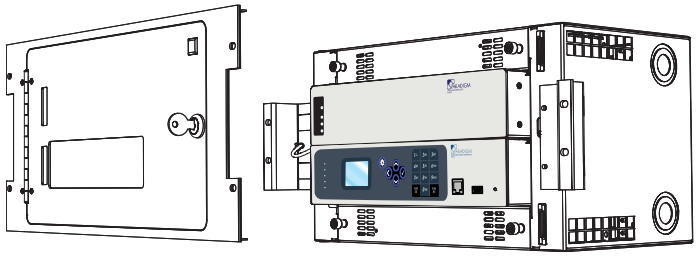
AVERTISSEMENT : RISQUE DE CHOC ÉLECTRIQUE! Travailler à l'intérieur du ERn Rack-Mount Enclosurelorsqu'il est alimenté vous expose à la possibilité de courants et de tensions dangereux.

Line voltages will be on the input terminals during this procedure. You must be a qualified electrician familiar with the hazards of working with high-voltage electricity. Use extreme caution when performing this procedure.

- HIGH LEAKAGE CURRENT
- Ground connection is essential before connecting supply
- Disconnect power before removing modules
- Service by qualified and authorized personnel only.

1. Close the ERn door.
2. Apply line power at the main circuit breaker for 90 seconds. Observe the enclosure for evidence of shorting, like arcing sounds or a burning smell. If you detect evidence of shorting, shut off the power at the main breaker and correct any wiring issues.
3. Open the ERn door and check voltage between phase, neutral, and ground. The ERn supports input power ranging +/- 10% of the rated voltage.
   - 100 VAC, (acceptable range 90–110 VAC)
   - 120 VAC, (acceptable range 108–132 VAC)
   - 230 VAC CE, (acceptable range 207–253 VAC)
   - 240 VAC, (acceptable range 216–264 VAC)
4. Turn off power at the main circuit breaker.

Install Modules



1. Install the Paradigm Processor Mk2 (P-ACP-E Mk2) in the appropriate module slot.
2. Install the Paradigm Station Power Module Mk2 (P-SPM-E Mk2) in the module slot above the Paradigm architectural control processor.
3. Install option modules if they are not installed.
   a. Install an ERn blank option module in the lower option module slot if no other options are required for your installation.

Note: *The ERn4 at 230 VAC ships from the factory with a rack power supply installed in the top (normal) position and in the lower option module slot as standard.*

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4. Install blank air flow modules (ERn-BM) in any unused module slot in the enclosure to maintain the required convection cooling requirements.
5. For 230 VAC CE ERn enclosures, secure the module retention bar to the left side of the ERn enclosure. This module retention bar is required to maintain CE compliance.

Compliance

Manufacturer Declaration (CE)

ETC declares that the equipment described in this document is in conformance with the requirements of the European Council Directives listed below:

- Low Voltage Directive (LVD) 2014/35/EU
- Electromagnetic Compatibility Directive (EMCD) 2014/30/EU
- RoHS Directive 2011/65/EU

FCC

This equipment complies with Part 15 of the FCC Rules. 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.

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 instructions, may cause harmful interference to radio communications. Any modifications or changes to this product not expressly approved by Electronic Theatre Controls, Inc. could void the user's authority to operate the product. 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 their own expense.

For current and complete product documentation, including compliance documentation, visit etcconnect.com/docs/ERn-enclosures.

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