

## Echo Power Control Series



Type(s)

Project

Date

Notes

## GENERAL INFORMATION

The Unison Echo Relay Panel is a control-oriented power center built with today and tomorrow's lighting loads in mind. It supports up to 24 relays or dimmers with integral branch breakers, power-usage reporting, and sophisticated control inputs. With built-in station and sensor support, DMX and Time Clock controls, Ethernet connectivity, optional 0–10 V dimming, DALI output and contact inputs, the Echo Relay Panels easily integrate into a broad range of systems and applications.

## APPLICATIONS

- Theaters
- Schools
- Houses of worship
- Conference centers
- Retail shops and restaurants

## FEATURES

- Main Feed Relay panel with feed options for:
  - Three-phase 120/208 V four-wire plus ground
  - Single-phase 120/240 V three-wire plus ground
- 24-position relay panel with support for 1-, 2-, or 3-pole relays and support for 300 W phase-adaptive or forward-phase dimmers
- 30-position breaker subpanel with support for 1-, 2-, or 3-pole breakers, including 1- and 2-pole 120 V GFCI
  - Single-pole relay kits fed by 20 A branch breakers are suitable for plug load control
- 14 inch width and 4 inch depth allows the cabinet to be flush- or surface-mounted in standard stud-width construction
- Echo, sACN, DMX-512, Astronomical TimeClock, or stand-alone control
- Built-in EchoConnect power supply for up to 6 Echo control products and 5 output products
- DMX and Ethernet (sACN) control of preset and sequence playback
- Local user interface provides:
  - Panel configuration
  - Preset and sequence programming and playback
  - Individual channel control
- Built-in Ethernet port
  - Advanced control of relays over streaming ACN (sACN)
  - Web UI for configuration and management
- Measured energy usage reporting per branch circuit
- Available 0–10 V, contact input, and DALI control cards
- Local control via UI or manual override per circuit
- UL924 Listed emergency control bypass with load shedding



## ORDERING INFORMATION

MODEL	DESCRIPTION
ERP-24R1-24B1-ML1P	Echo Relay Panel with 24 1-pole relays, 24 1-pole breakers, 120/240 V 1P 3W+G main lug input
ERP-24R1-24B1-ML3P	Echo Relay Panel with 24 1-pole relays, 24 1-pole breakers, 120/208 V 3P 4W+G main lug input
ERP-24R1-29B1-ML3P	Echo Relay Panel with 24 1-pole relays, 29 1-pole breakers, 120/208 V 3P 4W+G main lug input
ERP-12R1-12B1-ML3P	Echo Relay Panel with 12 1-pole relays, 12 1-pole breakers, 120/208 V 3P 4W+G main lug input
ERP-12R2-12B2-ML3P	Echo Relay Panel with 12 2-pole relays, 12 2-pole breakers, 120/208 V 3P 4W+G main lug input

Note: For non-standard model numbering see page 5

## Door Options

ERP-FMD	Flush-mount door for 120 V Echo Relay Panel
ERP-SMD	Surface-mount door for 120 V Echo Relay Panel

## Main Breaker Options

ERP-100A-3P 10kA MCB	Unison Echo Relay Panel main circuit breaker option kit; 120/208 V 3 pole 100 A breaker with 10 kA SCCR rating
ERP-200A-3P 10kA MCB	Unison Echo Relay Panel main circuit breaker option kit; 120/208 V 3 pole 200 A breaker with 10 kA SCCR rating
ERP-200A-3P 22kA MCB	Unison Echo Relay Panel main circuit breaker option kit; 120/208 V 3 pole 200 A breaker with 22 kA SCCR rating
ERP-200A-3P 42kA MCB	Unison Echo Relay Panel main circuit breaker option kit; 120/208 V 3 pole 200 A breaker with 42 kA SCCR rating
ERP-100A-2P 22kA MCB	Unison Echo Relay Panel main circuit breaker option kit; 120/240 V 2 pole 100 A breaker with 22 kA SCCR rating
ERP-200A-2P 22kA MCB	Unison Echo Relay Panel main circuit breaker option kit; 120/240 V 2 pole 200 A breaker with 22 kA SCCR rating

## Accessories

ERP-DIM	300 W Phase-Adaptive Dimmer (DA)
ERP-DIM-MLV	300 W Forward-Phase Dimmer (DM)
ERP-LVD	0–10 V Dimming Control Option Card
ERP-DALI	DALI Control Option Card (broadcast only)
ERP-CI	Contact Input Option Card
ERP-RTO	RideThru Option
ERP-TPH	Tamper-proof Hardware Kit with tool

## SHORT-CIRCUIT CURRENT RATING AND LUG SIZING

OPERATING VOLTAGE	MCB OPTION	SCCR RATING	LUG WIRE SIZE
All	Main Lug only	10 kA	4 AWG–300 kcmil
120/240 V	100 A, 200 A	22 kA	1 AWG–300 kcmil
120/208 V	100 A	10 kA	8 AWG–3/0
	200 A	10 kA, 22 kA, 42 kA	3/0–300 kcmil
GND/Neutral	NA	NA	4 AWG–300 kcmil
Rel/Dim Out	NA	NA	20–6 AWG
Load GND/Neutral	NA	NA	14–4 AWG

Note: Main feed lugs accept copper or aluminum wire; load terminals accept copper wire only.

## Echo Power Requirements

EchoConnect:	One unit of output power
Auxiliary Power:	Not required

## Built-in EchoConnect Power Supply

EchoConnect:	Provides 6U of control power and an additional 5U of output power**
Auxiliary Power:	Not provided

\*\*Note: Built-in power supply can be disabled

## Echo Presets

Supports 64 Echo Presets per space; up to 16 Echo spaces
--

For more information, download the [Echo Quick Guide](#)

## SPECIFICATIONS

## REGULATORY AND COMPLIANCE

- cULus Listed
- UL508 Listed
- UL67 Listed
- UL924 Listed
- Complies with ANSI E1.11 DMX512-A standard
- Complies with ANSI E1.31 streaming ACN standard

## USER INTERFACE

- Onboard web UI for simple configuration and management
- Graphical display with LED backlight
- Button interface with:
  - 0–9 number buttons
  - Up, down, back and enter navigation buttons
  - Test shortcut for local activation of preset, sequence and set level overrides
- USB interface for upload of setup and software updates

## MECHANICAL

- Enclosure constructed of 16-gauge steel finished in black, fine-textured, scratch-resistant powder coat paint
- Door options available for surface- or recess-mount applications.
  - Flush-mount door extends 1 inch beyond all panel edges to hide wall cutout
- Removable outer panel includes integral locking door to limit access to electronics, breakers and local relay overrides
- Full front access with no side clearance required
- Removable covers for access to Class 1 and Class 2 wiring

## ELECTRICAL

- Main feed power input available to support:
  - 120/240 V single-phase three-wire plus ground
  - 120/208 V three-phase four-wire plus ground
- Separate wiring chambers for Class 1 and Class 2 terminations
- Max input current: 200 A
- Main circuit breaker options: 100 A and 200 A
- Branch breaker panel supports three-phase and single-phase subfeed of a second panel up to 100 A
- Short-circuit rating: 10,000–42,000 amps symmetrical
- 10 A, 15 A and 20 A, 1-, 2-, or 3-pole branch circuit breakers; 80% rated
  - 15 A or 20 A, 1- or 2-pole 120 V GFCI breakers available upon request
- Inrush-pulse tolerance: 8–10.5 times rated current for half-cycle at 60 Hz

## ENVIRONMENTAL

- Thermal: 0°C to 40°C (32°F to 104°F) operating temperature
  - Relays (all) - 52.38 BTU/hr
  - Dimmers (all) - 11.78 BTU/hr
  - Humidity 5%–95%, non-condensing

## RELAY RATINGS

- 20 A Ballast (HID)
- 16 A Electronic Ballast
- 20 A Tungsten
- 20 A Motor Load
- Isolation: 4000 V RMS
- State: Latching; mechanically held
- Life:
  - 100,000 cycles at full resistive load
  - 30,000 cycles motor, inductive or tungsten
- Current-reporting accuracy: +/- 5% of connected load

## SPECIFICATIONS

## DIMMER RATINGS

- Phase-adaptive (DA), default reverse phase
  - 300 W resistive or electronic load capacity
- Forward-phase (DM)
  - 300 W magnetic or resistive load capacity
- Panel supports up to (24) fully loaded dimmers

## CONTROL ELECTRONICS

- Input: 100–277 V (+/-15%), 50/60 Hz, <16 A
  - Control wiring exiting the panel are Class 2
  - All control terminations utilize removable connectors

## FUNCTIONAL

- **System-Wide control**
  - DMX or sACN input
    - Per-circuit patching
    - Per-circuit threshold
    - 0–200 prioritization
  - Configurable data loss behavior:
    - Play preset; Hold last look; Wait and fade
  - UL 924 emergency lighting with load shedding
- **Application/Space segmented Control**
  - Space segmenting: up to 16 spaces per panel
  - Power Sequencing: one 16-step sequence per space
  - Presets: up to 64 per space configurable via local UI or Echo Inspire control stations
  - Zone control: up to 16 zones per space
    - TimeClock (up to 50 events)
    - Event types: Preset and sequence activation, Flick warn
    - Timed hold (24 hours max.)
    - Auto-timed hold, indefinite holds, holiday shut off, and scheduled event overrides
    - Calendar and time of day based event scheduler
    - Astronomical time events: sunrise/sunset offsets
  - Integral station power supply (for up to six stations with up to six power panels connected)
- **Monitoring Per Circuit:**
  - Breaker-trip notification
  - Relay state
  - Current draw, phase voltage, and energy usage
- **Monitoring Per Space:**
  - Active sequences, presets, and clock events
  - Zone levels

## ACCESSORIES

## 0–10 Dimming Option

- 24 outputs of 0–10 V sink dimming control rated for 100 mA per output

## Contact Input Option

- 24 dry contact inputs which can be used to:
  - Trigger presets and sequences, which will play at the priority configured for architectural sources, or;
  - Directly control one or more outputs.

## DALI Control Option

- 24 control loops of broadcast DALI control
- Each loop supports up to 64 ballasts
- External DALI power supply required

## RideThru Option

- Short-term power backup of control electronics
- Automatically engages when power is lost
- Recharges during normal power operation

## Tamper-proof Hardware Kit

- Special screw heads prevent access to panel interior

## ECHO FAMILY OF PRODUCTS

## EchoConnect Power Supplies

MODEL	DESCRIPTION
E-SPS	6 U Room Station Power Supply, Knockout Mount
E-SPS-DIN Mk2	16 U DIN rail Station Power Supply with 24 V Aux
E-SPM-A	16 U DRd Station Power Module with 24 V Aux
E-APS2	24 V Aux Power Supply, Knockout Mount

## EchoTouch

MODEL	DESCRIPTION
ETS	EchoTouch Controller Mk2

## Echo Stations

MODEL	DESCRIPTION
E1001	Inspire One Button Station
E1002	Inspire Two Button Station
E1004	Inspire Four Button Station
E1006	Inspire Six Button Station
E1008	Inspire Eight Button Station
E1104	Inspire Four Button with Fader Station
EPS05	Echo Preset Station - 5 Button
EPS10	Echo Preset Station - 10 Button
EPSKS	Echo Keyswitch Station
E-ATC	Echo TimeClock

## Echo Responsive Controls

MODEL	DESCRIPTION
ELS	Light Sensor
EOCC	Ceiling-Mount PIR Occupancy Sensor
EVAC	Ceiling-Mount PIR Vacancy Sensor
E-DOC-C	Ceiling-Mount Dual Tech Occupancy Sensor
E-DVAC-C	Ceiling-Mount Dual Tech Vacancy Sensor
E-DOC-W	Wall-Mount Dual Tech Occupancy Sensor
E-DVAC-W	Wall-Mount Dual Tech Vacancy Sensor
E-DOC-SM1	Switch-Mount Dual Tech Sensor - One Button
E-DOC-SM2	Switch-Mount Dual Tech Sensor - Two Button

## Echo Interfaces

MODEL	DESCRIPTION
EACC	EchoAccess Interface
EEB	Echo Expansion Bridge
EDMXC	Echo DMX Scene Controller
EEl	Echo-Echoflex Interface
ECII	Echo Contact Input Interface
ECOI	Echo Contact Output Interface
EDRI	Echo Demand Response Interface
EBI	Echo BACnet Interface
EII	Echo Integration Interface

## Zone Controllers

MODEL	DESCRIPTION
ERC-G2	One Zone Relay Controller
EDRC-G2	Two Zone Relay Controller
ELD-G2	One Zone 0-10 V Controller
EDLD-G2	Two Zone 0-10 V Controller
ESSC-G2	One Zone SmartSpace Controller
EDSSC-G2	Two Zone SmartSpace Controller
ELVD-G2	600-Watt Phase Adaptive Dimmer (120 V)
ELVD-277-G2	600-Watt Phase Adaptive Dimmer (277 V)
ELVD-G2-MLV	600-Watt Forward Phase Dimmer (120 V)
ELVD-277-G2-MLV	600-Watt Forward Phase Dimmer (277 V)

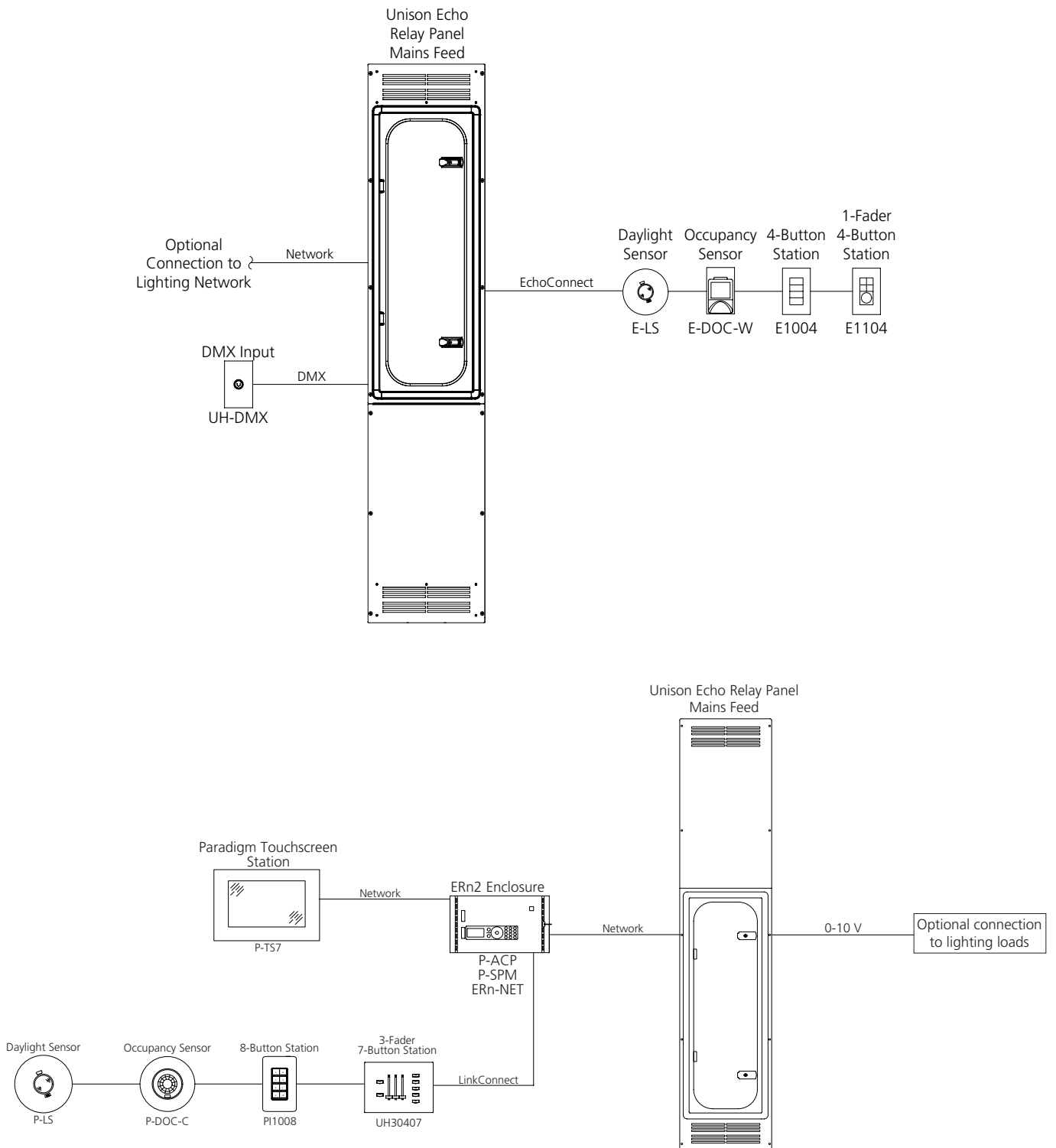
## Room Controllers

MODEL	DESCRIPTION
ERMCT4-G2	Four Zone Room Controller
ERMCT4-G2	Four Zone Room Controller with TimeClock
ERMCT8-G2	Eight Zone Room Controller
ERMCT8-G2	Eight Zone Room Controller with TimeClock

## Panel Products

MODEL	DESCRIPTION
ERP	Echo Relay Panel Mains Feed
ERPA	Echo Relay Panel Mains Feed 277 V
ERP-FT	Echo Relay Panel Feedthrough
IQ	Sensor IQ Intelligent Breaker System
DRd	Unison DRd with Echo Control

## SAMPLE RISER DIAGRAMS



## ORDERING INFORMATION

## Non-Standard Model Numbering

	BASE MODEL	300 W P-A DIMMERS	300 W MLV DIMMERS	1-POLE RELAY	2-POLE RELAYS	3-POLE RELAYS	1-POLE BREAKER	2-POLE BREAKERS	3-POLE BREAKERS
MODEL #	ERP-	#DA/	#DM/	#R1/	#R2/	#R3	-#B1/	#B2/	#B3
MAX QTY	1	24	24	24	12	8	29	14	9

Note: If GFCI breakers are required, substitute “-#GB1” or “-#GB2 (3-pole GFCI breakers are not supported). GFCI breakers cannot be used to feed dimmers.

## Power and Control Options

	FEED TYPE	PHASE	LOW VOLTAGE DIMMING	CONTACT INPUT	RIDETHRU OPTION
MODEL #	-ML (default), -MCBX/Y/	3P (default), 1P	-LVD, -DALI	-CI	-RTO
NOTES	X - MCB amp rating Y - MCB SCCR	3P - 120/208 4W+G 1P - 120/240 3W+G	1 per panel, either -LVD or -DALI	1 per panel	1 per panel

## EXAMPLES:

ERP-12R1/6R2-12B1/6B2-ML1P

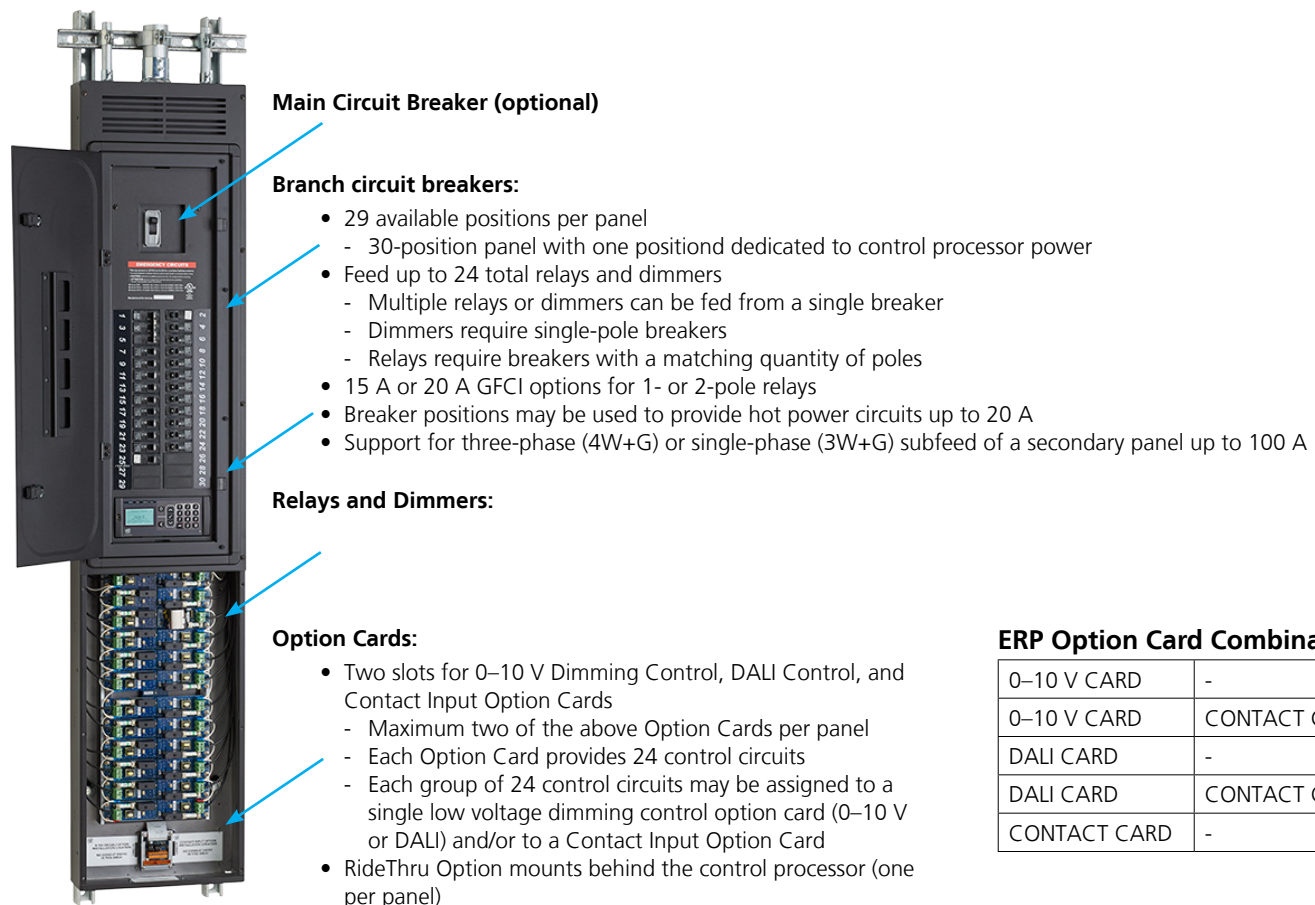
Single-phase 120/240 V panel with main lugs, twelve 20 A single-pole relays, six 20 A double-pole relays, twelve 20 A single-pole breakers, and six 20 A double-pole breakers

ERP-10R2-10B2-MCB200/22/3P

Three-phase 120/208 V panel with a 200 A, 22 kA SCCR main circuit breaker, ten 20 A double-pole relays, and ten 20 A double-pole breakers

ERP-8DA/6DM/10R1-29B1-MCB200/42/3P-LVD-CI-RTO

Three-phase 120/208 V panel with a 200 A, 42 kA SCCR main circuit breaker, eight 300 W phase-adaptive dimmers, six 300 W MLV forward-phase dimmers, ten 20 A single-pole relays, twenty-nine single-pole breakers, a 0–10 V Control Option Card, a Contact Input Option Card, and a RideThru Option



## ERP Option Card Combinations

0–10 V CARD	-
0–10 V CARD	CONTACT CARD
DALI CARD	-
DALI CARD	CONTACT CARD
CONTACT CARD	-

PHYSICAL

Echo Relay Panel Dimensions

MODEL	HEIGHT		WIDTH		DEPTH	
	mm	in	mm	in	mm	in
ERP	1,715	67.5	365	14.4	109	4.3

\*Note: Depth is 105 mm (4.1 in) without door attached

Echo Relay Panel Weights

MODEL	WEIGHT		SHIPPING WEIGHT	
	kg	lb	kg	lb
ERP - no relays or breakers	25	55	28	60
ERP - w/ relays & breakers	37	80	39	85

