ETC®

Unison Echo® Relay Panel Mains Feed

UL LISTED us · c UL LISTED · **120V**

Echo Power Control Series

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, sensor, DMX and TimeClock controls and Ethernet connectivity, plus optional 0-10V dimming, DALI output and contact inputs, the Echo Relay Panel integration opportunities are limitless.

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

FEATURES
- Main Feed Relay panel with feed options for:
  - Three-Phase 120/208V four-wire plus ground
  - Bi-Phase 120/240V three-wire plus ground
- 24-position relay panel with support for one-, two-, or three-pole relays and support for 300W phase adaptive dimmers
- 30-position breaker subpanel with support for 1-, 2-, or 3-pole breakers, including 1- and 2-pole 120V GFCI
- 14 in. width and 4 in. depth allows the cabinet to be flush- or surface-mounted in standard stud-width construction
- Echo, sACN, DMX-512, TimeClock, or stand-alone control
- Built-in EchoConnect® power supply for up to 6 Echo stations/sensors and 5 output products
- Built-in network interface provides:
  - Advanced control of relays over streaming ACN (sACN)
  - Measured energy usage reporting per branch circuit
  - Web UI for configuration
- Local control with Astronomical timeclock and manual override per circuit
- UL924 LISTED emergency control bypass contact input
- UL and cUL LISTED

ORDERING INFORMATION

Standard Relay Units

MODEL	DESCRIPTION
ERP-24R1-24B1	Echo Relay Panel with 24 single-pole relays, 24 single-pole breakers, 120/208V three-phase four-wire plus ground main lug input
ERP-12R2-12B2	Echo Relay Panel with 12 two-pole relays, 12 two-pole breakers, 120/208V three-phase four-wire plus ground main lug input
ERP-24R1-24B1-2	Echo Relay Panel with 24 single-pole relays, 24 single-pole breakers, 120/240V bi-phase three-wire plus ground main lug input

Note: For non-standard model numbering see page 5

Door Options

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

Main Breaker Options

7123K1001	Main Breaker; 120V Single-phase; 100A; 22kA SCCR
7123K1002	Main Breaker; 120V Single-phase; 200A; 22kA SCCR
7123K1003	Main Breaker; 120V Three-phase; 100A; 10kA SCCR
7123K1004	Main Breaker; 120V Three-phase; 200A; 10kA SCCR
7123K1005	Main Breaker; 120V Three-phase; 200A; 22kA SCCR
7123K1006	Main Breaker; 120V Three-phase; 200A; 42kA SCCR

Accessories

ERP-DIM	300W Phase Adaptive Dimmer Module
ERP-LVD	0-10V Dimming Control Option
ERP-DALI	DALI-Control Option
ERP-CI	Contact-Input Option
ERP-RTO	Ride-Thru Option
ERP-VB	Voltage-Barrier Kit

Echo Power Requirements

EchoConnect:	1 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 when used with external 16U EchoConnect Power Supply or when multiple relay panels are used in a single system

Echo Presets

Supports 64 Echo Presets

ETC®

S P E C I F I C A T I O N S

APPROVALS AND CERTIFICATIONS
- UL508 LISTED
- UL67 LISTED
- UL924 LISTED
- Complies with ANSI E1.11 DMX512-A standard
- Complies with ANSI E1.31 streaming ACN standard

USER INTERFACE
- Graphical display with LED backlight
- Button interface with:
  - 0-9 number buttons
  - Up, down, back and enter navigation buttons
  - "Light bulb" test button for local activation of preset, sequence and set level overrides
- USB interface for upload of setup and software updates
- Onboard Web UI for simple configuration and management

MECHANICAL
- Enclosure constructed of 16-gauge steel finished in black, fine-textured, scratch-resistant powder coat pain
- Door options available for surface- or recess-mount applications.
  - Flush-mount door extends 1in. 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:
  - 120/240V bi-phase three-wire plus ground
  - 120/208V three-phase four-wire plus ground
- Separate wiring chambers for Class 1 and Class 2 terminations
- Max input current: 200A
- Main circuit breaker options: 100A and 200A
- Short-circuit rating: 10,000-42,000 amps symmetrical
- 10A, 15A and 20A branch circuit breakers standard; 80% rated
  - 1- and 2-pole 120V GFCI breakers available upon request
- Inrush-pulse tolerance: 8-10.5 times rated current for half-cycle at 60Hz

CONTROL ELECTRONICS
- Relay modes: Normal (priority/HTP), latch-lock or last-action
- Configurable DMX on/off threshold
- Status feedback for breaker state, relay state, current draw per circuit, phase voltage and energy usage per circuit
- Built-in Echo control supports:
  - Up to eight spaces with 16 presets per space
  - 16 zones per space
  - One 16-step sequence per space
  - UL924 LISTED emergency control bypass
  - Time-of-day and astronomical timeclock with flick-warn and holiday overrides
- Configurable data-loss behavior supports:
  - Play preset
  - Hold last look
  - Wait and fade

ENVIRONMENTAL
- Thermal: 0-40°C; 32-104°F operating temperature
  - 16A circuit (20A breaker) - 52.38 BTU/hr
  - 300W circuit (with dimmer module) - 11.78 BTU/hr
- Humidity 5-95% non-condensing

S P E C I F I C A T I O N S

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

DIMMER RATINGS
- Phase-adaptive, default reverse phase
- 300W resistive, electronic, or magnetic load capacity
  - Magnetic transformers must be properly loaded to their rated current
  - Use care when retrofitting magnetic transformers with LED loads to ensure proper loading
- 7,200W maximum panel load with (24) 300W dimmer modules installed

SHORT-CIRCUIT CURRENT RATING AND LUG SIZING

OPERATING VOLTAGE	MCB OPTION	SCCR RATING	INPUT LUG WIRE SIZE
120/240V	100A,200A	22kA	1AWG-300kcmil
120/208V	100A	10kA	4AWG-3/0
	200A	10kA	4AWG-3/0
	200A	22kA, 42kA	3/0-300kcmil
All	Main Lug only	10kA	4AWG-300kcmil
Relay	NA	NA	6-14AWG
GND/Neutral	NA	NA	6-14AWG

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

ACCESSORIES

0-10 Dimming Option
- 24 outputs of 0-10V sink dimming control rated for 400mA per output

Contact Input Option
- 24 dry contact inputs for direct control of relays

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

Ride Thru 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	6U Room Station Power Supply, Knockout Mount
E-SPS-DIN	16U DIN rail Station Power Supply with 24V Aux
E-SPM	16U DRd Station Power Module
E-SPM-A	16U DRd Station Power Module with 24V Aux
E-SPM-RM	16U Rack-Mount Station Power Module Aux
E-SPM-RM-A	16U Rack-Mount Station Power Module 24V Aux
E-SPM-WM	16U Wall-Mount Station Power Module
E-SPM-WM-A	16U Wall-Mount Station Power Module 24V Aux
E-APS	24V Aux Power Supply, Knockout Mount

EchoTouch

MODEL	DESCRIPTION
ETS	EchoTouch Controller

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
EPSLO	Echo Lockout 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
EEI	Echo-Echoflex Interface
ECII	Echo Contact Input Interface
ECOI	Echo Contact Output Interface
EDRI	Echo Demand Response Interface
EBI	Echo BACnet Interface

Zone Controllers

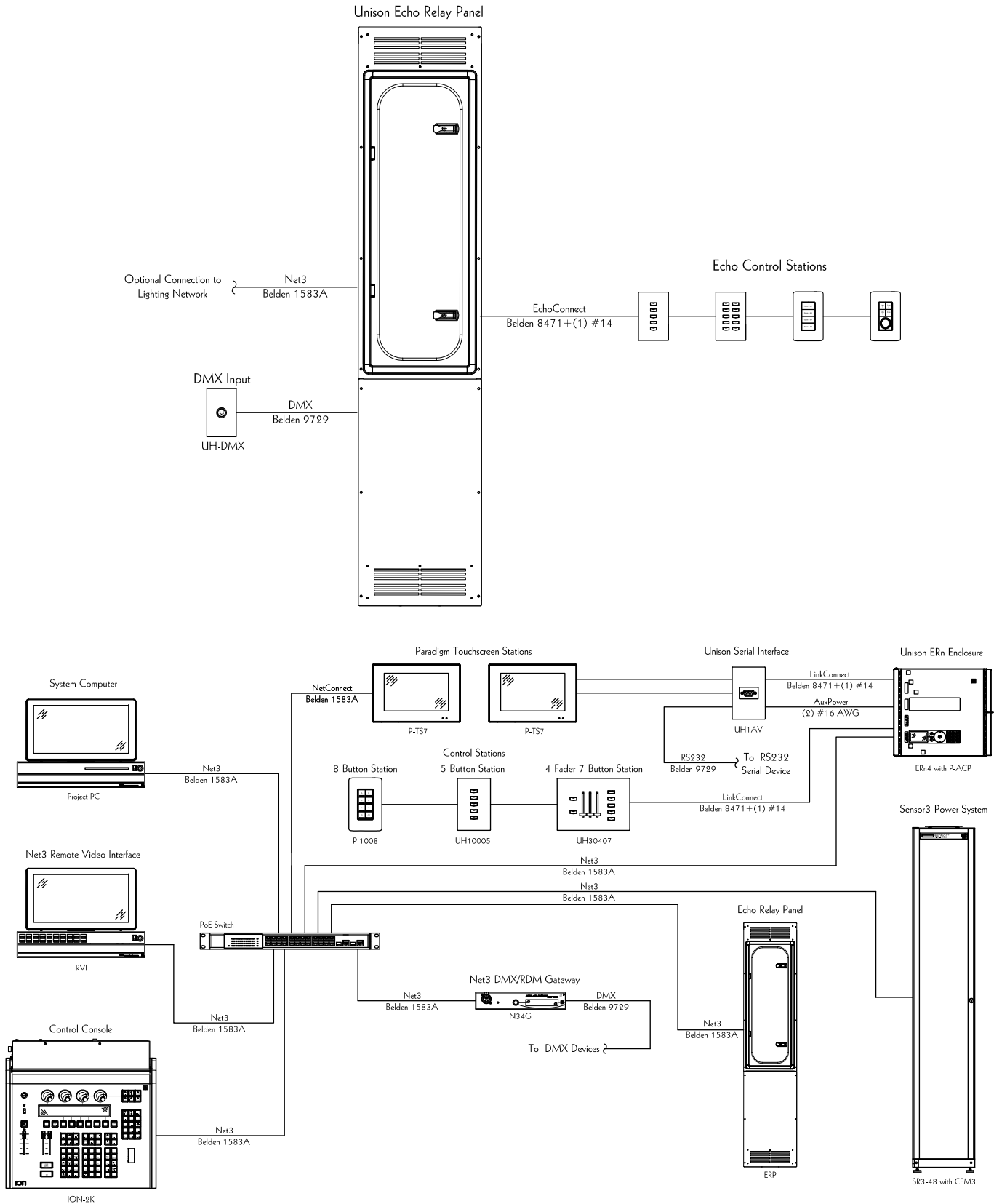| MODEL	DESCRIPTION
ERC-G2	One Zone Relay Controller
EDRC-G2	Two Zone Relay Controller
ELD-G2	One Zone 0-10V Controller
EDLD-G2	Two Zone 0-10V Controller
ESSC-G2	One Zone SmartSpace Controller
EDSSC-G2	Two Zone SmartSpace Controller
ELVD-G2	600-Watt Phase Adaptive Dimmer
ELVD-277-G2	600-Watt Phase Adaptive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

Room Controllers

MODEL	DESCRIPTION
ERMC4-G2	Four Zone Room Controller
ERMCT4-G2	Four Zone Room Controller with TimeClock
ERMC8-G2	Eight Zone Room Controller
ERMCT8-G2	Eight Zone Room Controller with TimeClock

Panel Products

MODEL	DESCRIPTION
ERP	Echo Relay Panel Mains Feed
ERP-FT	Echo Relay Panel Feed Through
SensorIQ	Sensor IQ Intelligent Breaker System
SR3	Sensor3 Power Control System
DRd	Unison DRd with Echo Control

SAMPLE RISER DIAGRAM

Unison Echo Relay Panel

Echo Control Stations

Optional Connection to
Lighting Network

Net3
Belden 1583A

EchoConnect
Belden 8471+(1) #14

DMX Input

DMX
Belden 9729

UH-DMX

Paradigm Touchscreen Stations

Unison Serial Interface

Unison ERn Enclosure

System Computer

NetConnect
Belden 1583A

LinkConnect
Belden 8471+(1) #14

AuxPower
(2) #16 AWG

P-TS7

P-TS7

UH1AV

ERn4 with P-ACP

Net3
Belden 1583A

Control Stations

Project PC

8-Button Station

5-Button Station

4-Fader 7-Button Station

RS232
Belden 9729

To RS232
Serial Device

LinkConnect
Belden 8471+(1) #14

Net3 Remote Video Interface

PI1008

UH10005

UH30407

Sensor3 Power System

Net3
Belden 1583A

Net3
Belden 1583A

PoE Switch

Echo Relay Panel

RVI

Net3 DMX/RDM Gateway

Control Console

Net3
Belden 1583A

Net3
Belden 1583A

N34G

DMX
Belden 9729

Net3
Belden 1583A

To DMX Devices

Net3
Belden 1583A

ION-2K

ERP

SR3-48 with CEM3

ORDERING INFORMATION

Non-Standard Model Numbering

MODEL	300W DIMMERS	1-POLE RELAY	2-POLE RELAYS	3-POLE RELAYS	1-POLE BREAKER	2-POLE BREAKERS	3-POLE BREAKERS	PHASE STYLE
ERP	#D/	#R1/	#R2/	#R3	-#B1/	#B2/	#B3	-2 (or blank)
Default	0	0	0	0	1	0	0	(Blank) THREE-PHASE 120/208V 4-wire plus ground
Min Number	0	0	0	0	1	0	0	(2) SINGLE (BI) PHASE 120/240 3-wire plus ground
Max Number	24	24	12	8	29	14	9	

EXAMPLES:

ERP-12R1/6R2/0R3-12B1/6B2/0B3-2
120/240V Single-phase panel with twelve 20A single-pole realys, six 20A double-pole relays, twelve 20A single-pole breakers and six 20A double-pole breakers

ERP-0R1/10R2/0R3-0B1/10B2/0B3
Three-phase 120/208V panel with ten 20A double-pole relays and ten 20A double-pole breakers
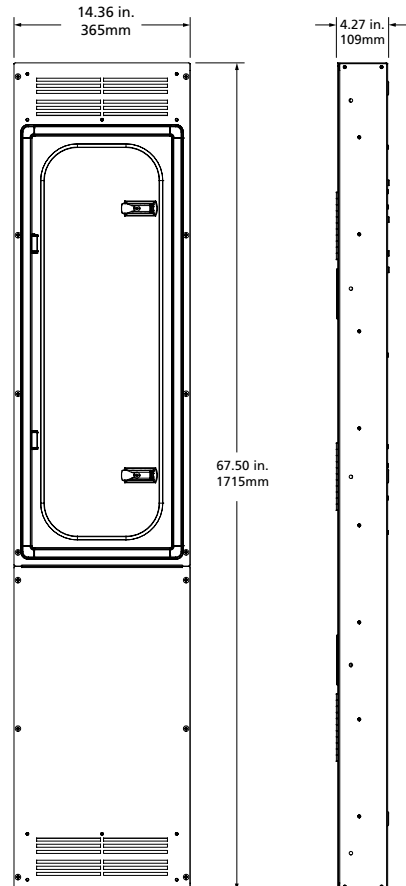
PHYSICAL

Echo Relay Panel Dimensions

MODEL	HEIGHT		WIDTH		DEPTH	
	in	mm	in	mm	in	mm
ERP	68	1727	14	355	4	102

*Note: Depth is 4.075 in. with door attached

Echo Relay Panel Weights

MODEL	WEIGHT		SHIPPING WEIGHT	
	lb	kg	lb	kg
ERP - no relays or breakers	55	24.9	60	27.2
ERP - w/ relays & breakers	80	36.3	85	38.6