

Elaho Power Control Series



Type(s)
 Project
 Date
 Notes

GENERAL INFORMATION

The Elaho 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 TimeClock controls, Ethernet connectivity, optional 0–10 V dimming, DALI output and contact inputs, the Elaho 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 120/208 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
- 14 inch width and 4 inch depth allows the cabinet to be flush- or surface-mounted in standard stud-width construction
- Elaho, sACN, DMX-512, TimeClock, or stand-alone control
- Built-in EchoConnect power supply for up to 6 Elaho control products 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

ORDERING INFORMATION

MODEL	DESCRIPTION
ERP-24R1-24B1-ML1P	Elaho Relay Panel with 24 1-pole relays, 24 1-pole breakers, 120/240 V 1P 3W+G main lug input
ERP-24R1-24B1-ML3P	Elaho Relay Panel with 24 1-pole relays, 24 1-pole breakers, 120/208 V 3P 4W+G main lug input
ERP-24R1-29B1-ML3P	Elaho Relay Panel with 24 1-pole relays, 29 1-pole breakers, 120/208 V 3P 4W+G main lug input
ERP-12R1-12B1-ML3P	Elaho Relay Panel with 12 1-pole relays, 12 1-pole breakers, 120/208 V 3P 4W+G main lug input
ERP-12R2-12B2-ML3P	Elaho 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 6

Door Options

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

Main Breaker Options

ERP-MB100A22K1P	Main Breaker; 120 V Single-phase; 100 A; 22 kA SCCR
ERP-MB200A22K1P	Main Breaker; 120 V Single-phase; 200 A; 22 kA SCCR
ERP-MB100A10K	Main Breaker; 120 V Three-phase; 100 A; 10 kA SCCR
ERP-MB200A10K	Main Breaker; 120 V Three-phase; 200 A; 10 kA SCCR
ERP-MB200A22K	Main Breaker; 120 V Three-phase; 200 A; 22 kA SCCR
ERP-MB200A42K	Main Breaker; 120 V Three-phase; 200 A; 42 kA SCCR

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	Ride-Thru Option

Elaho Power Requirements

EchoConnect:	1 Unit of Output Power
Auxiliary Power:	Not Required

Built-in EchoConnect Power Supply

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

*Note: Built in power supply can be disabled.

Elaho Presets

Supports 64 Elaho Presets per space; up to 16 Elaho spaces
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For more information, download the [Elaho Design 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

- 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 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

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 Elaho control supports:
 - Up to sixteen spaces with 64 presets per space configurable via local UI or Elaho Inspire control stations
 - Presets 1-16 can be configured remotely via Elaho Access or integrated Web UI
 - 16 zones per space
 - One 16-step sequence per space
 - 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

SPECIFICATIONS

ENVIRONMENTAL

- Thermal: 0–40°C (32–104°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

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

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.

ACCESSORIES

0-10 Dimming Option

- 24 outputs of 0-10 V sink dimming control rated for 400 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

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

ELAHO FAMILY PRODUCTS

Bus Power Supplies

MODEL	DESCRIPTION
E-SPS	6 U Room Station Power Supply, Knockout Mount
E-SPS-DIN	16 U DIN rail Station Power Supply with 24 V Aux
E-APS	24 V Aux Power Supply, Knockout Mount

ElahoTouch

MODEL	DESCRIPTION
ETS	ElahoTouch Controller Mk2

Elaho 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	Preset Station - 5 Button
EPS10	Preset Station - 10 Button
EPSKS	Keyswitch Station
E-ATC	TimeClock

Elaho 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

Elaho Interfaces

MODEL	DESCRIPTION
EACC	ElahoAccess Interface
EEB	Expansion Bridge
EDMXC	DMX Scene Controller
EEl	Elaho-Echoflex Interface
ECII	Contact Input Interface
ECOI	Contact Output Interface
EDRI	Demand Response Interface
EBl	BACnet Interface
EII	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)

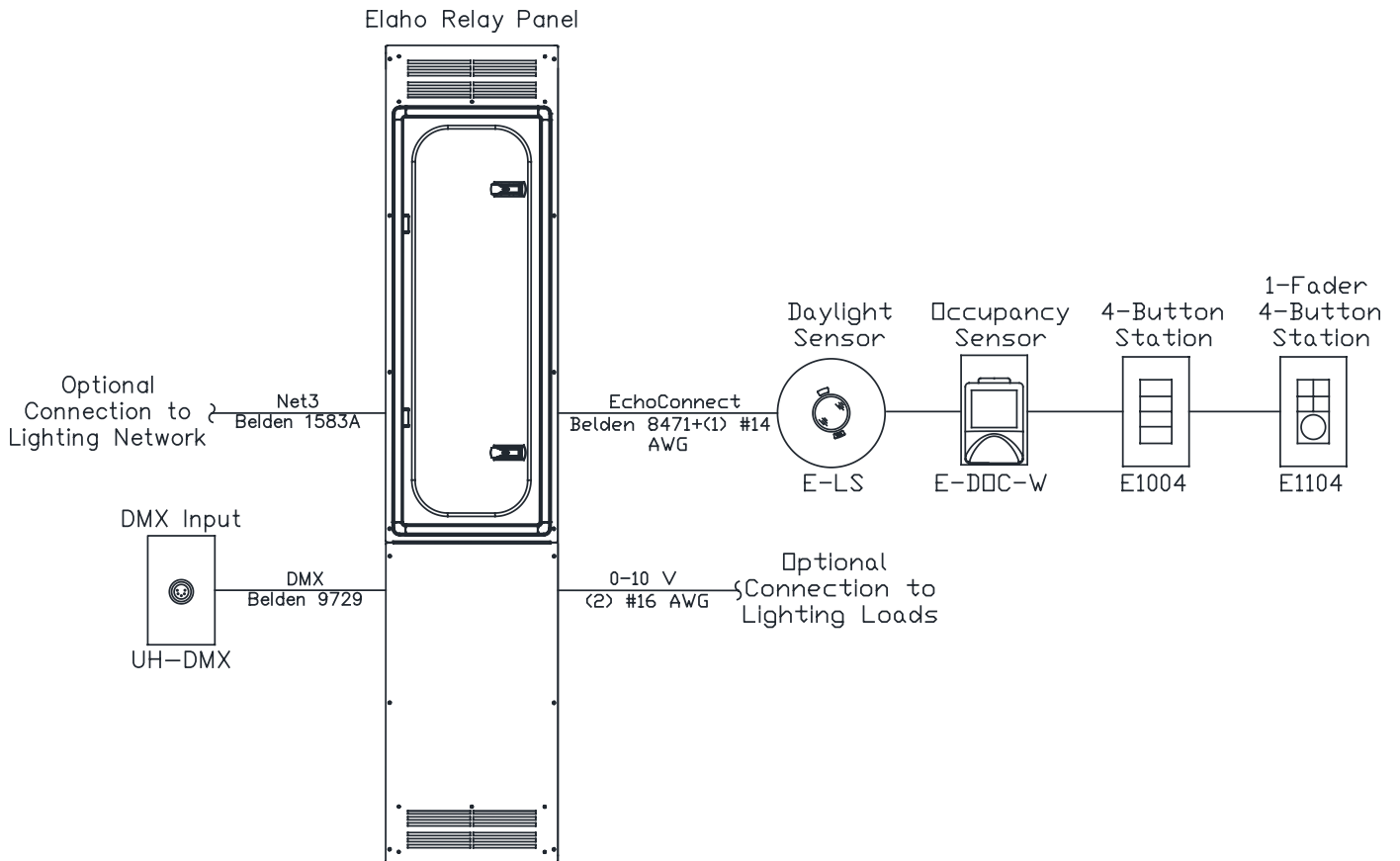
Room Controllers

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	Elaho Relay Panel Mains Feed
ERPA	Elaho Relay Panel Mains Feed 277 V
ERP-FT	Elaho Relay Panel Feedthrough

SAMPLE RISER DIAGRAM



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	RIDE-THRU 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, 22kA 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, 42kA 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 Ride-Thru Option



Main Circuit Breaker (optional)

Branch circuit breakers:

- 29 available positions per panel
 - 30-position panel with one position dedicated to control processor power
- Feed up to 24 total relays and dimmers
 - Multiple relays or dimmers can be fed from a single breaker
 - Dimmers require single-pole breakers
 - Relays require breakers with a matching quantity of poles
- 15 A or 20 A GFCI options for 1- or 2-pole relays
- Breaker positions may be used to provide hot power circuits up to 20 A
- Support for three-phase (4W+G) or single-phase (3W+G) subfeed of a secondary panel up to 100 A

Relays and Dimmers:

- 24 positions per panel
 - Relays use one position per pole - e.g., a 3-pole relay uses three positions
 - Dimmers use one position each

Option Cards:

- Two slots for 0-10 V Dimming Control, DALI Control, and Contact Input Option Cards
 - Maximum two of the above Option Cards per panel
 - Each Option Card provides 24 control circuits
 - Each group of 24 control circuits may be assigned to a single low voltage dimming control option card (0-10 V or DALI) and/or to a Contact Input Option Card
- Ride-Thru Option mounts behind the control processor (one per panel)

ERP Option Card Combinations

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

PHYSICAL

Elaho Relay Panel Dimensions

MODEL	HEIGHT		WIDTH		DEPTH	
	in	mm	in	mm	in	mm
ERP	68	1,727	14	355	4	102

*Note: Depth is 4.075 in. with door attached

Elaho 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

