ETC Paradigm Architectural Control Processor Mk2

Unison Control Series

Type(s)

Project

Date

Notes

GENERAL INFORMATION

Paradigm Architectural Control Processor Mk2 is designed for easy interaction and rapid response. The built-in memory and processing power works with vast amounts of lighting control data and is fast enough to process 2,048 simultaneous fades over any of its native protocols.
The Paradigm Processor is available in an enclosure-mount form factor (P-ACP-E) for centralized dimming and control installations and is available in a DIN rail mounted form factor (P-ACP-D) to accommodate a distributed control system.

APPLICATIONS

- Houses of worship
- Schools
- Restaurants
- Hotels
- Museums
- Casinos
- Ballrooms

FEATURES

- The enclosure-mounted processor is designed for tool-free installation in Unison DRd with a Mk2 CPU2 dimming engine and ERn Mk2 Control Enclosures
- The DIN mounted processor is designed for tool-free installation to 35 mm DIN rail (TS-35/7.5 and TS-35/15)
- Point of Control Interface: easy-to-read system display shows the user pertinent system information
- Supports Calculated Energy Reporting for configured loads when used in a Central Control Server System
- LinkConnect: using Echelon® LonTalk® protocol with LinkPower, the two-wire topology-free system gives you the freedom to put stations where you need them
- Web browser interface for easy modification, activation and monitoring of your system configuration and status
- Local access: user control and system status at the interface
- Secure access: multiple levels of secure user interface access

REGULATORY AND COMPLIANCE

- cULus Listed
- CE Compliant
- UKCA Compliant

ORDERING INFORMATION

Paradigm Architectural Control Processor

MODEL	DESCRIPTION
P-ACP-E Mk2	Paradigm Processor Mk2 - Enclosure
P-ACP-D Mk2	Paradigm Processor Mk2 - DIN

DIN Enclosure Assemblies

MODEL	DESCRIPTION
DIN8-P-ACP	DIN8 Enclosure w/ P-ACP-D
DIN14-P-ACP/SPS	DIN14 Enclosure w/ P-ACP-D and P-SPS-D
DIN14-P-ACP/SPS/NET	DIN14 Enclosure w/ P-ACP-D, P-SPS-D, and a Mosaic Network Switch

NOTE: The DIN enclosures listed above ship pre-assembled with the listed products.

Compatible Enclosures

	MODEL	DESCRIPTION
P-ACP-E compatible	DRd	Unison DRd with a Mk2 CPU2 Dimming Engine
	ERn	Unison ERn Mk2 Control Enclosure
P-ACP-D compatible	DIN8	Mini DIN Enclosure
	DIN14	Small DIN Enclosure
	DIN28	Large DIN Enclosure
	DIN-RM	DIN rail Rack-mount Kit

Paradigm System Accessories

MODEL	DESCRIPTION
P-SPM-E Mk2	Paradigm Station Power Module Mk2 - Enclosure
P-SPS-D Mk2	Paradigm Station Power Supply Mk2 - DIN
P-NSPS-D Mk2	Paradigm Network Station Power Supply Mk2 - DIN

SPECIFICATIONS

P-ACP MECHANICAL (COMMON)

- Microprocessor-based, solid-state technology to provide multi-scene lighting and building controls
- Tool-free installation
- Fanless
- Front-panel user interface with backlit 128x160 pixel color graphic display
- Front-panel status indicators for Power, DMX, Errors, and Ethernet
- Support of RJ-45 Ethernet network and Universal Serial Bus (USB) host port on the front panel
- Recessed reset button

P-ACP ELECTRICAL (COMMON)

- LinkConnect: Provides Echelon® LonTalk® with LinkPower for remote devices, including button stations, button/fader stations, touchscreen stations, sensors, and third-party LonMARK compliant products
- System configuration and programming information stored in onboard microSD memory card
- Support of ESTA BSR E1.17 Advanced Control Networks (ACN) and ESTA BSR E1.31 (sACN) Protocols
- Supports EIA-RS232 serial protocol for bi-directional command and communication with third-party equipment
- Compliant with IEEE 802.3i for 10/100/1000 BASE-T, Auto-MDI
- Two discrete ESTA DMX512-A ports, configurable as input or output ports*
  - *When used in a Dimming Enclosure, the second DMX port is always an output
  - DMX/RDM termination switches per port (IN= 120 ohm termination, OFF= no termination (the DMX signal passes through), OUT= Paradigm is the source).
- Supports User Datagram Protocol (UDP) messaging input and output for control of Paradigm or external systems

P-ACP-E MECHANICAL (SPECIFIC)

- Designed for use in the Unison DRd with a Mk2 CPU2 dimming engine and Unison ERn Mk2 Control Enclosure
- Fully-contained plug-in module with no discrete wire connections

P-ACP-D MECHANICAL (SPECIFIC)

- Durable aluminum housing, IP20 listed and UL2043 plenum rated
- Designed for installation on 35 mm symmetric DIN rail compliant with DIN EN60715 (TS-35/7.5 and TS-35/15 rail)

P-ACP-E ELECTRICAL (SPECIFIC)

- No discrete wiring connections required for use in a Mk2 dimming or control enclosure
- Hot swapable
- Four contact closure inputs capable of 5 V at 50 mA onto the dry contact
- Four contact-closure outputs (dry contacts) capable of at least 1 A at 30 V
- Total power draw 16 W

P-ACP-D ELECTRICAL (SPECIFIC)

- Compliant with IEEE 802.3at for Power over Ethernet providing network and optionally DC power (PoE+ 25.5 W maximum, Class 4)
- Removable pluggable connections for the following:
  - DC Power input on a three position pluggable connector, 24-v48 V, 15 W maximum (+, -, ground). In the presence of both PoE+ and DC Power input, the device will operate from the DC input.
  - EIA RS-232 serial input on a three position removable pluggable connector (Rx, Tx, Signal Common) serial protocol for bi-directional command and communication with third-party equipment
  - Supports two discrete ESTA DMX512-A universes on three position removable pluggable connectors (one input and one output connector available per universes A and B)
- Total power draw 15 W

P-ACP-E THERMAL

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

P-ACP-D THERMAL

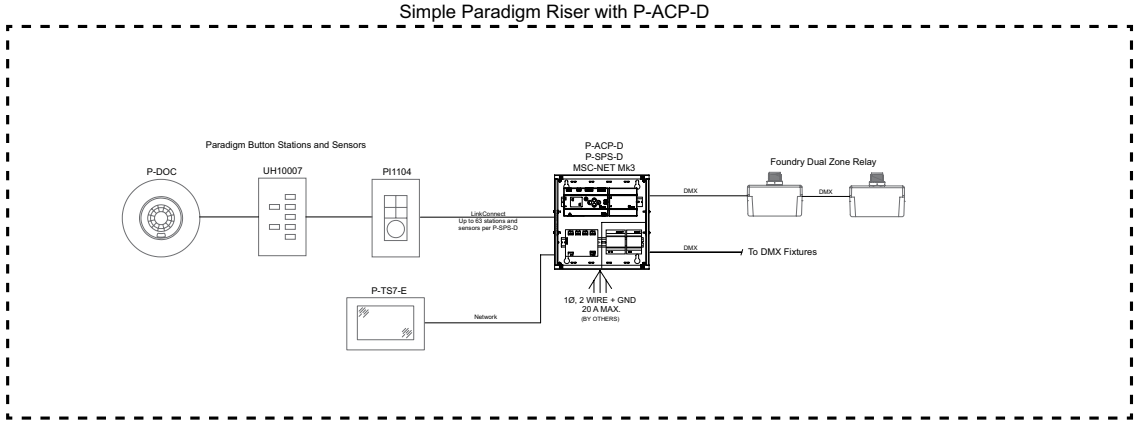
- Ambient room temperature: 0°C to 45°C (32°F to 113°F)
- Ambient humidity: 0%–95%, non-condensing

SPECIFICATIONS

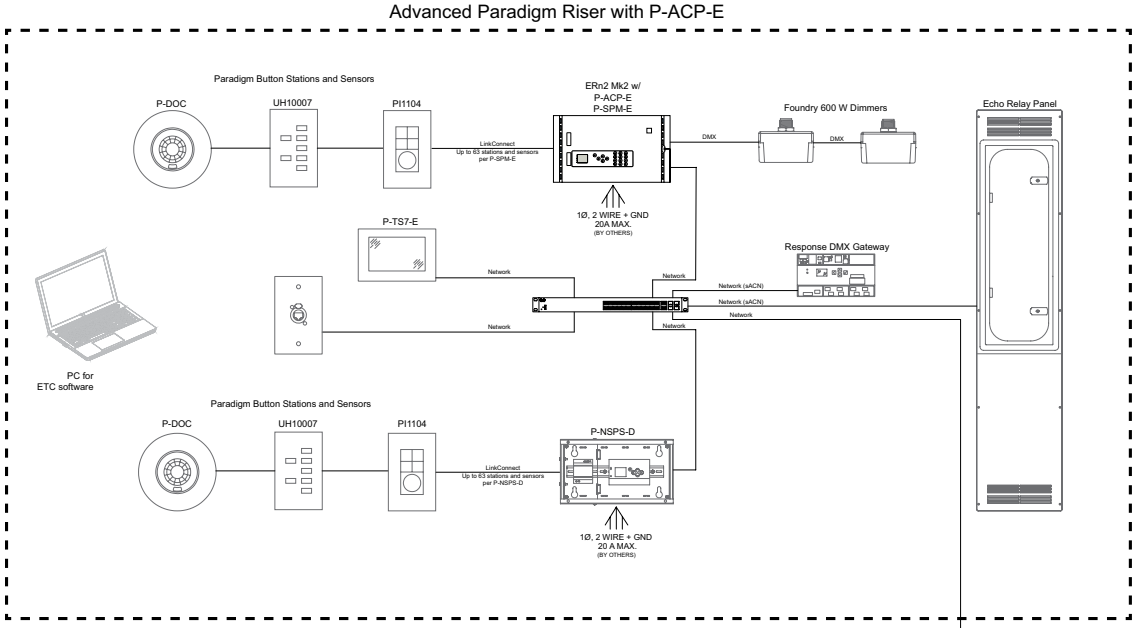
FUNCTIONAL

- Capacity
  - Supports 2,048 channels of control per control processor
  - Supports up to 128 stations per control processor
    - Each P-SPM-E can support 63 stations
    - Each P-SPS-D can support 63 stations
    - Each P-NSPS-D can support 63 stations
    - Maximum (1) P-SPM-E or P-SPS-D and (5) P-NSPS-D per control processor for a total of 128 stations per processor.
- System
  - Net3 system interoperability including sACN
  - Network Time Protocol for real-time clock synchronization supporting real and astronomical events
  - Supports two universes of DMX
  - Provides configuration of DRd dimming operations (P-ACP-E only)
  - Up to 12 control processors per project
  - Up to 64 control processors across multiple projects when using a Central Control Server
  - Addition of processors to a system proportionately increases the overall capacities
- RS-232 Serial Input/Output
  - Eight-bit word length, parity selection and one or two stop bits
  - Configurable baud rates from 9600 to 115,200 bps
  - Fully customizable input and output messages
  - Bi-directional
- Configuration Data
  - Remote upload from a connected PC running LightDesigner or another connected Paradigm Processor or Paradigm Server in the system
  - Stored in removable solid-state memory for easy transfer to another Paradigm Processor
- Local User Interface
  - Front panel color graphic LCD display
  - Backlit alpha-numeric direct entry buttons (P-ACP-E only)
  - Backlit menu navigation buttons (P-ACP-D only)
  - Front panel status LEDs
  - Control functionality for control channels, zones, fixtures, groups, presets, macros, walls, and sequences
  - Ability to schedule timed events (edit/delete)
  - Transfer of configuration using USB removable media
  - Transfer of configuration to and from touchscreen stations using removable media
- User Access Controls
  - Two user accounts – Administrator and User, local to each processor
- Web User Interface
  - Internal web server accessible via Ethernet port
  - Activate and deactivate presets
  - Ability to schedule timed events (add/edit/delete)
  - Displays status information and log files
  - Configuration of processor settings
  - Supports configurable user login security options
- Diagnostics
  - Standard and Critical Event logging
- Stations
  - Connected to a Paradigm Processor via topology-free LinkConnect, or star-topology network connection (Touchscreen Stations only)
  - Discovery and binding accomplished from the local user interface or LightDesigner Configuration Software
- Operation
  - Configurable DMX output refresh rate
  - Support for 16-bit DMX attributes
  - User configurable arbitration for multiple internal and external source data

Simple Paradigm Riser with P-ACP-D

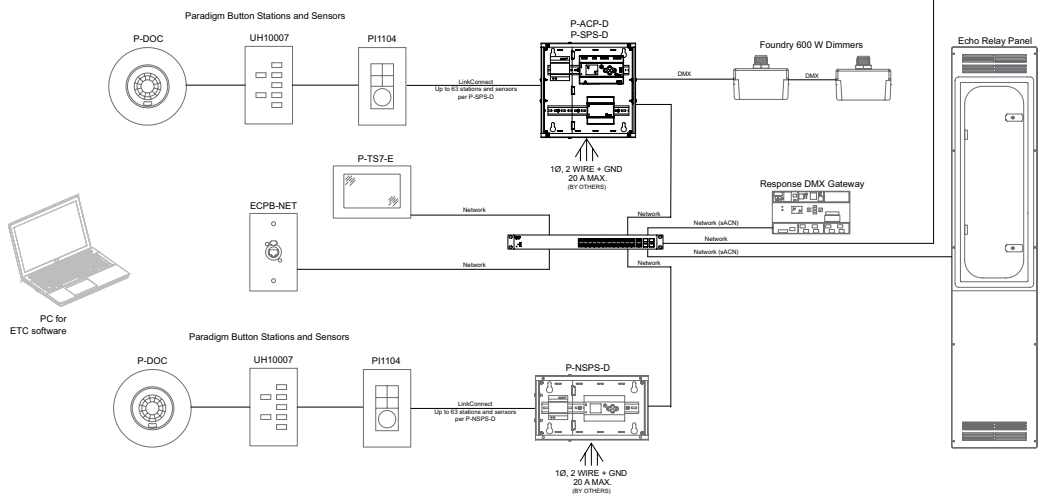


Advanced Paradigm Riser with P-ACP-E



Optional Paradigm Server joins multiple Paradigm projects and adds support for BACnet and P-TS18

Advanced Paradigm Riser with P-ACP-D



ETC Paradigm Architectural Control Processor Mk2*

Unison Control Series

PHYSICAL

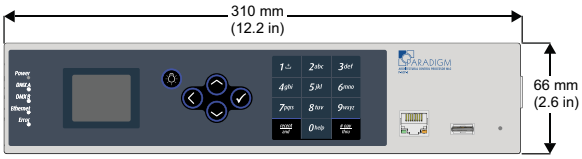
Dimensions†

MODEL	HEIGHT		WIDTH		DEPTH	
	mm	in	mm	in	mm	in
P-ACP-E Mk2	66	2.6	310	12.2	152	6.0
P-ACP-D Mk2	90	3.54	143	5.63	59	2.32
DIN8-P-ACP	209	8.2	361	14.2	132	5.2
DIN14-P-ACP/SPS	351	14.2	361	14.2	129	5.07
DIN14-P-ACP/SPS/NET	351	14.2	361	14.2	129	5.07

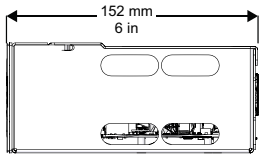
Weights†

MODEL	WEIGHT		SHIPPING WEIGHT	
	kg	lb	kg	lb
P-ACP-E Mk2	1.92	4.23	2.3	5.07
P-ACP-D Mk2	0.5	1.1	0.95	2.1
DIN8-P-ACP	4.5	10	5.5	12.1
DIN14-P-ACP/SPS	7.3	16.1	8.21	18.1
DIN14-P-ACP/SPS/NET	7.8	17.2	8.71	19.2

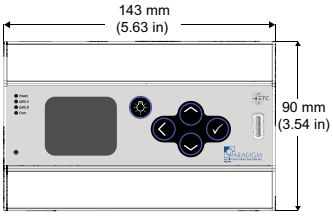
†Weights and dimensions typical



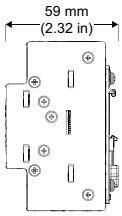
P-ACP-E Front



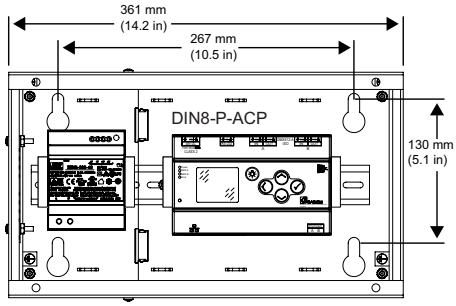
P-ACP-E Side



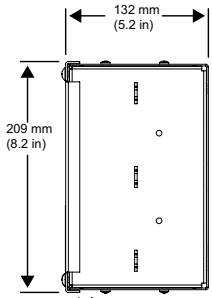
P-ACP-D Front



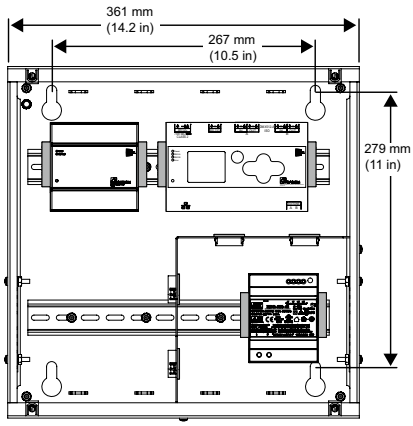
P-ACP-D Side



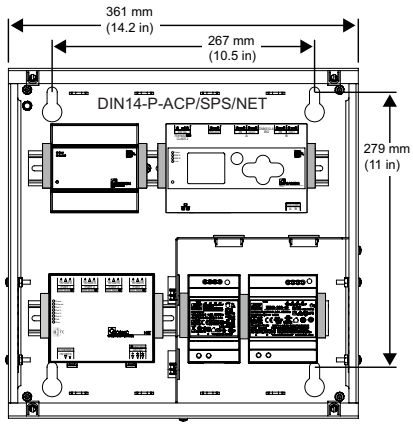
DIN8-P-ACP Front



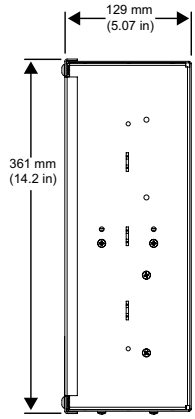
Side



DIN14-P-ACP/SPS Front



DIN14-P-ACP/SPS/NET Front



Side

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