Lighting Playback Controller

The Pharos LPC (Lighting Playback Controller) is an award-winning, all-in-one control solution for themed entertainment and LED lighting installations. It features individually controllable and independently running timelines and scenes, letting you build dynamic, precise, fully customisable pre-programmed lighting effects with the freedom of real-time manual overrides and the versatility of powerful show control and integration features.

LPC FAMILY

LPC Features

Designer Engine
The intelligent Designer Engine gives you complete control of your installation. Based on individually controllable and independently running timelines and scenes, it lets you build dynamic, precise, fully customisable pre-programmed lighting displays, all while giving you the freedom of real-time manual overrides, flexible multi-zone control, prioritisation and more.

Designer Trigger
Timing is everything. Whatever the stimulus, Designer Trigger can handle it. You can control your lighting with responsive, reactive programming. Designer Trigger is a rules engine that uses conditional logic and a broad range of interfaces and protocols. Send and receive any command, to and from any system. Conditional logic is supported, along with a powerful built-in scripting language for unlimited flexibility.

Flexible
Be limited by your design brief, not your control system. Our products support a vast range of different fixture types and can output multiple DMX-over-Ethernet (eDMX) lighting protocols at the same time. No other system gives you this level of flexibility and control over your project.

Custom Interfaces
Create a custom web interface for your installation that gives your users the control they need and the look they expect. Our built-in web server supports an extensive JavaScript and HTTP API and access control with multiple user levels.

Remote Management
Future-proof your lighting projects by connecting your Designer controllers to Pharos Cloud. This allows direct control of your Controllers from anywhere in the world, letting you check all of your Controllers' statuses, inputs and outputs, firing triggers, scheduling events, uploading new projects and much more. All Pharos Designer Controllers also have their own Web Interface that can be accessed on a local area network that provides real-time statuses, access to the full log and the ability to fire triggers on the controller.

Designer Mapping
Design the big picture; control every pixel. Create a map of your fixtures within the Designer software, then use Designer Mapping to create visually striking effects or play video across the entire array. Powerful controls allow you to build maps fast with pixel-precise adjustment. Multiple maps can be created to support different zones or for modelling different views of your installation.

Scalable
The right fit for every installation. Multiple Pharos Designer Controllers can be seamlessly linked together to work as one via a standard Ethernet network giving impressive scalability. For additional integration options simply add Remote Devices to further extend the network. Whether one Controller or many, it's all easily programmed using our Designer software.

Pharos Designer
Programmed and configured using the free Pharos Designer software – available for Windows or macOS – with upload over Ethernet.

Reliable
Hardware and firmware are self-sufficient, so no PC needs to be left on site. Rugged, compact unit designed for 24/7 operation and reliability.

Installer Friendly
Made for permanent installation, with installer-friendly connectors and easy DIN rail mounting.

Supported Fixtures

LEDs	Any colour configuration e.g. RGB, RGBW, 8-bit, 16-bit, tuneable white
Generic	Downlights, spotlights, uplights, etc. via controllable dimmers, relays or ballasts
Intelligent	Moving and multi-parameter fixtures
Fountain Jets	Fountain jets for fountain animation or other animatronics
Fixture Library	Pharos offers a cloud library with over 30,000 fixture profiles, for easy download of your luminaires

Output

DMX512	2 ports (max 512 channels each) USITT E1.11-2008
RDM	Via local ports or Art-Net, supports discovery and addressing via Designer 2 software
sACN	USITT E1.31 (with per fixture priority) standard
Art-Net	Art-Net I, Art-Net II and Art-Net 3. Configurable broadcast override
KiNET	KiNET V1, V2, V3; PDS/Data Enabler discovery
Pathport	Pathway Connectivity protocol
EDN	Via EDN: natively integrate, and output DMX, with the EDN
SPI	Via EDN+SDI: synchronous and asynchronous serial data output
DALI	Via RIO D4. Interface limits apply. DALI ballasts do not count towards used channels.
Simultaneous	Multiple protocols can be in operation simultaneously. Limited by patched channels, not universes used
Scalable	Synchronises with up to 40 Pharos Designer Controllers over network

Triggering & Integration

Startup	Commences programmed playback automatically on receiving power
Contact Closures	Connect an external volt-free switch between input and ground (internal 2.2k pull-up to 5V)
Digital In	Connect an external voltage source between input and ground (24V maximum; internal 2MOhm pull-down to 0V); software configurable low/high threshold
Analog In	Connect an external voltage source between input and ground (24V maximum); software-configurable range
Outputs	Via RIO: isolated relay outputs (48V, 250mA)
Clock	Battery-backed real-time clock for calendar and time-based triggers
Astronomical	Sunrise/Sunset/Twilight and Lunar phases
Ethernet	UDP, TCP, Multicast; send/receive any Ethernet message
Serial Data	RS232, RS485; configurable port; send/receive free syntax in ASCII, HEX or decimal
MIDI	MIDI Notes, SysEx or MIDI Time Code
Timecode	Via RIO A: Linear Timecode (SMPTE, Film, EBU, NTSC)
Audio Level	Via RIO A: stereo 30-band spectrum analysis
DMX	Trigger on changes within a range or entering a range
eDMX	sACN or Art-Net (option to pass-thru on local DMX output)
DALI	Via RIO D4: transmit and receive DALI commands
Web Interface	Built-in or custom designed
Wall Stations	Integrate with BPS, TPS or TPC
Conditions	Full conditional logic support
Scripting	Lua scripting for total flexibility
IO Modules	Supports our extensive IO Module library for easy integration
Scalable	Supports Pharos Designer Remote Devices

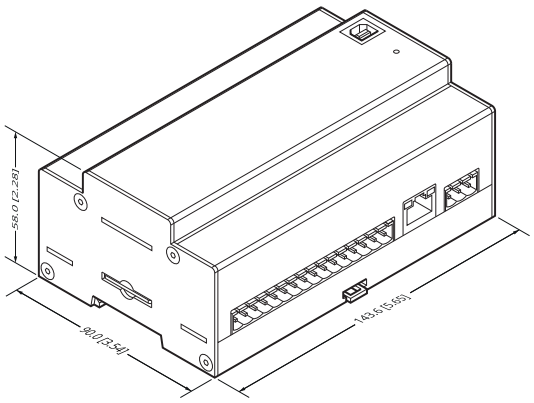
Interfaces

Ethernet	RJ45 socket for 10/100Base-TX Ethernet with Link/Data LEDs; Static IP or DHCP; Dual IP address for eDMX; Supports IEEE 802.1Q VLAN Tagging
DMX512	Two isolated DMX ports, RDM compatible *
Serial	RS232 / RS485 / DMX in *
Inputs	Eight inputs, individually selectable operating mode for contact closure, digital or analog input *
MIDI In & Out	MIDI via standard 5-pin DIN
USB-B socket	USB 1.1 for connection to PC

* Install-friendly 0.200" (5.08mm) plug in rising clamp connectors (included)

Specifications

Power	9-48V DC * or PoE (IEEE802.3af, Class 2), 4W typical
Configuration	Pharos Designer 2
Data Storage	Removable SD Card (supplied)
Temperature	0°C to 50°C (32°F to 122°F)
Humidity	10-50% relative, non-condensing
Ingress	IP40
Physical	8 unit wide DIN rail mounting enclosure (DIN43880 / EN60715 (35/7.5 rail)) 14.4 x 9 x 5.8 cm (5.7 x 3.5 x 2.3 in) 0.5 kg (1.1 lbs)
Shipping	20 x 15 x 12 cm (8 x 6 x 5 in) 0.8 kg (1.8 lbs)
Recovery	Hardware watchdog and recessed reset button



Order Code & Variants

LPC 1	Designer Lighting Playback Controller 1 (512 channels DMX/eDMX)
LPC 2	Designer Lighting Playback Controller 2 (1,024 channels DMX/eDMX)
LPC 4	Designer Lighting Playback Controller 4 (2,048 channels eDMX, 2 local DMX ports)

Warranty & Certifications

Warranty	5 years
Certifications	CE compliant, UKCA compliant, ETL/cETL listed, may be used as part of a Title 24 compliant lighting control system.

LPC24001

Lighting Playback Controller X Series 3

The Pharos LPC X (Lighting Playback Controller X) offers an extreme level of power and integration, making it an ideal solution for landmark lighting installations with significant channel counts. It integrates with the full range of Pharos Designer products and offers an optional real-time video input. The LPC X S3 is a next generation hardware platform with improved connectivity and new functionality with Audio In for Linear Timecode.

LPC FAMILY

LPC X Features

Designer Engine
The intelligent Designer Engine gives you complete control of your installation. Based on individually controllable and independently running timelines and scenes, it lets you build dynamic, precise, fully customisable pre-programmed lighting displays, all while giving you the freedom of real-time manual overrides, flexible multi-zone control, prioritisation and more.

Designer Trigger
Timing is everything. Whatever the stimulus, Designer Trigger can handle it. You can control your lighting with responsive, reactive programming. Designer Trigger is a rules engine that uses conditional logic and a broad range of interfaces and protocols. Send and receive any command, to and from any system. Conditional logic is supported, along with a powerful built-in scripting language for unlimited flexibility.

Flexible
Be limited by your design brief, not your control system. Our products support a vast range of different fixture types and can output multiple DMX-over-Ethernet (eDMX) lighting protocols at the same time. No other system gives you this level of flexibility and control over your project.

Custom Interfaces
Create a custom web interface for your installation that gives your users the control they need and the look they expect. Our built-in web server supports an extensive JavaScript API and access control with multiple user levels.

Remote Management
Future-proof your lighting projects by connecting your Designer controllers to Pharos Cloud. This allows direct control of your Controllers from anywhere in the world, letting you check all of your Controllers' statuses, inputs and outputs, firing triggers, scheduling events, uploading new projects and much more. All Pharos Designer Controllers also have their own Web Interface that can be accessed on a local area network that provides real-time statuses, access to the full log and the ability to fire triggers on the controller.

Designer Mapping
Design the big picture; control every pixel. Create a map of your fixtures within the Designer software, then use Designer Mapping to create visually striking effects or play video across the entire array. Powerful controls allow you to build maps fast with pixel-precise adjustment. Multiple maps can be created to support different zones or for modelling different views of your installation.

Scalable
The right fit for every installation. Multiple Pharos Designer Controllers can be seamlessly linked together to work as one via a standard Ethernet network giving impressive scalability. For additional integration options simply add Designer Remote Devices to further extend the network. Whether one Controller or many, it's all easily programmed using our Designer software.

Pharos Designer
Programmed and configured using the free Pharos Designer software – available for Windows or macOS – with upload over Ethernet.

Reliable
Hardware and firmware are self-sufficient, so no PC needs to be left on site. Rugged 19" rack mount unit designed for 24/7 operation and reliability.

Timecode
The stereo balanced line level audio input can receive linear timecode on both channels. The format is auto-detected and supported formats are 24fps (film), 25fps (EBU), 29.97fps (NTSC) & 30fps (SMPTE). A software flywheel with error correction and jump support ensures smooth but responsive timecode playback.

Video Input
Optional HDMI input for mapping live video, supporting up to 1080p60 with configurable scaling and X/Y pixel offset.

Supported Fixtures

LEDs	Any colour configuration e.g. RGB, RGBW, 8-bit, 16-bit, tuneable white
Generic	Downlights, spotlights, uplights, etc. via controllable dimmers, relays or ballasts
Intelligent	Moving and multi-parameter fixtures
Fountain Jets	Fountain jets for fountain animation or other animatronics
Fixture Library	Pharos offers a cloud library with over 30,000 fixture profiles, for easy download of your luminaires

Output

sACN	ANSI E1.31 (with per fixture priority) standard
Art-Net	Art-Net I, Art-Net II and Art-Net 3. Configurable broadcast override
KiNET	KiNET V1, V2, V3; PDS/Data Enabler discovery
Pathport	Pathway Connectivity protocol
EDN	Via EDN: natively integrate, and output DMX, with the EDN
SPI	Via EDN+SDI: synchronous and asynchronous serial data output
DisplayPort	Output for video-mapped fixtures
DMX512	Via the EDN or any other eDMX node
RDM	Via Art-Net or EDN, supports discovery and addressing via Designer 2 software
DALI	Via RIO D4. Interface limits apply. DALI ballasts do not count towards used channels.
Audio Out	Audio Output with two audio layers; a background layer for ongoing audio, and an alert layer for high-priority overriding
Simultaneous	Multiple protocols can be in operation simultaneously. Limited by patched channels, not universes used
Scalable	Synchronises with up to 40 Pharos Designer Controllers over network

Triggering & Integration

Startup	Commences programmed playback automatically on receiving power
Clock	Battery-backed real-time clock for calendar and time-based triggers
Astronomical	Sunrise/Sunset/Twilight and Lunar phases
Ethernet	UDP, TCP, Multicast; send/receive any Ethernet message
RS232 Serial	Configurable port; send/receive free syntax in ASCII, HEX or decimal
RS485 Serial	Via RIO: configurable port; send/receive free syntax in ASCII, HEX or decimal
eDMX	sACN or Art-Net
Timecode	Linear Timecode (SMPTE, Film, EBU, NTSC)
Inputs	Via RIO: contact closure, active low, active high or 0-24V analog level
Outputs	Via RIO: isolated relay outputs (48V, 250mA)
MIDI	Via RIO A: MIDI Notes, SysEx or MIDI Time Code
Audio Level	Via RIO A: stereo 30-band spectrum analysis
DALI	Via RIO D: transmit and receive DALI commands
Web Interface	Built-in or custom designed
Wall Stations	Integrate with BPS, TPS or TPC
Conditions	Full conditional logic support
Scripting	Lua scripting for total flexibility
IO Modules	Supports our extensive IO Module library for easy integration
Scalable	Supports Pharos Designer Remote Devices

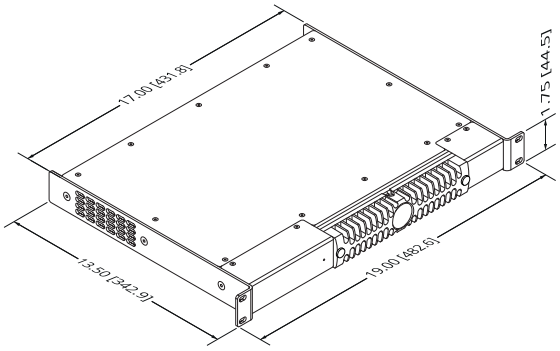
Interfaces

Ethernet	Network port for device access and management; Neutrik etherCON (RJ45 compatible) for 10/100/1000Base-TX Ethernet with Link/Data LEDs; Static IP or DHCP
eDMX	Dedicated Ethernet port for lighting data; Neutrik etherCON (RJ45 compatible) for 10/100/1000Base-TX Ethernet with Link/Data LEDs; Static IP or DHCP
Serial	RS232 *
USB	Two USB 2.0 Type A ports (for future development)
Audio Outputs	Stereo balanced line level analog port * / SPDIF (RCA) port
Audio Input	Stereo balanced line level analog port *
Video Output	DisplayPort for monitoring or video-mapped fixtures
HDMI Input	Video input up to 1080p60 (with HDMI IN option)

* Install-friendly 0.200" (5.08mm) plug in rising clamp connectors (included)

Specifications

Power	100-240V AC, 50-60Hz, 0.4-0.2A, 40W typical (50W maximum), IEC connector with switch (power cable not supplied)
Configuration	Pharos Designer 2.11 or later
Data Storage	Internal 128GB SSD (supplied)
Temperature	0°C to 50°C (32°F to 122°F)
Humidity	10-90% relative, non-condensing
Ingress	IP20
Physical	19" rack unit, 1U, 13.5" deep 48.3 x 34.3 x 4.5 cm (19 x 13.5 x 1.8 in) 3.5 kg (7.7 lbs)
Shipping	57 x 45 x 17 cm (22 x 18 x 7 in) 5.5 kg (12 lbs)
Recovery	Hardware watchdog and recessed reset button



Order Code & Variants

LPC X S3 10	Designer Lighting Playback Controller X S3 10 (5,120 channels eDMX)
LPC X S3 20	Designer Lighting Playback Controller X S3 20 (10,240 channels eDMX)
LPC X S3 30	Designer Lighting Playback Controller X S3 30 (15,360 channels eDMX)
LPC X S3 40	Designer Lighting Playback Controller X S3 40 (20,480 channels eDMX
LPC X S3 50	Designer Lighting Playback Controller X S3 50 (25,600 channels eDMX)
LPC X S3 60	Designer Lighting Playback Controller X S3 60 (30,720 channels eDMX)
LPC X S3 70	Designer Lighting Playback Controller X S3 70 (35,840 channels eDMX)
LPC X S3 80	Designer Lighting Playback Controller X S3 80 (40,960 channels eDMX)
LPC X S3 90	Designer Lighting Playback Controller X S3 90 (46,080 channels eDMX)
LPC X S3 100	Designer Lighting Playback Controller X S3 100 (51,200 channels eDMX)

For HDMI IN option order codes, please refer to website or price list

Warranty & Certifications

Warranty	5 years
Certifications	CE compliant, UKCA compliant, ETL/cETL listed, may be used as part of a Title 24 compliant lighting control system.

LPCX24001

LPC FAMILY

Video Lighting Controller

The Pharos VLC (Video Lighting Controller) is an extremely capable but cost effective solution for large LED pixel arrays such as building façades, bridges, and presentation walls. It makes it simple to play video content across your array, either from locally stored HD media files or a DVI-D video input. It also offers a range of creative generative effects, the versatility of powerful show control, and integration features.

VLC FAMILY

VLC Features

Designer Engine
Make your light fixtures a canvas onto which you can paint with creative effects or video playback. The powerful Designer 2 software allows you to build your fixture layout fast with pixel-precise adjustment. Then use individually controllable and independently running timelines to build dynamic, striking, pre-programmed lighting displays across.

High Capacity
Big just got a whole lot easier. The VLC can output all commonly used eDMX protocols (sACN, Art-Net I, KiNET) over Gigabit Ethernet and there are no restrictions on using these protocols simultaneously. There are six VLC variants with pricing based on channel capacity, ranging from 25,600 channels up to a massive 768,000 channels.

Pharos Designer
Programmed and configured using the free Pharos Designer software – available for Windows or macOS – with upload over Ethernet.

Custom Interfaces
Create a custom web interface for your installation that gives your users the control they need and the look they expect. Our built-in web server supports an extensive JavaScript API and access control with multiple user levels.

Remote Management
Future-proof your lighting projects by connecting your Designer controllers to Pharos Cloud. This allows direct control of your Controllers from anywhere in the world, letting you check all of your Controllers' statuses, inputs and outputs, firing triggers, scheduling events, uploading new projects and much more. All Designer Controllers also have their own Web Interface that can be accessed on a local area network that provides real-time statuses, access to the full log and the ability to fire triggers on the controller.

Designer Trigger
Timing is everything. Whatever the stimulus, Designer Trigger can handle it. You can control your lighting with responsive, reactive programming. Designer Trigger is a rules engine that uses conditional logic and a broad range of interfaces and protocols. Send and receive any command, to and from any system. Conditional logic is supported, along with a powerful built-in scripting language for unlimited flexibility.

High Definition
Live video can be captured on the DVI-D input at resolutions up to 1080p60. Internal video playback at up to 1080p30 supports all major formats such as H.264/MPEG-4 AVC, MJPEG and QuickTime. The built-in 128GB SSD provides plenty of capacity for media storage.

Reliable
Hardware and firmware are self-sufficient, so no PC needs to be left on site. Rugged, compact unit designed for 24/7 operation and reliability.

Installer Friendly
Made for permanent installation, the VLC is a 1U enclosure designed for 19" rack mounting.

Scalable
The right fit for every installation. Multiple Pharos Designer Controllers can be seamlessly linked together to work as one via a standard Ethernet network giving impressive scalability. For additional integration options simply add Remote Devices to further extend the network. Whether one Controller or many, it's all easily programmed using our Designer software.

Supported Fixtures

LEDs	RGB, RGBA, RGBW, RGBAW and W in any colour order, 8-bit or 16-bit
Fixture Library	Pharos offers a cloud library with over 30,000 fixture profiles, for easy download of your luminaires

Output

sACN	USITT E1.31 (with per fixture priority)
Art-Net	Art-Net I, Art-Net II and Art-Net 3. Configurable broadcast override
KiNET	KiNET V1, V2, V3; PDS/Data Enabler discovery
Pathport	Pathway Connectivity protocol
EDN	Via EDN: natively integrate, and output DMX, with the EDN
SPI	Via EDN+SDI: synchronous and asynchronous serial data output
DMX512	Via the EDN or any other eDMX node
DALI	Via RIO D4. Interface limits apply
Audio Out	Audio Output with two audio layers; a background layer for ongoing audio, and an alert layer for high-priority overriding
Simultaneous	Multiple protocols can be in operation simultaneously. Limited by patched channels, not universes used
Scalable	Synchronises with up to 40 Pharos Designer Controllers over network

Triggering & Integration

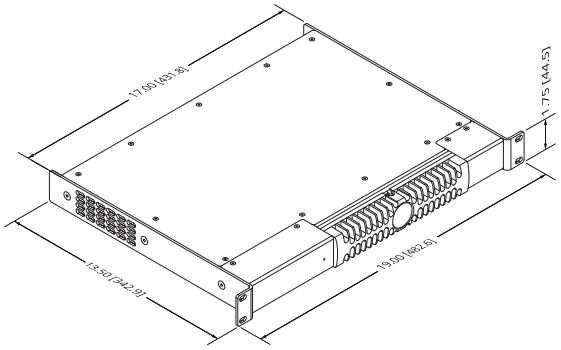
Startup	Commences playback automatically on receiving power
Clock	Battery-backed real-time clock for calendar and time-based triggers
Astronomical	Sunrise/Sunset/Twilight and Lunar phases
Ethernet	UDP, TCP, Multicast; send/receive any Ethernet message
RS232 Serial	Configurable port; send/receive free syntax in ASCII, HEX or decimal
RS485 Serial	Via RIO: configurable port; send/receive free syntax in ASCII, HEX or decimal
eDMX	sACN or Art-Net
Inputs	Via RIO: contact closure, active low, active high or 0-24V analog level
Outputs	Via RIO: isolated relay outputs (48V, 250mA)
MIDI	Via RIO A: MIDI Notes, SysEx or MIDI Time Code
Timecode	Via RIO A: Linear Timecode (SMPTE, Film, EBU, NTSC)
Audio Level	Via RIO A: stereo 30-band spectrum analysis
DALI	Via RIO D4: transmit and receive DALI commands
Web Interface	Built-in or custom designed
Wall Stations	Integrate with BPS, TPS or TPC
Conditions	Full conditional logic support
Scripting	Lua scripting for total flexibility
IO Modules	Supports our extensive IO Module library for easy integration
Scalable	Supports Pharos Designer Remote Devices

Interfaces

Ethernet	Network port for device access and management; Neutrik etherCON (RJ45 compatible) for 10/100/1000Base-TX Ethernet; Static IP or DHCP
eDMX	Dedicated Ethernet port for lighting data; Neutrik etherCON (RJ45 compatible) for 10/100/1000Base-TX Ethernet; Static IP or DHCP
DVI-D Input	Live video input to capture resolutions up to 1080p60
DVI-I Output	DVI-I output (for future development)
Serial	RS232 via DB9 connector
USB	Two USB 2.0 Type A ports (for future development)
Audio Outputs	Stereo analog & digital audio ports

Specifications

Power	100-240V AC, 50-60Hz, 0.4-0.2A, 40W typical (50W maximum), IEC connector with switch (power cable not supplied)
Configuration	Pharos Designer 2.2 or later
Data Storage	Internal 128GB SSD (supplied)
Temperature	0°C to 50°C (32°F to 122°F)
Humidity	10-50% relative, non-condensing
Ingress	IP20
Physical	19" rack unit, 1U, 13.5" deep 48.3 x 34.3 x 4.5 cm (19 x 13.5 x 1.8 in) 3.1 kg (6.8 lbs)
Shipping	57 x 45 x 17 cm (22 x 18 x 7 in) 5.5 kg (12 lbs)
Recovery	Hardware watchdog and recessed reset button



Order Code & Variants

VLC 50	Designer Video Lighting Controller 50 (25,600 channels eDMX)
VLC 100	Designer Video Lighting Controller 100 (51,200 channels eDMX)
VLC 250	Designer Video Lighting Controller 250 (128,000 channels eDMX)
VLC 500	Designer Video Lighting Controller 500 (256,000 channels eDMX)
VLC 1000	Designer Video Lighting Controller 1000 (512,000 channels eDMX)
VLC 1500	Designer Video Lighting Controller 1500 (768,000 channels eDMX)

Warranty & Certifications

Warranty	5 years
Certifications	CE compliant, UKCA compliant, ETL/cETL listed, may be used as part of a Title 24 compliant lighting control system.

VLC FAMILY

VLC24001

Video Lighting Controller Plus M

The Pharos VLC+ M (Video Lighting Controller Plus M) is designed to control the world's largest lighting façade projects. It renders multiple layers of effects and video from internal storage or live input and features processing, including rotation and masking. Up to 500 universes of eDMX and video can be output from a single unit with integrated show control.

VLC FAMILY

VLC+ Features

Designer Engine
Make your light fixtures a canvas onto which you can paint compositions of creative effects and full HD video playback, including dynamic rotation, translation and masking. The Designer software allows you to build your fixture layout fast with pixel-precise adjustment. Then use individually controllable and independently running timelines to build dynamic, striking, pre-programmed lighting displays across your canvas.

High Capacity
Big just got a whole lot easier. The VLC+ M can output all commonly used eDMX protocols over Gigabit Ethernet as well as providing its full canvas over video, and there are no restrictions on using these protocols simultaneously. The VLC+ M renders effects and video from internal storage or live input onto a canvas up to 16,000 pixels wide or high, and can output up to 500 universes of eDMX from a single unit. This can integrate well with the EDN20, which allows 20 universes of eDMX per node.

Pharos Designer
Programmed and configured using the free Pharos Designer software – available for Windows or macOS – with upload over Ethernet.

Custom Interfaces
Create a custom web interface for your installation that gives your users the control they need and the look they expect. Our built-in web server supports an extensive JavaScript API and access control with multiple user levels.

Remote Management
Future-proof your lighting projects by connecting your Designer controllers to Pharos Cloud. This allows direct control of your Controllers from anywhere in the world, letting you check all of your Controllers' statuses, inputs and outputs, firing triggers, scheduling events, uploading new projects and much more. All Designer Controllers also have their own Web Interface that can be accessed on a local area network that provides real-time statuses, access to the full log and the ability to fire triggers on the controller.

Designer Trigger
Timing is everything. Whatever the stimulus, Designer Trigger can handle it. You can control your lighting with responsive, reactive programming. Designer Trigger is a rules engine that uses conditional logic and a broad range of interfaces and protocols. Send and receive any command, to and from any system. Conditional logic is supported, along with a powerful built-in scripting language for unlimited flexibility.

High Definition
Live video can be captured on the DVI-D input at resolutions up to 1080p60. Dual 1080p30 internal playback means two full HD streams can be played, and cross-faded seamlessly into two further streams. In total, up to eight players are available, subject to performance limitations. Support for all major formats such as H.264/MPEG-4 AVC, MJPEG and QuickTime with the built-in 128GB SSD provides plenty of capacity for media storage.

Reliable
Hardware and firmware are self-sufficient, so no PC needs to be left on site. Rugged, compact 1U 19" rack mount unit designed for 24/7 operation and reliability.

Ease of Use
Easily build huge lighting projects with powerful Pharos Designer features such as fixture template – a tool that enables you to create a composite fixture that is an arrangement of any single-element library fixture, allowing strings and tiles to be built up from individual nodes into reusable templates to speed up commissioning.

Scalable
The right fit for every installation. Multiple Pharos Designer Controllers can be seamlessly linked together to work as one via a standard Ethernet network giving impressive scalability. For additional integration options simply add Remote Devices to further extend the network. Whether one Controller or many, it's all easily programmed using our Designer software.

Supported Fixtures

LEDs	RGB, RGBA, RGBW, RGBAW and W in any colour order, 8-bit or 16-bit
Fixture Library	Pharos offers a cloud library with over 30,000 fixture profiles, for easy download of your luminaires

Output

sACN	USITT E1.31 (with per fixture priority) standard
Art-Net	Art-Net I, Art-Net II and Art-Net 3. Configurable broadcast override
KiNET	KiNET V1, V2, V3; PDS/Data Enabler discovery
Pathport	Pathway Connectivity protocol
EDN	Via EDN: natively integrate, and output DMX, with the EDN
SPI	Via EDN+SDI: synchronous and asynchronous serial data output
DisplayPort	DisplayPort Output for video-mapped fixtures
DMX512	Via the EDN or any other eDMX node
DALI	Via RIO D4
Audio Out	Audio Output with two audio layers; a background layer for ongoing audio, and an alert layer for high-priority overriding
Simultaneous	Multiple protocols can be in operation simultaneously. Limited by patched channels, not universes used
Scalable	Synchronises with up to 40 Pharos Designer Controllers over network

Triggering & Integration

Startup	Commences programmed playback automatically on receiving power
Clock	Battery-backed real-time clock for calendar and time-based triggers
Astronomical	Sunrise/Sunset/Twilight and Lunar phases
Ethernet	UDP, TCP, Multicast; send/receive any Ethernet message
RS232 Serial	Configurable port; send/receive free syntax in ASCII, HEX or decimal
RS485 Serial	Via RIO: configurable port; send/receive free syntax in ASCII, HEX or decimal
eDMX	sACN or Art-Net
Timecode	Linear Timecode (SMPTE, Film, EBU, NTSC)
Inputs	Via RIO: contact closure, active low, active high or 0-24V analog level
Outputs	Via RIO: isolated relay outputs (48V, 250mA)
MIDI	Via RIO A: MIDI Notes, SysEx or MIDI Time Code
Audio Level	Via RIO A: stereo 30-band spectrum analysis
DALI	Via RIO D4: transmit and receive DALI commands
Web Interface	Built-in or custom designed
Wall Stations	Integrate with BPS, TPS 5 or TPS 8
Conditions	Full conditional logic support
Scripting	Lua scripting for total flexibility
IO Modules	Supports our extensive IO Module library for easy integration
Scalable	Supports Pharos Designer Remote Devices

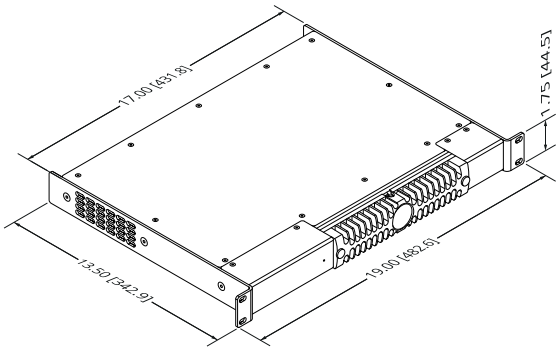
Interfaces

Ethernet	Network port for device access and management; Neutrik etherCON (RJ45 compatible) for 10/100/1000Base-TX Ethernet with Link/Data LEDs; Static IP or DHCP
eDMX	Two internally-switched dedicated Ethernet ports for lighting data; Neutrik etherCON (RJ45 compatible) for 10/100/1000Base-TX Ethernet; Static IP or DHCP
Serial	RS232 *
USB	Two USB 2.0 Type A ports (for future development)
Audio Outputs	Stereo balanced line level analog port * / SPDIF (RCA) port
Audio Input	Stereo balanced line level analog port *
Video Output	DisplayPort for monitoring or video-mapped fixtures
Video Input	HDMI live video input up to 1080p60

* Install-friendly 0.200" (5.08mm) plug in rising clamp connectors (included)

Specifications

Power	100-240V AC, 50-60Hz, 0.4-0.2A, 40W typical (50W maximum), IEC connector with switch (power cable not supplied)
Configuration	Pharos Designer 2.13 or later
Data Storage	Internal 128GB SSD (supplied)
Temperature	0°C to 50°C (32°F to 122°F)
Humidity	10-90% relative, non-condensing
Ingress	IP20
Physical	19" rack unit, 1U, 13.5" deep 48.3 x 34.3 x 4.5 cm (19 x 13.5 x 1.8 in) 3.5 kg (7.7 lbs)
Shipping	57 x 45 x 17 cm (22 x 18 x 7 in) 5.5 kg (12 lbs)
Recovery	Hardware watchdog and recessed reset button



Order Code & Variants

VLC+ M 50	Designer Video Lighting Controller Plus M 50 (25,600 channels eDMX)
VLC+ M 100	Designer Video Lighting Controller Plus M 100 (51,200 channels eDMX)
VLC+ M 250	Designer Video Lighting Controller Plus M 250 (128,000 channels eDMX)
VLC+ M 500	Designer Video Lighting Controller Plus M 500 (256,000 channels eDMX)

Warranty & Certifications

Warranty	5 years
Certifications	CE compliant, UKCA compliant, ETL/cETL listed, may be used as part of a Title 24 compliant lighting control system.

VLC FAMILY

VLC+M24001

Video Lighting Controller Plus

The Pharos VLC+ (Video Lighting Controller Plus) is designed to control the world's largest lighting façade projects. It renders multiple layers of effects and video from internal storage or live input and features processing, including rotation and masking. Up to 3,000 universes of eDMX and DVI-D can be output from a single unit with integrated show control.

VLC FAMILY

VLC+ Features

Designer Engine
Make your light fixtures a canvas onto which you can paint compositions of creative effects and full HD video playback, including dynamic rotation, translation and masking. The Designer software allows you to build your fixture layout fast with pixel-precise adjustment. Then use individually controllable and independently running timelines to build dynamic, striking, pre-programmed lighting displays across your canvas.

High Capacity
Big just got a whole lot easier. The VLC+ can output all commonly used eDMX protocols over Gigabit Ethernet as well as providing its full canvas over DVI-D, and there are no restrictions on using these protocols simultaneously. The VLC+ renders effects and video from internal storage or live input onto a canvas up to 16,000 pixels wide or high, and can output up to 3,000 universes of eDMX from a single unit. This can integrate well with the EDN20, which allows 20 universes of eDMX per node.

Pharos Designer
Programmed and configured using the free Pharos Designer software – available for Windows or macOS – with upload over Ethernet.

Custom Interfaces
Create a custom web interface for your installation that gives your users the control they need and the look they expect. Our built-in web server supports an extensive JavaScript API and access control with multiple user levels.

Remote Management
Future-proof your lighting projects by connecting your Designer controllers to Pharos Cloud. This allows direct control of your Controllers from anywhere in the world, letting you check all of your Controllers' statuses, inputs and outputs, firing triggers, scheduling events, uploading new projects and much more. All Designer Controllers also have their own Web Interface that can be accessed on a local area network that provides real-time statuses, access to the full log and the ability to fire triggers on the controller.

Designer Trigger
Timing is everything. Whatever the stimulus, Designer Trigger can handle it. You can control your lighting with responsive, reactive programming. Designer Trigger is a rules engine that uses conditional logic and a broad range of interfaces and protocols. Send and receive any command, to and from any system. Conditional logic is supported, along with a powerful built-in scripting language for unlimited flexibility.

High Definition
Live video can be captured on the DVI-D input at resolutions up to 1080p60. Dual 1080p30 internal playback means two full HD streams can be played, and cross-faded seamlessly into two further streams. In total, up to eight players are available, subject to performance limitations. Support for all major formats such as H.264/MPEG-4 AVC, MJPEG and QuickTime with the built-in 512GB SSD provides plenty of capacity for media storage.

Reliable
Hardware and firmware are self-sufficient, so no PC needs to be left on site. Rugged, compact 2U 19" rack mount unit designed for 24/7 operation and reliability.

Ease of Use
Easily build huge lighting projects with powerful Pharos Designer features such as fixture template – a tool that enables you to create a composite fixture that is an arrangement of any single-element library fixture, allowing strings and tiles to be built up from individual nodes into reusable templates to speed up commissioning.

Scalable
The right fit for every installation. Multiple Pharos Designer Controllers can be seamlessly linked together to work as one via a standard Ethernet network giving impressive scalability. For additional integration options simply add Remote Devices to further extend the network. Whether one Controller or many, it's all easily programmed using our Designer software.

Supported Fixtures

LEDs	RGB, RGBA, RGBW, RGBAW and W in any colour order, 8-bit or 16-bit
Fixture Library	Pharos offers a cloud library with over 30,000 fixture profiles, for easy download of your luminaires

Output

sACN	USITT E1.31 (with per fixture priority)
Art-Net	Art-Net I, Art-Net II and Art-Net 3. Configurable broadcast override
KiNET	KiNET V1, V2, V3; PDS/Data Enabler discovery
Pathport	Pathway Connectivity protocol
EDN	Via EDN: natively integrate, and output DMX, with the EDN
SPI	Via EDN+SDI: synchronous and asynchronous serial data output
DVI-I	DVI-I output for video-mapped fixtures
DMX512	Via the EDN or any other eDMX node
DALI	Via RIO D4. Interface limits apply
Audio Out	Audio Output with two audio layers; a background layer for ongoing audio, and an alert layer for high-priority overriding
Simultaneous	Multiple protocols can be in operation simultaneously. Limited by patched channels, not universes used
Scalable	Synchronises with up to 40 Pharos Designer Controllers over network

Triggering & Integration

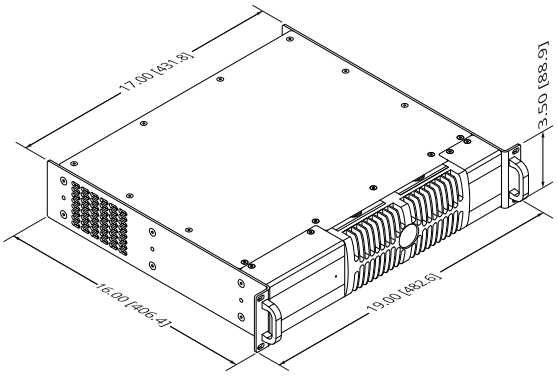
Startup	Commences playback automatically on receiving power
Clock	Battery-backed real-time clock for calendar and time-based triggers
Astronomical	Sunrise/Sunset/Twilight and Lunar phases
Ethernet	UDP, TCP, Multicast; send/receive any Ethernet message
RS232 Serial	Configurable port; send/receive free syntax in ASCII, HEX or decimal
RS485 Serial	Via RIO: configurable port; send/receive free syntax in ASCII, HEX or decimal
eDMX	sACN or Art-Net
Inputs	Via RIO: contact closure, active low, active high or 0-24V analog level
Outputs	Via RIO: isolated relay outputs (48V, 250mA)
MIDI	Via RIO A: MIDI Notes, SysEx or MIDI Time Code
Timecode	Via RIO A: Linear Timecode (SMPTE, Film, EBU, NTSC)
Audio Level	Via RIO A: stereo 30-band spectrum analysis
DALI	Via RIO D4: transmit and receive DALI commands
Web Interface	Built-in or custom designed
Wall Stations	Integrate with BPS, TPS or TPC
Conditions	Full conditional logic support
Scripting	Lua scripting for total flexibility
IO Modules	Supports our extensive IO Module library for easy integration
Scalable	Supports Pharos Designer Remote Devices

Interfaces

Ethernet	Network port for device access and management; Neutrik etherCON (RJ45 compatible) for 10/100/1000Base-TX Ethernet; Static IP or DHCP
eDMX	Two internally-switched dedicated Ethernet ports for lighting data; Neutrik etherCON (RJ45 compatible) for 10/100/1000Base-TX Ethernet; Static IP or DHCP
DVI-D Input	Live video input to capture resolutions up to 1080p60
DVI-I Output	DVI-I output for monitoring or video-mapped fixtures
Serial	RS232 via DB9 connector
USB	Two USB 2.0 Type A ports (for future development)
Audio Outputs	Stereo analog & digital audio ports

Specifications

Power	100-240V AC, 50-60Hz, 0.4-0.2A, 40W typical (50W maximum), IEC connector with switch (power cable not supplied)
Configuration	Pharos Designer 2.6 or later
Data Storage	Internal 512GB SSD (supplied)
Temperature	0°C to 50°C (32°F to 122°F)
Humidity	10-50% relative, non-condensing
Ingress	IP20
Physical	19" rack unit, 2U, 16" deep 48.3 x 40.6 x 8.9 cm (19 x 16 x 3.5 in) 7.6 kg (16.8 lbs)
Shipping	55 x 52 x 22 cm (21.5 x 20.5 x 8.5 in) 10 kg (22 lbs)
Recovery	Hardware watchdog and recessed reset button



Order Code & Variants

VLC+ 1000	Designer Video Lighting Controller Plus 1000 (512,000 channels eDMX)
VLC+ 1500	Designer Video Lighting Controller Plus 1500 (768,000 channels eDMX)
VLC+ 3000	Designer Video Lighting Controller Plus 3000 (1,536,000 channels eDMX)

Warranty & Certifications

Warranty	5 years
Certifications	CE compliant, UKCA compliant, ETL/cETL listed, may be used as part of a Title 24 compliant lighting control system.

VLC FAMILY

Touch Panel Station 5

The Pharos TPS 5 (Touch Panel Station 5”) is an elegant interface with a customisable, 5” capacitive touchscreen, compatible with any Pharos Designer Controller.

The front panel is a seamless, uninterrupted glass plate available in Black and in White, giving an elegant touch experience, with improvements to its core functionality, touch performance, screen resolution, and vastly superior aesthetics. And, with a unique and innovative universal mounting solution, the TPS 5 will be easy to wall mount in your installation, regardless of region.

TPS 5 Features

Touch Interface
The 5” vivid colour capacitive touchscreen makes navigating your project’s controls appealing and intuitive. It’s quick and easy to activate presets, manual overrides, or use a custom colour picker to personalise your lighting. The TPS 5 puts control of the Pharos Designer system at your fingertips.

Customisable
Create your fully customisable user interface using the free Pharos Designer software. Create multiple pages of controls including buttons, sliders, keypads and colour pickers, and configure their appearance and visual feedback. Make it eye-catching by importing your own graphics or picking from one of our attractive themes, with support for extended character sets, such as Arabic, Chinese, Cyrillic, Japanese and Korean.

Touchscreen Hardware
The new and improved TPS 5 is designed using superior, up-to-date technology. The new screens have a high DPI, with a resolution of 800x480 in a 5” display. And, with updated technology, comes greater responsiveness with the interface, enabling five-point multi-touch, giving smooth transitions, higher screen fidelity and more processing power, allowing more pages to be loaded.

Designer
Create interface pages in Pharos Designer 2 at the same time you programme the controller, and upload in one simple operation.

Installation
The TPS 5 ships with a new, innovative wall-mounting system. The Universal Mounting plate can be fitted to a wide range of regulation backboxes, including UK, US and EU. The TPS 5 fits to the mounting plate via a bayonet twist system which is not immediately obvious to an observer. This keeps it securely fastened with a toolless installation, and the MicroSD card remains securely out of reach whilst installed.

Scalable
Multiple Touch Devices can be combined with one or more Pharos Designer Controllers on the same network to build the ideal system for your installation. Each Touch Device is easily programmed using our Designer software.

Network
The TPS 5 requires any Pharos Designer Controller, and links to it using standard protocols over an Ethernet network.

Power-over-Ethernet
As a Power-over-Ethernet (PoE) device, the TPS 5 can be placed at any remote location and only needs a single Ethernet cable that provides both power and data.

Capabilities

Orientation	Portrait or landscape
Layouts	Free editable layouts
Pages	Any number of pages, although performance may be affected by complexity and number
Navigation	Convenient and custom navigation via configurable navigation bars
Fonts	Custom font support, including fonts with extended character sets e.g. Arabic, Chinese, Cyrillic, Japanese and Korean
Themes	Wide selection of themes available to download, or create your own with Designer's theme editor
Controls	A wide array of customisable buttons, sliders, colour pickers, labels, keypads and clocks
Flexible Integration	Fully integrated with Designer Trigger, so button states, graphics, and captions can change according to any number of preset triggers
Secure Access	Keypad for PIN-code entry; multiple user levels
Commissioning	Commissioned with Pharos Designer 2.9 or later

Interfaces

Ethernet	RJ45 socket for 10/100Base-TX Ethernet with Link/Data LEDs; Static IP or DHCP
Touchscreen	5" capacitive five-point multi-touch; 800×480 24bpp; 650 cd/m2

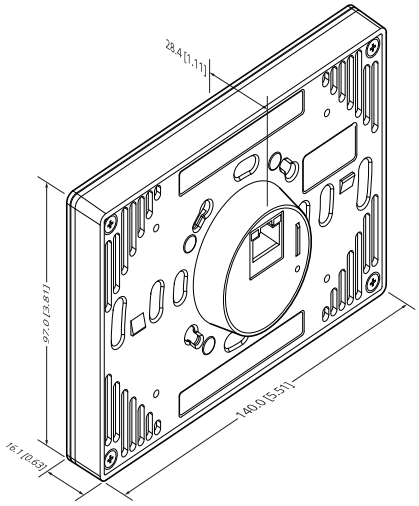
System Limits

Remote Device system limit count includes all RIO, EDN, TPS and BPS in project.

In Project	Maximum 200 remote devices across multiple controllers in a single Pharos Designer project.
Per Controller	Maximum remote device limits assigned to controllers depend on controller type: 64 for each LPC 1, 2, 4, and TPC 100 for each LPC X, VLC and VLC+

Specifications

Power	PoE (IEEE802.3af, Class 0), 7W typical
Required Configuration	Any Pharos Designer Controller Pharos Designer 2.9 or later
Data Storage	Removable MicroSD Card (supplied)
Temperature	0°C to 50°C (32°F to 122°F)
Humidity	10-90% relative, non-condensing
Ingress	IP40
Physical	Wall mounted, partly recessed with a custom mounting plate that supports UK 1 & 2-gang 35mm, EU 35mm or US 2.5" backbox (mounting plate included) 14 x 9.7 x 2.8 cm (5.5 x 3.8 x 1.1 in) 0.25 kg (0.6 lbs) (ex. mounting plate)
Shipping	19.5 x 15 x 7.5 cm (8 x 6 x 3 in) 0.5 kg (1.1 lbs)
Recovery	Hardware watchdog and recessed reset button



Order Code & Variants

TPS 5 B	Designer Touch Panel Station 5" Black (Wall mount touchscreen interface)
TPS 5 W	Designer Touch Panel Station 5" White (Wall mount touchscreen interface)

Pharos Universal Mounting Plate 5" included

If no colour is specified, TPS 5 B will be shipped by default

Pharos Designer Controller required

Colour Information

Jet Black	Bayblend T65XF (UL94 HB) RAL 9005 jet black
Signal White	Bayblend T65XF (UL94 HB) RAL 9003 signal white

Warranty & Certifications

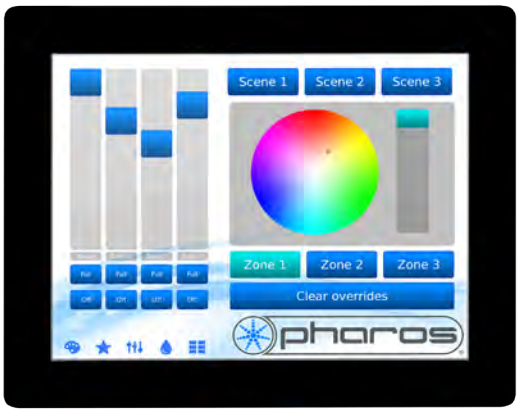
Warranty	5 years
Certifications	CE compliant, UKCA compliant, UL/cUL listed.

TPS525001

Touch Panel Station 8

The Pharos TPS 8 (Touch Panel Station 8”) is a new, spacious, elegant interface with a customisable, 8” capacitive touchscreen, compatible with any Pharos Designer Controller.

The front panel is a seamless, uninterrupted glass plate available in Black and in White, giving an elegant touch experience, and superior aesthetics. And, with a unique and innovative universal mounting solution, the TPS 8 will be easy to wall mount in your installation, regardless of region.



TPS 8 Features

Touch Interface

The 8” vivid colour capacitive touchscreen makes navigating your project’s controls appealing and intuitive. It’s quick and easy to activate presets, manual overrides, or use a custom colour picker to personalise your lighting. The generous 8" screen provides plenty of real estate for laying out buttons, sliders and colour wheels. The TPS 8 puts control of the Pharos Designer system at your fingertips.

Customisable

Create your fully customisable user interface using the free Pharos Designer software. Create multiple pages of controls including buttons, sliders, keypads and colour pickers, and configure their appearance and visual feedback. Make it eye-catching by importing your own graphics or picking from one of our attractive themes, with support for extended character sets, such as Arabic, Chinese, Cyrillic, Japanese and Korean.

Touchscreen Hardware

The TPS 8 is designed using the latest technology. The new IPS screens have a high DPI, with a resolution of 1024x768 in an 8” display. And, with new technology, comes greater responsiveness with the interface, enabling five-point multi-touch, giving smooth transitions, high screen fidelity and generous processing power, allowing freedom to load as many pages as needed.

Designer (v2.10 or later)

Create interface pages in Pharos Designer 2 at the same time you programme the controller, and upload in one simple operation.

Installation

The TPS 8 ships with a new, innovative wall-mounting system. The Universal Mounting Plate can be fitted to a wide range of regulation backboxes, including UK, US and EU. The TPS 8 fits to the mounting plate via a bayonet twist system which is not immediately obvious to an observer. This keeps it securely fastened with a toolless installation, and the MicroSD card remains securely out of reach whilst installed.

Scalable

Multiple Touch Devices can be combined with one or more Pharos Designer Controllers on the same network to build the ideal system for your installation. Each Touch Device is easily programmed using our Designer software.

Network

The TPS 8 requires any Pharos Designer Controller, and links to it using standard protocols over an Ethernet network.

Power-over-Ethernet

As a Power-over-Ethernet (PoE) device, the TPS 8 can be placed at any remote location and only needs a single Ethernet cable that provides both power and data.

Capabilities

Orientation	Portrait or landscape
Layouts	Free editable layouts
Pages	Any number of pages, although performance may be affected by complexity and number
Navigation	Convenient and custom navigation via configurable navigation bars
Fonts	Custom font support, including fonts with extended character sets e.g. Arabic, Chinese, Cyrillic, Japanese and Korean.
Themes	Wide selection of themes available to download, or create your own with Designer's theme editor
Controls	A wide array of customisable buttons, sliders, colour pickers, labels, keypads and clocks
Flexible Integration	Fully integrated with Designer Trigger, so button states, graphics, and captions can change according to any number of preset triggers
Secure Access	Keypad for PIN-code entry; multiple user levels
Commissioning	Commissioned with Pharos Designer 2.10 or later

Interfaces

Ethernet	RJ45 socket for 10/100Base-TX Ethernet with Link/Data LEDs; Static IP or DHCP
Touchscreen	8" capacitive five-point multi-touch; 1024x768 24bpp; 500 cd/m^2

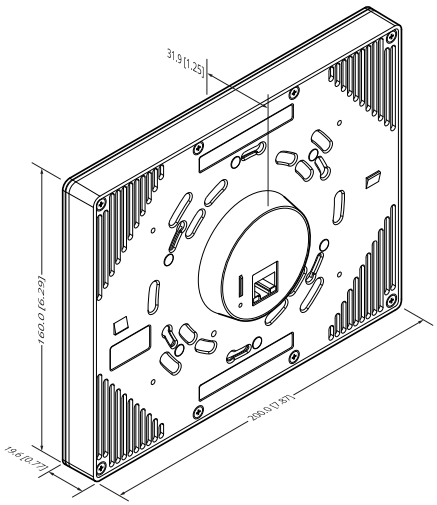
System Limits

Remote Device system limit count includes all RIO, EDN, TPS and BPS in project.

In Project	Maximum 200 remote devices across multiple controllers in a single Pharos Designer project.
Per Controller	Maximum remote device limits assigned to controllers depend on controller type: 64 for each LPC 1, 2, 4, and TPC 100 for each LPC X, VLC and VLC+

Specifications

Power	PoE (IEEE802.3af, Class 0), 10W typical
Required Configuration	Any Pharos Designer Controller Pharos Designer 2.10 or later
Data Storage	Removable MicroSD Card (supplied)
Temperature	0°C to 50°C (32°F to 122°F)
Humidity	10-90% relative, non-condensing
Ingress	IP40
Physical	Wall mounted, partly recessed with a custom mounting plate that supports UK & EU 2-gang 35mm, or US 2-gang and 3-gang 2.5" backbox (mounting plate included) 20 x 16 x 3.2 cm (7.9 x 6.3 x 1.3 in) 0.7 kg (1.6 lbs) (ex. mounting plate)
Shipping	32 x 24 x 4.5 cm (12.6 x 9.4 x 1.7 in) 1.1 kg (2.5 lbs)
Recovery	Hardware watchdog and recessed reset button



Order Code & Variants

TPS 8 B	Designer Touch Panel Station 8" Black (Wall mount touchscreen interface)
TPS 8 W	Designer Touch Panel Station 8" White (Wall mount touchscreen interface)

Pharos Universal Mounting Plate 8" included

If no colour is specified, TPS 8 B will be shipped by default

Pharos Designer Controller required

Colour Information

Jet Black	Bayblend T65XF (UL94 HB) RAL 9005 jet black
Signal White	Bayblend T65XF (UL94 HB) RAL 9003 signal white

Warranty & Certifications

Warranty	5 years
Certifications	CE compliant, UKCA compliant, UL/cUL listed.

TPS824001

Button Panel Station

The Pharos BPS (Button Panel Station) is a versatile 8-button station with integrated button LEDs that works with any Pharos Designer Controller. The stylish BPS is available in a range of finishes and there are two variants for compatibility with either US or UK back boxes. Install is easy and convenient as the BPS only requires a single Power-over-Ethernet (PoE) network connection.

BPS Features

Designer Trigger
Timing is everything. Whatever the stimulus, Designer Trigger can handle it. You can control your lighting with responsive, reactive programming. Designer Trigger is a rules engine that uses conditional logic and a broad range of interfaces and protocols. Send and receive any command, to and from any system. Conditional logic is supported, along with a powerful built-in scripting language for unlimited flexibility.

Sleek Design
An embossed magnetic overlay sits within a low-profile bezel that is only 5.5mm thick to give a sleek finish with no visible fixings. Both the bezel and the overlay are available in a variety of colours. There are two variants for compatibility with either US or UK back boxes.

Scalable
Up to 200 Remote Devices can be combined with one or more Pharos Designer Controllers on the same network to build the ideal system for your installation. Each Remote Device is easily addressed using a convenient thumb wheel. Whether one Controller or many, it's all easily programmed using our Designer software.

Buttons
The function of each of the 8 buttons is freely programmable and the system can detect press, hold, repeat and release events.

LEDs
Each button has a white LED indicator with fully user-controllable brightness and a choice of visual effects such as fades, fast or slow flashing or ramps.

Power-over-Ethernet
As a Power-over-Ethernet (PoE) device, the BPS can be placed at any remote location and only needs a single Ethernet cable that provides both power and data.

Learning IR
The BPS may be taught to recognise up to 8 different IR codes from a standard infrared remote control. When one of these keys on the remote control is pressed the BPS will treat that as a press on its own button.

Pharos Designer
Programmed and configured using the free Pharos Designer software – available for Windows or macOS – with upload over Ethernet.

Network
Works with any Pharos Designer Controller and links to it using standard protocols over an Ethernet network.

Capabilities

Buttons	8 high-reliability, tactile buttons with detection of press, held, repeat, release and clicked Security (PIN) and multi-key features supported
LEDs	Each button has an individual white LED indicator with variable brightness and flash effect options
Infrared	Learning IR allows any standard remote control to be used to activate button presses

Interfaces

Ethernet	RJ45 socket for 10/100Base-TX Ethernet with Link/Data LEDs; Static IP or DHCP; Power-over-Ethernet (PoE)

System Limits

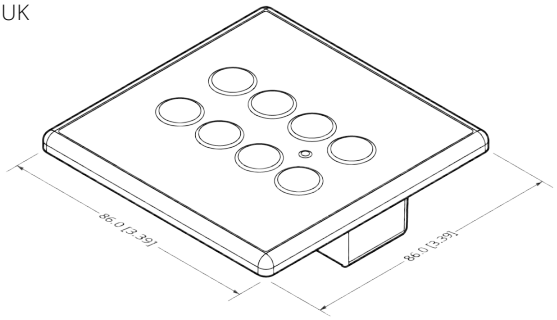
Remote Device system limit count includes all RIO, EDN, TPS and BPS in project.

In Project	Maximum 200 remote devices across multiple controllers in a single Pharos Designer project.
Per Controller	Maximum remote device limits assigned to controllers depend on controller type: 64 for each LPC 1, 2, 4, and TPC 100 for each LPC X, VLC and VLC+

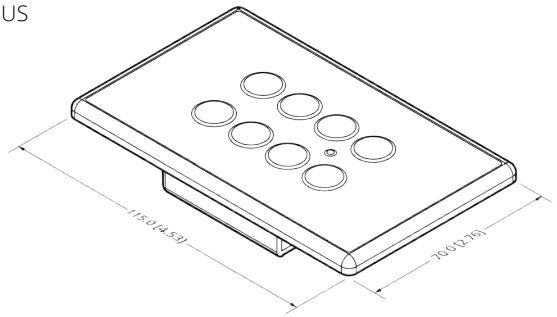
Specifications

Power	PoE (IEEE802.3af, Class 1), 1.5W typical
Required	Any Pharos Designer Controller
Configuration	Pharos Designer 2
Addressing	By rotary selector switch
Temperature	0°C to 50°C (32°F to 122°F)
Humidity	10-50% relative, non-condensing
Ingress	IP40
Physical	Flush-mounting wall panel with variants suitable for standard single-gang UK or US backboxes UK: 8.6 x 8.6 x 3.2 cm (3.4 x 3.4 x 1.3 in) US: 7 x 11.5 x 3.2 cm (2.8 x 4.5 x 1.3 in) 0.3 kg (0.7 lbs)
Shipping	20 x 15 x 12 cm (8 x 6 x 5 in) 0.5 kg (1.1 lbs)
Recovery	Hardware watchdog and recessed reset button

UK



US



Order Code & Variants

BPS UK BB	Designer Button Panel Station UK Black-on-Black (Magnetic Overlay)
BPS UK CC	Designer Button Panel Station UK Cream-on-Cream (Magnetic Overlay)
BPS UK WW	Designer Button Panel Station UK White-on-White (Magnetic Overlay)
BPS US BB	Designer Button Panel Station US Black-on-Black (Magnetic Overlay)
BPS US CC	Designer Button Panel Station US Cream-on-Cream (Magnetic Overlay)
BPS US WW	Designer Button Panel Station US White-on-White (Magnetic Overlay)

If no colour is specified, BPS BB will be shipped by default

Pharos Designer Controller required

Colour Information	
Jet Black	Bayblend T45 (UL94 HB) RAL 9005 jet black
Cream	Bayblend T45 (UL94 HB) RAL 9001 cream
Signal White	Bayblend T45 (UL94 HB) RAL 9003 signal white

Warranty & Certifications

Warranty	5 years
Certifications	CE compliant, UKCA compliant, ETL/cETL listed.

BPS24001

Remote Input Output

The Pharos RIO 80, 44 and 08 (Remote Input Output) devices provide a convenient and scalable way to add inputs and outputs to a Pharos Designer system for show control and integration. Each device can be placed where it is needed and connected to the Controllers over an Ethernet network. Each RIO has a multi-protocol serial port, supporting DMX output, and a combination of multi-functional digital/analog inputs and relay outputs.

RIO Features

Designer Trigger
Timing is everything. Whatever the stimulus, Designer Trigger can handle it. You can control your lighting with responsive, reactive programming. Designer Trigger is a rules engine that uses conditional logic and a broad range of interfaces and protocols. Send and receive any command, to and from any system. Conditional logic is supported, along with a powerful built-in scripting language for unlimited flexibility.

Scalable
Up to 200 Remote Devices can be combined with one or more Pharos Designer Controllers on the same network to build the ideal system for your installation. Each RIO is easily addressed using a convenient thumb wheel. Whether one Controller or many, it's all easily programmed using our Designer software.

Pharos Designer
Programmed and configured using the free Pharos Designer software – available for Windows or macOS – with upload over Ethernet.

Multi-Protocol
Every RIO has a multi-protocol serial port, whose protocol (RS232 or RS485), data rate and format settings (baud, parity, stop bits, etc.) are configurable in software. The port can also be configured to output up to 96 channels of DMX512.

Installer Friendly
Made for permanent installation, with installer-friendly connectors and easy DIN rail mounting.

Flexible Inputs
Each input is individually configurable in one of three modes. As a Contact Closure an external volt-free switch may be connected across the input. As a Digital Input an external voltage source (up to 24V) can be connected across the input and thresholds for 'high' and 'low' triggering can be set. As an Analog Input a variable external voltage can be measured within a configurable range.

Relay Outputs
Our outputs use solid-state relays to ensure silent operation and long-term reliability. They are designed for low voltage, low current switching (48V, 0.25A) and are also fully isolated. Where necessary they enable higher currents to be controlled from a Pharos Designer system by integration with commonly available third-party contactors.

Power-over-Ethernet
As a Power-over-Ethernet (PoE) device, the RIO can be placed at any remote location and only needs a single Ethernet cable that provides both power and data.

Network
Works with any Pharos Designer Controller and links to it using standard protocols over an Ethernet network.

Capabilities

Contact Closure	Connect an external volt-free switch between input and ground (internal 2.2kohm pull-up to 5V)
Digital In	Connect an external voltage source between input and ground (24V maximum; internal 2MOhm pull-down to 0V); software configurable low/high threshold
Analog In	Connect an external voltage source between input and ground (24V maximum); software-configurable range
Relay Outs	Individually isolated (1KV) relay outputs (48V 250mA)
Serial Data	RS232, RS485; configurable port; send/receive free syntax in ASCII, HEX or decimal
DMX Out	96 channels (USITT E1.11-2008)

Interfaces

Ethernet	RJ45 socket for 10/100Base-TX Ethernet with Link/Data LEDs; Static IP or DHCP; Power-over-Ethernet (PoE)
Serial	RS232 / RS485 / DMX out *
Inputs	Individually selectable operating mode for contact closure, digital or analog input (24V maximum) *
Relay Outs	Individually isolated (1KV) solid-state relay outputs rated at 48V 0.25A (AC/DC) * An external PSU is required to power the relay outputs

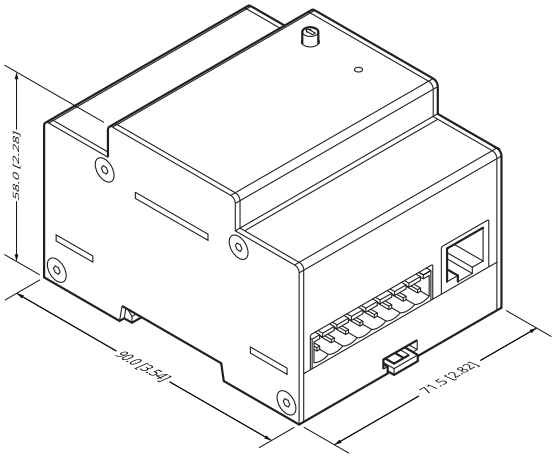
System Limits

Remote Device system limit count includes all RIO, EDN, TPS and BPS in project.

In Project	Maximum 200 remote devices across multiple controllers in a single Pharos Designer project.
Per Controller	Maximum remote device limits assigned to controllers depend on controller type: 64 for each LPC 1, 2, 4, and TPC 100 for each LPC X, VLC and VLC+

Specifications

Power	PoE (IEEE802.3af, Class 1), 1.5W typical
Required	Any Pharos Designer Controller
Configuration	Pharos Designer 2
Addressing	By rotary selector switch
Temperature	0°C to 50°C (32°F to 122°F)
Humidity	10-50% relative, non-condensing
Ingress	IP40
Physical	4 unit wide DIN rail mounting enclosure (DIN43880 / EN60715 (35/7.5 rail)) 7.2 x 9 x 5.8 cm (2.8 x 3.5 x 2.3 in) 0.3 kg (0.7 lbs)
Shipping	20 x 15 x 12 cm (8 x 6 x 5 in) 0.5 kg (1.1 lbs)
Recovery	Hardware watchdog and recessed reset button



Order Code & Variants

RIO 08	Designer Remote Input Output Device 08 (0 input, 8 output, Serial/DMX)
RIO 44	Designer Remote Input Output Device 44 (4 input, 4 output, Serial/DMX)
RIO 80	Designer Remote Input Output Device 80 (8 input, 0 output, Serial/DMX)

Pharos Designer Controller required

Warranty & Certifications

Warranty	5 years
Certifications	CE compliant, UKCA compliant, ETL/cETL listed.

* Install-friendly 0.200" (5.08mm) plug in rising clamp connectors (included)

RIO24001

Remote Input Output Audio

The Pharos RIO A (Remote Input Output Audio) device provides a convenient and scalable way to add audio integration to your Pharos Designer system. The RIO A has an audio input, supporting linear timecode or up to 30 band spectrum analysis, as well as a MIDI input and output. Each device can be placed where it is needed and connected to the Controllers over an Ethernet network.

RIO A Features

Designer Trigger

Timing is everything. Whatever the stimulus, Designer Trigger can handle it. You can control your lighting with responsive, reactive programming. Designer Trigger is a rules engine that uses conditional logic and a broad range of interfaces and protocols. Send and receive any command, to and from any system. Conditional logic is supported, along with a powerful built-in scripting language for unlimited flexibility.

Audio Response

The stereo balanced line level audio input supports auto or manual gain (adjustable in software). The spectrum analysis is configurable from 3 to 30 bands on each channel, and triggers can be set on the instantaneous or peak level of any band or the overall volume. Up to 4 simultaneous audio inputs are supported with multiple RIO A units.

Timecode

00:00:12:48

The audio input can also be configured to receive linear timecode on either channel. The format is auto-detected and supported formats are 24fps (film), 25fps (EBU), 29.97fps (NTSC) & 30fps (SMPTE). MIDI Time Code (MTC) can also be received via the MIDI Input. A software flywheel with error correction and jump support ensures smooth but responsive timecode playback. Up to 12 simultaneous Timecode inputs are supported with multiple RIO A units.

Scalable

Up to 200 Remote Devices can be combined with one or more Pharos Designer Controllers on the same network to build the ideal system for your installation. Each RIO is easily addressed using a convenient thumb wheel. Whether one Controller or many, it's all easily programmed using our Designer software.

MIDI

Musical Instrument Digital Interface (MIDI) is a standard serial protocol commonly used to link musical instruments and synthesizers – but it is also used for show control and MIDI Time Code. The RIO A provides both an input and output on standard 5-pin DIN connectors.

Power-over-Ethernet

As a Power-over-Ethernet (PoE) device, the RIO can be placed at any remote location and only needs a single Ethernet cable that provides both power and data.

Pharos Designer

DESIGNER

Programmed and configured using the free Pharos Designer software – available for Windows or macOS – with upload over Ethernet.

Installer Friendly

Made for permanent installation, with installer-friendly 0.200" (5.08mm) plug-in rising clamp terminals, a rugged, compact enclosure, and easy DIN rail mounting.

Network

Works with any Pharos Designer Controller and links to it using standard protocols over an Ethernet network.

Capabilities

Audio In
Volume level and up to 30 band spectrum analysis per channel, including peak decay rate control and manual or automatic gain
Maximum 4 audio inputs per system

Timecode
Timecode support via MIDI (MTC) or either audio channel (LTC)
User configurable fly-wheel, error correction routines and jump support
Maximum 12 Timecode inputs per system

Linear Timecode (LTC)
Format auto-detection with support for 24fps (film), 25fps (EBU), 29.97fps (NTSC) & 30fps (SMPTE)

MIDI
Input and Output of freely configurable Short messages (Notes), MIDI Show Control or Extended Messages using convenient message composer or MIDI Time Code (MTC) input

Interfaces

Ethernet
RJ45 socket for 10/100Base-TX Ethernet with Link/Data LEDs; Static IP or DHCP; Power-over-Ethernet (PoE)

Audio In
Stereo balanced line level (0dBV) *

MIDI In & Out
Standard 5-pin DIN

System Limits

Remote Device system limit count includes all RIO, EDN, TPS and BPS in project.

In Project
Maximum 200 remote devices across multiple controllers in a single Pharos Designer project.

Per Controller
Maximum remote device limits assigned to controllers depend on controller type:
64 for each LPC 1, 2, 4, and TPC
100 for each LPC X, VLC and VLC+

Specifications

Power
PoE (IEEE802.3af, Class 1), 1.5W typical

Required
Any Pharos Designer Controller

Configuration
Pharos Designer 2

Addressing
By rotary selector switch

Temperature
0°C to 50°C (32°F to 122°F)

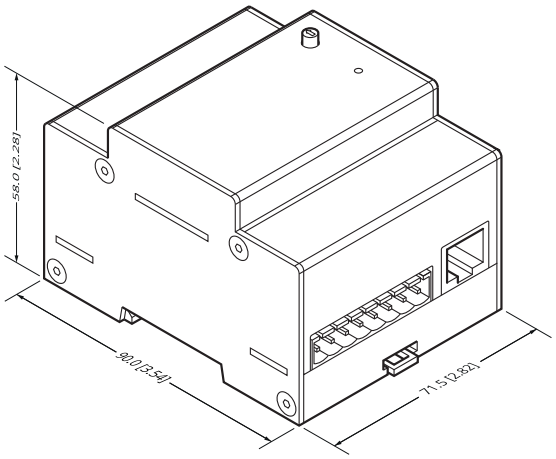
Humidity
10-50% relative, non-condensing

Ingress
IP40

Physical
4 unit wide DIN rail mounting enclosure (DIN43880 / EN60715 (35/7.5 rail))
7.2 x 9 x 5.8 cm (2.8 x 3.5 x 2.3 in)
0.3 kg (0.7 lbs)

Shipping
20 x 15 x 12 cm (8 x 6 x 5 in)
0.5 kg (1.1 lbs)

Recovery
Hardware watchdog and recessed reset button



Order Code & Variants

RIO A
Designer Remote Audio Input Device (Stereo Audio in, LTC, MIDI in and out)

Pharos Designer Controller required

Warranty & Certifications

Warranty
5 years

Certifications
CE compliant, UKCA compliant, ETL/cETL listed.

* Install-friendly 0.200" (5.08mm) plug in rising clamp connectors (included)

RIOA24001

Remote Input Output DALI

The Pharos RIO D (Remote Input Output DALI) device provides a convenient and scalable way to control DALI fixtures and ballasts from Pharos Designer Controllers. Each RIO D supports a single DALI bus, which can be used as an output for control and as an input for triggering. Each device can be placed where it is needed and connected to a Pharos Designer Controller over an Ethernet network.

RIO D Features

DALI Control
Control up to 64 DALI devices from each RIO D, with support for commissioning with DALI discovery and configuration commands. Pharos Designer includes a convenient drag-and-drop interface for DALI patching and timeline programming. Multiple RIO D units can be used together as part of a single Pharos Designer system to provide distributed DALI control over an Ethernet network.

Emergency Lighting
DALI Ballasts for emergency lighting have special requirements for regular testing, error detection and fault reporting. Pharos Designer supports this with the ability to schedule automatic Function and Duration tests, automatic querying for battery level and lamp hours, and a full test result and error reporting web page.

Scalable
Up to 200 Remote Devices can be combined with one or more Pharos Designer Controllers on the same network to build the ideal system for your installation. Each RIO is easily addressed using a convenient thumb wheel. Whether one Controller or many, it's all easily programmed using our Designer software.

DALI Triggering
Pharos Designer can also integrate with an existing DALI installation by listening in to DALI control messages sent by another control system or a DALI wall panel and using these as triggers for actions within the Pharos Designer system.

Designer Trigger
Timing is everything. Whatever the stimulus, Designer Trigger can handle it. You can control your lighting with responsive, reactive software. Designer Trigger is a rules engine that uses conditional logic and a broad range of interfaces and protocols. Send and receive any command, to and from any system. Conditional logic is supported, along with a powerful built-in scripting language.

Power-over-Ethernet
As a Power-over-Ethernet (PoE) device, the RIO can be placed at any remote location and only needs a single Ethernet cable that provides both power and data.

Pharos Designer
Programmed and configured using the free Pharos Designer software – available for Windows or macOS – with upload over Ethernet.

Installer Friendly
Made for permanent installation, with installer-friendly 0.200" (5.08mm) plug-in rising clamp terminals, a rugged, compact enclosure, and easy DIN rail mounting.

Network
Works with any Pharos Designer Controller and links to it using standard protocols over an Ethernet network.

Capabilities

DALI Control	Control for up to 64 DALI devices including device discovery and configuration
DALI Receive	Receive DALI messages from other controllers such as wall panels or occupancy sensors
Emergency Lighting	Schedule automatic Function and Duration tests; automatic querying for battery level and lamp hours; test result and error reporting web page
Bus Power Detection	Detect and report bus power status, a separate DALI bus power supply is required

Interfaces

Ethernet	RJ45 socket for 10/100Base-TX Ethernet with Link/Data LEDs; Static IP or DHCP; Power-over-Ethernet (PoE)
DALI	Port can transmit and receive DALI commands * Supports DALI standards: EN 62386-101:2009, EN 62386-102:2009, EN 62386-202:2009, EN 62386-209:2011

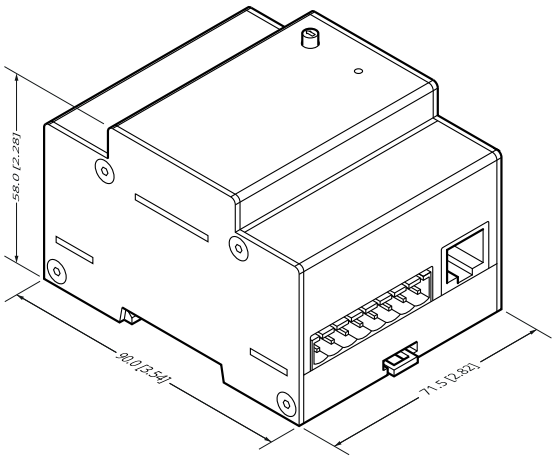
System Limits

Remote Device system limit count includes all RIO, EDN, TPS and BPS in project.

In Project	Maximum 200 remote devices across multiple controllers in a single Pharos Designer project.
Per Controller	Maximum remote device limits assigned to controllers depend on controller type: 64 for each LPC 1, 2, 4, and TPC 100 for each LPC X, VLC and VLC+
DALI Interface per Controller	Maximum total configured DALI ports assigned to controllers depends on controller type: 16 for each LPC 1 and TPC 32 for each LPC 2 64 for each LPC 4 100 for each LPC X 100 for each VLC and VLC+ (for triggering only)

Specifications

Power	PoE (IEEE802.3af, Class 1), 1.5W typical
Required	Any Pharos Designer Controller
Configuration	Pharos Designer 2
Addressing	By rotary selector switch
Temperature	0°C to 50°C (32°F to 122°F)
Humidity	10-50% relative, non-condensing
Ingress	IP40
Physical	4 unit wide DIN rail mounting enclosure (DIN43880 / EN60715 (35/7.5 rail)) 7.2 x 9 x 5.8 cm (2.8 x 3.5 x 2.3 in) 0.3 kg (0.7 lbs)
Shipping	20 x 15 x 12 cm (8 x 6 x 5 in) 0.5 kg (1.1 lbs)
Recovery	Hardware watchdog and recessed reset button



Order Code & Variants

RIO D	Designer Remote DALI Device (DALI)

Pharos Designer Controller required

Warranty & Certifications

Warranty	5 years
Certifications	CE compliant, UKCA compliant, ETL/cETL listed.

* Install-friendly 0.200" (5.08mm) plug in rising clamp connectors (included)

RIOD24001

Remote DALI 4-Port

The Pharos RIO D4 (Remote DALI 4-Port) is a remote input/output device that provides a convenient and scalable way to control DALI fixtures and ballasts from Pharos controllers. Each RIO D4 supports four DALI buses, which can be used as outputs for control and for receiving DALI commands. Compact plastic enclosure with installer-friendly connectors, DIN-rail mount and PoE for deployment where it is needed, the RIO D4 is connected to a Pharos controller over an Ethernet network.

Compatible with Pharos Designer 2.14.4 or later.

RIO D4 Features

DALI Control

Each port on the RIO D4 can control up to 64 DALI devices, with support for commissioning with DALI discovery and configuration commands. Multiple RIO D4 units can be used together as part of a single Pharos system to provide distributed DALI control over an Ethernet network.

DALI Commands

The RIO D4 can also integrate with an existing DALI installation by listening in to DALI commands sent by another control system or a DALI wall panel to activate lighting changes on a Pharos controller. RIO D4 also responds to DALI button events, illuminance and occupancy sensor changes.

Scalable

Multiple Remote Devices can be combined on the same network to build the ideal system for your installation. System totals, maximum devices and maximum DALI interfaces assigned to a controller depends on controller type.

Power-over-Ethernet

As a Power-over-Ethernet (PoE) device, the RIO D4 can be placed at any remote location and only needs a single Ethernet cable that provides both power and data.

Commissioning Software

Programmed and configured using Pharos software – available free for Windows or macOS – with upload over Ethernet.

Reliable

Solid-state design for 24/7 operation and reliability.

Installer Friendly

Made for permanent installation, with installer-friendly 0.200" (5.08mm) plug-in rising clamp terminals, a compact, plastic enclosure and easy DIN rail mounting. Includes a convenient thumb wheel for easy addressing and access to built-in test programs.

Network

Works with Pharos controllers and links using standard protocols over an Ethernet network.

Capabilities

DALI Control	Control for up to 64 DALI devices per port including device discovery and configuration
DALI Receive	Receive DALI messages from other controllers such as wall panels or occupancy sensors
Emergency Lighting	(Designer only) Schedule automatic Function and Duration tests; automatic querying for battery level and lamp hours; test result and error reporting web page
Bus Power Detection	Detect bus power status, with reporting also available in Pharos Designer.

Interfaces

Ethernet	RJ45 socket for 10/100Base-TX Ethernet with Link/Data LEDs; Static IP or DHCP; Power-over-Ethernet (PoE)
DALI	Ports can transmit and receive DALI commands* Supports DALI standards: EN 62386-101:2009, EN 62386-102:2009, EN 62386-202:2009, EN 62386-209:2011

System Limits

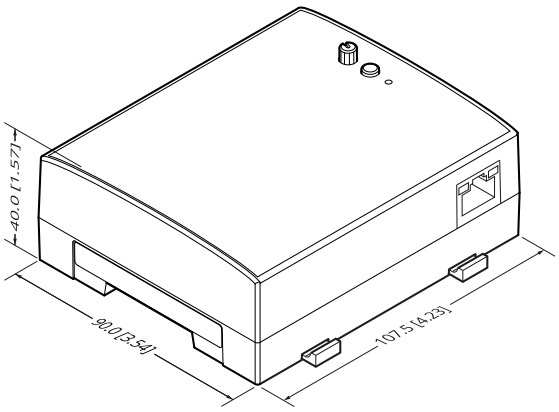
Remote Device system limit count includes all RIO, EDN, TPS and BPS in project.

In Project	Maximum 200 remote devices across multiple controllers in a single Pharos Designer project.
Per Controller	Maximum remote device limits assigned to controllers depend on controller type: 64 for each LPC 1, 2, 4, and TPC 100 for each LPC X, VLC and VLC+
DALI Interface per Controller	Maximum total configured DALI ports assigned to controllers depends on controller type: 16 for each LPC 1 and TPC 32 for each LPC 2 64 for each LPC 4 100 for each LPC X 100 for each VLC and VLC+ (for triggering only)

*Install-friendly 0.200" (5.08mm) plug in rising clamp connectors (included)

Specifications

Power	PoE (IEEE802.3af, Class 2), 7W max
Required	Any Pharos Designer Controller, DALI power supply per port
Configuration	Pharos Designer 2.14.4 or later
Addressing	By rotary selector switch
Temperature	0°C to 50°C (32°F to 122°F)
Humidity	10-90% relative, non-condensing
Ingress	IP40
Physical	6 unit wide DIN rail mounting enclosure (35/7.5 rail) 10.8 x 9 x 4 cm (4.2 x 3.5 x 1.6 in) 0.2 kg (0.5 lbs)
Shipping	19.5 x 15 x 7.5 cm (8 x 6 x 3 in) 0.4 kg (0.9 lbs)
Recovery	Hardware watchdog and recessed reset button



Order Code & Variants

RIO D4	Pharos Remote DALI 4-Port Device (DALI x4)

Pharos Designer Controller required
DALI power supply per port required

Warranty & Certifications

Warranty	5 Years
Certifications	CE compliant, UKCA compliant, UL/cUL listed.

RIOD425002

Remote DMX/SDI 4-Port Gateway

The Pharos RIO G4 (Remote Gateway 4-Port Device) is a convenient and scalable solution, providing cost-effective Ethernet-distributed DMX ports. The RIO G4 is an easily configurable networking node that is specifically designed to add physical DMX ports to Pharos controllers. Compact plastic enclosure with installer-friendly connectors, DIN-rail mount and PoE for deployment where you need it, with four output ports. The gateway is discoverable through Pharos software and associated to a Pharos controller to be seamlessly configured as part of your patch. Ports can be flexibly assigned, providing an elegant data distribution solution over an Ethernet network with minimal setup required.

Compatible with Pharos Designer 2.13 or later
Compatible with Pharos Expert 1.2 or later

RIO G4 Features

Isolation

The RIO G4 offers four DMX512 output ports to control your fixtures. Each port is independently galvanically isolated up to 2kV, ensuring the control circuitry and each port of the RIO G4 is protected against a multitude of electrical line faults, including earth potential rise and ground loops.

Protection

The RIO G4 is equipped with “self-healing” DMX ports, giving your equipment added protection from incorrect setup and energy surges, such as short circuits and power induction. Should an energy surge occur, it will be contained by the RIO, preventing it from flowing into other components; once the external fault is cleared, the ports “self-heal”, restoring DMX output automatically.

RDM Capable

When connected to Designer LPC family controllers, the RIO G4 supports the Remote Device Management protocol (ANSI E1.20), allowing fixtures connected to any of the DMX512 outputs to communicate back to their respectively assigned Controller over an Ethernet network.

Scalable

Multiple Remote Devices can be combined on the same network to build the ideal system for your installation. System totals and maximum device limits depend on controller type.

SDI (Designer only)

Accessory for the RIO G4 supporting serial data protocol outputs for controlling products such as addressable LED tape.

Power-over-Ethernet

As a Power-over-Ethernet (PoE) device, the RIO G4 can be placed at any remote location and only needs a single Ethernet cable that provides both power and data.

Commissioning Software

Programmed and configured using Pharos software – available free for Windows or macOS – with upload over Ethernet.

Reliable

Solid-state design for 24/7 operation and reliability.

Configurable hold last look option at 5Hz refresh, in the event of output data connection loss.

Installer Friendly

Made for permanent installation, with installer-friendly 0.200” (5.08mm) plug-in rising clamp terminals, a compact, plastic enclosure and easy DIN rail mounting. Includes a convenient thumb wheel for easy addressing and access to built-in DMX test programs.

Network

Works with any Pharos controller and links to it using standard protocols over an Ethernet network.

Interfaces

Ethernet	RJ45 socket for 100Base-TX Ethernet with Link/Data LEDs; Static IP or DHCP; Power-over-Ethernet (PoE)
DMX	Four DMX512 ports (USITT E1.11-2008), RDM Compatible*

Protocols

DMX	DMX512 (512 channels each) in DMX mode
RDM	Supports discovery and addressing via Pharos software (Excluding Designer VLC family)
UltraDMX	MY94441 supported natively (Designer only)
SPI	In SDI mode, supports serial data via the Pharos SDI (Designer only)

One output protocol per RIO G4

System Limits (Designer)

Remote Device system limit count includes all RIO, EDN, TPS and BPS in project.

In Project	Maximum 200 remote devices across multiple controllers in a single Pharos Designer project.
Per Controller	Maximum remote device limits assigned to controllers depend on controller type: 64 for each LPC 1, 2, 4, and TPC 100 for each LPC X, VLC and VLC+

System Limits (Expert)

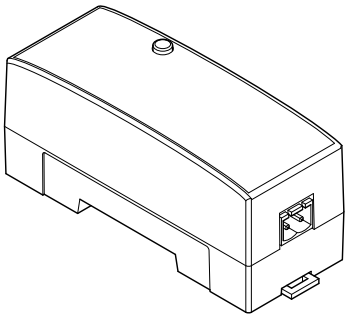
An Expert system comprises one Expert Control and optional devices.

In Project	Maximum four RIO G4 assigned to an Expert Control.

Accessories (Designer only)

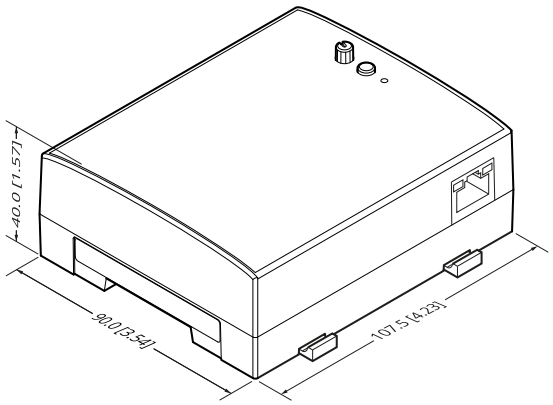
The SDI is an accessory to the RIO G4. This enables any Pharos controller to output via the RIO G4 + SDI a variety of serial protocols for controlling products such as addressable LED tape.

Both synchronous (SPI) and asynchronous serial lighting data are supported and these protocols allow for up to 1536 channels per port with supported cable lengths between the RIO G4 and SDI of up to 200m for asynchronous data and 40m for synchronous data.



Specifications

Power	PoE (IEEE802.3af, Class 2), 7W max
Required Configuration	Any Pharos Designer controller Pharos Designer 2.13 or later Pharos Expert 1.2 or later
Addressing	By rotary selector switch
Temperature	0°C to 50°C (32°F to 122°F)
Humidity	10-90% relative, non-condensing
Ingress Protection	IP40 Self-healing ports can withstand continuous AC voltage up to 300V or peak impulse voltage up to 650V with duration less than 10ms
Isolation	Ports independently galvanically-isolated up to 2kV
Physical	6 unit wide DIN rail mounting enclosure (35/7.5 rail) 10.8 x 9 x 4 cm (4.2 x 3.5 x 1.6 in) 0.2 kg (0.5 lbs)
Shipping	19.5 x 15 x 7.5 cm (8 x 6 x 3 in) 0.4 kg (0.9 lbs)
Recovery	Hardware watchdog and recessed reset button



Order Code & Variants

RIO G4	Pharos Remote Gateway 4-Port Device (DMX/SDI x4)

Pharos controller required

Warranty & Certifications

Warranty	5 Years
Certifications	CE compliant, UKCA compliant, UL/cUL listed.

*Install-friendly 0.200" (5.08mm) plug in rising clamp connectors (included)

RIOG425002

Ethernet Data Node

The Pharos EDN (Ethernet Data Node) is a convenient and scalable solution, providing cost-effective Ethernet-distributed DMX ports for large control projects. The EDN is an easily configurable networking node that is specifically designed to add physical DMX ports to Pharos Designer Controllers and integrates natively with the full Pharos Designer range. Extremely compact, it packs up to 20 DMX512 output ports into a 1U 19" form factor. For higher port count installations, nodes can be daisy-chained to provide as many physical DMX ports as you need. EDNs are discoverable through Pharos Designer software and associated to a Controller to be seamlessly configured as part of your patch. Ports can be flexibly assigned to any Designer Controller in your project providing an elegant data distribution solution over an Ethernet network with minimal setup required.

EDN Features

Isolation
The EDN offers up to 20 DMX512 output ports to control your fixtures. Each port is independently galvanically isolated up to 2kV, ensuring the control circuitry and each port of the EDN is protected against a multitude of electrical line faults, including earth potential rise and ground loops.

Protection
The EDN is equipped with "self-healing" DMX ports, giving your equipment added protection from incorrect setup and energy surges, such as short circuits, power induction and AC power faults. Should an energy surge occur, it will be contained by the EDN, preventing it from flowing into other components; once the external fault is cleared, the ports "self-heal", restoring DMX output automatically.

Integration
Built from the ground up on Pharos technology, the EDN natively interfaces with the rest of the Pharos product range including Pharos Designer software. Connecting it to your Designer lighting project is as simple as ensuring the EDN is on the same network as the Controllers. From there, Designer will detect it, giving you full control of your Ethernet network lighting solution with minimal effort.

Scalable
Up to 200 EDN units and other Remote Devices can be combined with one or more Pharos Designer Controllers on the same network to build the ideal system for your installation. Each EDN is easily addressed using a convenient thumb wheel. Whether one Controller or many, it's all easily programmed using the Designer software.

RDM Capable (LPC Family, Designer v2.8+)
When connected to a TPC, LPC and LPC X, the EDN supports the Remote Device Management protocol (ANSI E1.20), allowing fixtures connected to any of the DMX512 outputs to communicate back to their respectively assigned Controllers over an Ethernet network.

Network
Works with any Controller in the Pharos Designer range over an Ethernet network. A second network port is provided for daisy-chaining EDNs together. Our recommended limit of 8 daisy-chained EDNs is to ensure high performance; if that number is exceeded, some latency could become apparent.

SDI
Accessory for the EDN supporting serial data protocol outputs for controlling products such as addressable LED tape.

Reliable
Solid-state design for 24/7 operation and reliability.

Installer Friendly
Made for permanent installation, with installer-friendly connectors and easy 19" rack mounting.

Interfaces

Ethernet	Two Neutrik etherCON (RJ45 compatible) for 100†/1000 Base-TX Ethernet with Link/Data LEDs; Static IP or DHCP † From Designer v2.8 Note: LPC 1/2/4 & TPCs support 10/100Base-TX
DMX	Ten (EDN 10) / Twenty (EDN 20) DMX512 ports (USITT E1.11-2008), RDM Compatible*

Protocols

DMX	DMX512 (512 channels each) in DMX mode
RDM	Supports discovery and addressing via Designer Software. LPC Family Controllers only
UltraDMX	MY94441 supported natively
SPI	In SDI mode, supports serial data via the Pharos SDI

One output protocol per EDN

System Limits

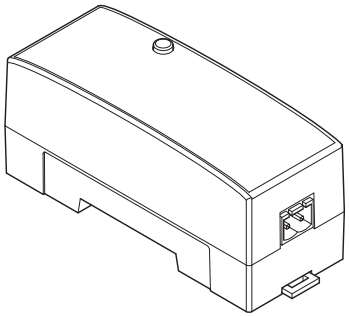
Remote Device system limit count includes all RIO, EDN, TPS and BPS in project.

In Project	Maximum 200 remote devices across multiple controllers in a single Pharos Designer project.
Per Controller	Maximum remote device limits assigned to controllers depend on controller type: 64 for each LPC 1, 2, 4, and TPC 100 for each LPC X, VLC and VLC+

Accessories

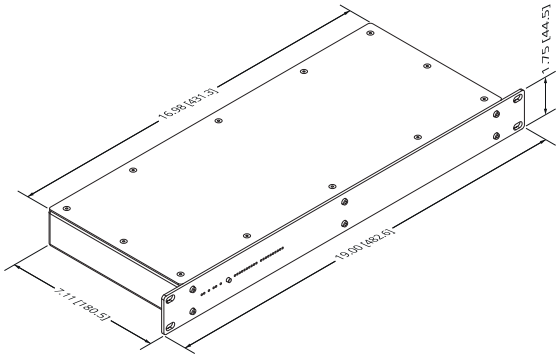
The SDI is an accessory to the EDN. This enables any controller in the Pharos Designer range to output via the EDN + SDI a variety of serial protocols for controlling products such as addressable LED tape.

Both synchronous (SPI) and asynchronous serial lighting data are supported and these protocols allow for 1536 channels per port with supported cable lengths between the EDN and SDI of up to 200m for asynchronous data and 40m for synchronous data.



Specifications

Power	100-240V AC, 50-60Hz, 0.25-0.12A, 25W typical (30W maximum), IEC connector with switch (power cable not supplied)
Required Configuration	Any Pharos Designer Controller Pharos Designer 2.7 or later (EDN 20) Pharos Designer 2.8 or later (EDN 10)
Addressing	By rotary selector switch
Temperature	0°C to 50°C (32°F to 122°F)
Humidity	10-50% relative, non-condensing
Ingress Protection	IP20 Self-healing ports can withstand continuous AC voltage up to 300V or peak impulse voltage up to 650V with duration less than 10ms
Isolation	Ports independently galvanically-isolated up to 2kV
Physical	19" rack unit, 1U 48.3 x 18.1 x 4.5 cm (19 x 7.1 x 1.8 in) 1.6 kg (3.5 lbs)
Shipping	57 x 30 x 18 cm (22 x 12 x 7 in) 3.2 kg (7 lbs)
Recovery	Hardware watchdog and recessed reset button



Order Code & Variants

EDN 10	Designer Ethernet Data Node 10 (1+1 Ethernet, 10 DMX/RDM)
EDN 20	Designer Ethernet Data Node 20 (1+1 Ethernet, 20 DMX/RDM)

Pharos Designer Controller required

Warranty & Certifications

Warranty	5 years
Certifications	CE compliant, UKCA compliant, ETL/cETL listed.

* Install-friendly 0.200" (5.08mm) plug in rising clamp connectors (included)

EDN24001

Serial Data Interface for EDN

The Pharos SDI (Serial Data Interface) is an accessory to the Pharos EDN (Ethernet Data Node) and RIO G4 (Remote Gateway 4-Port) providing a powerful solution for converting DMX data to a variety of serial protocols for controlling products such as addressable LED tape. The SDI supports both synchronous (SPI) and asynchronous serial lighting data and allows patching up to 3 universes (1536 channels) per unit.

The SDI features fully isolated data inputs and a DC input range of 5-28V giving the flexibility to use the same power supply as the fixtures. Synchronous data transmission is usually restricted to very short cable lengths, but, with the Pharos EDN + SDI or Pharos RIO G4 + SDI combinations outputting synchronous data, you can conveniently locate your SDIs up to 40 metres from the EDN / RIO G4, with asynchronous data transmission reaching up to 200m.

Compatible with all Pharos Designer Controllers, and suitable for any size of project, nevertheless we anticipate SDI will be particularly appealing with VLC family controllers, which are often used for very high capacity installations, flexibly mapping live video and video playback to lighting fixtures such as LED tape. The Pharos VLC with Pharos EDN + SDI combination will provide a one-stop single manufacturer supplied solution for the control hardware, all the way to the fixture.

SDI Features

Protocols

The SDI will integrate with the EDN / RIO G4 remote devices to control SPI enabled fixtures and a variety of other protocols commonly used in addressable LED tape, as well as other products using direct connection to LED driver ICs (Integrated circuits). The SDI supports many synchronous and asynchronous protocols, all from the same hardware, configured directly from the Pharos Designer Software (one protocol per EDN). Our intention is to support the most commonly used protocols. Contact Sales if you have a significant project requiring a driver not listed. Supported SPIs include WS2812 and APA102. For a full and up-to-date list of protocols visit the SDI page on our website.

Topology

In Asynchronous mode (data signal only), each SDI device can be connected via a twisted pair cable up to 200m away from the EDN / RIO G4. In Synchronous mode (data and clock signal), this range is 40m. As the RS485 connection from the EDN and RIO G4 does not require grounding, a single Ethernet cable could be used to distribute data for up to 4 SDIs. SDIs should ideally be located within 1m of their fixtures and, with a 5-28V DC input range, the SDI can be fed by the same power supply as the LED drivers.

Installer Friendly

Made for permanent installation, with installer-friendly 0.200" (5.08mm) plug-in rising clamp terminals, a compact enclosure and easy DIN rail or wall mounting.

Refresh Rate

As well as standard DMX refresh rates, the SDI will support up to 60Hz refresh when controlled by Pharos VLCs.

Isolation

The incoming RS485 data signal is fully isolated and does not need a ground reference.

Unobtrusive

The SDI is designed to be compact, with a variety of mounting options. Status indicators for power and data are off by default so the unit remains dark in case it is in view next to the fixtures. Pressing the push button will display the current status.

Scalable

Each EDN 20 can control 20 separate SDI devices (10 for EDN 10, 4 for RIO G4), with each SDI device able to control up to 1536 channels, or 512 RGB fixtures, allowing a greatly increased capacity for fixture control per port.

Reliable

Solid-state design for 24/7 operation and reliability.

Interfaces

Serial In RS485 connector to EDN / RIO G4 *
Serial Out 3-pin AD and SC/SD connectors *
(Asynchronous Data, Synchronous Clock, Synchronous Data)

Protocols

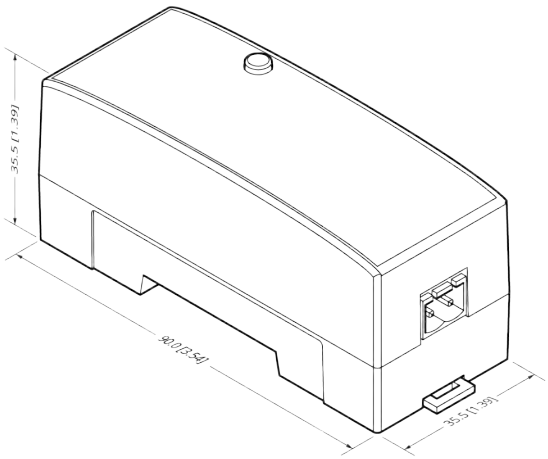
SDI Protocols

APA102	SK9822	WS2811
APA104	UCS1903	WS2812
LPD6803	UCS2903	WS2813
MBI6023	UCS2904	
SK6812	WS2801	

Please see our website for a full, up-to-date list of supported Protocols

Specifications

Power Required 5-28V DC *, 0.3W typical (0.6W maximum)
Any Pharos Designer Controller and Pharos EDN or Pharos RIO G4
Configuration Pharos Designer 2.8 or later (EDN)
Pharos Designer 2.13 or later (RIO G4)
Temperature 0°C to 50°C (32°F to 122°F)
Humidity 10-50% relative, non-condensing
Ingress IP40
Isolation 1kV
Physical 2 unit wide DIN rail mounting enclosure (35/7.5 rail)
3.6 x 9 x 3.6 cm (1.4 x 3.5 x 1.4 in)
Weight 0.05kg (0.11 lb)
Shipping 25 x 23 x 5.5 cm (9.8 x 9.1 x 2.2 in)
0.85kg (1.87 lb)
(pack of 10)



Order Code & Variants

SDI (10PK) Designer Serial Data Interface 10 Pack (EDN Accessory, RS485 in, DC Power in, SPI Out)

Pharos Designer Controller and EDN / RIO G4 required

Warranty & Certifications

Warranty 5 years

Certifications CE compliant, UKCA compliant, ETL/cETL listed.

* Install-friendly 0.200" (5.08mm) plug in rising clamp connectors (included)

EXPERT MAKES LIGHT OF IT

Expert Repeat is a convenient DMX512 splitter / repeater with four output ports compatible with the RDM standard to provide DMX distribution to luminaires.

The incoming isolated DMX signal from your Expert Control is regenerated four times on isolated, self-healing ports for distribution to your fixtures.

DMX splitters are an essential requirement for most control systems, allowing multiple separate cable runs from a single DMX output and ensuring electrical isolation.

In the same size and look as Expert Control and Expert Switch, this DIN rail mount repeater with install-friendly connectors requires a power supply in the range of 9 to 48V DC.

Installer Friendly

Made for permanent installation, with installer-friendly 0.200" (5.08mm) plug-in rising clamp terminals, flexible power requirements from 9 to 48V DC, and easy DIN rail and keyhole mounting options.

Four Port Outputs

Repeats a DMX signal to 4 outputs, each allowing for 32 DMX devices to be connected.

Isolation

Each input and output port is independently galvanically isolated, ensuring the control circuitry and each port of the Repeat is protected against a multitude of electrical line faults, including earth potential rise and ground loops.

RDM

Supports the Remote Device Management protocol (ANSI E1.20) allowing devices connected to any of the four outputs to be discovered and to communicate back to Expert Control over the DMX link.

Protection

Repeat is equipped with four self-healing DMX ports, giving your equipment added protection from unwanted energy, such as miswiring, short circuits, and surge events caused by lightning. Should a fault occur, it will be contained by the Repeat, preventing it from flowing into other components in the system; once the external fault is cleared, the ports "self-heal", restoring DMX output automatically.

Reliability

Made for permanent installation and designed for 24/7 operation and reliability.

EXPERT
REPEAT

Interfaces

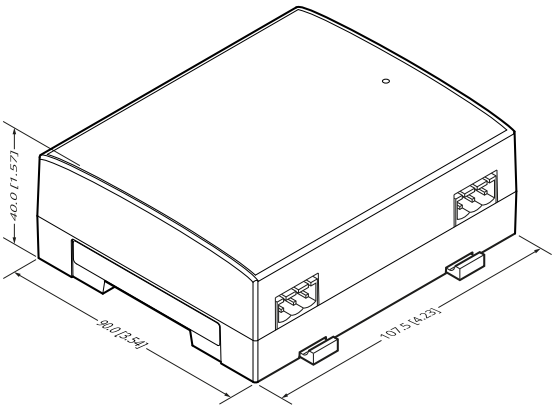
DMX/RDM input	DMX512 port * (USITT E1.11-2008), RDM compatible
DMX/RDM outputs	Four DMX512 ports * (USITT E1.11-2008), RDM compatible

Order Code & Variants

XPR	Expert Repeat (DMX Splitter with 1 in, 4 out, 9-48V DC)

Specifications

Power	9-48V DC * (4W typical)
Temperature	0°C to 50°C (32°F to 122°F)
Humidity	10-90% relative, non-condensing
Ingress	IP40
Protection	Self-healing ports can withstand continuous AC voltage up to 300V
Isolation	All Input and Output ports independently galvanically (capacitive) isolated. Isolation protection of 2500VRMS
Physical	6 unit wide DIN rail mounting enclosure (35/7.5 rail) 10.8 x 9 x 4 cm (4.2 x 3.5 x 1.6 in) 0.2 kg (0.5 lbs)
Shipping	19.5 x 15 x 7.5 cm (8 x 6 x 3 in) 0.4 kg (0.9 lbs)
Reset	Recessed reset button



Warranty & Certifications

Designed and manufactured in the UK, with a 5-year warranty, where quality and reliability are our top priority.

Warranty	5 years
Certifications	CE compliant, UKCA compliant, UL/cUL listed.

* Install-friendly 0.200" (5.08mm) plug in rising clamp connectors (included)

Pharos Switch

Pharos Switch is a convenient unmanaged Ethernet switch providing simple power and networking solutions for up to four Power-over-Ethernet devices. An elegant and easy solution to connect and power PoE controllers, remote devices and touch devices, with the Ethernet-in non-powered port connecting directly to the programming laptop or joining to a local network. This DIN rail mount PoE network switch only requires a 24V DC power supply. Compatible with Pharos Designer and Pharos Expert systems.

Pharos Switch Features

PoE Convenience

Combine power and data in a single Ethernet cable using PoE (IEEE 802.3af) technology, making it easy to locate your Pharos PoE devices where you need them.

Installer Friendly

Made for permanent installation, with installer-friendly 0.200” (5.08mm) plug-in rising clamp terminals requiring convenient 24V DC power; standard RJ45 sockets, and easy DIN rail and keyhole mounting options.

No Commissioning

The simple unmanaged switch operates out of the box, with no commissioning required.

Flexible

Automatically detects the requirements of the connected device to provide the correct power level.

Protected

Resettable fuses protect each port with the appropriate level of overcurrent protection for the Class of device that is attached.

Multiple Ports

Use four ports to power and connect Pharos PoE controllers, remote devices and touch devices (or other IEEE 802.3af compliant devices). One additional port (without PoE) available to connect to your computer, other networks or other devices that do not require Power-over-Ethernet.

Reliability

Made for permanent installation and designed for 24/7 operation and reliability.

Interfaces

PoE Four RJ45 sockets for 10/100Base-TX Ethernet with Power-over- Ethernet (10W max on each port)
Supports IEEE 802.3af Type 1- Class 1, 2 and 0 (up to 10W) devices

Ethernet RJ45 socket for 10/100Base-TX Ethernet

Order Code & Variants

PAC S Pharos Switch (Unmanaged PoE Ethernet switch with 4 Port, Class 2 PoE, 24V DC)

Specifications

Power 24V DC *, power consumption dependent on load (45W maximum)

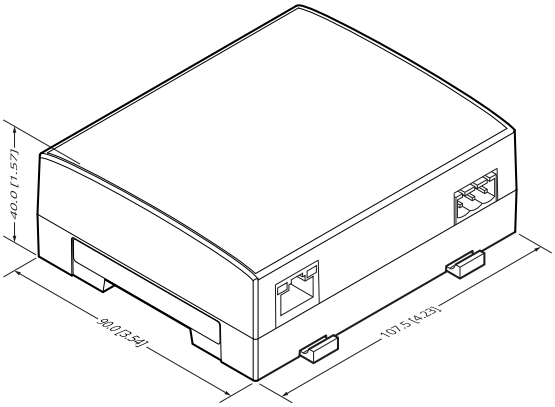
Temperature 0°C to 50°C (32°F to 122°F)

Humidity 10-90% relative, non-condensing

Ingress IP40

Physical 6 unit wide DIN rail mounting enclosure (35/7.5 rail)
10.8 x 9 x 4 cm (4.2 x 3.5 x 1.6 in)
0.3 kg (0.7 lbs)

Shipping 19.5 x 15 x 7.5 cm (8 x 6 x 3 in)
0.4 kg (0.9 lbs)



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Warranty 5 years

Certifications CE compliant, UKCA compliant, UL/cUL listed.

* Install-friendly 0.200" (5.08mm) plug in rising clamp connectors (included)