

## OVERVIEW

The Pharos Touch Panel Controller (TPC) is a lighting controller with a customisable touch screen interface. It incorporates the same advanced playback and show control engine as the Pharos Lighting Playback Controllers (LPC).

Timeline-based programming and show control are configured in the Pharos Designer software and multi-page user interfaces are created in the companion Pharos Interface Editor application. Designer uploads the complete project to the TPC.

The TPC provides one universe (512 channels) of lighting control over multiple eDMX protocols. It can run stand alone, with lighting programming triggered by user interaction with the touch screen and by its internal realtime and astronomical clocks, or it can be used as part of a larger Pharos control system, incorporating additional TPCs, LPCs, AVCs and Remote Devices. When used in tandem with a Pharos LPC I, the TPC can use the second DMX output of the LPC I to output local DMX.

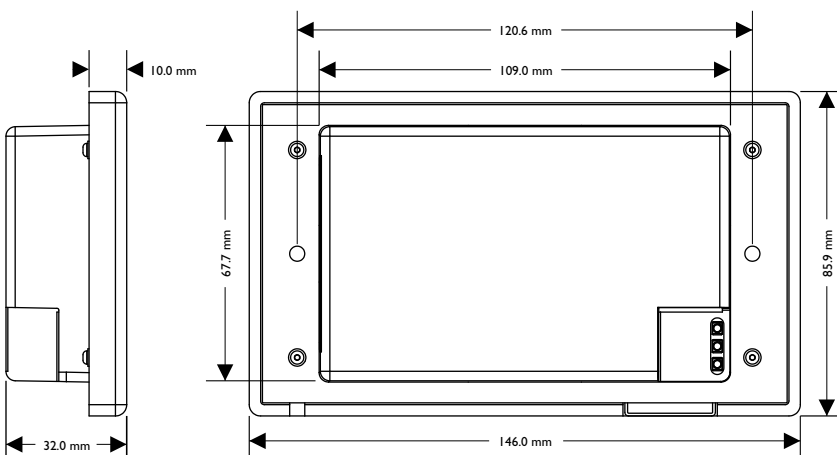
Like the LPC, the TPC features a built-in web server and is fully compatible with Pharos Installation Manager and Pharos Dynamic Media Manager, providing comprehensive remote management solutions.

The wall-mounting design features a magnetic overlay within the sleek, plated bezel to produce a modern, streamlined design. The screen uses capacitive touch sensing technology so only very minimal finger pressure is required for interaction. The TPC is a Power over Ethernet (PoE) device and therefore requires just one cable to install.

The TPC has a learning IR sensor for remote control and IR commands can be associated with touch screen controls. It also has onboard sensors for ambient light, temperature and proximity which can be used locally by the touch screen or by the larger Pharos control system.

## KEY FEATURES

- One universe, reliable, fully integrated and remotely managed control solution.
- Touch screen with customisable user interface.
- Programmed and configured using the Pharos Designer software.
- User interface designed using the Pharos Interface Editor application.
- Create multiple pages of controls, with option to inhibit controls for special events.
- Configure control appearance and visual feedback in software.
- Triggering and show control via touch screen, IR, Ethernet, realtime and astronomical clocks.
- Ambient light sensor for daylight harvesting functionality.
- Proximity sensor for occupancy detection.
- Learning IR sensor for remote control.
- Pixel accurate timeline programming and pixel-mapped media support.
- Algorithmic, realtime playback engine ideally suited to interactive control.
- Use multiple units connected and synchronised over Ethernet to scale to larger installations.
- Integrates with other Pharos Controllers (LPC, LPC X, AVC) and Remote Devices (RIO, BPS).
- Integrated web interface for remote management; custom pages supported.
- Removable SD memory card data storage.
- Solid state, instant-on, fit & forget solution.



## PROTOCOLS

- Art-Net II.
- Philips Color Kinetics KiNet.
- Pathport.
- sACN.

## SPECIFICATIONS

### General:

- Microprocessor based system specifically designed for the control of lighting in an architectural or entertainment application.
- Capacitive touch screen with customisable user interface, supporting multiple pages of controls and fully integrated with show control to provide visual feedback.
- Built-in learning IR sensor; with ability to associate IR commands with touch screen controls.
- Built-in ambient light sensor for daylight harvesting and to adjust screen brightness.
- Built-in temperature sensor and proximity sensor providing local and system-wide feedback.
- Project data stored in non-volatile solid-state memory, uploaded from a remote personal computer over an Ethernet or web connection.
- Operating System stored in non-volatile solid-state memory, remotely updated when necessary from a personal computer over an Ethernet connection.
- Commences playback automatically on receiving power without additional external trigger.
- Internal realtime clock operates when power is absent.
- Integrated web interface.
- 5 year warranty.

### Screen:

- Resolution: 480x272
- Colour depth: 24 bit

### Physical:

- Screen diagonal: 4.3"
- Wall-mounting in back box (UK 2-gang 35mm or custom US 2.5", available separately).
- Configuration and Reset buttons beneath magnetic overlay.
- Operating temperature range 0°C to 50°C (32°F to 122°F).
- CE compliant and ETL/cETL listed.

### Electrical:

- RJ45 socket for 10/100Base-TX Ethernet.
- IEEE 802.3af PoE powered device.\*

\*Typical power consumption 4W.



# SPECIFICATION

## Touch Panel Controller

### A. General

- i. The Controller shall be a microprocessor-based system specifically designed for control of lighting in an architectural or entertainment application. A personal computer running emulation software shall not be acceptable.
- ii. The Controller shall have a fully integrated capacitive touch screen, driven by the application running on the microprocessor. A web browser displaying remotely served content shall not be acceptable.
- iii. The touch screen application shall be dedicated to displaying a user interface for the Controller. No other processes shall run.
- iv. The appearance and content of the user interface may be customized by the user.
- v. The user interface may be used in landscape or portrait orientation.
- vi. The Controller shall store show data and the user interface configuration in non-volatile solid-state memory. This memory shall be removable for purposes of backup or disaster-recovery.
- vii. Show data and the user interface configuration may be downloaded from a remote personal computer over an Ethernet connection.
- viii. The Operating Software of the Controller shall be stored in a dedicated non-removable non-volatile solid-state memory. It shall be possible to update the Operating Software by download from a remote personal computer over an Ethernet connection.
- ix. The Controller shall commence show playback and display the user interface on the touch screen automatically on receiving power without additional external inputs.
- x. The Controller shall have an internal real-time clock that continues to operate when external power is absent. It shall be capable of adjusting for Daylight Savings Time automatically and can be updated over the Internet using the Network Time Protocol (NTP).
- xi. The Controller shall be able to calculate sunrise and sunset times based on longitude and latitude information, and use these as triggers for events.
- xii. The Controller shall have a capacity of 512 output control channels of eDMX protocols, including Art-Net II, KiNet, sACN and Pathport.
- xiii. The Controller shall be able to output multiple eDMX protocols simultaneously, up to the output control channel limit.
- xiv. The Controller shall be able to output eDMX protocols on a different IP network to its management IP network.
- xv. There shall be visual indicators on the Controller showing status of the controller and its interfaces.
- xvi. The Controller shall operate a web server on its Ethernet interface. This shall allow status information, control and configuration options to be accessed remotely.
- xvii. The appearance and content of the web interface may be customized by the user.
- xviii. The Controller shall allow lighting to be programmed as separate zones, with independent triggering and manual intensity control.
- xix. The Controller shall support multiple timelines, crossfades and effects running concurrently.
- xx. The Controller shall support playback of video media with individual pixels mapped to lighting fixtures in an array.
- xxi. The Controller shall support an ambient light sensor, which may be used for daylight harvesting and is configured to automatically adjust the brightness of the screen backlight.
- xxii. The Controller shall support a proximity sensor, which may be used in triggers and also to 'wake' the screen after a period of inactivity.
- xxiii. The Controller shall support a learning IR sensor.
- xxiv. The Controller shall support a temperature sensor, which may be used for triggering.
- xxv. The Controller shall be capable of providing show feedback via the user interface.
- xxvi. The Controller shall be capable of receiving Art-Net II for triggering.
- xxvii. The Controller shall support multiple remote devices connected via Ethernet for support of additional show control interfaces, such as contact closures, analogue inputs, relay outputs, serial, audio input, linear timecode, MIDI and DALI.
- xxviii. The Controller shall support multiple remote button panel stations via Ethernet for use as triggers and for user feedback.
- xxix. The Controller shall support multiple streams of linear timecode and audio data within a single networked system.
- xxx. The Controller shall have a recessed switch for resetting the unit without removal of power.
- xxxi. The Controller shall have a recessed switch for launching the internal configuration menu.
- xxxii. No physical buttons shall be visible or exposed when the Controller is correctly installed.
- xxxiii. The Controller shall have an internal watchdog feature that will restart the unit in the event of program failure.
- xxxiv. Multiple Controllers shall automatically synchronise and share triggers when programmed as part of a single show and linked via Ethernet during playback.
- xxxv. The Controller shall support conditional logic and execute user-defined Lua scripts to support advanced show control operations.
- xxxvi. The Controller shall be provided with a 5 year manufacturer warranty.

# SPECIFICATION

## Touch Panel Controller

### B. Physical

- i. The capacitive touch screen shall be 4.3" with a resolution of 480x272 and 24bit colour depth.
- ii. The unit shall mount in a UK double gang (35mm deep) back box or custom 2.5" back box (available separately).
- iii. The unit shall be entirely solid-state with no moving parts, fans nor hard disc drives.
- iv. The unit shall operate in a temperature range from 0°C to 50°C (32°F to 122°F).
- v. The unit shall be CE compliant.
- vi. The unit shall be ETL/cETL listed.

### C. Electrical

- i. The Controller shall support the following standard connectors:
  - a. RJ45 socket for 10/100Base-TX Ethernet
- ii. The Controller shall be able to receive power over Ethernet (IEEE 802.3af PoE powered device).

### D. Software

- i. The Controller shall be supported by programming software running on either a PC or Mac platform. Programming features shall include:
  - a. Comprehensive architectural and automated fixture library
  - b. Drag and drop placement of fixtures on plan
  - c. Drag and drop patching of fixtures to output addresses
  - d. Import of any media for mapping to fixture arrays
  - e. Timeline-based programming and playback
  - f. Extensive range of editable effect presets
  - g. Drag and drop placement of effect presets and media on timeline
  - h. Variety of triggering options for firing system-wide events
  - i. Each trigger event may be configured to initiate one or more lighting or show control action
  - j. Each trigger event may be configured to test one or more conditions before executing its actions
  - k. Simulation of individual timelines, and entire project with triggers
  - l. Live output from software for programming verification purposes
  - m. Controller and network management tools
  - n. Export TSV reports for all aspects of programming
  - o. Tools for remote management of content and show programming
- ii. The Controller shall be supported by user interface creation software running on either a PC or Mac platform. User interface configuration features shall include:
  - a. Create multiple pages of user interface controls
  - b. Library of page control layouts with buttons, sliders and colour pickers
  - c. Change the appearance of pages and controls by applying themes
  - d. Use themes from the theme library, or create custom themes
  - e. Choose a background image for each page
  - f. Assign local functionality to controls, e.g. change page or screen brightness
  - g. Add navigation controls to pages and configure page transitions.

### E. Protection

- i. The Controller is protected under licence by the following patents:  
U.S. Patents: 6,016,038; 6,150,774; 6,166,496; 6,211,626; 6,292,901; 6,340,868; 6,459,919; 6,528,954; 6,548,967; 6,577,080; 6,608,453; 6,624,597; 6,636,003; 6,717,376; 6,720,745; 6,774,584; 6,777,891; 6,781,329; 6,788,011; 6,801,003; 6,806,659; 6,869,204; 6,883,929; 6,888,322; 6,897,624; 6,936,978; 6,965,205; 6,967,448; 6,969,954; 6,975,079; 7,014,336; 7,031,920; 7,038,398; 7,038,399; 7,042,172; 7,064,498; 7,113,541; 7,132,635; 7,132,785; 7,132,804; 7,135,824; 7,139,617; 7,288,190; 7,231,060; Canadian Patent: CA 2,302,227; Hong Kong Patent: HK 1025416; Australian Patent: AU 757000; AU 2003203584; European Patents: EP 1 016 062 B1; EP 1 224 845 B1; EP 1 234 140 B1; DE 698 07 092 C0; DE 600 21 911 C0; DE 600 23 730 C0