

# PRESIDOR™



## Presidor LED Dimmer & Relay Panel

### Installation Guide and User Manual

**JSI Manufacturing**  
[www.jsimfg.com](http://www.jsimfg.com)



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## Warranty

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PRESIDOR LED Dimmer / Relay Panel come with a factory two (2) year limited warranty.

Extended warranties of up to ten (10) years are available at the time of purchase.

## For Technical Assistance

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1. Refer to your product user manual. The most current revision is available online.
2. Contact the "point-of-sale" dealer or distributor from which this product was originally purchased and ask for technical assistance.
3. If neither of the above can provide you with the necessary information, please contact our factory via email ([orders@jsimfg.com](mailto:orders@jsimfg.com)) or phone (403-287-8003) during business hours (Monday to Friday, 8:00AM to 4:00PM MST).

# Pre-Word

The PRESIDOR LED Dimmer / Relay Panel is a next-generation electronics package designed specifically for **LED Dimming**. The PRESIDOR LED Dimmer / Relay Panel can replace the aging control electronics of an existing dimmer rack. This ETL Listed, full-featured state-of-the-art unit. Full-featured, hi-resolution dimming with a lightning-fast response. An environmentally and financially responsible solution that installs in a matter of minutes!



Designed to install in minutes with only basic hand tools, this elegant package has been designed for longevity and reliability with the end user in mind. An intuitive LCD user interface combined with quad modular design makes the PRESIDOR LED Dimmer / Relay Panel extremely user-friendly and easily serviceable. USB-C Tech Port and face panel LED's permit easy firmware upgrades and operational status indication.

## Installation

### Safety:



Read the entire manual before using this equipment. Important Safeguards READ AND FOLLOW ALL SAFETY INSTRUCTIONS. When using electrical equipment, basic safety precautions should always be followed including the following:

- Do not use outdoors.
- Do not mount near gas or electric heaters.
- Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel or near water.
- The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
- Do not use this equipment for anything other than its intended use.
- Operation and servicing by qualified personnel only!

#### SAVE THESE INSTRUCTIONS

The following symbols may appear on product labeling.

##### General warning



Protective earth (ground) Avertissement général Protection Classe I Mise à la terre .



This document uses the following conventions to draw your attention to important information.

Note: Notes are helpful hints and information that is supplemental to the main text.



CAUTION: A Caution statement indicates situations where there may be unwanted consequences of an action, potential for data loss or an equipment problem.



WARNING: A Warning statement indicates situations where damage may occur, people may be harmed, or there are serious or dangerous consequences of an action.



WARNING: RISK OF ELECTRIC SHOCK! This warning statement indicates situations where there is a risk of electric shock.

# Packaging & Contents

Each **PRESIDOR LED Dimmer / Relay Panel** retrofit system is shipped in a custom-designed box and foam for the protection of the unit. For warranty maintenance, please keep the box and packaging stored in a safe place. In the unlikely event that the system needs to be returned to the JSI Factory, the packaging will be required to prevent shipping damage and warranty maintenance.

## Installation of PRESIDOR LED Dimmer / Relay Panel



**WARNING!** Verify all power is disconnected (turned off) before proceeding.



- Disconnect (turn off) the power supply to the dimmer rack(s) and rack processor electronics. Some systems may have their processor electronics powered by an isolated (separate) feed.
- Mark/Tag and Lockout electrical feed to the rack. Ensure with DMM- Digital Multi Meter that all power to the rack has been removed. Measure between A Phase to Ground and A Phase to Neutral and A Phase to B/C Phases , do the same for B and C phases.



- Remove your new PRESIDOR LED Dimmer / Relay Panel system from the box.
- Familiarize yourself with the backplane, and low voltage control input/output connections. Refer to [page 18](#) for details.
- Dress out all DMX and other low voltage connections to the backplane using the Phoenix style breakaway connectors provided. Be sure to isolate and protect all shield wires with heat-shrink or electrical tape.
- Remove the 6 (Six) screws holding the outer lid closed and set them aside.
- Open the door to get closer to the OEM brain and wiring. Inspect the wiring of the dimmer rack wiring.
- Measure a space on the wall to fit the panel in Width and Length. Please allow an extra 6 (Six) Inches on the right side for air flow.
- Mark the 4 (Four) holes to fit the rear of the Presidor Panel and install the panel accordingly.
- Get a qualified / certified Electrician to wire the panel for power.
- Wire all DMX/Console wiring to the panel.
- Switch panel on and enter the DMX start address.

# Introduction

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The Presidor Panel is made up of a Controller (PRCTL) a Fan board (PFC) and a combination of up to Six (6) Quad Dimmer and or Quad Relay Modules. The Dimmer module has Four (4) outputs, each output is rated at 120VAC, 5Amp (600Watt). The Relay Modules can be configured as Four (4) x 5 Amp outputs or Two (2) x 10 Amp outputs.

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Each **PRESIDOR LED Dimmer / Relay Panel** retrofit system is shipped in a custom-designed box and foam for the protection of the unit. For warranty maintenance, please keep the box and packaging stored in a safe place. In the unlikely event that the system needs to be returned to the JSI Factory, the packaging will be required to prevent shipping damage and warranty maintenance.

# Specification

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- Available in Single and Three Phase.
- Dim Standard: LED Dimmable and Incandescent.
- Relay for Non-Dim.
- DMX-512 start addressable in single channel (offset) or individually(patch).
- Embedded programming with Binary addressing of each module.
- Intelligent fault/error reporting: Short Circuit, Inductive, Overload, Over Temperature, Hard key, Zero Cross Fault.
- Intelligent feedback on Input Voltage and Frequency in Hz.
- Intelligent feedback per channel on loading capacity in Watts.
- Intelligent feedback on total load for the rack in watts.
- User-adjustable Curve/Trip Set for LED fixtures with different turn-on points.
- Programmable Fire setup.
- Capacitive Touch display for easy setup and configuration.
- Intuitive navigation allows for ease of operation.
- Opto-Isolated DMX IN and Through.
- Fire Aux Input.
- Overheat and overcurrent protection.
- Analog 0-10VDC Source or Sink 100mA relay only.
- State-of-the-art high-speed, low-power "green" processor and ancillary circuitry with a power consumption of > 400mA / Channel.
- Noise: 43dBA
- Fan Airflow: +- 84CFM
- 24 VDC for powering External Controls PWS-20P or PWS-70P.
- No Laptop required for setup.
- Optional: BMS or Network node ready.
- Comply with UL508A standard.
- Patent Protected.

# Technical Specification

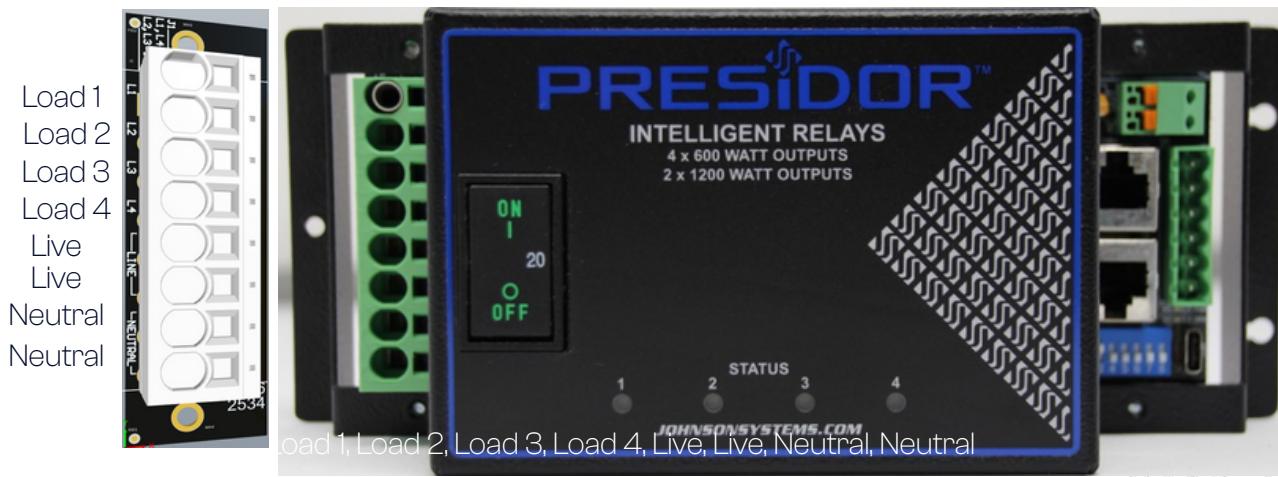
- 1.0 PRESIDOR™ - Panel shall be capable of handling Dimmers and Relays in the same enclosure.
- 1.1 On power-up, the panel will perform a self-test.
- 1.2 PRESIDOR™ Panel shall be capable of dimming incandescent, quartz, and LED dimmable fixtures.
- 1.3 PRESIDOR™ Panel shall be powered from 120/208 VAC 3-Phase 5-Wire or 120/240 VAC 1-Phase 4-Wire.
- 1.4 A capacitive touch interface for ease of setup and monitoring. All programming shall be via a user-friendly, intuitive, and self-prompts menu structure. No PC or special software will be required.
- 1.5 DMX-512 start address shall be addressable in single channel (offset) or individually (patch) on a per circuit/dimmer/channel basis. It shall be possible to address any dimmer to any channel within the entire DMX-512 universe or all dimmers to a single DMX channel.
- 1.6 Dedicated DMX In and DMX Thru ports shall be supplied internally via 3-Pin break-away connectors.
- 1.7 An active over-temperature shall illuminate a fan symbol at an internal temperature of 40 °C. In the event that the temperature run away, there will be an automatic shutdown of all the dimmer circuits at 70 °C.
- 1.8 PRESIDOR™ Panel shall employ the "system-on-a-chip" advanced digital technology. The control electronics shall be contained on a single PCB capable of driving 4 channels. Advanced state-of-the-art hardware and firmware will ensure >1% accuracy on all dimmer outputs.
- 1.9 The DMX inputs shall comply with USITT DMX-512-A (ANSI E1.11-2008), the standard protocol for digital data control.
- 1.10 PRESIDOR™ Panel shall be capable of reading the system AC Voltage and frequency on the UIB.
- 1.11 PRESIDOR™ Panel shall be capable of reading individual channel loading in Watts.
- 1.12 PRESIDOR™ Panel shall be capable of reading the complete loading of the panel in Watts.
- 1.13 PRESIDOR™ Panel shall be capable of setting the curve/trip set.
- 1.14 PRESIDOR™ Panel shall be capable of self-configuring module types by the press of a single button.
- 1.15 PRESIDOR™ Panel shall be capable of having a user and Admin password for the protection of configuration data.
- 1.16 PRESIDOR™ Panel shall be capable of showing the Firmware version on the UIB.
- 1.17 PRESIDOR™ Panel shall be capable of resetting the panel controller via the UIB.
- 1.18 PRESIDOR™ Panel shall be capable of selecting channels for the fire alarm to be activated at Full on in the event of a Fire alarm.
- 1.19 PRESIDOR™ Panel shall be capable of displaying a variety of faults via LED indicators on a per channel basis and these faults must be able to be cleared from the UIB. Fault/error reporting: Short Circuit, inductive, Overload, Over Temperature, Hard key, Zero Cross Fault.
- 1.20 PRESIDOR™ Panel shall have a lockable hinged lid.
- 2.0 All printed circuit boards (PCB's) shall be FR4/G10 with a UL 94V-0 Flame Class Rating.
- 2.1 PRESIDOR™ Panel shall be ETL listed and comply fully with UL508A and CSA.

# Backplane



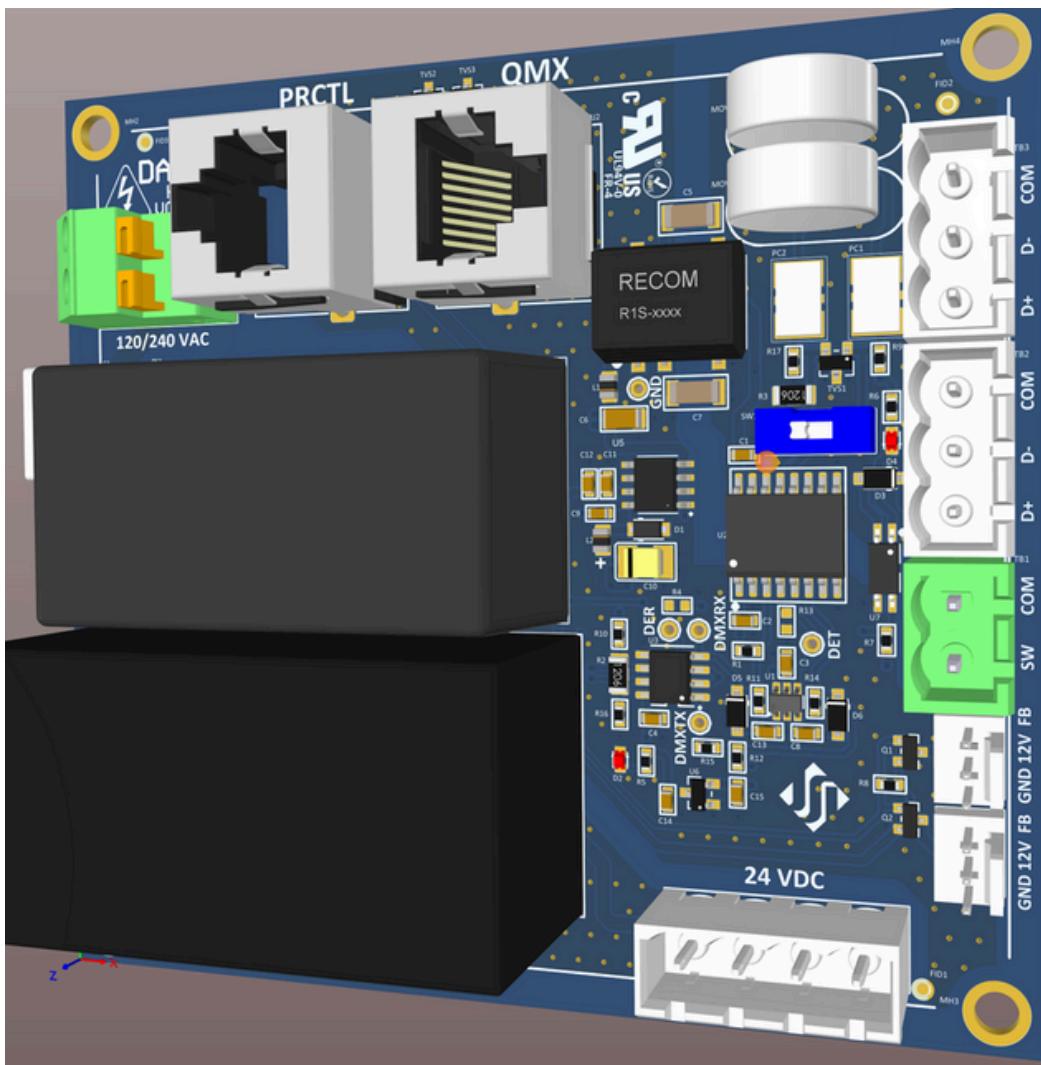
**NOTE:** Never pull directly on the wires to remove connectors. Some tightly fitted connectors may require slight "prying" on one or both sides of stuck connectors with a small flathead screwdriver to loosen.

## PRMQ - Presidor Relay Module Quad



- Please note that the 8 (Eight) Pin connector above on the far left is to be wired in this order from top to bottom.
- Load 1, Load 2, Load 3, Load 4, Live, Live, Neutral, Neutral

# PFC - Presidor Fan Control



DMX In

DMX Thru

Aux Contact (Fire)

- Connect the DMX-A and thru making sure that the polarity for each is correct.
- Also connect the Overtemp or Fire/Security alarms.

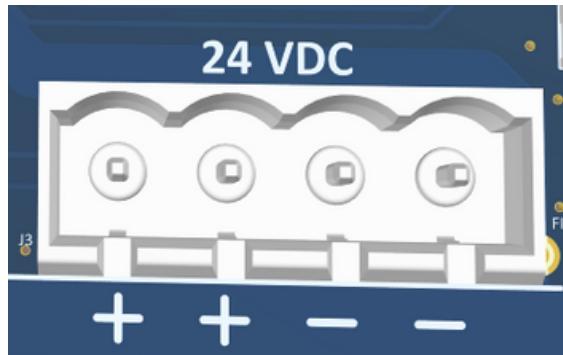


**NOTE: Please note that the PRESIDOR LED Dimmer / Relay Panel was designed with 24 VDC Power supply to support JSI's PRESIDOR Wall controls.**

# PRESIDOR - PWS - Power



- To connect a Presidor PWS wall controller we supplied a 24VDC Connector to do so.
- Pins 1 & 2 is +24VDC and Pins 3 & 4 is Common



**NOTE:** For connection use copper wire only, rated for 167°F (75°C) minimum.

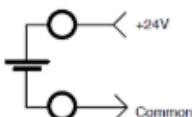
## Control Input / Output Connections

Breakaway type connectors are supplied for all I/O connections.

- Use wire size #28 to #12 AWG. Strip insulation length to 0.3" (7.5mm).
- Torque terminations to 3.6 IN-LBS (0.4 NM).

## Dual DMX Input and Thru

- DMX A (SHIELD/COMMON, DATA-, DATA+) is terminated on TB2 Pins 2 & 3.
- DMX B (SHIELD/COMMON, DATA-, DATA+) is terminated on TB3 Pins 5 & 6.
- Complies with USITT DMX512-A (ANSI E1.11 - 2008), a standard protocol for digital data control.
- Recommended cable is Belden 9773, 9829, 9842, CAT5, CAT5E, CAT6 or equivalent (low capacitance, twisted pair).
- Wiring must follow a daisy-chain topology with end-of-line (EOL) termination active on the PRESIDOR LED Dimmer / Relay Panel.
- Maximum of 64 receiving devices on a single DMX line.
- Maximum cable length is 1,000 feet (305 meters).



### +24VDC Power Supply Output

- A regulated +24VDC power supply output is available for powering PWS-20P and PWS-70P.
- Terminate on +24V and COMMON on J300 Pins 1&2 for Common and 3&4 for +24VDC
- External devices should not exceed the maximum combined current draw of 5 Amp.

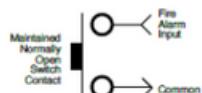
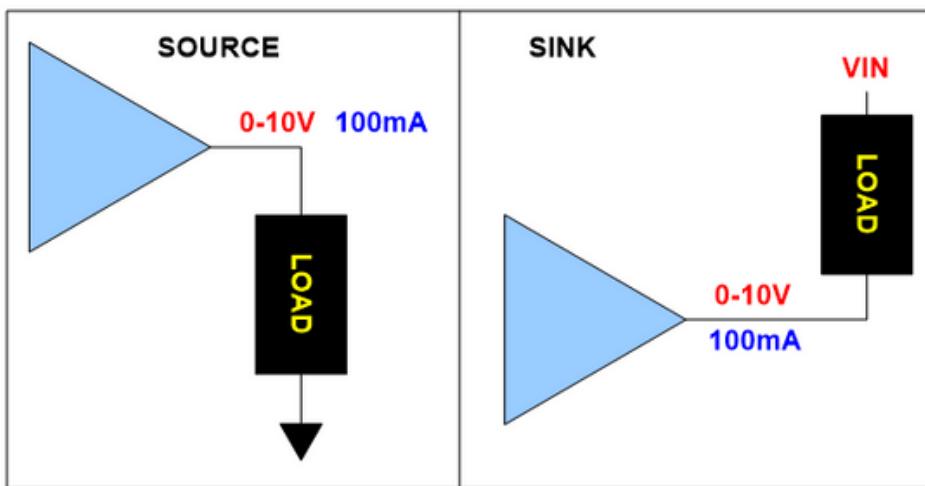


### 0-10VDC Analog Outputs

- Four (4) analog outputs on the quad relay modules terminate on TB1 Pins 1, 2, 3, 4, and 5, 6 is Common
- Outputs can be configured for normal (0-10VDC analog) source or sink mode of operation with 100mA output.



Common  
Common  
Analog 4  
Analog 3  
Analog 2  
Analog 1



### Over-Temperature Input From Dimmer

- When a dimmer goes into Overtemp it will activate an O/T alarm on the PRESIDOR LED Dimmer / Relay Panel. This will activate the Fans for 5min. If DMX is over 10% the fans will be on already and if this O/T alarm occurs and DMX is set to Zero, the fans will stay on for 5 min.

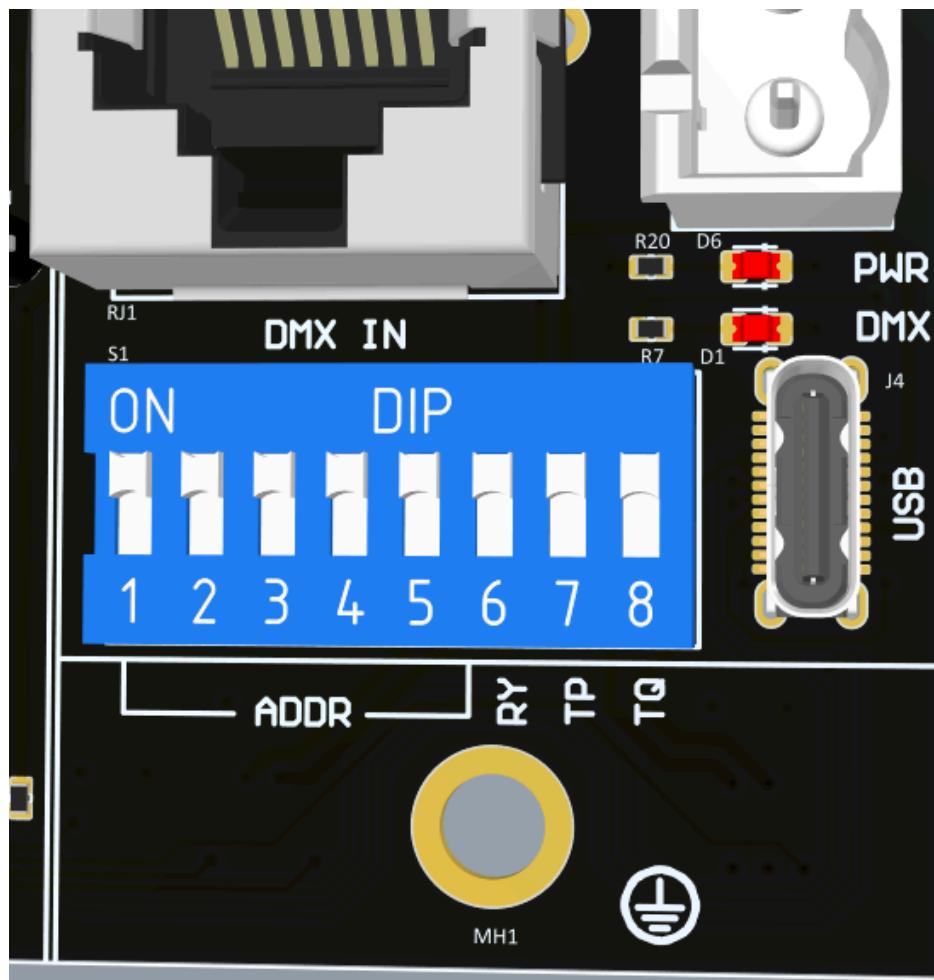
### Fire Alarm Input (Normally Closed)

- Terminate on TB1 Pins 1 & 2.
- Triggers selected channels to turn on when contact/switch is closed.
- Controlled via a maintained contact/switch to low-voltage common (COM).
- Programmed in the "F-ALARM" menu. See [page 22](#) for details.

# PRESIDOR LED Dimmer / Relay Panel

## Firmware Loading

All PRESIDOR LED Dimmer / Relay Panel systems have an embedded bootloader that permits field firmware upgrades (if necessary) via a PC or laptop computer. Connection is via the USB-C Tech Port on each quad nodule of the PRESIDOR LED Dimmer / Relay Panel panel and a PC (Win10 or newer). A standard USB-A to USB-C computer interface cable (not supplied) will be required to perform this upload.



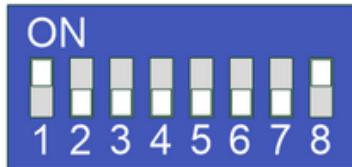
# Setup

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The PRESIDOR LED Dimmer / Relay Panel is pre-configured at the factory with the following setup.

## Dip Switch

Each module has a dip switch for addressing each module location.



Dip Switch 1-3 are used to set the module location 1-6.

Dip Switch 4 and 5 are not used.

Dip Switch 6 - Dimmer Module - Not Used

- Relay Module - OFF = 4 x 5Amp relay configuration. ON = 2 x 10 Amp relay configuration.

Dip Switch 7 - PMX Termination.

Dip Switch 8 - DMX Termination.

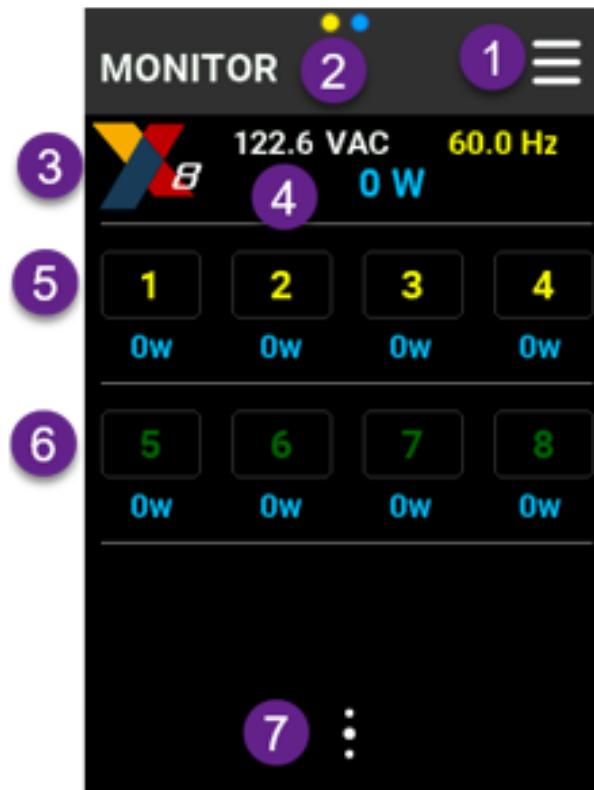
## Power Up

On power up, the display will show the following while performing a self test.



## Monitor Screen

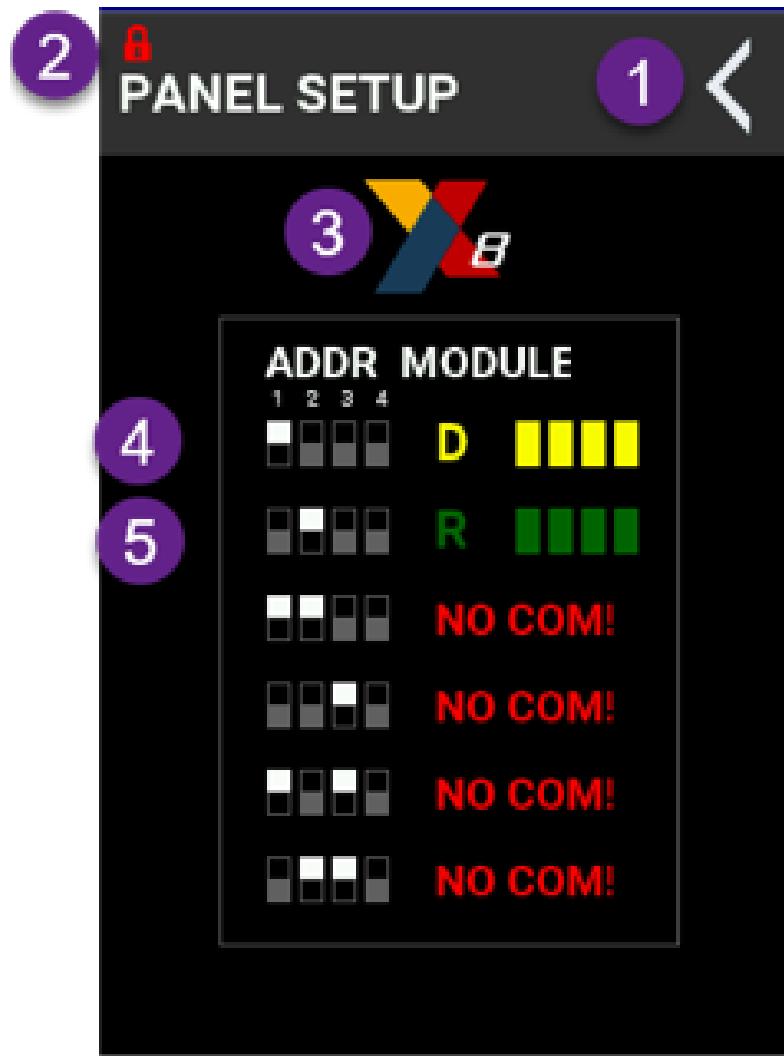
Admin Locked!



- 1) Menu
- 2) Status Indicators
  - Yellow
    - i. OFF - No communication with modules (Fault)
    - ii. ON - All modules connected and communicating.
  - Blue
    - i. OFF - No DMX
    - ii. ON - DMX Present
- 3) Panel Configuration: X8, X12 or X24
- 4) Real time display of Voltage, Frequency and Total Wattage of panel.
- 5) Dimmer module channels 1-4. Depending on configuration of panel.
- 6) Relay module channels 1-4. Depending on configuration of panel.

## Panel Setup

Will show this screen.



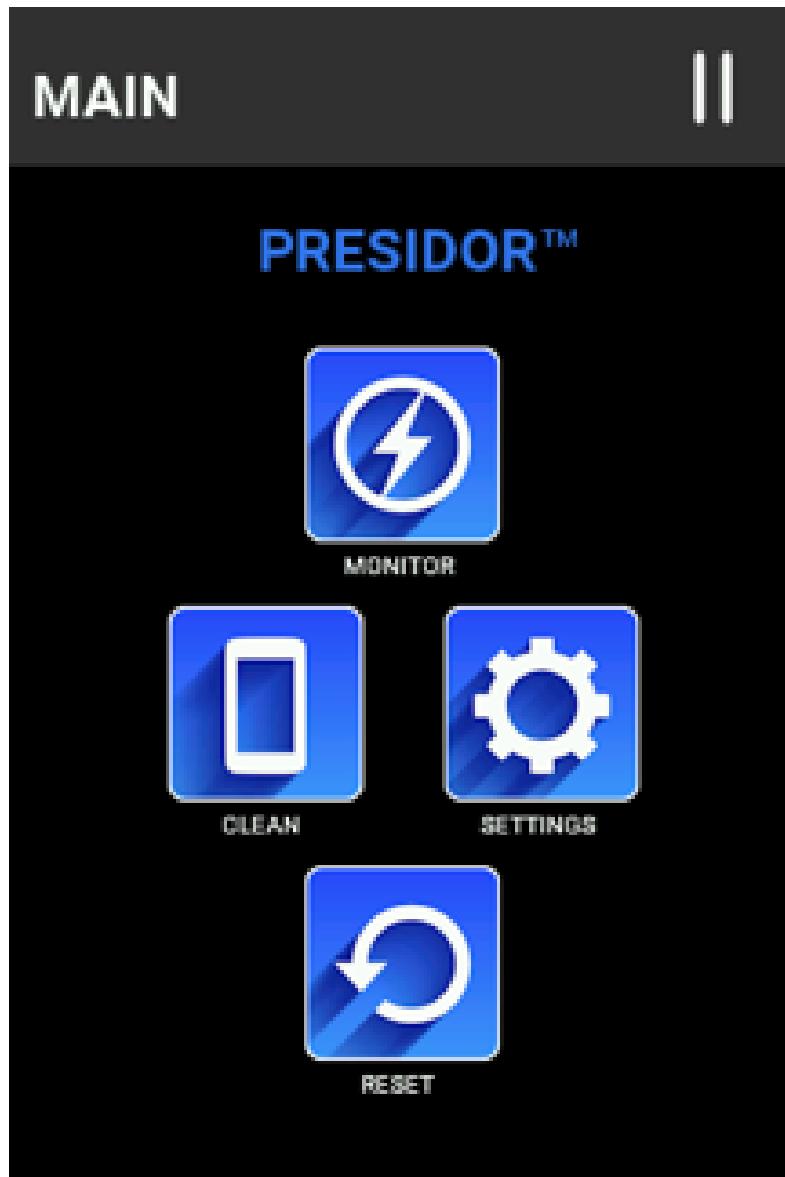
- 1) Back button
- 2) Lock indicates Password Locked. See password section.
- 3) X8, X12 or X24 - press icon to query panel configuration.
- 4) Dip Switch setting, "D" for Dimmer, "R" for relay and block to show channels 1-4 etc.

## Main Screen

The Main Screen allows quick access to the Monitor, Clean, Settings and Device Reset screens.



**NOTE:** The Reset button is only available after a valid password has been entered.



## Settings Screen



## DMX Screen

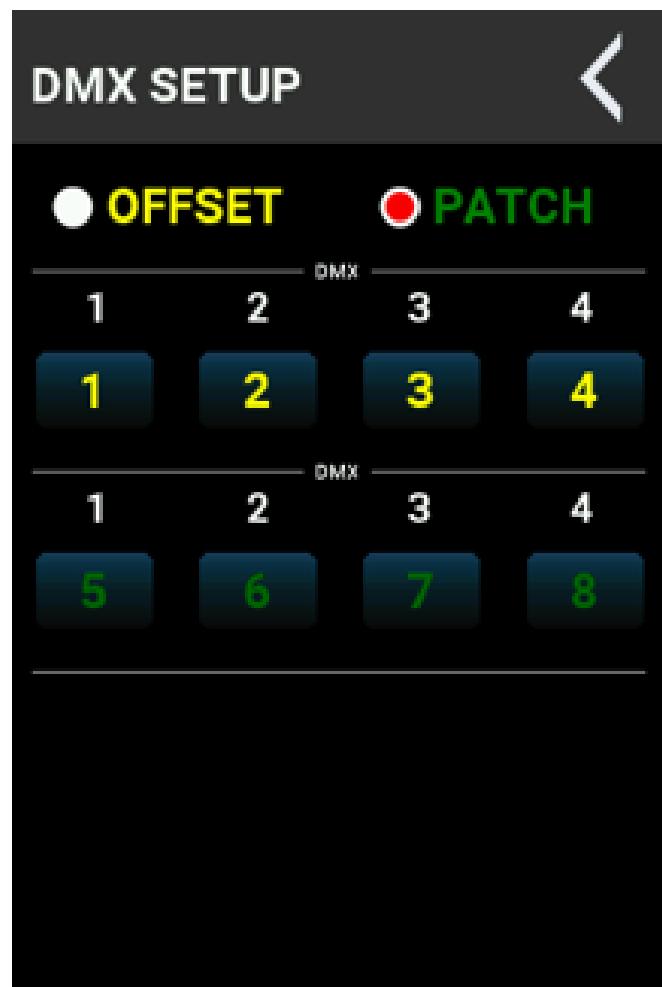
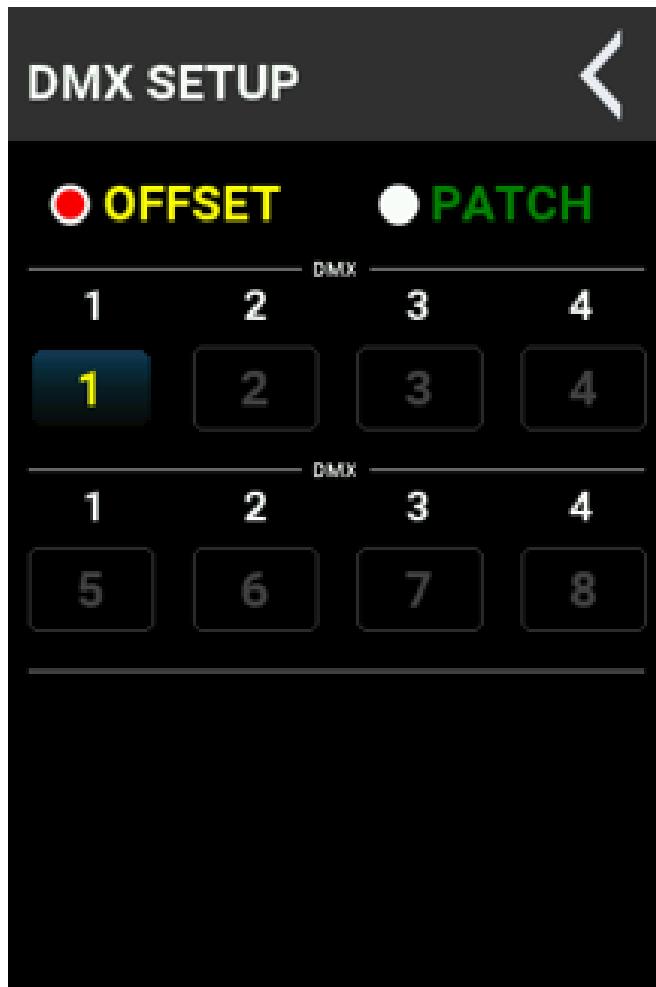
Admin Locked!

The DMX Screen allows the user to set the DMX address for each Module and channel as either

- a) OFFSET or b) PATCH

OFFSET - click on the first output to open the keypad and enter the DMX start address (1-512). This will set the DMX address for each module and channel based on the start address.

PATCH - allows the user to set the DMX address for each channel individually.

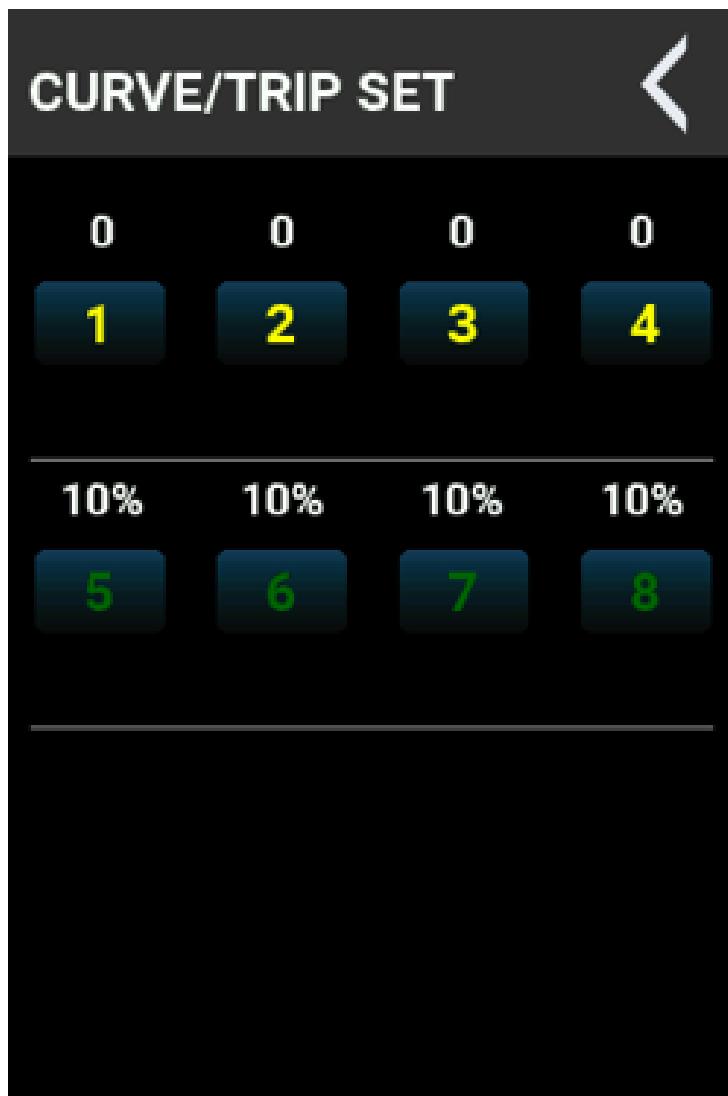


## Curve / Trip Set Screen

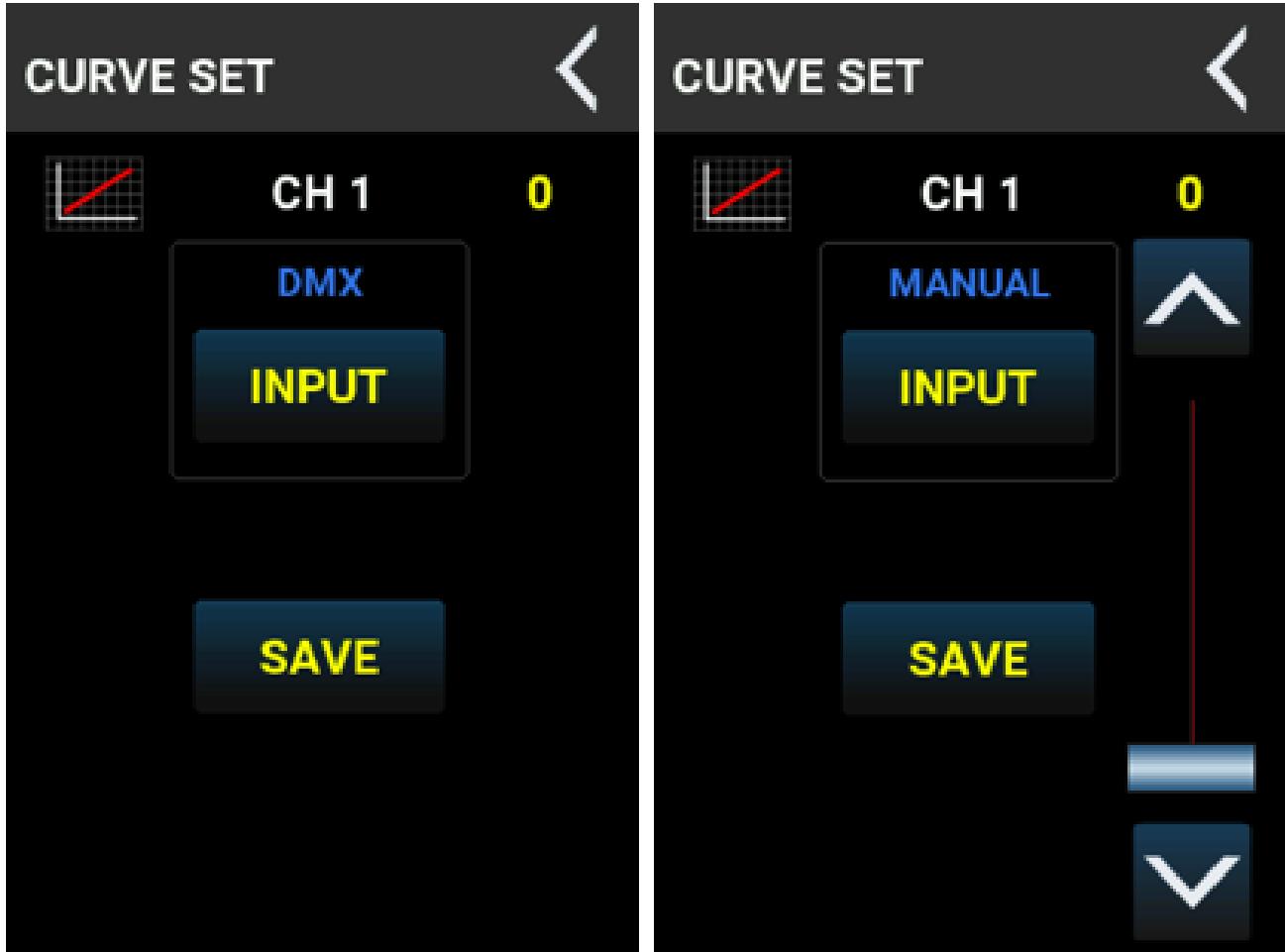
Admin Locked!

The Curve / Trip Set Screen is used to set the Dimmer curve for Dimmer Modules and Trip set level for Relay modules.

Click on any of the buttons to take the corresponding Curve / Trip screens



## Dimmer Curve Set Screen

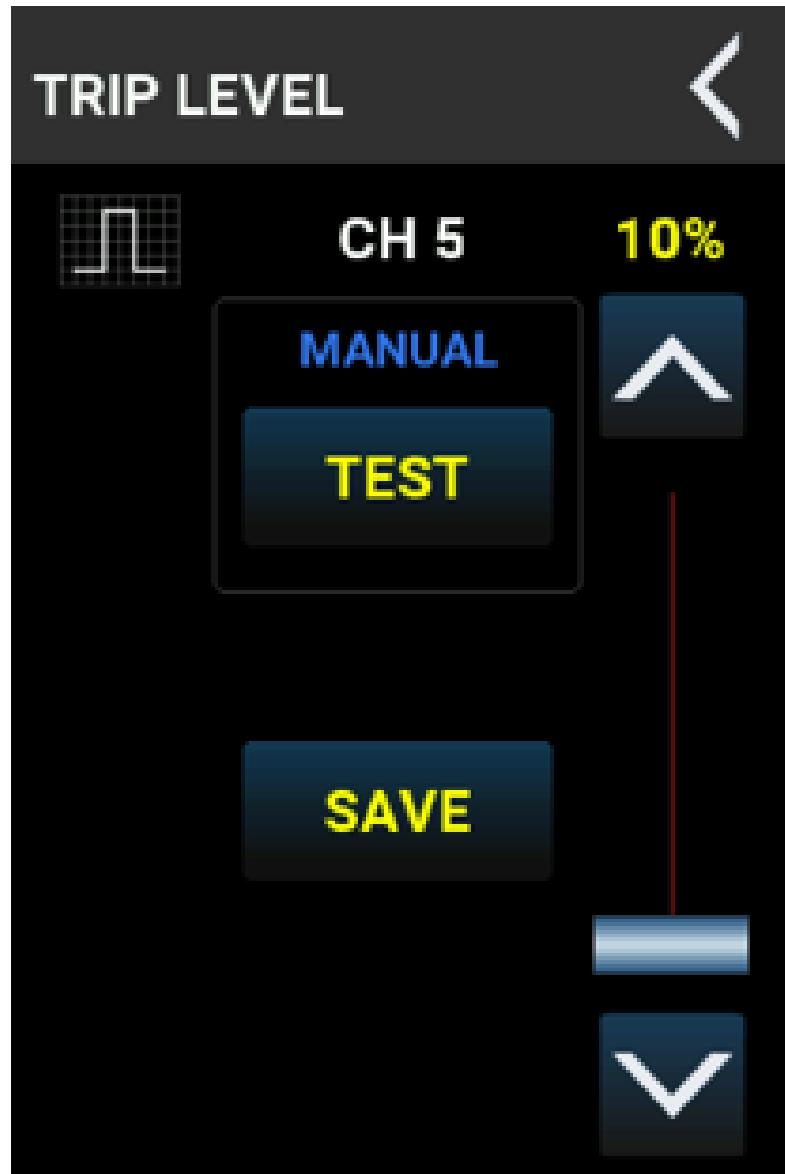


To adjust the Dimmer Curve Set Value, click on the (INPUT) button to toggle between live DMX or MANUAL. When DMX is selected, set the DMX level to the required input using a console or DMX CAT device. This value will be used to scale the output from from the set value, which is now the Zero point, to maximum (255). For example, adjust the DMX input until the light fixture first turns on then press (SAVE) to save the DMX zero level. In Manual mode, use the slider and (UP) and (DOWN) buttons to adjust the DMX zero value.



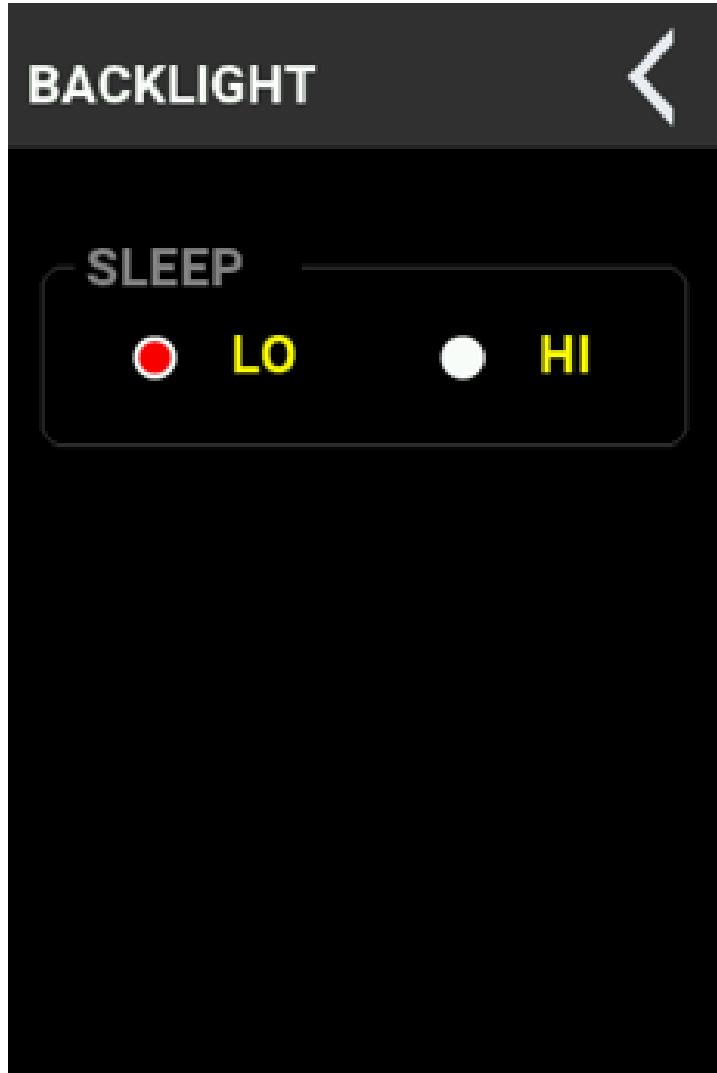
**NOTE:** For both Curve Set and Relay Trip levels, the corresponding DMX output will reflect the value being set.

## Relay Trip Set Screen



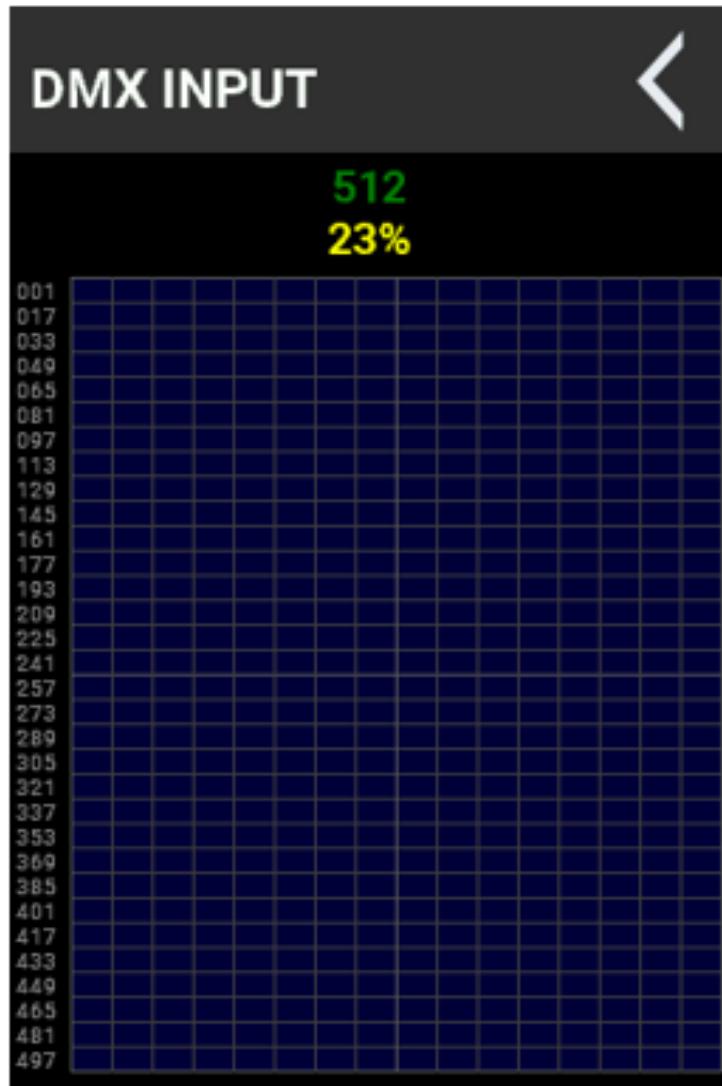
To adjust the Relay Trip level using slider and (UP) and (DOWN) buttons then (SAVE) the new Trip Level value. The default level is 10% DMX. Press the (TEST) button to test the relay output.

## Backlight Screen



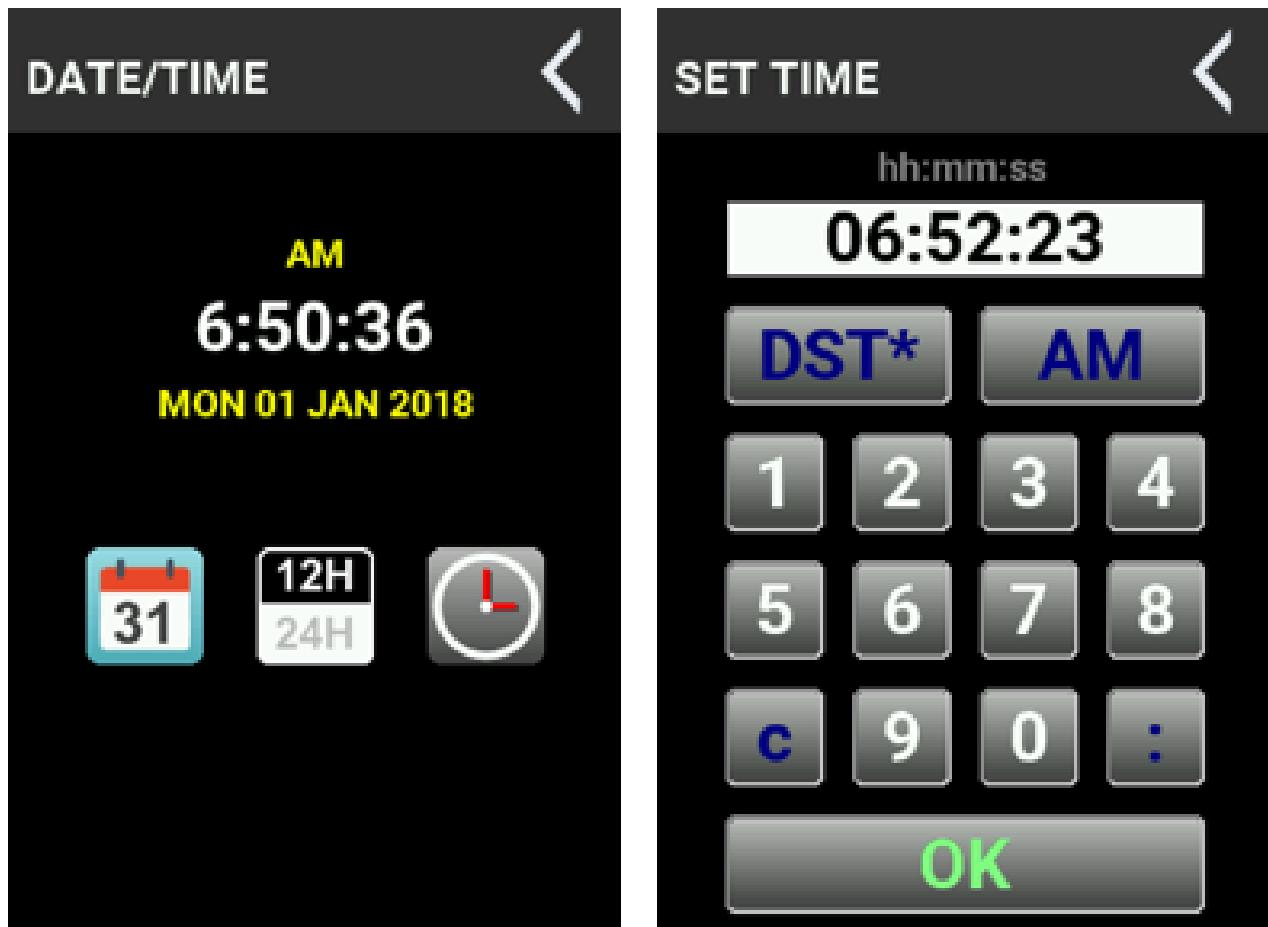
This screen is used to set the LCD backlight during SLEEP to either LOW or HIGH brightness.

## DMX Matrix Screen



This screen allows the user to display the levels for all 512 DMX channels in shades of blue for 0 (Black) to bright blue for a DMX value of 255. In addition, the screen also shows the DMX channel and DMX value (%) for the last DMX channel to be updated.

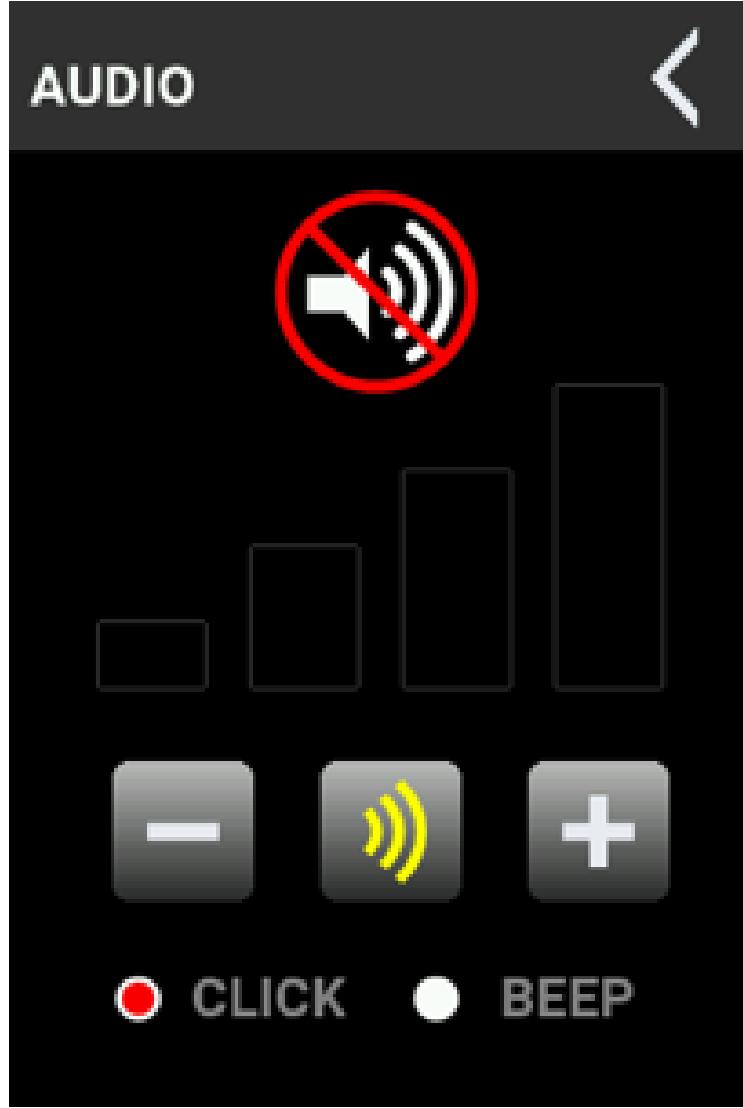
## Date / Time Screen



User Locked!

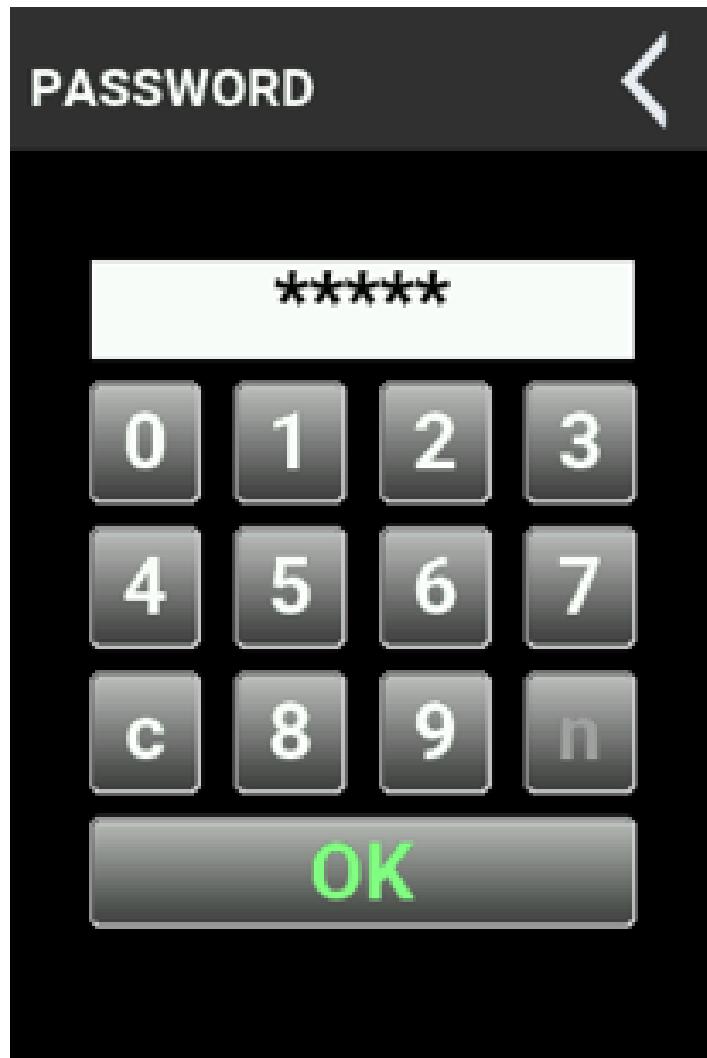
Use this screen to set the Date, 12/24HR format, time and DST for the Real Time Clock (RTC).

## Audio Screen



This screen is used to set the Audio from Click, Beep or Mute. Use the (-) and (+) buttons to adjust the volume.

## Password Entry Screen



This screen is used to set USER or ADMIN password.

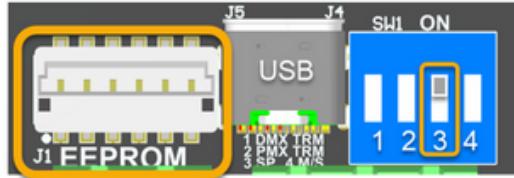
- ADMIN PASSWORD : 77285
- USER PASSWORD : 12345



**NOTE:** Normally a sleep timeout will disable the Password Lock however to disable the password lock, enter an invalid password and press (OK).

## Password Entry Screen

- 1) On the back of the PRCTL, make sure that the EEPROM plugin module beside the USB connector is plugged in all the way.
- 2) Turn DIP switch #3 ON.



- 3) Enter the password Screen and verify that the screen shows 4 RED BARS and the (n) button as shown below.



- 4) Click on the (n) button to toggle between "NewUP" (User Password) and "NewAP" (Admin Password).



- 5) Now enter a new 5-Digit User or Admin Password and press (OK). This screen is used to set USER or ADMIN password.

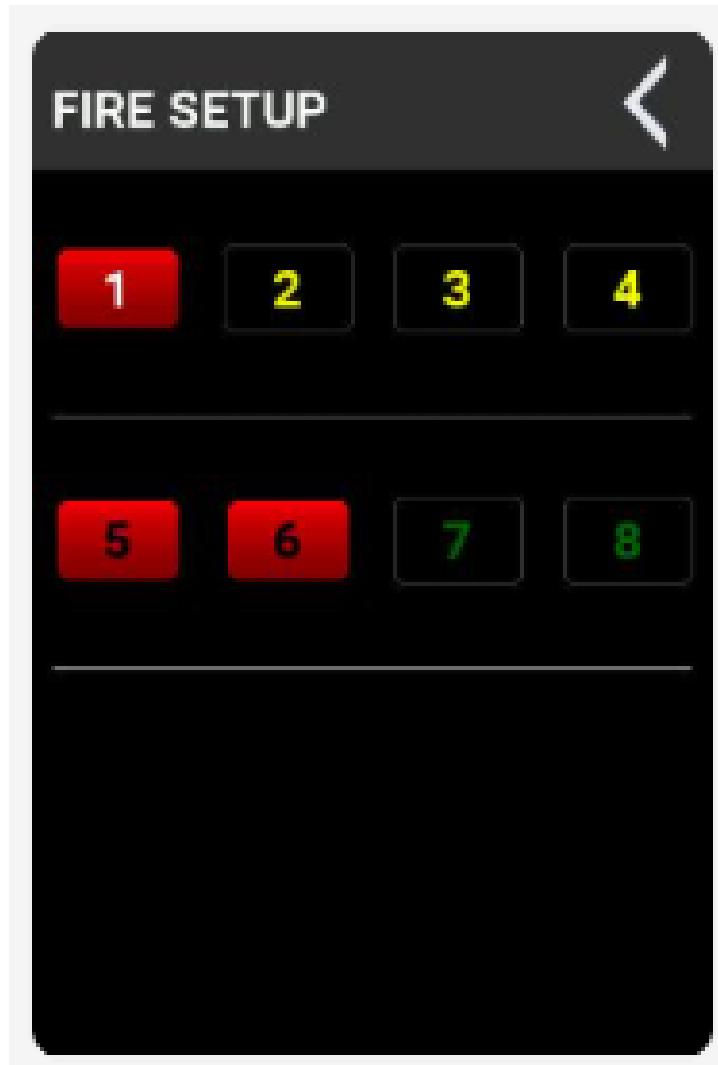
**IMPORTANT: Make sure to turn Dip switch #3 OFF.**

- 6) Exit the Password screen, then re-enter the Password screen and enter the new User or Admin Password.

## Fire Screen

Admin Locked!

This screen allows the user to enable or disable a module channel to either OFF (disabled) or ON (enabled - ON). Press a corresponding module channel to toggle the channel as ON or OFF.

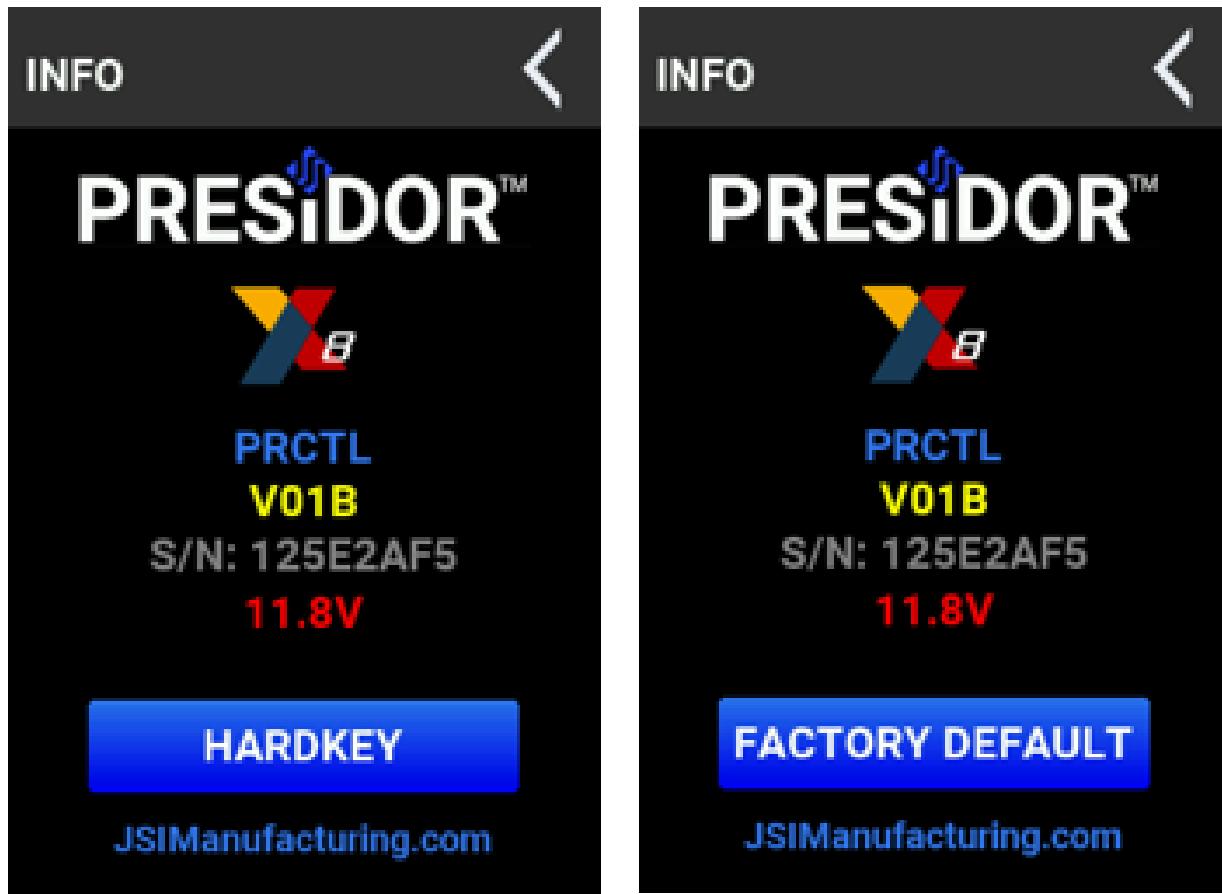


In the above example, Module #1, channel #1 and Module #2, channel #5 & 6 have been enabled as fire input (on the FAN board) is activated, these two channels will come on at FULL.

## Info Screen

Admin Locked!

If the device is Hard Keyed, call JSI for a Hard Key passkey.



If a valid passkey has been entered or the Hard Key has previously been disabled, the INFO screen will show a (FACTORY DEFAULT) button. Factory default will set the following parameters:

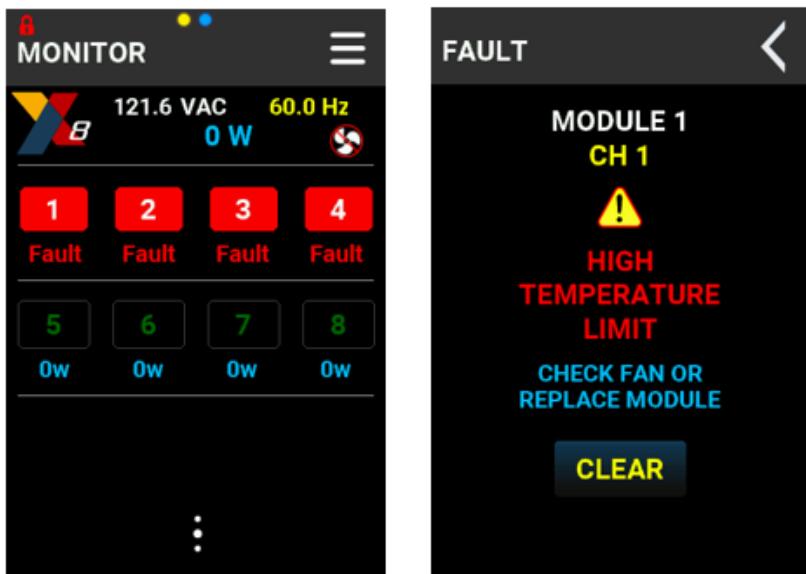
1. Time Format: 12HR
2. DST: Enabled
3. Audio - Volume : Mute
  - TYPE : Click
4. Backlight - Sleep : LO
  - Brightness : High
5. ADMIN PASSWORD : 77285
6. USER PASSWORD : 12345

## Faults Screen

The following table summarizes the Panel fault indications:

MODULE LED FAULT INDICATOR	DIMMER	RELAY
GREEN	NORMAL	NORMAL
FAST FLASHING GREEN	ZERO CROSS FAULT	ZERO CROSS FAULT
FLASHING GREEN	FAULT DELAY	FAULT DELAY
FLASHING YELLOW	OVER-POWER	OVER-POWER
FLASHING RED	SHORT-CIRCUIT	-
FLASHING WHITE	CURVE/TRIP ENABLE	CURVE/TRIP ENABLE
FLASHING BLUE	-	RELAY ON ERROR
FLASHING MAGENTA	INDUCTIVE	RELAY OFF ERROR
SOLID RED	OVER TEMPERATURE	OVER TEMPERATURE
SOLID BLUE	HARKEY	HARDKEY

When a fault occurs, a fault indication will be shown on the PRCTL screen. Clicking on the RED fault button will provide more information on the fault. In the case of a temperature fault as shown below, a possible fan failure will also be indicated.



## Faults Screen

### Module / Controller Communication Fault

Check that the RJ-45 cable's between the PRCTL and PFC Fan board is properly plugged in and that the cables RJ-45 between the PFC Fan Board and all modules is properly plugged in.

### Zero Cross Fault

Module status LED's fast flashing green indicates that NO AC Zero Cross has been detected. This error should normally only show up when the panel AC is turned off and the module is being powered via USB for firmware updates.

### Power Limit Fault

A Power limit fault is indicated by a flashing Yellow LED and occurs when the load to a channel exceeds 600Watt. Check the load on the output and limit the load to 600 Watt.

### Short-Circuit Fault

Dimmer Module short circuit.

A short circuit on a Dimmer Module Channel is indicated by a flashing RED LED. Power down the affected module using the module breaker or panel breaker and troubleshoot the fault.



**NOTE:** When a short circuit fault indication is cleared on the PRCTL, the fault indicator will turn green to indicate a 30 Second fault recovery time.

Relay Module short circuit.

A short circuit on a Relay Module Channel will trip the module breaker and or the Panel breaker

### Inductive Load Fault

The Dimmer Module will turn of the output and indicate an Inductive Load Fault if an inductive load is detected on the output. Troubleshoot and remove the inductive load..

### Over Temperature Fault

Each module has an on-board temperature sensor. An over temperature fault is indicated by a solid RED LED. When the module temperature exceeds 70°C (158°F), the module turns all outputs off until the temperature drops below 60°C (140°F). An over temperature fault may also indicate a FAN failure so check that both fans are operational.

## Faults Screen

### Relay ON / OFF Fault

A relay On fault (flashing blue LED) or relay OFF fault (flashing magenta LED) indicate a relay fault (failure to turn ON or OFF). It may be necessary to replace the faulty relay module. We manufacture with 277VAC 50 Amp Tungsten Relays so there are tons of overhead.

### Hardkey Fault

A HARDKEY fault is indicated by all modules in the panel showing solid blue LED's. Contact JSI to resolve and have the passkey from the PRCTL handy. Please provide the S/N# as below.

