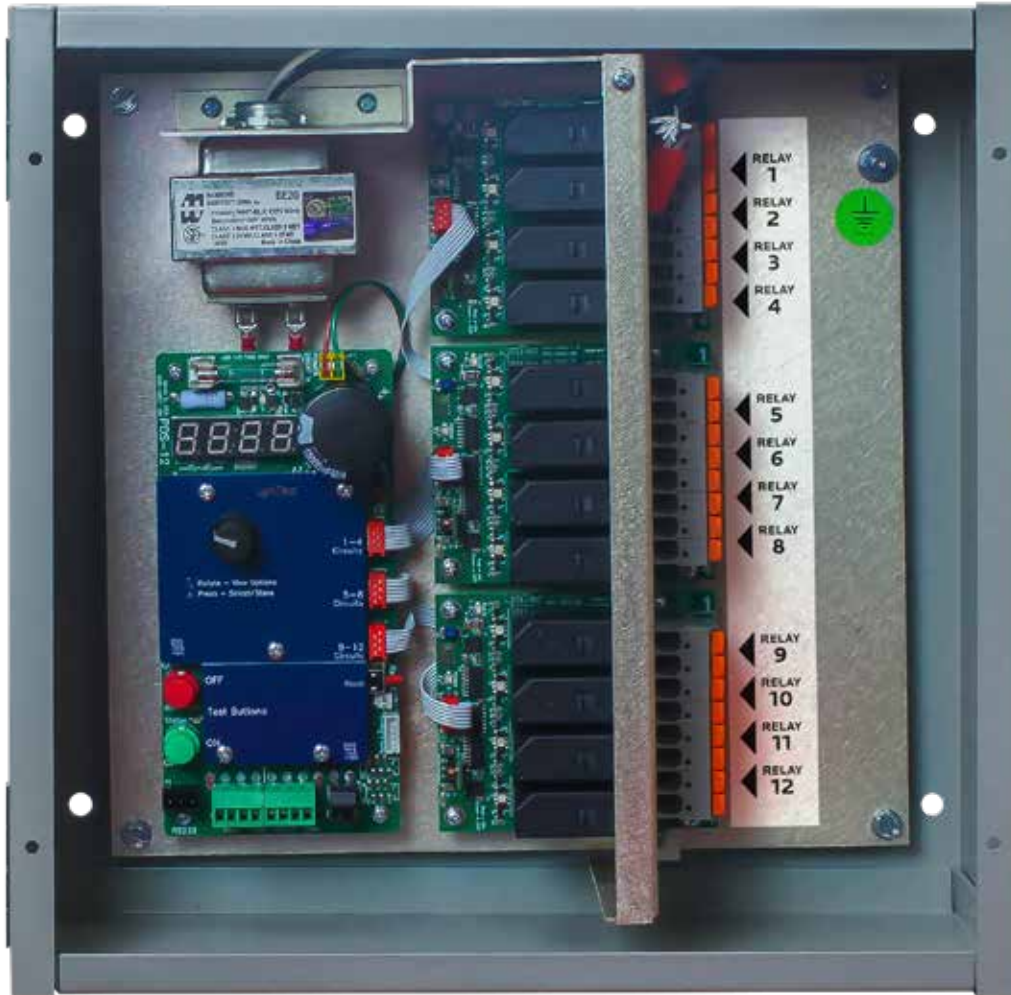


User Manual

# PDS-12

Series Relay Panels



# LynTec

LynTec.com | 800.724.4047

Power Control Simplified

## HAZARD CATEGORIES AND SPECIAL SYMBOLS

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

### **DANGER**

DANGER indicates an immediately hazardous situation which, if not avoided, **will result in** death or serious injury.

### **WARNING**

WARNING indicates a potentially hazardous situation which, if not avoided, **can result in** death or serious injury.

### **CAUTION**

CAUTION indicates a potentially hazardous situation which, if not avoided, **can result in** minor or moderate injury.

### **CAUTION**

CAUTION, used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, **can result in** property damage.

*NOTE: Provides additional information to clarify or simplify a procedure.*

## PLEASE NOTE

Electrical equipment should be installed, operated, serviced and maintained only by qualified electrical personnel. This document is not intended as an instruction manual for untrained persons. No responsibility is assumed by LynTec for any consequences arising out of the use of this manual.

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## Chapter 1--Introduction

### OVERVIEW

This bulletin explains how to install and operate the LynTec Power Delay Sequencer (PDS) relay panel. The PDS-12 can control up to 12 relays. Control signals originate externally from dry contact inputs.

### CONTENTS

Each PDS comes standard with the following components installed:

- PDS Controller
- Power Supply
- Relay Driver to control 4, 8 or 12 relays
- SS-2 Switch Set

Optional additional components include:

- SS-2PL Locking Switch Set (single-gang wall plate)
- SS-2DPL Locking Switch Set (Decora insert)
- SS-2LRP Locking Switch Set (1RU rack plate)
- SS-4LRP Two Locking Switch Sets (1RU rack plate)

## Chapter Two--Safety Precautions

This chapter contains important safety precautions that must be followed before attempting to install, service, or maintain electrical equipment. Carefully read and follow the safety precautions below.

READ AND FOLLOW ALL SAFETY INSTRUCTIONS



### DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

This equipment must be installed and serviced only by qualified electrical personnel.

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- Turn off all power supplying this equipment before working on or inside equipment.
- Always use a properly rated voltage sensing device to confirm that power is off.
- Replace all devices, doors, and covers before turning on power to this equipment.

Failure to follow this instruction will result in death or serious injury.

#### IMPORTANT SAFEGUARDS

When using electrical equipment, basic safety precautions should always be followed including the following:

READ AND FOLLOW ALL SAFETY INSTRUCTIONS.

- Do not use outdoors unless the enclosure is rated for outdoor use
- 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.
- The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
- Do not use this equipment for other than intended use.

SAVE THESE INSTRUCTIONS

## Chapter Three--Quick Start Guide

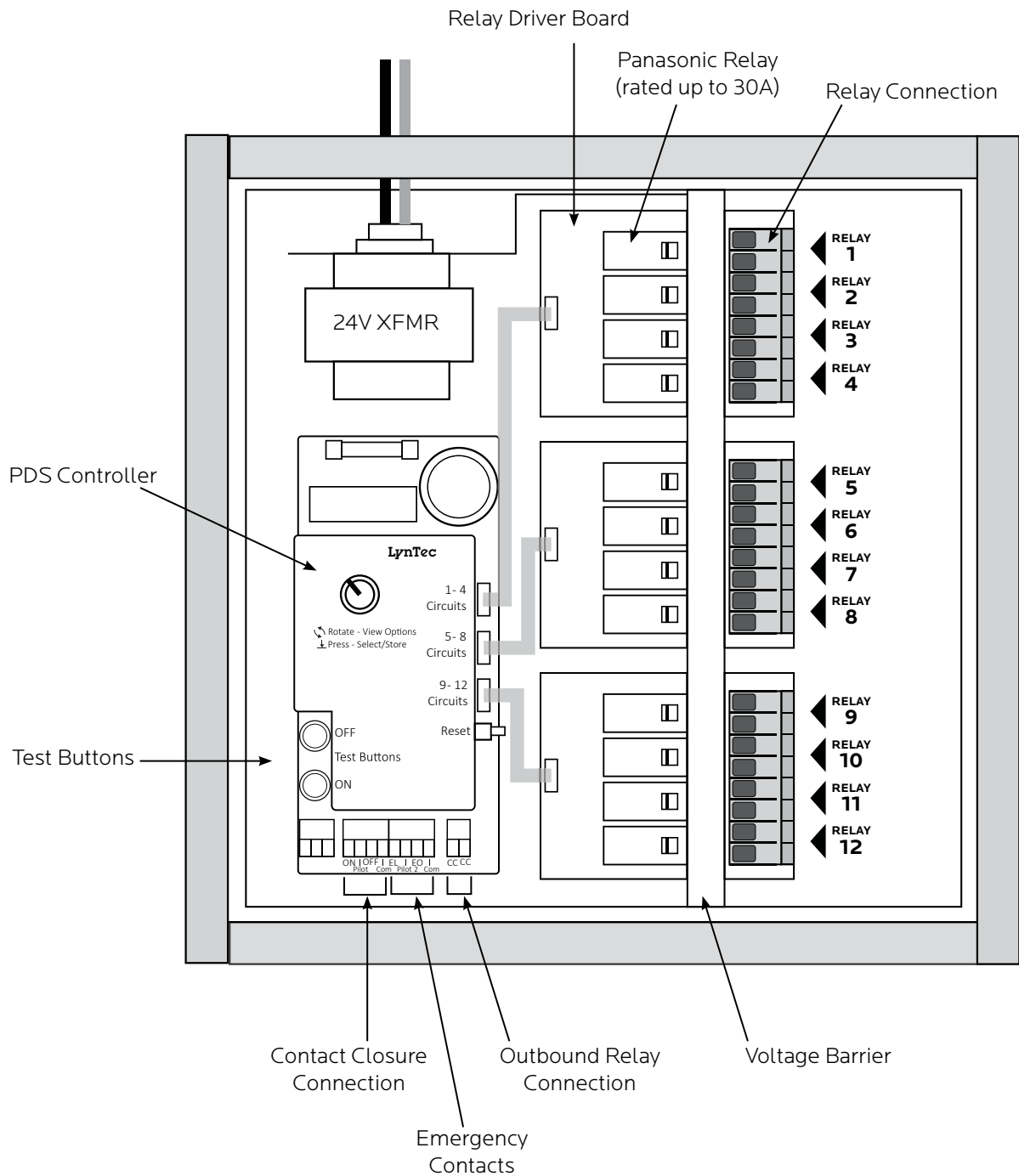
### INTRODUCTION

This chapter is a quick reference listing the steps necessary to install the PDS system. The steps in this chapter are provided as an installation checklist. For complete installation instructions, refer the chapter listed.

Steps	Reference
1. Mount the PDS at your preferred location as allowed by code.	<b>Local Electrical Code</b>
2. Wire the power supply.	<b>Chapter 4--Wiring</b>
3. Wire each individual circuit.	<b>Chapter 4--Wiring</b>
4. Wire contact closures.	<b>Chapter 4--Wiring</b>
5. Complete the relay panel setup.	<b>Chapter 5--Control Setup</b>
6. If your PDS system does not operate as expected, verify that everything is installed and programmed correctly.	<b>Appendix A--Troubleshooting</b>

# Chapter 4--Wiring

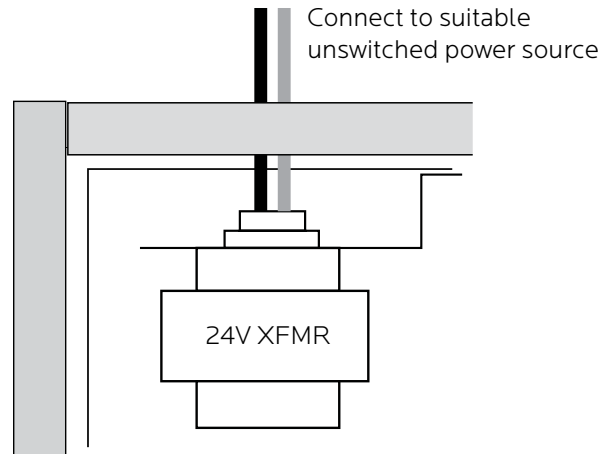
Figure 4-1: PDS-12



**POWER WIRING**

To initially wire the PDS connect the power breaker in your panel to the transformer in the PDS.

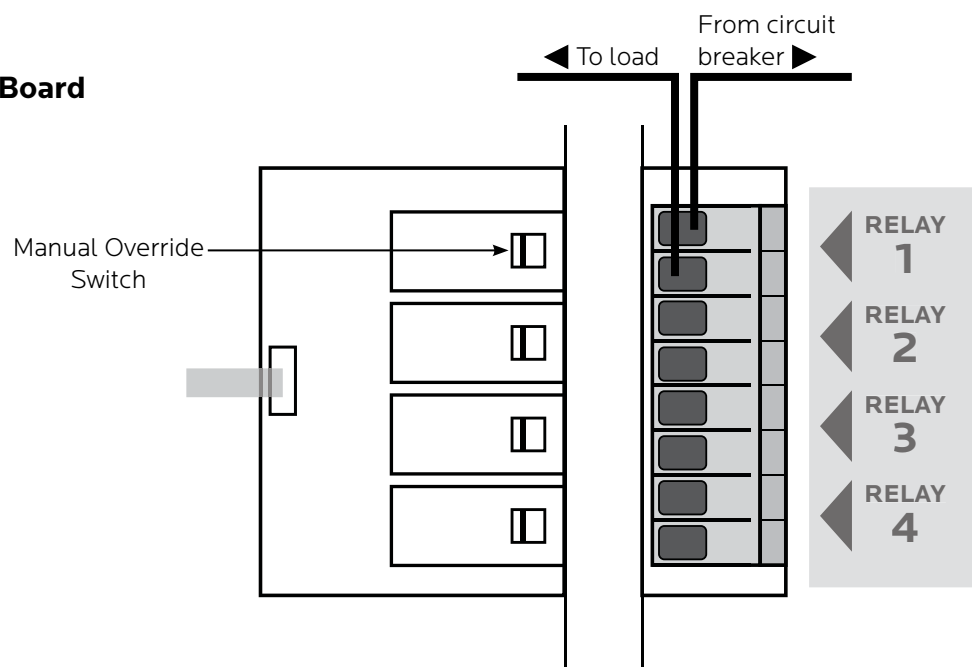
**Figure 4-2: 24V Power Transformer**



**RELAY WIRING**

To wire individual relays, bring the hot from the breaker to the first terminal for the desired relay. Then run another conductor from the second relay terminal to the load.

**Figure 4-3: Relay Driver Board**



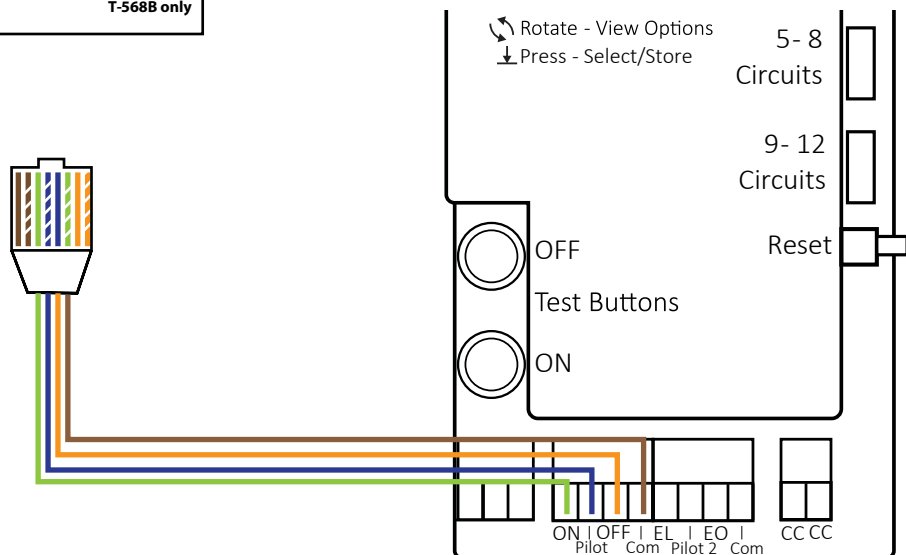
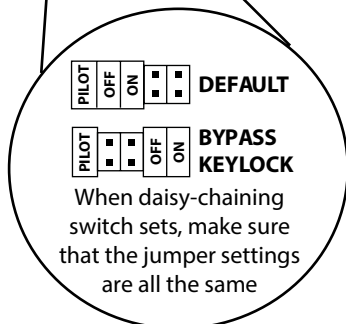
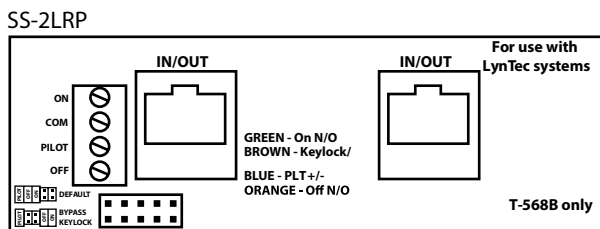
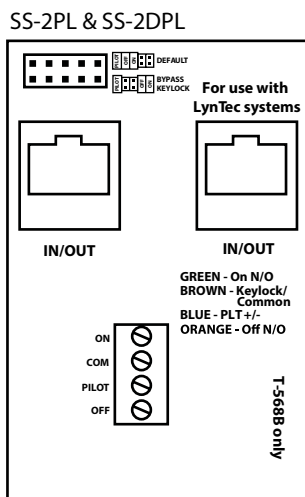
## SWITCH WIRING

### SS-2PL, SS-2DPL, SS-2LRP and SS-4LRP Locking Switch Sets

Using a standard LynTec SS-2PL, SS-2DPL, SS-2LRP or SS-4LRP Switch Set with illuminated ON switch. See Figure 4-4.

**Figure 4-4: Switch Wiring for SS-2PL, SS-2DPL, SS-2LRP and SS-4LRP**

1. Connect at T-568B Cat5 cable to the RJ-45 input on the back of the switch set. Alternately, you may use the provided 4- wire terminal.
2. Connect the green wire from the Cat5 (or the wire from the first terminal switch set terminal strip) to the ON terminal.
3. Connect the brown wire from the Cat5 (or the wire from the second terminal on the switch set) to the OFF terminal.
4. Connect the blue wire (or the wire from the third terminal on the switch set) to the PILOT terminal
5. Connect the orange wire (or wire from the fourth terminal on the switch set) to the COM terminal.



**LynTec SS-2 Switch Set**

Using a standard LynTec SS-2 Switch Set with illuminated ON switch. See Figure 4-5

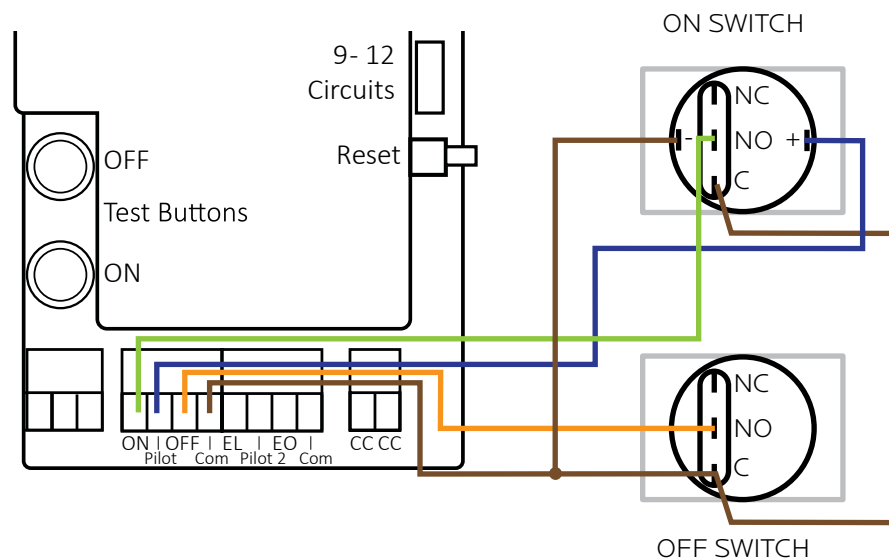
Wire the ON switch to PDS Controller board as follows:

1. Connect the “NO” pin on the ON switch to the “ON” terminal on the PDS Controller.
2. Connect the “+” pin on the ON switch to the “Pilot” terminal on the PDS Controller.
3. Connect the “-” pin on the ON switch to the “Com” terminal on the PDS Controller.

Wire the OFF switch to PDS Controller board as follows:

4. Connect the “NO” pin on the OFF switch to the “OFF” terminal on the PDS Controller.
5. Connect the “C” pin on the OFF switch to the “Com” terminal on the PDS Controller.
6. Jumper the “C” pin on the OFF switch to the “C” pin on the ON switch.

**Figure 4-5: Switch Wiring for SS-2**



## SS-2 and KS-2L Loose Components

Using a standard LynTec SS-2 Switch Set with illuminated ON switch with a KS-2L Lock. See Figure 4-6

Wire the ON switch to PDS Controller board as follows:

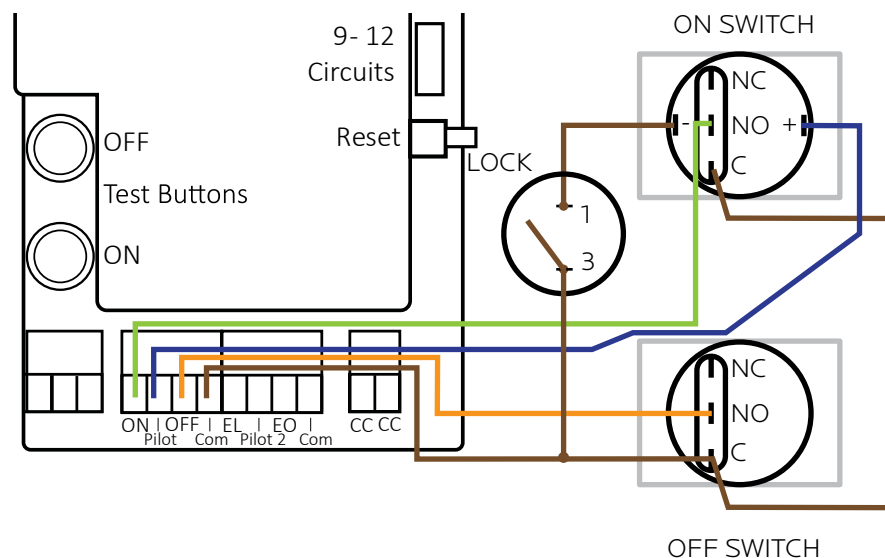
1. Connect the “NO” pin on the ON switch to the “ON” terminal on the PDS Controller.
2. Connect the “+” pin on the ON switch to the “Pilot” terminal on the PDS Controller.
3. Connect the “-” pin on the ON switch to the “1” terminal on the KS-2L. Then connect the “3” terminal on the KS-2L to the “Com” terminal on the PDS Controller.

Wire the OFF switch to PDS Controller board as follows:

4. Connect the “NO” pin on the OFF switch to the “OFF” terminal on the PDS Controller.
5. Connect the “C” pin on the OFF switch to the “Com” terminal on the PDS Controller.

6. Jumper the “C” pin on the OFF switch to the “C” pin on the ON switch.

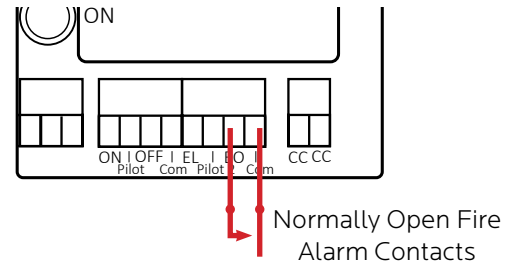
**Figure 4-6: Switch Wiring for SS-2 with KS-2L**



**Emergency Override Wiring**

From the fire alarm unit or latching Emergency Shutoff switch, wire the Normally Open (NO) contacts to the “EO” and “Com” positions on the PDS Controller.

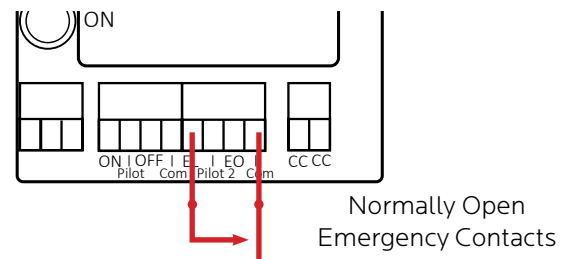
**Figure 4-7: Wiring for Emergency Override**



**Emergency Lighting Wiring**

From the fire alarm unit or latching Emergency Lighting switch, wire the Normally Open (NO) contacts to the “EL” and “Com” positions on the PDS Controller.

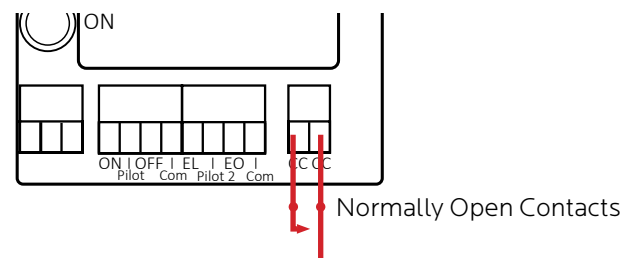
**Figure 4-8: Wiring for Emergency Lighting**



**Completion Contact Wiring**

From the desired unit, wire the Normally Open (NO) contacts to the “CC” and “CC” positions on the PDS Controller.

**Figure 4-9: Wiring for Completion Contacts**



## **INITIAL POWER UP PROCEDURE**

With the circuit breaker panel door open and breakers visible, turn on the Controller Power 15 Amp circuit breaker.

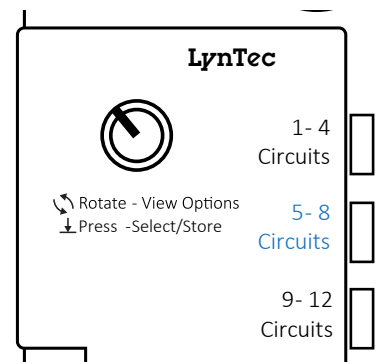
The red "Status" LED should illuminate on the PDS Controller and "LynTec PDS-12" will scroll across the screen.

Use the red and green test buttons to test operation.

## Chapter 5--Setup

PDS-12 setup is achieved via a dial on the PDS Controller. The dial is rotated to view options and pressed to select and store options. The dial can rotate left or right and also be pressed in for menu selection and control. The screen will timeout after 30 seconds and clear anything not saved.

**Figure 5-1: PDS Controller Dial**



## MENU OPTIONS

### Circuit Select Menu

The Circuit Select Menu will appear any time changes are made to individual circuits. All circuit LEDs will go Green except the selected circuit which will alternate between red & green.

When the desired circuit has been selected, press the dial to move to the next option for that circuit.

On menus where the circuit ON/OFF is selected, green designates OFF & red designates ON.

To save changes, press the dial in for 2 seconds to ensure all changes are saved to memory. "SAVd" will display on the screen when saving is complete.

### Step Menu (StEP)

This feature changes all circuit delays to the same time interval. The default interval is 0.2 seconds. PLEASE NOTE: this menu will clear any individual circuit delays.

On press it the screen will blink the current step rate. Rotating the dial left or right will cycle through the available step rates in seconds (0.1 to 500 secs).

Press to save the selection and return to main menu.

## **Delay Menu (dELy)**

This feature changes the circuit delay for any individual circuit. Pressing the dial will activate the Circuit Select Menu. After the desired circuit is selected, rotate left or right to cycle through individual delay options from 0.1 to 500 seconds.

Press to save the selection and return to main menu.

## **Brownout Menu (bo)**

This feature changes the circuit state for circuits during a under-voltage (brownout) or over-voltage condition. The default setting is all circuits set to turn off during either voltage condition. all OFF.

Pressing the dial will activate the Circuit Select Menu. The current setting for the selected circuit will be displayed. Press the dial to change the state. Rotating left will select "OFF" and right will select "ON"

Press to save the selection and return to Circuit Select Menu.

When all changes to individual circuits have been made. Press to save the selection and return to main menu.

## **Emergency Override Menu (Eo)**

This feature allows you to select which individual circuits should turn off in the event of an emergency.

Pressing the dial will activate the Circuit Select Menu. The current setting for the selected circuit will be displayed. Press the dial to change the state. Rotating left will select "OFF" and right will select "ON"

Press to save the selection and return to Circuit Select Menu.

When all changes to individual circuits have been made. Press to save the selection and return to main menu.

### Completion Relay Menus (C on & CoFF)

These two menus allow you to select which individual circuits trigger the completion relay. The default ON circuit is the last circuit and the default OFF circuit is the first circuit.

Pressing the dial will activate the Circuit Select Menu. Rotate the dial to select the desired circuit. The current setting for the selected circuit will be displayed. Press the dial to change the state.

Press to save the selection and return to Circuit Select Menu.

When all changes to individual circuits have been made. Press to save the selection and return to main menu.

### Nominal Voltage Selection Menus (VrnG & VoLt)

These menus allow you to set the nominal voltage for under-voltage (brownout) or over-voltage monitoring.

The VrnG menu sets the voltage range. Exact voltages are selected in the next menu. Press to open the VrnG menu and turn the dial to select 120C, 240V or 277V as the voltage range.

Press to save the selection and return to main menu.

The VoLt menu allows to refine the nominal voltage within the selected range. For example, in the 120V range, you may choose any nominal voltage between 100V - 130V in 1 volt increments. See table 5-1 for ranges and increments.

Press to save the selection and return to main menu.

**Table 5-1: Voltage Settings**

Setting	Range	Increment
120V	100V - 130V	1 volt
240V	200V - 260V	5 volts
277V	232V - 302V	5 volts

## **Emergency Relay Menus (EoCC & ELCC)**

The default relay type for EL and EO features is Normally Open. You may change the type to Normally Closed in these menus.

Press the dial to display the current setting. Rotate to change the setting.

Press to save the selection and return to main menu.

## **Brownout Enable/Disable (boEn)**

This feature allows you to enable or disable the brownout (under or over-voltage) protection. The default setting is ENABLED. To disable, press to open the menu, then rotate.

Press to save the selection and return to main menu.

PLEASE NOTE: If brownout is disabled, the start up voltage check is also disabled. The normal start time requirement for this is 5 seconds. Control is only possible after this check is complete. Disabling Brown out removes this start up time check, enabling it conversely ensures that voltage is good before making changes.

## **Display Brightness (brGt)**

This menu changes the brightness of the display. The screen will not blink, but left/right will decrease/increase the brightness in real time.

Press to save the selection and return to main menu.

## **Factory Reset (rSEt)**

To reset the PDS-12 to factory settings press the dial to confirm.

This action restores everything to default configuration. All settings will be lost. The PDS-12 will automatically restart.

## **Information Menu (InFo)**

This menu shows the current firmware version of the PDS-12.

Press to return to main menu.

## **Test Menu (teSt)**

When pressed, circuit 1 will turn on. Turn the dial to the right will turn OFF circuit 1 and then turn ON circuit 2 at a half second interval. This will repeat for as many circuits as are installed. Turn the dial to the left to reverse the circuit OFF / ON sequence.

This will NOT time out. A second press of the encoder button is required to end the TEST mode.

Press to return to main menu.