Pelican Wireless Systems

Installation Guide

POWER CONTROL MODULE / PM5-120/240

System Components

Wireless Control Module a wall mounted antenna to be placed in a location which can easily transmit and receive wireless signals.

Power Relay Module mounted and installed in a high voltage rated electrical box. Schedulable relays for switching On/Off electrical loads.

⚠ Caution ⚠

Failure to follow these instructions can damage the product or cause a hazardous condition. Disconnect power during the installation of this product. All wiring must conform to local codes and ordinances. We strongly recommend that any installation or servicing be performed by a qualified individual.

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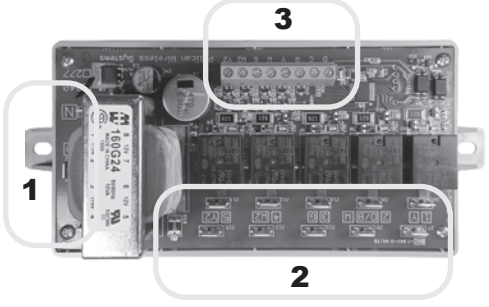
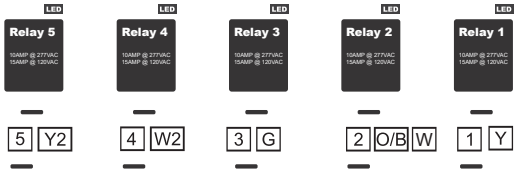
1. Power Relay Module Installation

The power relay module can either be mounted inside an electrical sub panel with circuit breakers or in its own dedicated electrical box. Mounting tabs are provided on each end of the module. The module should be securely fastened to the inside of the electrical box using the mounting tabs and screws. Each relay on the module has a green light to indicate when it is active. There is also a single green status light located next to the low voltage terminal block indicating the status of communications with the wireless module.

Diagram 1



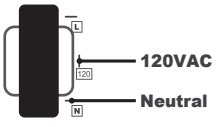
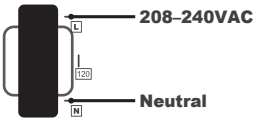
2 Dry Contact Relays



There are (5) sets of relay connections. Each connection is independent and can operate at different voltages and currents. The dry contacts are rated to 120VAC@15AMPS and 240/277VAC @10AMPS. Each relay operates as a mechanical on/off switch and is intended to control the LINE side of the circuit.

1 Power Options

The module can be powered by <u>either</u> 120VAC or 208-240VAC.

120VAC	208–240VAC
	

If using 120VAC, connect the 120VAC line to the terminal labeled “120” and Neutral to the terminal labeled “N”. If using 208-240VAC, connect the power wires between “L” and “N” (do not use the “120” terminal). The input power is reduced to 24VAC to provide isolated power to the relay control circuit and the wireless control module. A built-in auto-reset fuse limits current to 0.3 Amps to provide short circuit protection for the control interface.

3 Control Interface

There are (8) screw terminals on the relay module. The terminals labeled R, C, and D are used to connect the relay module to the wireless control module. 18 to 24 gauge wire is recommended for this connection. Terminal functions are as followed: D – Data/Communication, R – 24VAC supply power, C – Common Wire (Diagram 2).

⚠WARNING DO NOT USE THE 24VAC OUTPUT TO POWER ANY OTHER DEVICES.

2. Wireless Control Module Installation

The Wireless Control Module has a wireless antenna used to bridge communication between the Pelican Wireless Mesh Network and the Power Relay Module installed at the site, linking the Power Control Module to the Pelican Energy Management System (Web App). The Wireless Control Module also stores/contains all configuration and scheduling information for proper management of the Power Relay Module. The Wireless Control Module has a built-in repeater which will help extend the range of the Pelican Wireless Mesh Network.

⚠ WARNING NEVER INSTALL THE WIRELESS CONTROL MODULE IN A METAL ENCLOSURE. WIRELESS CANNOT COMMUNICATE THROUGH METAL.

1 Mounting

Mount the Wireless Control Module on a wall away from metal objects which will cause wireless interference.

2 Communication Wire

Once attached to the wall, run a three wire cable between the Wireless Control Module and the Power Relay Module using standard unshielded thermostat wire or 18-24 gauge wire. Wire can be up to 500 feet in length. The Wireless Control Module's bottom terminal block has three connections labeled R, C, D. Connect these three terminals to the same designated low voltage terminals on the Power Relay Module. The Wireless Control Module's terminals are spring cage connected. The wires should first be stripped to expose 1/4" of wire. Each terminal has a release slot and a round hole. Insert the exposed wire end into the round hole and it will be held in place by the internal spring cage.

To remove an already inserted wire, use a small flat blade screw driver and inserted it into the release slot. This will open the spring cage allowing for the wire to be removed.

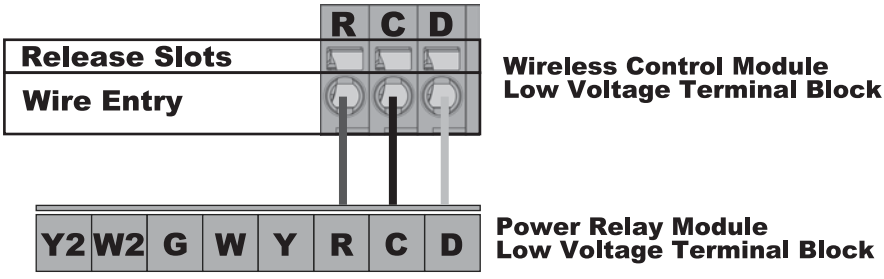


Diagram 2

Wireless Control Module LED Lights

The wireless module has two green LED lights which indicate power, communication status, and wireless network status.

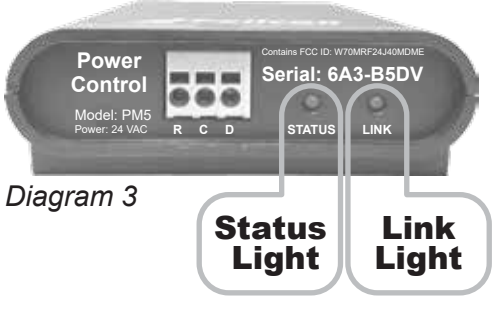


Diagram 3

Status Light

Off	No Power
Blinking	Attempting to communicate with the Relay Module
Solid	Good communication with Relay Module

Link Light

Off	No wireless network detected
Blinking	Establishing Internet connection
Solid	Active wireless communication

3. Configuration

All of the configuration settings can be made through the Pelican Site Manager Web Application. Configuration can be found under the Admin section. Each Power Module will be listed with it's serial number and the label Power Setup.

NOTE: To assist in configuring this unit write down the Serial Number, which is found on the front of the Wireless Control Module. Keep note of which circuit each relay is connected to. This information will be used during the setup process.

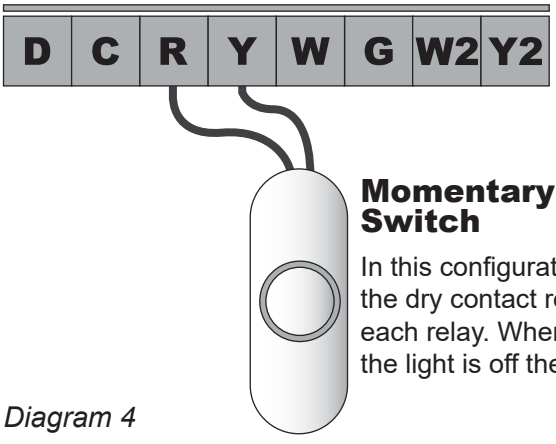
2. Access your Pelican Web App. Select “Notifications” and select the “configure” option next to the newly installed Power Control Module’s serial number.

3. Each “Relay” can be uniquely named based on the load/function it will be turning On and Off. Set unused relays to “Disabled”.

4. To set relay schedules, navigate to your Pelican Web App’s home screen. Select the relay Group and then select the calendar icon of the relay. You can schedule the relay to turn On or Off at specific times or relative to Dusk and Dawn.

Optional: Manual Override Function

There are (5) low voltage terminals on the Power Relay Module labeled Y, W, G, W2, Y2. These can optionally be used to manually turn relays On and Off. To use this feature, run a two wire cable between the Power Relay Module and a momentary pushbutton switch. Connect one wire to the "R" terminal and the other wire to the input terminal correlating with the relay to be manually switched. Each time a one second momentary connection is made between these two wires, the correlating dry contact relay will change between On and Off. These manual inputs operate at 24VAC with very low current. The pushbutton switches can be located up to 500 feet from the Power Relay Module. 18 to 24 gauge wire should be used for these connections.



Momentary Switch

In this configuration, pressing the momentary switch will switch the dry contact relay labeled (Y). There is a LED light above each relay. When the light is ON the relay is energized. When the light is off the relay is not energized.

Diagram 4

Advanced: Integration with Thermostats

Power Control Module relays can be synchronized with the operation of your Pelican Thermostats. For example a pump, valve, boiler, cooling tower, and/or chiller connected to a relay can be energized based on actual thermostat demand. For integration assistance please contact Pelican Technical Support by calling 888-512-0490 or email support@pelicanwireless.com.

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