



6 CHANNEL TIME SWITCH

INSTALLATION & OPERATION GUIDE

OVERVIEW:

The Powerbox® 6-Channel Timer is an advanced timing device that allows you to control six independent electrical devices from one synchronized time clock, with up to 100 combined timing programs.

You can program and operate the timer through its native user interface, or more conveniently via BlueTooth Smart® with an iOS App that is available for free via the Apple® App Store.

Unlike a complicated PLC, the Powerbox® 6-Channel Timer is easy to operate, with no programming knowledge necessary.

Each timed channel has a dedicated 8-Amp, single-pole relay, for switching electrical loads. For switching larger 2 and 3 pole loads, the timer can be used to trigger contactor relays. Use this device to control virtually any compatible electrical load, such as lights, pumps, fans, motors, solenoids, and more.

The one-second resolution ability of the timer's programs allows for extremely flexible and precise timing routines to control virtually any device with absolute accuracy and precision. There is no other device like it available anywhere!

SUMMARY OF FEATURES:

- Six Independent programmable channels
- Capacity of up to 100 total programs
- One second program time resolution
- Six onboard relays with 8A capacity each
- Stores time and programs for 10 days during power outage
- Native UI for programming and operation
- BlueTooth Smart® enabled
- iPhone/iPad App for convenient programming and operation
- Green backlit LCD display and green channel on/off indicator LED's
- Wide range of operating voltages of 90-250VAC
- Removable terminal blocks for easy wiring
- DIN rail mountable
- Removable front cover to protect display and buttons in harsh environments
- Powered by an ARM processor
- Designed and manufactured in California

INSTALLATION & WIRING:

The Powerbox® 6-Channel Timer is equipped with finger-safe removable terminal blocks to make wiring easy and efficient. You only need a few basic tools to perform all of the wiring tasks.

TOOLS NEEDED:

- *Small Flat Blade Screwdriver
- *Wire Cutters
- *Wire Strippers

MAIN OPERATING VOLTAGE:

The Powerbox® 6-Channel Timer requires a main operating voltage of between 90 to 250 Volts AC, 50/60Hz, to power its essential functions. This wide operating voltage range allows the device to function on most power systems worldwide. The main input power for device operation is independent of, and not related to, the power switched by the six onboard relay channels.

Connect your main input voltage wiring to the two position terminal block, by first removing the terminal block from the device and then connecting the two supply wires to the terminal block. See **FIGURE 1**. Strip the end of the supply wires approximately 3/16", loosen the screws on the terminal block, insert the

wires and tighten the screws.

FIGURE 1



Insert supply wires into terminal block and tighten screws.

It is recommended to use 16 to 20 AWG wire rated for the appropriate input voltage you intend to supply. Main input voltage can consist of LINE + NEUTRAL or LINE + LINE voltage phases. After connecting the two supply wires to the terminal block, carefully connect the opposite ends of these wires to the supply voltage. Next, plug the terminal block back into the device and you will see the display initialize.

DEVICE CONTROL WIRING:

The Powerbox® 6-Channel Timer contains six single-pole relays that are rated for up to 8 Amps each at up to

250VAC, or 24VDC. It is recommended that you have basic wiring knowledge before attempting to wire this device, or hire a professional to install it, otherwise damage to the device, or personal injury could occur.

Single-pole relays function by opening the connection (breaking line voltage) to turn a connected device off, and closing the connection (making line voltage) to turn a connected device on. The neutral, or common, wire remains unbroken. This type of operation is suitable for switching on and off devices that operate with two wires, where one wire is the line voltage, and the other wire is the neutral, or common. For switching loads where there are two or more line voltage phases, then you must use an additional contactor-type relay with the appropriate number of poles to match the line voltages you are switching. In cases such as this, the Powerbox® 6-Channel Timer is used to trigger the coil of the contactor relay that is switching multiple line voltage phases.

See **FIGURE 2** for a diagram of how to wire device loads with two wires consisting of a LINE + NEUTRAL.

Each channel (1 thru 6) has two terminal connection points marked '1' and '2'. For any given channel, terminal connection point '1' accepts the source line voltage and terminal connection point '2' connects to the load. In other words, terminal connection point '1' is voltage coming in, and terminal connection point '2' is voltage going out. When a given channel is turned on, the relay connection closes and allows the source voltage to supply the load, turning the connected device on. When a given channel is turned off, the relay connection opens and supply voltage to the load is cut off, turning the device off. The neutral connection for the device remains unbroken.

Each channel can operate on a different voltage if desired, or all channels can operate on the same voltage. When all channels are operating on the same voltage and loads are

within acceptable limits, a single voltage supply line can be bridged across each of the incoming supply line channels on the device, as illustrated in FIGURE 3.

For switching loads with multiple line voltage phases, such as 2 or 3 phase loads, use the Powerbox® 6-Channel Timer to trigger a contactor-type relay

that will accommodate the appropriate number of poles for the line voltages that you are switching. For this type of configuration, see FIGURE 4 for wiring instructions.

When making your connections, you can remove the terminal block from the device for more convenient access.

FIGURE 2 - Standard connection

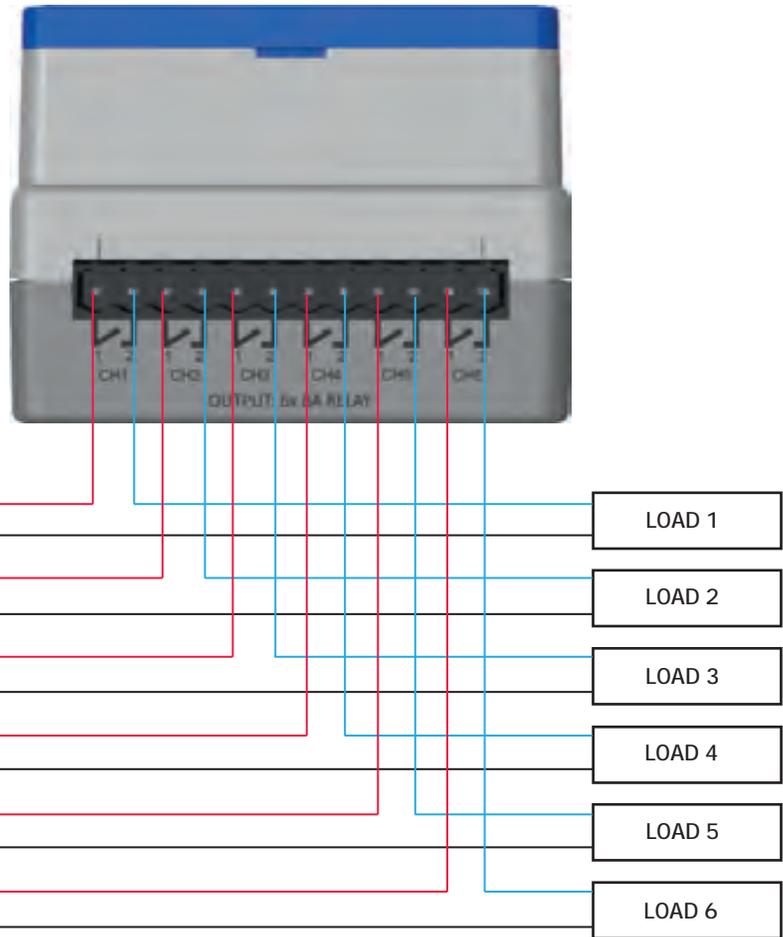


FIGURE 3 - Standard bridged connection

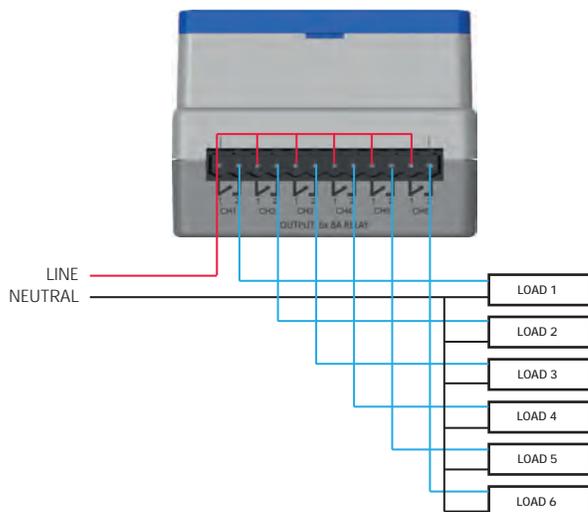


FIGURE 4 - Triggering a contactor for multi-pole loads

