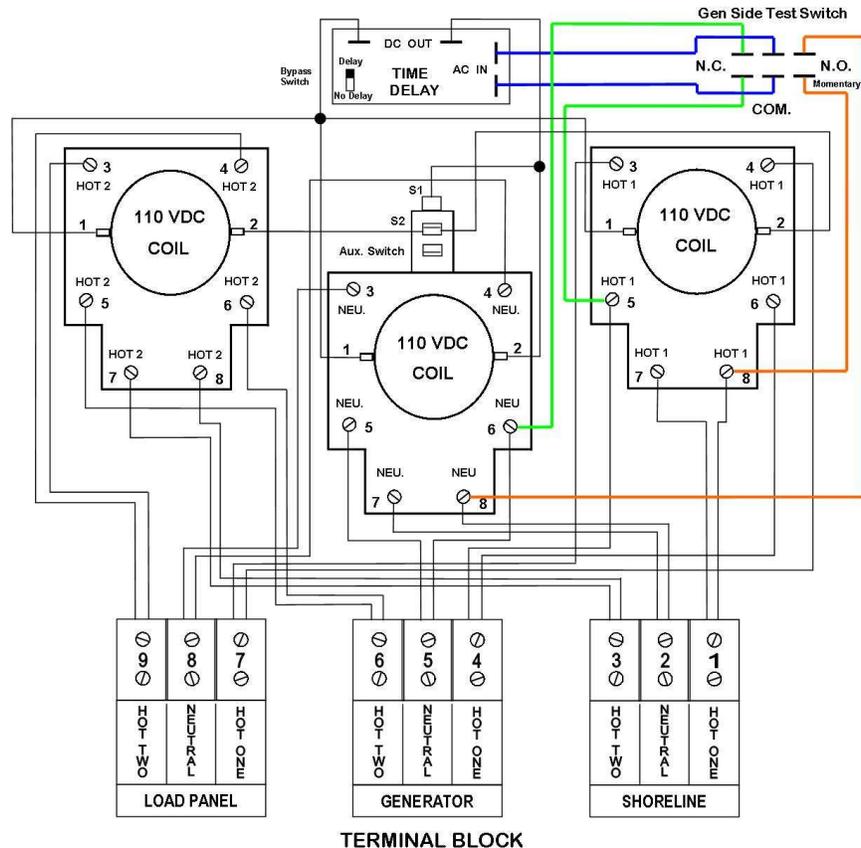


LPT100 - Theory of Operation



Relay Terminals:

- 1 & 2 - Coil
- 3 & 4 - Common (Control Panel)
- 5 & 6 - Normally Open

The LPT100 is intended for use as an electrical transfer switch to automatically switch multiple sources from one to another, such as switching from Shoreline to Generator power.

In operation, the Shore power (house current) is supplied to terminals 1, 2 and 3 (HOT 1, Neutral and HOT 2) of the Terminal Block assembly. Because this switch uses DPDT relays for switching, the Shore power appears at the Control Panel output terminals 7, 8 and 9 (HOT 1, Neutral and HOT 2) through the normally closed contacts of the relays. The relays do not have to be energized.

Generator (or auxiliary) power is supplied to terminals 4, 5 and 6 (HOT 1, Neutral and HOT 2) of the terminal block assembly. When the Generator is energized, 110 VAC (nominal) is applied to the AC input terminals (J3 and J4) of the Time Delay/Driver pc board from the NC terminals of the Generator Test Switch.

The Time Delay/Driver board converts the AC input voltage into a DC voltage to power the DC relays. After 22 seconds (nominal), a DC voltage is available at the DC output terminals (J1 and J2). **NOTE** – the time delay portion of the Time Delay/Driver board can be defeated via a SPST switch located on the pc board. This allows for instant switching from Shore power to Generator power when Generator power is applied to the pc board input terminals.

The DC (-) voltage (J1) is connected directly to terminal 1 on all three relays. The DC (+) voltage (J2) is connected to terminal 2 on the Neutral relay and to terminal S1 on the Auxiliary switch attached to this relay. Terminal S2 connects to terminal 2 on both HOT relays. This is done to make sure the Neutral relay is energized before the HOT relays can energize.

When the Generator is shut down, the DC voltage is removed and the relays return to their normally closed state supplying Shore power to the Control Panel.

Generator Test Switch - In normal mode, the Generator Hot 1 & Neutral lines (Green) are passed to the time delay through the NC switch contacts. When the switch is depressed, the Shoreline Hot 1 and Neutral lines (Orange) are passed to the time delay through the NO switch contacts. After 30 seconds (nominal), the Generator contacts will energize. When the switch is released, the switch returns to normal mode and the Generator relays de-energize.