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Touch-Plate[®]
Lighting Controls
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ZONES[®] - LT



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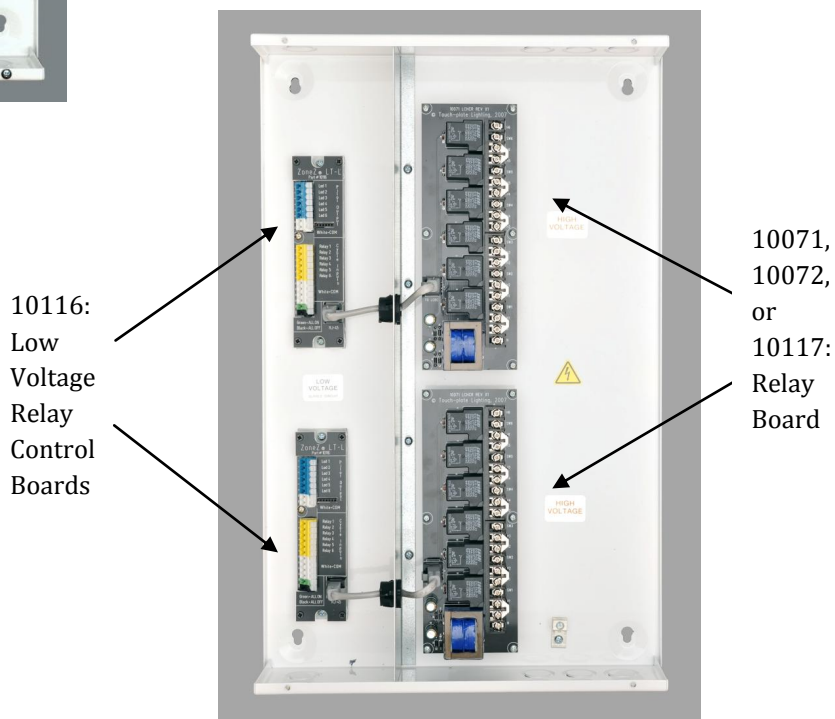
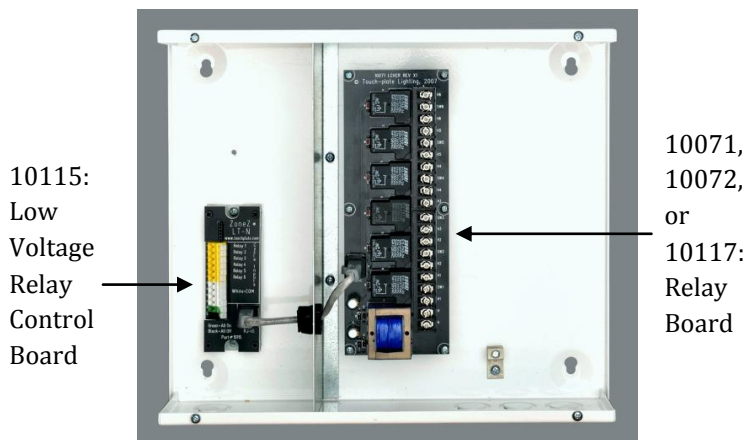
Locating Items in the Panel

Figure 3.1 shows an entire ZoneZ-LT-N panel with 6 relays. The Relay Board is labeled 10071 or 10072. Each Relay Board has 6 relays and a Power Supply mounted on it.

The Low Voltage Relay Control Board is labeled 10115. It can control up to 6 relays and provides “All Off” and “All On” functions. In the panel the Low Voltage Relay Control Board(s) are almost always on the left side of the panel and the Relay Board(s) are almost always on the right side of the panel.

Figure 3.2 shows an entire ZoneZ-LT-L panel with 12 relays. The Relay Board is labeled 10071 or 10072. Each Relay Board has 6 relays and a Power Supply mounted on it.

The Low Voltage Relay Control Board is labeled 10116. It can control up to 6 relays and provides “All Off” and “All On” functions. The ZoneZ-LT-L also allows for LEDs capabilities. In the panel the Low Voltage Relay Control Board(s) are almost always on the left side of the panel and the Relay Board(s) are almost always on the right side of the panel.



Retrofitting an Existing System

READ ALL INFORMATION TO COMPLETE A SUCCESSFUL INSTALLATION.

PRECAUTIONS: TO INSTALL A NEW RELAY PANEL, MAKE SURE TO TURN OFF POWER AT THE CIRCUIT BREAKER BEFORE REMOVING OR REPLACING ANY PARTS. BE SURE TO DISCONNECT AND REPLACE ANY EXISTING CONTROL STATION THAT HAVE PILOT LIGHTS / LAMPS BEFORE BRINGING POWER TO THE UPDATED RELAY PANEL.

Use the following instructions for disconnecting and removing parts in the existing system.

1. Label all wires- VERY IMPORTANT AND VITAL FOR A SUCCESSFUL INSTALLATION
 - a. Wires that need to be labeled are:
 - i. Low Voltage Switch Leg from the Control Station to the Relay (1550/2500/3000/4000) – Figure 4.2
 - ii. Common Wire from the Control Station to the Transverter (TVR-1/TPS-0120)-Figure 4.3
 - iii. Common Wire from the Control Station to the Pilot Light Transformer (PL-6/TPS-2001)*
 - iv. Wire(s) from the Breaker Panel to the Transverter (TVR-1 / TPS-0120)-Figure 4.4
 - v. Wire(s) from the Breaker Panel to the Lighting Load-Figure 4.4
2. Disconnect the Transverter (TVR-1 / TPS-0120)
3. Disconnect the Line Voltage from the relay (2 wires from the base of each relay)
 - a. Many times the ‘Hot’ wires are together
4. Disconnect the Low Voltage from the relay (Red and Brown wire from the coil)
5. Disconnect the Pilot Light Transverter from the Lighting Load and the Control Station(s)
 - a. The line voltage wires connected to the Pilot Light Transverter are no longer needed
6. Remove the enclosure with all Relays, Transverter, and Pilot Light Transformer(s) disconnected
 - a. If re-using the enclosure, only remove the Relays, Transverter, and Pilot Light Transformer(s)

See Figures 4.1 – 4.5 for visual explanations

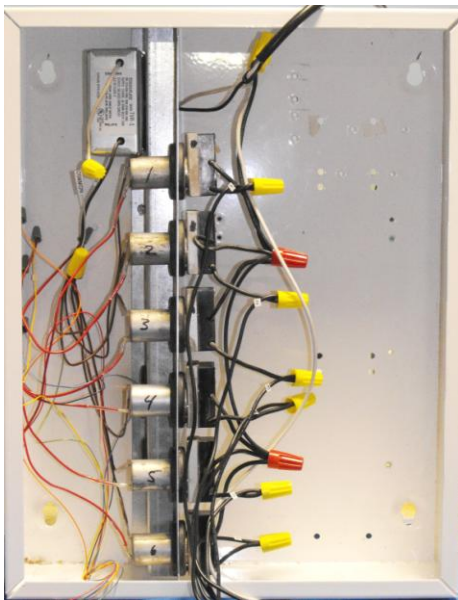


Figure 4.1
Shown: 6 Relay Panel made up of 2500B Relays and TVR-1 Transverter

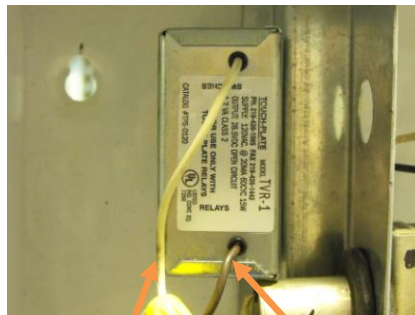


Figure 4.2
Label the Wires Indicated
Wire connected to White wire: Switches
Wire connected to Brown wire: Relays

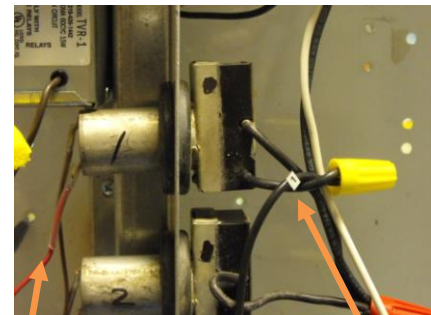


Figure 4.3
Label the Wires Indicated
Wire connected to Black Base Wire: Hot
Wire connected to Red Coil Wire: Switch Leg

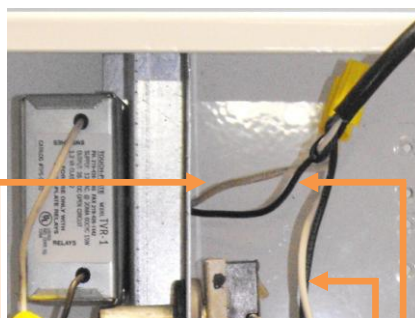


Figure 4.4
Label the Wires Indicated
White wire from Breaker: Neutral
Black wire from Breaker: Hot
White wire to Load: Neutral

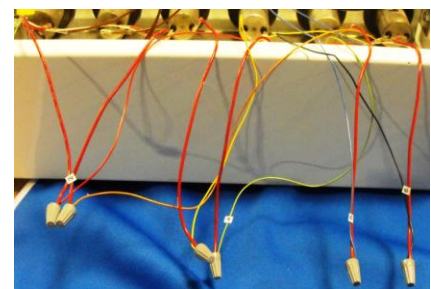


Figure 4.5
Label the Wires Indicated
Colored wires from the Switch:
Red, Orange, Yellow, Green, Blue, Black
Colors may vary in each application

Introduction to the Low Voltage Relay Control Board (10115 / 10116)

Figure 5.1 shows a Low Voltage Relay Control Board labeled 10115. The low voltage switch control portion is comprised of: 6 Yellow cage-clamp connectors, 4 White cage-clamp connectors, 1 Green cage-clamp connector, and 1 Black cage-clamp connector.

The Yellow connectors are the individual switch inputs for relays 1 through 6.

The White connectors are All Switch Common – it does not matter which one is used during the installation, there are 4 to help keep the wiring easier and cleaner.

The Green connector is ALL ON for the 6 relays directly connected to the low voltage board.

The Black connector is ALL OFF for the 6 relays directly connected to the low voltage board.

Figure 5.2 shows a Low Voltage Relay Control Board labeled 10116. This control board has LED capabilities. The low voltage switch control portion is comprised of: 6 Yellow cage-clamp connectors, 4 White cage-clamp connectors, 1 Green cage-clamp connector, and 1 Black cage-clamp connector.

The Yellow connectors are the individual switch inputs for relays 1 through 6.

The White connectors are All Switch Common – it does not matter which one is used during the installation, there are 4 to help keep the wiring easier and cleaner.

The Green connector is ALL ON for the 6 relays directly connected to the low voltage board.

The Black connector is ALL OFF for the 6 relays directly connected to the low voltage board.

The LED control portion is comprised of: 6 Blue cage-clamp connectors and 2 White cage-clamp connectors.

The Blue connectors are the individual LED inputs for LEDs 1 through 6.

The White connectors are ALL LED common – it does not matter which one is used during the installation, there are 2 to help keep the wiring easier and cleaner.

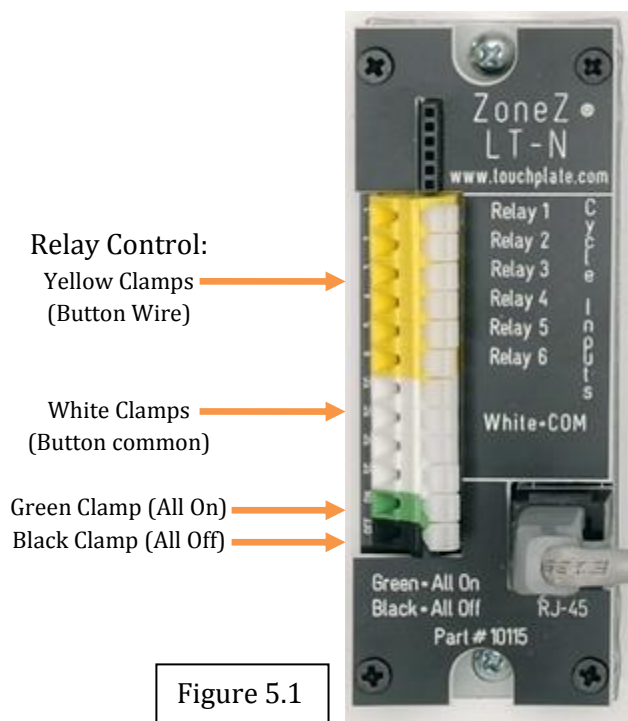


Figure 5.1

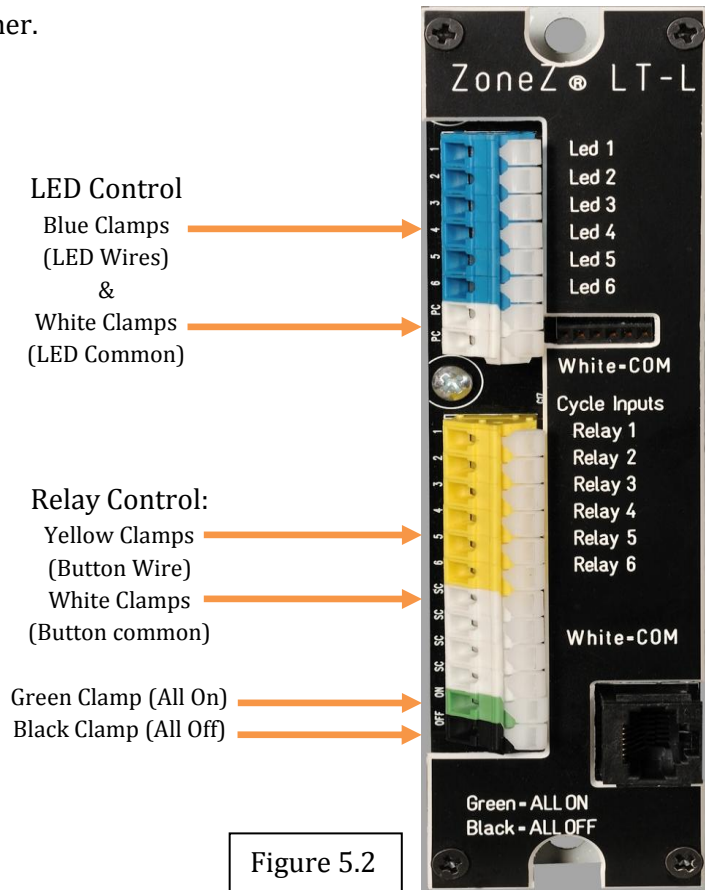


Figure 5.2

Introduction to the Relay Board (10071 / 10072 / 10117)

Figure 6.1 shows a 10071 Relay Board. The 10071 Relay Board has electronically held relays rated at 20AMPS. There are 6 relays and a transformer per board. The transformer performs the same functions as the TVR-1 / TPS-0120, which supplies power to the relay and the low voltage circuitry. The Relay Board will come from the factory with ‘jumpers’. ‘Jumpers’ allow all six (6) relays to share one (1) hot feed. If more than one (1) hot feed is desired or needed, the jumper(s) can be removed so the new hot feed can be wired.

Figure 6.2 shows a 10072 Relay Board. The 10072 Relay Board has mechanically latching relays rated at 50AMPS. There are 6 relays and a transformer per board. The transformer performs the same functions as the TVR-1 / TPS-0120, which supplies power to the relay and the low voltage circuitry. T The Relay Board will come from the factory with ‘jumpers’. ‘Jumpers’ allow all six (6) relays to share one (1) hot feed. If more than one (1) hot feed is desired or needed, the jumper(s) can be removed so the new hot feed can be wired.

Figure 6.3 shows a 10117 Relay Board. The 10117 Relay Board has electronically held relays rated at 20AMPS. There are 2 relays and a transformer per board. The transformer performs the same functions as the TVR-1 / TPS-0120, which supplies power to the relay and the low voltage circuitry. The Relay Board will come from the factory with ‘jumpers’. ‘Jumpers’ allow all two (2) relays to share one (1) hot feed. If more than one (1) hot feed is desired or needed, the jumper(s) can be removed so the new hot feed can be wired.

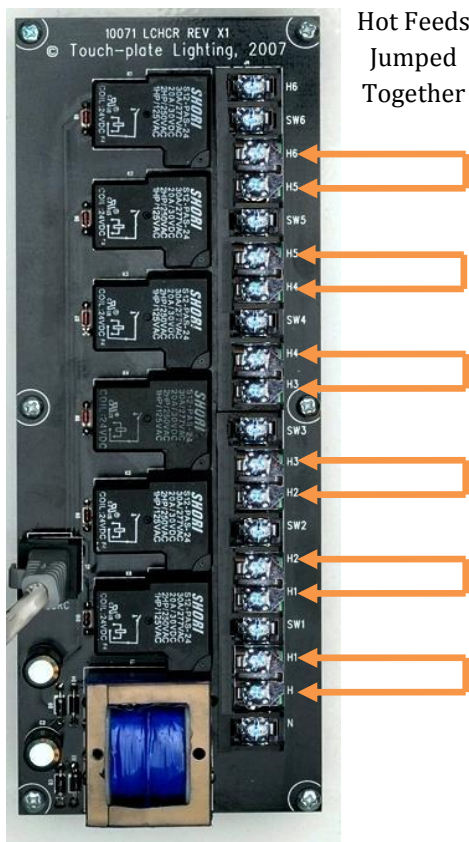


Figure 6.1

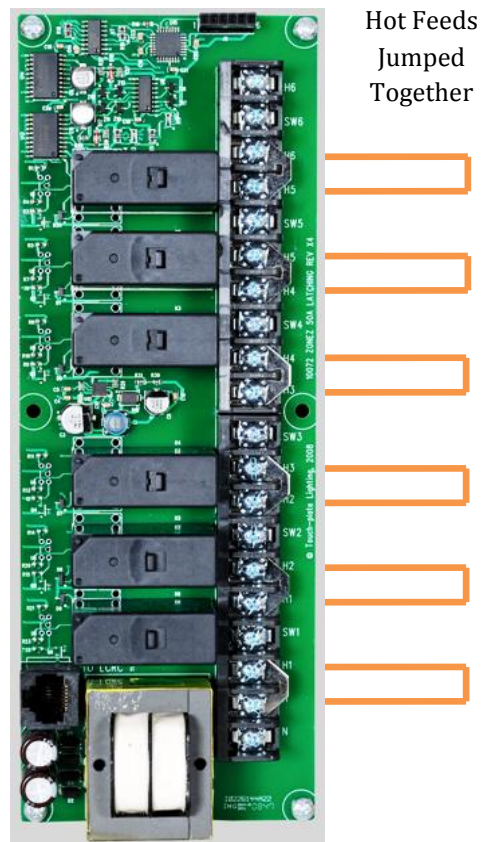


Figure 6.2

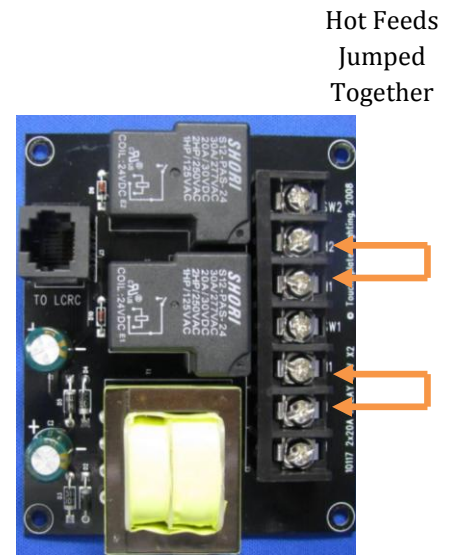


Figure 6.3

Wiring the Low Voltage Relay Control Board (10115 / 10116)

The Low Voltage Relay Control Board uses a descending order for the Switch Inputs (yellow connectors). The top Yellow connector controls Relay 1, the second Yellow connector controls Relay 2, the third Yellow connector controls Relay 3, and descending order for the following three Yellow connectors (4-6). See figure 7.1 for a 10115 visual description or figure 7.2 for a 10116 visual description.

The White connectors below the Yellow connectors are all Switch Common. Switch Common is the positive DC voltage (24 VDC) that is supplied to every wall switch. No matter how many low voltage switches are in the home, each of them has to have one wire per station that goes back to the 24 VDC (White Switch Common cage-clamp connectors). Since every system has multiple Switch Common wires, there are 4 White Switch Common connectors to keep the wiring easier and cleaner. If desired, all commons can be tailed together and landed in any of the Switch Common connectors. See figure 7.1 for a 10115 visual description or figure 7.2 for a 10116 visual description.

The 10116 Low Voltage Relay Control Board also uses a descending order for the LED Inputs (blue connectors). The top Blue connector controls LED 1, the second Blue connector controls LED 2, the third Blue connector controls LED 3, and descending order for the following three Blue connectors (4-6). See figure 7.2 for visual description.

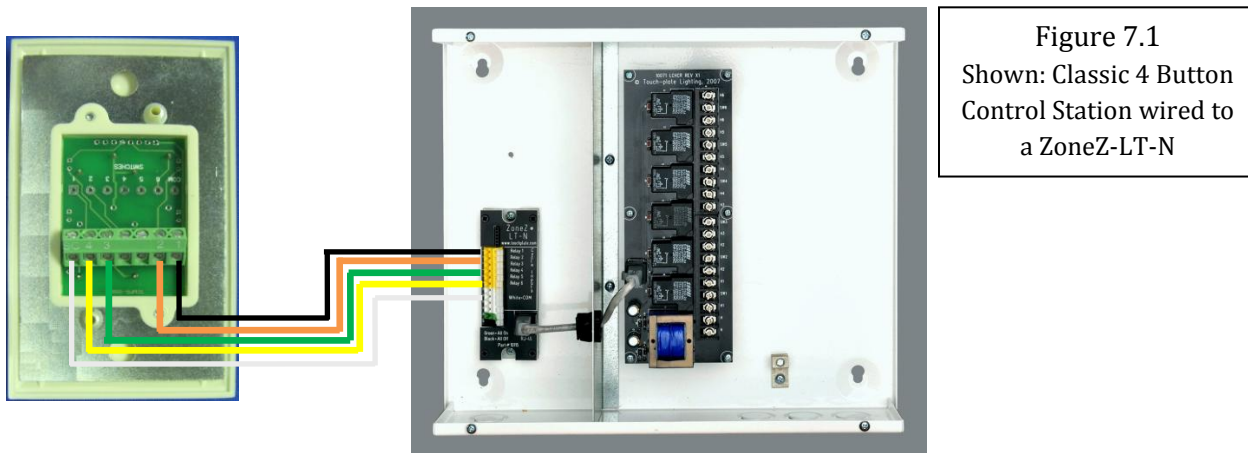


Figure 7.1
Shown: Classic 4 Button
Control Station wired to
a ZoneZ-LT-N

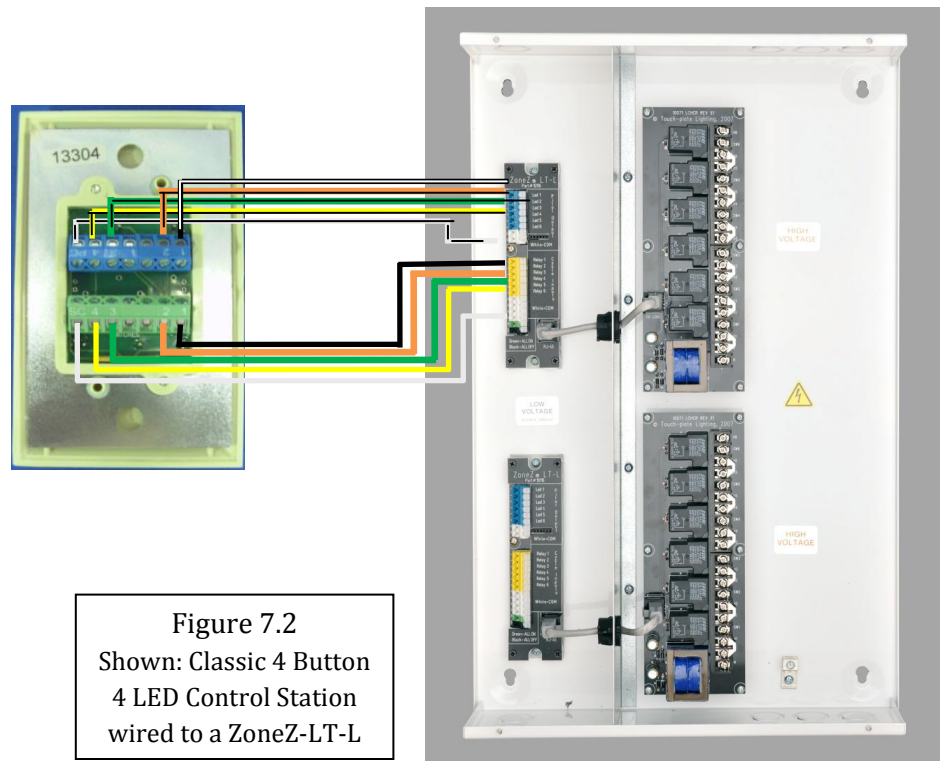


Figure 7.2
Shown: Classic 4 Button
4 LED Control Station
wired to a ZoneZ-LT-L

Wiring the Relay Board (10071 / 10072 / 10117)

The Relay Board (either 10071 or 10072) connects to the low voltage relay control board via RJ45 Cable. The transformer is wired from the circuit breaker panel with a Hot and Neutral feed.

Each relay on the Relay Board has a designation of “H1”, “H2”, “H3”, “H4”, “H5”, or “H6”. “H” stands for “HOT” and this wire must come from the circuit breaker panel. The relays do not need to have neutral feeds. There are duplicates of each Hot feed.

The “SW” designations are the Switched Leg of the relay. These are the terminals for the wire that goes to the light fixture being controlled. This is to provide ‘Jumpers’, which allow the same breaker to feed all 6 relays on one (1) Relay Board. If the lighting load is too much, a new circuit can be added to separate the relays, by removing the ‘jumper’.

The Relay Board is numbered opposite of the Low Voltage Control Board. The numbers ascend on the Relay Board with Relay # 1 (SW1) as the lowest relay on the board. See figure 8.1 for visual description.

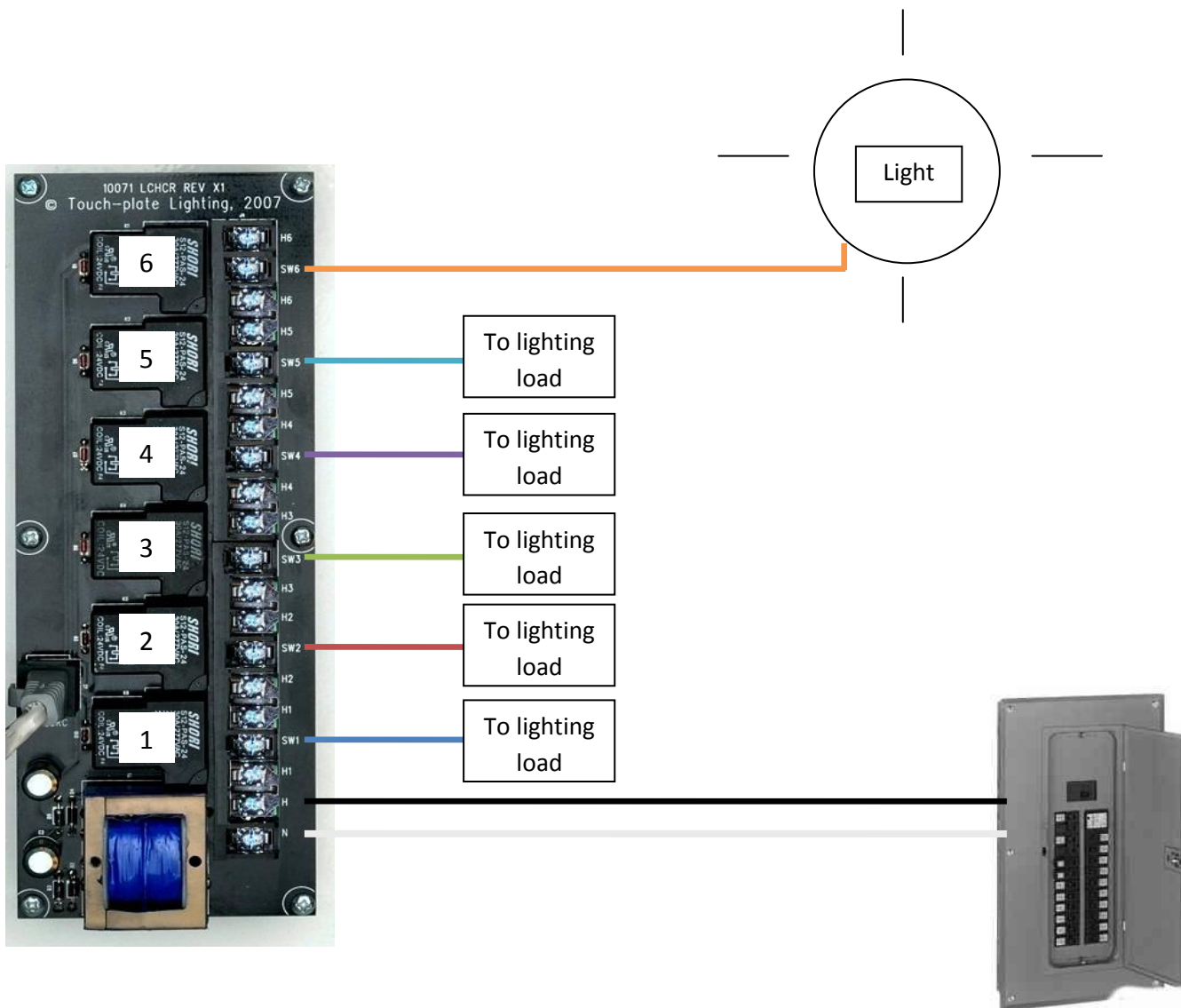


Figure 8.1

On-Site Troubleshooting Test

To perform a test of the 120 VAC wiring the following steps need to be completed before the test.

1. Line voltage has been fed to each relay
2. Each light fixture is connected to the “SW” (Switched Leg)
3. 120 VAC power connected to the Transformer on the Relay Board

Once these steps are completed the test can be done to make sure of all the 120 VAC wiring is correct.

To begin the test, a short piece of thin low voltage wire is needed (stripped on both ends). With the wire, insert one end into one of the White cage-clamp connectors next to the Yellow cage-clamp connectors on the Low Voltage Relay Control Board. Using the other end of the wire, tap it to the conductive metal of each of the Yellow cage-clamp connectors, one at a time.

Each touch of the wire to the conductive metal of the cage-clamp connector will energize the relay and change the relay state. The lights in the respective room should go ON and / or OFF when the cage-clamp is touched. If the lights do not respond, a meter can be used on the line voltage relay outputs to see if the voltage switches from 0 to 120VAC.

Once the test has proven the line voltage is correct and all relay assignments are understood, then wiring of the Low Voltage Relay Control Board can take place.

See figure 9.1 for visual description.

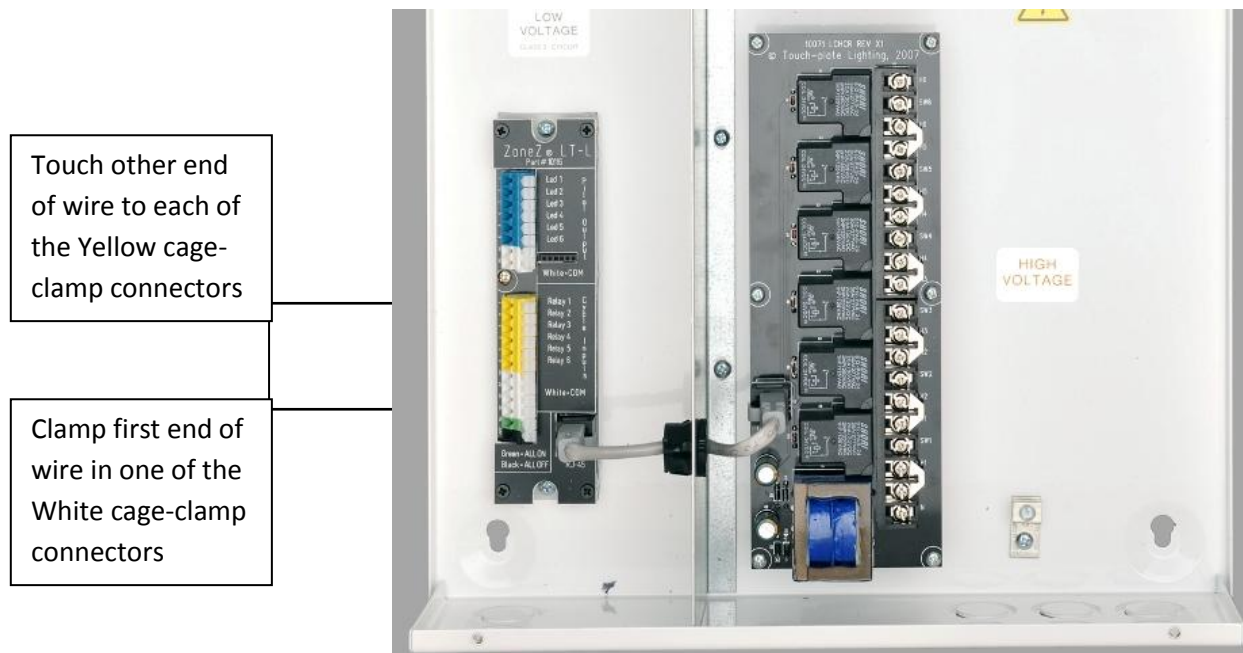


Figure 9.1

Frequently Asked Questions

1. Why are there so many “HOTS” and what are “jumpers”?
 - a. There are many “HOTS” so power can be fed to all six relays without using wire nuts. We want to help make the installation be as neat and orderly as possible. The way that the power is fed to all six relays is by using “jumpers”. “Jumpers” are metal inserts that jump the previous “HOT” to the next “HOT”.

2. How can switch commons be tracked during a retrofit?
 - a. The first way is if the transverter is still present and connected, the Switch Common wire will have a positive 28 to 31VDC reading. The second way to track the common wires is to unscrew a switch from the wall and look at what color wire is used for the common. If it is not obvious from these methods, the final option is to use a ringer (tone generator and receiver) and tone it out.

3. What do the functions “ALL ON” and “ALL OFF” do and how do I use them?
 - a. “ALL ON” turns all 6 relays of whichever relay board you have to the ON position, no matter what the previous state was. “ALL OFF” turns all 6 relays OFF no matter what previous state. It helps to wire line voltage loads to the same relay board that would be beneficial to go ON/OFF together to create a “Welcome” or a “Goodbye”. If you had a total of 6 relays taking care of exterior lights, garage light, foyer entry light, the All ON would be very useful. 6 loads within the Main living area of the home the same thing, a living room, great room, dining room could have a single switch to bring them ON or OFF, giving greater flexibility to the system.

Warranty

Touch-Plate® warrants this hardware product against defects in materials or workmanship, under normal use for a period of ONE (1) year from date of shipment. If a hardware defect is to arise and a valid claim is received within the Warranty Period, Touch-Plate® will repair or replace the product at no charge.

This warranty does not apply to:

- a. Damage to unit(s) caused by accident, acts of God, inappropriate installation, faulty installation, or any negligent use;
- b. Unit(s) which have been subject to being taken apart or otherwise modified;
- c. Unit not used in accordance with instructions;
- d. The finish on any portion of the product, such as surface and/or weathering, as this is considered normal wear and tear;
- e. Non-Touch-Plate hardware installed by the user;
- f. Damage caused by Non-Touch-Plate products;
- g. Damage caused by operating the product outside the permitted or intended uses described by Touch-Plate®;
- or
- h. Specific plans or Specific application requirements, unless the plans and specifications have been forwarded to Touch-Plate and Touch-Plate has approved and accepted the plans in writing.

EXCEPT AS PROVIDED IN THIS WARRANTY, TOUCH-PLATE IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, INCLUDING BUT NOT LIMITED TO, INSTALLATION OR REPLACEMENT LABOR COSTS.

Other Important Information

1. If your product is capable of storing data, you should make periodic backup copies of the information contained to protect the contents as a precaution.
2. Do not install hardware in environments that have a temperature range of 0-60°C, as this could shorten the life span of the hardware.