touch-plate®

LIGHTING CONTROLS

ZoneZ Network Manual

Table Of Contents

Preparation

Unpack the ZNZ-ZN and inspect the contents for damaged or missing parts. If any problems arise, please contact Touch-Plate at 260.426.1565 for assistance.

Precautions

The ZNZ-ZN hardware is designed to be in environments that have a temperature range of 0-60°C (non-condensing atmosphere). Installing in an environment outside of these parameters will shorten the life span of the hardware.

Touch-Plate recommends the use of 18 to 22 AWG wire for low voltage wiring of contact closure products and 18 AWG wire for all 24V power connections.

All 120VAC wiring must use wire as specified by National Electric Code for load size and wire length.

Compatible Hardware

The ZNZ-ZN product can be a part of a networked, intelligent system with a Time-Keeper. It can also be a standalone item that can incorporate the following products:

Contact Closure Switches:

- 5000 Series
- Genesis Series
- Classic Series
- Eclipse Series
- Industrial Series
- Mystique Series
- Royal Series
- Ultra Series

Warranty

Touch-Plate warrants this product against defects in materials or workmanship, under normal use, for a period of ONE (1) year from date of shipment. If a defect arises 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;

h. -or- 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.

ZNZ-ZN Overview

The ZNZ-ZN is the effortless lighting solution that allows for simple group control.

The ZNZ-ZN has the following options:

A   RS485 Connection to Time-Keeper Master Controller

B   Termination DIP Switches

C   Programming Interface

D   Contact Closure Switch Inputs

E   Group Inputs

F   LED Outputs

G   Pilot Voltage Settings

H   Other Functions DIP Switches

I   Address DIP Switches

J   Pilot Intensity DIP Switches
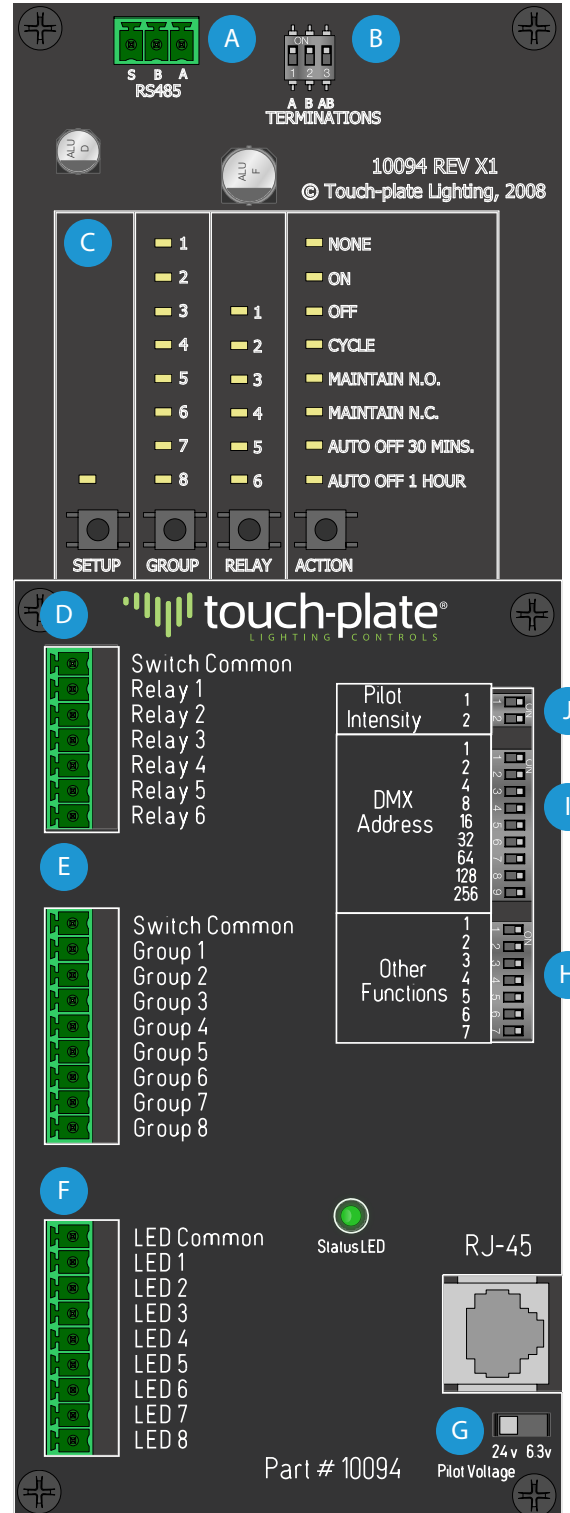
Installation Notes

The ZNZ-ZN has relays which can be removed from the system if they ever need to be replaced. Use the following diagram and instructions on how to remove the relay boards from the system.

A Insert flathead screwdriver into the slot on the din rail clip.

B Using the screwdriver, pry the clip away from the din rail.

C Lift the relay board up from the din rail and slide the relay board out.
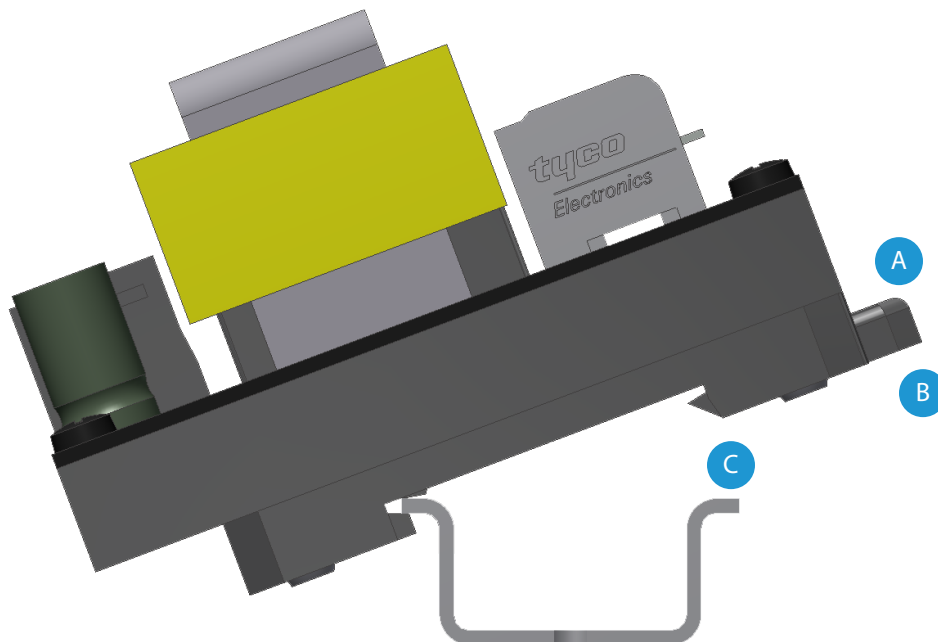
Retrofitting an Existing System

To correctly update an existing system, be sure that the entire system is being updated. Power from the circuit breaker MUST be turned off before removing any existing parts. Most systems that have control stations with pilot lights must have those existing control stations replaced before bringing power to the updated system.

Use the following instructions to correctly label and remove the existing system.

(A) Label all wires before or during removal. Use the following chart to identify the wires that need labeled.

Wires to be Labeled	Wire Description
Low Voltage Switch Leg	Low Voltage Switch Leg from the Switch to the Relay
Common	Common from the Switch to the Transverter (TPS/TVR)
Common	Common from the Switch to the Transformer (PL-6)
Line Voltage Switch Leg	Wire from the Breaker to the Transverter (TPS/TVR)
Breaker	Wire from the Breaker to the Lighting Load

(B) Disconnect the Transverter (typically a TVR-1 or TPS-0120).

(C) Disconnect the line voltage from the relay (two wires from the base of the relay); many times the Hot wires are jumped together.

(D) Disconnect the low voltage from the relay (wires from the coil of the relay).

(E) Disconnect the pilot light transformer from the lighting load and control station(s). The line voltage wires connected to the pilot light transformer are no longer needed.

(F) Remove the enclosure with all the relays, transverter, and pilot light transformers disconnected. If reusing the enclosure, only remove the relays, transverter, and pilot light transformers.
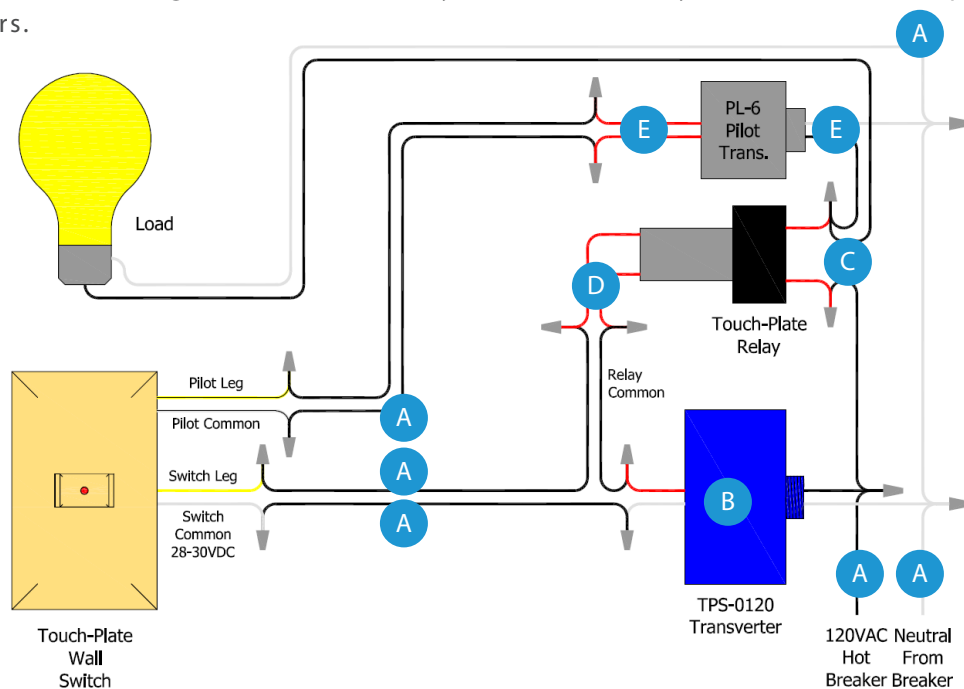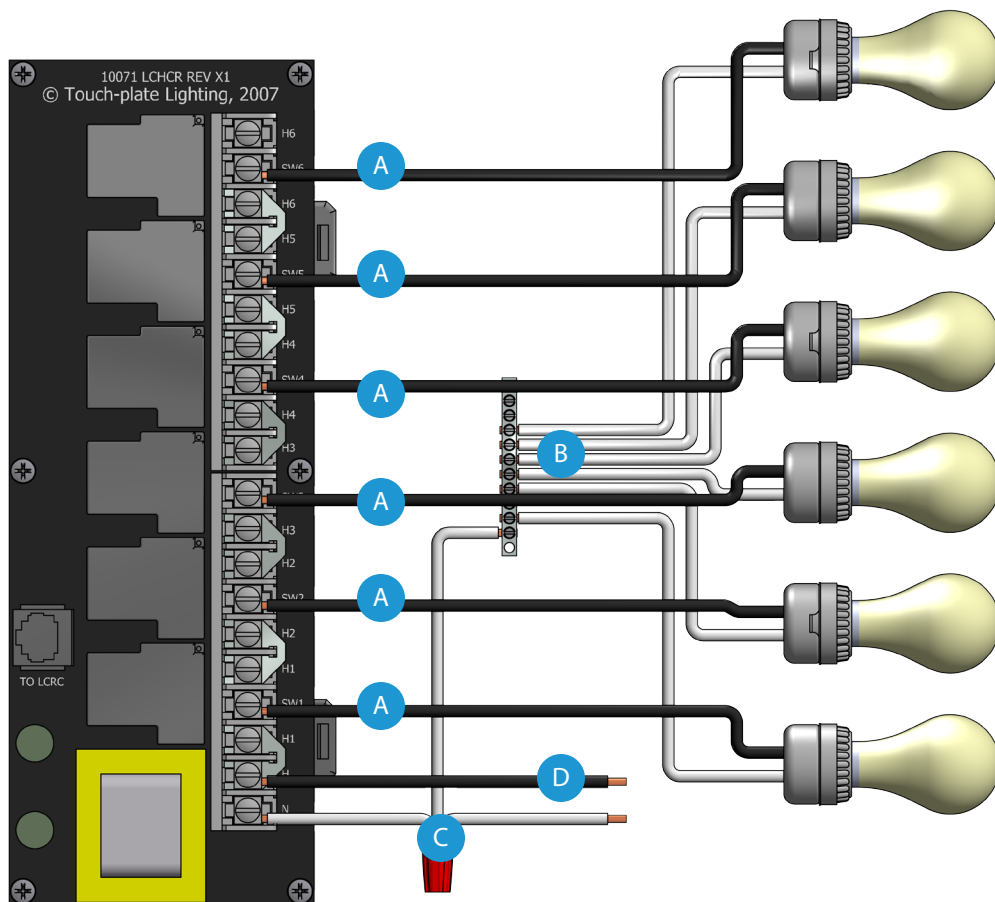
Line Voltage Wiring and Connections

Use the line voltage wiring connections diagram to setup your system. This diagram does not show all possible connections and configurations.

The Z-6R15, Z-6R20, and Z-6R25L are all available with either a 120V or 277V feed. Be sure to only use one of these types, as the relay board is not capable of handling both types of feeds.

The terminals labeled H-H6 are the hot terminals. These come from the factory with jumpers to jump the 'hots' together. These jumpers can be removed if each load has its own hot feed.

A   Connect Switch Leg 1 from the lighting load to the terminal labeled SW1. Continue to do the same for switch legs 2-6.

B   Connect the neutral wires from each lighting load to the neutral bar.

C   Bring a neutral feed from the breaker panel to the neutral bar. Bring a neutral feed from the neutral bar to the terminal labeled 'N'.

D   Connect the hot wire from the breaker panel to the terminal labeled 'H'.

E   Connect the ground wire from the breaker panel to the ground bar or ground lug.

Contact Closure Switch Wiring and Connections (Relays 1-6)

Use the Contact Closure Switch wiring connections diagram to setup your system. This diagram does not show all possible connections and configurations.

The Contact Closure Switch Inputs are used when programming is not going to be used. The switches will be wired directly into the terminal of the corresponding relay.

For example, if button 1 is to control relay 1, the wire would be brought into the terminal labeled 'Relay 1'.

A   Connect the button 1 wire to the desired terminal.

Continue to connect all button wires to the desired terminals.

Terminals available are Relay 1, Relay 2, Relay 3, Relay 4, Relay 5, and Relay 6.

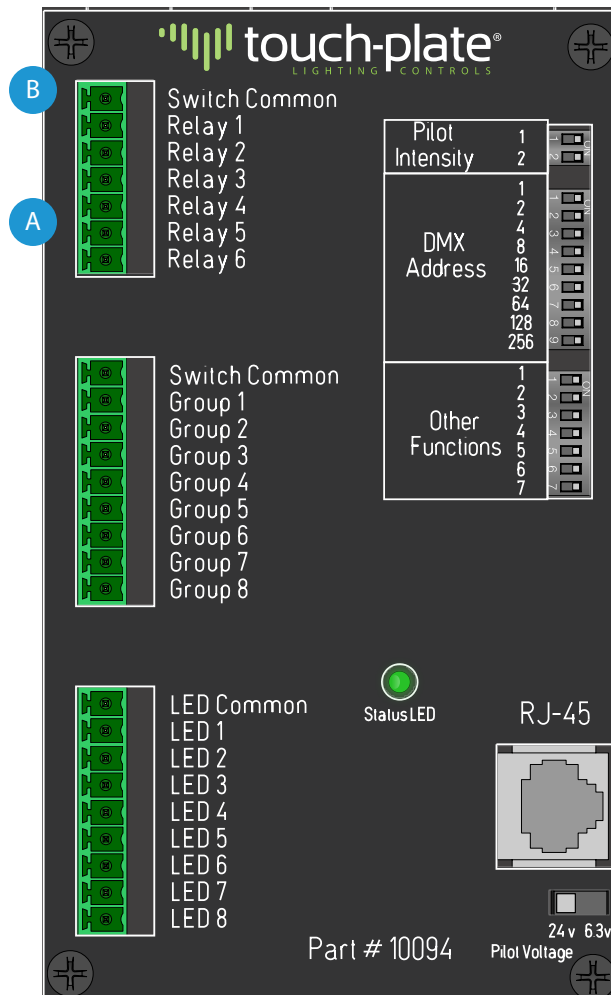**B**   Connect the common wires to the terminal labeled 'SC' (Switch Common).

Contact Closure Switch Wiring and Connections (Grouping)

Use the Contact Closure Switch wiring connections diagram to setup your system. This diagram does not show all possible connections and configurations.

The purpose of the Group Function is to define an action for a group of relays.

The Contact Closure Switch Group Inputs are used when programming is going to be used. The switches will be wired directly into the terminal of the corresponding Group. Programming will need to take place before any of the buttons work properly.

For example, if button 1 is to control relays 1-3, the wire would be brought into the terminal labeled 'Group 1'.

A   Connect the button 1 wire to the desired group terminal.

Continue to connect all button wires to the desired terminals.

Terminals available are Group 1, Group 2, Group 3, Group 4, Group 5, Group 6, Group 7, and Group 8.

B   Connect the common wires to the terminal labeled 'SC' (Switch Common).

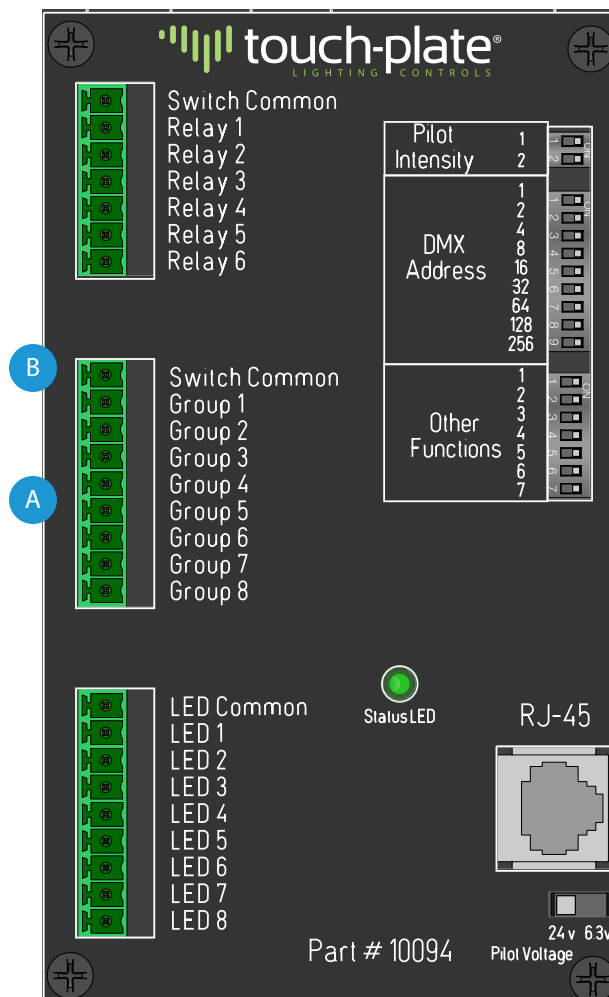## Contact Closure Switch Wiring and Connections (LED)

Use the Contact Closure Switch wiring connections diagram to setup your system. This diagram does not show all possible connections and configurations.

The LED outputs are used when LEDs are present on the Switches. These can be wired and used whether the Contact Closure Switch Inputs or Group Inputs are used.

The LED outputs correspond to the LED location on the switch.

For example, when wiring LED #4 on the switch, bring the LED wire to the terminal labeled 'LED 4'.

A Connect the LED 1 wire to the desired terminal.

Continue to connect all LED wires to the desired terminals.

Terminals available are LED 1, LED 2, LED 3, LED 4, LED 5, LED 6, LED 7, and LED 8.

B Connect the common wires to the terminal labeled 'PC' (Pilot/LED Common).

Time-Keeper Wiring and Connections
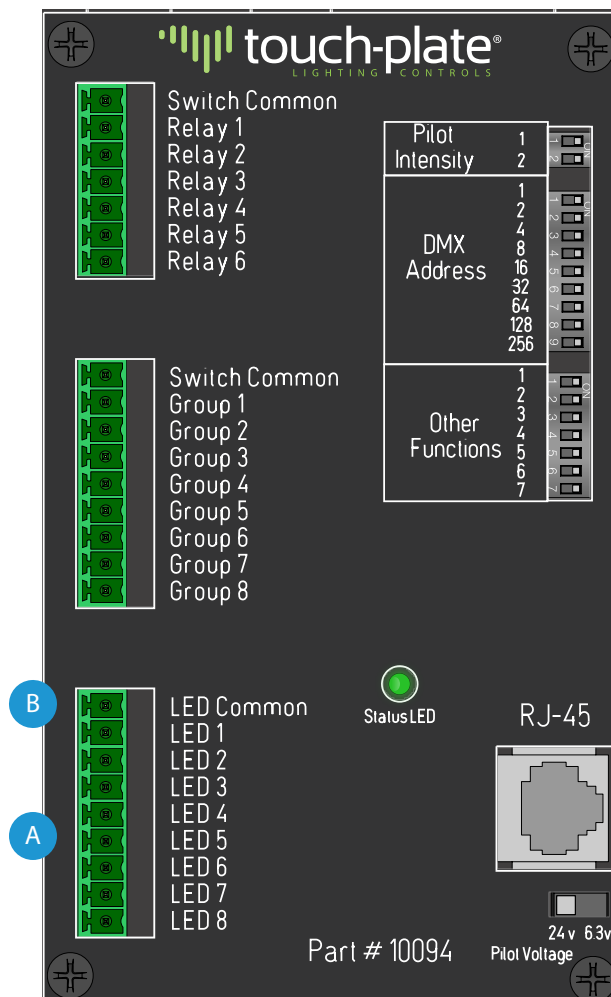
Use the Time-Keeper wiring connections diagram to setup your system. This diagram does not show all possible connections and configurations.

The Time-Keeper will be wired directly into the terminal labeled 'RS485' on the ZNZ-ZN.

A Connect the Ground wire to the terminal labeled 'S' under the RS485 section.

Connect the - wire to the terminal labeled 'B' under the RS485 section.

Connect the + wire to the terminal labeled 'A' under the RS485 section.
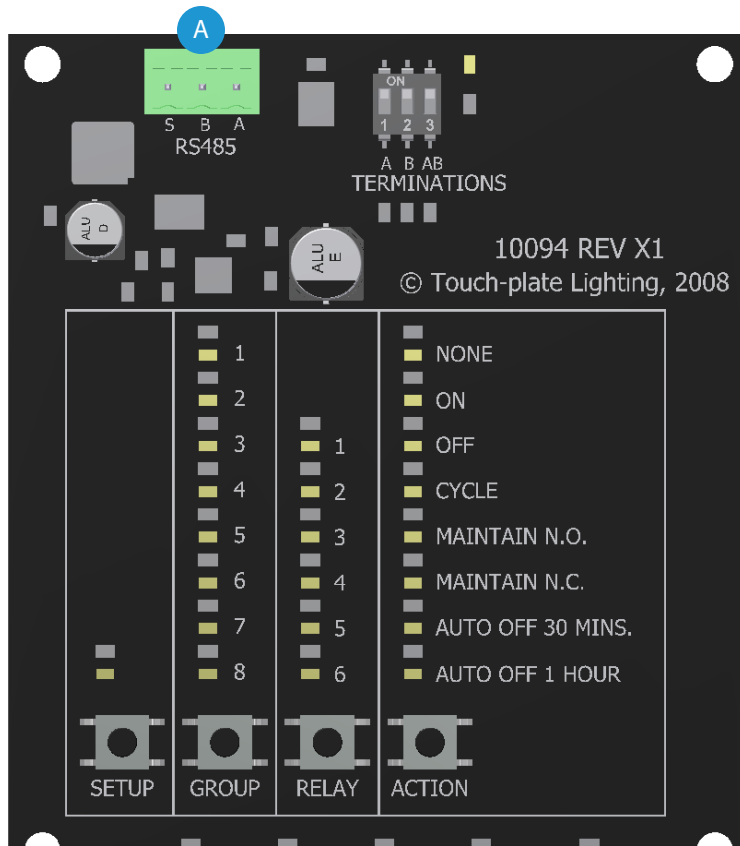
Time-Keeper Notes

When a ZNZ-ZN is paired with a Time-Keeper, some of the settings change to ensure that they are compatible with one another. Please review the following if a Time-Keeper is part of the system.

- A Time-Keeper paired with a ZNZ-ZN is only utilized to program events.

- The ZNZ-ZN will not allow LEDs to react to events programmed through the Time-Keeper.

- The Address and Option DIP Switches are only utilized if a Time-Keeper is part of the system. Pages 15 and 16 provide further information on the DIP Switches.

Programming Interface Explanations

These explanations will help to understand each section of the Interface and its definition.

| Section	Item	Definition
Setup	Button	Press 1 time to turn on programming control Press and hold for 12 secs to clear the programming
Group	1	Controls Group 1
	2	Controls Group 2
	3	Controls Group 3
	4	Controls Group 4
	5	Controls Group 5
	6	Controls Group 6
	7	Controls Group 7
	8	Controls Group 8
Relay	1	Corresponds to Relay 1
	2	Corresponds to Relay 2
	3	Corresponds to Relay 3
	4	Corresponds to Relay 4
	5	Corresponds to Relay 5
	6	Corresponds to Relay 6
Action	None	No action will occur
	On	The load turns on with a button press
	Off	The load turns off with a button press
	Cycle	Each button press cycles the load between ON and OFF.
	Maintain N.O.	The load is OFF during a button press
	Maintain N.C.	The load is ON during a button press
	Auto Off 30 Mins	If the lights are off, they will turn on. In 30 minutes they will turn off. If the lights are on, they will stay on. After 30 minutes, the lights will turn off.
	Auto Off 1 Hour	If the lights are off, they will turn on. In 1 hr they will turn off. If the lights are on, they will stay on. After 1 hr, the lights will turn off.

Programming Group Functions

Use the programming diagram to setup your system. Each load needs to have its Action determined before programming begins. Each system will have different programming characteristics and this document does not show all possible programming options.

If using Maintain options in a Group and multiple inputs are programmed to control the same loads, the Maintain options can make the other programmed Actions not work.

A   Press the 'SETUP' button once to begin the programming.

B   Press the 'GROUP' button multiple times until the LED Is lit next to the Group Number that is to be programmed.

C   Press the 'RELAY' button multiple times until the LED is lit next to the Relay Number that is to be programmed.

D   Press the 'ACTION' button multiple times until the LED Is lit next to the Action that is to be carried out by the relay.

B   Press the 'GROUP' button to move to the next group that is desired to be programmed.
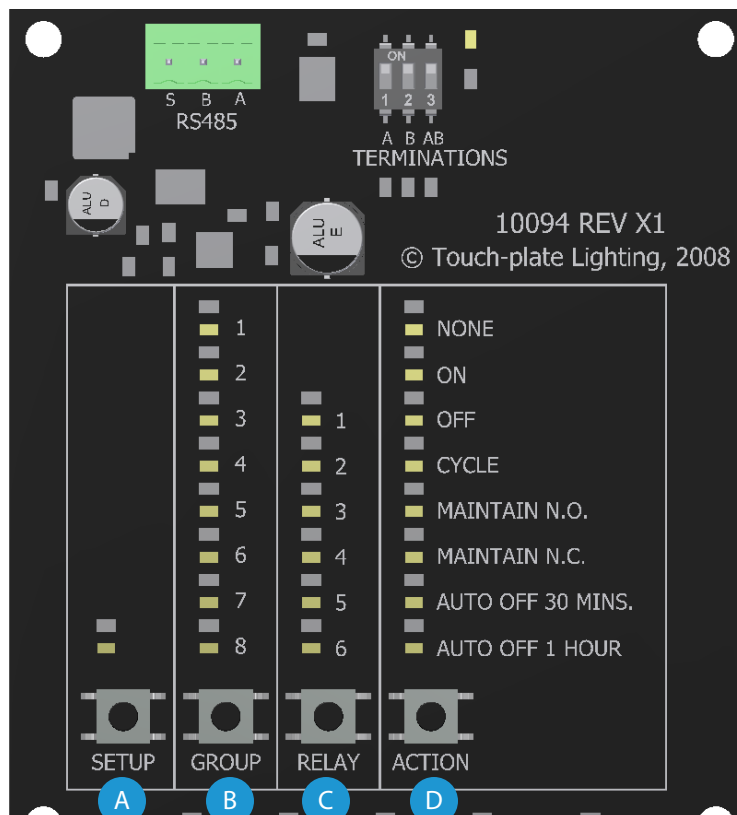
Programming LED Functions

Use the programming diagram to setup your system. These instructions are used to program an LED to respond to the Group programming. Each system will have different programming characteristics and this document does not show all possible programming options.
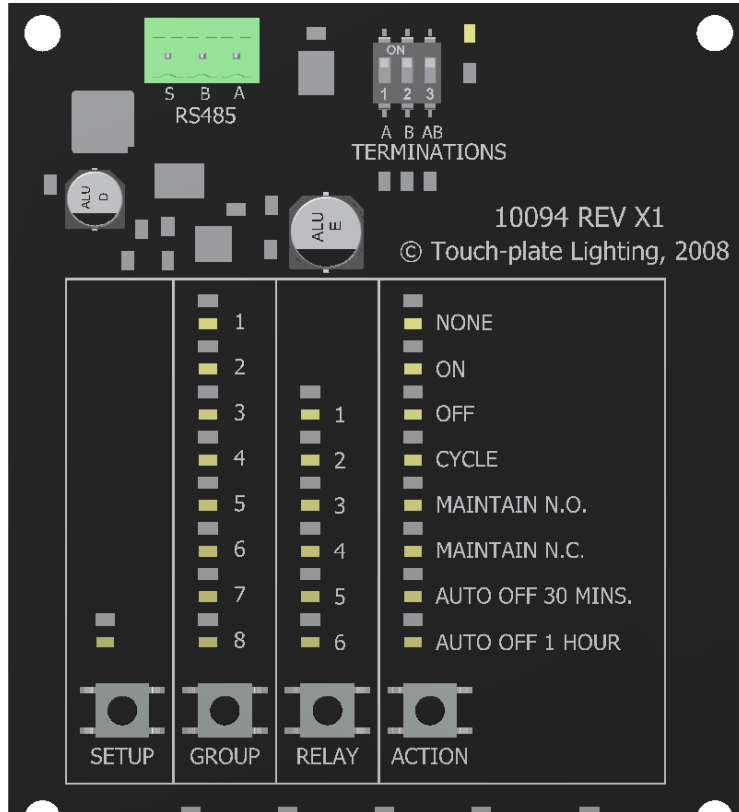
A   Press the 'SETUP' button twice to begin the programming.

B   Press the 'GROUP' button multiple times until the LED Is lit next to the Group Number that is to have a corresponding LED turned On.

C   Press the 'GROUP' button to move to the next LED that is desired to be programmed.

Address Dip Switches

The Address Dip Switches are used to set the DMX Address only if a Time-Keeper is present.

Normally, these Dip Switches come from the factory pre-programmed. If they do not, make sure you do not duplicate addresses, as each ZNZ-ZN must have its own unique address.

Note that each ZNZ-ZN utilizes 6 addresses. For example, if on one Time-Keeper network there were two (2) ZNZ-ZN's, the first would be set to Address 73 and the second would be set to Address 79.

Do not change values unless directed by Touch-Plate!!!

Address	1	2	3	4	5	6	7	8	9
73	ON	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF
79	ON	ON	ON	ON	OFF	OFF	ON	OFF	OFF
85	ON	OFF	ON	OFF	ON	OFF	ON	OFF	OFF
91	ON	ON	OFF	ON	ON	OFF	ON	OFF	OFF
97	ON	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF
103	ON	ON	ON	OFF	OFF	ON	ON	OFF	OFF
109	ON	OFF	ON	ON	OFF	ON	ON	OFF	OFF
115	ON	ON	OFF	OFF	ON	ON	ON	OFF	OFF
121	ON	OFF	OFF	ON	ON	ON	ON	OFF	OFF
127	ON	ON	ON	ON	ON	ON	ON	OFF	OFF
133	ON	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF
139	ON	ON	OFF	ON	OFF	OFF	OFF	ON	OFF
145	ON	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF
151	ON	ON	ON	OFF	ON	OFF	OFF	ON	OFF
157	ON	OFF	ON	ON	ON	OFF	OFF	ON	OFF
163	ON	ON	OFF	OFF	OFF	ON	OFF	ON	OFF
169	ON	OFF	OFF	ON	OFF	ON	OFF	ON	OFF
175	ON	ON	ON	ON	OFF	ON	OFF	ON	OFF
181	ON	OFF	ON	OFF	ON	ON	OFF	ON	OFF
187	ON	ON	OFF	ON	ON	ON	OFF	ON	OFF
Valid Addresses are through Address 193									

Valid addresses are from 73 to 193. Addresses are set using the nine Address Dip Switches, which each have a value noted in the chart below.

Address Dip Switch	1	2	3	4	5	6	7	8	9
Value	1	2	4	8	16	32	64	128	256

The values of all switches in the ON position are added together and the total is equal to the address. See the examples below:

DMX Address 1: Turn on switch 1 only, and leave all other Address switches off.

DMX Address 13: Turn on switches 1, 3 and 4. The values of those switches is 1 + 4 + 8 = 13.

Option Dip Switches

The Option Dip Switches are used to set different functions.

Option	ON/OFF	Definition
1	ON	DMX functionality is ON. This has to be on when a Time-Keeper is a part of the system.
1	OFF	DMX functionality is OFF.
2	ON	N/A
2	OFF	N/A
3	ON	N/A
3	OFF	N/A
4	ON	N/A
4	OFF	N/A
5	ON	N/A
5	OFF	N/A
6	ON	N/A
6	OFF	N/A
7	ON	N/A
7	OFF	N/A

Termination Dip Switches

The Termination Dip Switches are used to set the Terminations.

Terminations	Definition
A	Pull Up
B	Pull Down
AB	Termination

LED Intensity Dip Switches

The Pilot Intensity Dip Switches are used to set the LED Intensity. This option is only used when the factory has been contacted.

Intensity	Definition
1	ON = Low Intensity
2	ON = Medium Intensity
1 & 2	ON = High Intensity

Troubleshooting Guide

If no response occurs when the system is powered up, use the following steps to identify the problem.

1. Remove the Diecut from the ZNZ-ZN.

2. Look for the LED indicator to be blinking on the ZNZ-ZN.

   a. For the indicator to be blinking, power has to be correctly brought to the system.
   b. If the LED indicator is not blinking, confirm power connections and then contact the factory for assistance.
   c. If the LED indicator is blinking, move on to the next step.

3. Verify that the line voltage has been fed to all the necessary relays.

4. Verify that each light fixture is connected to the 'Switched Leg'.

5. Verify that 120 VAC has been connected to the transformer on the Relay Board.

6. Take a short piece of thin wire (both ends need to be stripped) and hold one end to the conductive metal of the 'Switch Common'.

7. Take the other end of the short wire and tap it to the conductive metal of each of the Relay terminals, on the ZoneZ-N, one at a time.

   a. Each touch should energize the relay and change its state. The lights in the respective rooms should go ON and OFF when the terminal is touched.

8. If the lights do not respond, use a meter on the line voltage relay outputs to see if the voltage switches from 0 to 120 VAC.

9. If these steps do not solve the problem, please contact the factory for assistance.

Frequently Asked Questions

1. What are Groups?

   a. Groups allow for a single button to control multiple relays.
   b. For example: In most bathrooms there are lights above the sink and above the shower. If both lights are desired to be turned on at the same time with the push of a single button, Grouping makes this possible.

2. What are the 'Option' Functions?

   a. Option Functions are to be used when a Time-Keeper is connected to the ZNZ-ZN.

3. What is the 'DMX Address'?

   a. The DMX Address is a number in a line of specific addresses.
   b. This has to be done because everything has a unique address and has to be programmed to do so.

4. What is the 'Pilot Voltage'?

   a. Pilot Voltage is set to 24V from the factory so it can send the correct voltage to the switches.
   b. When using the Pilot Voltage set at 6.3V, this can only be used when existing lit switches are not updated at the same time.

5. What are the 'Terminations'?

   a. These are DMX line terminations. This is only used if a DMX controller is connected to the ZNZ-ZN.

6. Why are there so many 'HOTs' and what are 'Jumpers'?

   a. The 'HOTs' are so power can be fed to all six relays without using wire nuts. This will help make the installation as neat and orderly as possible.
   b. The way that the power is fed to all six relays is by using the 'Jumpers'. These are metal inserts that "jump" the previous 'HOT' to the next 'HOT'.

7. How do you save the programming?

   a. The programming is saved once the Group, Relay, or Action is entered and the button press is released.

Touch-Plate ZoneZ Network Manual
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