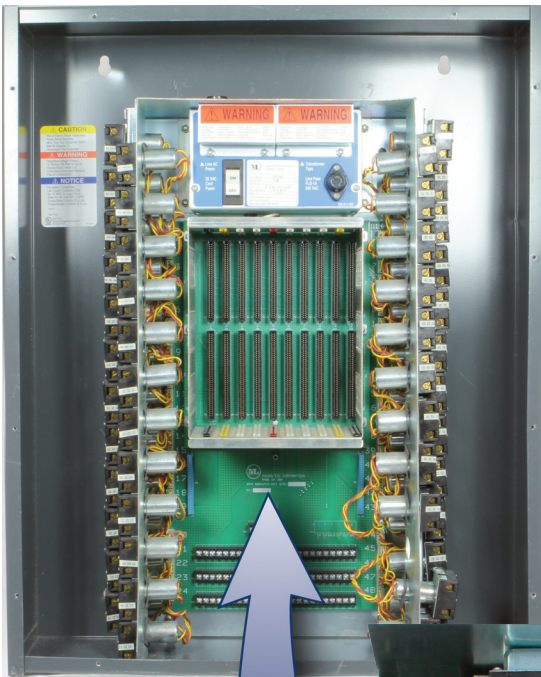


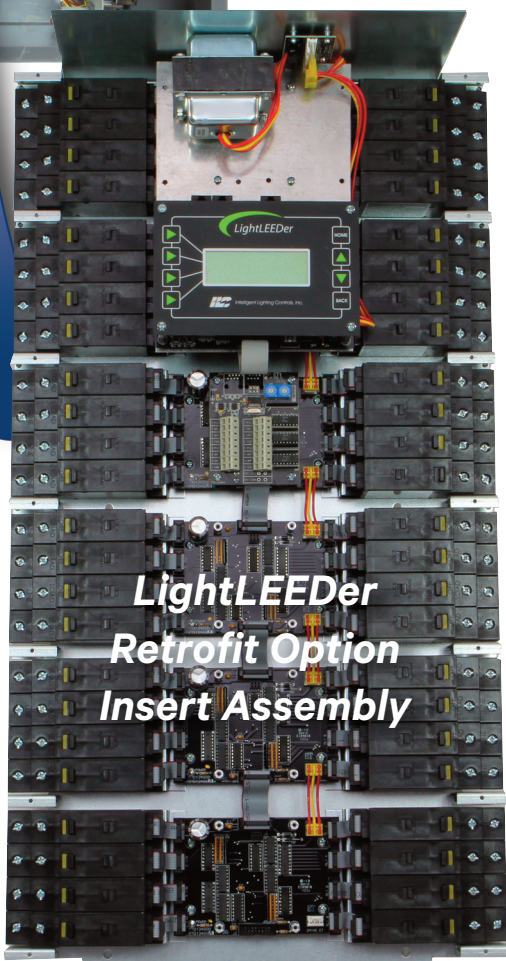
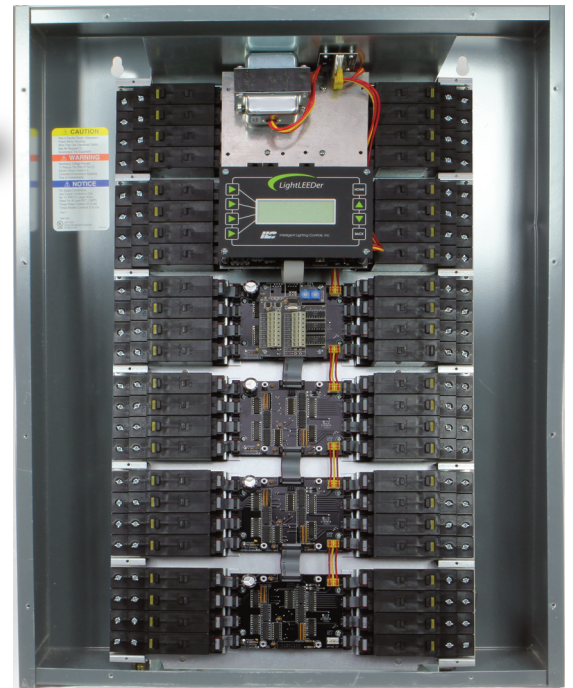
LightLEEDer

Drop-in Retrofit Option for MicroLite® Control Panels

Existing MicroLite panel



Finished LightLEEDer Retrofit panel



- Re-use existing MicroLite enclosure and door
- Drop-in LightLEEDer retrofit insert assembly
- Re-use existing wiring
- Optional inputs for low voltage switches and occupancy sensors
- Supports LightSync Data Line switch stations
- Stand-alone or networked system
- Free programming software
- BAS/EMS interface options
- Meets current energy code requirements
- Commissioning by an ILC Certified Technician
- Supports daylight harvesting and dimming
- Compatible with MicroLite 1000R Series, 100R – 600R Series
- Options for Full Series, Half Series, “P” Series

## CONVERSION OF A MICROLITE 1000R (RELAYS) FULL OR HALF PANEL TO AN ILC LIGHTLEEDER RETROFIT SYSTEM

Congratulations on the purchase of your new ILC LightLEEDer Retrofit System for the replacement of the existing MicroLite 1000R (Full or Half ) and/or the MicroLite 600R (or previous versions, such as MicroLite 100, 200, 300, 400, and 500)!

The design of the ILC LightLEEDer Retrofit System will allow you to use the existing MicroLite enclosure, conduits, and line voltage wiring to your current MicroLite system. This will greatly reduce the time and cost for the installation of the new ILC LightLEEDer Retrofit System. The concept of this Retrofit design is to reduce your onsite removal and replacement labor and material costs because you will not need to replace and/or change any of these items during the installation of your new ILC LightLEEDer Retrofit system.

Before installing your new ILC LightLEEDer Retrofit system you must understand the components in your existing MicroLite system, which will be removed during this retrofit.

### ITEMS OF YOUR EXISTING MICROLITE 1000R RELAY PANEL SYSTEM INTELLIGENT LIGHTING CONTROLS, INC.

The MicroLite 1000R is used as the main example in this document; other MicroLite panels will have the same or similar configuration and a ILC LightLEEDer retrofit interior made to fit the enclosure.

Components in the MicroLite system:

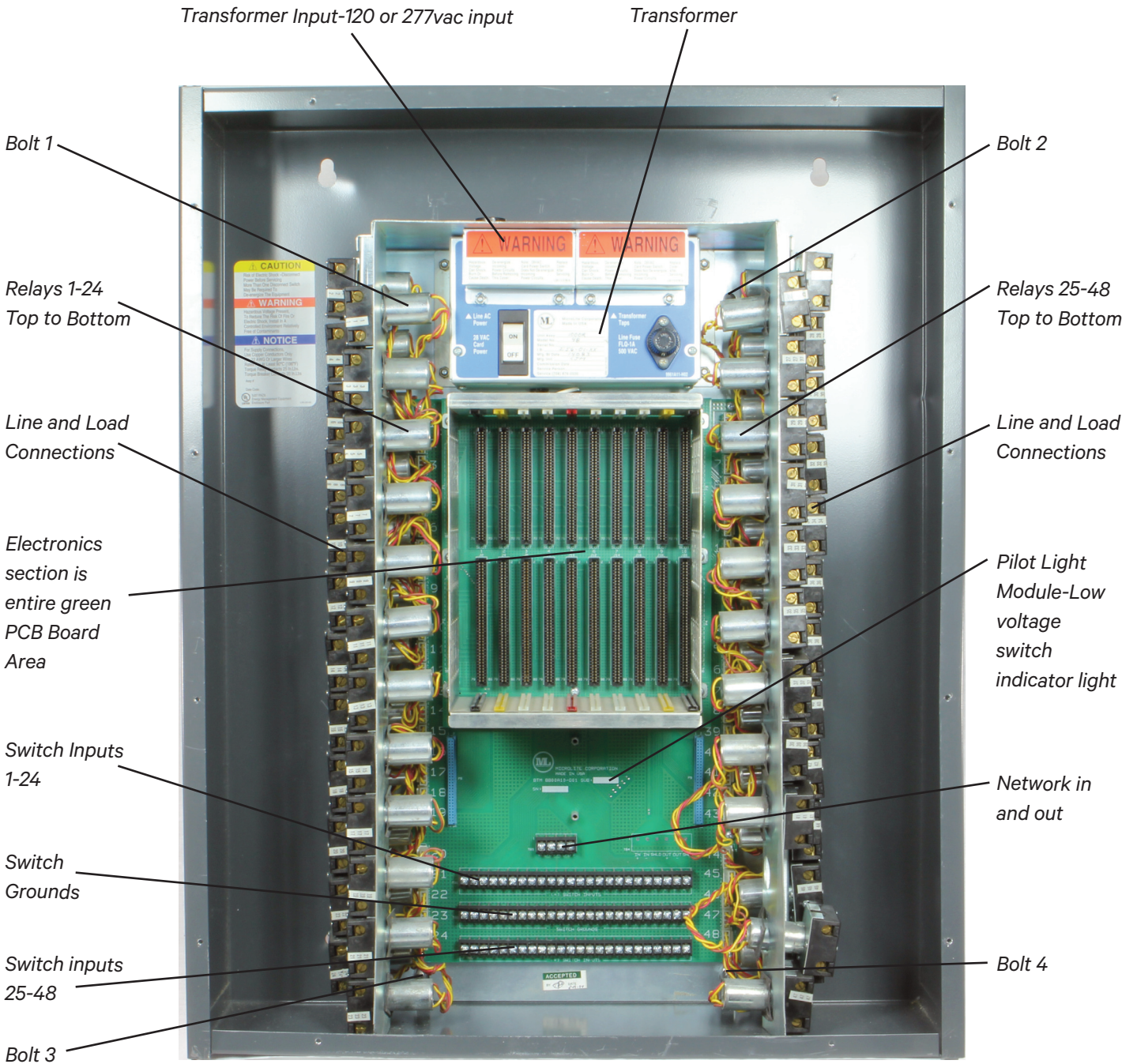
- 1) A power transformer at the top, which is used for converting either 120 or 277VAC to 18VAC in the existing MicroLite system.
- 2) A section of electronics in the center that runs vertically from the top to the bottom of the relay panel.
- 3) Two sections of relays (one to the left and one to the right) for the control of the lighting loads.

These are the three (3) main component sections on the MicroLite 1000R system.

### ITEMS THAT MAY BE USED IN YOUR EXISTING MICROLITE 1000R RELAY PANEL SYSTEM

- 2A) In the electronics section there can be low voltage inputs (accepting dry contacts) for the remote switches that turn on and off the relays. These inputs are labeled switch 1-24, switch grounds, and switch 25-48.
- 2B) In the electronics section there are shielded twisted pair control cables if the system has more than one relay panel for communication. These are labeled Network In and Network Out.

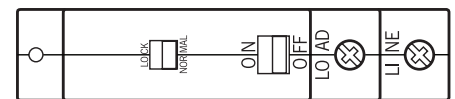
Existing MicroLite 1000R Relay Panel



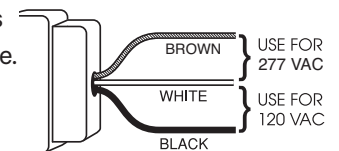
### PROCESS FOR CONVERTING FROM A MICROLITE 1000R TO ILC LIGHTLEEDER RETROFIT SYSTEM

Now that you know the components in your existing MicroLite 1000R system, we can walk you through the process of removing the MicroLite 1000R internal components and replacing them with the new ILC LightLEEDer Retrofit System.

- 1) Turn OFF all power to the existing MicroLite 1000R Relay Panel system. Please observe lockout/tagout rules!
- 2) Remove the Front Cover of the existing MicroLite 1000R Relay Panel by removing the large Philips screws holding the cover. Retain and Store the cover and screws for re-use after the interior retrofit is completed.
- 3) Label all of the line wiring (input to the relays) and load wiring (output from the relays) that are connected to the existing relays. The new R40 relays will be in approximately the same location.
- 4) Remove all of the line and load wires from the existing relays, being careful not to damage the existing wire leads. These are held in place by the flat blade screw on each of the relays.
- 5) Remove the line wiring going to the transformer at the top of the MicroLite 1000R Relay Panel. This is in the top, center of the relay panel and is typically covered by a face panel, which is accessed by removing the bolts from the covers.
- 6) Remove the four (4) nuts in the corners of the MicroLite 1000R Relay Panel, which hold the MicroLite 1000R Insert (Transformer, electronics, and relays), and remove the entire MicroLite 1000R Insert.
- 7) Install the new ILC LightLEEDer Retrofit System's Insert into the exact same location. The existing bolts can be used as guides to hold the new ILC LightLEEDer Retrofit System into place. Depending on the age of the system, bolts may be in different locations. The bolts can be left in place or snapped and/or cut off. The bolts are not necessary in the new system.
- 8) Use self-tapping metal screws (3/8 inch by # 8) in the predesignated holes along the ILC LightLEEDer Retrofit System's Insert Panel to secure the new components to the existing MicroLite enclosure.
- 9) Land the line and load wires onto the new ILC LightLEEDer R40-1 Reliant Relays. The ILC LightLEEDer R40-1 Relays will be in the same general location as the old MicroLite relays were located. Please note that the line wire should be towards the back and the load wire should be towards the front of the ILC LightLEEDer R40-1 Reliant Relays.



- 10) Connect the line wiring to the new transformer at the top of the ILC LightLEEDer Retrofit System's Insert Panel. Please make sure to use the correct tap of 120 or 277 VAC and cap off the unused wire.

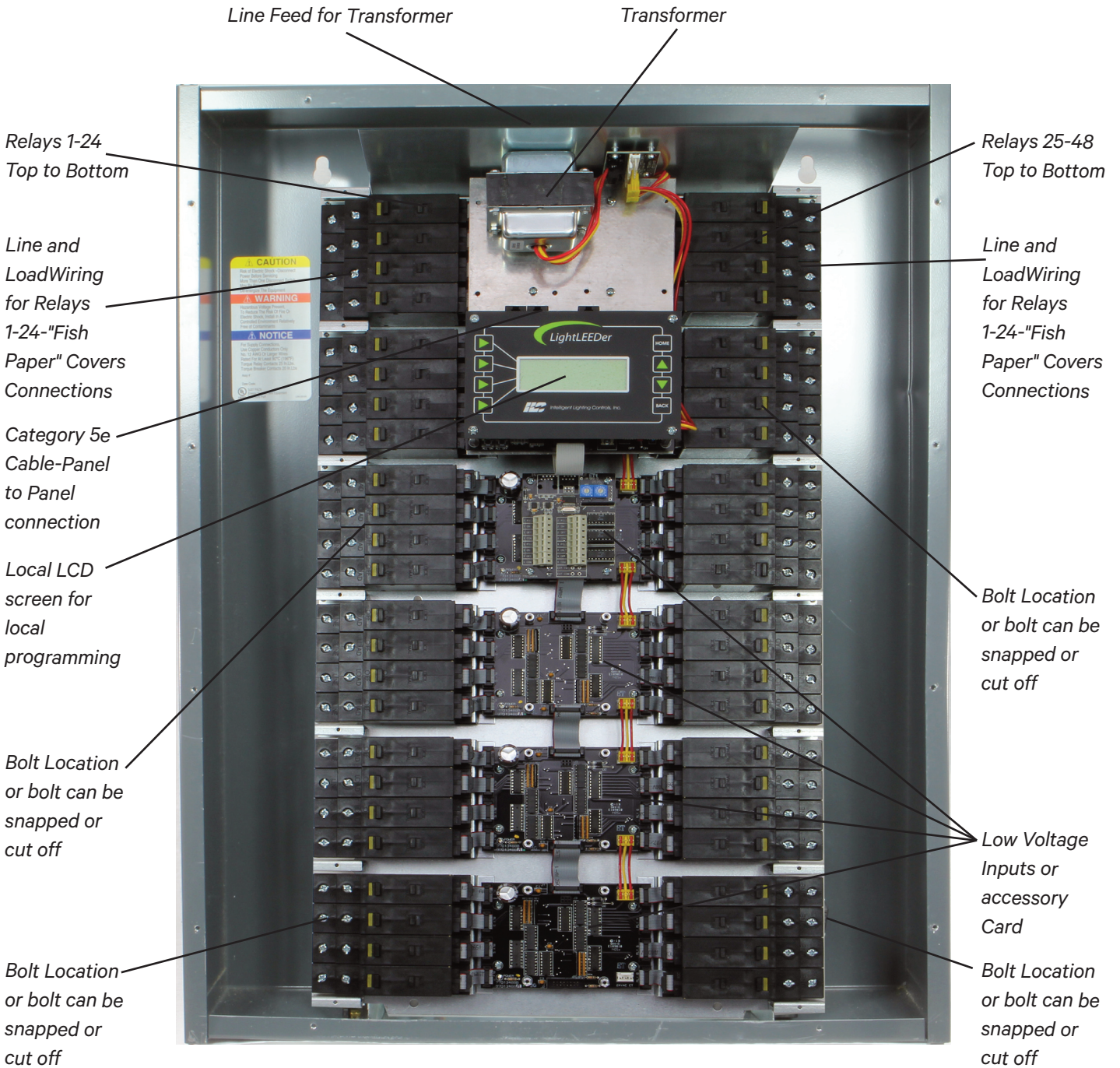


- 11) Put the front cover back on the enclosure and turn the power back "ON" to the system. If this is a stand-alone relay panel, then at this point in time, you have completed the retrofit of the system from a MicroLite 1000R to an ILC LightLEEDer Retrofit System. You are ready to program the system using the ILC LightLEEDer Pro Software.

**LightLEEDer**

**Drop-in Retrofit Option for MicroLite® Control Panels**

After an ILC LightLEEDer Retrofit System has been installed

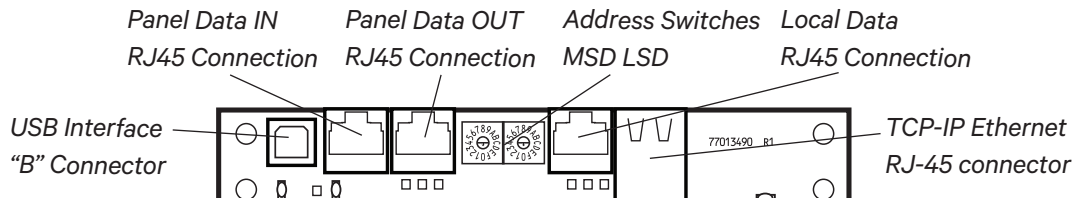


**ADDITIONAL STEPS FOR MULTIPLE RELAY PANELS COMMUNICATING TOGETHER**

If the system has more than one relay panel, please read this section. In order for the existing MicroLite 1000R Relay Panels to communicate, there is a shielded twisted pair cable located in the Electronics section and is labeled “in+, in-, shield, out+, out-, and shield”. This cable is a daisy chain and runs in a straight line between all of the existing MicroLite Relay Panels.

You will need to remove this cable and pull in a Category 5e or better cable to replace the shielded twisted pair communication wire. The new ILC LightLEEDer Retrofit System will use the Category 5e or better cable for communication between the ILC LightLEEDer Relay Panels. The same cable path can be used and the existing control wire can be used as a pull wire.

Please note that the Category 5e or better control cable will connect towards the top of the ILC LightLEEDer Retrofit System.



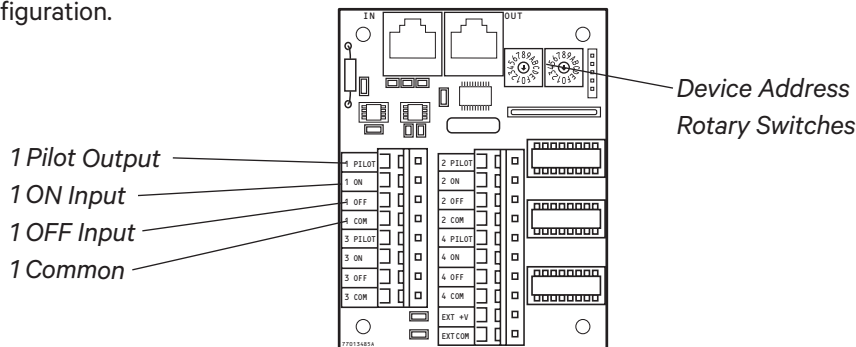
**ADDITIONAL STEPS FOR LOW VOLTAGE INPUTS**

The existing MicroLite 1000R Relay Panel has the possibility for 48 low voltage inputs, which are labeled switch inputs 1-24, switch grounds, and switch inputs 25-48. These are horizontal rows of screw terminals that are located at the bottom of the electronics section.

The new ILC LightLEEDer Retrofit System has low voltage input modules that can mount in the middle of the electronics section and are capable of receiving the same low voltage inputs and switch grounds from the existing MicroLite system.

In addition, some MicroLite 1000R Systems have a Pilot Light Module (PLM) located directly above the switch inputs 1-24. These are pilot light wires for the existing switch inputs. The new ILC LightLEEDer Retrofit System is capable of receiving the pilot light wires on the same low voltage input modules.

The ILC LightLEEDer Retrofit System comes standard with one (1) Low Voltage Input Module which has four (4) inputs. The ILC LightLEEDer Retrofit System for a 48 relay panel can accommodate up to four (4) Low Voltage Input Modules for a total of 16 inputs in standard configuration.



If additional low voltage inputs are necessary, additional low voltage input modules can be added either in the ILC LightLEEDer Retrofit Relay Panel interior, or in a small enclosure outside of the relay panel. Remote inputs can be mounted at the location of the existing low voltage switches or in existing control stations. Optional Digital 1-6 Button devices (LightSync Switch Stations), Modules for Occupancy sensors inputs (24VDC powered) and optional Photo sensor or 0-10VDC dimming control modules are also available. Consult your Retrofitter or ILC for additional options.