Quick Installation and Start up Guide

INTELLIGENT LIGHTING CONTROLS, INC.
Energy Saving Lighting Controls

This guide will provide a quick overview of installation and wiring the ILC Apprentice II controller. For more information and programming information, see the ILC Apprentice II Quick Reference or User Guide CD supplied with this controller. You may also visit www.ilc-usa.com to download the User Guide, or call ILC for more information or a printed User Guide.

1 Pre-Installation Checks

- Check all materials off the packing list to verify the order. Report any discrepancies or visible damage at once.
- Review electrical prints and other relevant project documentation.

2 Mounting the Controller

- Typically, the control panel is mounted near the lighting circuits to be controlled.
- The enclosure is manufactured with pre-drilled holes near each corner. Secure to the mounting surface with the hardware appropriate for the application.
- The panel is designed to operate in temperatures between 0 and 40°C and 10-90% humidity non-condensing.

3 Wiring the Controller

Warning: Keep all Low voltage and High voltage wires routed only in designated areas as shown in Figure 1.

- Remove fish paper barriers from the relays and transformer.

3.1 Wiring the Transformer:

- Run a dedicated 120 or 277 VAC circuit including a ground conductor and terminate to the primary connections of the transformer and the ground lug. Cap the unused lead. See Figure 1.
- Re-install fish paper barrier to isolate the high voltage area from the low voltage area.

3.2 Wiring the Relays:

Warning: The relays in this controller contain a solid-state device that may be damaged from a high fault short circuit if the following steps are not completed.

- Route the wires through the High Voltage Routing Area and temporarily connect the **line and load** wires for each circuit to the **line** terminal of the relay.
- Power the circuits to the loads to verify the circuit is void of any short circuits. Clear any shorts found and re-test.
- Power down circuits and remove the line and load wires from the temporary connection and connect the line and load wires as shown in figure 1.
- Re-install all fish paper barriers to isolate the high voltage area from the low voltage area.

3.3 Wiring Hardwire Switch Inputs:

- Run the required wiring between the switches and the switch inputs.
- Keep the wire lengths to a maximum of 1500 feet.
- Terminate as shown in Figure 1 for momentary or maintained switches.

3.4 Wiring LightSync Data Line Devices and Panels:

- See ApprenticeII User Guide for details.

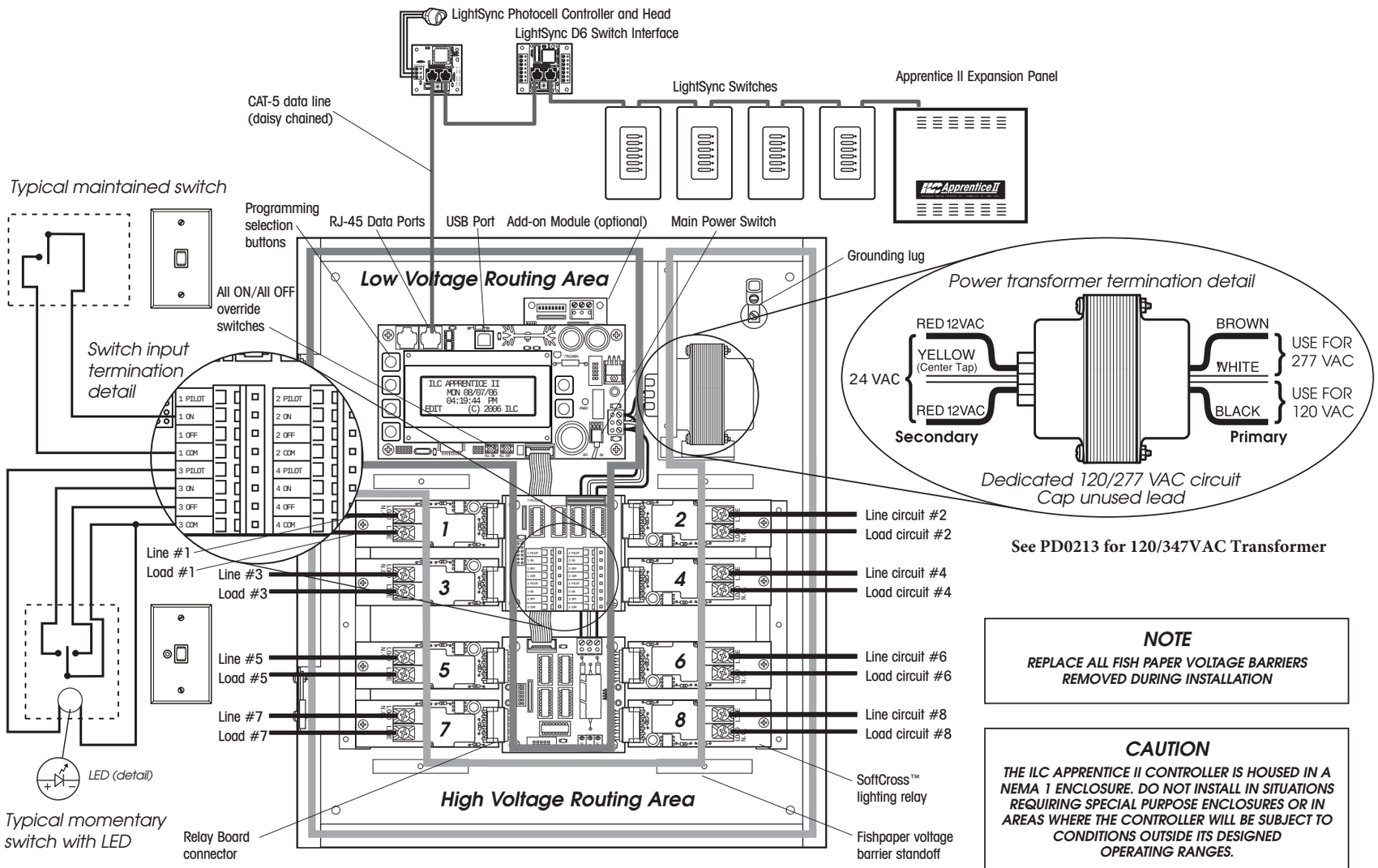

Figure 1 – ILC Apprentice II 08 Installation Detail

See PD0213 for 120/347VAC Transformer

NOTE

REPLACE ALL FISH PAPER VOLTAGE BARRIERS REMOVED DURING INSTALLATION

CAUTION

THE ILC APPRENTICE II CONTROLLER IS HOUSED IN A NEMA 1 ENCLOSURE. DO NOT INSTALL IN SITUATIONS REQUIRING SPECIAL PURPOSE ENCLOSURES OR IN AREAS WHERE THE CONTROLLER WILL BE SUBJECT TO CONDITIONS OUTSIDE ITS DESIGNED OPERATING RANGES.

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4 Pre-Power Checks

Complete the following checks BEFORE applying power to the ILC Apprentice II controller.

4.1 Check Controller Power Input

1. Verify that the controller power switch is OFF.
2. After verifying that the processor transformer source voltage is 120 or 277 VAC (whichever is appropriate), power-up the circuit.
3. Verify correct line voltage on the primary of the transformer.

4.2 Verify Controller's Supply Voltage

Verify that there is 24 VAC on processor transformer secondary and 12 VAC between each leg and the center tap. (See Figure 1.)

4.3 Double-Check Connections

1. Verify integrity of I/O connections.
2. Verify integrity of all internal and external wire/cabling.

4.4 External Monitoring and Control

If control of the ILC Apprentice II via Apprentice II Pro software and a PC is desired, consult the ILC Apprentice II User Guide appendix for instructions regarding the USB port.

5 Power-Up and Check Out

Complete the following procedures to power-up and checkout the ILC Apprentice II controller.

5.1 Power-Up the Controller

1. Turn the power switch located on the CPU board ON. (See Figure 1.)
2. Verify that the controller keypad screen displays the default time and date.
3. Verify that both power lights on each I/O board are lit. (See Figure 1.)

5.2 Verify the Lighting Relays

Switch all relays ON and OFF, pushing the All ON/All OFF override switches located on the CPU board. (See Figure 1.) Verify that the relay status LED goes ON and OFF and that the relay itself changes state. Verify that the relay controls the proper circuit.

5.3 Perform Initial Programming Procedures

(See enclosed ILC Apprentice II Quick Reference Guide or ILC Apprentice II User Guide Section 3.)

1. Clear memory.
2. Set the correct date and time on the controller.
3. Program the switch inputs and timers.

5.4 Verify the Switching Function

1. Operate each switch.
2. Verify that each switch controls the correct lighting relays in the manner you have programmed.

5.5 Verify the Timer Functions

Using Demo Clock x10 feature (see enclosed ILC Apprentice II Quick Reference Guide or ILC Apprentice II User Guide Section 3),

1. Verify that the relays respond as programmed.
2. Reset the controller clock to the correct date and time.

5.6 LightSync™ Switches

See the Apprentice II User Guide for installation and troubleshooting.

6 Troubleshooting

In the event of trouble, use the following procedures to identify the problem.

6.1 Controller Will Not Power-Up

1. Verify that the transformer has 120/277 VAC on the primary and 24 VAC on the secondary with 12 VAC between each leg to the center tap.
2. Verify that the power LED on the CPU board is lit.
3. If there is proper primary and secondary voltage on the transformer but the power LED is not lit and the keypad screen doesn't come up, consult the factory.

6.2 Lighting Relay(s) Will Not Function

1. Verify that there is 24 VAC to the terminal block on the output board.
2. Ensure that the Relay Board connector is fully engaged (See Figure 1).
3. Override the affected relay ON/OFF through the keypad. (See Apprentice II User Guide.)
4. If the relay doesn't respond, consult the factory.

6.3 Switch Input Will Not Function

1. Check your programming.
2. Verify proper connections at field and controller end.
3. Verify that there is only one maintained switch connected per input.
4. Unhook field connections from affected input. Connect test switch of same type as field switch.
5. Work the test switch.
6. Verify that the CPU is seeing the switch input by **viewing the current switch status**. This can be done with the keypad by going to the **Switch Status** screen and scrolling to the individual input or scanning all of the inputs to verify that a switch closure is being seen by the controller (See ILC Apprentice II User Guide). Also the output board(s)s can be tested through the keypad. Relays can be forced individually or all swept ON or OFF using the keypad (See ILC Apprentice II User Guide Section 3-3).
8. If the switch input or affected relay doesn't respond (or no response is viewed through the keypad), consult the factory.

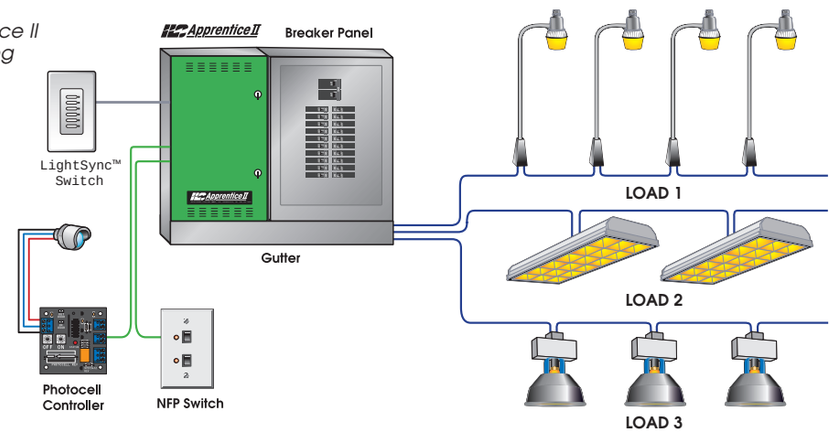
6.4 Timers Will Not Function Properly

1. Check your programming.
2. Verify the affected output integrity by mapping a switch input to the output and triggering it with a test switch. If the relay doesn't react, consult the factory.

6.5 Entire Input or Output Board(s) Will Not Function

1. Check to ensure that the data and power cables linking the I/O boards are connected properly and are free of opens and shorts.
2. Verify that the CPU sees the expansion I/O boards using the keypad. This can be done by going to the Relay Status screen and scrolling through the outputs to see if the CPU sees all of the outputs (See Section 3-3).
3. If the Input or Output board is not recognized by the CPU, consult the factory.

Typical ILC Apprentice II installation controlling outdoor, indoor and HID lighting



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