

**READ AND FOLLOW ALL SAFETY INSTRUCTIONS!  
SAVE THESE INSTRUCTIONS AND DELIVER TO OWNER AFTER INSTALLATION**

## IMPORTANT SAFETY INSTRUCTIONS

### **▲ WARNING**

**To reduce the risk of death, injury or property damage from fire, electric shock, cuts, abrasions, falling parts, and other hazards:**

- Service of the equipment must be performed by qualified service personnel.
- Installation and maintenance must be performed by a person familiar with the construction and operation of this product and any hazards involved. All applicable codes and ordinances must be followed.
- Read this document before installing, servicing, or maintaining this equipment. These instructions do not cover all installation, service, and maintenance situations. If your situation is not covered, or if you do not understand these instructions or additional information is required, contact *Synergy Lighting Controls*.

### **▲ WARNING**

**Before installing, servicing, or maintaining this equipment, follow these general precautions.**

**To reduce the risk of electrocution:**

- Make sure the equipment is properly grounded.
- Always de-energize any equipment before connecting to, disconnecting from, or servicing the equipment.

**To reduce the risk of fire:**

- Use supply conductors with a minimum installation temperature rating as specified.

**To reduce the risk of personal injury from cuts, abrasions:**

- Wear gloves to prevent cuts or abrasions from sharp edges when removing from carton, handling and maintaining this equipment.
- Do not install a damaged equipment.

*Synergy Lighting Controls*, a division of *Acuity Brands Inc.*, assumes no responsibility for claims arising out of improper or careless installation or handling of this product.

## SAVE THESE INSTRUCTIONS

# Installation Instructions

## SYRS EXTDS

### Digital Remote Station



#### SYRS EXTDS Basic Overview

The Synergy SYRS EXTDS Digital Remote Station is used with a Synergy controller and other digital stations to provide state-of-the-art networked lighting control. The SYRS EXTDS is available in 2, 4, 6 or 9 button configurations. It is equipped with a photocell input, an occupancy sensor input, and two outputs which are suitable for control of LPCS series power packs.

#### Before You Start

1. Always disconnect all power.
2. This device is supplied by a Class 2 low voltage transformer in the system enclosure. Install in accordance with National Electric code and any other codes that may apply.
3. Use only as intended and at the listed voltage.
4. Use only accessories recommended by Lithonia Control Systems.

#### Rough in Mounting Instructions For Remote Stations

Install a 4" square by 2.5" deep gang box, and either a Lithonia SYRS 1GR or Steel City 52C13 plaster ring at the required location. **No other plaster rings are approved for use.** The plaster ring should be slightly behind the wall face, within 1/8", and not protruding to finish off properly. See illustration below.

#### Important Remote Station Mounting Notes

The SYRS station flush mounts to a Lithonia SYRS 1GR or Steel City 52C13 plaster ring attached to a 4" square by 2.5" deep outlet box as shown in Figure 1. For masonry applications use Lithonia SQRS 1GB or Steel City GW-125-G one-gang masonry outlet box (1.875" W x 3" D min.).

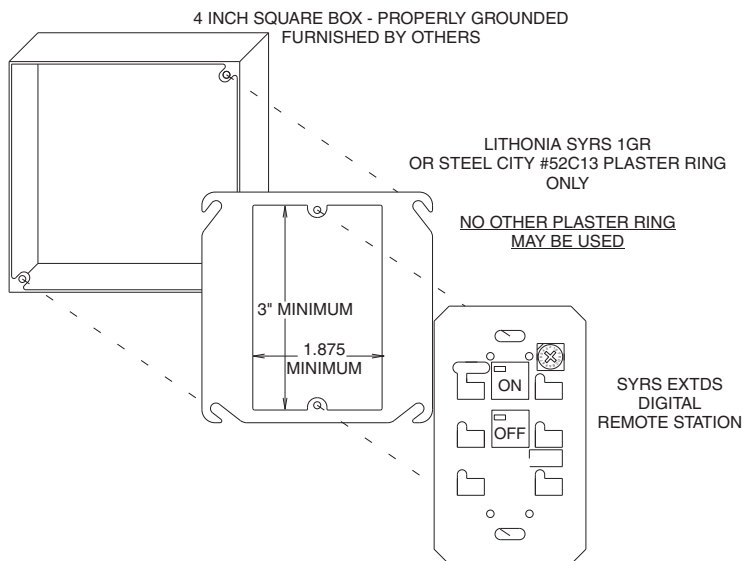
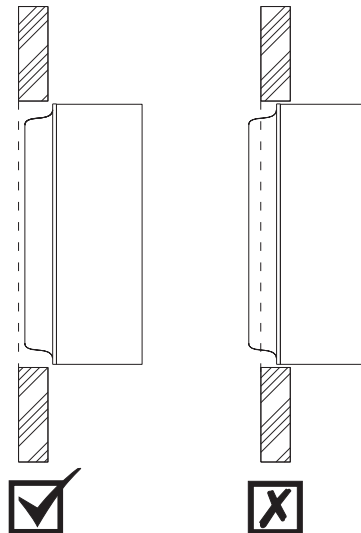


Figure 1 - SYRS Mounting Details



RIGHT

WRONG

# Installation Instructions

## SYRS EXTDS

### Digital Remote Station



#### Important Remote Station Rough In Wiring

1. Outlet boxes **must** be grounded for proper operation and to avoid possible product damage.
2. SYRS stations can be connected to a Class 2 low voltage Synergy A4 network.
3. **Do not** install A4 network cable in AC power conduit or raceways.
4. All A4 network devices **must** be connected in a daisy chain (in and out) configuration. "T" taps or branches in the network are **NOT** permitted. See *Figure 2*.
5. Network wire shall be:  
(2) #16 AWG conductors for power and (1) EIA-485 approved twisted and shielded pair for data signal. Approved cables are Lithonia SYA CABLE A4 (four conductors) or (1) Belden 3105A (2 wire, twisted and shielded pair) and 2 #16 AWG conductors, supplied by others.
6. Contact LCS Technical support at 1-800-533-2719 if A4 network length exceeds 2000 feet.
7. See *Figures 3 - 6* for detailed interconnect wiring of SYRS station network.

#### SYRS EXTDS Power Requirements

SYRS stations can be powered from the Synergy SYE enclosure power supply or a remote LPCS power station. The Synergy MLX system controller supports a maximum of 60 A4 network devices. A single SYE enclosure power supply can power a maximum of 20 SYRS stations. A single LPCS power station can power a maximum of 4 stations. See *Figures 3 and 4* for appropriate details. If the A4 network requires more than 20 SYRS stations, consult factory for guidelines. If a power supply is powering other network devices in addition to the SYRS stations, consult factory for guidelines.

#### SYRS EXTDS Remote Station Installation

1. Verify correct voltage is present on the A4 power conductors **BEFORE** connecting to the SYRS station. Maximum 28 VDC (nominal) should be present.
2. Connect A4 network wiring as shown in *Figures 4 or 5*.
3. Connect auxillary devices as shown in *Figures 6 or 7*.
4. Orient and mount station to plaster ring as shown in *Figure 1*.

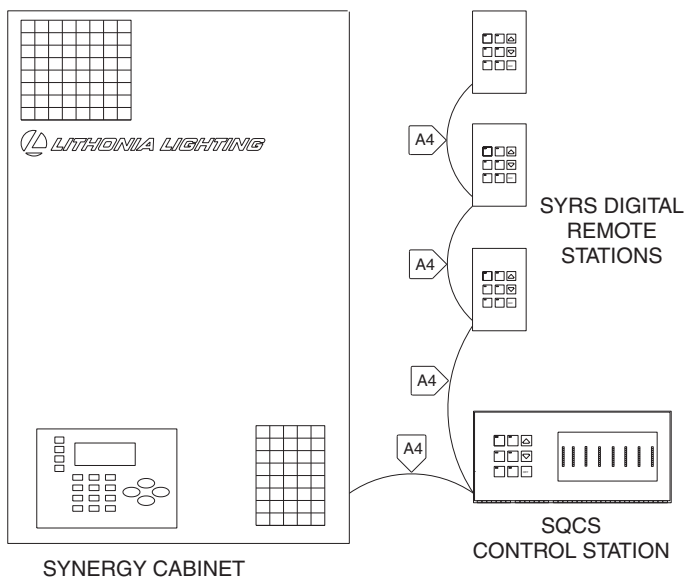


Figure 2 - SYRS Remote Station One Line Drawing

#### One Line Wiring Symbols

- A4** Control Station Network Cable. Class 2 low voltage; do not install in high voltage conduit or raceway. All devices connecting to network must be wired in a daisy chain (in and out) configuration; "T" taps or branches in the network are not permitted. The numerical order in which devices are connected is not important.

Network wire shall be:

(2) #16 AWG conductors for power and (1) EIA-485 approved twisted and shielded pair for data signal. Approved cables are Lithonia SYA CABLE A4 (four conductors) or (1) Belden 3105A (2 wire, twisted and shielded pair) and 2 #16 AWG conductors, supplied by others.

# Installation Instructions

## SYRS EXTDS

### Digital Remote Station



#### SYRS EXTDS Operation

The SYRS EXTDS can operate in either stand-alone mode or network mode.

##### Network Mode:

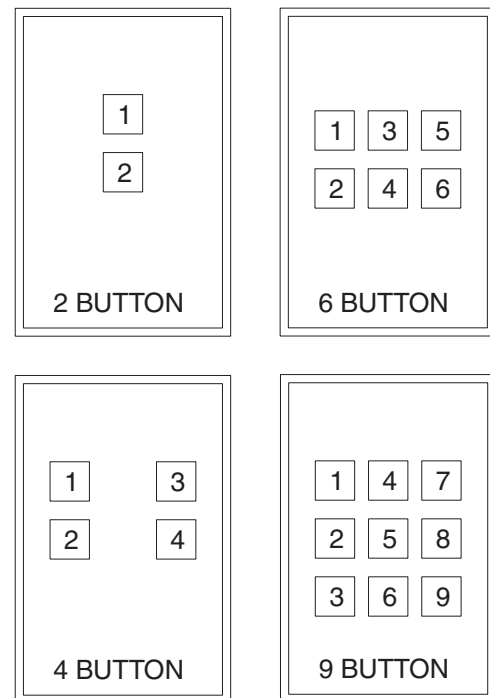
The SYRS EXTDS station communicates to the SYSC system controller through the Synergy A4 network. Each button on the SYRS EXTDS can be programmed for single or multiple circuit control of any load(s) connected to the Synergy system. Each button, the photocell input, and digital outputs can be monitored by the SYSC system controller to provide system wide functions based on each object's status.

##### Stand-Alone mode:

The SYRS EXTDS operates as a stand-alone unit. Only loads connected to the LPCS power packs controlled by the SYRS EXTDS will be controlled. An occupancy sensor input and photocell input are available for automatic lighting control.

#### SYRS EXTDS Button Operation

The SYRS EXTDS is available with 2, 4, 6 or 9 buttons. Each button can be programmed for single or multiple circuit control. The SYSC system controller stores the programming information for each button to output group assignment. Each button configuration requires a specific programming configuration. (See *Figure 3* for button numbering schemes) The SYRS station ships from the factory with the button configuration pre-programmed. In the event the button configurations are lost, the station will indicate an error condition by flashing all the button (green) LEDs in a Blink – Blink – Pause – Blink – Blink – Pause pattern. See the troubleshooting section for details on reprogramming the button configuration.

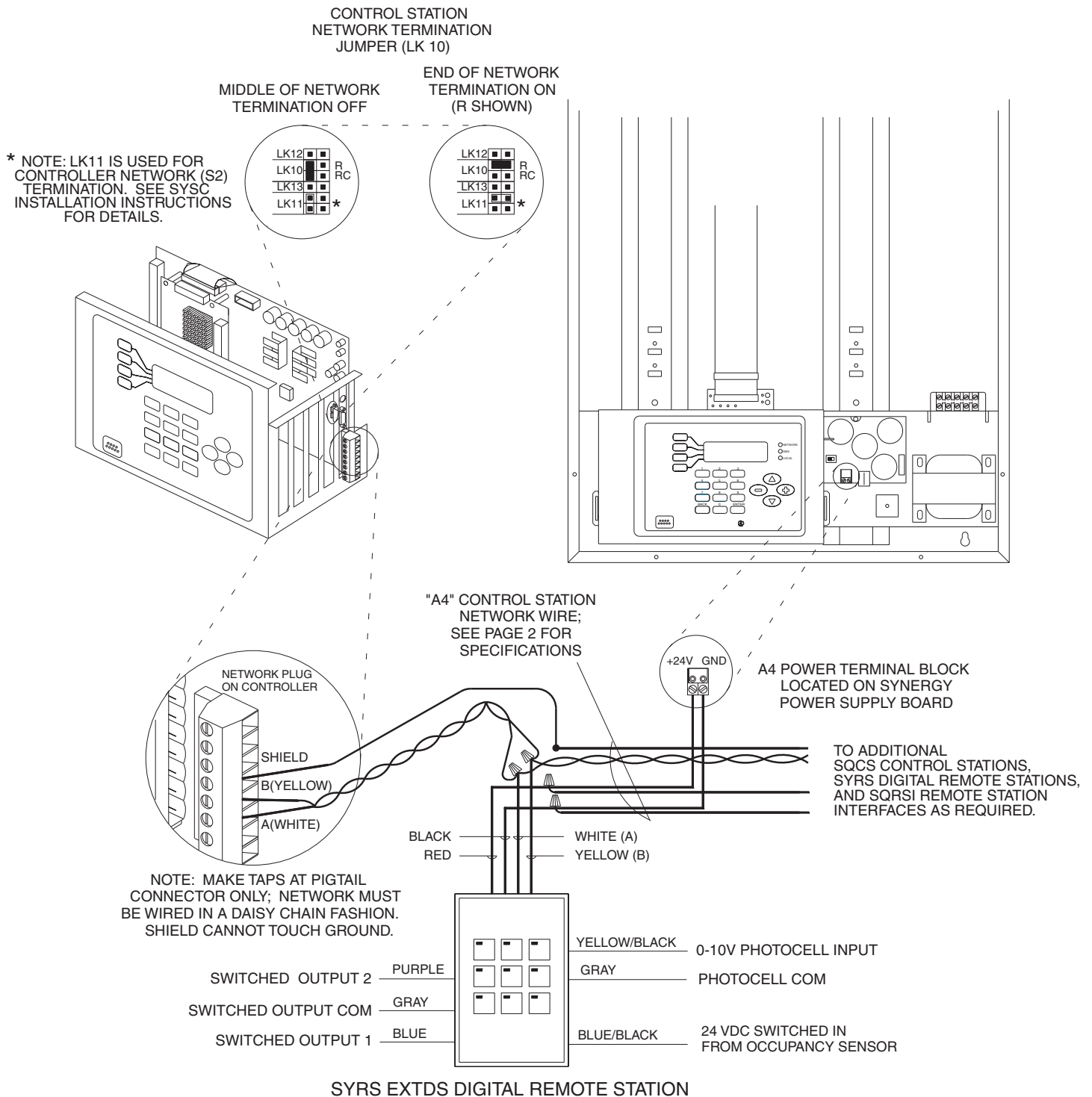


**Figure 3 - SYRS EXTDS Button Numbering**

# Installation Instructions

## SYRS EXTDS

### Digital Remote Station

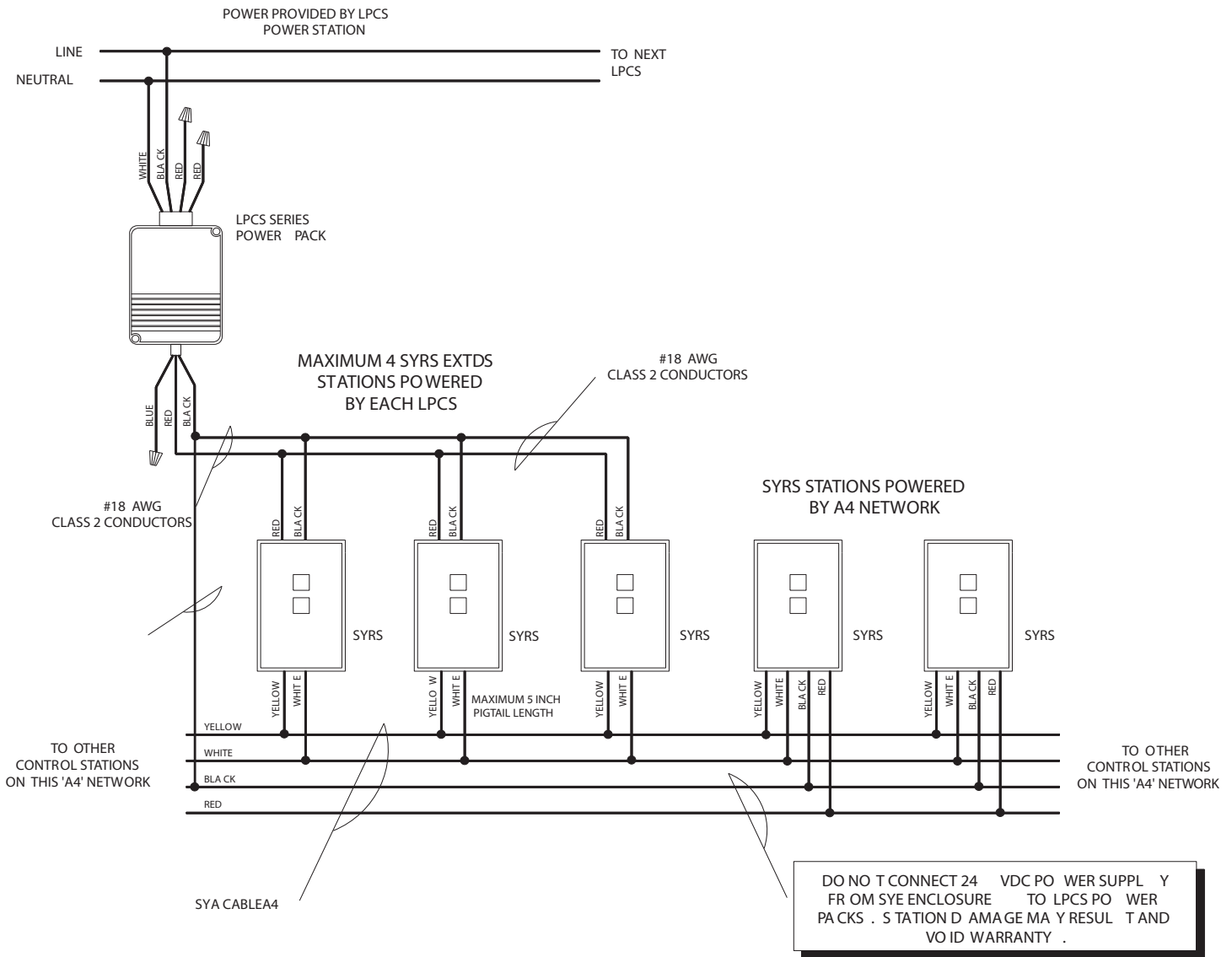


**Figure 4 - SYRS EXTDS Remote Station Network - Typical Wiring  
Power Supplied Synergy Enclosure**

# Installation Instructions

## SYRS EXTDS

### Digital Remote Station



**Figure 5 - SYRS EXTDS Remote Station Network - Typical Wiring  
Power Supplied by LPCS Series Power Packs**

# Installation Instructions

## SYRS EXTDS

### Digital Remote Station



#### SYRS Station Addressing

The SYRS station communicates to the controller through the Synergy A4 network. Each device on the A4 network **must** have a unique address. **DUPLICATE ADDRESSES ARE NOT ALLOWED!**

To set the network Address:

Select and set a unique network address for each station. For addresses 0 through 15 use SWITCH 1. For addresses 16 through 59 use SWITCHES 1 and 2. The address equals the value of SWITCH 1 added to the value of SWITCH 2. See *Figure 8* for the switch setting of a specific address.

#### SYRS A4 Network Termination

The A4 network must be properly terminated for proper operation. The device residing at each end of the network **MUST** be terminated. The SYSC system controller is normally located at one end of the network and ships from the factory with termination activated. If an SYRS station is at the end of the A4 network it must be terminated. (See *Figure 6* for dip switch settings) If SYRS stations are located at both ends of the network, BOTH SYRS stations must be terminated and the factory applied A4 network termination on the SYSC system controller **must** be removed. (See the SYSC system controller jumper settings in *Figure 4* to unterminate the controller)

DO NOT CONNECT 24 VDC POWER SUPPLY FROM SYE ENCLOSURE TO LPCS POWER PACKS. STATION DAMAGE MAY RESULT AND VOID WARRANTY.

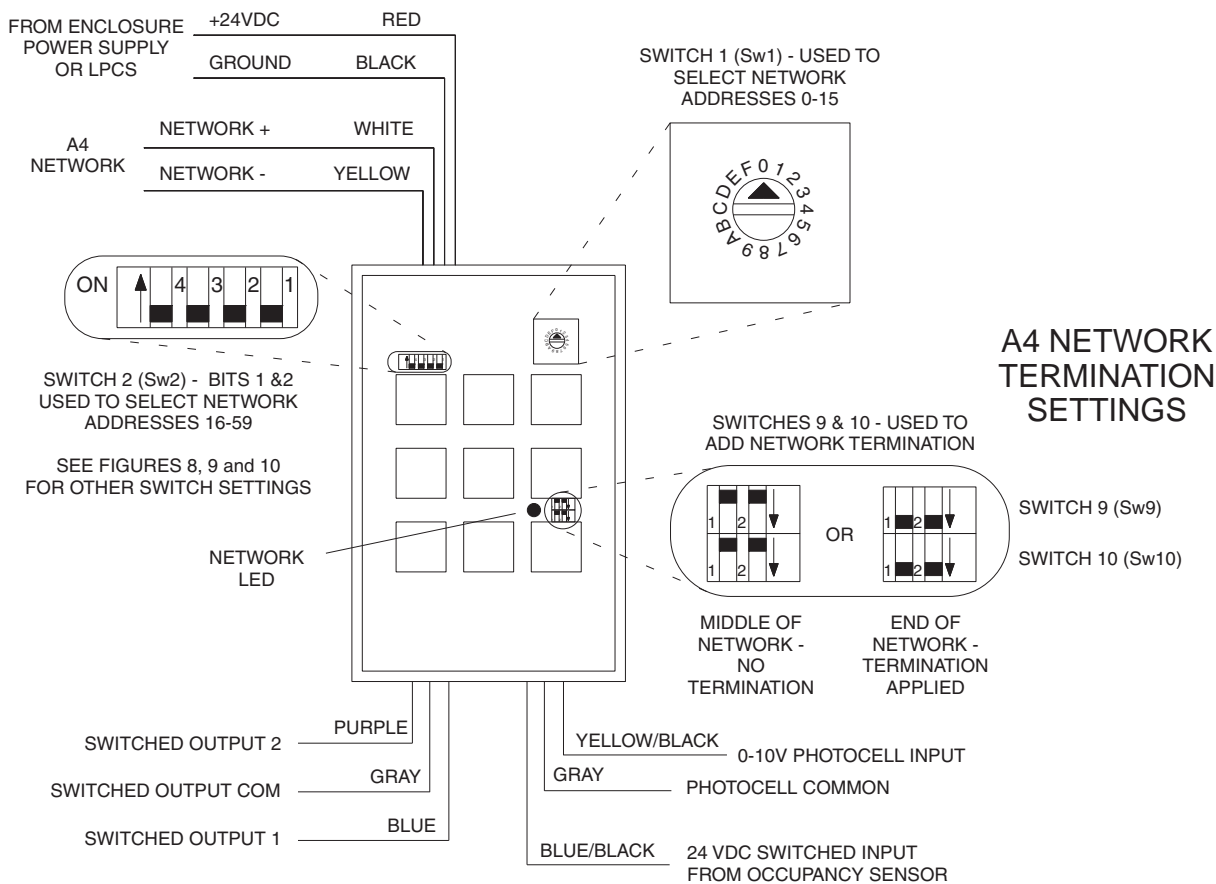
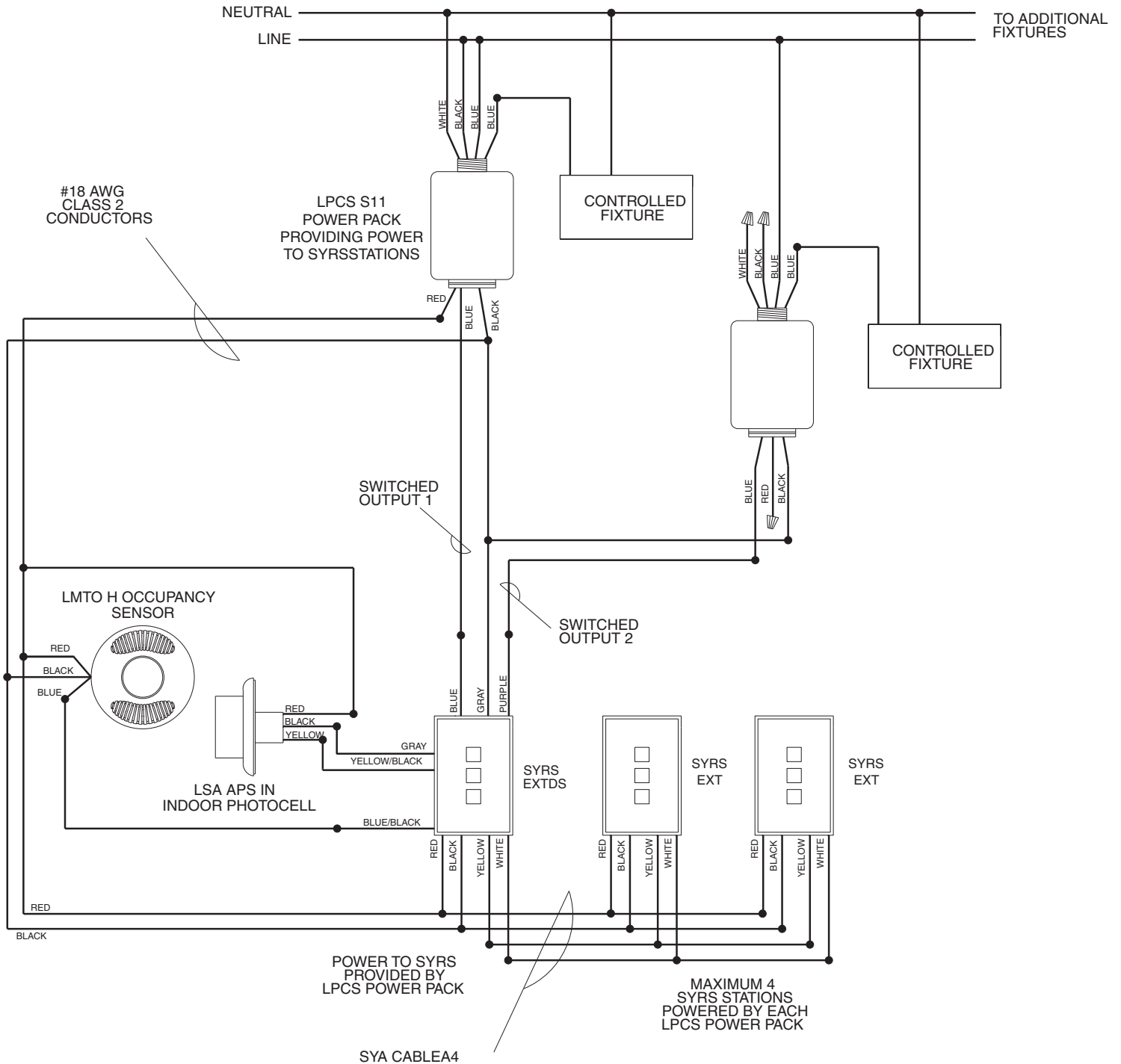


Figure 6 - SYRS EXTDS Details

# Installation Instructions

## SYRS EXTDS

### Digital Remote Station



**Figure 7 - SYRS EXTDS Details - Photocell, Occupancy Sensor and Dual Switching LPCS Power Packs**

# Installation Instructions

## SYRS EXTDS

### Digital Remote Station



## SYRS EXTDS Stand Alone Operation

The SYRS EXTDS has a special operation mode in which it can operate as a stand alone unit, this mode is entered by setting the station address to 60. (See *Figure 9* for details) Stand alone mode is intended to be used with 2, 4 or 6 button stations. A 9 button station can be used as well but will have 3 unused buttons. When operating in stand alone mode, control is as follows: (See *Figures 3 and 6* for button and output numbering)

### 2 BUTTON STATION

Button 1 turns on outputs 1 & 2  
Button 2 turns off outputs 1 & 2

### 4 BUTTON STATION

Button 1 turns on outputs 1  
Button 2 turns off outputs 1  
Button 3 turns on outputs 2  
Button 4 turns off outputs 2

### 6 BUTTON STATION

Button 1 turns on outputs 1  
Button 2 turns off outputs 1  
Button 3 turns on outputs 2  
Button 4 turns off outputs 2  
Button 5 turns on outputs 1 & 2  
Button 6 turns off outputs 1 & 2

### 9 BUTTON STATION

Button 1 turns on outputs 1  
Button 2 turns off outputs 1  
Button 4 turns on outputs 2  
Button 5 turns off outputs 2  
Button 7 turns on outputs 1 & 2  
Button 8 turns off outputs 1 & 2  
Buttons 3, 6, & 9 are not used

On all stations, the occupancy sensor input can be configured to control outputs 1 and 2.

The Photocell input can be configured to control outputs 1 and 2 when in Photocell Control Mode.

When operating in stand alone mode, the occupancy sensor input will turn ON/OFF the lighting circuits connected to the SYRS EXTDS outputs. The outputs can overridden OFF using the buttons on the station. Once turned OFF by a button, the occupancy sensor will NOT turn back on the outputs until the room becomes unoccupied, then again occupied.

The photocell input can be configured to provide automatic control of the lighting circuits connected to the SYRS EXTDS outputs. When the light level in the space reaches a sufficiently bright level (automatically determined in calibration), one of the outputs will turn OFF. If the light level continues to increase to a second brighter level, the second output will be turned OFF. As the lighting in the space decreases below the brightness levels, the outputs will turn back on in order to maintain the light levels found during calibration.

Note: The station buttons and the occupancy sensor can turn OFF the outputs, but can NOT turn ON an output if the photocell is keeping it OFF. If the user turns OFF an output using one of the buttons on the station, the photocell will not turn ON that output unless the button is turned back on or the room becomes unoccupied, then occupied again.

Simple multi-location operation is possible by connecting multiple stations together via the four wire A4 control station network. Button 5 on a six button station or button 1 on a two button station will send a 'Master ON' message across the network which causes all connected stations to turn ON both outputs if the local photocell is not holding them OFF. Button 6 on a six button station or button 2 on a two button station will send a 'Master OFF' message across the network which will cause all connected stations to turn OFF both outputs.

# Installation Instructions

## SYRS EXTDS

### Digital Remote Station



## SYRS EXTDS Programming Modes

### Photocell Control mode:

Photocell Control mode uses a photocell to maintain a predetermined user light level by switching off one or both of the the lighting circuits connected to the SYRS EXTDS outputs. Photocell Control Mode is selected by placing position 3 of SW2 in the ON (up) position. (See *Figure 10* for details)

### Photocell Maximum Level Calibration

The maximum amount of ambient light the photocell will see must be calibrated into the station by using this procedure. The SYRS EXTDS uses this level to make it's internal photocell calculations. Calibration should be done while the photocell is seeing the maximum amount of available light. Enter Photocell Maximum Level Calibration mode by setting position 4 on SW2 in the on (up) position and position 3 in the off (down) position. (See *Figure 10* for details) Press and hold any button for 3 seconds, the high level will be saved. If the level is successfully saved, all the button LEDs will illuminate. If the button LEDs blink, there was a problem setting the level and it was not saved.

There 2 possible errors. The station will indicate the error by blinking it's button LED's:

3 blinks then a pause, then repeat - The high level exceeds the 10V output maximum, caused by too much light into the photocell. Try adjusting the sensitivity down at the photocell.

4 blinks then a pause, then repeat - The high level is below the 2V minimum output, caused by not enough light into the photocell. Try adjusting the sensitivity up at the photocell or moving the photocell closer to the light source.

### Photocell Control Calibration:

Photocell control calibration must be performed in order for photocell control mode to operate correctly. The SYRS EXTDS automatically determines when to switch the outputs on/off based on calculations made during callibration. During calibration, the station measures the photocell input level with the outputs on, then off, and determines how much light level each output provides. It will then set the calibrated light level equal to the amount of light both outputs provide.

To enter into calibration mode, Positions 1-4 on SW2 should be in the on (up) position. (See *Figure 10* for details) Press and hold any button for 3 seconds to start calibration mode. While calibration is in progress, the button LEDs will blink a code, blink-blink-pause-blink-blink-pause, until the calibration is completed (a few seconds). Once calibration is complete, all button LED's will be on. If calibration fails (level too high or too low), the button LED's will blink an error

code by flashing 5 times, then followed by a long pause. This pattern will continue to flash as long as the error condition is present and the station is in photocell control mode.

### **Photocell Control Enable/Disable:**

Photocell Control Enable / Disable mode is used to select which outputs are used in Photocell Control Mode. To enter Photocell Output Enable/Disable Mode, positions 1, 3 and 4 on SW2 should be in the on (up) position and position 2 in the off (down) position. (See *Figure 10* for details) Buttons 1 & 2 are used to select outputs 1 & 2 respectively. The button LED will indicate the control status. When the LED is on, the output is controlled, when the LED is off, the output is not controlled. Each press of the button will toggle the control status.

### Photocell Sensitivity Adjustment:

Photocell sensitivity is used to adjust the level at which the lights turn on/off in Photocell Control Mode. This level is automatically set during the Photocell Calibration Mode. However, this level can be changed slightly higher or lower by using the sensitivity adjustment. To enter sensitivity adjustment mode, positions 2, 3 and 4 on SW2 should be in the on (up) position and position 1 in the off (down) position. (See *Figure 10* for details) Buttons 1 & 2 control the sensitivity. The higher the sensitivity, the longer the outputs remain on (more light). The lower the sensitivity, the sooner the outputs turn off (less light). The normal setting is when both LEDs 1 & 2 are on. There are 5 levels of adjustment higher and 5 levels lower. The level can be determined by counting the number of times an LED blinks. LED 1 for higher sensitivity and LED 2 for lower.

### Occupancy Sensor Control Enable/Disable:

(stand alone operation only)

Occupancy Sensor Control enable/disable mode is used to select which outputs are controlled by the occupancy sensor input. To enter Occupancy Sensor Control Enable/Disable Mode, positions 3 & 4 on SW2 should be in the on (up) position and positions 1 & 2 in the off (down) position. (See *Figure 10* for details) Buttons 1 & 2 are used to select outputs 1 & 2 respectively. The button LED will indicate the control status. When the LED is on, the output is controlled, when the LED is off, the output is not controlled. Each press of the button will toggle the control status.

# Installation Instructions

## SYRS EXTDS

### Digital Remote Station

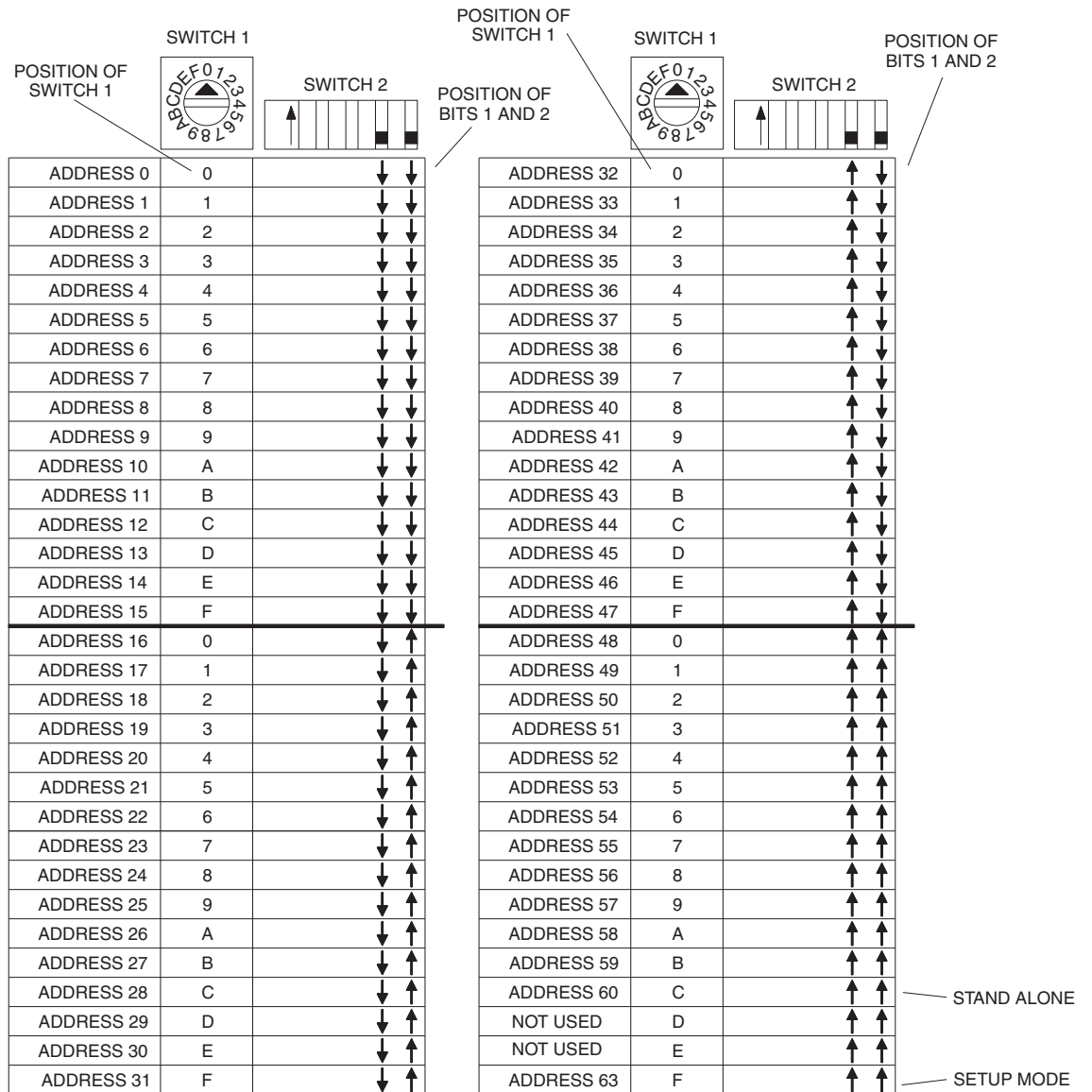


Figure 8 - SYRS Addresses

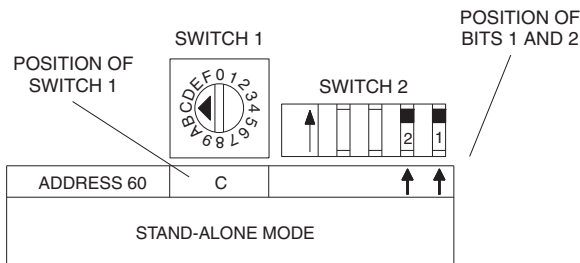


Figure 9 - Stand Alone Mode Dip Switch Setting



# Installation Instructions

## SYRS EXTDS

### Digital Remote Station



## SYRS EXTDS Troubleshooting

### **SYMPTOM:**

ALL BUTTON (GREEN) LEDES ARE FLASHING

#### **Flashing in Unison:**

An A4 network communication error has occurred. Check and verify all A4 network connections and verify the system controller is functioning properly. Refer to the controller operations manual for proper operating and troubleshooting instructions.

#### **Blink – Blink – Pause – Blink – Blink – Pause pattern:**

The station's button configuration has been lost. To reprogram the button configuration for an SYRS station, follow these steps:

#### **BUTTON RECONFIGURATION**

1. Record the current setting of SWITCH 1 and SWITCH 2. (network address)
2. Set SWITCH 1 to "F" and SWITCH 2, bits 1 & 2, to the UP (ON) position. (network address "63") See Figures 8 for details.
3. Press and hold any button for more than 3 seconds. All button LEDs will start to flash.
4. Press and release each button. (The order in which the buttons are pressed is NOT important) After each button is pressed the button LED will stay on, no flashing.
5. Return SWITCH 1 and SWITCH 2 to the network address setting recorded earlier.

#### **Note:**

Only configure one station at a time on the A4 network.

#### **Blink - Blink - Blink - Pause - Blink - Blink - Blink - Pause:**

Photocell high set point exceeds 10V; adjust the sensitivity on the photocell (see photocell installation instructions for details).

#### **Blink - Blink - Blink - Blink - Pause - Blink - Blink - Blink - Blink - Pause:**

Photocell high set point is below 2V; adjust the sensitivity on the photocell or move the photocell closer to the light source.

### **SYMPTOM:**

SYNERGY SYSTEM RESPONDS SLOWLY OR WILL NOT RESPOND TO SYRS BUTTON PRESSES

Check the following:

1. Each device on the A4 network **must** have a unique address. **DUPLICATE ADDRESSES ARE NOT ALLOWED!** Using duplicate addresses will cause poor system performance, erratic operation and network communication errors.
2. Verify the A4 network address for each station by checking Switches 1 and 2. See *Figure 8* for switch settings of a specific address.

Contact Lithonia Controls Technical Support at 800-533-2719. Lithonia Controls Technical Support is available from 8:00 a.m. to 5:00 p.m. EST, Monday through Friday, for phone consultation.

## Warranty

Lithonia Control Systems warrants all equipment to be free from defects in manufacturing under normal and proper storage, installation and operation for a period of one (1) year. Our guarantee liability extends only to the repair or replacement of the defective part and no labor charges for correction of the defect by repair or replacement will be honored by Lithonia Controls Systems unless prior written authorization has been granted by our Customer Service Department.

Visit Lithonia Control Systems on the internet at <http://www.lithonia.com/controls> for additional information on products, technical data and installation instructions.