

**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 Digital Remote Station

w/EXT Option



SYRS EXT Basic Overview

The Synergy SYRS EXT Digital Remote Station is used with a Synergy controller and other digital stations to provide state-of-the-art networked lighting control. The SYRS EXT is available in 1 to 9 button configurations. The SYRS EXT provides both analog (photocell) and digital (occupancy sensor) inputs for use in local or networked operations, and utilizes Proportional Integral Derivative (PID) technology to provide Daylight Harvesting on locally controlled circuits. Daylight Harvesting (PID mode) maintains a constant light level based on a user defined light level.

Before You Start

1. Always disconnect all power.
2. This device is supplied by a Class 2 low voltage transformer in the system enclosure or a Class 2 low voltage transformer contained in an LPCS power station. 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 Synergy Lighting Control systems.

Rough in Mounting Instructions For Remote Stations

Install a 4" square by 2.5" deep gang box and either a Synergy 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 Control Station Mounting Notes

The SYRS EXT station flush mounts to a Synergy 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 Synergy SQRS 1GB or Steel City GW-125-G one-gang masonry outlet box (1.875" W x 3" D min.).

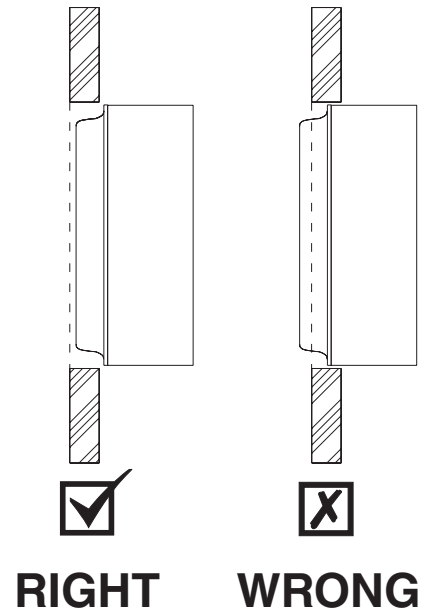
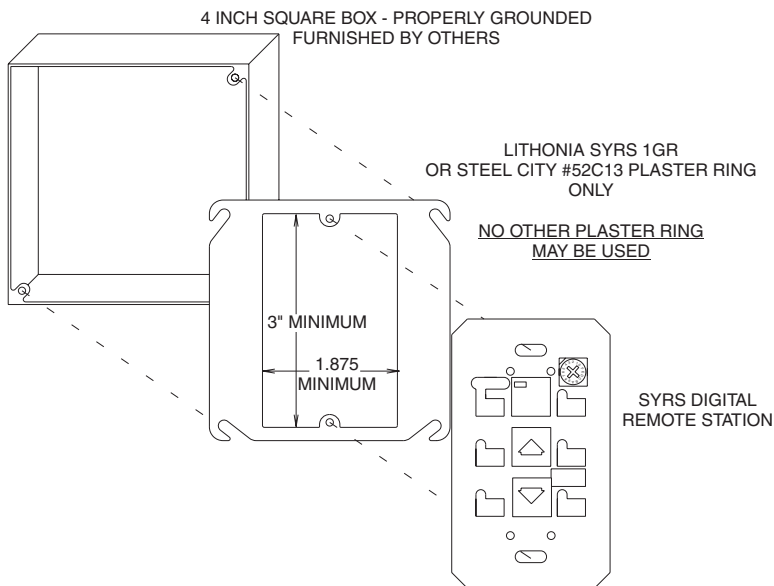


Figure 1 - SYRS Mounting Details

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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 Synergy 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 Synergy Lighting Controls 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.

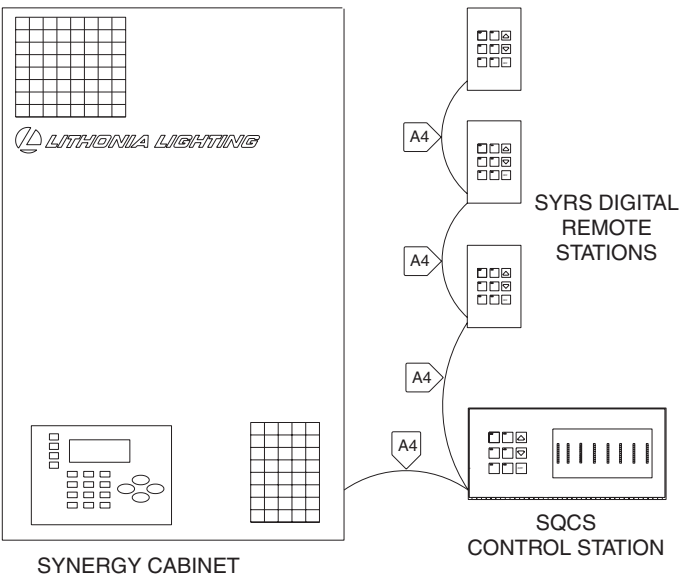


Figure 2 - SYRS Remote Station One Line Drawing

SYRS Power Requirements

SYRS stations can be powered from the Synergy SYE enclosure power supply or a remote LPCS power station. The Synergy 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 3 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 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 3 or 4*.
3. Orient and mount station to plaster ring as shown in *Figure 1*.

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 Synergy SYA CABLE A4 (four conductors) or (1) Belden 3105A (2 wire, twisted and shielded pair) and 2 #16 AWG conductors, supplied by others.

SYRS EXT Operation

The SYRS EXT can operate in one of several modes: stand-alone manual mode, stand-alone PID mode or network mode.

Stand-Alone Manual Mode:

SYRS EXT stations can be operated in the stand-alone manual mode. In this mode the user has manual control of the lighting loads connected to the switched or dimmed outputs. The light level can be raised or lowered using the Raise/Lower buttons, or can be switched ON/OFF using the alternate action ON/OFF button (the on/off function requires the use of an LPCS power station). On SYRS EXT stations containing three or more buttons, the button functions default to the following: (See Figure 6 for button numbering)

ON/OFF - Button 1

Raise - Button 2

Lower - Button 3

An occupancy sensor (if used) will automatically turn the connected lights on and off. **The photocell input is disabled.**

Stand-Alone PID Mode:

The SYRS EXT utilizes the photocell input to operate in daylight harvesting mode, which automatically controls the analog (dimmer) output level. The SYRS EXT's photocell input can be calibrated to maintain a user defined light level (ex. 75 foot candles), which sets the maximum amount of artificial light (dimmer) output from the station. The dimmer output level can be manually adjusted while in PID mode, but it will **not** exceed the maximum level set during calibration.

An occupancy sensor (if used) will automatically turn the lights on and off.

Network Mode:

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

Network PID Mode:

The SYRS station can function in PID mode while being connected to the Synergy A4 network. The SYRS EXT network functions operate as described in the network mode section. However, only loads connected to the analog (dimmer) output of the SYRS EXT are controlled by the photocell, as described in the stand-alone PID mode section.

SYRS EXT and Occupancy Sensor

The SYRS EXT contains a digital input compatible for use with all Lithonia supplied occupancy sensors. When selecting a mounting location for the sensor, position the sensor where it will not detect movement in undesired areas. (Refer to the occupancy sensor's documentation for coverage specifications) In an office, do not place the sensor where it will detect hallway traffic causing the loads to turn on when the office is unoccupied. In open areas, place the sensor in the center of the area being controlled.

See *Figure 6* for occupancy sensor wiring details.

SYRS EXT and Photocell

The SYRS EXT can be used in conjunction with a Synergy DEQ APS photocell to provide automatic fluorescent dimming control. The SYRS EXT has a 0-10 VDC photocell input which can be used to provide automatic Daylight Harvesting. Daylight Harvesting (PID mode) maintains a constant light level based on a user defined set point.

See photocell installation section for more details and *Figure 6* for photocell wiring details.

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SYRS Digital Remote Station

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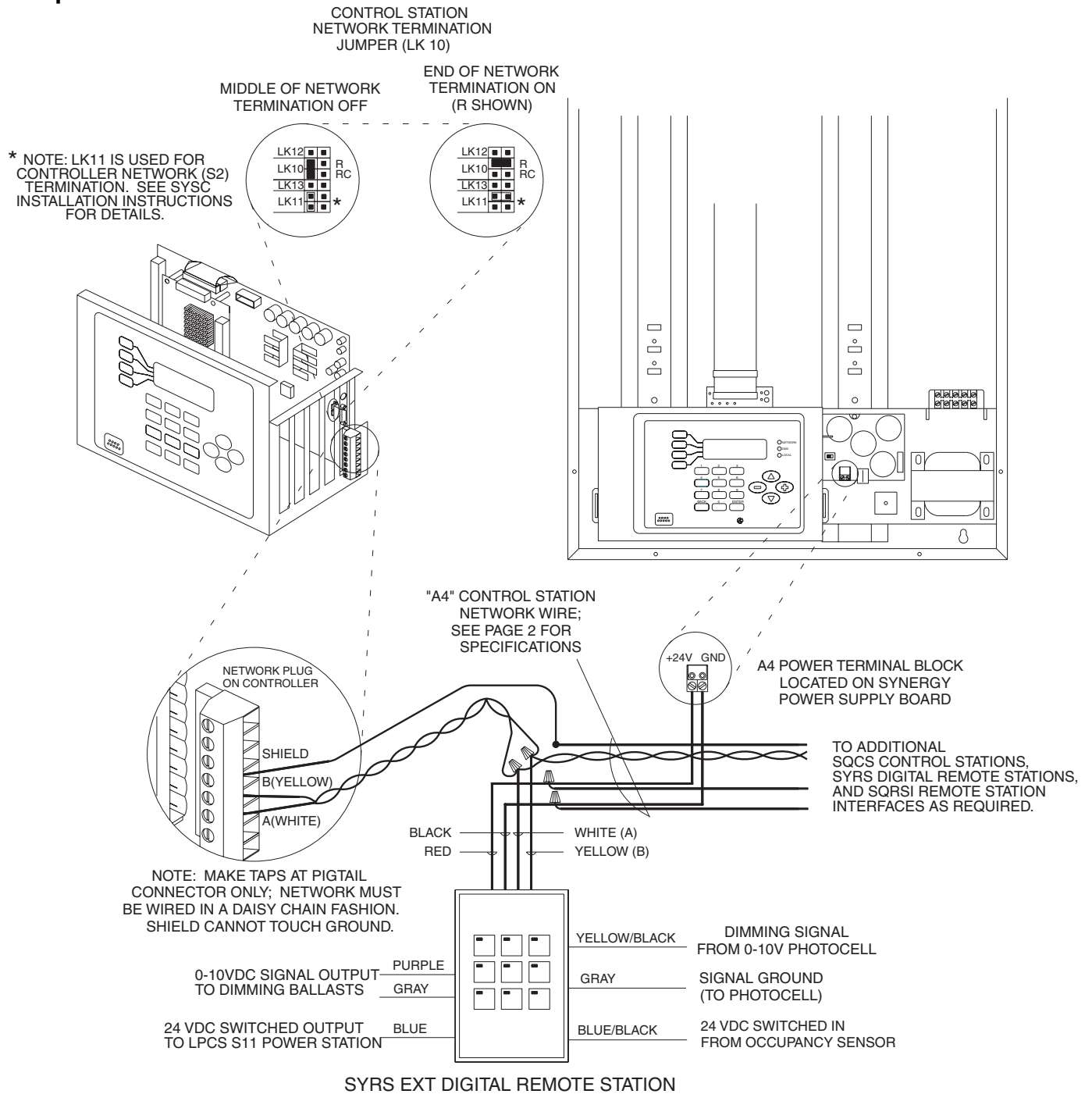
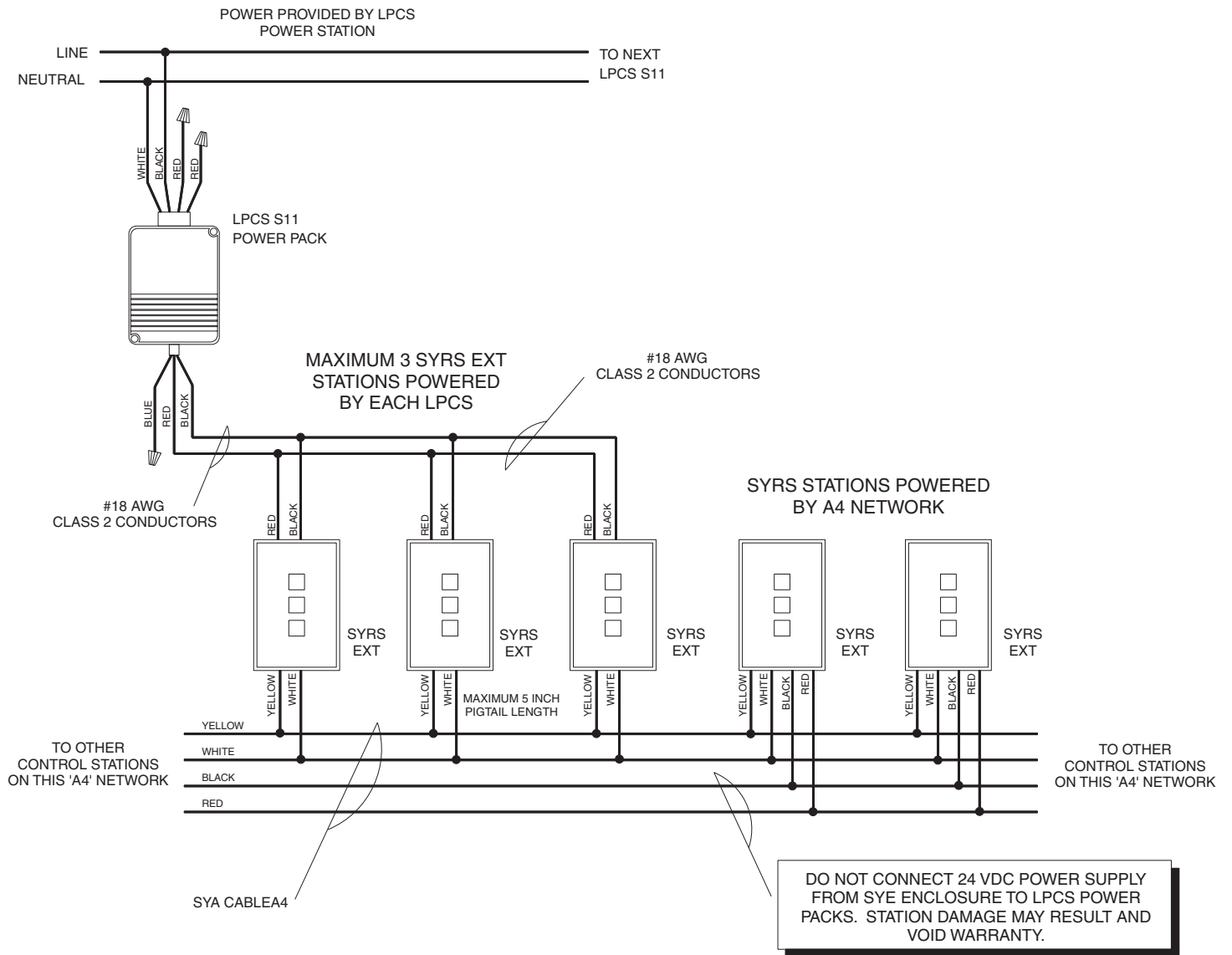


Figure 3 - SYRS EXT Remote Station Network - Typical Wiring
Synergy Enclosure Power Supply

IMPORTANT: Control Station network miswires may cause damage and void warranty. Verify proper voltages are present before connecting power to the Remote Station.

Installation Instructions

SYRS Digital Remote Station w/EXT Option



**Figure 4 - SYRS EXT Remote Station Network
Typical Power Wiring**

Installation Instructions

SYRS Digital Remote Station w/EXT Option



SYRS EXT 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 *Figures 5 and 8* for specific address settings.

SYRS EXT 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 5* 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 3* to unterminate the controller)

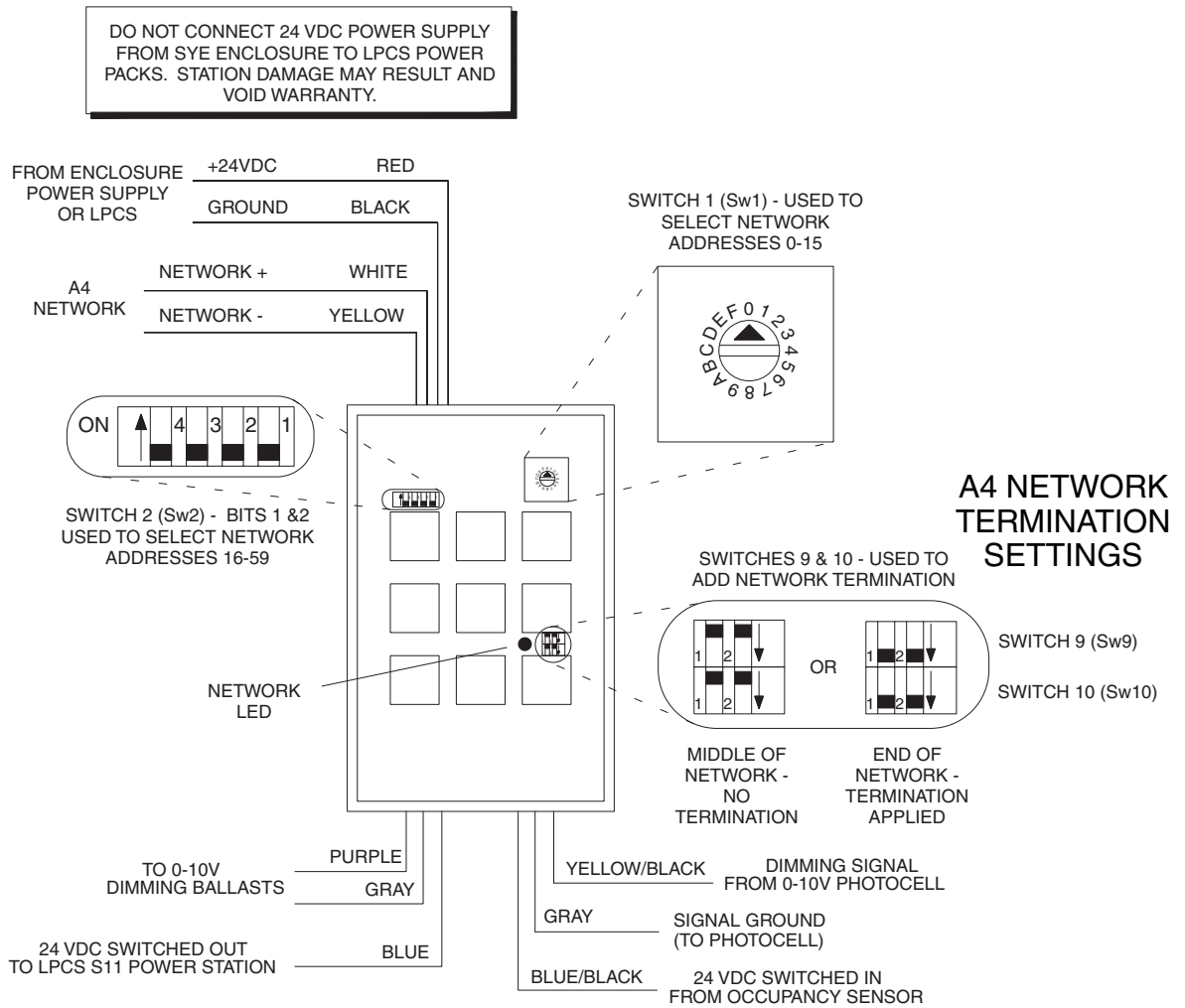


Figure 5 - SYRS EXT Details

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SYRS Digital Remote Station
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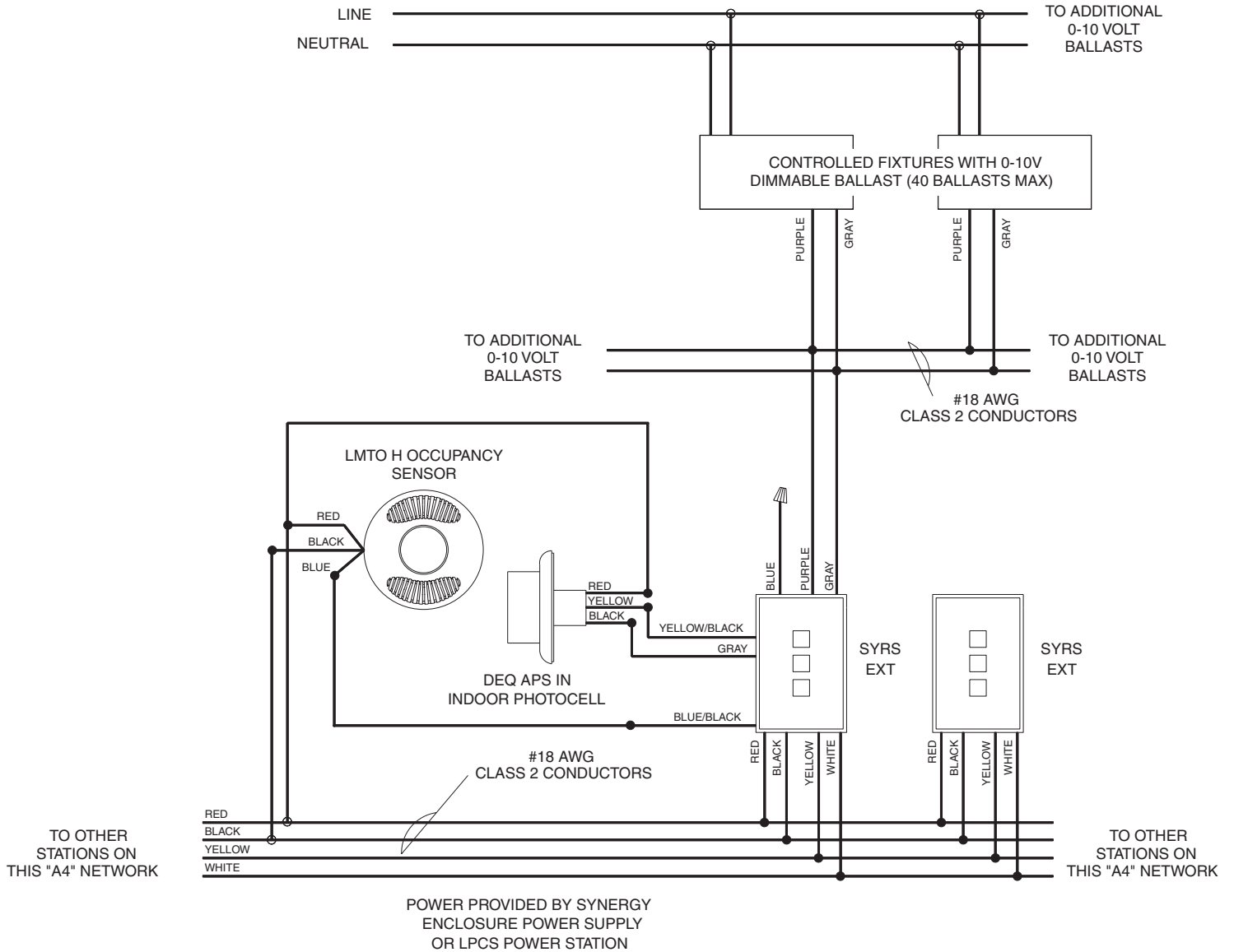


Figure 6 - SYRS EXT Details
Typical Wiring

Installation Instructions

SYRS Digital Remote Station w/EXT Option



SYRS EXT Button Operation

The SYRS EXT is available with one to nine 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 (1 through 9) requires a specific programming configuration. (See *Figure 7* for button numbering schemes) The SYRS EXT 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.

SYRS Replacement

If the SYRS EXT station is being installed to replace an older unit (series 10/11), and after replacement the button functions do not work as expected, the SYRS EXT station may need to be setup with an alternate button configuration. To use the alternate configuration perform the following steps:

Perform the button reconfiguration setup procedure listed in the troubleshooting section, but at step 2 set SWITCH 1 to “E” and SWITCH 2, bits 1 & 2, to the UP (ON) position. (network address “62”) See *Figure 9* for details. If this does not correct the issue, contact Synergy Lighting Control Technical Support at 1-800-533-2719 for further assistance.

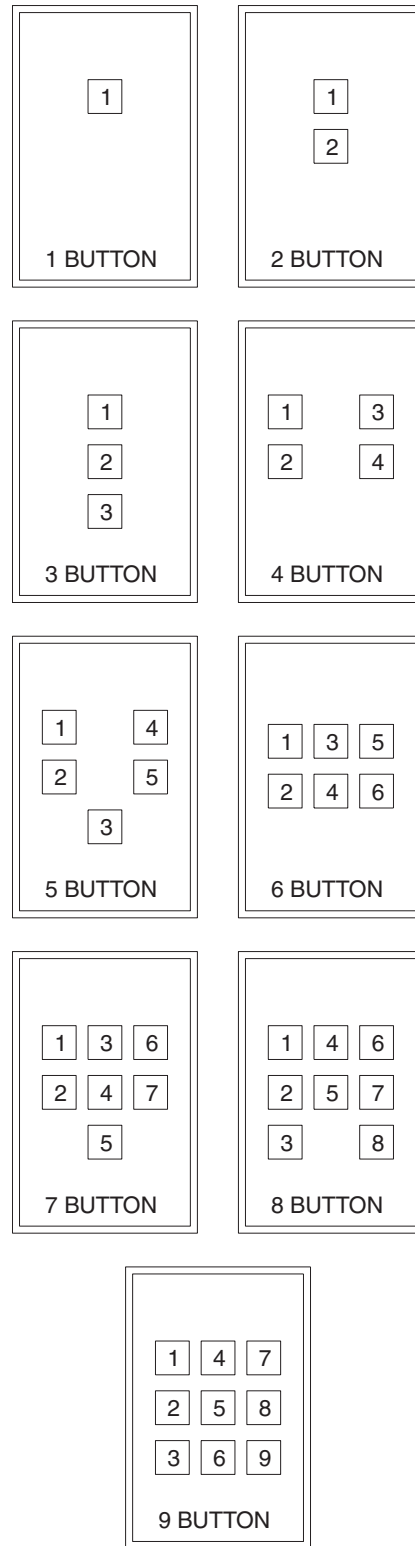


Figure 7 - SYRS EXT Button Numbering

Photocell Installation

Careful consideration should be given to photocell placement to achieve maximum system performance.

Follow these guidelines for proper photocell installation:

1. Do not mount photocells in areas with exposure to direct sunlight or areas exposed to sunlight reflected from highly reflective surfaces.
2. Do not mount photocells next to fixtures not controlled by the photocell.
3. Do not mount photocells directly above indirect lighting fixtures.
4. Do not mount photocells within 6 feet of windows. Special consideration should be given for windows facing east or west to avoid exposure to direct sunlight.
5. Photocells should be evenly spaced between adjacent fixtures being controlled by the photocell.
6. Mount photocells over commonly used areas within the space being controlled.
7. Horizontal window blinds should not be adjusted to focus light directly on the photocell. Doing so will adversely affect dimming performance.
8. For optimum performance, the photocell should be located so it receives an equal amount of daylight and artificial light.

Photocell Calibration - PID Mode

Before operating in PID mode, the photocell input on the SYRS EXT must be adjusted to the desired maximum light level. This adjustment sets the maximum amount of light (natural and artificial) available in the space. This adjustment should be performed with minimal natural lighting in the area. (blinds closed, doors closed, windows covered, or at night)

Follow these steps to adjust the maximum light level:

1. Verify the SYRS EXT is NOT in PID Mode. Set SWITCH 2 - position 3, in the DOWN (OFF) position. (See *Figure 5* for details)
2. Manually adjust the lights with the raise / lower buttons to desired maximum light level.
3. Enter Calibration mode:
Set SWITCH 2 - position 4, to the UP (ON) position.
4. Press and hold any button for three seconds. The button (green) LEDs will illuminate when the level is saved correctly.
6. Enter the Normal Mode:
Release the button, then set SWITCH 2 - position 4, to the DOWN (OFF) position.
7. Enter PID Mode:
Set SWITCH 2 - position 3, to the UP (ON) position.

If the button LEDs are blinking after trying to save the maximum light level, the level was not accepted. The button LEDs will blink in one of two patterns:

Blink - Blink - Blink - Pause - Blink - Blink - Blink - Pause
Maximum level exceeds 10V; adjust the sensitivity on the photocell (see photocell installation instructions for details).

Blink - Blink - Blink - Blink - Pause - Blink - Blink - Blink - Blink - Pause
Maximum level is below 2V; adjust the sensitivity on the photocell or move the photocell closer to the light source.

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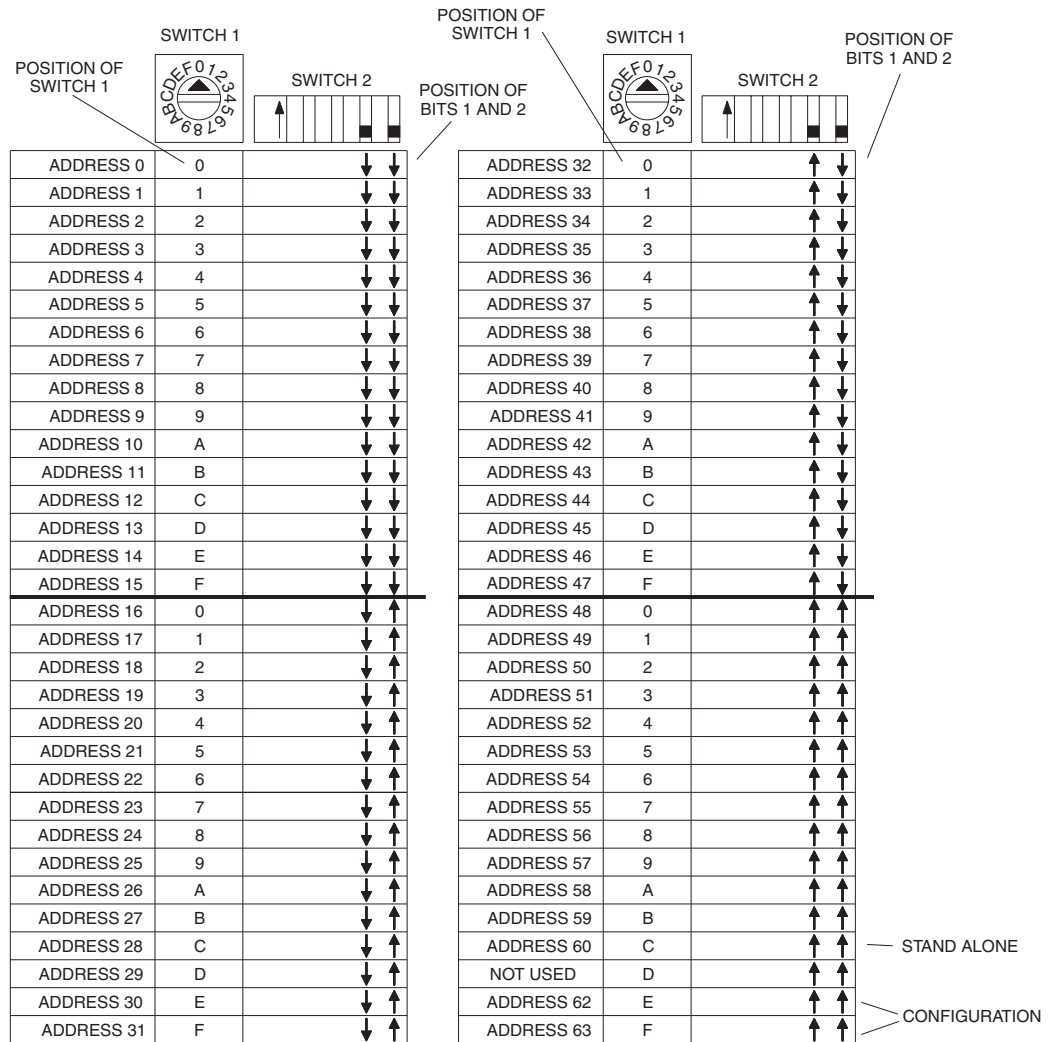


Figure 8 - SYRS Addresses

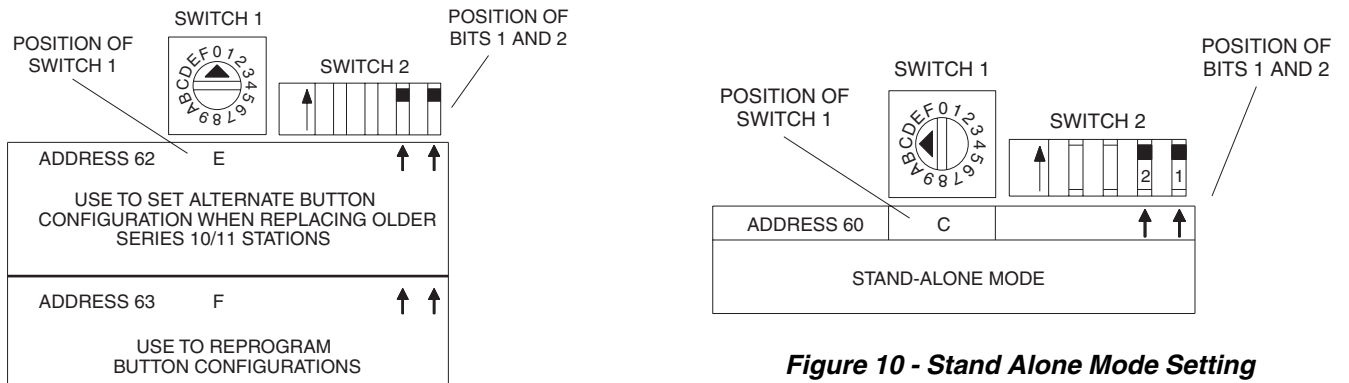


Figure 9 - Button Reconfiguration Settings

Figure 10 - Stand Alone Mode Setting

Installation Instructions

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SYRS EXT Troubleshooting

SYMPTOM:

ALL BUTTON (GREEN) LEDS 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 5 and 9* 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 *Figures 5 and 8* for switch settings of a specific address.

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

Visit Synergy Lighting Controls on the internet at <http://www.synergylightingcontrols.com> for further information on products, technical data or installation instructions.

Warranty

Synergy Lighting Controls warrants all equipment to be free from defect 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 Synergy Lighting Controls unless prior written authorization has been granted by our Customer Service Department.