



SYGS Installation Guide

SECTION 1 – Safety

**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 at 1-800-533-2719.

Software Compatibility

For optimal compatibility the Synergy controller should use firmware 2.71 or later and Synergy Config version 2.1.16 or later. **DO NOT** attempt to upgrade a Synergy controller currently using firmware 2.30 or earlier. Consult factory for firmware updates.

⚠ 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 insulation 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 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.

SECTION 2 - Installation

SYGS Basic Overview

The SYGS is a graphical touchscreen control station for Synergy Lighting Control systems. The clean styling is ideal for high-finish areas and its high resolution screen is easy to view and simple to use. The SYGS station connects to the Synergy lighting control system via a four-conductor network bus. It is fully compatible with current Synergy user interfaces. Up to 60 devices per SYSC, MLS or MLX controller.

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 Synergy Lighting Control Systems.

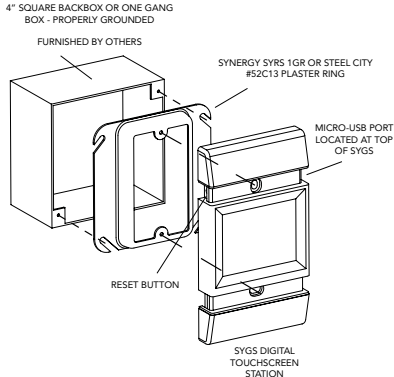
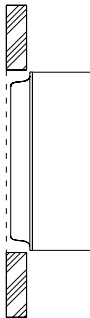


Figure 1 - Exploded View of Control Station

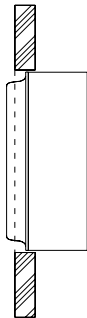
Rough-In Mounting Instructions/ Important Notes

The SYGS station flush mounts to a one gang box (2-1/2" minimum inside depth) or to a Synergy SYRS 1GR or Steel City 2C13 one gang plaster ring attached to a grounded 4" square, deep outlet box. If a plaster ring is used, the plaster ring should be mounted slightly behind the wall face, within 1/8", and not protruding to finish off properly. See illustration to the right.

Backbox **MUST** be connected to earth ground for proper operation and to avoid possible product damage from static discharge. Warranty voided if not properly grounded.



RIGHT



WRONG

Important Remote Station Rough-In Wiring

1. Outlet boxes must be grounded for proper operation to avoid possible product damage from static discharge.
2. SYGS 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* on p.6.
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 CABLEA4 (four conductors) or (1) Belden 3105A (2-wire, twisted and shielded pair) and (2) #16 AWG (or larger) conductors, supplied by others.
6. Contact Synergy Technical support at 1-800-533-2719 if the A4 network length exceeds 2000 feet.
7. See *Figure 5* on p.8 for detailed interconnect wiring of SYGS station network.
8. See *Table 1* on p.10 for guidelines on the number of SYGS stations that can be installed without auxiliary power supplies. Additional power supplies may be required based on the length of the A4 cable.

SECTION 3 - Wiring

Network Wiring

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:

SYGS requires SYNERGY all one cable SYA
CABLEA4 (plenum rated)
OR
Belden 3105A (non-plenum rated) plus
(2) #16 conductors for power

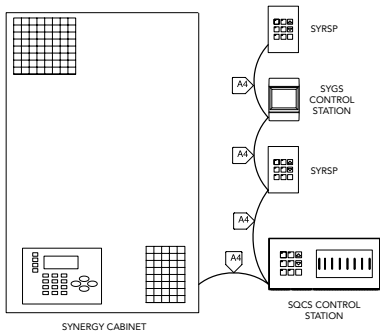


Figure 2 - SYGS Control Station One Line Drawing

SYGS Synergy Enclosure Wiring

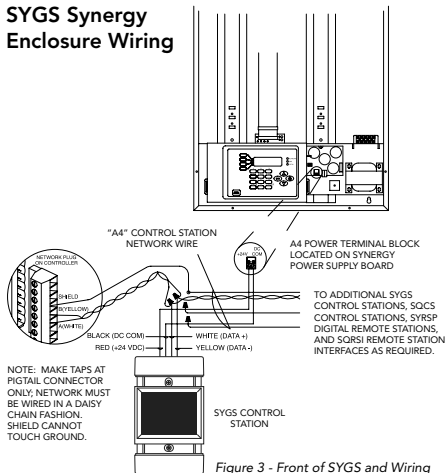


Figure 3 - Front of SYGS and Wiring

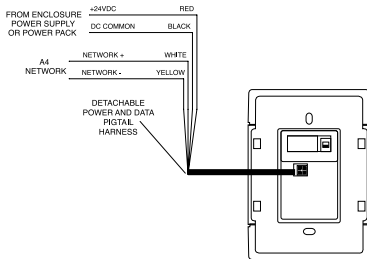


Figure 4 - Back of SYGS

SECTION 4 - Wiring Details and Termination

SYGS A4 Network Termination

The A4 network must be properly terminated for network 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 SYGS station is at the end of the A4 network, it must be terminated. (See *Figure 5* for details)

If SYGS stations are located at both ends of the network, **BOTH** SYGS stations must be terminated and the factory applied A4 network termination on the SYCS system controller **must** be removed. (See the SYCS system controller jumper settings in *Figure 6* on p.9 to remove termination from the controller)

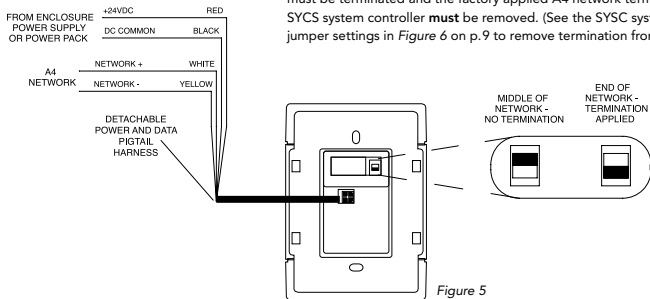


Figure 5

Controller Termination

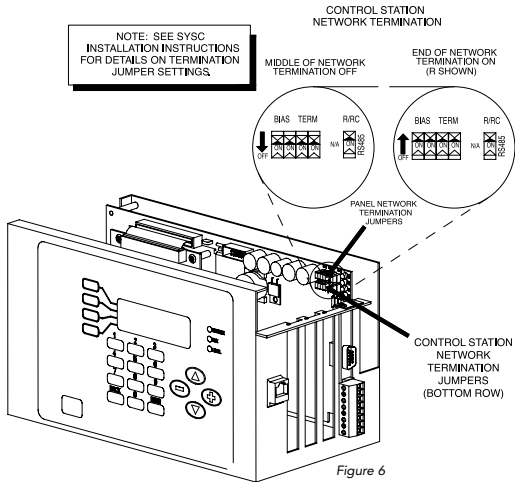


Figure 6

SECTION 5 - Power Requirements

SYGS Power Requirements

SYGS stations can be powered from the Synergy SYE enclosure power supply or a remote power pack. The Synergy MLS or MLX system controller supports a maximum of 60 A4 network devices. A single SYE enclosure power supply can power a maximum of 60 SYGS stations.

SYGS Remote Station Installation

1. Verify voltage on the A4 power conductors IS NOT above 28 VDC (nominal) BEFORE connecting to the SYGS station. Maximum 28 VDC (nominal) should be present.
2. Connect A4 network wiring as shown in *Figures 2 and 3* on p.6 and 7.
3. Refer to Table 1 for SYGS A4 network length limitations.
4. Orient and mount station to plaster ring as shown in *Figure 1* on p.3.

SYA CABLEA4 Length (Feet)	Max Number of Stations Powered from Synergy SYE Enclosure
2000	17
1500	21
1000	30
500	47*

Table 1

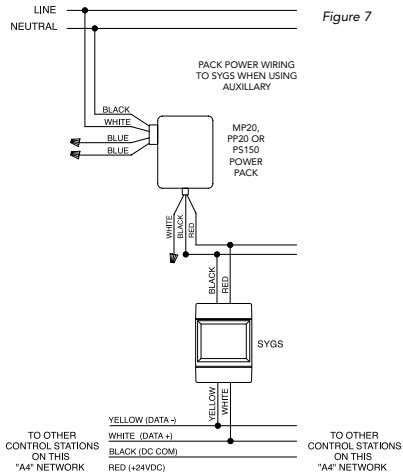
*For additional bus length requirements or higher number of SYGS stations on the A4 network consult factory for additional wire requirements.

The SYGS requires a minimum of 17.5 volts to ensure proper functionality. The Synergy SYE Enclosure is capable of powering up to 60 SYGS stations.

The number of stations that may be powered by the SYE Enclosure is dependent on the length of the A4 network. Consult *Table 1* for installation guidelines. If the number of SYGS stations on the SYA CABLEA4 network exceeds the specified guidelines additional power packs are required. Use the Sensor Switch MP20 or PS-150 power pack for additional power as required. Refer to *Figure 7* on p.11 for wiring information.

SYGS Wiring Power Pack

Use the 18 AWG black wire if connecting to 120 VAC. Use the 18 AWG orange wire if connecting to 277 VAC. 347 VAC units will have a **red** input wire instead of the orange wire.





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