

Product Sheet: Control Panel

The SageGlass Symphony Control Panel houses the electronics required to operate SageGlass insulating glass units (IGUs). The Control Panel can be ordered in two sizes based upon the number of SageGlass IGUs to be operated.

Small Panel



Large Panel



Dimensions and Specifications

Panel Size	Kit Number	Box Dimensions			Weight	Controllers	Max IGUs	Max m ²	Voltage	Max Power Watts (W)
		Width	Length	Depth						
Small	300-1200-001	36,8 cm	34,3 cm	5,6 cm	5,4 kg	1	16	74	99-253	320
Large	300-1201-001	44,5 cm	91,4 cm	10,7 cm	14,5 kg	1	16	74	99-253	320
Large	300-1201-002	44,5 cm	91,4 cm	10,7 cm	17,2 kg	2	32	149	99-253	640
Large	300-1201-003	44,5 cm	91,4 cm	10,7 cm	19,5 kg	3	48	223	99-253	960
Large	300-1201-004	44,5 cm	91,4 cm	10,7 cm	22,5 kg	4	64	297	99-253	1280

Conditioned space: -20-40°C; 0%-90% relative humidity, non-condensing

Product Ratings

IP2X



Package Includes

1. Control Panel
2. Mounting Screws

Tools and Materials required

1. Drill
2. #1 Phillips screwdriver (Large Panel only)
3. #2 Phillips screwdriver (or #2 Phillips drill bit)
4. 3.2 mm Flat screwdriver
5. 8 mm hex socket nut driver (Small Panel only)

Additional Supporting Documentation

Refer to SageGlass Product Sheets as they are produced for more in-depth information regarding the control system components. Reference sageglass.com/resources

System Requirements

1. All safety related codifications, symbols and instructions that appear in this operating manual or on the equipment must be strictly followed to ensure the safety of the operating personnel as well as the instrument. If the equipment is not handled in a manner specified by the manufacturer it might impair the protection provided by the equipment.
2. Control Panels can be placed in plenum or wall areas within a conditioned space. Control Panels must attach to a mounting surface that can support a fully assembled Control Panel's weight. Control Panel can be installed in both vertical and horizontal orientations, to include floor mounted. Mounting the unit overhead (panel cover facing down) is not permitted.
3. A Control Panel must be mounted within 106 m of an IGU with 16 AWG 8-Conductor Cable. If Frame Cables are run directly to the Control Panel, the Control Panel must be within 38 m of the IGUs.
4. All cables supplied by SageGlass should be conditioned for 24 hours at room temperature prior to installation and never installed below 0 °C ambient temperature.
5. When unpacking and mounting the Control Panel (Large), it is required to have two people lift and carry the unit for safety due to fully assembled weight.



Small Control Panel Installation

Step 1:

Mark the four holes for placement and drill mounting holes. Use mounting tabs or drawing dimensions to mark holes prior to drilling.

Step 2:

Use the appropriate screws provided by SageGlass to mount the enclosure securely. Insert the screws through the enclosure's mounting holes into the mounting surface. If screw anchors are required, install them in the wall prior to mounting.

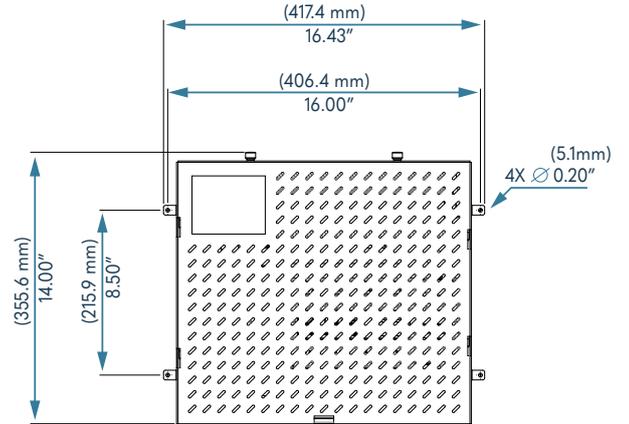


Figure 1: Installation Dimensions

Step 3:

Remove front cover (1) by loosening thumbscrews (2) and slide up to disengage hooks (3) until cover stops then pull towards you to remove it.

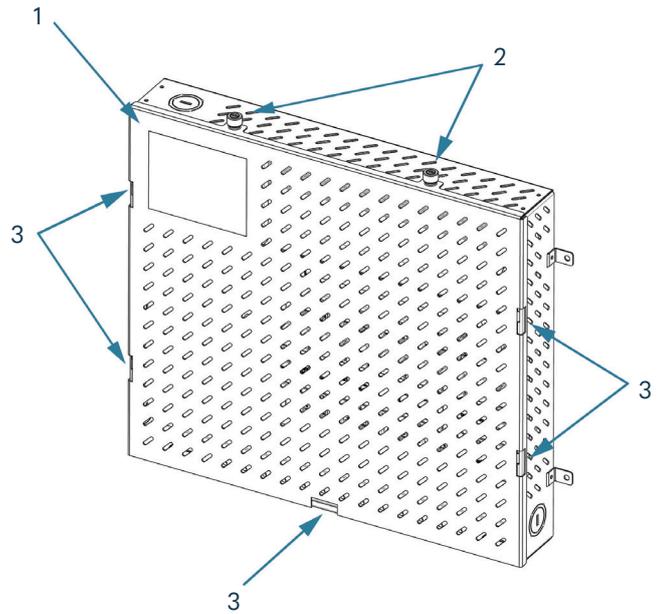


Figure 2: Cover Removal

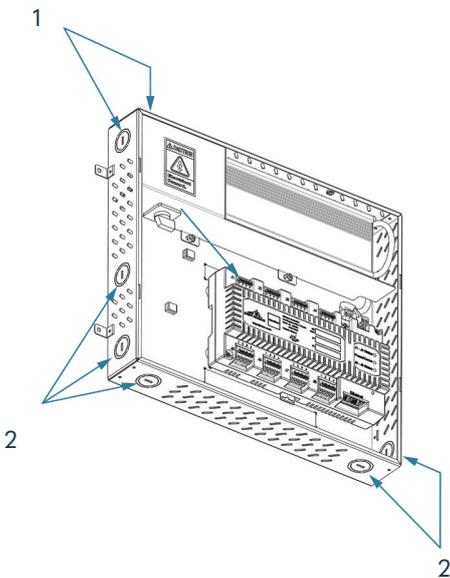


Figure 3: Knock-outs

Step 4:

Remove appropriate knock-outs to populate wires inside the enclosure depending on Control Panel orientation. Use knock-outs (1) for AC and knock-outs (2) for DC cables.

Control Panel Wiring - AC Circuit

Only a qualified electrician can install the AC side of the panel.

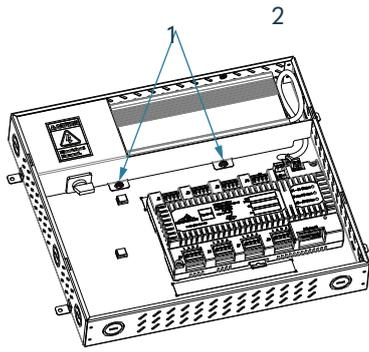


Figure 4: AC Cover Removal

Step 1:

Using 8 mm socket remove two nuts (1) (keep to reinstall AC cover) and then pull AC cover (2) out of panel. Remove dust cap over controllers (not shown).

Step 2:

Separate the switch base from the knob operator by unlocking lever (1).

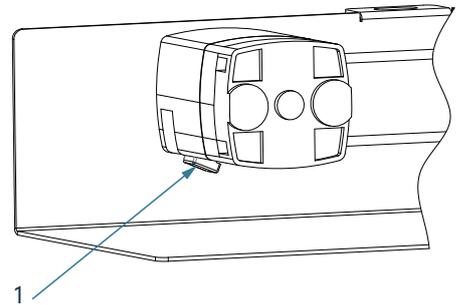


Figure 5: Switch Disconnecting

Step 3:

Strip AC wires back about 10 mm.

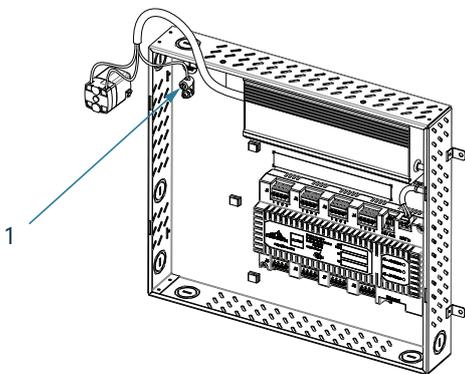


Figure 6: AC Connections

Step 4:

Connect ground wire to Ground terminal (1).

Step 5:

Connect AC line wires to the Switch. Follow local electrical codes for proper AC wire routing: 1 and 2 are neutral, 3 and 4 are hot.

Step 6:

Attach switch back to the AC cover and reattach cover onto the Control Panel.

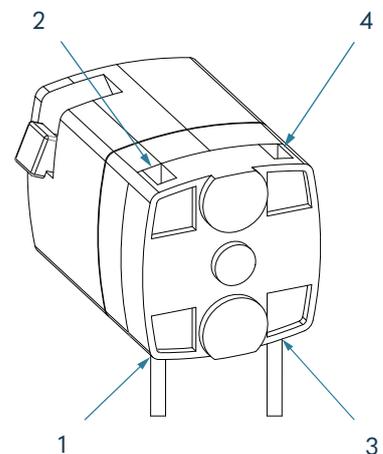
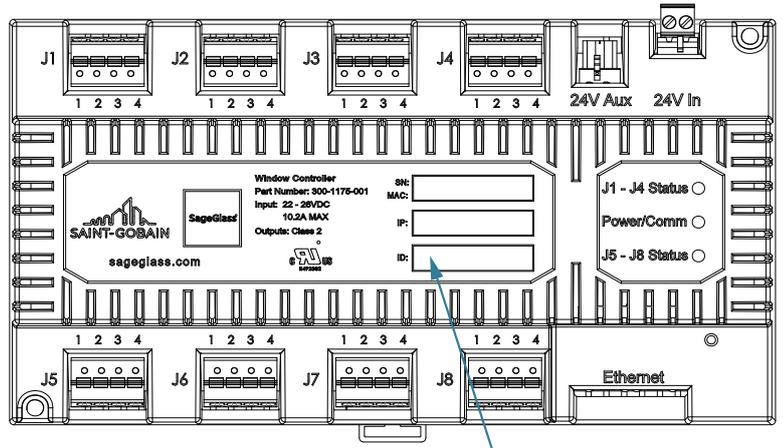


Figure 7: Switch Connections

Control Panel Wiring - DC Circuit

Figure 8: Controller Labeling



Controller Number Location
(i.e. CP1-1)

Step 1:

For termination, remove 13 mm of DC wire insulation. To insert the wires into the terminals use flat screwdriver to push on terminal clamp.

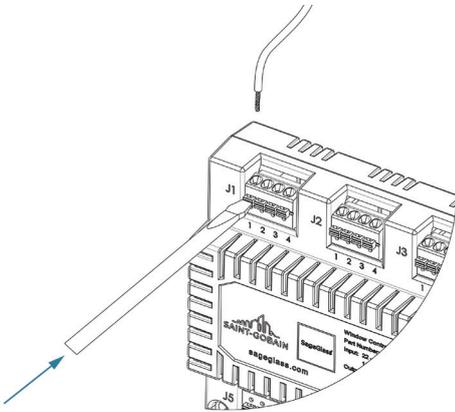


Figure 9: Terminal Connection

Step 2:

Populate wire terminals (1) with 2-Wire Frame Cables, 4-Wire Frame Cables or 8-Conductor Cables according to wire color code guide (2) that is on stickers above and below controller.

Refer to appropriate row of wire color code guide depending on the cables that system is equipped with and follow the color code.

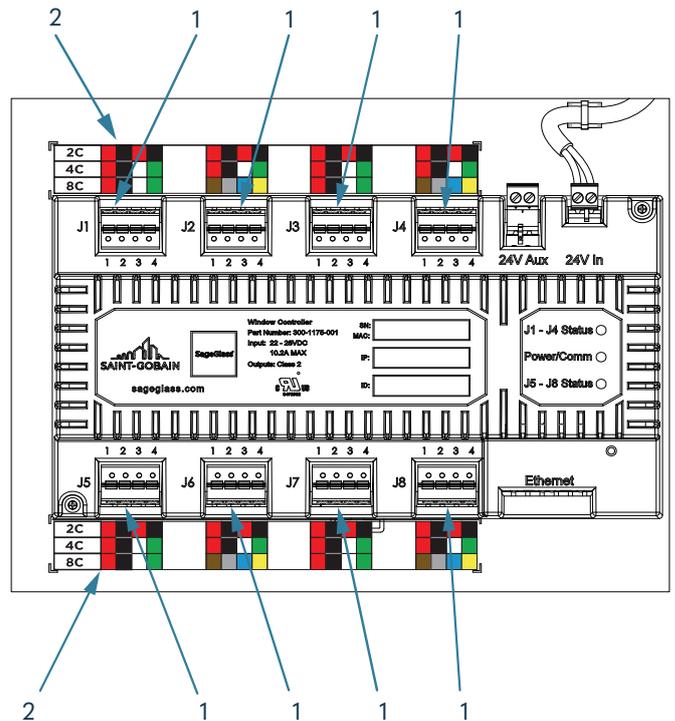


Figure 10: Controller Connection

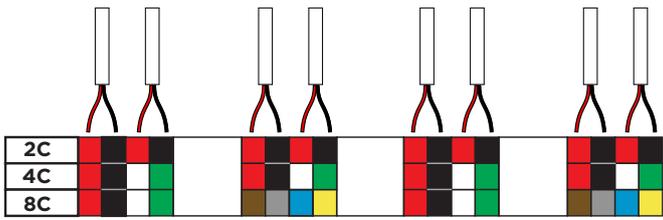


Figure 11: 2-Wires

If it is a 2-Wire Frame Cable, use 2C row of wire color code guide. One set will be black and red. Each terminal block can hold two sets.

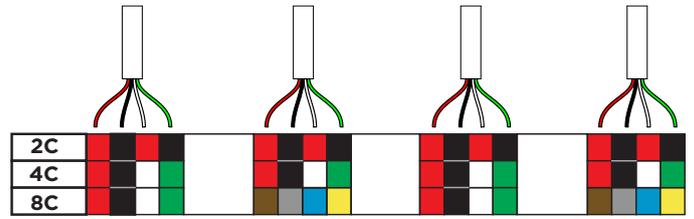


Figure 12: 4-Wires

If it is 4-Wire Frame Cable, use 4C row of wire color code guide. One set will be red, black, white and green. Each terminal block will hold one set.

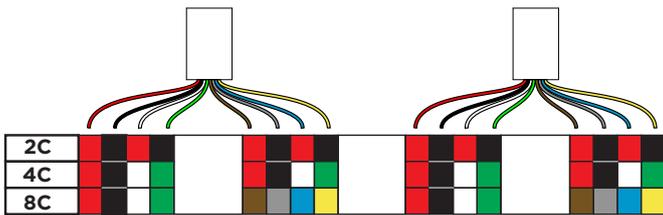


Figure 13: 8-Conductor Cable

If it is 8-Conductor Cable, use 8C row of wire color code guide. It will have two of each set and mount to the adjacent terminal blocks (i.e. J1 and J2).

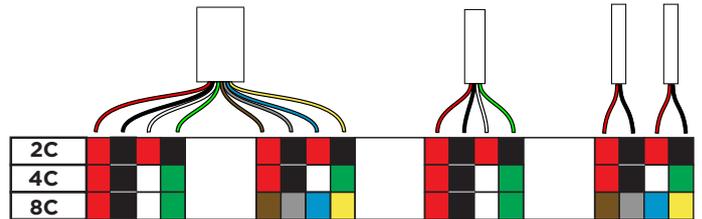


Figure 14: Mixed Wires

If system is equipped with mixed cable types, 8-Conductor Cables must go to adjacent terminal blocks (i.e. J1 and J2), 4-Wire Frame Cable should be connected to one terminal block and 2-Wire Frame Cable into terminal block according to the color code.

Step 3:

Feed Ethernet cable through knockouts. Connect Ethernet cable to one of the free Ethernet ports (1) or (2).

Step 4:

Leave the AC switch in the disconnect/Off position.

Step 5:

Install the Control Panel cover onto the panel.

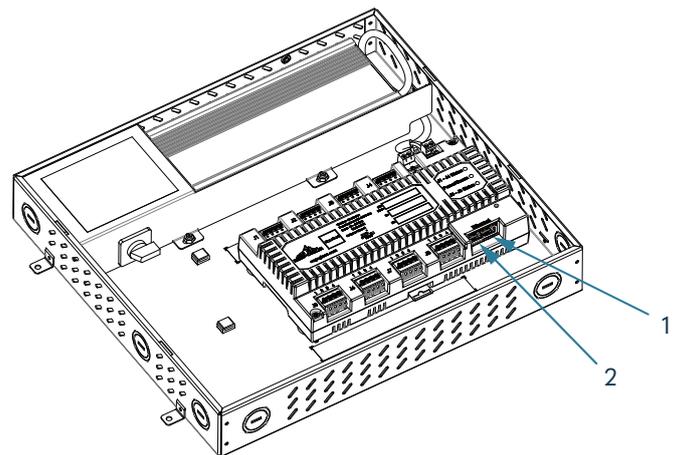


Figure 15: Ethernet Connection

Large Control Panel Installation

Step 1:

Mark six hole placements and drill mounting holes. Use mounting tabs or drawing dimensions to mark holes prior to drilling.

Step 2:

When unpacking and mounting the Control Panel (Large), it is required to have two people lift and carry the unit for safety due to fully assembled weight.

Use the appropriate screws provided by SageGlass to mount the enclosure securely. Insert the screws through the enclosure mounting holes into the mounting surface. If screw anchors are required, install them in the wall prior to mounting.

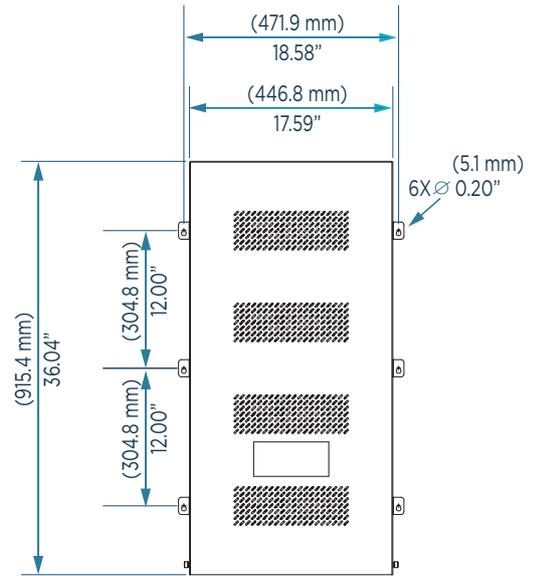


Figure 1: Installation Dimensions

Step 3:

Remove front cover (1) by loosening thumbscrews (2) and disengaging the release hooks (3).

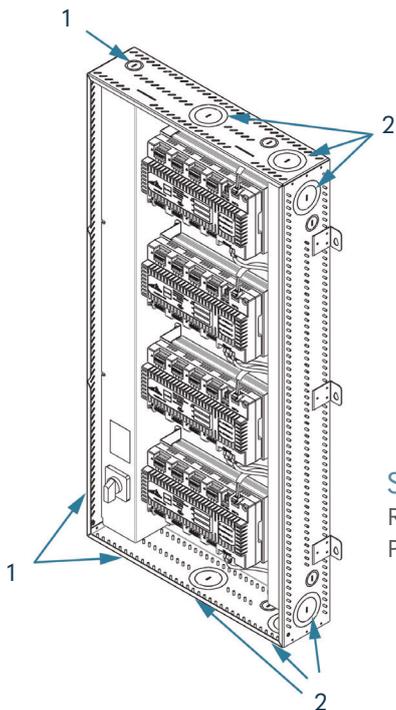


Figure 3: Knock-Outs

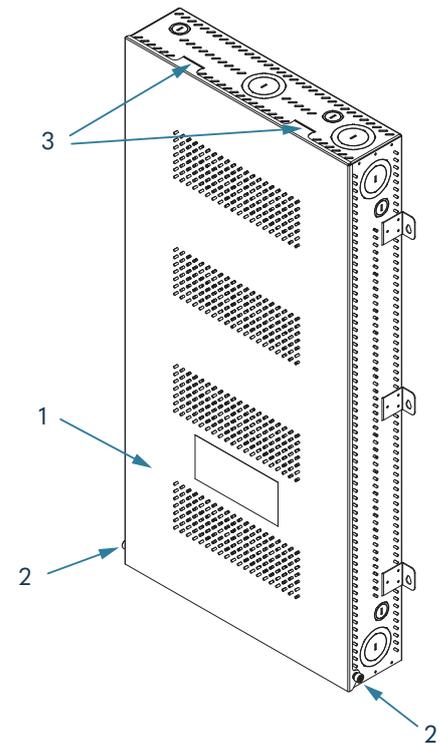


Figure 2: Cover Removal

Step 4:

Remove appropriate knock-outs to populate wires inside the enclosure depending on Control Panel orientation. Use knock-outs (1) for AC and knock-outs (2) for DC cables.



Control Panel Wiring - AC Circuit

Only a qualified electrician can install the AC side of the panel.

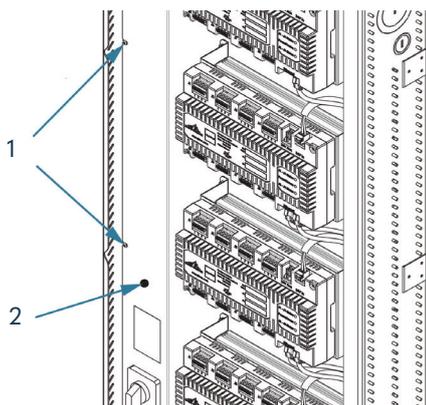


Figure 4: AC Cover Removal

Step 1:

Loosen screws (1) and AC cover (2) (do not need to remove screws). Slide AC cover towards controllers and then remove to gain access to switch and ground terminal. Remove dust cap over controllers (not shown).

Step 2:

Separate the switch base from the knob operator by unlocking lever (1).

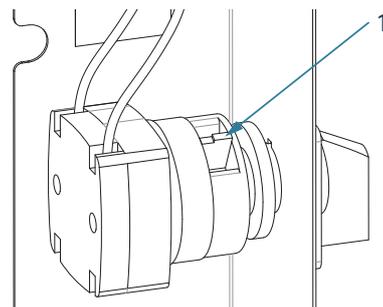


Figure 5: Switch Disconnecting

Step 3:

Strip AC wires back about 3/8". Route wires through knockout/strain relief.

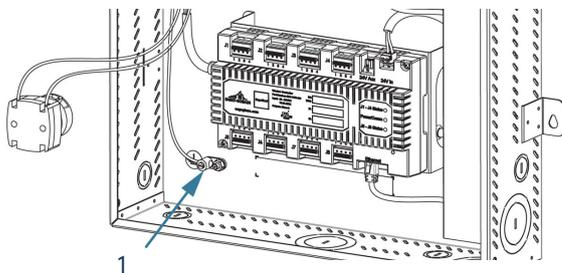


Figure 6: AC Connections

Step 4:

Connect ground wire to ground terminal (1).

Step 5:

Connect AC line wires to the switch. Follow local electrical codes for proper AC wire routing: 1 and 2 are neutral, 3 and 4 are hot.

Step 6:

Attach the switch back to the AC cover and reattach the AC cover into the Control Panel.

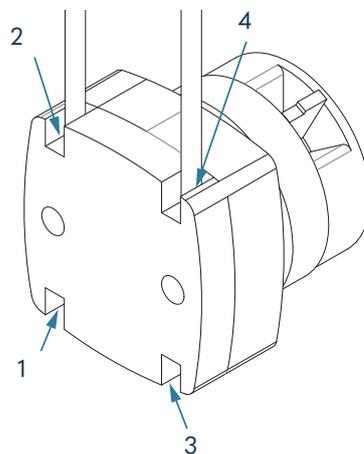


Figure 7: Switch Connections

Control Panel Wiring - DC Circuit

System can have one, two, three or four controllers in the Control Panel. Figure 8 displays a close up of the controller labeling and the corresponding information in an example wiring diagram. Consult project specific wiring diagram for all cable terminations.

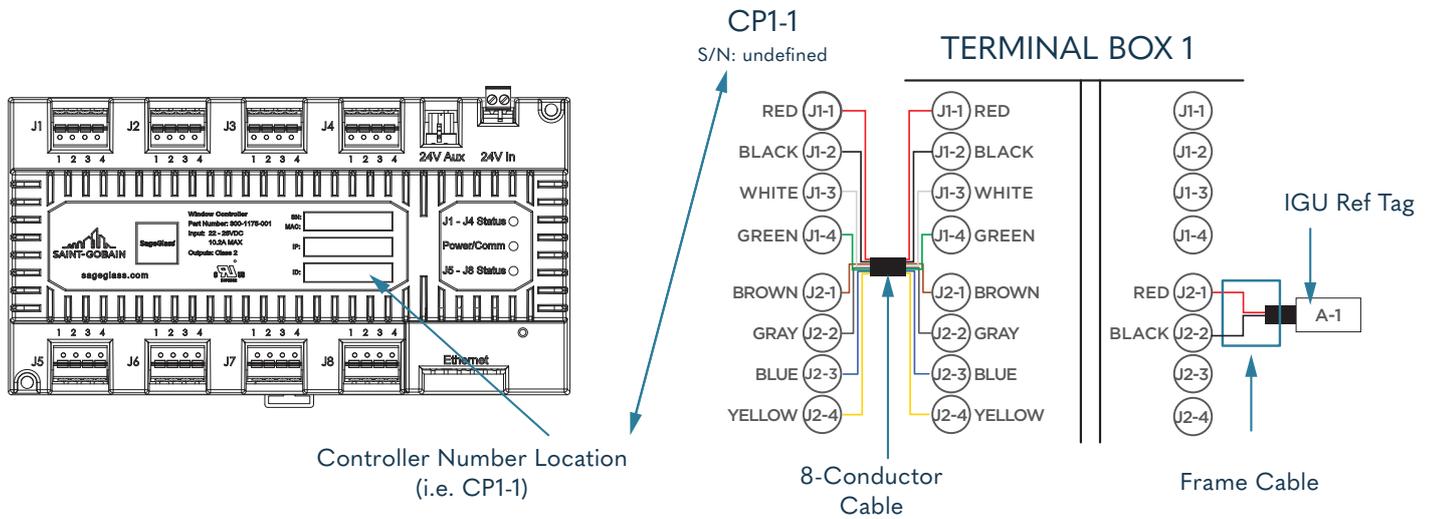


Figure 8: Controller Labeling

Four controller configuration is shown in the following figures.

Step 1:

Unsnap channel cover (1) to route cables through knock-out to the appropriate controllers thru channel cut-outs. Leave about five inches of extra wire as service loop while routing within the channel.

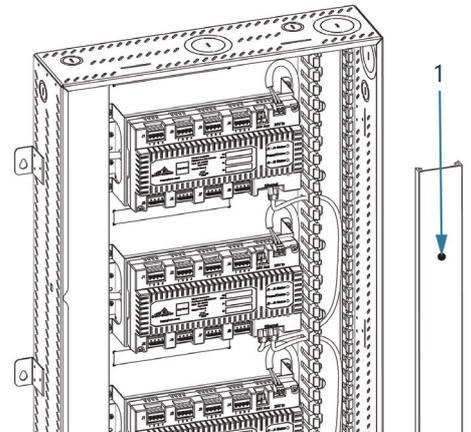


Figure 9: Unsnapping Channel Cover

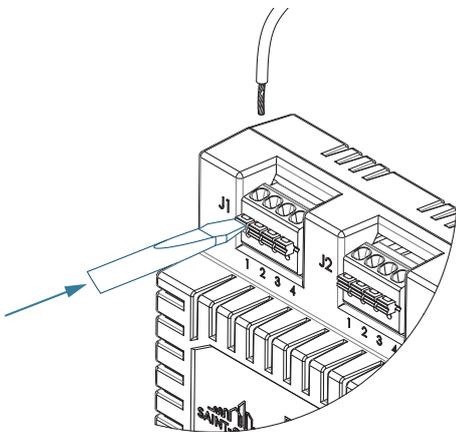


Figure 10: Terminal Connection

Step 2:

For termination, remove 13 mm of DC wire insulation. To insert the wires into the terminals use flat screwdriver to push on terminal clamp.

Step 3:

Populate wire terminals (1) with 2-Wire Frame Cables, 4-Wire Frame Cables, and/or 8-Conductor Cables according to the project specific Wiring Diagram and the wire color code guide that is on sticker (2) below each terminal's row. The wire color code guide between the controllers shall be used for top and bottom controllers.

Refer to appropriate row of the wire color code guide depending on cables the system is equipped with and follow the color code.

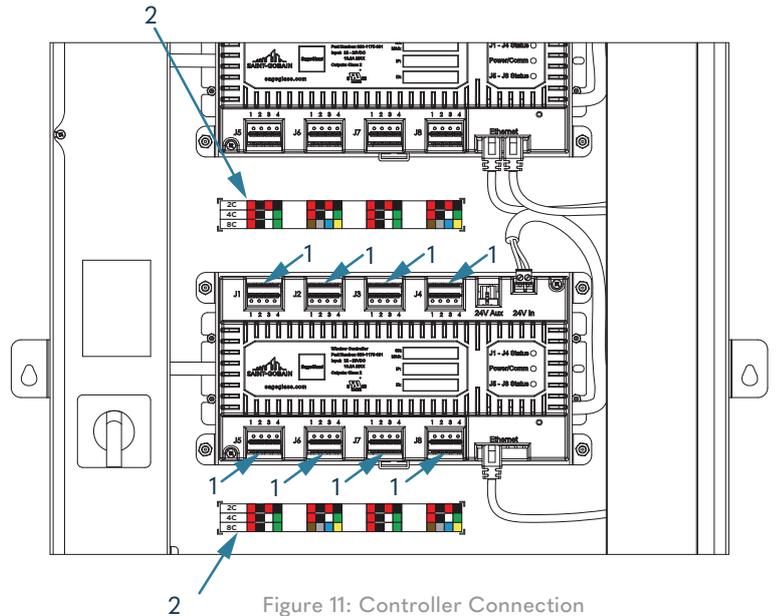


Figure 11: Controller Connection

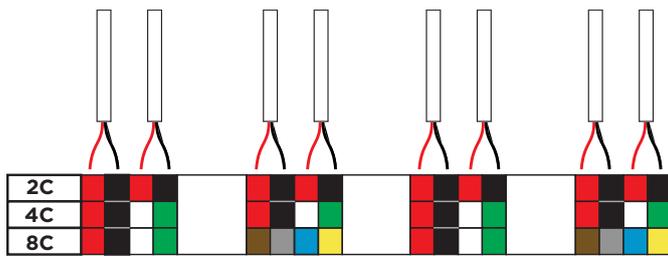


Figure 12: 2-Wires

If it is a 2-Wire Frame Cable, 2C row of wiring guide is used. One set will be black and red. Each terminal block can hold two sets.

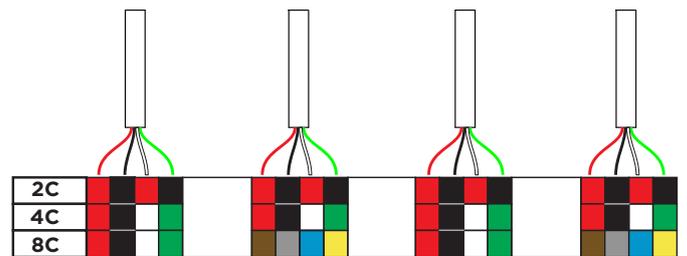


Figure 13: 4-Wires

If it is 4-Wire Frame Cable, 4C row of wiring guide is used. One set will be red, black, white and green. Each terminal block will hold one set.

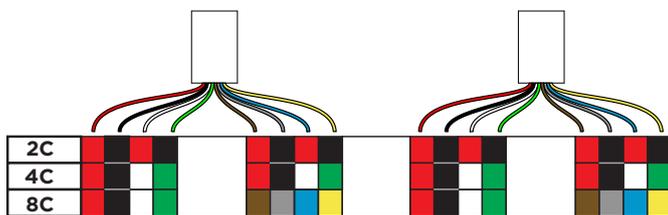


Figure 14: 8-Conductor Cables

If it is 8-Conductor Cable, 8C row of wiring guide is used. It will have two of each set and mount to the adjacent terminal blocks (i.e. J1 and J2).

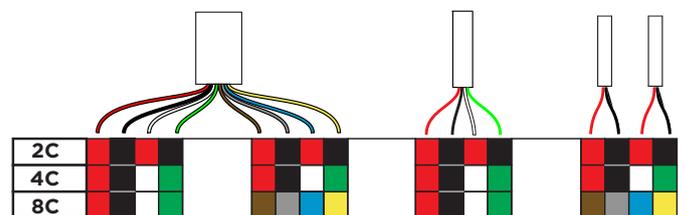


Figure 15: Mixed Wires

If system is equipped with mixed cable types, 8-Conductor Cables must go to adjacent terminal blocks (i.e. J1 and J2), 4-Wire Frame Cables should be connected to one terminal block and 2-Wire Frame Cables should be connected to one terminal block according to the color code.

Step 4:

Feed Ethernet cable through knockouts. Connect Ethernet cable to one of free Ethernet ports (1) or (2).

If there is only one controller, there will only be one free port.

Step 5:

Close cable channel.

Step 6:

Leave the AC switch in the disconnect/Off position.

Step 7:

Install the Control Panel cover onto the panel.

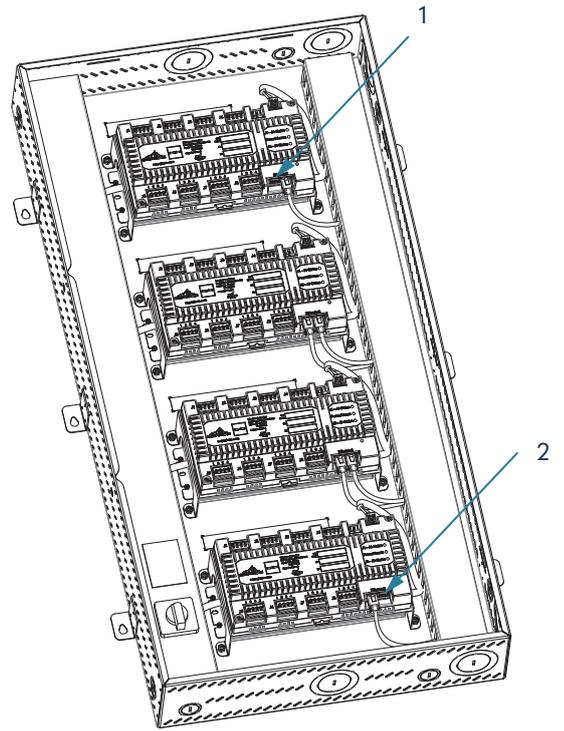


Figure 16: Ethernet Connection