GL-IPAC-SW8

Crestron Green Light® Integrated Switching System

Product Manual

Contents

Overview

The Crestron GL-IPAC-SW8 switching panel provides internal controls for eight circuits of switched load and is expandable to support up to 64 circuits of switched load by adding external panels and switching modules. It features local inputs for sensors and keypads, along with an LCD user interface where installers or users can set up the system without having to connect to a computer.

The GL-IPAC-SW8 is perfect for smaller-sized installations, such as retail stores, small office spaces, parking garages, and service stations, which typically require only on/off switching—eliminating the need for a larger, more expensive panel. In addition, the GL-IPAC-SW8 can be easily integrated with Crestron automation solutions for centralized monitoring and remote control of multiple locations.

Features

Out of the Box Lighting Controls

The GL-IPAC-SW8 comes preconfigured for use as the central control processor for a Crestron Green Light® Power Switching system. Right out of the box, the GL-IPAC-SW8 affords easy setup and programming for a complete switching system consisting of up to 64 switched loads, 16 local and two remote keypads, 24 occupancy and photo sensors, and 100 time clock events.

Keypads with as many as 12 buttons each can be programmed easily to control lighting loads and other functions. Lights can be programmed to turn on and off automatically using the built-in astronomical time clock. Lighting events may be programmed to occur at specific times or at an offset from sunrise or sunset. Occupancy sensors and photo sensors may also be implemented to enable automatic on/off lighting control based on room occupancy and ambient light levels.

Save Energy

Built-in support for occupancy and photo sensors helps to strike a perfect balance between daylight harvesting and comfort, reducing energy costs. Automatically turn off lights in unoccupied areas to allow natural light level in the space to light the area. Crestron GLS sensors can be placed strategically in each space to maximize the benefits of energy management.

Easy Deployment

Packaged in one metal enclosure, the GL-IPAC-SW8 can be deployed in small spaces, including plenum ceilings. The surface-mount GL-IPAC-SW8 can be affixed to a wall or ceiling rafter, cleanly out of sight. Standard wire-entry knockouts are provided.

Key Features Include:

- Eight internal circuits for switched loads
- Expandable to control up to 64 circuits of switched load
- Supports 100 to 277 volt applications
- 16 amp load rating per channel
- Built-in astronomical time clock
- Positive air gap at each output
- Phase-independent channels
- Local controls for setup, testing, and verification
- Local and remote override capability
- Non-volatile power failure memory
- Easy access is facilitated from the hinged front cover
- CEC Title 24 2013 Compliant

Specifications

Below are the product specifications for the GL-IPAC-SW8. For a list of available accessories, visit the GL-IPAC-SW8 product page.

Product Specifications

Load Rating

Switched Channels	8 internal; Expandable up to 64 by adding external panels and modules
Per Channel	16 Amps @ 120 to 277VAC, 50/60 Hz
Switched Load Types	Florescent Ballast, Incandescent, Magnetic Low-Voltage, Electronic Low-Voltage, Neon/Cold Cathode, High-Intensity Discharge, LED, Motor
Relay Lifetime	Resistive rating: 100,000 on/off operations, 50A @ 277VAC; General rating: 50,000 on/off operations, 16A @ 120/277VAC

Power Requirements

Main Power	100-277V AC, 50/60 Hz, via channel 1 (LINE 1, NEUT)
Available Cresnet Power	15 W at 24VDC

Connectors (Class 1)

NEUT	(2) terminal blocks, paralleled, line input neutral
Line 1 - Line 8	(16) terminal blocks, line power inputs; 2 connections per channel, paralleled, allows for easy daisy-chaining;
SW1 - SW8	(8) terminal blocks, switch channels outputs

Connectors (Class 2)

Cresnet	(1) 4-pin 3.5 mm terminal block; A maximum of 10 GLS-SIMs may be connected via the Cresnet® terminal block for occupancy sensors and for photo sensors; Up to 20 occupancy sensors may be supported (10 external Cresnet sensors and 10 external, non-system sensors connected to the Cresnet network via GLS-SIM); Up to 20 photo sensors may be supported (10 external, non-system sensors wired directly to a Cresnet occupancy sensor and 10 external, non-system sensors wired to a GLS-SIM using the Cresnet network)
OVR	(1) 2-pin 3.5 mm terminal block, comprising (2) inputs for external contact closures to trigger the preset Override state

Contact Closures	(1) 9-pin 3.5 mm terminal block comprising (8) contact closure inputs and (1) GND port
Sensor Input 1-4	(1) 6-pin 3.5 mm terminal block comprising (4) sensor inputs for internal, nonsystem occupancy sensors, (1) +24VDC, and (1) GND port (provides sensors with power)
Sensor Input 5-8	(1) 6-pin 3.5 mm terminal block comprising (4) sensor inputs for internal, nonsystem photo sensors, (1) +24VDC, and (1) GND port (provides sensors with power)
USB	(1) USB Type-B console port, for communication with Crestron Toolbox™ software
LAN	(1) 8-wire RJ-45 with 2 LED indicators;
	10/100BaseT Ethernet port;
	Green LED indicates link status;
	Yellow LED indicates Ethernet activity

LED Display

Green LCD dot matrix, 128x64 resolution, adjustable LED backlight

Controls and Indicators

▼ and ▲	(2) pushbutton, adjusts menu parameters
ENTER	(1) pushbutton, selects underlined item and stores settings
HOME	(1) pushbutton, returns to the home page
BACK	(1) pushbutton, returns to the previous page
CANCEL	(1) pushbutton, cancels current action without saving
HELP	(1) pushbutton, opens context-sensitive help screen
Soft Keys	(4) pushbuttons for activation of LCD driven functions
PWR	(1) Green LED;
	Solid illumination indicates line power is applied to NEUT and LINE1
HW-R	(1) Recessed miniature push-button for hardware reset (reboots the processor)
SW-R	(1) Recessed miniature push-button for software reset (restarts the program)
OVR	(1) Red LED and (1) miniature push-button for enabling override mode
ON/OFF	ON/OFF: (8) Red LEDs and (8) miniature push-buttons for individual manual channel activation

Environmental

Temperature	32° to 104°F (0° to 40°C)
Humidity	10% to 90% RH (non-condensing)

Dimensions

Height	12.13 in. (308 mm)
Width	14.13 in. (359 mm)
Depth	4.06 in. (104 mm)

Compliance

UL Listed Enclosure

FCC, IC

Installation

Packaged in one metal enclosure, the GL-IPAC-SW8 can be deployed in small spaces, including plenum ceilings. The surface-mount GL-IPAC-SW8 can be affixed to a wall or ceiling rafter, cleanly out of sight. Standard wire-entry knockouts are provided.

Refer to the following sections for front panel controls and wiring information.

- Front Panel Controls
- Wiring Diagram
- Wiring Guidelines

Front Panel Controls

Use the front panel to operate and configure the GL-IPAC-SW8.

Front Panel Controls
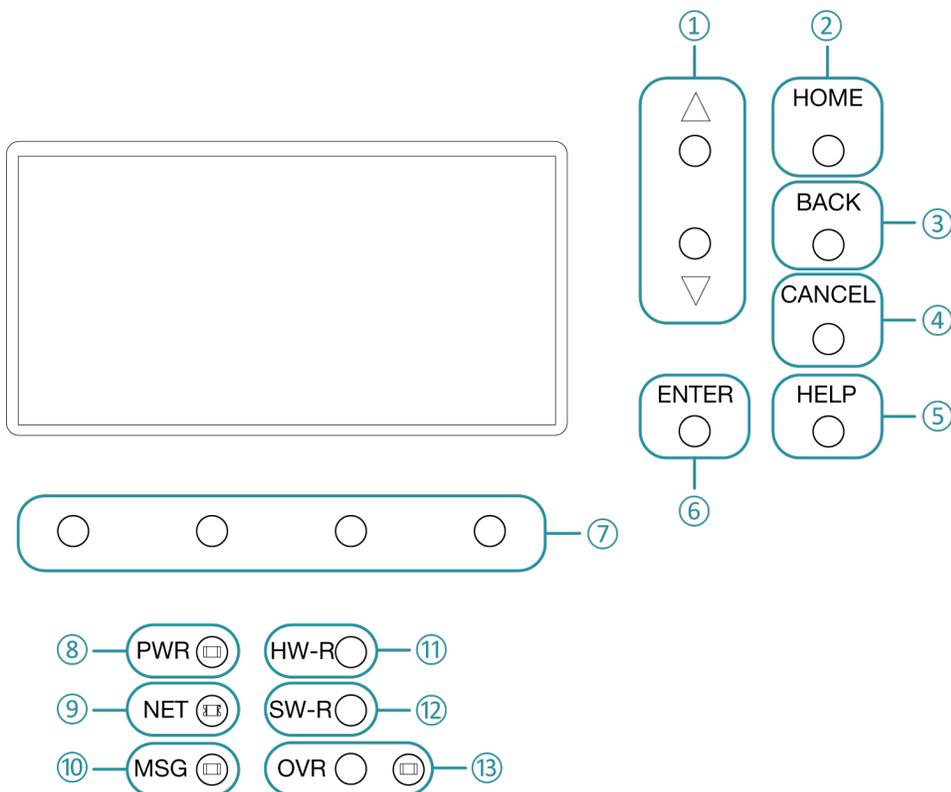
| ① | ▼ and ▲: Press buttons to navigate between items on the Setup screens. Also allows scrolling on the Setup screens when a scroll bar is present on the right side of the display. |
| ② | **HOME:** Press button to return to the home screen. |

③ **BACK:** Press button to go back to the previous screen while in Setup mode.

④ **CANCEL:** Press button to cancel the current operation while in Setup mode.

⑤ **HELP:** Press button to display the help dialog while in Setup mode. The help dialog provides information for the screen that is currently displayed.

⑥ **ENTER:** Press button to confirm the current on-screen selection.

⑦ Four Soft Buttons: For making selections based on the display options shown above the buttons.

⑧ **PWR** LED: Illuminates to show that the device is powered.

⑨ **NET** LED: Illuminates to show activity on the Cresnet network.

⑩ **MSG** LED: Illuminates to show that the processor has generated an error message.

⑪ **HW-R:** Press button for hardware reset.

⑫ **SW-R:** Press button for software reset.

⑬ **OVR:** Press button to enter **override** mode. LED illuminates to indicate **override** mode.

Wiring Diagram

The following illustration is a detailed connection overview of a GL-IPAC-SW8 system.

① Neutral connections.

From Neutral Connection ———— ⊙ N

To Additional Neutral
Connection (Optional) ———— ⊙ N
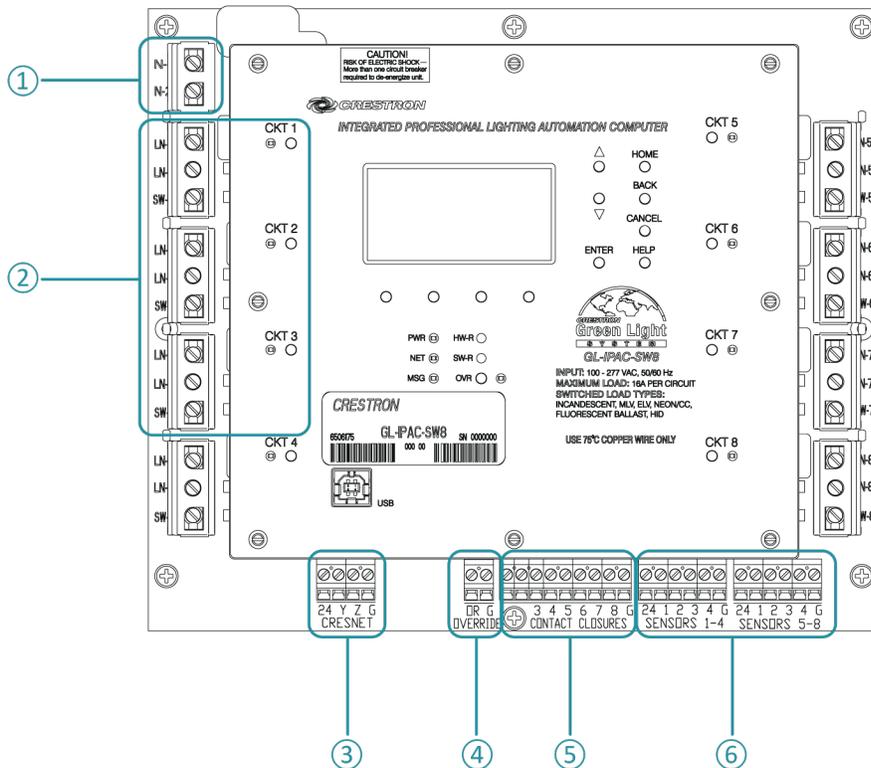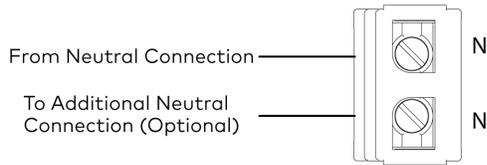
② **CKT 1** is used to power the GL-IPAC-SW8. Line power can be daisy chained from **LN1** to **LN2** to **LN3** and so on. **LN1**, **LN2** through **LN8** can also be powered by individual circuits. Use 14 - 10 AWG wiring.

From Line
Power ———— ⊙ LN1

⊙ LN1

To Switched
Load ———— ⊙ SW1

From Line
Power ———— ⊙ LN2

⊙ LN2

To Switched
Load ———— ⊙ SW2

Jumper from **CKT 2**
to **CKT 3** to Power
CKT 3 Loads ➤

⊙ LN3

⊙ LN3

To Switched
Load ———— ⊙ SW3
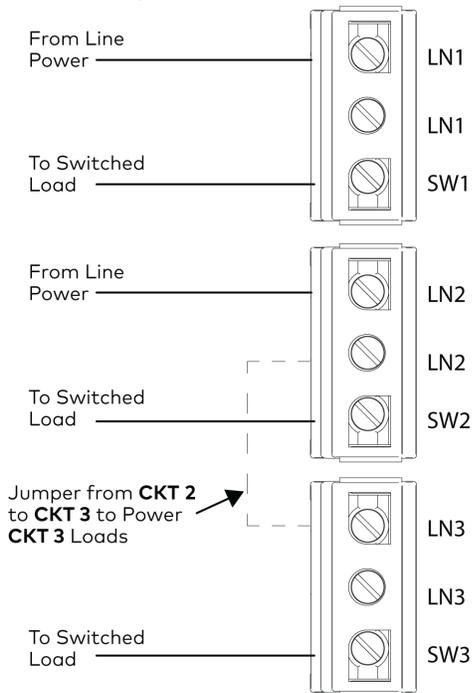
③ **CRESNET 24 Y Z G** is used to power (24VDC) and communication with compatible Cresnet devices using Cresnet cable.

CRESNET

24 Y Z G

Cresnet
Devices
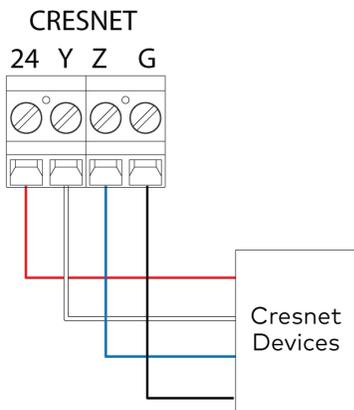
④ **OVERRIDE OR G** connects to a contact closure or a Crestron GLS-PLS-120/277 Phase Loss Sensor (sold separately). Use 18 - 12 AWG wiring.

OVERRIDE
OR G

Emergency
Override
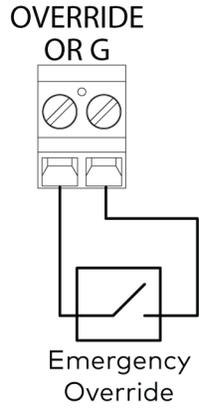
⑤ **CONTACT CLOSURES 1 - 8, G** connects to contact closures and are configured through the front panel setup controls. Use 18 - 12 AWG wiring.

CONTACT CLOSURES 1 is reserved to lock the GL-IPAC-SW8 user interface.

CONTACT CLOSURES 2 is reserved to lock the keypads.

CONTACT CLOSURES 3 - 8 are configured through programming.

G is the common ground to the device and should be connected to all contact closures.

CONTACT CLOSURES
1 2 3 4 5 6 7 8 G

Programmable
Contact Closure

Lock Keypads

Lock GL-IPAC-SW8
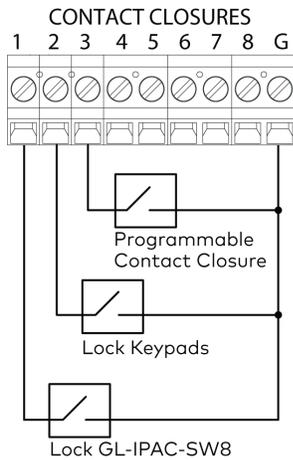
⑥ **SENSORS 1-4 24, 1 - 4, G** connects to occupancy sensors. Use 18 - 12 AWG wiring.

SENSORS 5-8 24, 1 - 4, G connects to photocells. Use 18 - 12 AWG wiring.

24 supplies power to the devices and should be daisy chained to all devices in the same sensor group.

1 - 4 control signal from the connected devices.

G is the common ground to the devices and should be daisy chained to all devices on the same sensor group.
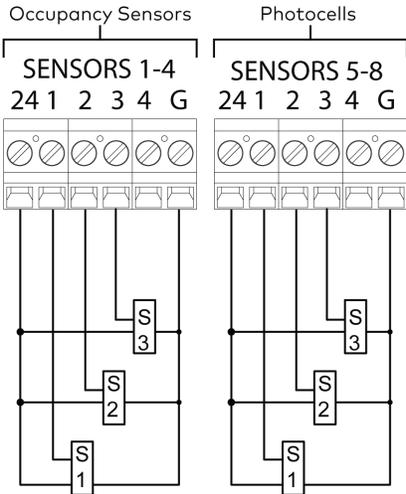
Occupancy Sensor Wired to SENSORS 1-4 Port

Occupancy sensors can only be wired to the **SENSORS 1-4** port.
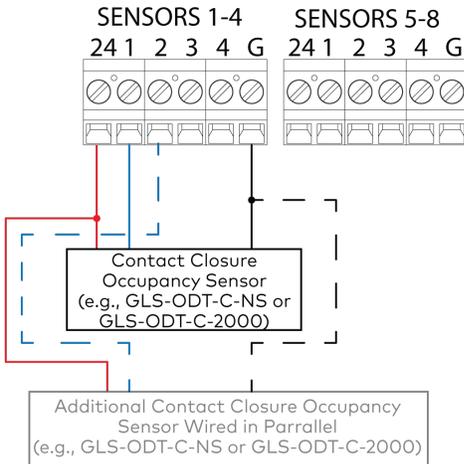
Cresnet Occupancy Sensor and Photocell Wired Using Cresnet

The following illustration indicates how to wire an occupancy sensor and photocell using Cresnet.

> **NOTE:** A maximum of 10 Cresnet occupancy senors may be connected.

CRESNET
24 Y Z G

Cresnet Cable

24 Y Z G   EXT

Crestron Occupancy
Sensor
(GLS-ODT-C-CN or
GLS-OIR-C-CN)
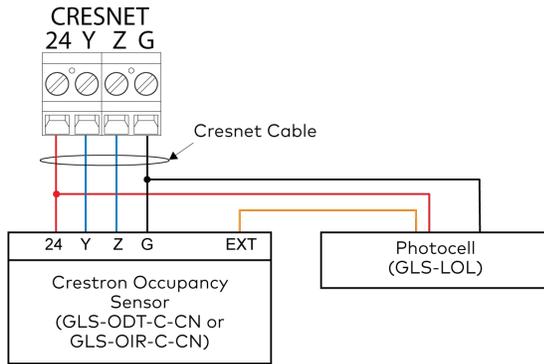
Photocell
(GLS-LOL)

Occupancy Sensor Wired to Cresnet Port Using a GLS-SIM

Use the dials to set the ID of the GLS-SIM to C0 - C9 to match the ID defined in the program.

NOTE: A maximum of 10 GLS-SIMs may be connected.

CRESNET
24 Y Z G

Cresnet Cable

GLS-SIM

CRESNET   SENSOR
24 Y Z G   24 1 2 G

Crestron Occupancy Sensor
(GLS-ODT-C-NS,
GLS-ODT-C-2000)
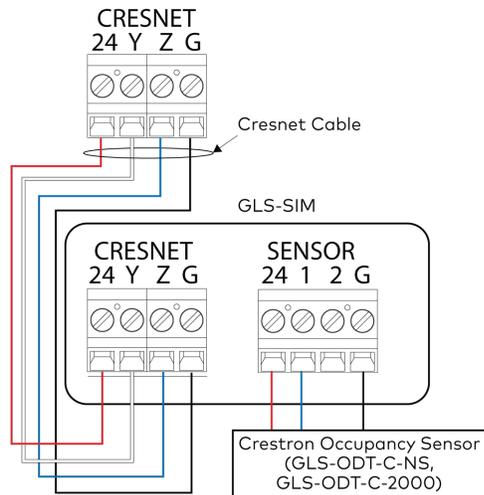
Input Channel	Dip Switch	Setting
1	1	On
	2	On
2	3	-
	4	-

Photocell Wired to SENSORS 5-8 Port

Photocells can only be wired to the right SENSORS 5-8 port.
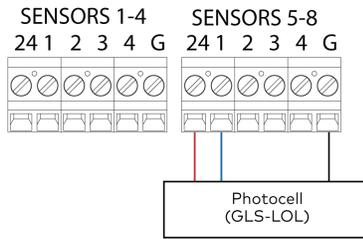
Photocell Wired Using Cresnet to GLS-SIM

Use the dials to set the ID of the GLS-SIM to C0 - C9 to match the ID defined in the program.

> **NOTE:** A maximum of 10 GLS-SIMs may be connected.
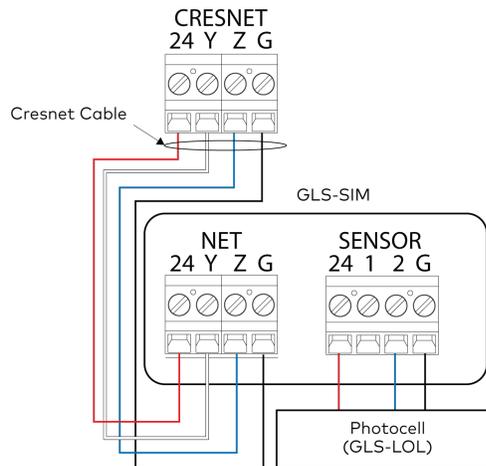
Input Channel	Dip Switch	Setting
1	1	-
	2	-
2	3	On
	4	On

Using GLS-PLS-120/277 to Provide Override Control

A GLS-PLS-120/277 connects to 3-phase inputs and neutral power connections. The **OUTPUT 1** or **OUTPUT 2** port connects to the **OVERRIDE OR G** port on the GL-IPAC-SW8.
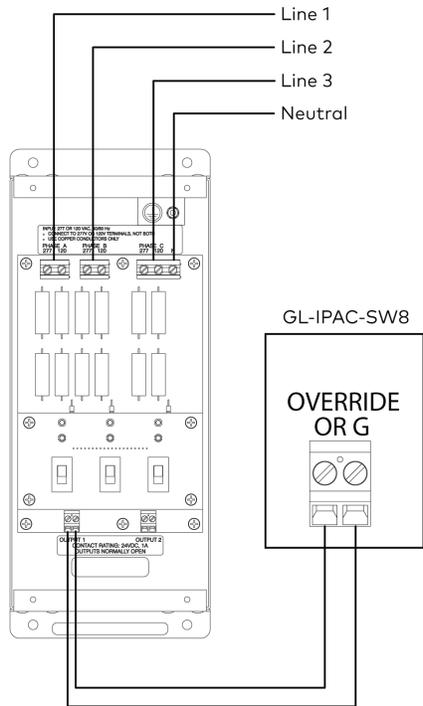
Adding an Additional Lighting Panel

Adding an additional lighting panel to the GL-IPAC-SW8 is accomplished by connecting the two panels together via the **CRESNET 24 Y Z G** port.
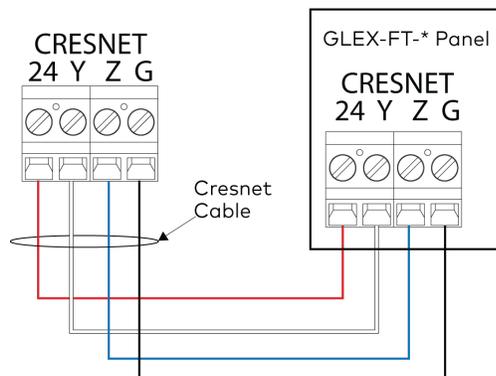
Adding Additional Power

The following illustration indicates how to wire an additional power supply.

CRESNET
24 Y Z G

To Cresnet
Device(s)

Do not connect
external power
supply to 24 from
GL-IPAC-SW8

Power Supply

From 120/277 V
Power Source
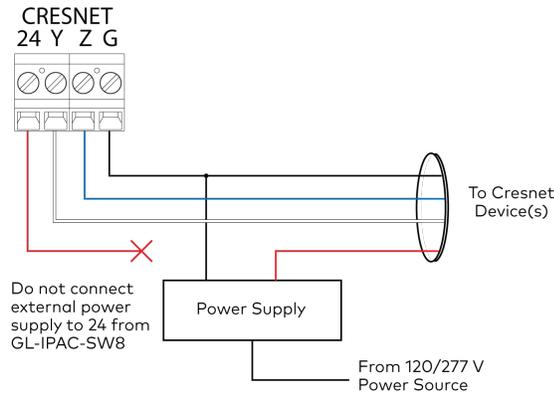
Wiring Guidelines

To ensure optimum performance over the full range of the installation topology, use Crestron Certified Wire only. Failure to do so may incur additional charges if support is required to identify performance deficiencies because of using improper wire.

Calculate Power

> **CAUTION:** Use only Crestron power supplies for Crestron equipment. Failure to do so could cause equipment damage or void the Crestron warranty.
>
> Provide sufficient power to the system. Insufficient power can lead to unpredictable results or damage to the equipment. Use the Crestron Power Calculator to help calculate how much power is needed for the system.

When calculating the length of wire for a particular Cresnet run, the wire gauge and the Cresnet power usage of each network unit to be connected must be taken into consideration. Use Crestron Certified Wire only. If Cresnet units are to be daisy chained on the run, the Cresnet power usage of each network unit to be daisy chained must be added together to determine the Cresnet power usage of the entire chain. If the unit is run from Crestron system power supply network port, the Cresnet power usage of that unit is the Cresnet power usage of the entire run. The wire gauge and the Cresnet power usage of the run should be used in the following equation to calculate the cable length value on the equation's left side.

L < 40,000 / R x P

L = Length of run (or chain) in feet.

R = 6 Ohms (Crestron Certified Wire: 18 AWG (0.75 mm^2)) or 1.6 Ohms (Cresnet HP: 12 AWG (4 mm^2)).

P = Cresnet power usage of entire run (or chain).

Make sure the cable length value is less than the value calculated on the right side of the equation. For example, a Cresnet run using 18 AWG Crestron Certified Wire and drawing 20 watts should not have a length of run more than 333 feet (101 meters). If Cresnet HP is used for the same run, its length could extend to 1250 feet (381 meters).

> **NOTE:** All Crestron certified Cresnet wiring must consist of two twisted pairs. One twister pair is the 24 and G pair and the other twisted pair is the Y and Z pair.

Strip and Tin Wire

When daisy chaining Cresnet units, strip the ends of the wires carefully to avoid nicking the conductors. Twist together the ends of the wires that share a pin on the network connector and tin the twisted connection. Apply solder only to the ends of the twisted wires. Avoid tinning too far up the wires or the end becomes brittle. Insert the tinned connection into the Cresnet connector and tighten the retaining screw. Repeat the procedure for the other three conductors.

Add Hubs

Use of a Cresnet Hub/Repeater (CNXHUB) is advised whenever the number of Cresnet devices on a network exceeds 20 or when the combined total length of Cresnet cable exceeds 3000 feet (914 meters).

Configuration

Use the front panel controls and display to configure the GL-IPAC-SW8. The following controls are used to navigate the front panel display: ▲, ▼, ENTER, HOME, BACK, CANCEL, and HELP. There are four soft buttons which perform the functions listed above them on the front panel display screen.

From the home screen on the front panel display, press **Setup** to access the full list of options for configuring the GL-IPAC-SW8. Press the **HELP** button while on any setup screen to display additional setup information.

If timeclock events need to be changed after the GL-IPAC-SW8 is fully configured, press **TmClk** to add, edit, or remove timeclock events.

Home Screen

IPAC-SW8		
August 2, 2022		
4:21 PM		
Setup	TmClk	V1.00.018
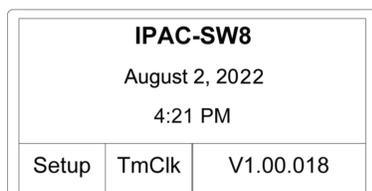
After pressing **Setup**, 10 configuration options appear.

- Project Settings
- Panels
- Occupancy Sensors
- Photo Sensors
- Keypads
- Remote Keypads
- Contact Closures
- Timeclock
- Ethernet Settings
- About

Setup Screen

Setup	Project Settings	■
	Panels	
	Keypads	
	Timeclock	
		Select
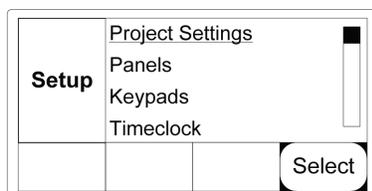
Project Settings

Project Settings sets the geographical location of the GL-IPAC-SW8 installation as well as the time, date, and Daylight Savings Time settings. Select **Project Settings** from the **Setup** menu to configure the GL-IPAC-SW8 time settings.

1. Use ▼ and ▲ to select the GL-IPAC-SW8's state.

   Select State Screen
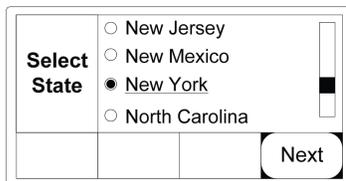
Select State	○ New Jersey
	○ New Mexico
	● New York
	○ North Carolina
	Next

2. Press **Next** from the Select State screen to advance to the Set Current Date screen.
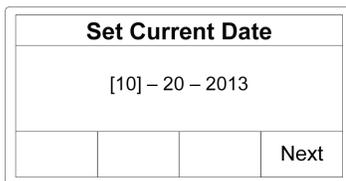
   Set Current Date Screen

Set Current Date
[10] – 20 – 2013
Next

3. On the Set Current Date screen use ▼ and ▲ to change the month, date, and year. Press **ENTER** to move between the date and year.

4. Press **Next** to advance to the Set Current Time screen.

5. Press **Edit** on the Set Current Time screen to change the time. Use ▼ and ▲ to change the values and **ENTER** to move between the hour, minute, second, and AM/PM.

6. Press **Set** to save the values.
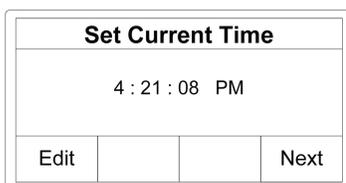
   Set Current Time Screen

Set Current Time		
4 : 21 : 08 PM		
Edit		Next

7. Press **Next** to advance to the Daylight Savings Time screen.

8. Using ▼ and ▲, select **Off** or **Auto**. **Off** turns daylight savings time off and **Auto** updates the time automatically based on Daylight Savings Time for the region.

9. Press **ENTER** to make the selection and **Exit** to save the settings and return to the Setup menu.

Daylight Savings Time Screen

Daylight Savings Time			
○ Off			
● <u>Auto</u>			
			Exit

Panels

Panels configures the additional lighting panels controlled by the GL-IPAC-SW8.

Select **Panels** from the Setup menu to modify external panel lighting loads. The Load Count screen identifies internal and external loads on the GL-IPAC-SW8. The GL-IPAC-SW8 supplies eight circuits to switch loads.

Changing the Number of External Loads

1. Highlight **EXT: --- --** and press **Edit**.

Load Count Screen

	Int: 8 Loads		
Load Count	<u>Ext: --- --</u>		■
Edit	Clear	ID	Exit

2. Use ▼ and ▲ to change the number of external loads then press **ENTER**.

Set External Load IDs

Each load in an external panel is controlled by a lighting module. To properly control the external loads in a system, the connected modules must be identified to the GL-IPAC-SW8.

To identify the connected modules:

1. Set the ID of an external module according to the list on the right side of the screen.
2. Press **OK** to exit the screen.

> **NOTE:** ERR indicates that a module ID cannot be found.

Set Module ID Screen

Occupancy Sensors

Occupancy Sensors configures internal, Cresnet, and GLS-SIM occupancy sensors connected to the GL-IPAC-SW8.

To configure occupancy sensors:

1. Select **Occupancy Sensors** from the Setup menu. The Occ Sensr List screen provides a list of all connected occupancy sensors. There can be a total of 24 occupancy sensors connected to the GL-IPAC-SW8. There are three types of occupancy sensors:
   - 4 internal, non-system sensors (Sensor 1 to 4)
   - 10 external Cresnet sensors (Sensors B0.1 to B9.1)
   - 10 external, non-system sensors connected to Cresnet via GLS-SIM (Sensors C0.1 to C9.1)
2. Configure the desired occupancy sensor as described in the following sections.

Press **Exit** to return to the Setup menu.

Occ Sensr List Screen

Internally Connected Occupancy Sensors

To configure:

1. From the Occ Sensr List screen, highlight an internal sensor using ▼ and ▲.
2. Press **Test** to enter the Internal Sensor Test screen.
3. Press **Type** to define one of the available states:
   - **Active Hi** (Default)
   - **Active Lo**
   - Normally Open (**N/O**)
   - Normally Closed (**N/C**)

   Status shows the current sensor state (**Active** or **Inactive**) based on the chosen type.
4. Press **OK** to save the setting and return to the Occ Sensor List screen.

   Internal Sensor Test Screen
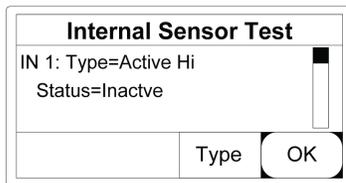
   ```
   ┌─────────────────────────────────┐
   │      Internal Sensor Test       │
   │ IN 1: Type=Active Hi        ■   │
   │     Status=Inactve              │
   │                                 │
   │                   Type │  OK    │
   └─────────────────────────────────┘
   ```

Cresnet Connected Occupancy Sensors

> **NOTE:** Internal sensors, wired directly to the GL-IPAC-SW8, do not need to be discovered.

External Cresnet sensors range from B0.1 through B9.1.

To configure:

1. Highlight the external sensor from the Occ Sensr List screen and then press **Find** to set IDs for Cresnet occupancy sensors. Three options to find the sensors are presented:
   - **Set ID using IR Remote** allows the sensor to be found using an IR remote. This requires a direct view of the sensor, but does not require physical access to the sensor.
   - **Find by pressing test button** allows the sensor to be found by pressing the button on the inside of the sensor. This requires the sensor to be physically accessible, which may require a ladder or step stool.
   - **Find by serial number** allows the sensor to be found by entering the serial number of the sensor. The sensor's serial number must be recorded prior to installation.

2. Use ▼ and ▲ to select the desired option and press **OK**.

    Find Sensor B1.1 Screen

Find Sensor B1.1	
Set ID using IR Remote	■
Find by pressing test button	
Find by serial number	
	OK

3. After a Cresnet occupancy sensor is found, press **Test** to confirm functionality.

    - State describes the current state of the sensor: **occupied** or **vacant**.

    - Raw shows what the sensor is currently detecting; every time movement is sensed the radio button fills in.

    - Timeout is the time the sensor must detect continuous vacancy before going to its vacant state. Timeout can be local, 30 seconds, 2 minutes, 5 minutes, 10 minutes, 15 minutes, or 30 minutes. The local setting uses the timeout set via the IR remote. Any programming overrides the occupancy sensor settings.

4. Press **TmOut** to change the time before the occupancy sensor times out.

5. Press **OK** to save settings.

    Sensor B1 Test Screen

Sensor B1 Test		
B1.1: State = Vacant		■
B1.1: Raw O		
B1.1: Timeout - 30s		
	TmOut	OK

GLS-SIM Connected Occupancy Sensors

External occupancy sensors connected to a GLS-SIM range from C0.1 through C9.1.

To configure:

1. Highlight the external sensor from the Occ Sensr List screen and then press **Find**.

2. Set the ID on the GLS-SIM to match the settings displayed on the GL-IPAC-SW8.

3. Press **OK** to return to the Occ Sensr List screen.

    Find Sensor C0.1 Screen

Find Sensor C0.1	
Ensure that the NET ID has been set to CO, and that the NET and PWR LEDs are lit.	
	OK

4. From the Occ Sensr List screen, highlight an external sensor connected to a GLS-SIM using ▼ and ▲ and press **Test** to enter the test screen.

5. Set the type of sensor on the GLS-SIM using the DIP switches. Refer to the GLS-SIM Operations and Installation Guide (Doc. 6768). Status shows the current sensor state based on the set type.

   Press **OK** to return to the Occ Sensor List screen.

Sensor C0.1 Screen

Sensor C0.1 Test
Set type on GLS-SIM
Status=Inactve
OK
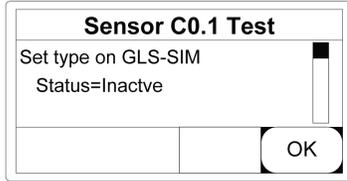
Assign an Occupancy Sensor

On the Sensor Load Assignment screen, loads L1.1 through L1.8 are displayed. For an external panel the loads are listed L2.1 through L2.56. The first digit represents the panel and the second digit represents the load. Next to panel and load, in parenthesis, functions already assigned to that sensor display as single letters. A **p** designates photo sensor assignment. An **o** designates occupancy sensor assignment. The occupancy sensor that is assigned to the load is listed on the right side of the screen. If no sensor has been assigned, - - - is displayed.

Sensor Load Assignment Screen

Sensor Load Assignment			
L 1.1 (p,o) = Sensor 2 (Off Only)			
L 1.2 (p,o) = Sensor 3 (On/Off)			
L 1.3 (p) = - - -			
Multi	Mode	Edit	OK
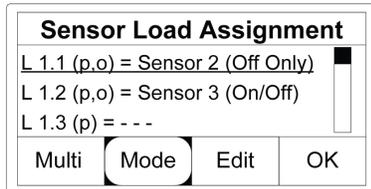
Assign an Occupancy Sensor to a Load

In this menu, assign occupancy sensors to specific loads.

1. Select **Edit** then use ▼ and ▲ to select the occupancy sensor.
2. **OK** saves the assignments and returns to the Setup menu.
3. Press **Set** to confirm the selection.

4. Press **Mode** to assign an action to the load:

- **On/Off** turns the load on and off based upon occupancy or vacancy.

- **Off Only** turns the load off based upon vacancy.

- **Auto/Off** allows the sensor to detect occupancy and then checks the ambient light levels to determine if the lights should be turned on. When vacancy is detected, lights turn completely off.

  The Sensor Load Assignment screen (above) shows two different sensors assigned to two different loads. They function as follows:

- Sensor 2 turns load 1 on panel 1 off.

- Sensor 3 turns load 2 on panel 1 on or off depending on occupancy or vacancy state.

Assign an Occupancy Sensor to a Group

Multi allows multiple occupancy sensors to be grouped, enabling them to monitor large areas. When one occupancy sensor detects motion, the area is assumed to be occupied. All connected occupancy sensors in a group must go vacant for the vacancy action to trigger.

To assign an occupancy sensor to a group:

1. From the Sensor Load Assignment Screen, press **Multi** to enter the Occ Multi screen. Groups 1 through 10 are displayed. The first digit in parenthesis indicates how many sensors are assigned to each group. If no sensor has been assigned to the group, 0 is displayed inside the parenthesis.

2. Use ▼ and ▲ to select the sensor group and select **Edit**.

3. Use ▼ and ▲ to highlight the occupancy sensor and then **Enter** to select it.

4. Press **Set** to add the sensor to the group. The number of sensors in the group is indicated within the parenthesis.

5. Press **OK** to save the assignments and return to the Sensor Load Assignment menu.

   Occ Multi Screen

Occ Multi	Group 1 (2)	■
	Group 2 (3)	
	Group 3 (4)	
	Group 4 (0)	
	Edit	OK
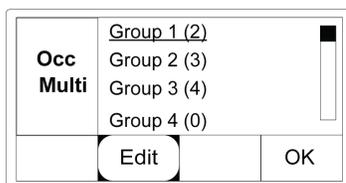
Photo Sensors

Photo Sensors configures loads and lighting thresholds for photo sensors attached to the GL-IPAC-SW8.

Select **Photo Sensors** from the Setup menu to enter the Photocell List screen. The screen displays the available photo sensors. The GL-IPAC-SW8 types of sensors include:

* 4 internal (Sensors 5 through 8)
* 10 external non-system sensors wired directly to a Cresnet occupancy sensor (Sensors B0.2 through B9.2)
* 10 external non-system sensors wired to a Cresnet GLS-SIM (Sensors C0.2 through C9.2)
* 10 external GLS-LCCT sensors wired to a Cresnet network (Sensors C0 through C9)

Photocell List Screen

Photo -cell List	Sensor 5		■
	Sensor 6		
	Sensor 7		
	Sensor 8		
Loads	Setup		Exit
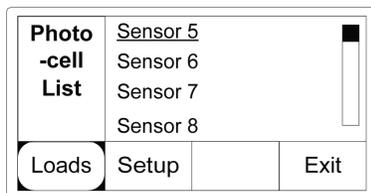
Photo Sensor Range

Configure lighting levels for each sensor:

1. Press **Loads**.
2. Use ▼ and ▲ to highlight the desired sensor on the Photocell List screen, then press **Setup** to configure the sensor. The screen provides four lighting levels in foot-candles (fc).
3. For open loop sensors (GLS-LOL) select **3-300 (GLS-LOL)**, **30-3000 (GLS-LOL)**, or **60-6000 (GLS-LOL)** depending on the lighting level required to trigger an action. Settings on the Select range (fc) screen must match jumper settings on the GLS-LOL. Other photo sensors should be assigned to **0-1000 (Other)**.

   Select range (fc) Screen

Int.5	○ 3-300(GLS-LOL)	■
Select range (fc)	○ 30-3000(GLS-LOL)	
	○ 60-6000(GLS-LOL)	
	○ 0-1000(Other)	
		Next
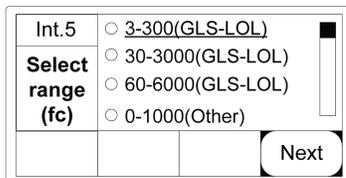
4. Press **Next** to advance to the Ctrl Type screen.

   The control type assigns what the sensor is going to do to the specific loads it is assigned to. There are three options: **On/Off**, **Hi/Lo/Off**, and **Hi/Med/Lo/Off**.

   - **On/Off** determines when the photo sensor turns lights on after ambient light levels drop below the assigned threshold and when the photo sensors turn lights off after ambient light levels rise above the assigned threshold.

   - **Hi/Lo/Off** allows the user to assign specific loads to the Lo and Hi settings. If ambient light levels exceed the upper threshold, all loads are turned off. When ambient light levels drop below the upper threshold, Lo loads are turned on. When the ambient light levels drop below the lower threshold, Hi loads are turned on.

   - **Hi/Med/Lo/Off** allows the user to assign specific loads to the Hi, Med, and Lo settings. If ambient light levels rise above the upper threshold, all loads are turned off. If ambient light levels drop below the upper threshold, Lo loads are turned on. If ambient light levels drop below the second threshold, Med loads are turned on and Lo loads are turned off. If ambient light levels drop below the last threshold, Hi, Med, and Lo loads are turned on to their high setting.

5. Highlight the desired option and press **Next** to adjust the threshold associated with the setting.

   Ctrl Type Screen

Int.6	○ On/Off	■
Ctrl Type	● Hi/Lo/Off	
	○ Hi/Med/Lo/Off	
	○	
		Next
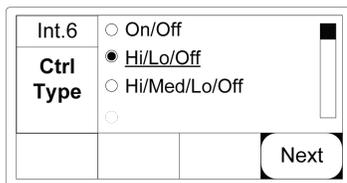
Lighting Threshold Settings

The Photocell Setup screen allows adjustment of the lighting threshold settings. The displayed bar graph represents the settings.

- The dotted section in the bar graph represents the hysteresis buffer that prevents the lights from cycling when ambient light levels near the threshold.

- A tick mark on the top of the bar graph shows the current ambient light level.

Photocell Setup Screen (on/off)

Photocell Setup	**Int.6**
Current: 0	On: 93
L 1: 99	Off: 104
L 2	Band	Done
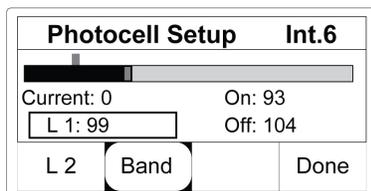
The settings determine the functionality of the loads as described below. Refer to the Light Levels illustration that follows below for details.

- When the light level is less than L1, both Lo and Hi lights are on.
- When the light level is greater than L2, both Lo and Hi lights are off.
- When the light level is between L1 and L2, Lo lights are on and Hi lights are off.

To adjust the levels:

1. Press **L 1**, **L 2**, or **L 3** to switch between the available levels.
2. Use ▼ and ▲ to change the threshold.
3. Press **Band** to adjust the hysteresis buffer.
4. Press **Done** to return to the Photo Cell List screen.

Light Levels Illustration
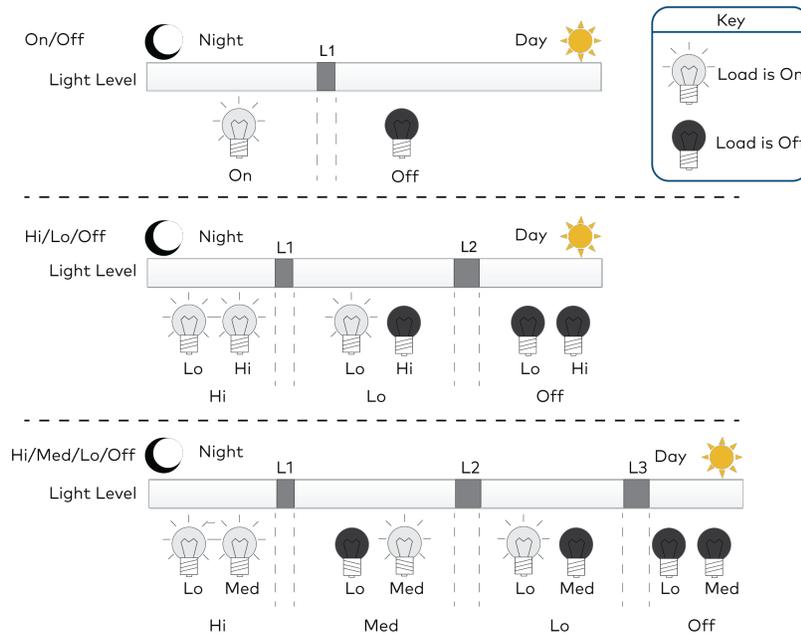
Assign Photo Sensors to Loads

The Photocell Assignments screen assigns photo sensors to loads.

1. Use ▼ and ▲ to highlight the desired load.
2. Press **MODE** to assign a photo sensor function to the load. Each function (**Hi**, **Med**, **Lo**, **Off**) operates the connected load according to the settings established on the Photocell Setup screen.

3. Press **OK** to save assignments.

Photocell Assignments Screen

```
┌─────────────────────────────────┐
│     Photocell Assignments      ▐ │
│ L 1.1 (p,o) = Sensor5 (Med)    ■ │
│ L 1.2 (p,o) = Sensor6 (Hi)       │
│ L 1.3 (o) = - - -                │
├────────┬────────┬───────┬────────┤
│  Copy  │  Mode  │  Edit │   OK   │
└────────┴────────┴───────┴────────┘
```

Keypads

Keypads configures all keypads in the system. A total of 16 external keypads can be connected to the GL-IPAC-SW8.

To configure keypads:

1. Select **Keypads** from the Setup menu.

2. Press **Find** to begin the keypad search process.

3. Find the keypad by pressing any button on the keypad or by entering the keypad's serial number. Note that all buttons flash if opting to find a keypad by pressing one of its buttons. Once a button on a flashing keypad is pressed, the keypad is identified by the GL-IPAC-SW8 and assigned an ID number. If **Online** is displayed, the GL-IPAC-SW8 found the keypad. If **Not Found** is displayed, the GL-IPAC-SW8 cannot find the keypad.

Keypd List Screen

```
┌─────────────────────────────────┐
│         │ 1: Not Found         ■ │
│ Keypd   │ 2: Not Found           │
│ List    │ 3: Not Found           │
│         │ 4: Not Found           │
├────────┬────────┬───────┬────────┤
│  Press │  Edit  │  Find │  Exit  │
└────────┴────────┴───────┴────────┘
```
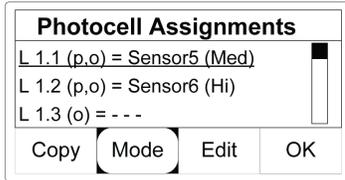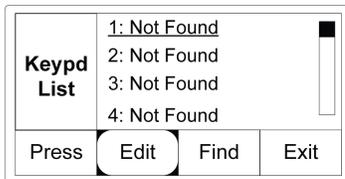
Keypad functions can be assigned automatically or manually:

- **Press** assigns functions to the pressed button automatically.

- **Edit** assigns functions manually.

4. Use ▼ and ▲ to highlight one of the keypads that is marked **Online**. When an **Online** keypad is selected, the **Find** button changes to the **ID** button.

5. Press the **ID** button to locate the keypad; the keypad blinks until a button is pressed.

Keypd List Screen

```
┌─────────────────────────────────┐
│         │ 1: Online            ■ │
│ Keypd   │ 2: Online              │
│ List    │ 3: Online              │
│         │ 4: Not Found           │
├────────┬────────┬───────┬────────┤
│  Press │  Edit  │   ID  │  Exit  │
└────────┴────────┴───────┴────────┘
```
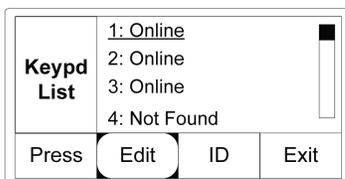
6. After pressing **Press**, Auto Select is initiated. Press a button on the keypad to program it. The GL-IPAC-SW8 directs the user to the Select Btn screen.

Keypads: Auto Select Screen

```
┌─────────────────────────────────┐
│           1: Online        ■     │
│    ┌─────────────────────┐       │
│ Keyp│    Auto Select:     │       │
│ Lis │   Press a button    │       │
│     │    to program       │       │
│    └─────────────────────┘       │
│ ─────────────────────────────── │
│  ESC   │  Edit  │  Find  │ Exit  │
└─────────────────────────────────┘
```
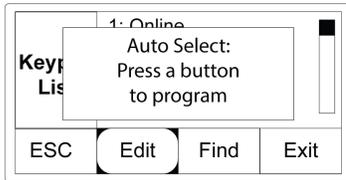
Program Button Function

To manually program or edit a button's function, select the button on the Select Btn screen.

- Press **Edit** to display functions.
- Press **Copy** to duplicate button functions and **Paste** to add the functions to another button.
- Press **OK** to save button functions.

Select Btn Screen

```
┌─────────────────────────────────┐
│  KP-1  │ Button 1          ■     │
│ Select │ Button 2                │
│  Btn   │ Button 3                │
│        │ Button 4                │
│ ─────────────────────────────── │
│ Edit  │ Copy  │ Paste │  OK      │
└─────────────────────────────────┘
```
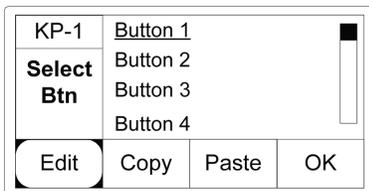
Assign Button Function and Select Loads

Button functions are configured on the Select Btn Type screen.

1. Assign a button function by selecting any of the following options:
   - **On**
   - **Off**
   - **Toggle**
   - **Custom**
   - **Enter Override**
   - **Exit Override**
   - **Enter/Exit Override**
   - **Enable**
   - **Timeclock**
   - **Disable Timeclock**
   - **Enable/Disable Timeclock**

2. Select **Next** to assign loads to the button.

Select Btn Type Screen

B1.3	○ Toggle	■
Select Btn Type	○ Custom ○ Enter Override ○ Exit Override	
		Next

The Select Loads screen appears. If a button is set to **On**, **Off**, **Toggle**, or **Custom**, the loads affected by the button press must be selected. Affected loads have the function displayed next to the load ID. Unaffected loads have **- - -** displayed next to the load ID.

- Press **Adjust** to change functions.
- **Set All** selects all loads.
- **Clr All** clears the functions of all loads.

Select Loads Screen

B1.3	L1.1 (p,o) = On	■
Select Loads	L1.2 (p,o) = - - - L1.3 (o) = - - - L1.4 (o) = - - -	
Set All	Clr All	Adjust	OK

Remote Keypads

Remote Keypads configures keypads connected to external systems via IP.

To program or edit remote keypads that operate with a connected control system, select Remote Keypads from the Setup screen. The GL-IPAC-SW8 allows for up to two remote keypads to be connected to ID 20 and 21 on the remote control system.

Refer to the steps described above in the Keypads section to program button functions for remote keypads.

To configure the remote keypad:

1. Press **Setup** on the Keypad Address Setting screen.

Rmte Keypd List Screen

Rmte Keypd List	20: Not Programmed 21: Not Programmed	■
Press	Edit	Setup	Exit

2. Enter the IP address of the remote control system.
3. Press **Edit** and then use ▼ and ▲ to change the IP values.
4. Press **ENTER** to advance to the next part (octet) of the IP address.

5. Press **Set** to confirm the address. The GL-IPAC-SW8 must be restarted after altering the IP address.

> **NOTE:** After setting the IP address of the remote control system, an EIC must be added to the remote system program. On the EIC, joins 200-219 are dedicated for the remote keypads.

*   Press **Clear** to delete the IP Address.
*   Press **Exit** to save the settings and return to the Rmte Keypd List screen.

Keypad Address Setting Screen

Keypad Address Setting		
IP Address		■
127.000.000.001		
Clear	Edit	Exit

Contact Closures

Trigger specific actions using two predefined contact closure inputs and six custom contact closure inputs.

Select **Contact Closures** from the Setup menu to show a list of the six editable contact closures (**CC3** - **CC.8**).

*   Contact closure 1 is preprogrammed to lock the GL-IPAC-SW8.
*   Contact closure 2 preprogrammed to lock all keypads in the system.
*   Contact closures 3 -8 (**CC.3** -**CC.8**) can be programmed using the same functions as the keypads, in addition to being able to lock, unlock, and lock/unlock the GL-IPAC-SW8 or the keypads.

To program the functions for the contact closures:

1. Use ▼ and ▲ to highlight a contact closure and press **Edit.**

Contact Closures Screen

Cont. Clos- ures	CC.3 CC.4 CC.5 CC.6	■
	Edit	Exit

2. Select one from the Select function screen: **On, Off, Toggle, Custom, Enter Override, Exit Override, Enter/Exit Override, Enable Timeclock, Disable Timeclock, Enable/Disable Timeclock, Lock Keypads, Unlock Keypads, Lock/Unlock Keypads, Lock GL-IPAC-SW8,**

Unlock **GL-IPAC-SW8**, and **Lock/Unlock GL-IPAC-SW8**.

3. Press **Next** to edit the controlled loads if the selection was **On**, **Off**, **Toggle**, or **Custom**.

Other selections navigate to the Contact Closures screen.

> **NOTE:** Contact closures maintain logic functionality.

Select function Screen

CC.3	○ On	■
Select funct -ion	○ Off ○ Toggle ○ Custom	
		Next

If a contact closure is set to **On**, **Off**, **Toggle**, or **Custom** then the Select Loads screen is displayed. **On**, **Off**, **Toggle**, and **Custom** each have different operations that can be performed:

* **On** turns lights on or allows lights to turn on based upon photo sensor light readouts.
* **Off** turns lights off with a warning that the lights are about to turn off.
* **Toggle** operates with the functionality of the **On** and **Off** mentioned above.
* **Custom** allows further modification of the above options.

Use ▼ and ▲ to highlight the desired load and press **Adjust** to change the contact closure settings. Pressing **Set All** selects all loads and pressing **Clr All** clears the function of all loads.

Select Loads Screen

CC.3	L1.1 (p,o) = On	■
Select Loads	L1.2 (p,o) = - - - L1.3 (o) = - - - L1.4 (o) = - - -	
Set All	Clr All	Adjust	OK

Timeclock

To program or adjust timeclock events on the GL-IPAC-SW8, select **Timeclock** from the Setup menu or select the **TmClk** shortcut on the home screen.

> **NOTE:** Selecting **TmClk** on the home screen results in the Time Clock Events page, described further below.

The Holiday List screen provides a list of holidays. A holiday is observed if the screen displays an **X** next to the holiday. Use ▼ and ▲ to highlight a setting and press **Select** to observe or remove the **X**. Select **- - -** at the bottom of the list of holidays and press **Add** to add a custom holiday. A total of 100 timeclock events can be added.

Holiday List Screen

Holiday List	☒ Thanksgiving		
	☒ Thksgvg 2 Day		
	☒ Christmas		
	☐ ---		
Add			Next

The Timeclock Warn Setup screen schedules the lights to blink as a warning before they turn off.

To configure the warnings:

1. Press **Next** to advance to the Timeclock Warn Time screen.

    Timeclock Warn Setup Screen

Timeclock Warn Setup		
On the following pages set the warn time and warning loads Press Help for more info		
		Next

2. Use ▼ and ▲ to select the warn time (in minutes). The selection can range from 1 to 30 minutes.

3. Press **Next** to advance to the Warn Loads screen.

    Timeclock Warn Time Screen

Timeclock Warn Time		
Warn Time: [5] minutes		
		Next

4. Use ▼ and ▲ to highlight the desired loads.
    - Press **Select** to select individual loads.
    - Press **Set All** to select all loads.
    - Press **Clr All** to deselect all loads

Warn Loads Screen

Warn Loads	☒ L1.1		
	☒ L1.2		
	☒ L1.3		
	☒ L1.4		
Set All	Clr All	Select	Next

Press **Next** to navigate to the Time Clock Events page.

Time Clock Events

The Time Clock Events screen allows the start and end of the workday to be adjusted. Events on weekdays, weekends, and holidays can also be set.

> NOTE: Pressing **TmClk** on the home screen goes to the Time Clock Events page.

To configure the events:

1. Use ▼ and ▲ to highlight Start of Workday and press **Edit** .
2. Use ▼ and ▲ to select the time and press **ENTER** to advance though the settings.
3. Press **Next** to save and exit.
4. Repeat this process for End of Workday.

To add additional Time Clock Events:

1. Highlight **- - -** and press **Add**. The **Add** option only appears when **- - -** is highlighted.
2. Use ▼ and ▲ and the **ENTER** button to select the days the event should take place (**weekdays**, **weekends**, **holidays**, or **custom**) then press **Next**.
3. Select **Standard**, **Sunrise**, or **Sunset**. **Standard** allows input of a fixed time. **Sunrise** and **Sunset** use the device's astronomical clock to coordinate the event with the sunrise or sunset (+/- 2 hours).
4. Press **Next** to advance to the Event Type (Event Prog) screen.
5. Use ▼ and ▲ and the **ENTER** button to select Lights On/Off, Lock Keypads, or Unlock Keypads.
6. Press **Next** if Lights On/Off is selected or Done if Lock Keypads or Unlock Keypads is selected.
7. Press **Exit** to save settings and return to the Setup screen.

   Time Clock Events Screen

Time Clock Events	Start of Workday	
	End of Workday	
	1. Wkday SS+2:00	
	2. Wkly 2:10 PM	
Edit		Exit
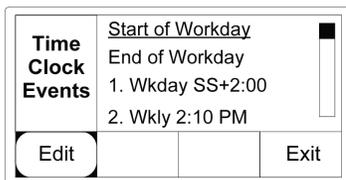
Configure Event for Load

To configure the event type for each load:

1. Use ▼ and ▲ to highlight the desired load and press **ENTER** to toggle between **Auto**, **On**, and **Off (Warn)** or press the **All On** button to turn all loads on or **All Off** to turn all loads off.
2. Press **All Clr** to clear all selections made.
3. Press **OK** to save the settings and return to the Time Clock Evnts screen.

Event Prog Screen

Event Prog	L1.1 (p,o) = On	■
	L1.2 (p,o) = On	
	L1.3 (o) = On	
	L1.4 (o) = On	
All On	All Off	All Clr	OK

Add Custom Holiday

To add a custom holiday:

1. Use ▼ and ▲ to select **- - -** from the holiday list and press **Add**.
2. On the Timeclock Event-Custom screen, add the holiday's month using ▼ and ▲ and then press **ENTER**.
3. Use ▼ and ▲ to select the day and select **Next**.
4. Use ▼ and ▲ to select the duration of the holiday, between 1 and 99 days.
5. Press **Next** to return to the Setup menu.

Timeclock Event-Custom Screen

| **Timeclock Event-Custom** |
| Holiday Start Date (MM-DD) |
| [07]   -   25 |
| | | | Next |

Ethernet Settings

The GL-IPAC-SW8 can be configured to use a static IP address (DHCP is off) or to obtain an IP address from a DHCP server (DHCP is on). Select **Ethernet Settings** from the Setup menu to adjust this.

1. Use ▼ and ▲ to select the desired DHCP setting: **On** or **Off**.
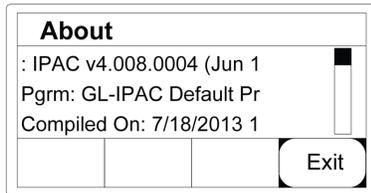2. Press **Next** to return to the Setup menu.

Ethernet - DHCP Screen

| **Ethernet – DHCP** |
| DHCP: [Off] |
| | | | Next |

About

Select **About** from the Setup menu to display information about the GL-IPAC-SW8's programming and Ethernet configuration.

About Screen

About
: IPAC v4.008.0004 (Jun 1
Pgrm: GL-IPAC Default Pr
Compiled On: 7/18/2013 1
Exit

Troubleshooting

Problem	Installation Resolution	Hardware Resolution	Software Resolution
Occupancy sensor does not function.	Verify that the occupancy sensor is placed in the correct location by utilizing the Test mode on the sensor. For additional details refer to the occupancy sensor's installation guide at https://www.crestron.com/manuals.	Verify the occupancy sensors are connected correctly. If sensors are connected via GLS-SIM, verify that DIP switch settings match those listed in this guide.	Verify that occupancy sensors are associated with loads from the Occupancy Sensor screen.
Photo sensors do not function.	Verify that the photo sensor is placed in an area where natural light is changing.	Verify the photo sensors are connected correctly. If sensors are connected via GLS-SIM, verify that DIP switch settings and dials are correct.	Verify that photo sensors are associated with loads from the photo sensor setup screen. Verify that the photo sensor levels are set such that actions occur with the level of natural light measured by the sensor. Verify that Auto mode is triggered by an external device.
Keypad buttons do not trigger the expected action.	Verify that the Cresnet wiring is in place and that adequate power is being supplied.	N/A	Verify that the keypad buttons have been programmed from the keypad programming screen. Verify that the loads change from the corresponding keypad button presses.

Problem	Installation Resolution	Hardware Resolution	Software Resolution
Timeclock events are not occurring.	N/A	N/A	Verify that timeclock events are programmed properly. Ensure that there are no timeclock overrides present. Verify that the date and time of the GL-IPAC-SW8 are set correctly.
Contact closures do not function.	Verify that the contact closure is being triggered.	Verify that the contact closure wires are being connected to the contact closure input and to the ground terminal. Verify that the contact closure is capable of sinking 10 mA of current and it does not provide current to the input terminal.	Verify the contact closure input is programmed via the Contact Closure screen.
A city is not available from the Project Settings screen.	N/A	N/A	Select a city that is geographically close and in the same time zone as the current city. The location selection allows for accurate calculation of sunrise and sunset times. Selecting a nearby city may cause the sunrise and sunset times to be off by a few minutes.

Problem	Installation Resolution	Hardware Resolution	Software Resolution
External loads are not being controlled.	Verify that the modules attached to the GL-IPAC-SW8 are supported.	Verify that Cresnet wiring is properly wired between the GL-IPAC-SW8 and the external panel. Verify that the modules within the panel are wired properly. Refer to the Wiring Diagram section for wiring information.	Verify that the modules IDs have been properly set according to the Panels setup option.

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