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Product Manual

GLS-SIM

Crestron Green Light® Sensor Integration Module

Crestron Electronics, Inc.

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The original language version of this document is U.S. English.
All other languages are a translation of the original document.

Regulatory Model: GLS-SIM

Contents

GLS-SIM

The GLS-SIM is a compact interface device designed to allow Crestron Green Light® sensors (where applicable) to be connected directly to a Cresnet® control network. Cresnet is the communications backbone for Crestron sensors, dimmers, keypads, touchpanels, shade controllers, thermostats, and many other devices. This flexible four-wire bus provides data communications and 24VDC power for all devices on the Cresnet network. The GLS-SIM installs easily at the sensor location, mounting conveniently inside the electrical box or exposed above the ceiling. Wiring connections to the network and sensor are facilitated using miniature screw terminals.

The GLS-SIM is compatible with Crestron GLS-series sensors, as well as with most 24VDC powered sensors from any manufacturer. Up to 1A @ 24VDC power is available[1] to support multiple sensors in parallel. The GLS-SIM actually includes two sensing inputs, each capable of sensing a contact closure, logic level, or 0-10VDC analog signal. Setup is simplified using onboard DIP switches to select the sensor type (i.e. occupancy, photocell, partition, etc.) and operating mode (i.e. normally-open or normally-closed).

This section provides the following information:

Features

Key features include:

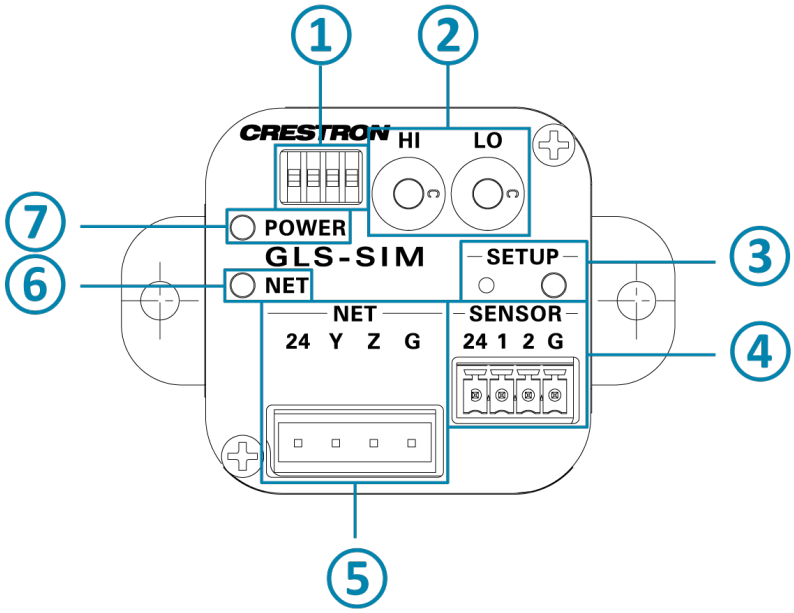
- Provides Cresnet connectivity for Crestron GLS-series (where applicable) and third-party sensors
- Works with occupancy sensors, photocells, partition sensors, and more
- Provides 24VDC to power one or more sensors
- Includes two independent sensing inputs
- Supports contact-closure, DC logic, and 0-10V analog signals
- Onboard DIP switches simplify setup
- Allows fully-programmable operation as part of any Crestron system
- Compact module fits in an electrical box behind the sensor
- Miniature screw terminals facilitate reliable wiring connections

Physical Description

The GLS-SIM provides the following connectors, controls, and indicators.

Front

The following illustration shows the front of the GLS-SIM.



① **MODE:** (1) 4-position DIP switch;
Sets sensor type and operating mode

② **ID CODE:** (2) Rotary DIP Switches;
Used for manually setting Cresnet ID;
'00' setting enables touch-settable ID (TSID)

③ **SETUP:** (1) Red LED and (1) recessed miniature pushbutton for TSID

④ **SENSOR:** (1) 4-pin 3.5mm detachable terminal block;
Sensor input comprised of 24VDC power output and two digital or analog input ports (referenced to GND);

⑤ **NET:** (1) 4-pin 5mm detachable terminal block;
Cresnet client port, connects to Cresnet control network

⑥ **NET:** (1) Yellow LED, indicates communication with Cresnet system

⑦ **POWER:** (1) Green LED, indicates 24 VDC operating power supplied via Cresnet control network

Specifications

Product specifications for the GLS-SIM.

Product Specifications

Connectors

NET	(1) 4-pin 5mm detachable terminal block; Cresnet client port, connects to Cresnet control network
SENSOR	(1) 4-pin 3.5mm detachable terminal block; Sensor input comprised of 24VDC power output and two digital or analog input ports (referenced to GND); Digital Input: Rated for 0-24VDC, input impedance 20k ohms, logic threshold 1.25 VDC; Analog Input: Rated for 0-10VDC, protected to 24VDC maximum, input impedance 20k ohms; Programmable 5VDC, 2k ohms pull-up resistor per pin; Maximum Power Load: 1A @ 24VDC[1]

Controls and Indicators

ID CODE	(2) Rotary DIP Switches; Used for manually setting Cresnet ID; '00' setting enables touch-settable ID (TSID)
MODE	(1) 4-position DIP switch; Sets sensor type and operating mode
POWER	(1) Green LED, indicates 24VDC operating power supplied via Cresnet control network
NET	(1) Yellow LED, indicates communication with Cresnet system
SETUP	(1) Red LED and (1) recessed miniature pushbutton for TSID

Power Requirements

Cresnet Power Usage	1 W (0.04A @ 24VDC) Does not include power draw of attached devices

Environmental

Temperature	32° to 104°F (0° to 40°C)
Humidity	0% to 95% RH (noncondensing)

Dimensions

Height	2.00 in. (51 mm)
Width	2.00 in. (51 mm), 2.88 in. (73 mm) with bracket
Depth	0.86 in. (22 mm)

Weight

2 oz (46 g)

Compliance

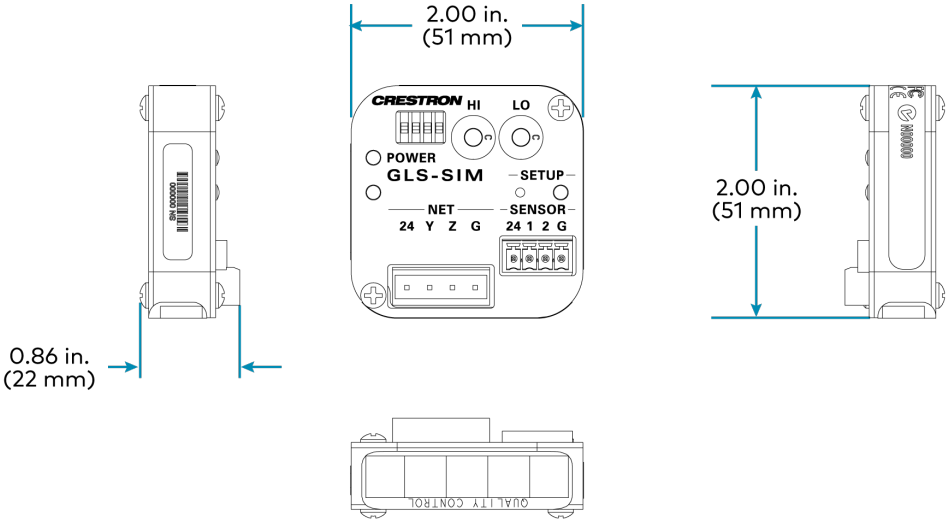
Regulatory Model: GLS-SIM

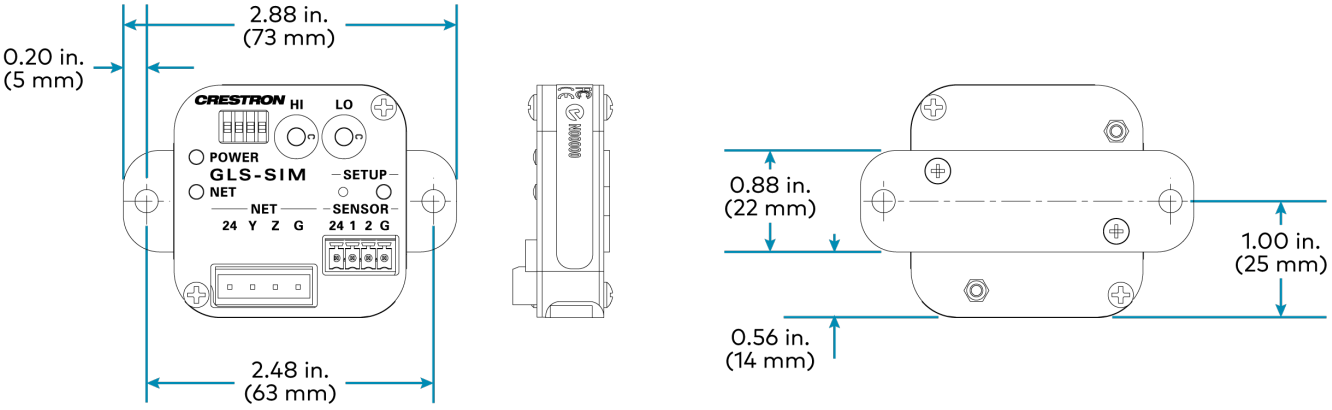
FCC Part 15 Class B, IC Class B, CE, UL® Listed for US and Canada

Note:

1. Actual load capability dependent upon the amount of available Cresnet power in the system.

Dimension Drawings





Installation

The GLS-SIM can be installed inside a standard 4-inch electrical box using the included 3M Dual Lock fastener or mounted to the ceiling using the included mounting bracket.

To use the included mounting bracket, use the included 04-40 x 1/4 in. screws to attach the mounting bracket as shown in the following illustration. The only tool required is a #1 Phillips screwdriver.

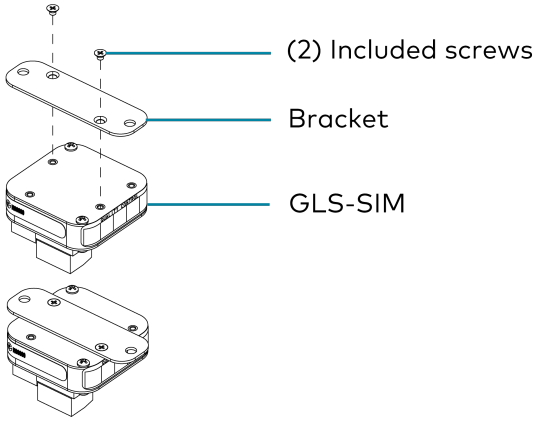
In the Box

Qty.	Description
1	GLS-SIM, Crestron Green Light® Sensor Integration Module
	Additional Items
1	Bracket, Metal Plate (2022949)
2	Screws, 4-40 x 1/4 in., Undercut Head, Phillips (2023106)
1	Connector, 4-Pin, Right-Angle (2003584)
1	Connector, 4-Pin (2003576)
1	3M® Dual Lock® Fastener, 0.75 in. x 0.75 in., Clear, Adhesive (2005414)

Mounting

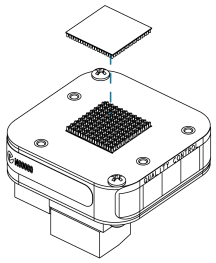
Use the following procedure to mount the GLS-SIM.

1. Use a #1 Phillips screwdriver and the included 4-40 x 1/4 in. screws to attach the mounting bracket to the GLS-SIM as per the image below.

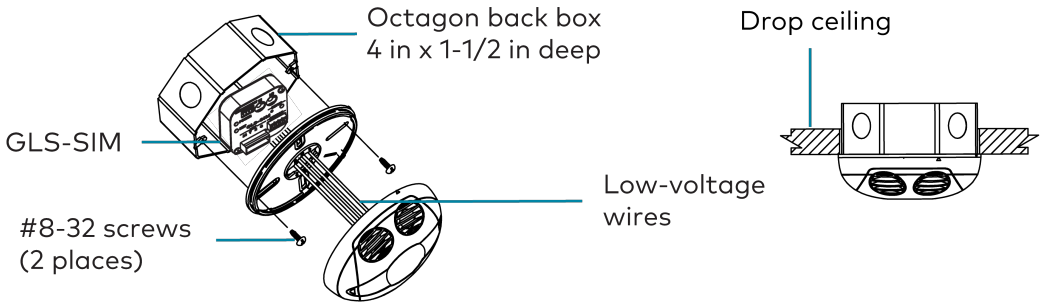


2. Mount the GLS-SIM to a flat surface with two mounting screws (not included).

The included dual lock fastener can be attached as per the image below.



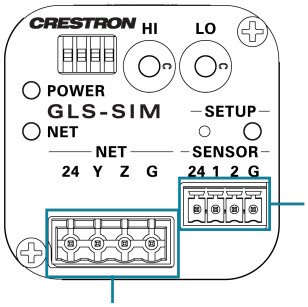
The GLS-SIM can also be mounted in an octagon back box or flush to a drop ceiling.



Hardware Hookup

Make the necessary connections as shown in the following illustration. Apply power after all connections have been made.

> **CAUTION:** Incorrect wiring may damage the GLS-SIM.

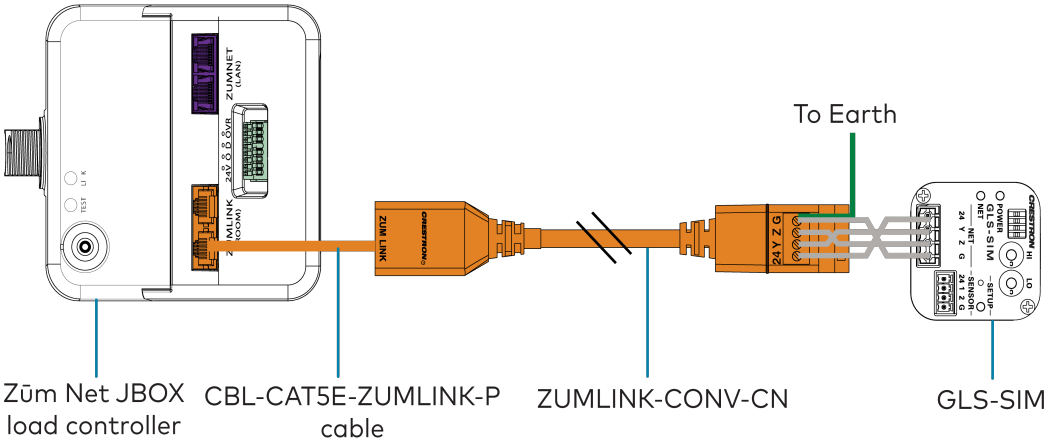


SENSOR:
Sends power to and receives input from

NET:
To control system and other Cresnet devices

Connect with Zūm

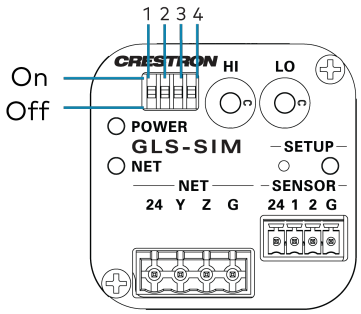
When utilized with Zūm® wired lighting control applications and the Zūm Link communication bus, match the 24, Y, Z, G connections from the ZUMLINK-CONV-CN to the GLS-SIM. The ZUMLINK-CONV-CN G output must be ground to Earth as well as to the GLS-SIM G input. Make the necessary connections as per the image below.



Configuration

The GLS-SIM can be configured to work with various device types. Use the DIP switches as described in the following images and tables to configure the device.

DIP Switches on GLS-SIM

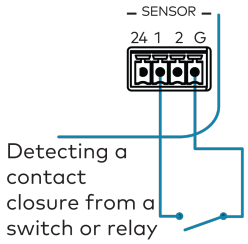


Input Channel	DIP Switch	Setting
1	1	OFF: Enables pull-up resistor ON: Disables pull-up resistor
	2	OFF: Normal polarity ON: Inverted polarity
2	3	OFF: Enables pull-up resistor ON: Disables pull-up resistor
	4	OFF: Normal polarity ON: Inverted polarity

Sensor Digital Input

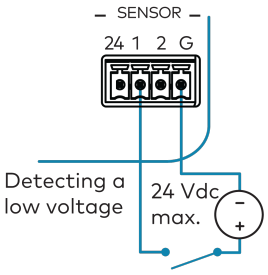
The GLS-SIM can be configured for sensors that use relay contacts (normally open or normally closed) or voltage level (active high or active low). The digital input is rated for 0–24VDC, the input impedance is 18.5k ohms, and the logic threshold is 1.25VDC. Refer to the tables and wiring diagrams to configure the GLS-SIM.

Switch Settings for Digital Input (Dry Contact Closure)



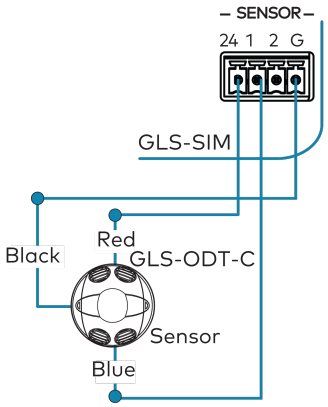
Input Channel	DIP Switch	Setting
1	1	OFF
	2	OFF: Normally open ON: Normally closed
2	3	OFF
	4	OFF: Normally open ON: Normally closed

Switch Settings for Digital Input (Voltage Detection)



Input Channel	DIP Switch	Setting
1	1	ON
	2	OFF: Active low ON: Active high
2	3	ON
	4	OFF: Active low ON: Active high

Switch Settings for Digital Input

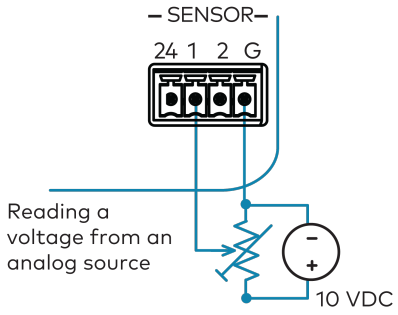


Input Channel	DIP Switch	Setting
1	1	ON
	2	ON
2	3	ON
	4	ON

Analog Input

When using the GLS-SIM to read an analog input, set the DIP switches as shown in the tables and wiring diagrams to configure the GLS-SIM. The analog input is rated for 0–10VDC, protected to a maximum of 24VDC, and the input impedance is 18.5k ohms.

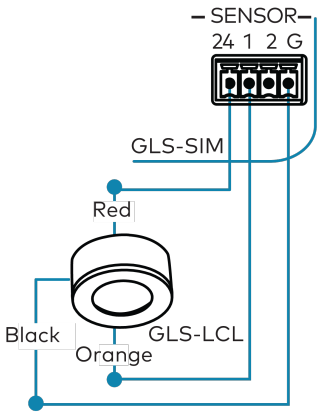
Switch Settings for Analog Input (Read Voltage from Analog Source)



Input Channel	DIP Switch	Setting
1	1	ON
	2	OFF
2	3	ON
	4	OFF

Setting switches 2 or 4 to ON inverts the polarity, causing the control signal to read "100%" at 0V and "0%" at 10V.

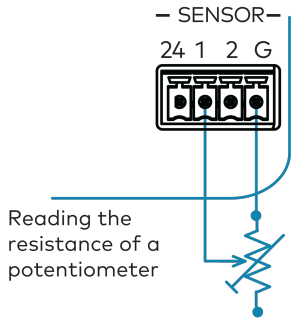
Switch Settings for Analog Input (Crestron Photocells, e.g., GLS-LCL and GLS-LOL)



Input Channel	DIP Switch	Setting
1	1	ON
	2	OFF
2	3	ON
	4	OFF

Setting switches 2 or 4 to ON inverts the polarity, causing the control signal to read "100%" at 0V and "0%" at 10V.

Switch Settings for Analog Input (Read Resistance of Potentiometer)



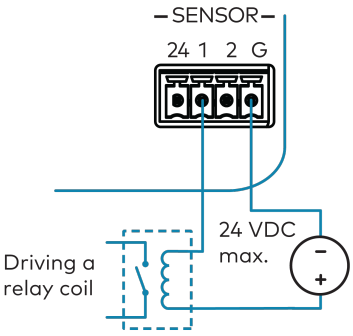
Input Channel	DIP Switch	Setting
1	1	OFF
	2	OFF
2	3	OFF
	4	OFF

Setting switches 2 or 4 to ON inverts the polarity, causing the control signal to read "100%" at 0V and "0%" at 10V.

Digital Output

When using the GLS-SIM as a digital output, set the DIP switches as shown in the table and wiring diagram. The digital output is a 250mA sink from a maximum of 24VDC, and catch diodes are used with "real world" loads.

Switch Settings for Digital Output (Drive a Relay Coil)



Input Channel	DIP Switch	Setting
1	1	ON
	2	OFF
2	3	ON
	4	OFF

Setting switches 2 or 4 to ON inverts the polarity, causing the control signal to read "100%" at 0V and "0%" at 10V.

Resources

The following resources are provided for the GLS-SIM.

> **NOTE:** You may need to provide your Crestron.com web account credentials when prompted to access some of the following resources.

Crestron Support and Training

- Crestron True Blue Support
- Crestron Resource Library
- Crestron Online Help (OLH)
- Crestron Technical Institute (CTI) Portal

Programmer and Developer Resources

- help.crestron.com: Provides help files for Crestron programming tools such as SIMPL, SIMPL#, and Crestron Toolbox™ software
- developer.crestron.com: Provides developer documentation for Crestron APIs, SDKs, and other development tools

Product Certificates

To search for product certificates, refer to the Product Certificates section of the Crestron Resource Library.

Related Documentation

- Crestron Technical Documentation

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