

GrydSense Wired DALI Controller

TECHNICAL SPECIFICATION

Table of Contents

Overview 2

Features and Capacities 2

Models Available..... 2

Specifications 2

 Power 2

 Environment 2

 Terminals 2

System Diagram 3

Explanation and Features 4

Standards 4

Sensors Connected 4

Mounting 4

Troubleshooting and Maintenance Features 4

GrydLight Module – Sensor (Wired / Wireless) Integration 4

 DALI Bus 4

 DALI Wiring 4

 GS-Link: System Low-Voltage Wiring 4

 Analog Bus Wiring..... 5

Mechanical Dimensions 6

Overview of Wiring Terminals..... 7

 Wiring – Line Voltage 8

 Wiring from AC/DC Power Supply 8

 Emergency Lighting Applications 8

 Wiring: DALI Bus 9

 Wiring – GS Link 10

 Daisy-Chain wiring Example 10

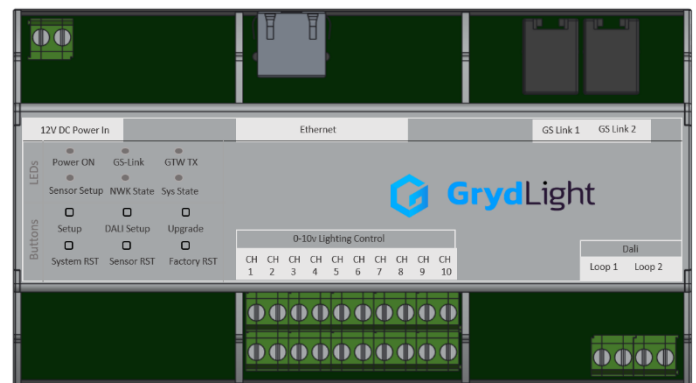
Overview

The GrydSense din-rail mounted Controller is an interface between the fixtures, sensors and the Vortex Gateway. It drives 0-10 volts and DALI drivers. It provides DALI bus power and control for two independent DALI Buses with up to 64 ballasts on each Bus

- Controls up to 124 Dali based lighting fixtures
- Each GS-link loop can connect up to 20 sensors
- Simple and Intuitive commissioning of lights and sensors
- It can loop the light/s to sensors, i.e., the lights/ballasts which are to be controlled based on the sensor trigger.
- Sensor Commissioning, DALI Commissioning, Sensor Factory Reset, Controller Factory Reset, DALI Loop test etc.,

Features and Capacities

- Power for two buses of DALI compliant digital addressable loads (up to 240 mA per bus).
- DALI Bus can control up to 32 zones per bus.
- Analog Channel can control up to 10 Ballasts / series of ballasts.
- Non-Volatile memory backup.
- Minimal commissioning requirement for default operations.
- Remote upgrade of the system using ethernet.
- Ambient light sensor inputs automatically adjust light levels based on set lighting requirements.
- Network expanded by connecting occupancy sensors on 'GS-Link' network.
- Includes GS-link control link for seamless integration of lights, motorized window treatments, control stations and GS-link Sensor Modules.
- GS-link units and GS-link Sensor Modules can be used in a GrydLight system to control and manage light in an entire building.
- 2 GS-link for interfacing with 20 wired sensors per link.
- Wired Sensors acts as the provisioner for Wireless Sensors.



Models Available

GRYD-DALI-2C – 2 Channel DALI controller

GRYD-DALI-2C-AN-10 – 2 Channel DALI and 10 Channel Analog Controller

Specifications

Power

- 12V-DC
- Max Current Draw- 500mA
- DALI Bus Output: 12 V - 240 mA per link

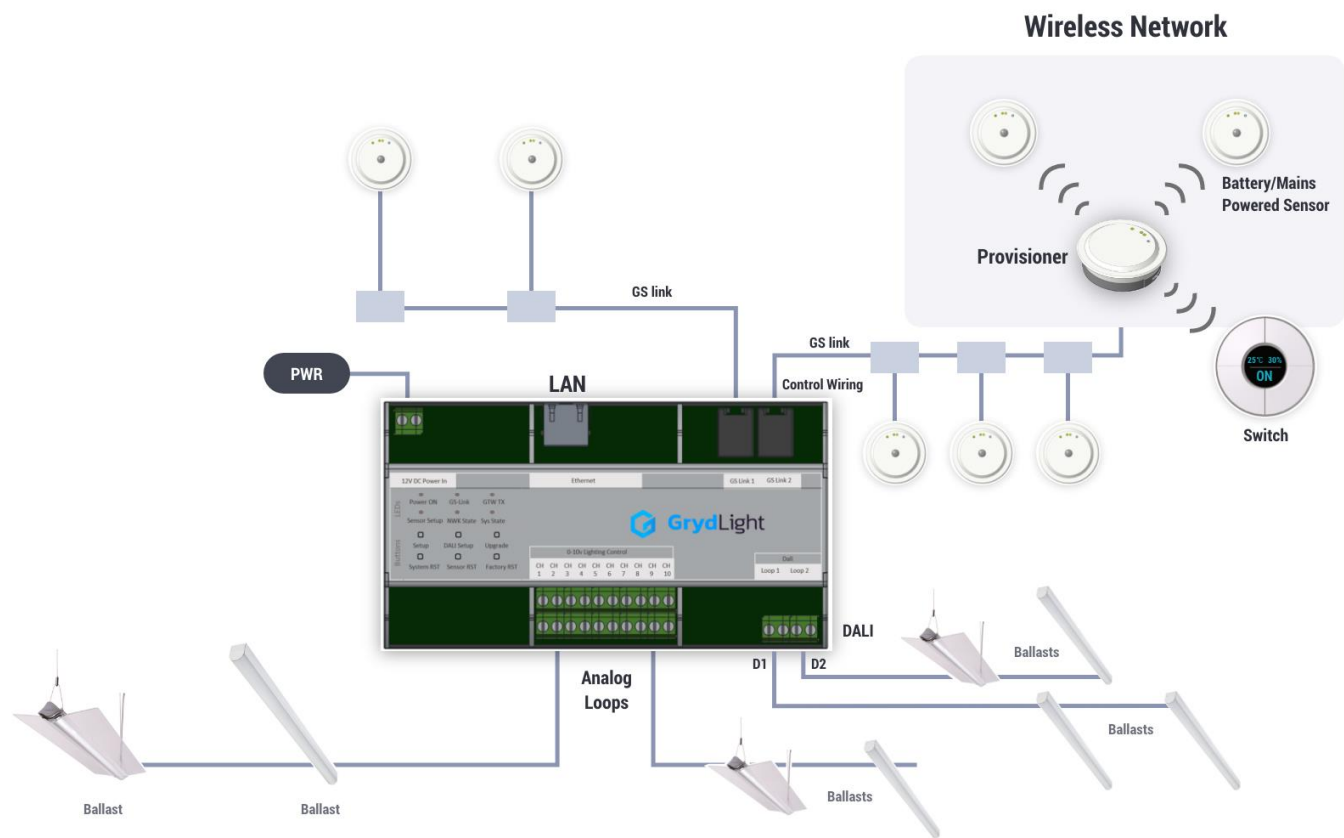
Environment

- Ambient Temperature Operating Range: 0°C to 40°C
- Relative Humidity: less than 90% non-condensing
- For indoor use only

Terminals

- Mains Wiring: 2.5Sqmm [3 Core]
- Sensor Wiring: 0.5Sqmm [2 Core]

System Diagram



Explanation and Features

(1). GS-Link connectors	up to 20 sensors can be looped per each GS link.
(2). Mains wiring	12v supply for controller.
(3). 0 -10V channels	Ten dimming zones.
(4). DALI bus	Connect DALI loops.

Standards

- ANSI C137.4-2019
- IEC 62386
- CE Certified
- ROHS Compliant

Sensors Connected

- Use occupancy sensors to automatically turn the lights off/on in an area a fixed time after it becomes vacant/occupied.
- 16 Sensors can be connected per loop directly to the controller
- Occupied/ Unoccupied level can be programmed.
- Use Ambient Light Sensor to detect the daylight intensity level and dim or switch off the ballasts accordingly.
- Temperature and humidity sensors can be used to monitor ambient temperature and humidity in the zone defined.

Mounting

Mounts to standard DIN rail

DALI Buses Up to 64 DALI compliant loads on each bus can be addressed and grouped into 64 zones

The GS-Link can have up to 124 devices and 124 zones.

Troubleshooting and Maintenance

Features

Maintains redundant memory of ballast programming for ease of single or multiple ballast replacement.

GrydLight Module – Sensor (Wired / Wireless) Integration

- BLE Occupancy Sensor to control zone on the GS-Link
- Assign up to 20 BLE Occupancy Sensor
- Add additional wired and wireless sensors by adding to the GS-Link
- Wire and power up to 20 sensors total
- Occupancy Sensor
- Ambient Light Sensor

DALI Bus

GrydLight unit shall supply power to the independent DALI Bus, which support up to 64 ballasts.

Up to 128 DALI compliant loads on both the buses and can be grouped in up to 128 zones

DALI Wiring

- DALI wiring can be treated as AC Voltage; hence wiring can be done in combination with the mains wiring
- Greater than a 2V drop should not be noted on the DALI Bus.
- Local Electrical codes and National code to be consulted for separation requirements.

Wire Gauge	Maximum DALI-Compliant Bus Wire Length
12 AWG	2000 ft
14 AWG	1500 ft
16 AWG	1000 ft
18 AWG	500 ft

GS-Link: System Low-Voltage Wiring

- System communication using low voltage wiring
- Wiring may be daisy chained or tapped

- Wiring must be isolated between mains cable
 - Total length of the GS-Link cannot exceed 290ft
 - Using 6 core cable is recommended for GS-Link
 - Using twisted pair is recommended.
- Local Electrical codes and National code to be consulted for separation requirements.

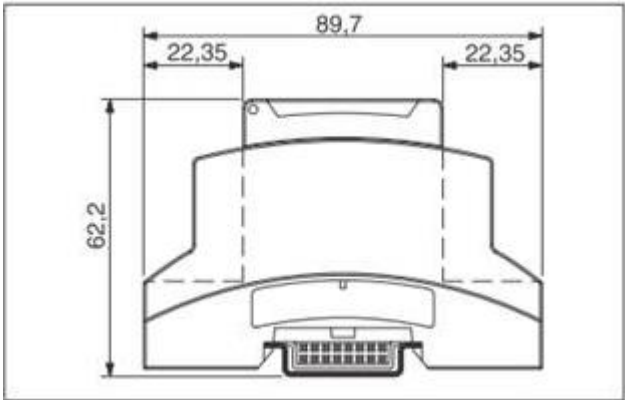
Wire Gauge	Maximum DALI-Compliant Bus Wire Length
12 AWG	2000 ft
14 AWG	1500 ft
16 AWG	1000 ft
18 AWG	500 ft

Analog Bus Wiring

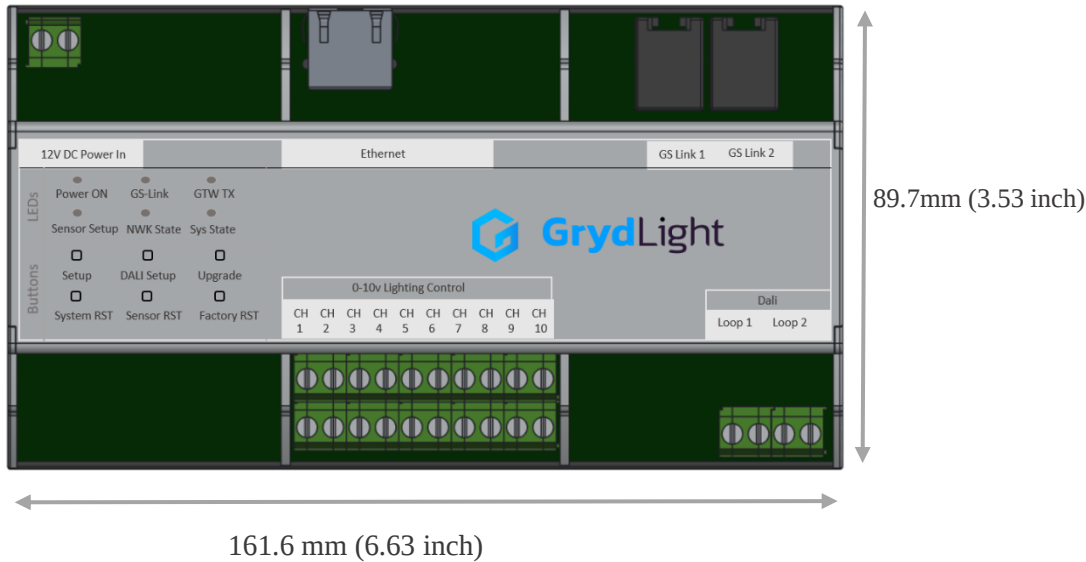
- Analog wiring can be treated as AC Voltage; hence wiring can be done in combination with the mains wiring

Mechanical Dimensions

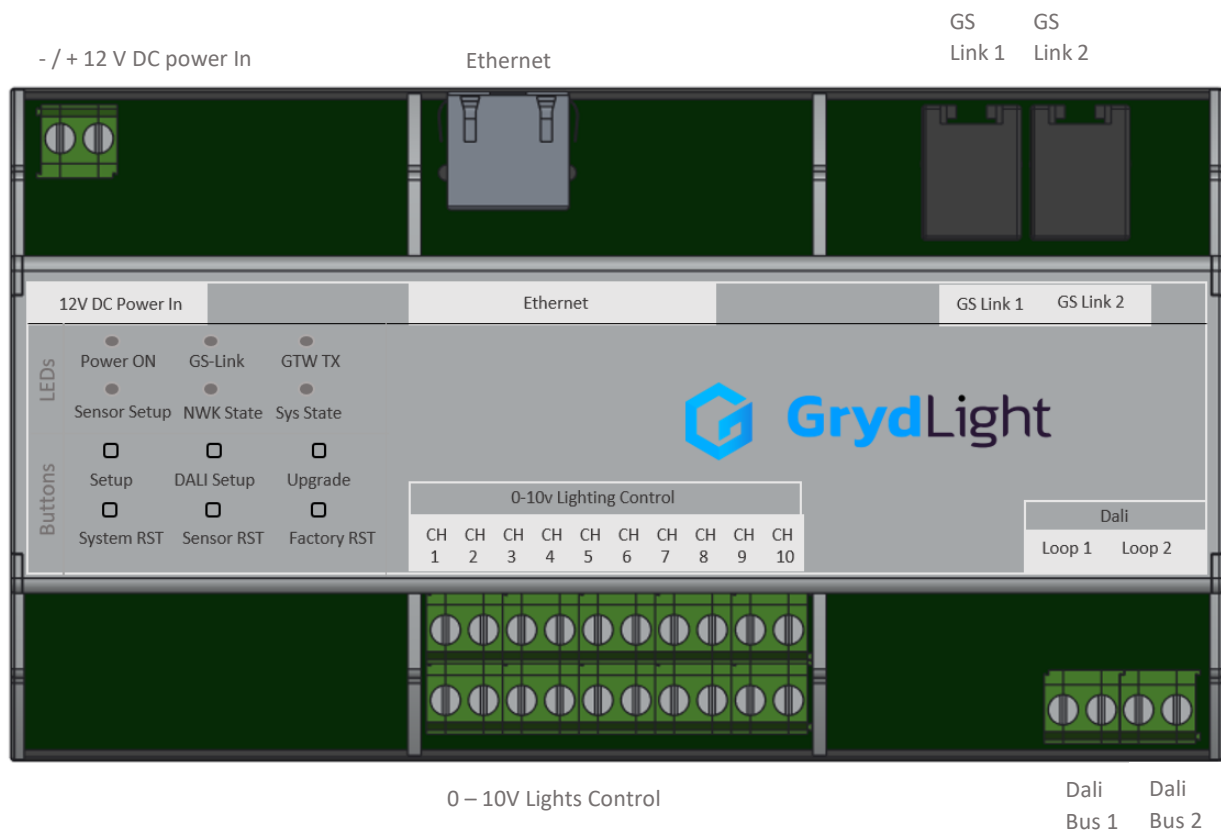
Side View



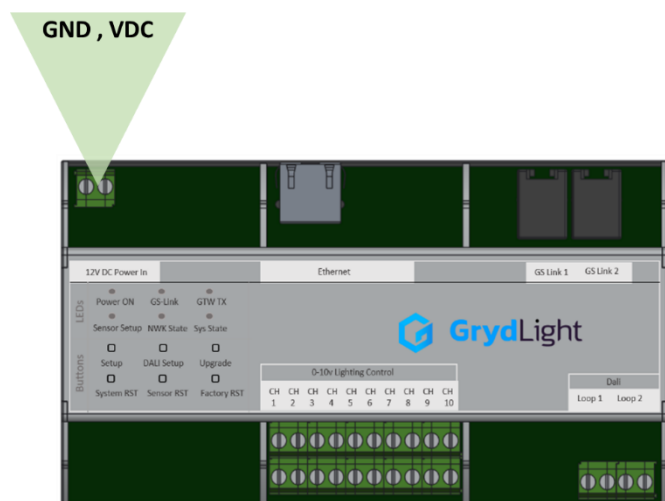
Top View



Overview of Wiring Terminals



Wiring – Line Voltage



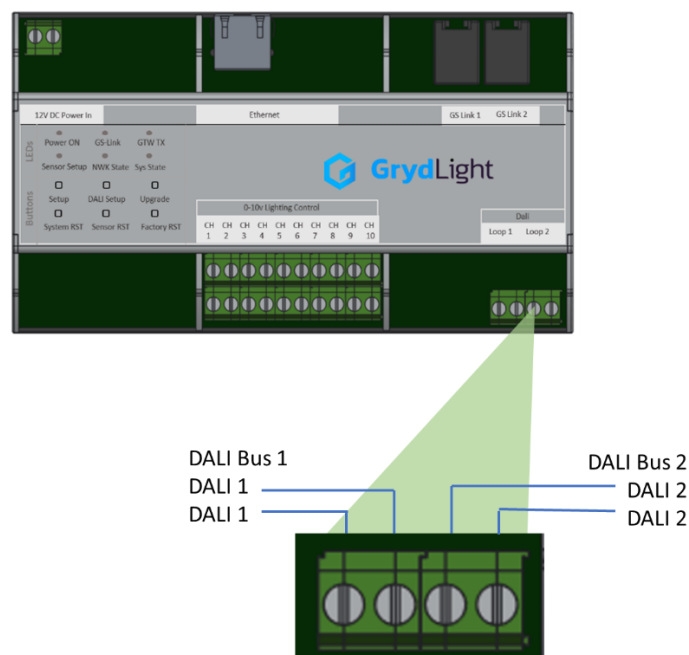
Wiring from AC/DC Power Supply

Run VDC, Ground wires from a 12 V DC power supply module feed to the *Controller*.

Emergency Lighting Applications

When normal power drops out, the *Controller* unit will not power the DALI Buses. When this occurs, ballasts powered from emergency feeds go to their emergency mode, full light output by default.

Wiring: DALI Bus



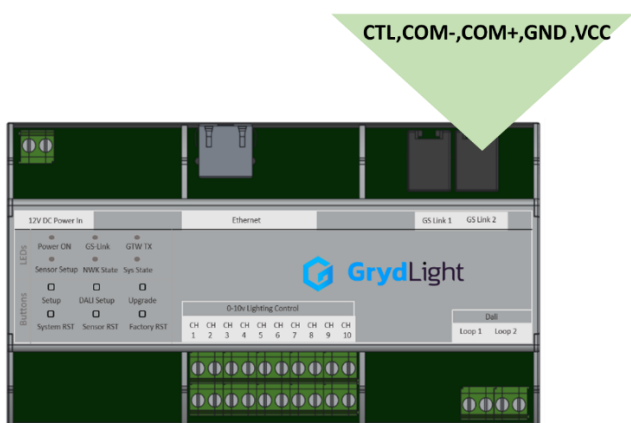
The *Controller* unit will supply power to an independent DALI Bus, which supports a maximum of 64 ballasts.

DALI Wiring

- DALI wiring is not SELV.
- DALI wiring is treated as mains voltage, and thus may be run within the same sheathing.
- Ensure that there is no greater than a 2 V drop between the *Controller* and the end of the DALI Bus.
- Consult all national and local electrical codes for separation requirements.

Wire Gauge	Maximum DALI-Compliant Bus Wire Length
12 AWG	2000 ft
14 AWG	1500 ft
16 AWG	1000 ft
18 AWG	500 ft

Wiring – GS Link



Low Voltage Communication Interface

- System communicates using Low-Voltage wiring
- Wiring can be daisy chained
- Total Length of the GS link should not excel 100 meters
- Using 6 core cable is recommended for GS-Link
- Using twisted pair is recommended.

Daisy-Chain wiring Example

