

# MESH CONTROLLER MODULE, MESH-CTRL

The MESH-CTRL family of wireless control modules utilizes **Bluetooth®** mesh protocol to enable robust and reliable wireless lighting control of LED drivers that have 0-10V or 10V PWM. These devices are designed to utilize the powerful web-based Silvair commissioning platform and are provisioned with the intuitive Silvair iOS application.

Technology Partner **SILVAIR** 



## Features:

- Industry leading Bluetooth SIG Mesh certified stack
- Small mechanical footprint: 1.5in x 3in x 0.75in (WxLxH)
- Silvair Commissioning platform (<https://platform.silvair.com/>)
- Silvair Provisioning iOS app (<https://apps.apple.com/us/app/silvair/id1281447717>)
- Easily integrate EnOcean wall switches with the scan of a QR code

## Electrical Specifications: (Operating Temperature 25°C unless otherwise noted)

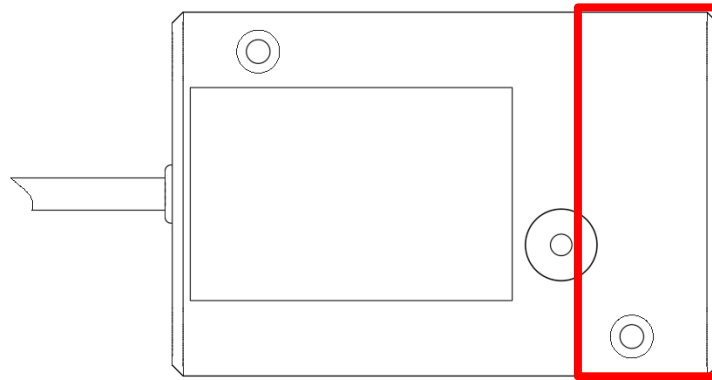
- DC Supply Requirements (MESH-CTRL-10V and MESH-CTRL-PWM)
  - Input Voltage: 12 VDC
  - Typical current draw: 20 mA
- Control Output Voltage (MESH-CTRL-10V)
  - 0-10V Analog output control signal capable of sourcing up to 10mA
- Control Output Voltage (MESH-CTRL-PWM)
  - 10V PWM output control signal capable of sourcing up to 10mA
- Radio Transceiver
  - Operating Frequencies: 2.402-2.483 GHz
  - Maximum Output Power: +4 dBm

## Range:

- The range between two MESH-CTRL units or between a MESH-CTRL and a smartphone can vary greatly. Factors determining communication range include obstacles (walls, trees, etc.) and enclosure material. In open air, the range between two units can exceed 200m. However, if the MESH-CTRL is enclosed in a metal structure, the range could be limited to under 1m.
- The benefit of using the MESH-CTRL is that it employs mesh technology, in which each MESH-CTRL rebroadcasts the message it receives, thus extending the overall coverage area of the mesh network. The Silvair iOS application can measure the health of the mesh network to further optimize the mesh network performance and reliability.

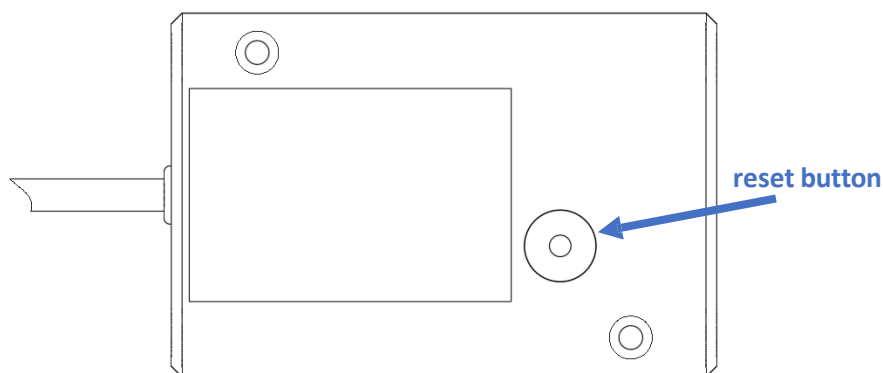
### Antenna Location:

- The **RED** box indicates the PCB antenna location. If the MESH-CTRL is located within a custom enclosure, please make sure the enclosure material allows for the propagation of wireless signals through the material. For instance, window-less metal enclosures are not an ideal housing for wireless devices.
- For best Bluetooth range performance, keep all external metal at least 30mm from the antenna area.



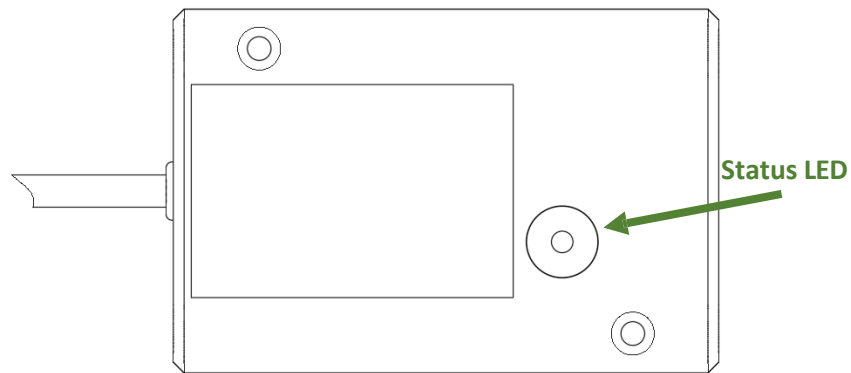
### Factory Reset:

- The MESH-CTRL can be reset to the factory default state by holding the **reset button** for a minimum of 5 seconds while power is applied. While the **reset button** is being held down, the **status LED** will stay on for 1 second, then fast blink 2 times per second for 5 seconds, and then turn off. Once the reset is complete, the **status LED** will blink at 3 times per second to indicate the device is in an unprovisioned state.

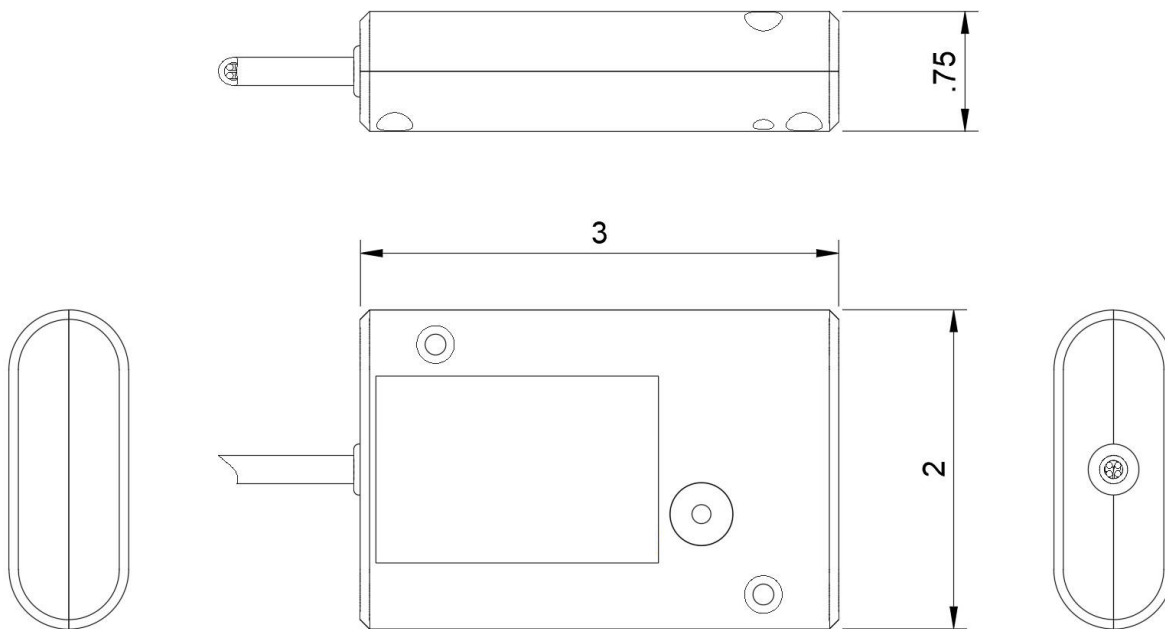


### Status LED:

- The **status LED** indicates the MESH-CTRL is in one of two states:
  - **Unprovisioned State:** The **status LED** will blink approximately 3 times per second.
  - **Provisioned State:** The **status LED** will blink approximately 1 time every 2 seconds.
- The **status LED** also indicates when a mesh package is received by blinking two times in rapid succession.

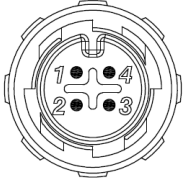


### Mechanical Specifications: (dimensions in inches)



## Connector Types:

### Option 01

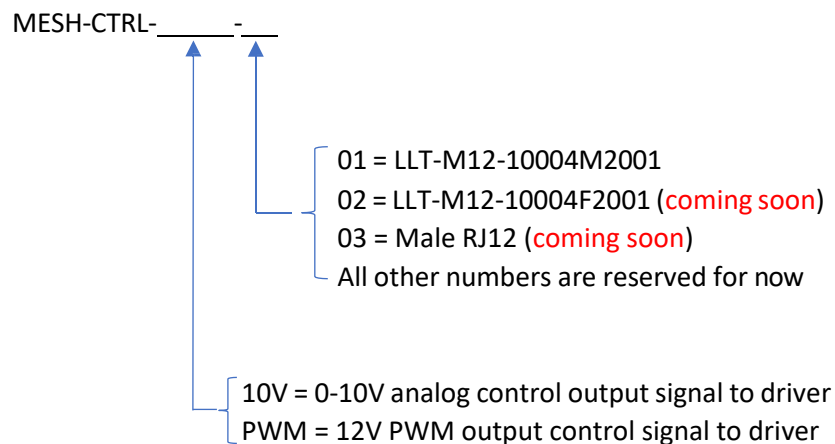
Drawing	Connector Name	Pin	Net	Comments
	<b>LLT-M12-10004M2001</b>  Mating Connectors: • <b>LLT-M12-10004F1001</b>	1	RTN	Return for +12VDC Power supply
		2	+12V	+12VDC Power supply
		3	-Dim	-Dim to LED Driver
		4	+Dim	+Dim to LED Driver

## Certifications:

- Bluetooth QDID: pending
- FCC ID: X8WBM832
- IC (Industrial Canada) ID: 4100A-BM832
- CE: Compliant

## Part Numbering Guide:

Use the guide below to order the correct version of the MESH-CTRL product. There are multiple ordering options, some of which are not yet currently available, but are planned.



Information in this document is subject to change.