

MESH TRANSLATOR MODULE, MESH-TRAN

The MESH-TRAN provides Bluetooth® mesh conversion for 0-10V lighting control systems. This enables existing hard-wired control systems to wirelessly send commands to the NVision eco-system of Bluetooth® mesh lighting control devices, including the MESH-CTRL. All of these devices are designed to utilize the powerful web-based Silvair commissioning platform and are provisioned with the intuitive Silvair iOS application.

Operationally, each fixture with a MESH-CTRL provisioned to the network is dimmed to the desired level as set by the 0-10V control system. This analog value is converted to a Bluetooth® mesh command and decoded back to an analog dimming signal at the driver. For 0-10V drivers with dim-to-off capability, a zero value turns the fixture off.

Technology Partner **SILVAIR** 



Figure 1 - MESH-TRAN

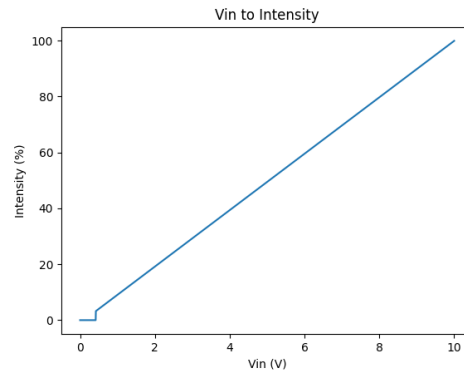
Features:

- Industry leading Bluetooth SIG Mesh certified stack
- Reliable wireless control of LED light fixtures
- No Internet connection required to setup or function
- Accepts outputs from most control systems
- Extends wired control systems wirelessly
- Intensity input is replicated at the driver (0-10V)
- No change to existing control and interface capabilities

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

- DC Supply Requirements
 - Input Voltage: 12 VDC
 - Typical current draw: 30 mA
- Input Controls
 - Intensity Control
 - Analog Control: 0-10VDC
 - PWM Frequency: 1kHz to 2kHz
 - TTL Enable: 0-3.3VDC (active low)
- Radio Transceiver
 - Operating Frequencies: 2.402-2.483 GHz
 - Maximum Output Power: +4 dBm

Input to Output Characteristics



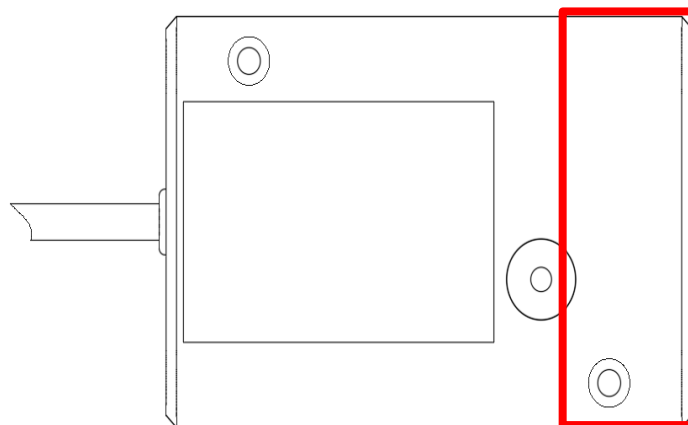
- Any voltage below 0.5v will automatically be converted to 0%
- Any Voltage Above 9.9v will automatically be converted to 100%
- At the 0.5v threshold a small hysteresis is used to prevent oscillation

Range:

- The range between a MESH-TRAN and MESH-CTRL unit 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 either is enclosed in a metal structure, the range could be limited to under 1m.
- The benefit of using the MESH-TRAN 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.

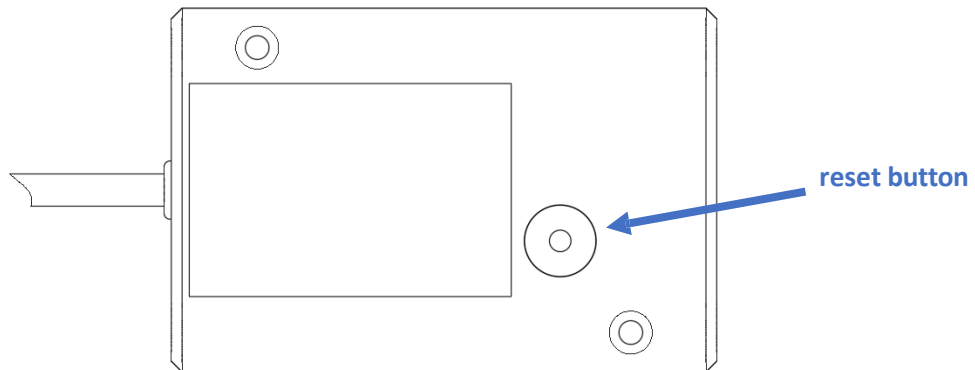
Antenna Location:

- The **RED** box indicates the PCB antenna location. If the MESH-TRAN 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.



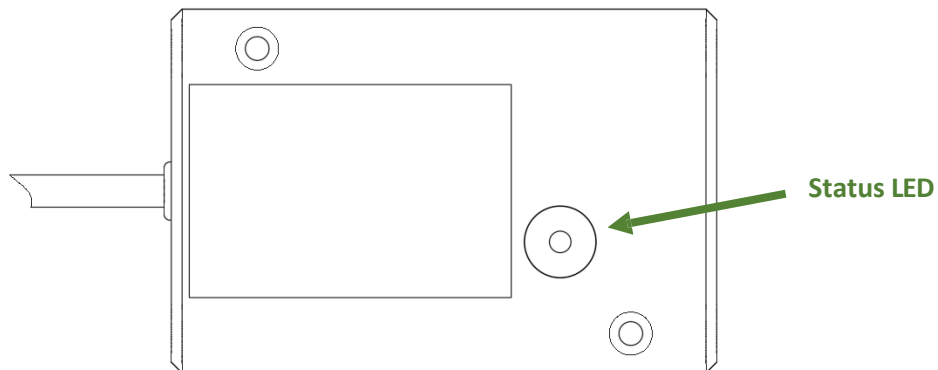
Factory Reset:

- The MESH-TRAN 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 seconds, 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.

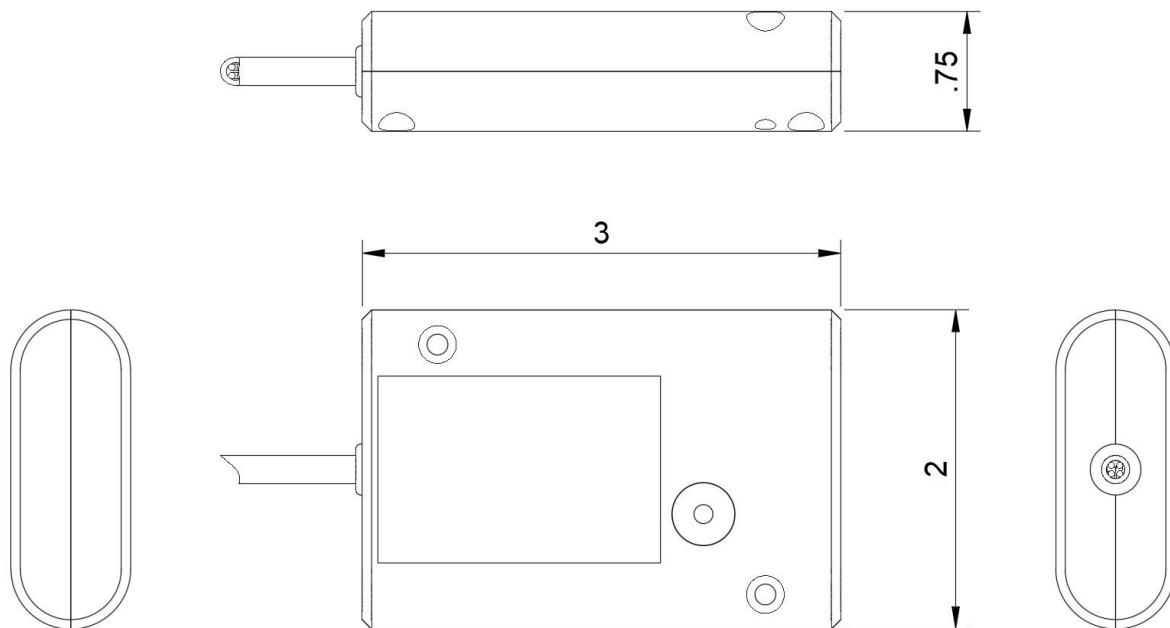


Status LED:

- The **status LED** indicates the MESH-TRAN 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.

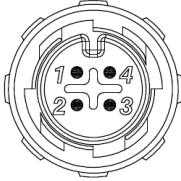


Mechanical Specifications: (dimensions in inches)



Connector Types:

Option 01

Drawing	Connector Name	Pin	Net	Comments
	LLT-M12-10004M2001 Mating Connectors: • LLT-M12-10004F1001	1	RTN	Return for +12VDC power supply
		2	+12V	+12VDC power supply
		3	TTL	TTL enable, active low
		4	+Vin	Intensity control voltage

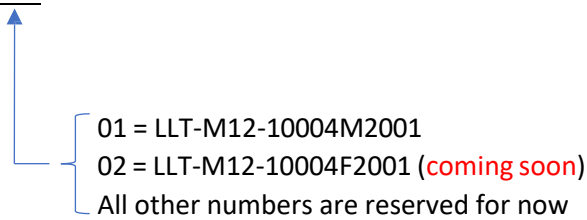
Certifications:

- 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-TRAN product. There are multiple ordering options, some of which are not yet currently available, but are planned.

MESH-TRAN-_____



Information in this document is subject to change.