

SHADE CONTROLLERS AND MOTORS

DLM SHADE RULES & BEST PRACTICES

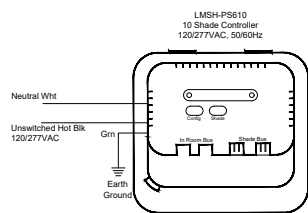
DLM SHADES INSIDE THE ROOM

- Always ensure Shade Controllers are fed with a constant hot (unswitched) circuit.
 - Use WS LMRJ-xx Cat 5e and LMSH-SBCA-Pxx Shade Bus cables to ensure reliable communication between devices.
 - There are two separate buses in the DLM Shade system - one is the same Cat 5e In Room Bus (IRB) used in Wired DLM Lighting products to provide 24VDC power to DLM Shade Switches and communication between controllers and switches. The second bus is the "Shade Bus", a 4-wire conductor providing DLM communication and power (24VDC from LMSH-PS602, 36VDC from -PS610) to Shade Motors. Note that Shade Buses from different controllers should never be intermingled - motors should be powered by and communicate with just a single Shade Controller. Communication between the IRB and the Shade Bus is routed together inside the Shade Controller (similar to a DLM LMZC-301 Panel's A and B networks). Other than the originating Shade Controller, the only devices on the Shade Bus are Shade Motors with each controlling an individual motorized shade load.
 - DLM LMSH-PS6xx Shade Controllers have smart power supplies to power either 2 (-PS602) or 10 (-PS610) motors on the Shade Bus. Each room is limited to 48 devices on the IRB (Shade Controllers + Switches + any DLM Lighting Control devices). Each Controller's Shade Bus is limited based on its model to either 2 Motors or 10 Motors. The total number of loads on all Shade Buses in a room is only limited by the max 64 DLM Load Limit (which applies to Shade Motors + any DLM Lighting Loads).
- (Note: "Banding" is allowed for some of the Wattstopper Shade products - meaning mechanical couplers can be added to connect a motorized shade to one or more non-motorized shades. Non-motorized shades do not count toward the max 64 DLM Load Limit per room.)**
- Shade Bus cables and Shade Bus Extenders DO NOT count toward to load limits or device limits since they are not intelligent DLM products.
 - In a room of DLM Shades, the IRB bus allows multiple Shade Controllers to communicate with each other and to shade switches. Max IRB distances follow Wired DLM IRB Rules - 150' Cat 5e (free topology but no loops) per intelligent DLM device, to a max of 1,000' per IRB. Check total mA consumption of DLM Cat 5e accessory devices on the IRB network against total current available from all Shade Controllers. 24VDC IRB mA from different Shade Controllers is additive but limited to max 800mA by the Shade Controller's smart power supplies.
 - Each Shade Controller provides power for Shade motors up to 500' distance per Shade Bus port (1 port for LMSH-PS602, 2 -PS610). Do not intermingle Shade Bus cables from different Shade Controllers or Shade Bus ports.
 - Shade Motors will be assigned load numbers based on their DLM Serial # (highest is first), similar to Wired DLM devices. In a room with DLM Lighting and DLM Shades, the lighting loads will get the initial load numbers starting with "1", followed by the Shade Motors.
 - Ideally Shade Controllers are for multiple shades inside a single room, not multiple rooms. This is primarily to avoid later confusion by facility personnel. As with Wired DLM lighting products, Rooms should be connected to each other only using a Wired or Wireless Bridge.

LMSH-PS610

Shade Controller and power supply for 1 to 10 motors

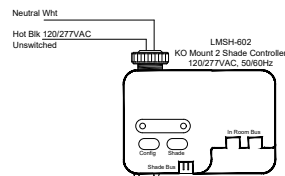
LMSH-PS610 accepts either 120 or 277VAC input voltage and mounts on a 4" sq or 4 1/16" junction box. Unit has 2 Cat 5e DLM ports for connection to switches, and 2 Shade Bus ports to connect to motors. LMSH-PS610 intelligently provides 150mA of 24VDC power on IRB for DLM switches and 1.5A of 36VDC power on Shade Bus for Shade Motors.



LMSH-PS602

KO Mount Shade Controller and power supply for 1 or 2 motors

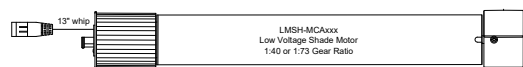
LMSH-PS602 accepts either 120 or 277VAC input voltage. Unit has 2 Cat 5e DLM ports for connection to switches, and 1 Shade Bus port to connect to motor units. LMSH-PS602 intelligently provides 150mA of 24VDC power on IRB for DLM devices and 0.5A of 24VDC power on Shade Bus for Shade Motors.



LMSH-MCAxxx Shade Motor

A low voltage motor powered via the Shade Bus cable, each Shade Motor counts as a single load in a DLM room. Connects to Shade Bus via a 13" whip with a female connector. (Also has Wireless DLM radio antenna - not shown or enabled).

Available in two different gear ratios:
40:1 smaller and medium shade assemblies
73:1 larger shade assemblies
Specific gear size will be determined by Shade Team based on Dealer provided information.



SWITCHES AND REMOTE

LMSH-SW10x

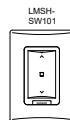
Shade Wall Switch Controls

Ea. Switch consumes 5mA 24VDC on IRB
ID color by suffix: -W=White, -I=Ivory, -LA=Light Almond, -B=Black, -G=Gray, -R=Red

LMSH-SW101

1-Button Shade Switch

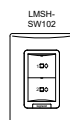
Rocker can control one or more Shade Motors together. Top Raises, Bottom Lowers Shades.



LMSH-SW102

2-Button Shade Switch

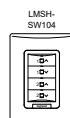
Each button controls 1 or more Shade Motors together. Each tap toggles between Lower/Stop/Raise/Stop. Press and hold will toggle between raising/lowering shade until released.



LMSH-SW104

4-Button Shade Switch

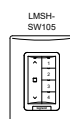
Each pair of buttons control 1 or more Shade Motors - one to Raise/Stop, one to Lower/Stop with each tap. Press and hold will move shade in that button's assigned direction until released.



LMSH-SW105

5 Button Shade Switch

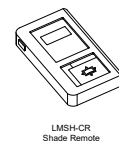
Rocker acts like LMSH-SW101, while buttons control any group of shades to a preset level (default 80%, 60%, 40%, 20%). Note presets are assigned per button. They are not DLM scenes, but buttons can be switched to scenes if desired.



LMSH-CR

Shade Configuration Remote

Handheld configuration remote communicates to shades via LMSH-SWxxx IR Windows. Allows shade limits and other parameters to be easily set.

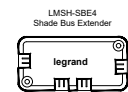


ACCESSORIES

LMSH-SBE4

Shade Bus Extender

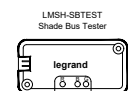
Coupler/Splitter for Shade Bus cables. Provides 4 female Shade Bus terminals to allow a single Shade Bus cable from a Shade Controller to be split to 3 Shade Motors, or 2 Shade Motors and a cable to another Shade Bus Extender for easy wiring of an entire room.



LMSH-SBTEST

Shade Bus Tester

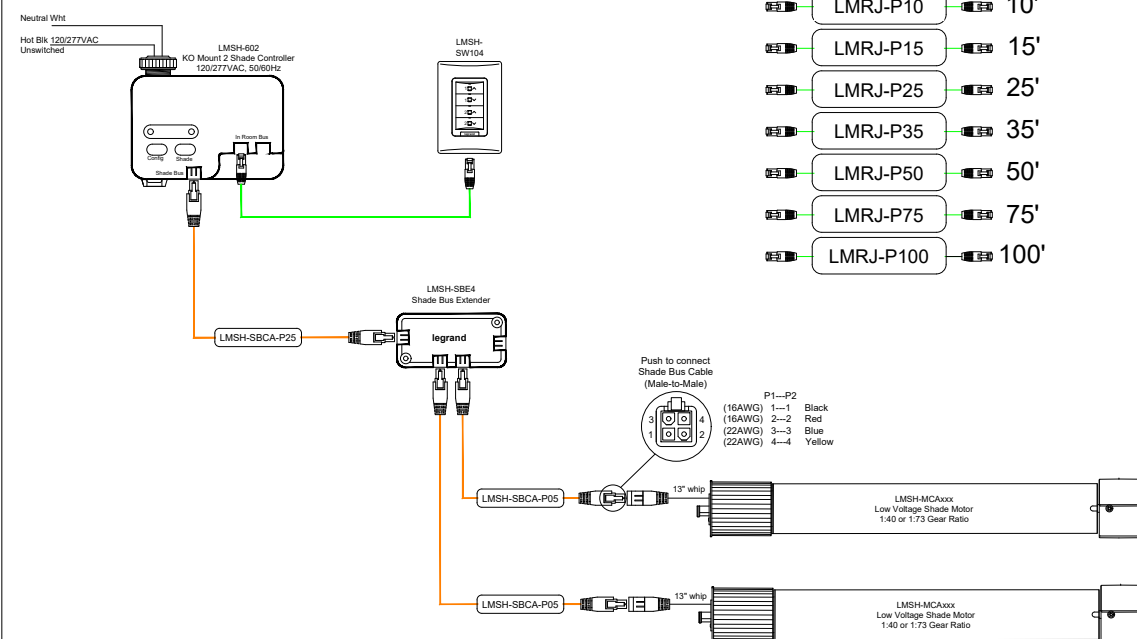
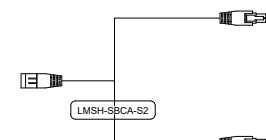
Tester for manually terminated Shade Bus cables. Has a single Shade Bus terminal to verify communication and power is available. Proper cable termination can be verified when both Blue and Green LEDs are lit.



LMSH-SBCA-S2

Shade Bus "Y" Splitter Cable

Ideally used to split a single Shade Bus cable to two different Shade Motors. Splitter has a single female connector (connects to Shade Bus cable), and two separate 6" cables each with a male connector (connects to motors).



SHADE BUS CABLES

LMSH-SBCA-Pxx

Shade Bus Cables

White male-to-male plenum rated Shade Bus cables in multiple lengths. Cables include 2 wire pairs - one 16 AWG for 24/36VDC power, and one 22 AWG for 24VDC communication. Place below tag on wire to indicate desired length.

Shade Bus cable also available in 1,000' or 2,000' reels via **LMSH-SBW-S1000** or **LMSH-SBW-S2000**. Packages with terminals that make up to 10 cables are available via **LMSH-SBWC10**. Use Crimp Tool **LMSH-SBWCTOOL**.

LMSH-SBCA-P03	3'
LMSH-SBCA-P05	5'
LMSH-SBCA-P10	10'
LMSH-SBCA-P15	15'
LMSH-SBCA-P25	25'
LMSH-SBCA-P35	35'
LMSH-SBCA-P50	50'
LMSH-SBCA-P75	75'
LMSH-SBCA-P100	100'

LMRJ-xxx

Cat 5e Cables

Standard DLM B-to-B Cat 5e cables in multiple lengths with green jacket. Drop "P" in suffix for non-Plenum, add "-W" after length for White jacket (Plenum rated only).

LMRJ-01	6"
LMRJ-P03	3'
LMRJ-P10	10'
LMRJ-P15	15'
LMRJ-P25	25'
LMRJ-P35	35'
LMRJ-P50	50'
LMRJ-P75	75'
LMRJ-P100	100'

