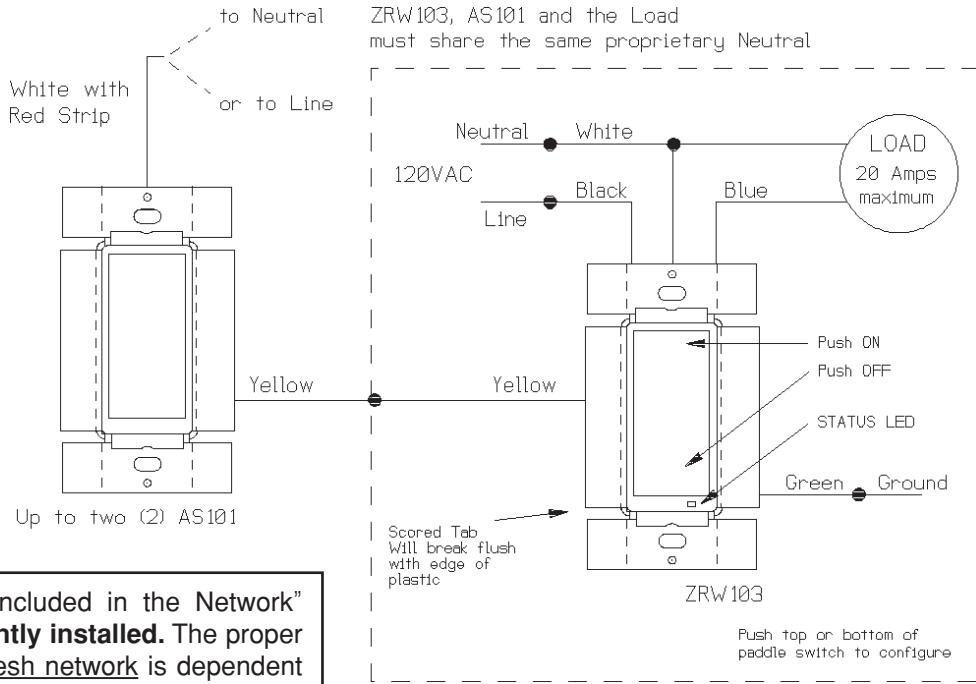




Shown with supplied
Decora™ trim plate



Note: This module must be "Included in the Network" **only where it will be permanently installed.** The proper operation of this node in the mesh network is dependent on it knowing its location with respect to other nodes. You cannot "test bench" configure this module, then install.

LSM-20 WALL MOUNTED SWITCH

The LSM-20 Wall Mounted 3-Way Switch is a component of the Evolve lighting control system. Wire the Wall Mounted Switch in place of the standard wall switch according to the diagram above and program from the Wireless Controller to operate loads. Inclusion of this Switch on the IR-100 Wireless Controller menu allows remote ON/OFF control of lamps connected.

This Wall Mounted Switch is designed to work with other Evolve enabled devices. Evolve nodes of other types can be added to the system and will also act as repeaters if they support this function of repeating the signal received to other modules in the system.

As part of a Evolve network, the LSM-20 will also act as a wireless repeater to insure that commands intended for another device in the network are received. This is useful when the device would otherwise be out of the radio range of the wireless controller.

There are no field repairable assemblies on this unit.. If service is needed, the unit must be returned where purchased.

DANGER! SHOCK HAZARD. Read and understand these instructions before installing. This device is intended for installation in accordance with the National Electric code and local regulations in the United States, or the Canadian Electrical Code and local regulations in Canada. It is recommended that a qualified electrician perform this installation.

Make sure the load controlled by the switch does not exceed 2400 watts. For indoor use only. Retain instructions for future use.

INSTALLATION

Wire this Switch in place of a current wall switch according to the diagram above.

When used, AS101's are required to be **wired to the same line (or neutral)** which is also wired to the master unit as well as the load being controlled, and not wired to any other neutral. If multiple neutrals are tied together in one box, separate the neutrals to preserve the integrity of the LSM-20 circuit. **Caution!** Do not wire unit "live" (with power on the circuit) and do not allow the yellow wire to contact line voltage, neutral or ground or you will damage the device. Refer to your Controller operating instructions to add this module under the command of the Wireless Controller.

INCLUDING LSM-20 TO THE NETWORK

STEP 1. Prepare the Controller to include a unit to the network by adding it to a group (method of adding a node to the network). Refer to controller instructions.

The LSM-20 supports the Association command.

The LSM-20 can be set to control other Evolve devices. You can turn on and off, and even dim other Evolve devices once they are “**associated**” into either of 2 groups with the LSM-20.

A NOTE ABOUT DIMMERS IN A GROUP: If you combine Evolve enabled dimmers and other types of Evolve devices in a group, place a Evolve enabled dimmer into the empty group first to ensure that the dimming operates correctly.

Each group is turned on or off (or dimmed by tapping or holding) the switch a differing amount of times.

If you **associate** a Evolve device into Group 2, you can turn that device on and off by tapping the switch on or off *twice*. You can brighten or dim devices by tapping the switch on or off once and then holding the switch down. The load attached to the LSM-20 is not affected.

If you associate a Evolve device into Group 3, you can turn that device on and off by tapping the switch on or off *three times*. You can brighten or dim devices by tapping the switch on or off twice and then hold the top or bottom of the switch down. The load attached to the LSM-20 is not affected.

You can associate up to **5** Evolve devices into *each* of these groups.

For instructions on how to associate a Evolve device into one of these groups, refer to your wireless controller instructions. (If you are using the IR-100 controller, refer to the Setup Menu, Association section).

Configuration

The LSM-20 supports the Configuration command.

The LSM-20 can be configured to operate slightly differently than how it works when you first install it. Using the Configuration command you can configure the following:

You can use a IR-100 to send Configuration commands. (Refer to the Setup Menu, Configuration section)

Set Ignore Start Level Bit When Transmitting Dim Commands

The LSM-20 can send Dim commands to Evolve enabled dimmers. The Dim command has a start level embedded in it. A dimmer receiving this command will start dimming from that start level if this bit is set to 0. If the bit is set to 1, the dimmer will ignore the start level and instead start dimming from its current level.

- **Parameter No: 1**
- **Length: 1 Byte**
- **Valid Values = 0 or 1 (default 1)**

Night Light

The LED on the LSM-20 will by default, turn ON when the load attached is turned ON. To make the LED turn ON when the load attached is turned OFF instead, set parameter 3 to a value of 1.

- **Parameter No: 3**
- **Length: 1 Byte**
- **Valid Values = 0 or 1 (default 0)**

Invert Switch

To change the top of the switch to OFF and the bottom of the switch ON , set parameter 4 to 1.

- **Parameter No: 4**
- **Length: 1 Byte**
- **Valid Values: 0 or 1 (default 0)**

Enable Shade Control Group 2

The LSM-20 can control shade control devices via its group 2 if this configuration parameter is set to 1.

- **Parameter 14**
- **Length: 1 Byte**
- **Valid Values: 0 or 1 (default 0)**

Enable Shade Control Group 3

The LSM-20 can control shade control devices via its group 3 if this configuration parameter is set to 1.

STEP 2. The LSM-20 must be in its permanently installed location. Tap either the top or bottom of the LSM-20 once.

STEP 3. You should see an indication on your Controller that the “DEVICE WAS INCLUDED” in the network.

NOTE: If you have trouble adding the LSM-20 to a group it may be that the Home ID and Node ID were not cleared from it after testing. You must first “RESET UNIT” with your controller to remove it from the network. If using the IR-100, select “SETUP” and scroll to “RESET UNIT”

Although adding it to a group includes it in the network, removing it from a group does not remove it from the network. If removed from a group, it functions as a repeater (only). “RESET UNIT” removes it completely from the network.

BASIC OPERATION

(Local Control)

The switch paddle on the LSM-20 allows the user to:

- Turn the attached load on or off.
- Include or exclude the module from the Evolve system
- Control other Evolve enabled devices.

Also, when a controller prompts you to “Send Node ID” or to “Press Button on Unit”, quickly tap the switch on or off once to satisfy those instructions.

- Tapping top of switch turns the load attached ON.
- Tapping bottom of switch turns the load attached OFF.
- Pressing and holding switch does not effect the load attached to the LSM-20, but will allow dimming and brightening of Evolve dimmers if associated (see below for details).

LED indication

The LED on the LSM-20 will turn on when the load attached is ON. The LED can be user configured however to turn ON when the load attached is OFF, if so desired, to act as a night light. See ADVANCED OPERATION section.

The LSM-20 will flicker its LED when it is transmitting to any of its 2 groups. This can be changed if desired. See ADVANCED OPERATION section.

Auxiliary Switch

The LSM-20 supports the AS101 auxiliary switch to provide 3-way or 4-way operation.

Remote Control

The LSM-20 will respond to BASIC and BINARY commands that are part of the Evolve system. Refer to your controller's instructions as to whether your controller can transmit those commands.

Internal circuit protection

The LSM-20 internal circuitry is protected by an internal fuse. This internal fuse is factory serviceable only. Check your home circuit breakers before concluding that the product must be returned to manufacturer for repair at a nominal charge.

ADVANCED OPERATION

All On/All Off

The LSM-20 supports the ALL ON/ ALL OFF commands.

The LSM-20 can be set to respond to ALL ON and ALL OFF commands four different ways.

Refer to your controller for information on how to set the LSM-20 to operate in the manner you desire. Some controllers may be only able to set certain settings of ALL ON/ALL OFF response.

The four different ways the LSM-20 can be setup to respond to ALL ON and ALL OFF commands are:

- 1. LSM-20 will not respond to ALL ON or the ALL OFF command.**
- 2. LSM-20 will respond to ALL OFF command but will not respond to ALL ON command.**
- 3. LSM-20 will respond to ALL ON command but will not respond to ALL OFF command.**
- 4. LSM-20 will respond to ALL ON and the ALL OFF command.**

Association

- **Parameter 15**
- **Length: 1 Byte**
- **Valid Values: 0 or 1 (default 0)**

LED Transmission Indication

The LSM-20 will flicker its LED when it is transmitting to any of its groups. This flickering can be set to not flicker at all (set to 0), to flicker the entire time it is transmitting (set to 1), or to flicker for only 1 second when it begins transmitting (set to 2). By default, the LSM-20 is set to flicker for only 1 second.

- **Parameter No: 19**
- **Length: 1 Byte**
- **Valid Values = 0, 1 or 2 (default 2)**

Each Configuration Parameter can be set to its default setting by setting the default bit in the Configuration Set command. See your controller's instructions on how to do this (and if it supports it).

All Configuration commands will be reset to their default state when the LSM-20 is excluded from the Evolve network by using the controller to reset the node (on the IR-100 select “SETUP” and scroll to “RESET UNIT”).

SUC Support

There must be a **Static Update Controller** in your Evolve system for this feature to work. The Static Controller can act as a gateway in the system, since other nodes always know its position (not moved after addition to the network). The “always listening” advantage of the Static Controller is that other nodes can transmit information frames to it whenever needed.

You can assign an “SUC Route” to the LSM-20. Refer to your controller's instructions on how to do this (if it supports it). Assigning an SUC Route to the LSM-20 allows it to request an update of the Evolve devices that are between it and the Evolve device to which it was trying to transmit. The LSM-20 will only request an update when a transmission fails.

SPECIFICATIONS

Power:	120 VAC, 60 Hz
Signal (Frequency):	908.42 MHz, 9.6Kbps or 40Kbps capable
Maximum Load:	Resistive : 20 amps (2400 watts) maximum, 120 VAC Motor: 1 H.P. maximum, 120 VAC Incandescent: 960W maximum, 120 VAC
Range:	Up to 100 feet line of sight between the Wireless Controller and /or the closest Evolve Receiver Module

INTEROPERABILITY WITH EVOLVE™ DEVICES

A Evolve™ network can integrate devices of various classes, and these devices can be made by different manufacturers, just as the LSM-20 can be incorporated into existing Evolve™ networks.

The top or bottom of the LSM-20 switch paddle can be used to carry out **inclusion** (inclusion to the network by adding to a group), **association** (operate simultaneously with other nodes), **exclusion** (remove from a group) or **reset** (remove from the network). Controllers can be replicated in order to provide operation from other locations.

WARRANTY

For warranty and general product information visit our web site at www.equestscontrol.com

ABOUT LSM-20'S CERTIFICATION

The LSM-20 is certified to comply with applicable FCC and IC rules and regulations governing RF and EMI emissions.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

FCC NOTICE

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

IC NOTICE

This Class B digital apparatus complies with Canada ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.



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