



78-2728-250  
7/15



# *Lionel*

## *Switch Throw Monitor*

### *(STM2)*

## *Owner's Manual*



# ***Congratulations!***

**Y**our layout has always been more than the sum of its parts. But until now, combining those parts into a complete system could be a challenge. Lionel's new Layout Control System or "LCS," fulfills the LEGACY promise of integrated locomotive and layout control.

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# What is Lionel's Layout Control System?

LCS doesn't replace your existing Lionel Legacy Control system. It adds to it! You can control your layout from Lionel Cab Remote controllers or from smart devices like an Apple iPad and run locomotives, operate track switches, accessories and lighting. Create automatic events to control passing locomotives and other layout accessories or switches.

LCS is a modular system, with each product offering unique features. No single LCS product will do everything and not every layout will require every type of LCS device. But a fully realized LCS system will likely include the following:

- A Lionel Command Base (Legacy or Base-1L) for locomotive control
- LCS WiFi so you can control your layout from smart devices like an iPad®
- LCS ASC2, to operate switches, lighting, and accessories
- LCS STM2 for continuous monitoring of track switch positions
- LCS BPC2 for block power control
- LCS SensorTrack (one or more) which adds a new level of interactivity with compatible Lionel Legacy and Vision locomotives
- LCS SER2 for computer control and use of existing Lionel serial devices like the TPC-300 and TPC-400

## How it works!

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**A**s you know, your Lionel Cab Remote sends commands to your Command Base. In turn, the base controls your locomotives via a one-way communication link. LCS works in parallel with your existing command base, adding a wired network of control modules. Spread across your layout, these LCS modules operate switches, lighting, accessories, and track power blocks. LCS is bidirectional, meaning modules can send and receive commands.

And here's where it all comes together: since LCS can also send commands back through the command base, LCS devices can operate your locomotives as well as your layout! For example, a module like SensorTrack™ can make a locomotive blow a grade-crossing signal as it passes. And the LCS WiFi module connects devices like an Apple iPad® to your layout so you and your friends can easily operate switches, locomotives and more.

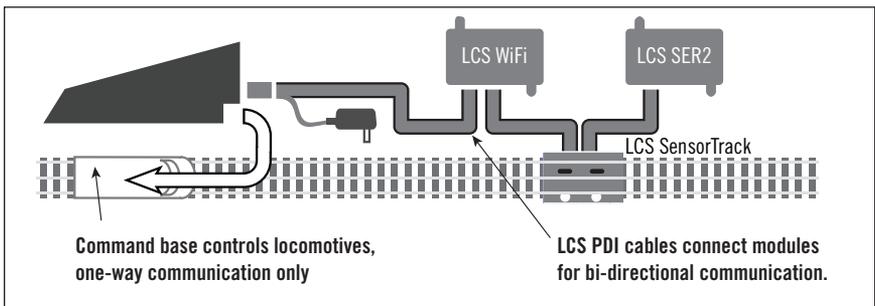


Figure 1. LCS doesn't replace your Lionel Command Base—it adds to it!

## LCS STM2 Module

The STM2 module is designed to provide current, accurate information on the position of up to 16 track switches on your layout. It works with the LCS WiFi module and the iPad-based Lionel LCS App. When a switch is thrown for any reason, the STM2 generates a command and sends it through the LCS system. Then, the Lionel LCS App updates the display of that particular switch. The STM2 is compatible with Lionel FasTrack and Lionel tubular track switches. It can be used with command controlled switches, as well as remote controlled switches operated by an ASC2, SC2 or other switch controller. A wire must be connected from the STM2 to each monitored switch for the STM2 to function.



Figure 2. LCS STM2 Module

STM2 sends an update when a TMCC command throws a switch, when a wired remote control switch is operated or when a track switch moves automatically by the non-derailing function as a locomotive approaches from the reverse (trailing-point) direction. With the STM2 monitoring up to 16 track switches, any switch operation is instantly transmitted to all connected LCS-aware apps. To monitor more than 16 track switches, just add an additional STM2. With the STM2 installed on your layout, you'll always know what your switches are doing!

**Note!** Remember that the STM2 does not operate your switches! Its job is to sense their position and send a command to the iPad-based Lionel LCS App when a switch position changes.

## ***Installing Your First LCS Device***

**T**he following section describes installation of a new LCS system. If you already have installed your first LCS component, please skip ahead to the next section titled “Installing additional LCS devices.”

When installing a new LCS system, the process you will follow depends on which (if any) Lionel Command Base is to be connected to your LCS system. The following sections describe starting a new LCS installation with a Legacy Base, a Base-1L, or without any command base.

### **The LCS DB-9 Cable with Power Supply**

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**E**very LCS system requires exactly one 6-81499 LCS DB-9 Cable with Power Supply. This special cable has three connectors: (A) a DB-9, with a “pig-tail” cable-mount power supply connector (C) and also a 10-foot cable with an “LCS PDI” connector at its end (B). See below:

The cable receives power from the included DC wall-pack (12VDC at 1A). Power for each LCS device is supplied through the single LCS data cable. The LCS DB-9 Cable with Power Supply wall-pack is capable of powering dozens and dozens of LCS devices, depending on type. An additional power booster/cable extender is available for extremely large LCS installations.

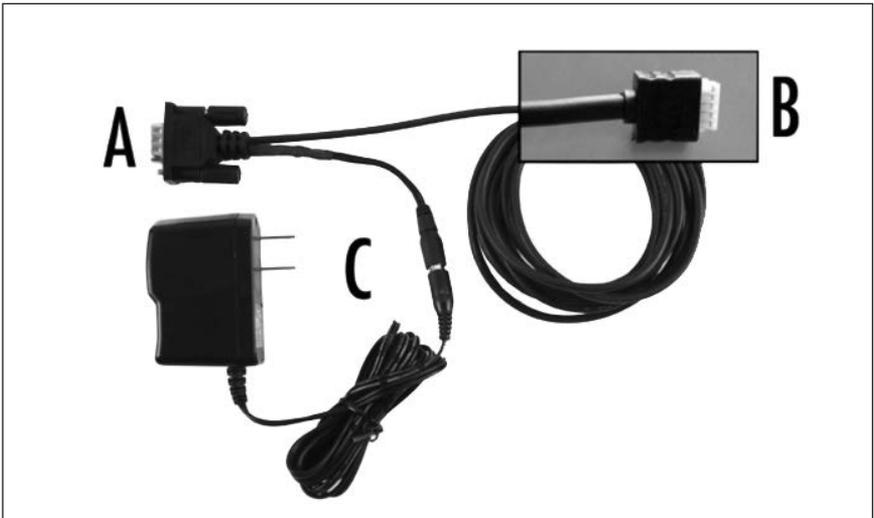


Figure 3. The LCS DB-9 Cable with Power Supply (sold separately)

# Installing Your First LCS Device

## Installing a new LCS system with a Legacy Base

To install a new LCS system on a layout with a Legacy Command Base:

1. Turn off power to your layout and Legacy Base.
2. Connect the DC wall-pack to the female cable-mount connector of the LCS DB-9 Cable.
3. Connect the DB-9 connector of the LCS DB-9 Cable to your Legacy Command Base.
4. Connect the LCS PDI cable end of the LCS DB-9 Cable to either connector on your LCS device, such as an LCS WiFi or LCS SensorTrack or any other Layout Control System product.
5. Restore power to your layout and Legacy Base.
6. Plug in the LCS wall-pack power supply.

**Note!** If using a Legacy command base, it must have software rev 1.52 or higher installed.

Your system should resemble the figure below.



Figure 4. Installing a new LCS system with a LEGACY Base

Once connected and powered-up, the yellow LED on the Legacy Base will blink once every second. With this setup, you can control Lionel locomotives and Layout Control System products using a Legacy Remote(s) and optionally a CAB-1L remote(s).

If you have additional LCS devices to install, see “Installing additional LCS devices.” If not, skip ahead to the next section of this manual, “Configuring your LCS Device.”

# Installing Your First LCS Device

## Installing a new LCS system with a Base-1L

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To install a new LCS system on a layout with a Base-1L Command Base:

1. Turn off power to your layout and Base-1L.
2. Connect the DC wall-pack to the female cable-mount connector of the LCS DB-9 Cable.
3. Connect the DB-9 connector of the LCS DB-9 Cable to your Base-1L.
4. Connect the LCS PDI cable end of the LCS DB-9 Cable to either connector on your LCS device, such as an LCS WiFi or LCS SensorTrack or any other Layout Control System product.
5. Restore power to your layout and Base-1L.
6. Plug in the LCS wall-pack power supply.

Your system should resemble the figure below.

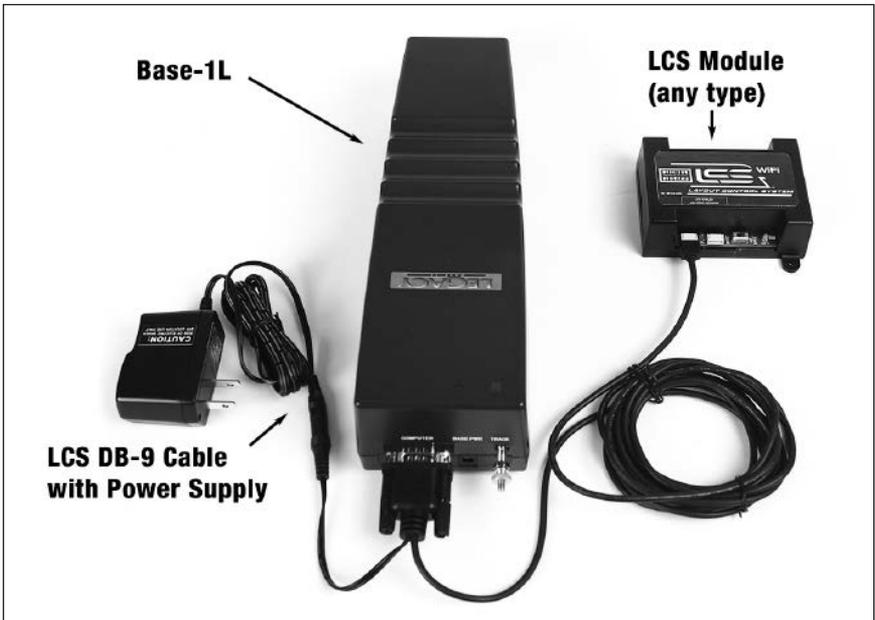


Figure 5. Installing a new LCS system with a Base-1L

Once connected and powered-up, the red LED on the Base-1L will blink once every second. With this setup, you can control Lionel locomotives and Layout Control System products using a CAB-1L remote(s).

If you have additional LCS devices to install, see “Installing additional LCS devices.” If not, skip ahead to the next section of this manual, “Configuring your LCS Device.”

# ***Installing Your First LCS Device***

## **Installing LCS with Legacy AND TrainMaster Command Bases**

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**T**he following instructions apply **ONLY** if you are using one or more original CAB-1 remotes with a Legacy command base. It is not necessary to follow these instructions to use the CAB-1L remote with a Legacy command base.

In order to complete this installation, you will need a CAB-1 remote, an original TMCC TrainMaster command base, a Legacy Command Base with a Legacy CAB-2 remote and the Legacy serial Y cable (included with the Legacy command base).

**Note!** This is the **ONLY** supported application for the Legacy Y cable. The “Command base” end of the Legacy Serial Y cable cannot be directly connected to any accessory other than the original TMCC TrainMaster command base.

To install a new LCS system on a layout with a Legacy Command Base, an original TMCC Command Base and a Legacy Serial Y Cable:

1. Turn off power to your layout, Legacy Base and TMCC TrainMaster command base.
2. Connect the DC wall-pack to the female cable-mount connector of the LCS DB-9 Cable.
3. Connect the DB-9 connector of the Legacy Serial Y cable to your Legacy Command Base.
4. Connect the “Command Base” end of the Legacy Y cable to the DB-9 connector of your TMCC TrainMaster Command Base.
5. Connect the DB-9 end of the LCS DB-9 Cable to the “Serial Comm” connector of the Legacy Y cable.
6. Connect the LCS PDI cable end of the LCS DB-9 Cable to either connector on your LCS device, such as an LCS WiFi or LCS SensorTrack or any other Layout Control System product.
7. Restore power to your layout, Legacy Base and TMCC TrainMaster command base.
8. Plug in the LCS wall-pack power supply.

**Note!** If using a Legacy command base, it must have software rev 1.52 or higher installed.

# Installing Your First LCS Device

## Installing LCS with Legacy AND TrainMaster Command Bases (continued)

Your system should resemble the figure below.



Figure 6. Installing LCS with Legacy AND TrainMaster Command Bases

Once connected and powered-up, the yellow LED on the Legacy Base will blink once every second. With this setup, you can control Lionel locomotives and Layout Control System products using any combination of LEGACY Remotes, CAB-1L remotes and original CAB-1 remotes.

If you have additional LCS devices to install, see “Installing additional LCS devices”. If not, skip ahead to the next section of this manual, “Configuring your LCS Device.”

## **Installing a new LCS system with NO Command Base**

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**T**he Layout Control System can be used without a Legacy or TMCC Command base. This would be appropriate for a layout which only uses “conventional” or “transformer-controlled” locomotives or a different type of locomotive control system such as DCC. An LCS WiFi is required, as is one other LCS module (such as ASC2 or BPC2).

To install a new LCS system on a layout that does NOT include a Legacy or TMCC Command Base:

1. Connect the DC wall-pack to the female cable-mount connector of the LCS DB-9 Cable.
2. Connect the LCS PDI cable end of the LCS DB-9 Cable to either connector on your LCS WiFi.
3. Set the Base/No Base switch to “NO BASE.”
4. Leave the DB-9 connector of the LCS DB-9 Cable unconnected.
5. Plug in the LCS wall-pack power supply.

With this setup, you can control other Layout Control System products using compatible software on smart devices connected via WiFi or from a computer using a wired serial connection via an LCS SER2. Since this configuration does not include a command base, you will not be able to use Legacy or TMCC Cab Remotes, command-controlled locomotives or wireless command controlled switches or accessories in conjunction with this LCS system.

If you have additional LCS devices to install, see “Installing additional LCS devices”. If not, skip ahead to the next section of this manual, “Configuring your LCS Device.”

## Installing additional LCS devices

This section describes adding a new device to an existing Layout Control System installation. If you are installing a brand new LCS system, please refer to the previous section of this document, “Installing Your First LCS Device.”

Adding additional LCS devices to an existing Layout Control System requires an additional cable for each new device. These “LCS PDI Cables” come in a variety of pre-made lengths. They are not included with LCS devices and must be purchased separately. LCS PDI Cables are available in a variety of lengths:

6-81500 - LCS PDI 1ft Cable

6-81501 - LCS PDI 3ft Cable

6-81502 - LCS PDI 10ft Cable

6-81503 - LCS PDI 20ft Cable

Each new device is connected via LCS PDI cables in a “daisy-chain” fashion (one to the next, and so on). The order of devices in the “chain” is up to you. The only exception is that an LCS WiFi must be the first device in the chain if no Lionel Command Base is present.

To connect each additional LCS device:

1. Find the “last” LCS device in the chain. One of its two LCS PDI connectors will be in use, the other will be empty.
2. Using your chosen length LCS PDI Cable, connect one cable end to the unused LCS PDI connector of the last LCS device in the chain.
3. Connect the second cable end to either of the LCS PDI connectors on your new LCS device (see figure below). Your new LCS device is now the last one in the chain.

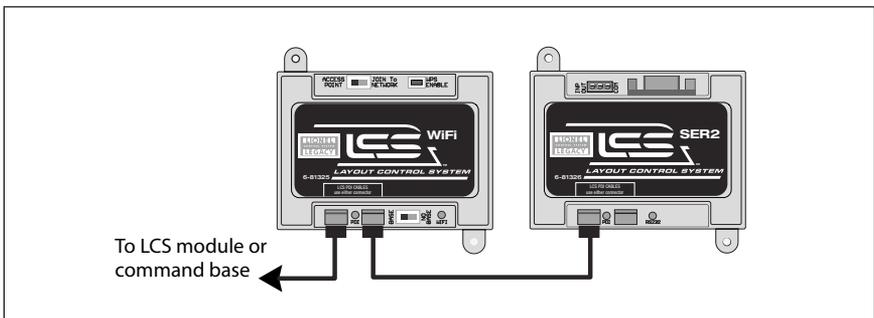


Figure 7. Installing additional LCS devices

# Configuring Your STM2

The illustration below shows the name and location of each button, connector and indicator light on your LCS STM2 module. The function of each is described on the following pages.

**A – Switch-sense screw terminals. Run wires from here to your track switches (see installation instructions).**

**B – Switch-sense screw terminal numbers.**

**C – LCS PDI cable inputs. Use either connector.**

**D – Red LCS PDI activity indicator.**

**E – Program button used when setting the STM2's TMCC ID base address.**

**F – Green switch sense activity indicator.**

**G – Sense return screw terminal (see installation instructions).**

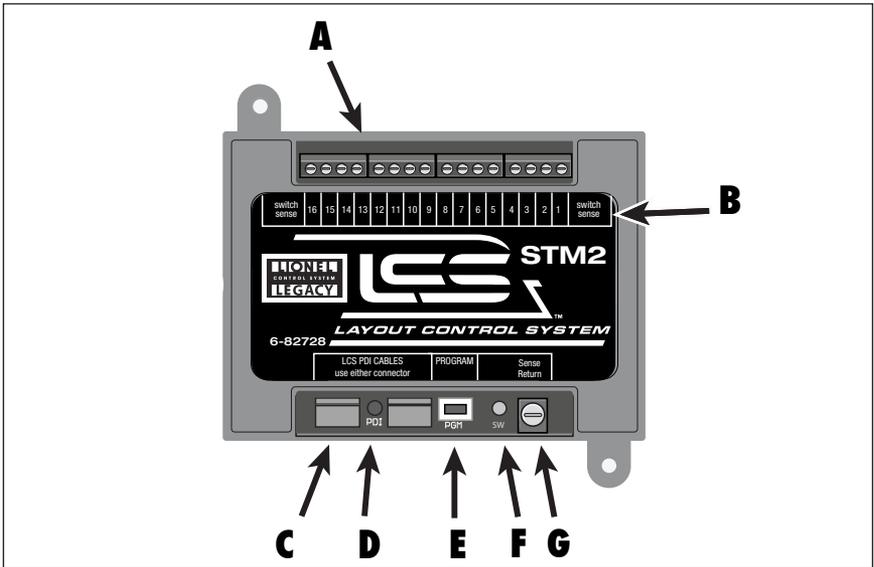


Figure 8. STM2 call outs.

The following additional steps required to use your STM2:

1. Run wires from the **switch-sense screw** terminals to each track switch you wish to monitor.
2. Connect the Sense Return terminal (see installation instructions).
3. Set the STM2's configuration. Make sure the TMCC IDs of your track switches match exactly to the base address and **Switch-sense screw** terminal position on your STM2.

# Configuring the STM2

## STM2 Software Configuration

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**Y**our STM2 configuration includes two parts: a TMCC base ID and an operating mode (single-wire or two-wire switch sensing).

The base ID of your STM2 should be set to match the lowest-number TMCC switch ID on your layout. To make most efficient use of your STM2, your layout switches' TMCC IDs should be assigned consecutively, with no gaps in the numeric sequence.

For all Lionel track switch types, single-wire switch sensing is recommended. In this mode, your STM2 can monitor the position of up to 16 individual track switches. Two-wire mode is included to support products such as Atlas awitches. You should choose two-wire mode only if necessary, as it reduces the number of switches you can monitor by half.

Setting the STM2's TMCC base ID and operating mode are performed in a single operation. This configuration will be retained even when power is removed from the unit. You'll need physical access to the STM2 and a CAB remote to complete this operation.

To configure your STM2:

1. Turn power to your command base and LCS system on.
2. Press and hold the STM2 PGM button for 1 second. The red LED will begin blinking slowly.
3. On your Lionel cab remote, press SW (Switch addressing).
4. Enter the desired 1 or 2 digit base address for your STM2. This should match the TMCC ID of the lowest-numbered switch on your layout.
5. Press SET. The STM2's red LED will flash quickly, then return to slow flashing.
6. Press the PGM button OR AUX1 for single-wire mode (recommended for most switches) OR press AUX2 for two-wire operation. The STM2's red LED will flash quickly and then turn off. The configuration process is complete.

To complete the installation, you must now connect the switch sense wires and Sense Return/ground wire from the STM2 to the electrical terminals of each track switch you wish to monitor. The next section of this manual includes sample wiring diagrams to help you complete this task.

**Note!** In both single-wire and two-wire modes, a Sense Return/ground wire is also required. In the following example illustrations, this ground wire is shown connected individually to every switch. Depending on your installation, you may instead be able to connect a single Sense Return wire to the U terminal on your track power transformer.

## Wiring examples

This section of the manual describes wiring the STM2 for operation with different types of track switches. In order for the STM2 to do its job, there must be an exact matching of TMCC IDs in three places: each connected track switch, the STM2's TMCC base address and switch-sense screw terminal number and finally, the ID setting for each switch graphic on the Lionel LCS App.

The STM2 has a TMCC Base address. The base address corresponding to the STM2's switch-sense screw terminal #1. Each following screw terminal gets the next higher-ID. If your switch ID number scheme has gaps in the numerical sequence, you won't be able to use your STM2 to its full capacity. Therefore, monitored track switches should be assigned to consecutive TMCC IDs.

Setting the TMCC base ID of your STM2 is described elsewhere in this document. For instructions on setting the ID's of your track switches and configuring the Lionel LCS App, please refer to the documentation for those products.

In the example below, the lowest-numbered switch ID on the layout is 21 and the remaining switches are numbered consecutively through ID 26. In this case, the STM2 would be assigned a base ID of 21. A wire from switch-sense screw terminal 1 would run to switch 21 and each subsequent screw terminal would be wired to the next-higher ID-numbered switch.

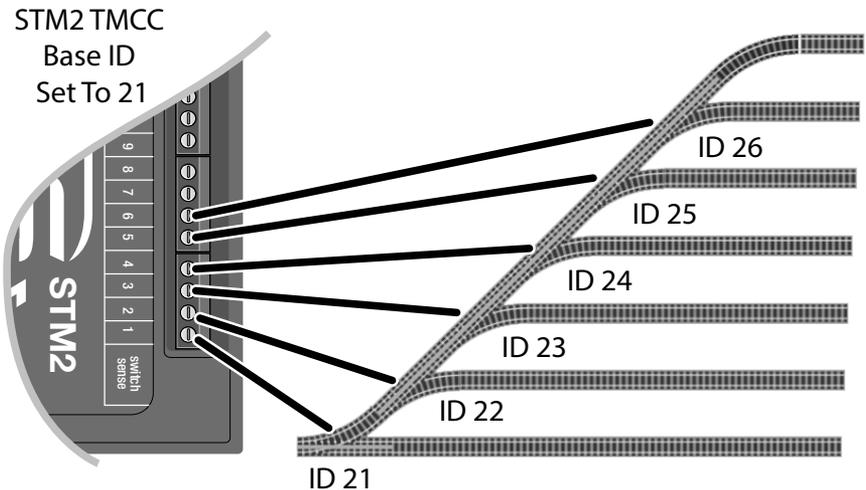


Figure 9. Each switch-sense screw terminal must connect to a command controlled switch with a corresponding TMCC ID.

**Note!** Sense return wire(s) not shown in the above illustration.

# Wiring examples

## Wiring a FasTrack Command Controlled Switch

To connect one FasTrack command-controlled switch to your STM2:

1. Determine which switch-sense screw terminal (1-16) matches the ID of the track switch.
2. Connect a wire from that screw terminal (#1 shown below) to the RSC Lights terminal of your command-controlled FasTrack switch.
3. Connect a wire from the Sense Return terminal of the STM2 to the GND wire of your command-controlled FasTrack switch.

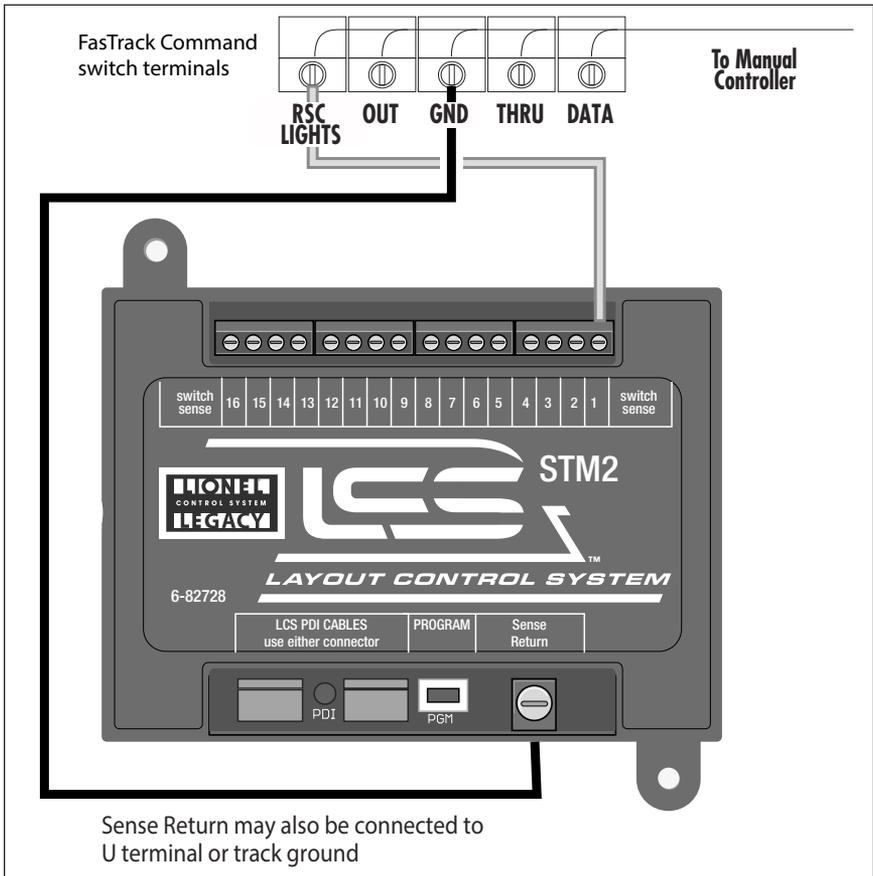


Figure 10. LCS STM2 Switch Throw Monitor wiring example with Command-Controlled FasTrack switch.

# Wiring examples

## Wiring a FasTrack Remote-Controlled Switch & ASC2

To connect a FasTrack remote-controlled switch to and ASC2 and STM2:

1. Connect your ASC2 to your remote-controlled switch following the instructions in the ASC2's Owner's Manual. Confirm that you can operate your switch using your Lionel CAB Remote before proceeding to the next step.
2. Determine which switch-sense screw terminal (1-16) matches the ID of the track switch.
3. Connect a wire from that screw terminal (#1 shown below) to the RSC Lights terminal of your command-controlled FasTrack switch.
4. Connect a wire from the Sense Return terminal of the STM2 to the GND wire of your command-controlled FasTrack switch.

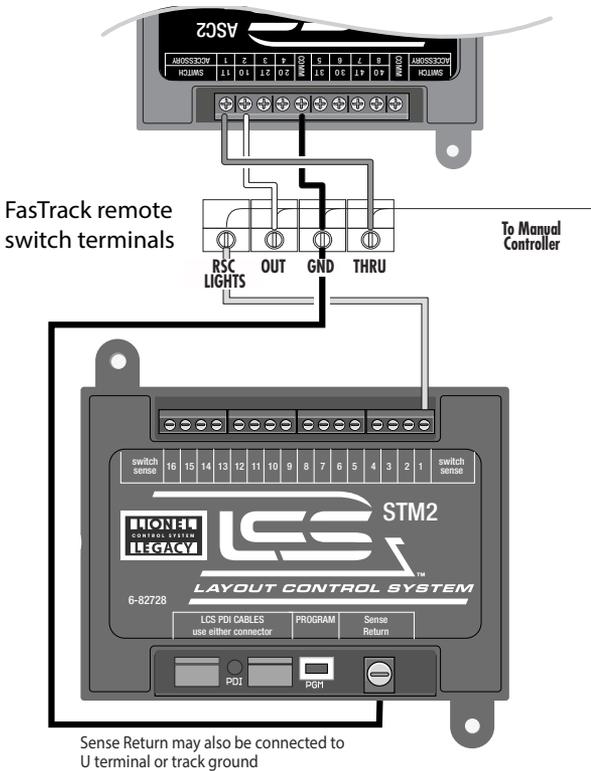


Figure 11. LCS STM2 Switch Throw Monitor wiring example with FasTrack switch and LCS ASC2.

# Wiring examples

## Wiring a Lionel Tubular Remote Operating Switch and ASC2

To connect a Lionel Tubular Remote Operating switch to an ASC2 and STM2:

1. Connect your ASC2 to Lionel tubular switch as shown. Confirm that you can operate the switch using your Lionel CAB Remote before proceeding to the next step.
2. Determine which switch-sense screw terminal (1-16) matches the corresponding ASC2 ID for each track switch.
3. Connect a wire from that STM2 screw terminal (#1 shown below) to terminal 3 on the switch.
4. Connect a wire from the Sense Return terminal of the STM2 to the GND wire of your switch, U terminal or track ground.

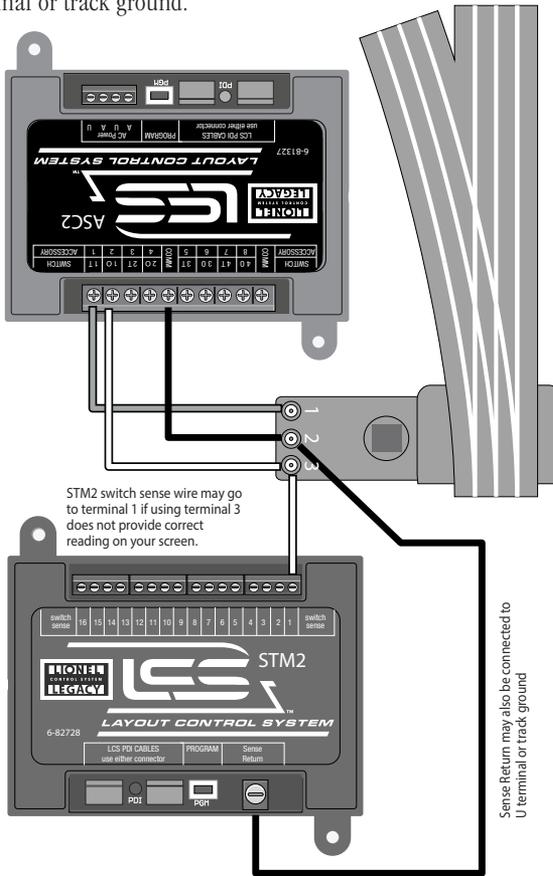


Figure 12. LCS STM2 Switch Throw Monitor wiring example with a Lionel tubular track switch and LCS ASC2.

# Wiring examples

## Wiring Lionel #5122 Switches

To connect one or more #5122 switches to an ASC2 and your STM2:

1. Connect your ASC2 to your #5122 switch following the instructions in the ASC2's Owner's Manual. Confirm that you can operate each switch using your Lionel CAB Remote before proceeding to the next step.
2. Determine which switch-sense screw terminal (1-16) matches the corresponding ASC2 ID for each track switch.
3. Connect a wire from that screw terminal (#1 & #2 shown below) to the "out" (center) terminal of that switch.
4. Connect a wire from the Sense Return terminal of the STM2 to the GND wire of your switch, U terminal or track ground.

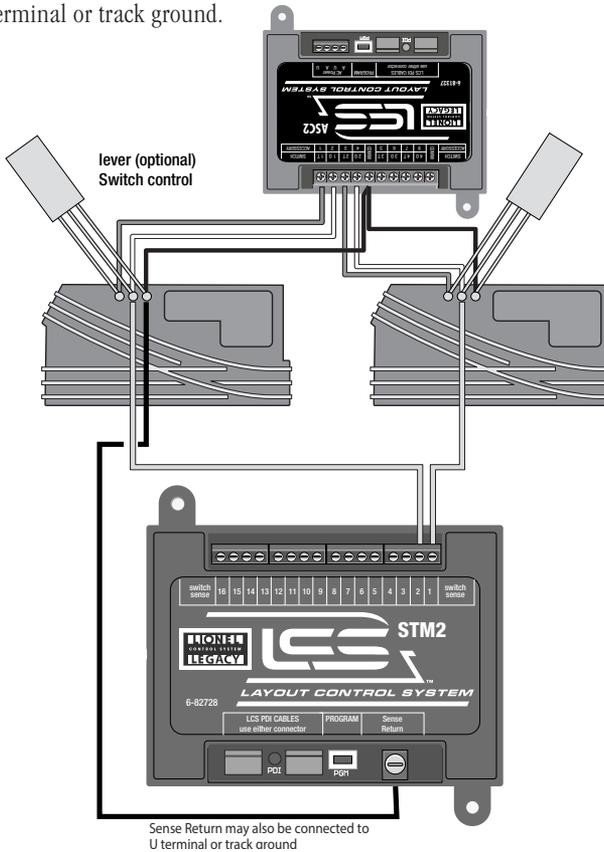


Figure 13. LCS STM2 Switch Throw Monitor wiring example with two Lionel #5122 switches and an LCS ASC2. .

# Wiring examples

## Wiring an Atlas Remote Operating Switch

To monitor the position of an Atlas Remote switch, you'll need to set your STM2 to the optional two-wire mode (see page 14). Two-wire mode applies to all sense terminals on the STM2, so a single STM2 can monitor up to 8 Atlas switches.

To connect an Atlas switch to an ASC2 and your STM2:

1. Connect your ASC2 to your Atlas switch following the instructions in the ASC2's Owner's Manual. Confirm that you can operate that switch using your Lionel CAB Remote before proceeding to the next step.
2. Set your ASC2 for two-wire mode (see page 14). Determine which switch-sense screw terminal pair (1&2, 3&4, etc.) matches the corresponding ASC2 ID for the track switch. In this example, the ASC2 Switch 3 terminals are used; the third pair of sense terminals on the STM2 are numbers 5&6.
3. Connect wires from those screw terminals to the two outer terminals of the switch as shown.
4. Connect a wire from the Sense Return terminal of the STM2 to the GND wire of your switch, U terminal or track ground.

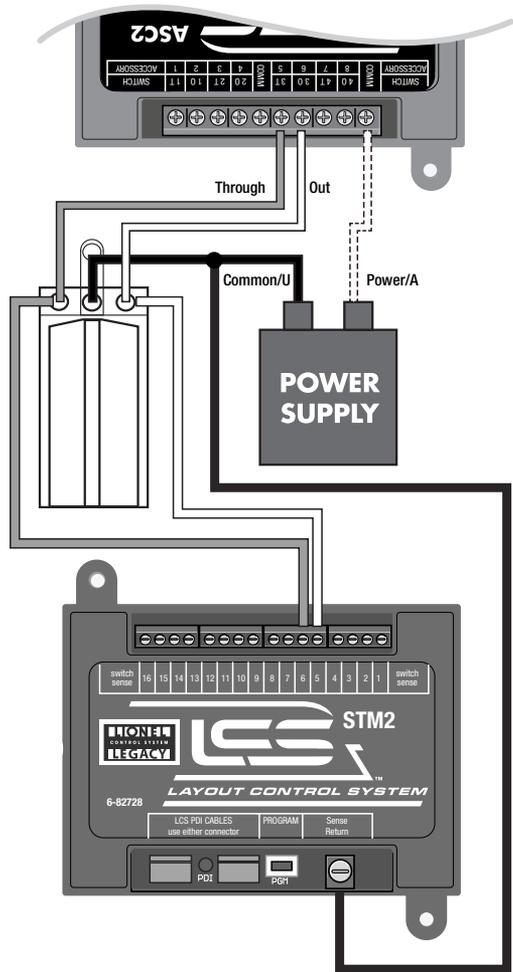


Figure 14. LCS STM2 Switch Throw Monitor wiring example with an Atlas switch and an LCS ASC2. .

# Using the STM2

## Verify Your Wiring

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Once your wiring is complete, test your *physical* installation by operating each connected switch, one at a time. As each switch throws, watch for the STM2's green "SW" LED to blink. This green light will flash each time any connected switch operates, regardless of if it was triggered by a command from your handheld remote, software such as the Lionel LCS iPad App, a manual activation of the switch by hand or by a locomotive triggering the switch's non-detailing feature.

The green LED blinks when a voltage change is detected on any of the 16 switch sense screw terminal inputs. Note that a green blink should always be accompanied by a red blink, which indicates command activity on the LCS PDI cable.

If the green LED does not flash when a particular switch is thrown, you have a wiring error, a defective track switch or you are attempting to use an incompatible track switch. If there's a problem, correct it before continuing on to the next step.

## Confirming Operation on your iPad

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Finally, confirm the *logical* connection between the STM2 and the rest of your system. Open the Lionel LCS app and viewing one of your custom control panels, operate one or more of the switches connected to your STM2. Everything should work as normal.

Now, use your finger to flick the switch and change it from through to out or vice versa. Watch the screen of your iPad. The switch graphic on your Lionel LCS app should toggle as you manually throw the switch. Then go on and operate each track switch to confirm the screen always shows the correct switch position.

If one or more switches do not update the screen when manually operated, re-check your wiring (see above). Otherwise, the problem is a mismatch between the TMCC ID used to control that switch and the base address and screw terminal number of your STM2. Refer back to the example on page 15 and confirm that:

- All your connected switches have sequentially-numbered TMCC IDs
- The base TMCC ID of your STM2 is the same TMCC ID as the track switch wired to switch sense screw terminal #1.

# ***Appendix***

## **Operation of LEDs**

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**O**n power up, the Red LED on your STM2 will turn on for 1 second. If it remains on continuously, this indicates a problem with the LCS PDI cabling or your command base.

During operation, the Red LED flickers when commands are passing through the LCS PDI bus.

The green "SW" LED will blink each time a compatible voltage change is detected at any of the 16 switch sense screw terminals of your STM2. In operation, when a switch wired to your STM2 throws, the green light should blink. Whenever the green LED blinks, the red LED will blink also. This is normal operation.

## **Specifications of the LCS STM2**

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### ***Mechanical***

- Size: 3.7" x 2.7" x 1.2"
- Mounting: Two #4 pan head sheet metal screws

### ***Electrical***

- Input PDI supply current: 35 mA

## Notes

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## Lionel Limited Warranty Policy & Service

This Lionel product, including all mechanical and electrical components, moving parts, motors and structural components, with the exception of **LIGHT BULBS, LED's & TRACTION TIRES** are warranted to the original owner-purchaser for a period of **one year from the original date of purchase** against original defects in materials or workmanship when purchased through a **Lionel Authorized Retailer\***.

This warranty does **NOT** cover the following:

- Normal wear and tear
- Light bulbs or LED's
- Defects appearing in the course of commercial use
- Damage resulting from abuse/misuse of the product

Transfer of this product by the original owner-purchaser to another person voids this warranty in its entirety. Modification of this product in any way; visually, mechanically or electronically, voids the warranty in its entirety.

Any warranted product which is defective in original materials or workmanship and is delivered by the **original owner-purchaser** (this warranty is non-transferrable) to Lionel LLC or any Lionel Authorized Service Station **MUST** be accompanied by the original receipt for purchase (or copy) from an **Authorized Lionel Retailer\***, will at the discretion of Lionel LLC, be repaired or replaced, without charge for parts or labor. In the event the defective product cannot be repaired, and a suitable replacement is not available, Lionel will offer to replace the product with a comparable model (**determined by Lionel LLC**), if available. In the event a comparable model is not available the customer will be refunded the original purchase price (requires proof of purchase from the **Authorized Lionel Retailer\*** it was originally purchased). Any products on which warranty service is sought must be sent freight or postage prepaid (Lionel will refuse any package when postage is due). **Transportation and shipping charges are not covered as part of this warranty.**

**NOTE: Products that require service that do not have a receipt from a LIONEL AUTHORIZED RETAILER\* will be required to pay for all parts required to repair the product (labor will not incur a charge) providing the product is not older than 3 years from date of manufacture and is within 1 year from date of purchase. A copy of the original sales receipt is required.**

**In no event shall Lionel LLC be held liable for incidental or consequential damages.**

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you. This warranty gives you specific legal rights and you may have other rights which vary from state to state.

### Instructions for Obtaining Service

If service for this Lionel LLC product is required, bring the item, along with your DATED sales receipt and completed warranty information (at the bottom of this page) to the nearest Lionel Authorized Service Station. Your nearest Lionel Service Station can be found by calling 1-800-4-LIONEL or by accessing the website at [www.lionel.com](http://www.lionel.com).

If you prefer to send your Lionel product directly to Lionel, for repair you must FIRST call 586-949-4100 extension 2 or write to Lionel Customer Service, 6000 Victory Lane, Concord, NC 28027. Please have the 6-digit Lionel product number, the date of original purchase, the dealer where the item was purchased and what seems to be the problem. You will receive a return authorization (RA) number to ensure your merchandise will be properly tracked and handled upon receipt at Lionel LLC.

Once you have your Return Authorization (RA) number, make sure the item is packed in its original Styrofoam inner container which is placed inside the original outer display box (this will help prevent damage during shipping and handling). This shipment **MUST** be prepaid and we recommend that it be insured with the carrier of your choice.

Please make sure you have followed all of the above instructions carefully before returning any merchandise for service. You may choose to have your product repaired by one of Lionel LLC's Authorized Service Stations after its warranty has expired. A reasonable service fee should be expected once the product warranty has expired.

### Warranty Information

Please complete the information below and keep it, along with your **DATED ORIGINAL SALES RECEIPT**. You **MUST** present this form **AND** your **DATED SALES RECEIPT** when requesting warranty service.

\*A complete listing of Lionel Authorized retailers can be found by calling 1-800-4-LIONEL or by visiting our website at [www.lionel.com](http://www.lionel.com).

Products that are more than 3 years old, from date of manufacture, are not applicable for warranty coverage, even if they have never been sold prior to this date. (Under no circumstance shall any components or labor be provided free of charge.)

Name \_\_\_\_\_  
Address \_\_\_\_\_  
Place of Purchase \_\_\_\_\_  
Date of Purchase \_\_\_\_\_  
Product Number \_\_\_\_\_



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PRINTED IN CHINA