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Lionel Accessory Motor Controller 2 (AMC2) Owner's Manual

LIONEL CONTROL SYSTEM LEGACY
LAYOUT CONTROL SYSTEM

Thank You!

Your 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.

Table of Contents

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 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
- LCS AMC2 for controlling accessory motors and lights

How it works!

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 loco 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, locos and more.

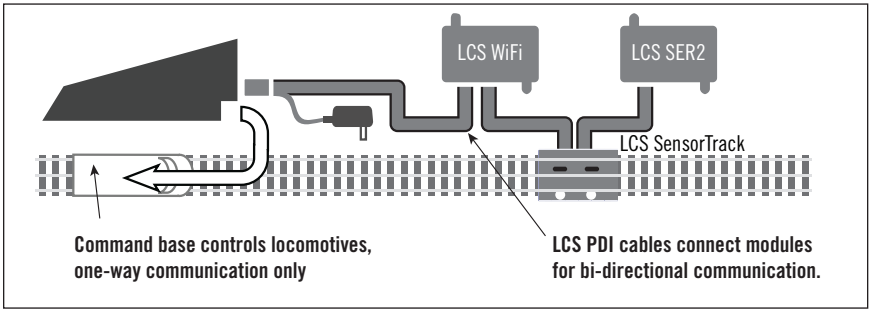

Figure 1. LCS doesn't replace your Lionel Command Base—it adds to it!

What is Lionel's Layout Control System?

LCS AMC2 Module

The AMC2 module gives you control over your accessories like never before. When used in conjunction with lights, the AMC-2 allows you to control bulb brightness from the CAB Remote Controller. When used in conjunction with your accessories' motors, the AMC-2 gives you control over operation.

- Gives you precise motor and/or light control.
- Allows for operation of accessory speed, direction, or function from the CAB remote controller or LCS app.
- Operate up to two motors and up to four incandescent lights.
- Various motor options allow for continuous motion, or proportional control, where the motor turns only while you continuously rotate the throttle.
- Each light output can be dimmed independently.

Note! The LCS AMC2 can only control incandescent light bulbs. It is not recommended to use LED lighting.

Figure 2. LCS ASC2 Module

Installing Your First LCS Device

The 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. 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

Every 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.

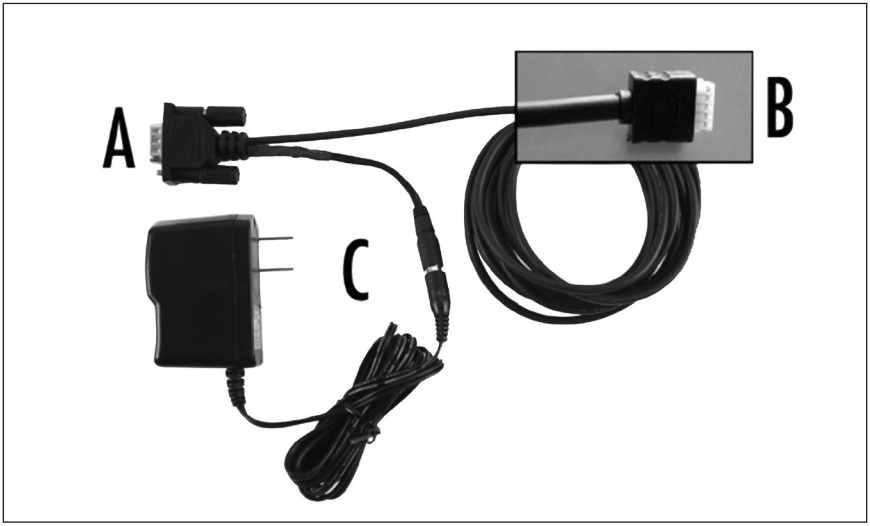

Figure 3. The LCS DB-9 Cable with Power Supply (sold separately)

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.

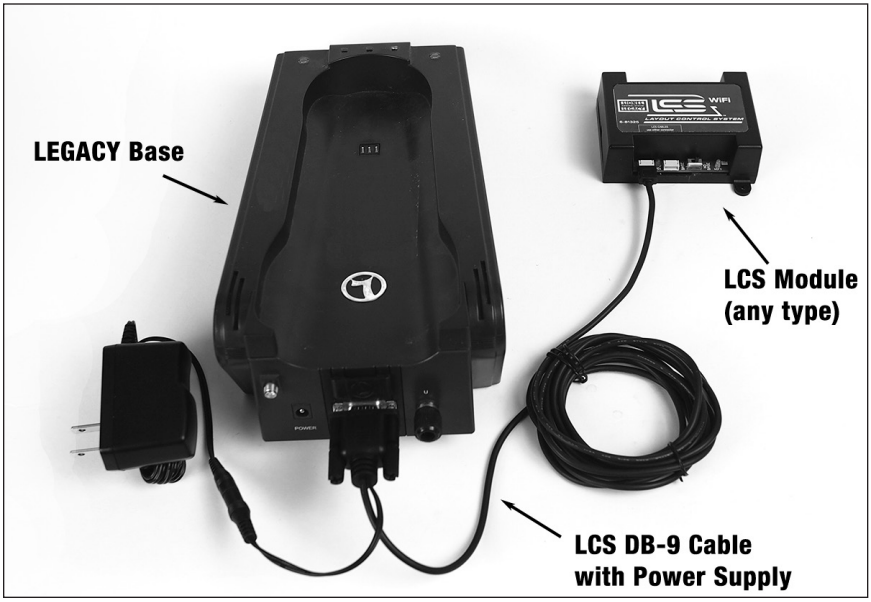

Figure 4. Installing a new LCS system with a LEGACY Base

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 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

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.

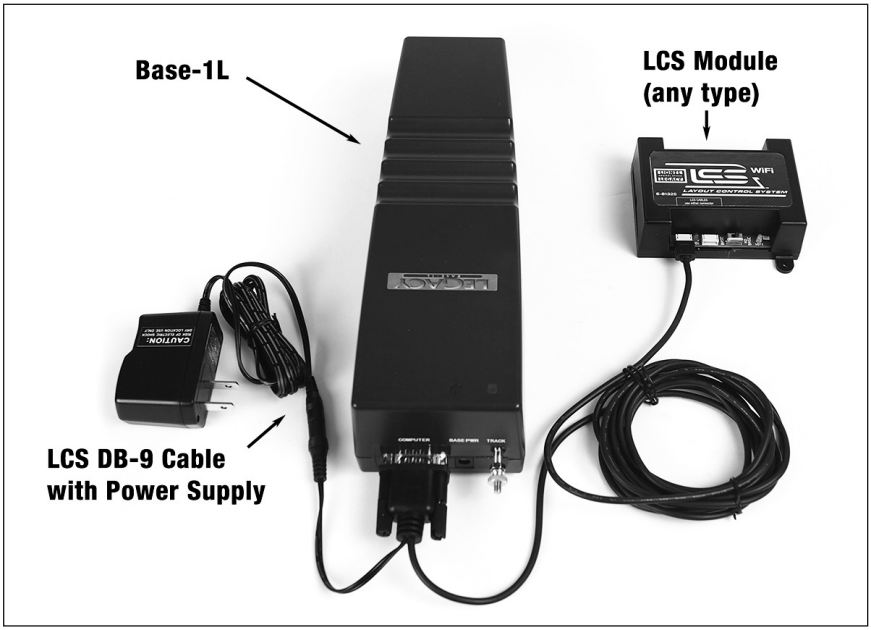

Figure 5. Installing a new LCS system with a Base-1L

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

The 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 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.

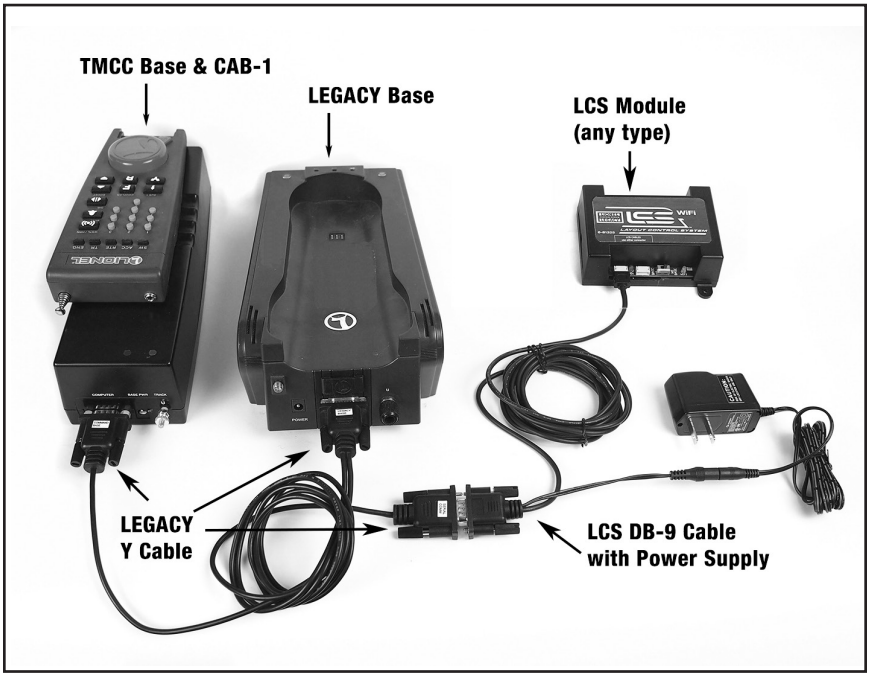

Figure 6. Installing LCS with Legacy AND TrainMaster Command Bases

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 Your First LCS Device

Installing a new LCS system with NO Command Base

The Layout Control System can be used without a Lionel 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 are one other LCS module (such as ASC2 or BPC2).

To install a new LCS system on a layout that does NOT include Lionel 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 Lionel 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 if 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.

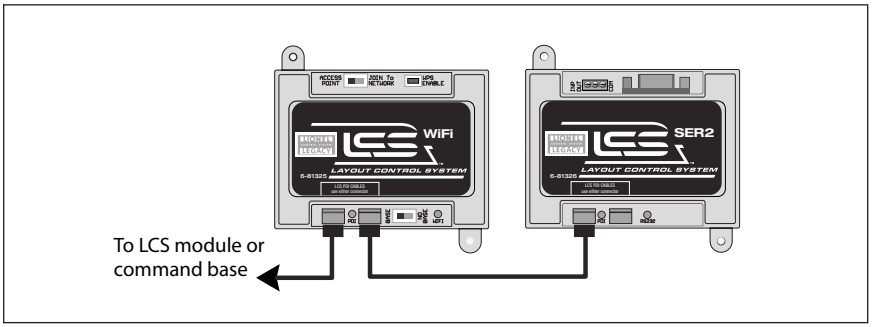

Figure 7. Installing additional LCS devices

Configuring Your AMC2

The illustration below shows the name and location of each switch, connector and indicator light on your LCS AMC2 module. The function of each is described on following pages.

A – Motor/Lights terminals should be connected to motors and incandescent lights.

B – Label for screw terminals.

C – LCS PDI cable inputs. Use either connector.

D – Red LCS PDI activity indicator.

E – Program switch used to set the AMC2's TMCC ID.

F – Input Power terminals.

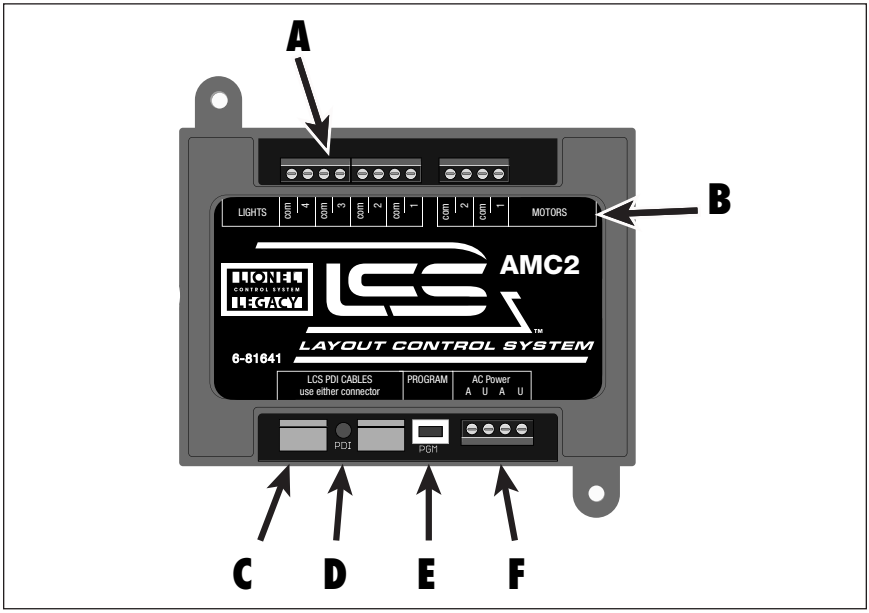

Figure 8. AMC2 callouts.

There are three additional steps required to use your AMC2. They are:

1. Connect an accessory transformer to the Input Power Terminals.
2. Set the AMC2's software configuration. In this step, you will choose switch vs. accessory mode, base address and the latching or momentary sub-mode.
3. Wire your accessories or switches to the AMC2.

Configuring Your AMC2

Connect Accessory Transformer to Input Power Terminals

Your AMC2 requires an external power source to operate its motor and light outputs. This must be supplied from a separate accessory transformer and is required for both Accessory or Switch configuration of your AMC2.

Connect an accessory transformer with an 12-14 VAC output to the AMC2's front screw terminal connections marked "A" and "U" as shown in Figure 9 below. If your installation includes more than one AMC2, they can share the same accessory transformer as long as the combined current draw does not exceed the capacity of the accessory transformer (See Specifications, Electrical at the end of this document).

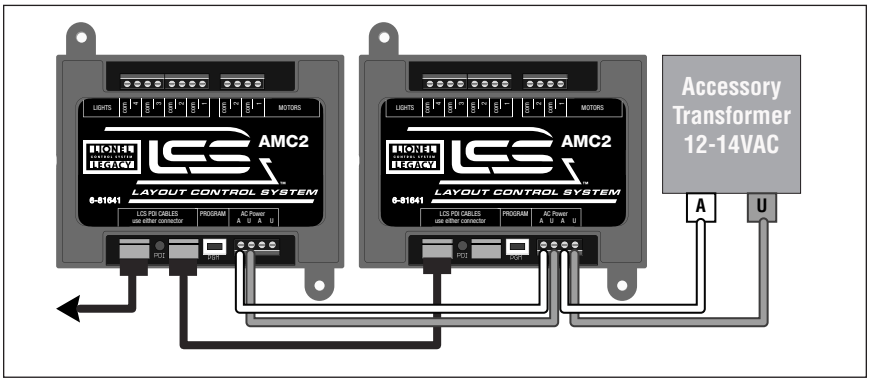

Figure 9. Connecting two AMC2 modules with LCS PDI cables and an accessory transformer

The AMC2 requires separate external power to operate its internal relays. Multiple AMC2 and/or BPC2 modules can be wired in a daisy-chain fashion as shown above.

When connected to lighting or accessories, the AMC2 will switch on and off the power to these connected devices.

To connect the Input Power Terminals on your AMC2:

1. Attach one wire to the Common/Ground/U terminal of your transformer and connect it to the POWER U terminal on the AMC2 unit.Do not connect this terminal to the outside rail.
2. Attach another wire to the Power/A terminal of your transformer and connect it to the POWER A terminal on the AMC2 unit.
3. If your layout includes additional AMC2 or BPC2 devices, you can use the spare A and U terminals on the first unit to jumper power to your next AMC2 device as shown in Figure 9.

Configuring Your AMC2

Understanding AMC2 Software Configuration

Your AMC2 software configuration is a single operation that sets three distinct features:

1. Accessory, Train or Engine Addressing
2. The operating mode for Motor 1 and if it should be automatically turned on when the AMC2 is powered up.
3. The operating mode for Motor 2 and if it should be automatically turned on when the AMC2 is powered up.

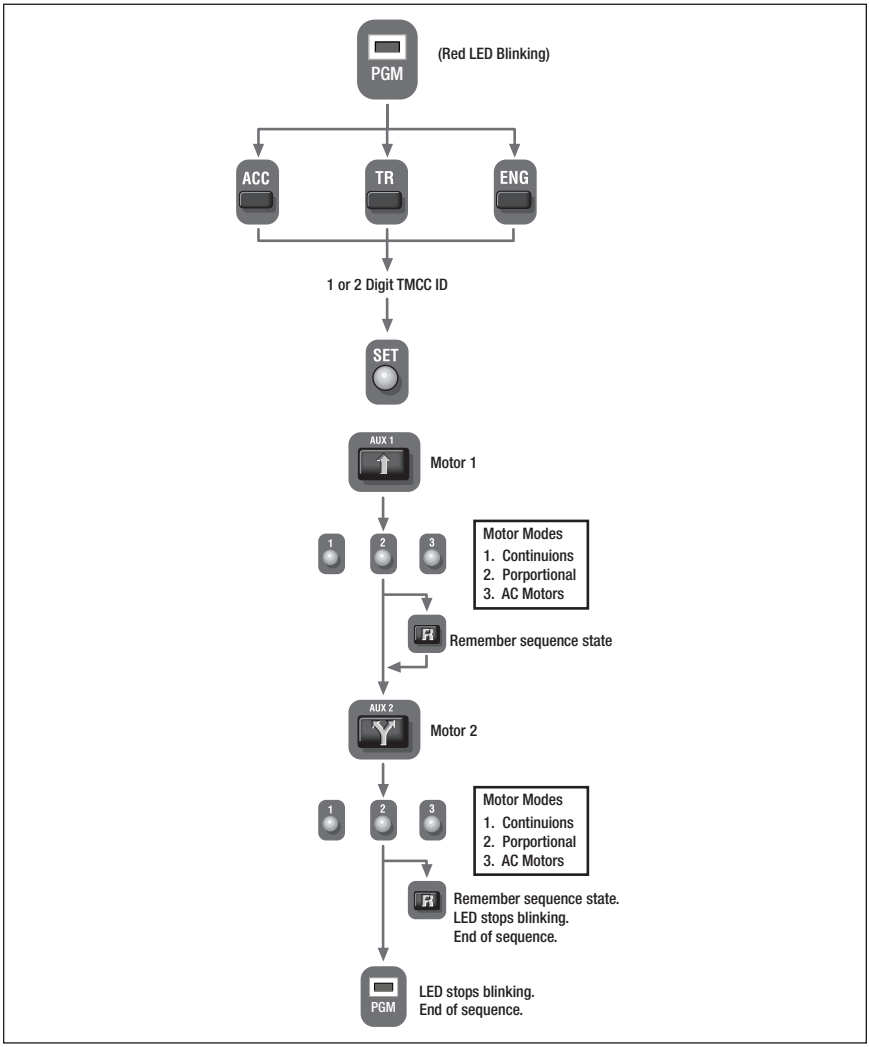

Figure 10. AMC2 configuration flowchart.

Configuring Your AMC2

Base Address/TMCC ID

Each AMC2 on your layout needs a unique combination of address type and TMCC ID. The programming sequence begins with the choice of Accessory (ACC), Train/Track (TR) or Engine (ENG). Following this, a one or two digital TMCC ID is chosen.

Note! Do not use TMCC ID #99.

Motor Modes

You'll choose the operating mode for the one or two connected motors during the programming sequence. Modes one and two are for DC motors, mode three is for AC motors.

Mode 1 offers "continuous" motor operation of a DC motor. Here, setting the throttle leaves the motor running at a constant speed and the direction button is used to change spin direction—just like a locomotive. If you press the direction button while the motor if it is spinning, it will stop. Use the throttle to start it turning again in the new direction. If you wish, you can enable saving the motor setting during the programming setup for a Mode 1 motor which causes that motor's speed and direction to be automatically restored on power-up.

Mode 2 is "proportional" motor operation for a DC motor. Here, you have to keep rotating the throttle for the motor to spin. When you turn the throttle faster, the motor speed increases. When you stop turning the throttle, the motor stops too (this is comparable behavior to the Lionel Command Controlled Gantry Crane). Changing from clockwise to counterclockwise throttle motion will reverse the motor's direction of rotation. The DIR button and enabling saving the motor setting for in this mode are not particularly useful.

Mode 3 is for AC motors. This mode provides continuous operation. When the throttle is turned clockwise, the motor speed spins faster. When the throttle stop turning, the motor continues to run at its current speed. To slow or stop the motor, turn the throttle counter-clockwise. The Direction button is ignored in this mode.

Motor "Remember"

When setting motor modes 1 and 3, you can set your AMC2 to remember the last commanded speed and direction of that motor and restore it on power-up. Just tap the R (rear coupler) button during programming and the AMC2 will "Remember" the last speed the motor(s) were turning at when it's power was removed. Then, when the AMC2 is turned back on, it will automatically spin the motors at that same speed and direction. You can set Remember separately for Motors 1 and 2.

Note! Lighting levels will always be remembered. When the AMC2 is powered on, each of the four lighting channels will return to it's most recently set level.

Configuring Your AMC2

Configuring & using your AMC2 using an Accessory ID

To configure your AMC2 options using an Accessory ID:

1. Turn power to your command base and LCS system on.
2. Press and hold the AMC2 PGM button for 1 seconds. The red LED will begin blinking slowly.
3. On your Lionel cab remote, press ACC to choose Accessory configuration. Both the motors and the lights must use the same address type, ACC in this case.
4. Enter the 1 or 2 digit address/TMCC ID. This ID is shared by all motors and lights. They cannot be different.
5. Press SET. The red LED will blink quickly, then return to slow blinking.

At this point, you've configured your AMC2 for Accessory operation and set its TMCC ID. The lighting outputs have no additional features, their programming is complete.

6. To program motor 1, Press AUX1, then 1, 2 or 3 depending on the motor type DC vs. AC and the desired operating behavior.
7. If you want motor 1 to automatically come up to speed on power-up of your AMC2, tap the R (rear coupler) button on your remote.
8. To program motor 2, Press AUX1, then 1, 2 or 3 depending on the motor type DC vs. AC and the desired operating behavior.
9. If you want motor 2 to automatically come up to speed on power-up of your AMC2, tap the R (rear coupler) button on your remote.

Depending on the options you select, the red LED may stop blinking automatically. If not, press the PGM button on your AMC2. Once the blinking stops, the configuration process is complete.

Configuring & using your AMC2 using a Train or Engine ID

To configure your AMC2 options using an TR or ENG ID:

1. Turn power to your command base and LCS system on.
2. Press and hold the AMC2 PGM button for 1 seconds. The red LED will begin blinking slowly.
3. On your Lionel cab remote, press TR or ENG. Both the motors and the lights must use the same address type, TR or ENG in this case.
4. Enter the 1 or 2 digit address/TMCC ID. This ID is shared by all motors and lights. They cannot be different.
5. Press SET. The red LED will blink quickly, then return to slow blinking.

At this point, you've configured your AMC2 for Accessory operation and set its TMCC ID. The lighting outputs have no additional features, their programming is complete.

6. To program motor 1, Press AUX1, then 1, 2 or 3 depending on the motor type DC vs. AC and the desired operating behavior.

7. If you want motor 1 to automatically come up to speed on power-up of your AMC2, tap the R (rear coupler) button on your remote.
8. To program motor 2, Press AUX1, then 1, 2 or 3 depending on the motor type DC vs. AC and the desired operating behavior.
9. If you want motor 2 to automatically come up to speed on power-up of your AMC2, tap the R (rear coupler) button on your remote.

Depending on the options you select, the red LED may stop blinking automatically. If not, press the PGM button on your AMC2. Once the blinking stops, the configuration process is complete.

To operate your AMC2:

1. Depending on how you programmed your AMC2 in the previous step, press the ACC, TR or ENG button on your remote.
2. Enter the one or two digit ID number matching the address set in the previous step.
3. Press AUX 1, then enter a single digit from 1 to 6 to choose the motor or the light you want to control. 1 & 2 two are for the motors, 3-6 are for lights.

1	Motor 1
2	Motor 2
3	Light 1
4	Light 2
5	Light 3
6	Light 4

4. Turn the throttle clockwise to brighten that light or spin motor faster (modes 1 and 3).
5. Turn the throttle counter-clockwise to slow or stop the motor or dim/turn off that light.
6. To control a different motor or light, jump back to step 3 above (enter the 1 digit number corresponding to the motor or light you want to control next).

To turn off the last operated motor or light:

1. Press and release the zero key (CAB1L) or the zero or R/reset button (CAB2).

Your handheld Cab Remote's reset command (numeric 0) will turn off the most recently operated motor or light. The other motor or lights will not be affected.

To turn off all motors and lights:

1. Press and hold the HALT button.

The Halt button will stop the entire layout, including all ASC2 operating motors and illuminated lights.

Accessory examples

Wiring a single basic accessory

To connect a basic on/off accessory or light to your AMC2:

1. Attach one wire to the Power/A terminal on your accessory motor and connect it to the + Motor 1 terminal of the AMC2.
2. Attach another wire to the Common/Ground/U terminal on the accessory motor and connect it to the – Motor 1 terminal.

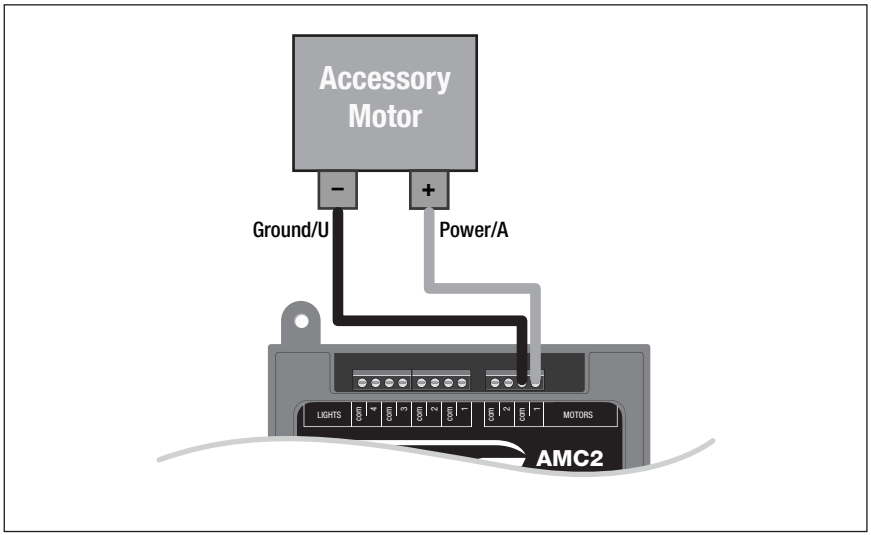

Figure 11. An accessory motor wired to the Motor 1 terminal.

Accessory examples

Wiring and operating a motor

Refer to the figure below to wire two motors to the AMC2 motor terminals.

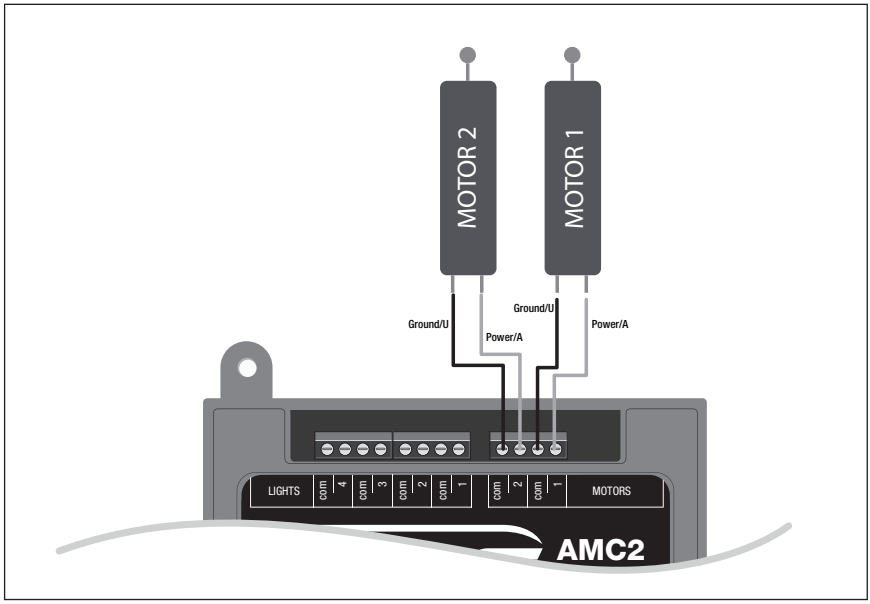

Figure 12. Motor wiring diagram.

Follow these steps to operate the motors:

1. Press ACC on the CAB remote controller.
2. Using your CAB remote controller, enter the TMCC ID associated with the AMC2.
3. Press AUX 1, then press 1 for motor 1 and 2 for motor 2.
4. Rotate the throttle clockwise to turn on the motor/accessory.
5. Rotate the throttle counterclockwise to turn off the motor/accessory.

Accessory examples

Wiring and Operating the Gantry Crane

Refer to the illustration below to wire the Gantry Crane for proportional motor setup.

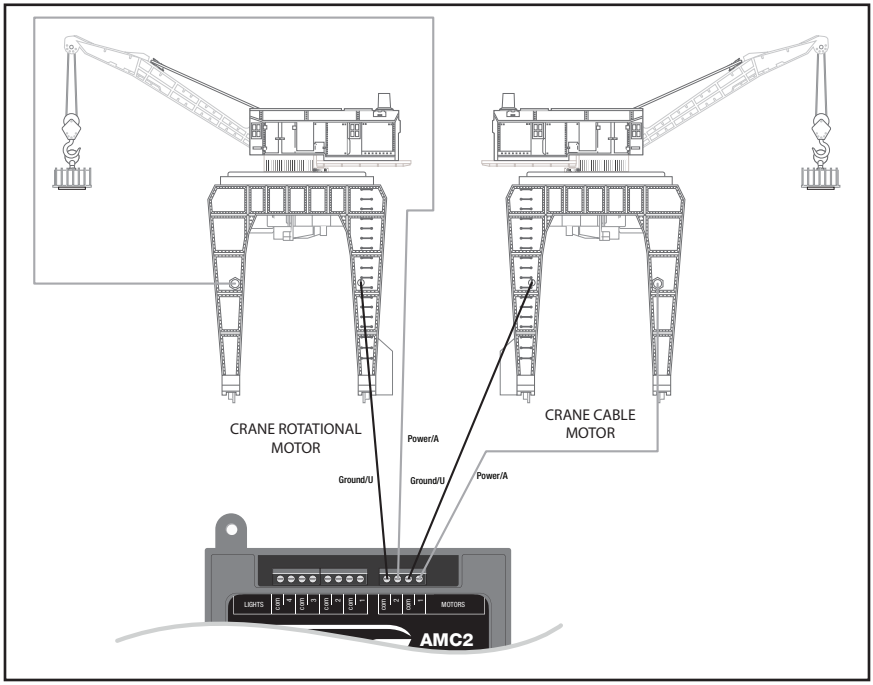

Figure 13. Gantry Crane wiring example.

To set up your crane:

1. Press PGM
2. Press ACC or TR or ENG
3. Select a 1 or 2 Digit TMCC ID
4. Press SET
5. Press AUX 1
6. Press 2 (Proportional)
7. Press AUX2
8. Press 2 (Proportional)
9. Press PGM

Accessory examples

Wiring and Operating the Gantry Crane continued

To operate your crane:

1. Press ACC or TR or ENG
2. Select the TMCC ID you just assigned to the crane.
3. Press AUX1
4. Press 1 for the crane cable motor or 2 for the crane rotation motor.
5. Rotate the throttle clockwise or counter clockwise to move the crane.

Accessory examples

Wiring and Operating the Tug-of-War (DC motor setup)

Refer to the illustration below to wire the tug-of-war accessory using DC motor setup.

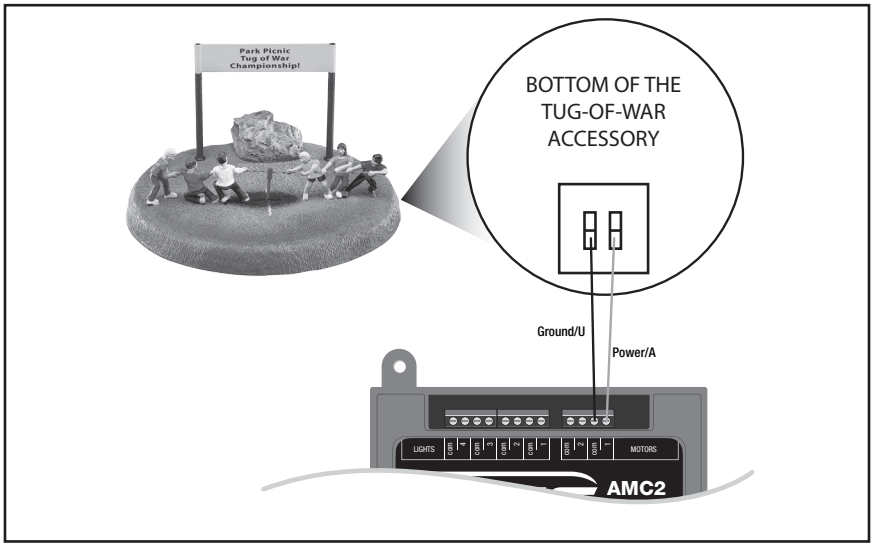

Figure 14. Tug-of-war accessory wiring example.

To set up your accessory:

1. Press PGM
2. Press ACC or TR or ENG
3. Select a 1 or 2 Digit TMCC ID
4. Press SET
5. Press AUX 1
6. Press 1 for DC Motor Setup
7. Optional: Press R for the Remember Sequence State
8. Press PGM

Accessory examples

Wiring and Operating the Tug-of-War (DC motor setup) continued

To operate your accessory:

1. Press ACC or TR or ENG
2. Select the TMCC ID you just assigned to the tug-of-war accessory
3. Press AUX1
4. Press 1 for DC Motor
5. Rotate the throttle clockwise to turn the motor on
6. Rotate the throttle counter clockwise to turn the motor off

Accessory examples

Wiring and Operating a Pullmor Motor (AC motor setup)

Refer to the illustration below to wire a Pullmor motor using AC motor setup.

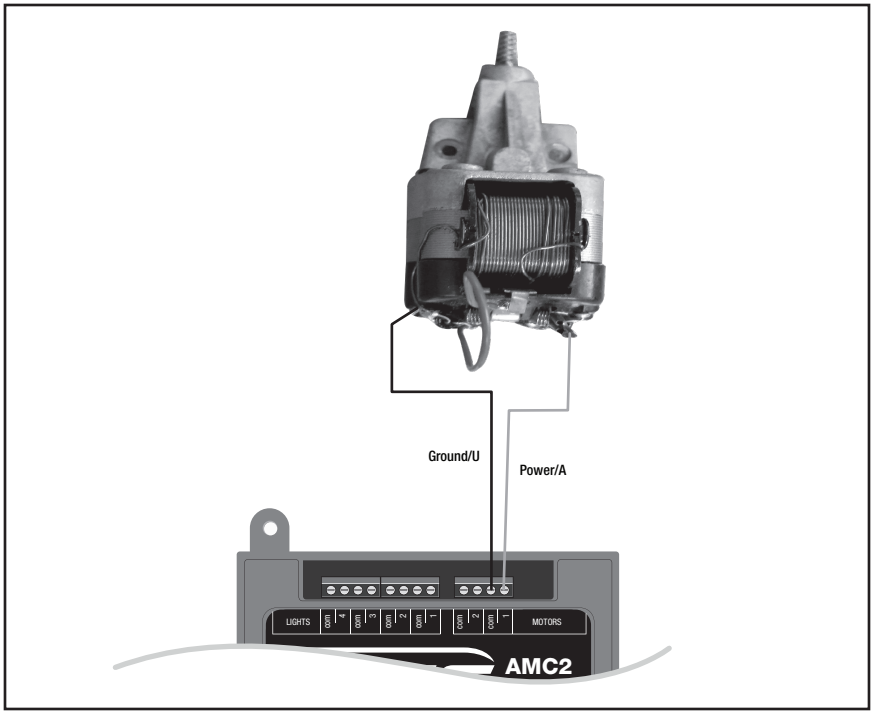

Figure 15. Pullmor motor wiring example.

To set up your Pullmor motor:

1. Press PGM
2. Press ACC or TR or ENG
3. Select a 1 or 2 Digit TMCC ID
4. Press SET
5. Press AUX 1
6. Press 3 for AC Motor Setup
7. Optional: Press R (Remember Sequence State)
8. Press PGM

Accessory examples

Wiring and Operating a Pullmor Motor (AC motor setup) continued

To operate your Pullmor motor:

1. Press ACC or TR or ENG
2. Select the TMCC ID you just assigned to the Pullmor motor
3. Press AUX1
4. Press 1 for AC Motor
5. Rotate the throttle clockwise to increase the motor's speed
6. Rotate the throttle counter clockwise to decrease the motor's speed

Accessory examples

Wiring and operating incandescent lights

Refer to the illustration below to wire incandescent lights to light terminal numbers 1 and 4.

Note! The LCS AMC2 can only control incandescent light bulbs. It is not recommended to use LED lighting.

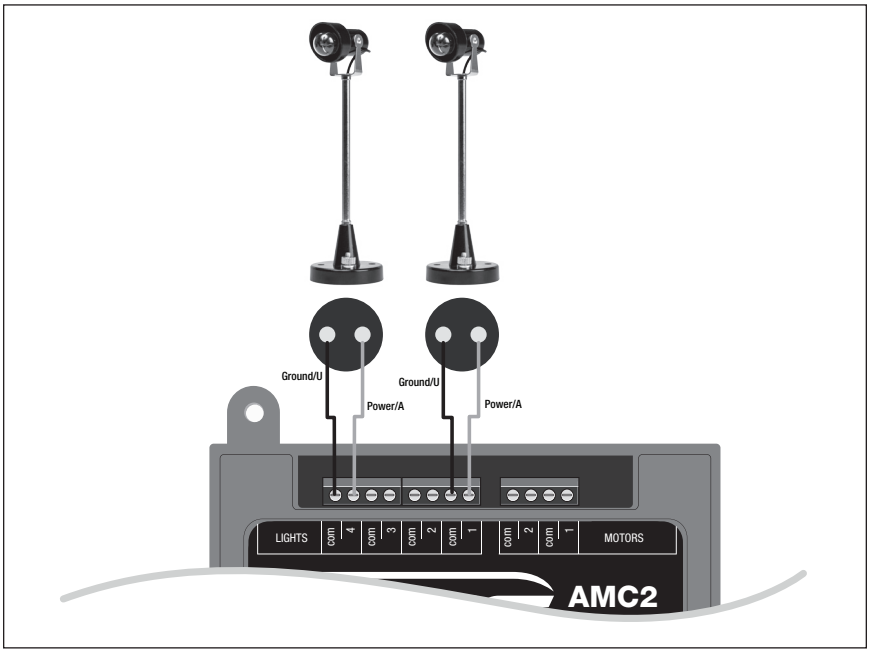

Figure 16. Incandescent light wiring example.

To operate the incandescent lights:

1. Press ACC on the CAB remote controller.
2. Enter the TMCC ID associated with the ASC2.
3. Press AUX1.
4. Press 3 for light 1, 6 for light 4.
5. Rotate the throttle clockwise to brighten the lights, counterclockwise to dim.

Appendix

Operation of LEDs

On power up, the Red LED on your AMC2 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.

Specifications of the LCS AMC2

Mechanical

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

Electrical

- Input PDI supply current: 50 mA

Accessory Power Input

- Input voltage: 18 VAC max

Accessory Power Output

- Motor outputs: 1.7A max per channel (AC or DC)
- Incandescent lamp outputs: 0.6A AC max per channel

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 an 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.

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.

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 _____

6301 Performance Dr., CONCORD, NC 28027
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