THERMO KING PRECEDENT SR-4

SensorLINK 200x Installation

Single- and Multi-Temperature Units



SAFETY

Work Safely Before You Begin

> **WARNING — Unexpected Starting and Hazardous Voltage**
> Refrigeration units can start automatically or remotely. Some units can be started remotely even when switched off. Moving parts and electrical power can cause serious injury or death. High voltage can be present while a unit is running in diesel mode or connected to electric standby.

- **Turn the unit off and disconnect the battery.** Follow the unit manufacturer's service instructions before opening equipment, unplugging connectors, or working on wiring.
- **Disconnect electric standby power if equipped.** Turn off the external power source before handling the standby cord, then disconnect the cord.
- **Isolate and verify all hazardous energy.** Follow the facility's energy-control and lockout/tagout procedures, including stored energy. A qualified person must verify isolation before work begins.
- **Protect yourself.** Wear safety glasses and the appropriate protective equipment. Keep hands, clothing and tools clear of fans, belts and hot surfaces.
- **Check before drilling.** Do not drill into the refrigeration unit unless directed by the unit manufacturer. Verify the area behind any trailer mounting surface is clear.

When Power Is Needed for Testing or Setup: Follow the unit and facility procedures for safely restoring power. Keep people clear of moving parts. Only qualified personnel should perform live electrical checks with appropriately rated equipment and protective gear. Isolate power again before further work on wiring or connections.

BEFORE YOU START

Choose the Correct Installation Path

This guide covers the SensorLINK 200x wireless door-switch system with Thermo King Precedent SR-4 single- and multi-temperature units. Identify the unit and configuration before connecting the harness.

Single-Temperature
Harness and single-zone connections →

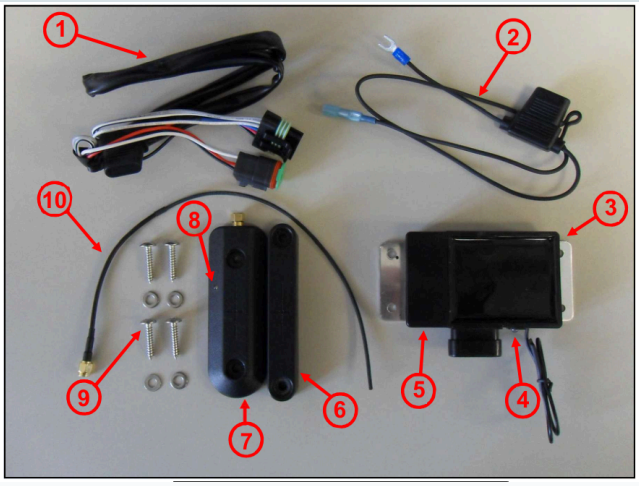
Multi-Temperature
Zone 1, Zone 2, and Zone 3 connections →

The supplied SR-4 references cover C-600, G-700, S-600, and S-700 single-temperature units, and C-600M, S-610DE, and S-610M multi-temperature units. Features can vary with control and HMI software revisions.

IDENTIFY THE PARTS

SensorLINK 200x Components

Use the numbered photograph to identify the parts before installation.



Component identification. Numbers correspond to the list.

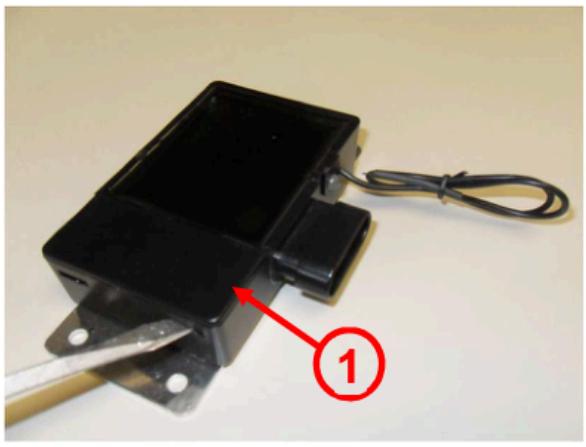
1. Wiring harness
2. In-line fuse harness
3. SensorLINK 200x module
4. Module LED
5. Module jumper cover
6. Door sensor magnet
7. Door sensor transmitter
8. Door sensor transmitter LED
9. Door sensor mounting hardware
10. Optional door sensor antenna

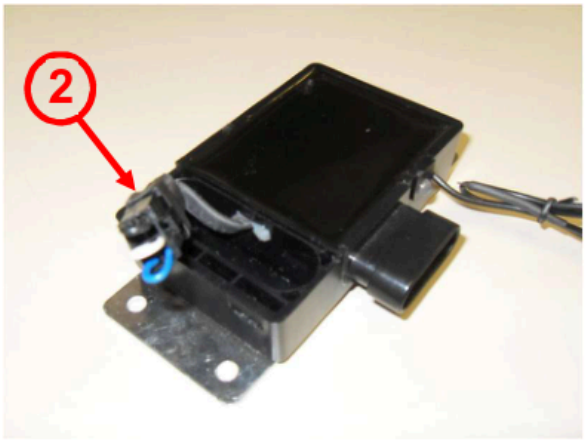
Keep the antenna inside the trailer and confirm the kit matches the equipment being installed.

MODULE PREPARATION

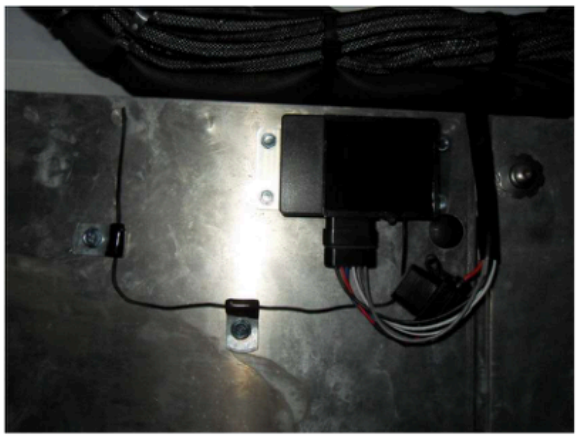
Prepare and Mount the Module

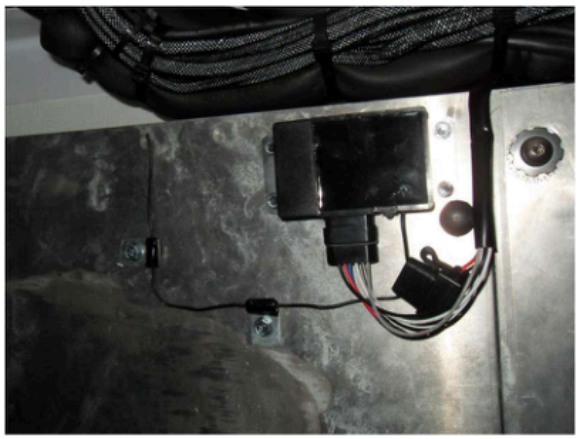
1. Remove the module jumper cover with a small screwdriver. Leave the cover off until sensor training is complete.
2. Bring the jumper-plug harness out of the compartment. **Do not remove the jumper plug yet.** Initial power-up without the jumper can reverse door-sensor operation.
3. Use customer-supplied hardware to mount the module to the front wall or expansion-valve cover. The instructions recommend mounting it about 1 inch from the ceiling when practical.
4. Route, secure, and protect the harness as needed.





1 Jumper cover. **2** Jumper-plug harness.





Module mounting examples.

> **Output Configuration**
> The standard module output is +12 VDC and will not operate a relay as described in the installation instructions. If negative output is required, follow the **optional negative-output procedure** before training. The 200x instructions state that the module does not support a fuel sensor.

Identify the door-switch circuits and the required output configuration before modifying wiring. Keep the SensorLINK jumper installed for the initial power-up.

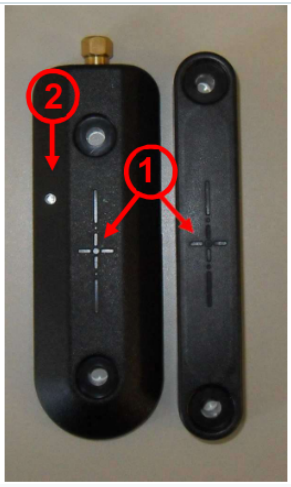
DOOR SENSOR AND MAGNET

Install and Align the Sensor

1. Mount the transmitter **inside the trailer or truck body** and mount the magnet on the door. Mount the sensor as high as practical.
2. Align the crosshair marks and set the gap between the transmitter and magnet to **1/4 inch**.
3. Where possible, position the transmitter so its LED is visible. The optional antenna can be used with either door type; secure it to the trailer body.

> **Mounting Material**

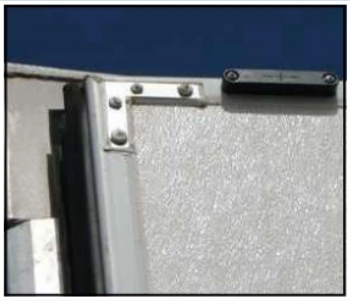
> Mounting brackets are available for standard applications. Do not place metal between the transmitter and magnet. If a bracket must be fabricated, use a non-ferrous material such as aluminum or plastic.



1 Crosshair alignment marks. **2** Transmitter LED.



Swing-door mounting example.



Swing-door magnet mounting example.



Roll-up-door mounting example.

Check that the transmitter, magnet, and antenna remain secure and clear of moving door hardware throughout the door's travel. If a transmitter needs replacement, see **Replace a door sensor** in the diagnostic guide.

OPTIONAL CONFIGURATION

Configure 12 VDC Negative Output

Use this procedure only when the installation requires negative output, such as the relay application described in the SensorLINK instructions. Complete it **before training the module**.

1. Cut the white wire on the SensorLINK jumper plug.
2. Cut the red/black wire of the wiring harness near the module plug. Cover the cut end of the red/black wire that continues from the plug to the harness, preferably with heat-shrink tubing.

With this configuration, the white, white/black, and gray outputs operate as negative outputs.

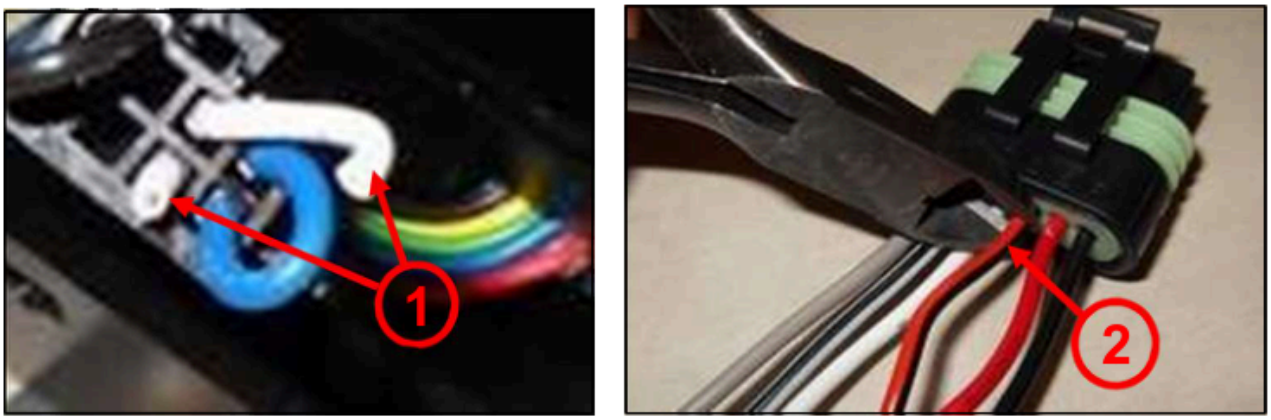


Photo callouts: **1** white jumper-plug wire; **2** red/black harness wire near the module plug.

SINGLE-TEMPERATURE

Connect the Single-Temp Harness

1. Locate the unit door-sensor plug at the evaporator and identify the DS wire in the unit harness connector.
2. Remove the protective cover from the unit harness connector.
3. Connect the SensorLINK harness plug, matching the wiring shown below. Then check the **power circuit**.

SensorLINK Wire	Unit Circuit
White	DS
Black	CH
Red	DSP

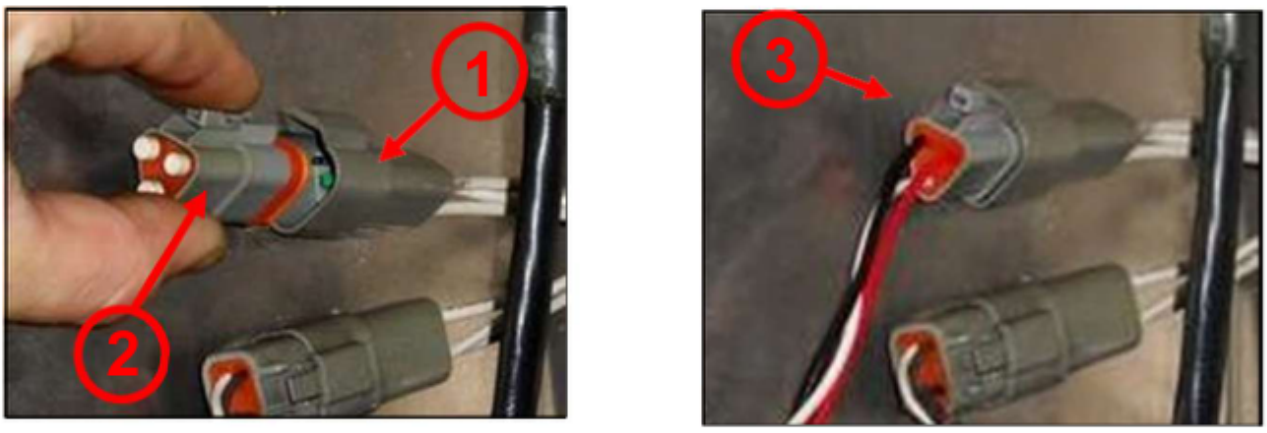


Photo callouts: **1** unit door-sensor connector; **2** protective cover; **3** SensorLINK harness plug connected.

Earlier SensorLINK Precedent instructions identify the unit circuits as **DS-02**, **CHDS-02**, and **DSP-02**. Verify the connector and actual wire markings for the unit being serviced.

MULTI-TEMPERATURE

Connect the Multi-Temp Harness

1. Locate the unit door-sensor plugs at the evaporator. Identify the DS wires and remove the protective connector covers.
2. For Zone 2, if required, install a customer-supplied Deutsch socket terminal on the white/black wire. Insert it into the protective cover aligned with the unit's DS2 wire.
3. For Zone 3, if required, install a customer-supplied Deutsch socket terminal on the gray wire. Insert it into the protective cover aligned with the unit's DS3 wire.
4. Install the Zone 1 harness plug: white to DS, black to CH, and red to DSP. Connect each required additional zone to its corresponding unit harness connector.
5. Check the **power circuit**.

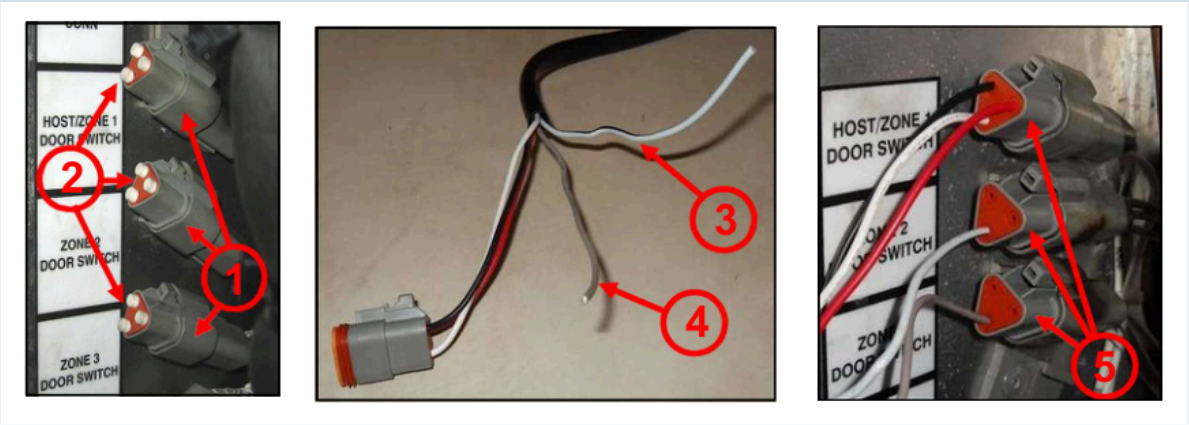


Photo callouts: **1** unit door-sensor connectors; **2** protective covers; **3** Zone 2 white/black wire; **4** Zone 3 gray wire; **5** connected zone plugs.

Earlier SensorLINK Precedent instructions identify the additional zone inputs as **DS2-02** and **DS3-02**. Verify the connector and actual wire markings for the unit being serviced.

POWER CIRCUIT

Check and Connect Module Power

Before Restoring Power: Follow the safety instructions above and keep people clear of moving parts. Isolate power again before working on wiring or connections.

With the SensorLINK jumper still installed, reconnect the unit battery and check whether the DSP door-sensor power wire has constant, unswitched battery power. If it does, verify the module LED blinks green while the unit is off, then proceed to **controller settings**.

> **If the Circuit Is Switched**
> Disconnect the battery before making wiring changes. The SensorLINK instructions direct the installer to provide constant power using the in-line fuse harness.

1. Locate the DSP door-sensor power wire in the unit control box and cut it.
2. Insulate the end coming from the original power source, preferably using heat-shrink tubing.
3. Crimp the in-line fuse harness to the DSP wire that runs from the control box to the evaporator. Heat the butt connector's shrink tubing to seal it.
4. Connect the fuse harness spade connector to the 12 VDC battery-power **2 circuit** at the unit circuit board.

5. Reconnect power and verify that the module LED flashes green while the unit is off.

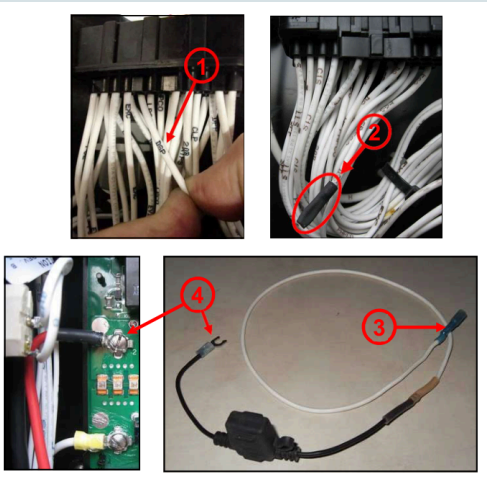


Photo callouts: **1** DSP power wire; **2** insulated power-source end; **3** fuse-harness butt connector; **4** spade connector and 12 VDC 2-circuit connection.

SR-4 CONTROLLER SETUP

Open the Guarded Access Menu

Record the unit's existing settings and use the settings specified for the fleet. The unit must be turned on but **not running** to enter Guarded Access.

1. From the standard display, press **MENU**.
2. On the first main-menu screen, press and hold **EXIT** and the unlabeled third soft key for five seconds. The Maintenance Menu opens.
3. Use the down soft key to scroll to the last Maintenance Menu item.
4. Press and hold **EXIT** and the unlabeled fourth soft key for five seconds. The Guarded Access Menu or a security-code prompt appears.
5. If a code is required, enter the authorized code. Select **Programmable Features**, then use the on-screen navigation to find **Door Open Forces** and the applicable timeout settings.
6. Choose the setting specified for the installation and confirm it using the controller's on-screen prompts. Exit back to the standard display.

Main Menu
Hold the first and third keys for five seconds.

EXIT	SELECT	Unlabeled	DOWN

Last Maintenance Menu Item
Hold the first and fourth keys for five seconds.

EXIT	SELECT	UP	Unlabeled

The key-position diagrams above are original illustrations of the described soft-key positions. Key labels can change with the screen and controller configuration.

When You Exit
The controller performs a warm restart when Guarded Access is exited, including when no changes were made. If a feature is controlled by OptiSet Plus, the single-temperature manual states that it may not be changeable from Guarded Access.

DOOR-OPEN RESPONSE

Choose What Happens When a Door Opens

The available choices differ between single- and multi-temperature SR-4 units. Use the fleet's approved operating requirements when selecting a response. The multi-temperature reference also lists a separate **Door Open** setting that enables or disables the function. The factory setting for Door Open Forces in the supplied references is Log Only; confirm the actual unit setting.

Setting	Single-Temp	Multi-Temp	Door-Open Response
LOG ONLY	Available	Available	Records the door event in ServiceWatch and CargoWatch while the unit continues to run.
UNIT NULL	Available	Available	Shuts down the unit for the door-open condition, subject to the configured timeout and defrost behavior.
HIGH SPEED LOCKOUT	Available	N/A	Locks out high speed so the single-temperature unit runs in low speed.
ZONE NULL	N/A	Available	Shuts down the affected zone; the unit can continue operating for another zone that calls for heating or cooling.

Door-switch state changes are recognized after approximately **four seconds**. In multi-temperature Zone Null, if all zone door-switch inputs are open, the unit is forced to null. If the affected zone is defrosting, that defrost completes before Zone Null shuts it down. For Unit Null, an active defrost cycle completes before the unit shuts down; on a multi-temperature unit, this applies when any zone is defrosting.

Screen options can vary by software revision and configuration.

TIMEOUT AND ALARMS

Door-Open Timeout and Alarm 108

Alarm 108 identifies a door-open timeout. The supplied SR-4 references describe a configurable **Door Open Timeout** of 1 to 4 hours in 10-minute increments, or a disabled/off setting, where the feature is available.

A Timeout Can Change Operation While the Door Is Open
With Unit Null or Zone Null, an expired timeout can allow the unit or affected zone to run again even if the door remains open. With single-temperature High Speed Lockout, an expired timeout returns the unit to normal operation and permits high speed when needed. Confirm the fleet's required settings before changing this feature.

The single-temperature reference lists the timeout for Unit Null and High Speed Lockout; its factory setting is Disabled. The multi-temperature reference lists it for Unit Null and Zone Null; its factory setting is Off. With the timeout disabled or off, the references say a unit or zone in null remains there until the door closes. Confirm the actual setting on the unit.

The **Door Timeout Alarm** setting controls whether an expired timeout creates Alarm 108 where that setting is available. The feature tables list it for Unit Null: Enabled allows the alarm; Disabled prevents it. The diagnostic sections discuss additional modes, so check the options and behavior on the installed controller.

If Alarm 108 occurs, check the door and switch condition and review the unit's recorded information and configured timeout before deciding what needs attention. The diagnostic references describe a four-second door-switch recognition delay.

For more alarms, visit **Thermo King Alarm Codes**.

TRAINING

Train the Module to the Door Sensors

> **Start with Every Door Closed**
> Training with a door open can reverse the reported door position. Do not operate or train other door sensors within range while training this module.

1. Verify that all doors are closed.
2. Remove the SensorLINK jumper plug for ten seconds. The module LED continues blinking green.
3. Replace the jumper plug. A solid green module LED indicates training mode, which lasts approximately one minute.
4. Open Door 1. The module LED alternates one red blink and one green blink to indicate Door 1 has been trained.
5. Close Door 1. The LED returns to solid green while training mode remains active. Repeat the open-and-close sequence for each additional sensor, one at a time.
6. When no more sensors need training, wait for the LED to blink green, indicating that training mode has ended.
7. Open and close each door to verify its sensor response, then reinstall the jumper cover. When more than one door is open, the installation instructions say the blink pattern indicates those doors respectively.

Sensor	Open-Door Blink Pattern	Zone Output	Wire
Door 1	1 red ●	Zone 1	White
Door 2	2 red ●●	Zone 2	White/black
Door 3	3 red ●●●	Zone 3	Gray
Door 4	4 red ●●●●	Zone 3	Gray

The SensorLINK 200x supports up to four door sensors. Doors 3 and 4 share the Zone 3 output.

FINAL VERIFICATION

Check the Completed Installation

- The module, sensor, magnet, antenna, and wiring are secure and protected.
- The sensor and magnet are aligned with the specified 1/4-inch gap; no metal is between them.
- The jumper cover is reinstalled after training.
- Each trained door produces the expected module LED pattern when opened and returns to the closed-door indication when closed.
- The SR-4 door-open response and any timeout settings match the fleet's instructions.
- Each applicable unit or zone responds as expected during the final check.

If the result is unexpected, inspect the installation and configuration before changing other controller settings.

Troubleshooting Common Symptoms

Start with the magnet alignment, 1/4-inch gap, antenna, wiring, connectors, power and fuse condition. Check all trained doors before assuming the signal belongs to one sensor.

- **No module LED:** Check the module's power and ground, wiring and fuses. A qualified technician can verify battery voltage at the module's red power and black ground wires.
- **Module stays blinking green when a door opens:** Check the magnet, alignment and antenna; observe the door transmitter LED and retrain the sensor if needed.
- **Module keeps blinking red with doors closed:** Confirm all trained doors are closed, then check the relevant magnet, alignment, antenna and transmitter; retrain if needed.
- **Transmitter LED is slow or dark:** The diagnostic guide identifies a slow flash as a weak sensor battery and no LED activity as a depleted battery. Check the transmitter and replace the door switch as needed.
- **Controller door indication is backwards:** If the module also shows red for closed and green for open, retrain with every door closed before entering training. If the module indicates doors correctly but the controller does not, inspect the trainer jumper, harness, output configuration and unit-side input.
- **Module stays solid green:** Solid green is normal during the approximately one-minute training period. If it remains solid or repeatedly returns to training, inspect the trainer plug for damaged wiring, corrosion or displaced pins.

For a fault that remains after these checks, follow the unit and SensorLINK diagnostic procedures before replacing parts.

RELATED RESOURCES

SensorLINK Guides and Support

Choose a guide for your equipment or the service you need.

SERVICE ↗
Diagnostics & Troubleshooting
Check symptoms, lights, wiring and controller response.

SERVICE ↗
Door Sensor & Module Replacement
Replace a door sensor or receiver and retrain every door.

INSTALLATION ↗
Carrier Installation
Single- and multi-temperature installation.

WARRANTY · PDF ↗
Warranty Claim Form
Claim form and limited warranty terms.

Need help? **Contact Transport Wireless Technologies**.

REGULATORY INFORMATION

FCC Notice

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.
2. This device must accept any interference received, including interference that may cause undesired operation.

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