Global Sensor Systems Troubleshooting Guide

A quick, step-by-step playbook to diagnose and fix control box, sensor, wiring, and brake issues, organized by problem with clear actions.

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Read this first (applies to every issue)

- Truck in **Park**, key **OFF** before touching wiring.
- **Reverse test:** key **ON**, shift to Reverse with foot on brake (wheels chocked).
- Visually confirm **all sensors power up** (LEDs) and have a clear view.
- Check basic **power/ground** at the junction box and solenoid.
- When you open up the junction box, **re-seal it** properly after.

Top Issues During Installation

1) Brakes do not apply when shifting into Reverse

Symptoms: Put in Reverse → no brake activation.

Do this:

1. **Confirm sensors are seeing objects**
    a. Put an object in front of each sensor. Make sure each sensor's LED light turns on to indicate detection (as shown in figure 1).

Figure 1: LED lighting in the sensor.

2. **Check power at the braking solenoid**
    a. With the truck in Reverse, the solenoid valve should receive 12V.

3. **Verify ignition (trigger) wire and ground**
    a. The **red ignition wire** should deliver 12V to the solenoid when conditions are met.
    b. Make sure the **ground is solid** (clean metal, tight, no paint/rust).

Notes: If there's **no power** at the solenoid, trace back from the solenoid → junction box → ignition wire/ground.

2) Sensors trigger too early or too late

Symptoms: System stops the truck at the wrong distance.

Do this:

1. **Match sensor positions/settings**
    a. In the mounting box, ensure all sensors are in the **same hole position (1–6)** as per the installation manual.
2. **Set the correct detection range**
    a. Adjust all sensors to the **specified range** for this vehicle as per the installation manual specifications.
3. **Inspect lenses**
    a. Make sure each sensor lens is **clean and undamaged** (no cracks, scratches, heavy grime).

Notes: Mixed hole positions or mixed ranges = inconsistent stop distances. Keep in mind high vis and large white objects (garage doors) will reflect light better and from greater distances this is normal.

3) No power at the junction box (but everything else looks right)

Symptoms: Junction box shows no power.

Do this:

1. **Check the in-cab harness connection**
    a. Verify the harness is plugged into the correct points and fully seated.
2. **Walk the harness end-to-end**
    a. Look for **cuts, pinches, rub-throughs**, or crushed sections, especially at pass-throughs and tie-downs.
3. **Open and inspect the junction box**
    a. Look for **corrosion or moisture**. Dry/clean if needed and **re-seal** the cover properly.

Notes: Damaged harness insulation or a bad seal is a common culprit.

Top Issues After Installation

1) Brakes apply immediately when shifting into Reverse (no obstacle behind the truck)

Note: Reflective or bright surfaces can trigger sensors farther away. Remove reflective tape, pylons, and safety vests behind the truck.

Symptoms: As soon as Reverse is selected, brakes activate with no object behind.

Do this:

1. **Verify ignition (trigger) wire and ground**
    a. The trigger circuit should only be energized **as designed**; ensure the ground is good and not causing a false trigger.
2. **Check gear-based power source**
    a. If the yellow trigger wire shows power in **any gear other than Reverse**, it's tied to the **wrong circuit**.
    b. **Fix the source wiring** per the installation manual.
3. **Check sensors**
    a. If any sensor light is always on you have a shorted sensor. **Note:** To verify short. Place electrical tape over the top slit of the sensor. If the light stays on the sensor is shorted.
4. **Check harness**
    a. If the harness is damaged the wires could be crossing imitating a signal from the sensors activating the brakes.

Notes: The trigger feed must match the specified Reverse/logic source in the manual.

2) Sensors stopped working after they previously worked

Symptoms: System used to work, now sensors don't trigger.

Do this:

1. **Inspect sensor leads to the junction box**
    a. Look for **ripped, cut, or pulled** wires/connectors.
2. **Open the junction box**

    a. Check for **corrosion/condensation**. Dry, clean, and re-seal. Repair any damaged terminals.
3. **Independently identify each sensors functionality.**
    a. If some sensors work and others don't it is isolated to the individual sensors or bad connections in junction box.
    b. If all Sensors are not working it is either junction box or harness issue.

Notes: Vibration and washdowns can loosen or let moisture in if not tightened/sealed correctly.

3) Improper Brake Activation

Symptoms: Brakes activate in Neutral/Drive/etc.

Do this:

1. **Re-check the in-cab harness install**
    a. All **grounds** must be on clean metal, tight, and to the **correct grounding point**.
2. **Inspect the entire harness for shorts**
    a. Look for **rub-through** or spots where the harness could be **accidentally grounding**, causing a false brake command.
3. **Make sure your reverse lead is not connected to any accessory devices.**
    a. A common mistake is using the **reverse camera as a reverse lead**. This has seen back feeds causing braking events outside of reverse gear. **Find a dedicated reverse lead.**

Quick Reference (what wire does what)

- **Red ignition/trigger wire:** Supplies 12V to the **braking solenoid** when the system commands it.
- **Ground:** Must be clean, tight, and consistent. A weak ground = weird, random behavior.
- **Yellow Reverse lead:** Opens the ignition at the control box to go down harness to power the system.

Pro tips

- Use dielectric grease on connectors and **always** re-seal junction boxes after inspection.
- If behavior is inconsistent, test **one sensor/cable at a time** to isolate the fault.
- Use an alignment tool on every install as the tailgate height and condition varies from truck to truck. Having the same measurement of alignment will ensure consistency across all your trucks.

Control Box Lights — What They Mean

A. Truck OFF or not in Reverse

Control box should look like this:

B. Truck in Reverse, clear path

No object within 5.5 ft. Control box shows this:

C. Reverse with Auto Brake OFF

Driver pressed the "Auto Brake OFF" button. The truck **will not** stop automatically. Intermittent beeping sounds.

D. Truck in Reverse & object detected.

One or more sensors see an object at 5.5 ft (or farther if reflective material). Brakes apply automatically. Solid beep. Truck cannot back up further.

E. Truck in Reverse, Auto Brake OFF and object detected

Sensors see an object at 5.5 ft (or farther if reflective). The “Auto Brake OFF” button was pressed. Brakes do not apply automatically. Solid beep.

F. Fault light / breaker trip

Press the **Fail/Reset** breaker on the back of the control box. These breakers protect ignition and ground. If they tripped, there was an electrical short.

- If the light turns off: the breaker needed a reset. Go to the “Quick Checks” section below.
- If the light stays on: replace the control box.

After a Breaker Reset — Quick Checks

New installations

1. Make sure **all sensors work** and their wires are intact.
2. Verify **ignition and ground** are correctly connected.
3. Confirm **brake solenoid wiring** is correct and insulated.

When the electrical fault is cleared and wiring is correct, the problem is solved.

Existing systems (repairs)

1. Verify **ignition, ground, and reverse** wires are correctly connected and undamaged.
2. Check **brake solenoid** and **sensor junction box** for loose connections, damage, or corrosion.
3. If recent work was done on the vehicle, an intermittent short may have occurred. A breaker reset often clears it.
4. Inspect the **harness** for mechanical damage or pests. Replace the harness if it cannot be repaired.

Need Help?

If none of these steps fix the issue → Contact **Global Sensor Systems Support:**

Tristan Morris-Desmarais: 416-452-3783
Cole Nephin: 519-280-1650