

DETECTOR AND LOOP PROBLEMS

Most problems are due to the cable and not the loop or detector itself.

The lead in wire or cable can be lengthened by splicing more on. It is suggested to use the same type cable or a weatherproof, shielded single pair cable. The pair **MUST** be twisted at least once every 8 inches along the cord or whatever wires extend the cable all the way to the detector. All splices should be soldered and sealed against moisture. Damage to the lead in wires is the most common reason for loop failure. Inspect any possible rub points or exposed wire/cable for damage.

Extending Cable

The maximum cord length is 200 feet. If splicing has to be done it is recommended to solder the connections and seal them from moisture. Any added wire should be #18 or #16 AWG and the 2 sensor wires need to be twisted every 8 inches minimum. It is better to have tighter twists if possible. Consider this like a communications extension. The cable should be cut so that very little extra is in the run. **If extra is left for maintenance reasons it is best to 'Zig Zag' the extra cable in an accordion type bundle. Do Not Roll The Extra Cable Into a Ring.** This may create a 2nd loop and cause the loop to become unstable and send ghost signals.

Issues with hoses dragging over the loop

Some **High Pressure Hoses** have steel braiding in them that can disrupt the field and make the loop unstable. Avoid dragging such lines over the loop surface. This problem normally shows up in entrance applications. Be aware of what the employees are doing. Some problems are found to be generated by a board employee.

Issues with sticking on after the vehicle leave the loop

It is Very rare that ANY Loop will cause this problem. Most of the time when a Loop goes bad it will Fault the detector (shows as loop being bad). Detectors can come on right away after reset with or without a vehicle in the loop are indications of a bad loop. Most of these are due to something interfering with the Detector (amplifier). If you have more than one make sure the Detectors are on different frequencies. If they are set the same they can cross talk and become unstable. Something else in the area might do the effect. Try changing the detector frequency to see if it improves.

Concrete mesh issues

Typically the wire mesh is pulled up into the concrete slab and does not cause any problems. However if the mesh is not properly pulled up into the concrete and instead is under the slab and moving due to floor vibrations it can cause false readings of the loop by the detector. If the loop tends to activate when a piece of equipment is activated this may be the issue. The only solution is to try to move the loop away from the bad spot. The loop might only have to be moved a foot away to fix the problem.

Testing and How to do a Home made (test) Loop:

If an Ohm meter is used across a loop unattached to a detector, it should read about 100ohms + or - 10% and none of the lead wires should read to the ground wire. Digital meters may just read 0.0 or no ohms. This does not mean the loop is 'bad'.

The fastest way to determine where to look if you are having a problem between the Sensor (loop) or a Detector (amplifier) is to replace the Sensor with a Home Made Loop (HML) or if available another Sensor/Detector.

To make a Home Made Loop you will just need about 30' of #14 or #16 AWG Stranded wire. Wind this up in a ring about 12" in diameter. Leave about 1' of lead cable to hook into the control box (to the amplifier). You can use tape to hold the ring together and remember to twist the lead wires going to the ring. This HML will work just like a regular loop sensor only will have limited range. The Detector should be able to use this HML to pick up a soda can or any metal at least 3" x 3" or bigger.

If this works correctly the problem is most likely with the Sensor (loop). If it does not then the problem would be in the Detector (commonly) or the Control Box (rarely). Most Detectors last at least up to 5 years. After that, they are prone to failures due to age, wear and surges. Loop Sensors normally last twice as long as the detectors. They have no moving parts or electronics in them to wear out. Most of these fail due to physical damage from impact, rubbing, or corrosion. 8 out of 10 times it is the cord itself that is damaged or worn. A properly working system should not skip on trucks/SUVs and should not activate when someone walks over it. Unless they are wearing steel toed shoes this has been known to activate a loops.

Sample of a Home Made Loop.



This was made by wrapping the wires around the outside bottom of a 5gal chemical bucket. Tapping the wires as the ring is pulled down off the bottom of the bucket will help keep the wires together. Notice that the lead wires are twisted. This is normally all that you need to test with.

Other things to consider

Assuming the system checks out but still acts up from time to time, false activation might be from high surge(s) on the supply line. Voltage spikes can cause this problem and a simple surge suppressor on the incoming 110vac line may be needed. Most of the Goodlin Systems control boxes have suppressors on the circuit board. Radio Shack sells a MOV Surge Protector (Catalog #: 276-568) that can be used to suppress line spikes and can be hard wired right to the detector base or harness. As with any electrical units, make sure they have a proper ground to the ground terminal.