

**INSTALLATION INSTRUCTIONS
FOR
SURFACE MOUNT PAD**

MODEL
GL-SM8-B

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GOODLIN SYSTEMS INC.

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INTRODUCTION

The GL-SM8-B is an inductive loop sensor that is made to take the place of a floor cut loop. It has many advantages, waterproof small size, and fast installment time, no saw cutting or drilling if required and is movable.

The cord is 50 foot long as a standard and is available in 25-foot increases. Just add the final length to the part number.

Format for ordering extra cable would be: GL-SM8-B-#

Example of a pad with a 75 foot cable: GL-SM8-B-75

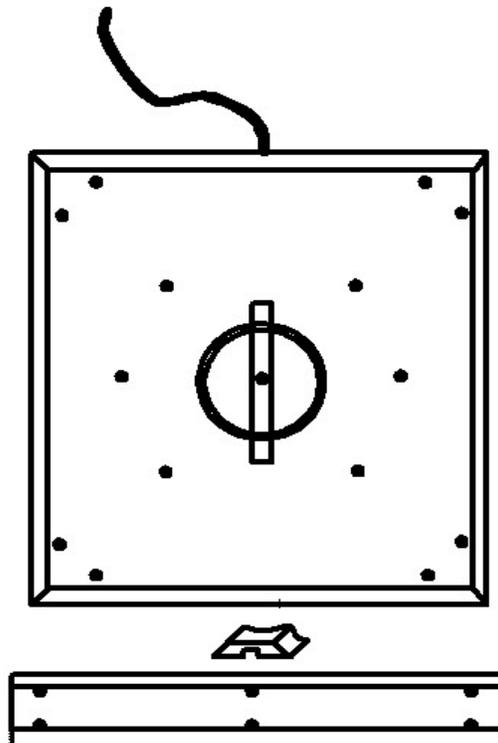
Maximum cable length that can be used is 225 feet.

The cable can be lengthened by splicing more cable 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. (See: Extending Cable)

Cable Length
50' standard

Pad Size
23 3/4 x 24 inches

Cord Cover
24" long



SPECIFICATIONS

DIMENSIONS: 24"L X 23 3/4"W X 5/8"H

PAD MATERIAL: High-density polyethylene plastic

WINDINGS: 100-ohm impedance +- 10%

SENSING RANGE: 26-30 Inches depending on detector type, sensitivity, and mounting

ESTIMATED INSTALLATION TIME: 1/2 - 1 hour

DETECTION FIELD THEORY

The detection field is like an invisible set of bubbles or lines crossing from one side of the sensor* to the other. When power is first applied, the detector remembers the way the bubble is formed. The field will only be altered or reshaped by the presence of new metal. The detector will remember and accept this new shape if it is reset; thus the sensor can be placed by metal as long as the metal stays where the detector remembers it was. Any new metal entering the field will reshape the field. It is this reshaping, or changes, that the detector will see and activate on. Also note that the closer the metal is to the sensor, the less it has to move to reshape the field. The amount of metal also has an effect on the amount of change in the field. The more metal the more change. When the metal is removed from the field the bubble returns to the original state the detector remembers, thus the detector deactivates. **IF THE FIELD DOES NOT RETURN TO ITS ORIGINAL SHAPE THE DETECTOR DOES NOT DEACTIVATE. AN UNSTABLE LOOP CAUSES THIS.** Thus is seen by the detector turning on then off frequently without metal entering the fields. Most detectors have an internal check that will phase out any detection/activation in a preset amount of time. If a car was to set over a loop for more than 15- 30 minutes, the detector will automatically reset the field and be ready for any new metal. There is an option on the detector (setting) that will cut off the automatic reset. This is called permanent presence.

MOST INSTABILITY PROBLEMS ARE CAUSED BY THE MOVEMENT IN THE FIELD BY CLOSE, LARGE METAL PIECES. THE MOST CONCENTRATED PART OF THE FIELD IS ABOUT 4-6 INCHES FROM THE SURFACE OF THE SENSOR*.

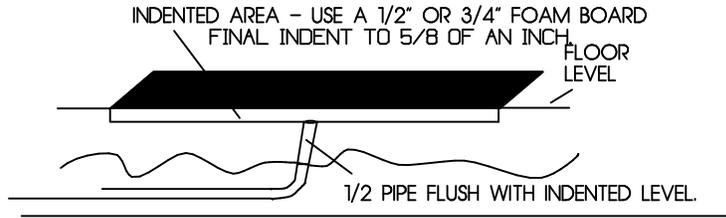
*** SENSOR IS THE LOOP OR COIL WINDINGS THAT SET UP THE FIELD**

REPLACEMENT OF UNDERGROUND LOOPS

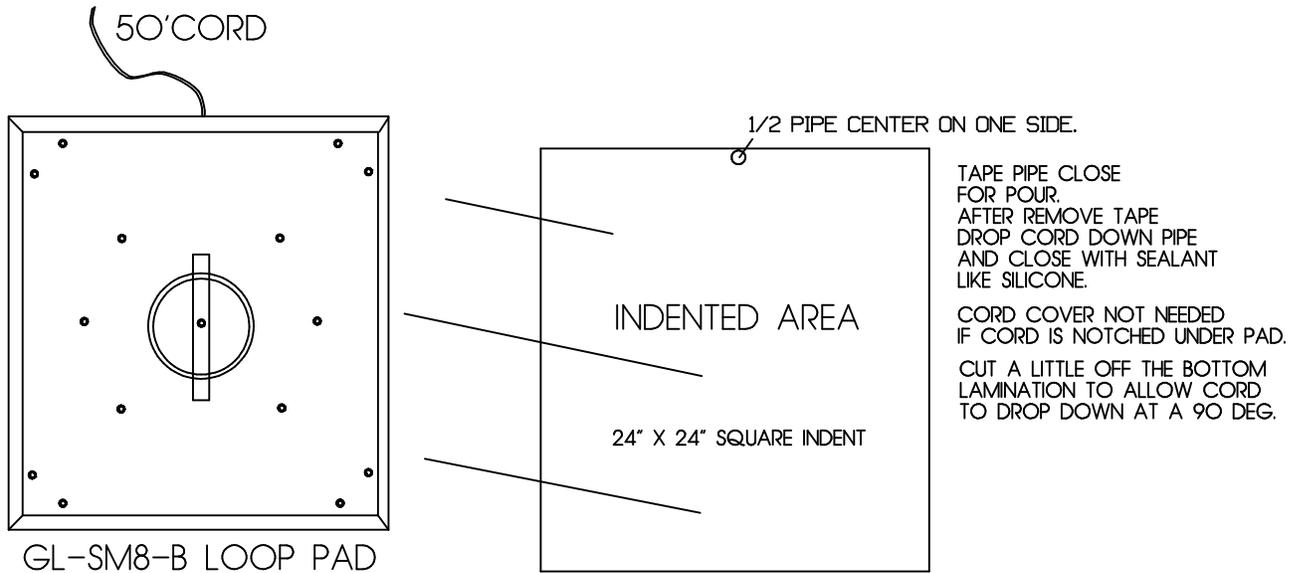
- A- Take the two (2) wires that are now going to the underground loop, cut and run them to the wires of the GL-SM8-B (PAD) cord. Best if the cord of the pad can be ran all the way to the main detector box itself.
- B- Place the PAD so center of the vehicle passes over it. Whenever possible try to place the pad so vehicles don't run over it. This helps the pad last longer. The PAD can be driven over without damage however, care must be taken that it is mounted in such a way that this will not flex the PAD. It should be well supported. It is recommended that no more than ¼ of the PAD be placed over metal (solid) and no more than ½ the PAD over steel grating. Remember, the more metal the PAD covers the less sensitivity distance it will have.
- C- Mount the PAD down flat and secure with plastic anchors or an adhesive. If the floor is uneven, such as from the concrete to the pit cover, build up under the pad with wood, plastic or concrete patch to make the PAD lie flat and have support against flexing. The pad should not flex when walked on or driven over.
- D- To test for flex, simply walk on the pad with the system on. You will not get shocked the pad carries no voltage or amps but make sure the equipment the PAD is turning on is OFF! Try to make the pad move (flex) under your foot pressure (*note: most flexing happens on the edge of the PAD) If the system activated by this test then try refastening the PAD by tightening the screws down, building up or supporting the PAD better. Once you can walk on the PAD without setting off the detector, the PAD is mounted properly.

Indented into concrete (New Installation, Optional)

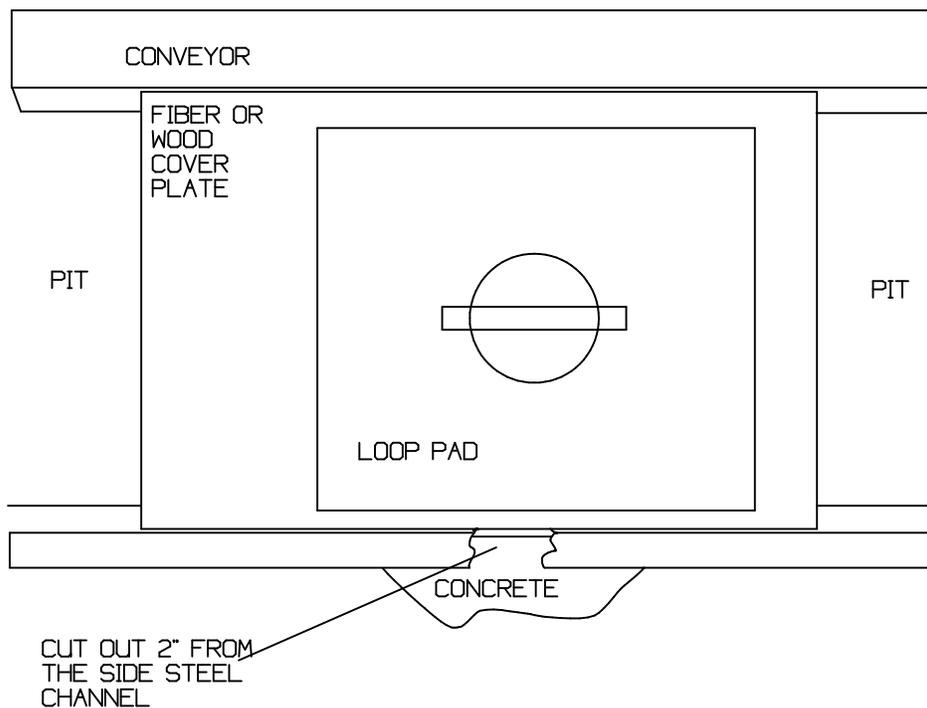
SIDE VIEW



TOP VIEW



Over A Conveyor Pit



INSTALLATION NOTES

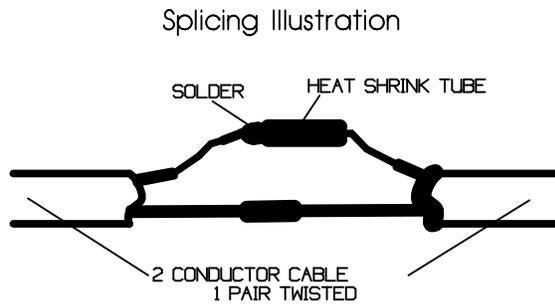
The correct installation of the GL-SM8-B is critical to the performance and life of the unit. We do not recommend mounting the pad on steel grating or, over any metal surfaces. This will cause the range of the field to be decreased; thus the pad loses its full-advertised range. We recommend replacing the steel grating that the pad would sit on with either a fiberglass grate or a piece of ¾" piece of pressure treated plywood reinforced with 2 X 4 pressure treated lumber. You do not have to replace the entire grating in the tunnel just the piece the pad will be sitting on.

The GL-SM8-B **must** be mounted as securely as possible. Make sure to use all the predrilled holes for mounting whether it is mounted on concrete or over the pit on top of plastic grating or a wood deck. If there is any flex after mounting the pad could give false activation if stepped on. We recommend that the pad be placed so the center of the vehicle passes over it, and that the tire doesn't run over the pad. This may decrease the life of the pad.

If the pad is mounted over the pit there are a couple of things that need to be done. First, we do not recommend mounting over steel grating. This effects the range of the pad. It will noticeably decrease the distance the pad will be able to create a field. Secondly, if you have steel channel running around the outside edge of the pit it is important to cut a 2" section out of it. This does not allow the pad to make the entire conveyor pit into one big loop. If the section is not cut out false activation will occur.

Extending Cable

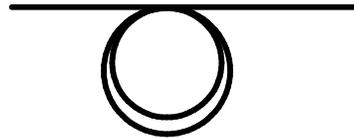
The GL-SM8-B has a standard length of 50 feet of cord. This should reach most places where the amplifier is located or out of the water area for splicing. Longer cord can be ordered with the GL-SM8-B in 25 foot lengths. The maximum cord length is 200 feet. If splicing has to be done it is recommended 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 needed 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 GL-SM8-B to become unstable and send ghost signals.



Correct:
Extra Cable 'Zig Zagged'

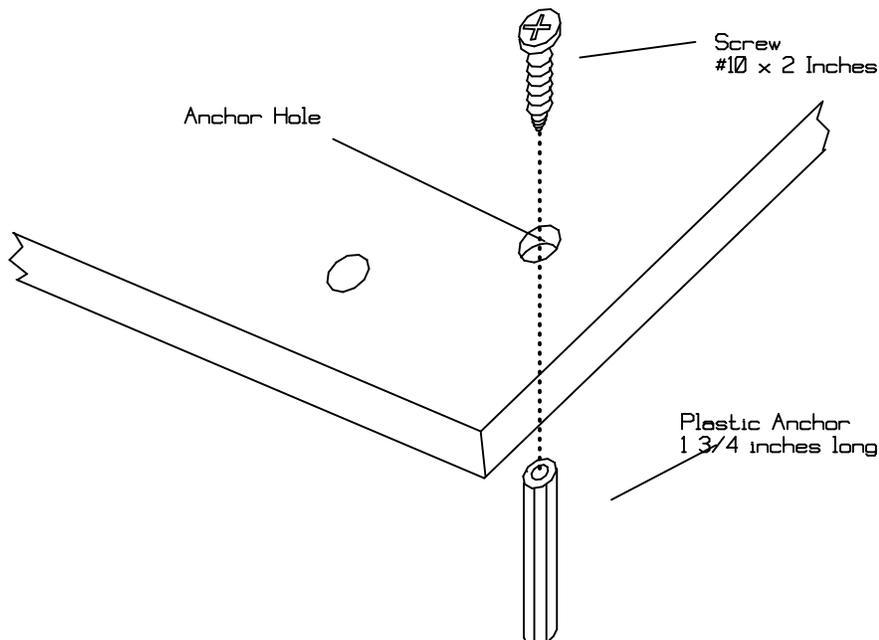


Wrong!
Extra cable in a circle



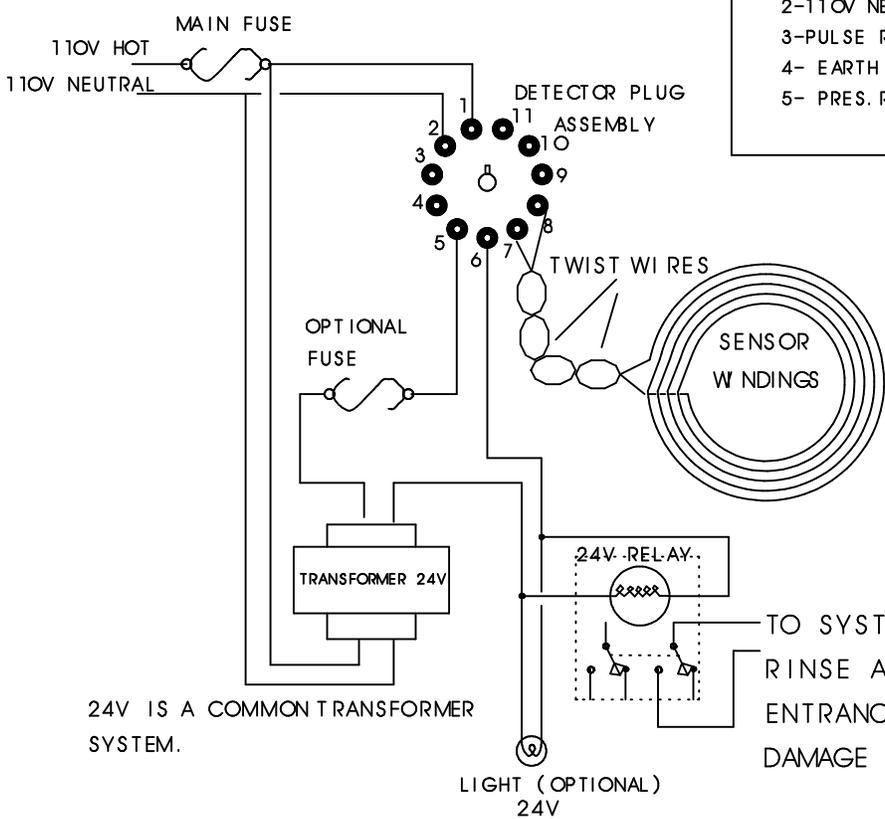
Anchoring

The GL-SM8-B can be mounted with plastic anchors (supplied) or any other typical anchor device made for the material it is being mounted on. In some cases where drilling is not allowed or wanted the GL-SM8-B can be mounted down with an adhesive. If it is to be glued down it is recommended to roughen the underside with a coarse sand paper such as a 50 or 80 grit to increase the bonding of the glue.



SAMPLE WIRING DIAGRAMS FOR A LOOP CONTROL SYSTEM

DETECTOR AND RELAY CONTROL



NOTE: DETECTOR PINOUT BASED ON GOODLIN SYSTEMS
OTHER DETECTORS MAY VARY

1-110V HOT	6- PRES RELAY NO
2-110V NEUTRAL	7- LOOP
3-PULSE RELAY NO	8- LOOP
4- EARTH GROUND	9- PULSE RELAY CMM
5- PRES. RELAY CMM	10- PRES RELAY NC
	11- NOT USED

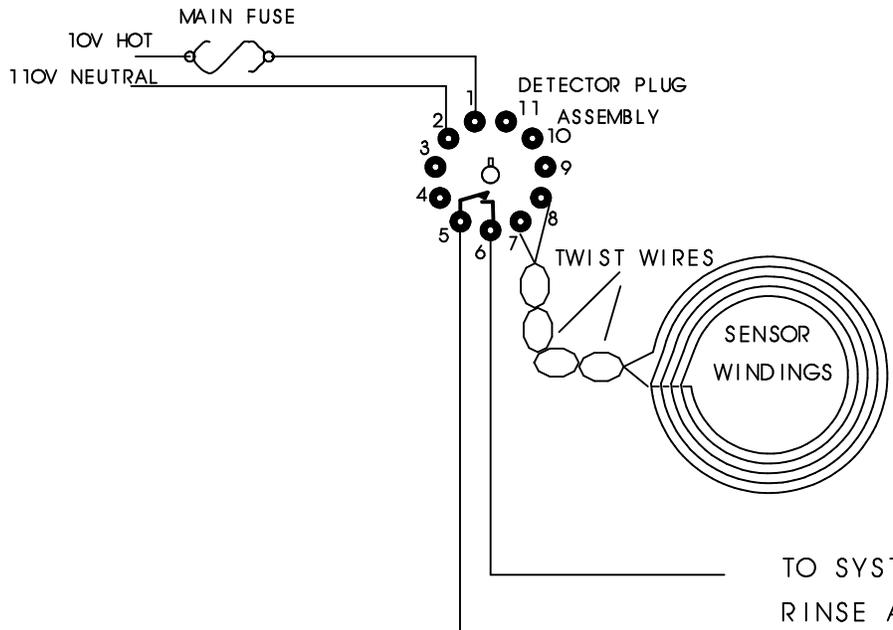
THE LOOP WIRES
(FROM THE DETECTOR)
CAN BE WIRED INTO ANY
OF THESE
LOOP WINDINGS...
UNDERGROUND LOOP
TSS STAND
TSS PAD

TO SYSTEM TO BE TURNED ON
RINSE ARCH, BLOWER, WRAPS
ENTRANCE , SOAPER, GO LIGHTS,
DAMAGE CONTROL, ETC...

24V IS A COMMON TRANSFORMER
SYSTEM.

LIGHT (OPTIONAL)
24V

DETECTOR CONTROLLING DIRECTLY



THE LOOP WIRES
(FROM THE DETECTOR)
CAN BE WIRED INTO ANY
OF THESE
LOOP WINDINGS...
UNDERGROUND LOOP
TSS STAND
TSS PAD

TO SYSTEM TO BE TURNED ON
RINSE ARCH, BLOWER, WRAPS
ENTRANCE , SOAPER, GO LIGHTS,
DAMAGE CONTROL, ETC...

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.