

## LD30-12 and LD30-24

Loop Detector is used to detect metal objects such as motor vehicles, motor bikes or trucks.

### Features

- 2 Versions available, 12VAC/DC is LD30-12 and 24VAC/DC is LD30-24
- Sensitivity selection switch for bitumen, concrete and re-enforced concrete
- Relay output which is normally wired to door or gate controller card
- Self calibrate for different temperatures

### Application

Controls automatic doors or gates when a vehicle is present.



### Description

Loop detectors in recent years have become a popular tool having innumerable applications in policing, right from surveillance operations to traffic control. Automation of gates and doors have become a popular usage of the loop detector.

The digital technology of the loop detector enables the equipment to sense a change in the inductance of the loop as soon as it detects the metal object in its path. The inductive loop which detects the object is made of insulated electrical wire (32/020; 32 Strand, 2mm diameter) and is arranged either as a square or rectangle shape (Refer to installation instructions for more shapes).

The loop consists of several loops of wire and consideration should be given to the loop sensitivity when installing on different surfaces. It is recommended that the sensitivity switch on the loop detector, to be set to High (H) for re-enforced concrete, medium (M) for concrete and low (L) for bitumen surfaces. Setting the correct sensitivity allows the loops to operate with maximum detection. When detection occurs, the detector energises a relay for the output. This energising of the relay can be configured, to three different modes, by selecting the output switch on the detector.

### Output Switch Setting

- **STATIC:** Relay energises while metal object is over the loop.
- **PULSE:** Relay energises for approximately two seconds, when metal object is over the loop.
- **DELAYED:** Relay energises while metal object is over the loop and remains energised for seven seconds after object has moved off the loop.

The digital technology enables the inductive loop to operate normally when environment temperature variations occur.

With all the above features integrated into a single semiconductor, combined with the loop detector's rigid metal case enables the detector to give accurate relay output when a metal object is over the inductive loop.

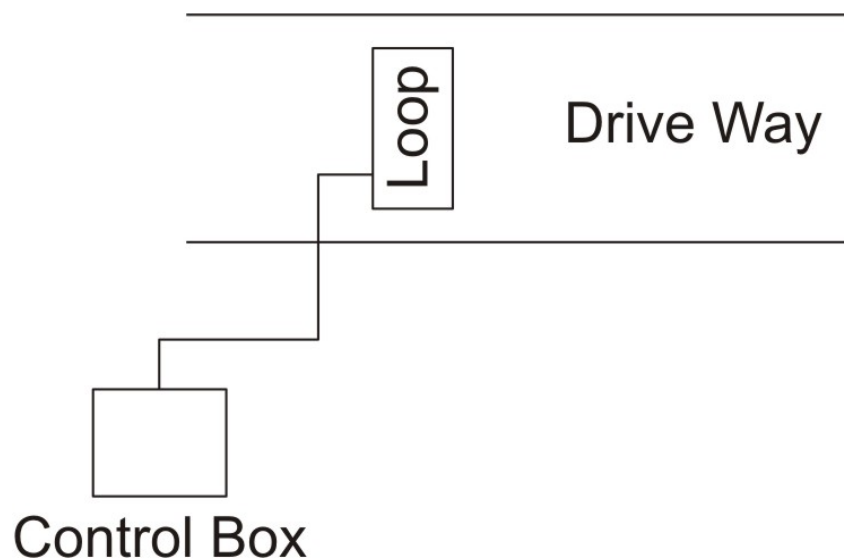
**Installation Instructions**

**Loop Detector**

A device that indicates the presents of a metal object, i.e. Car, Truck etc. within or on top of its ground loop.

**Loop**

Example: Cut a 25 mm deep channel size 2m x 0.6m (6' x 2') into ground (see drawing) with access channel leading to control box. The loop **should not** be fixed/mounted with any **metal** objects e.g. nails, since this will detune the loop. The loop should be fixed with silicone glue in a thin slot. Mounting the loop in a plastic electrical pipe will also cause the loop to vibrate when a vehicle drives over it and therefore the loop detector will not operate.



The accuracy of these dimensions does not reflect in the performance of the loop. Using flexible wire (32/020; 32 Strand, 2mm diameter) is most suitable. Lay three turns one on top of the other into pre-cut channel. The access wires from the loop to control box should be twisted. If distance between loop and control box is more than 10m, shielded wire should be used. Cover and seal wire with sealant (flexible or other).

**Control Box**

When the control box is installed within 10 metres of the loop, normal wires can be used to connect the control box to the loop. More than 10 metres requires the use of a 2 core shielded cable. Do not exceed 30 metres distance between control box and loop.

For interference free operation every loop detector should have its own 24V transformer and an earth connected to terminal block marked with.



**Signal Out**

Relay contact

- CO = Common
- NC = Normally closed
- NO = Normally open

Contact will close when metal object is on top of loop. This condition is held for as long as a car is inside loop (if switched to STATIC output).

**To set up follow these steps:**

Step 1: Connect twisted wires (Your Loop) to terminal block labeled loop on the control box.

Step 2: Switch on 24V.

Step 3: Set "SENS" sensitivity switch to:

LOW (L) = Bitumen

MED (M) = Concrete

HIGH (H) = Re-enforced concrete

Step 4: Set "OUTPUT" switch to either STATIC or PULSE or DELAYED.

- STATIC output = detect led is on as long as car is inside loop.
- PULSE output = detect led is on for approx. two seconds.
- DELAYED output = detect led remains on for seven seconds after car has moved off loop.

Step 5: Press "RESET" push button momentarily. Loop detector is now in operation.

Change "FREQUENCY" switch only if two loop detectors (in close proximity) interfere with each other.

Below are some recommended loop shapes and sizes.



All Loops are three turns and approximately 25mm deep.

If a loop wider than 2 metres is needed, it is more effective to have two loops in parallel or wind a figure 8 loop as in the last loop above.

**Technical Data**

Supply Voltage	LD30-12 10.0 to 14.0 Volts AC/DC LD30-24 22.0 to 28.0 Volts AC/DC
Supply Current	30mA (1 Watt)
Operating frequency	80 to 120 KHz
Oscillation System	Inductive
Operating Temperature Range	0 - 40°C
Frequency Response	Less than 10Hz (Can detect a motor bike)
Loop	Use flexible building wire (Refer to installation instructions for different loop shapes).
Output	Change over relay output, rated at 1 Amp at 28VDC or 0.5 Amps at 120VDC resistive load.
Output Relay Contact	Common (C), Normally Closed (NC), Normally Opened (NO)
Connections	LOOP and EARTH: 3-way screw type terminal block. SUPPLY and RELAY OUTPUT: 5-way screw type terminal block.
Dimension	160 x 100 x 30 mm
Weight	170g
Approval	Australian EMC

**Elsema Pty Ltd**

3/10 Hume Rd, Smithfield

NSW 2164

Ph: 02 9609 4668

Fax: 02 9725 2663

Website: [www.elsema.com](http://www.elsema.com)

Distributed by: