

MD12-1

Metal Loop Detector

Features

- Supply 12VDC
- Adjustable sensitivity (16 levels via a trimpot)
- 2 x Relay outputs (each can be configured individually)
- Power up and loop activation LED indicator.
- Industry standard 11-way plug-in type circular connector.



Application

- Controls automatic doors or gates when a vehicle is present source.

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 has become a popular usage of the loop detector.

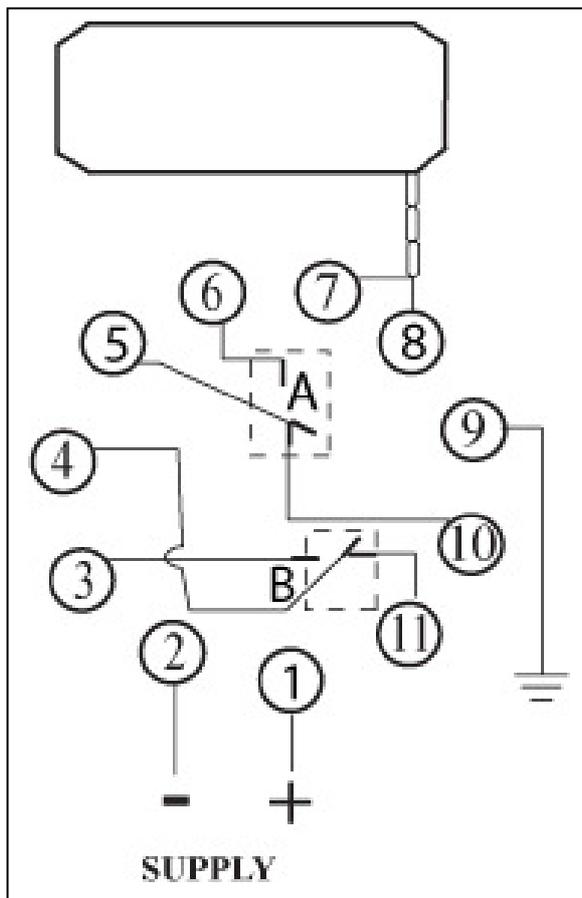
The digital technology of the loop detector enables the equipment to sense a change in the inductance of the loop as soon as it detects the metal object in its path. The inductive loop which detects the object is made of insulated electrical wire (32/020; 32 Strand, 2mm diameter) and is arranged either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

The loop consists of several loops of wire and consideration should be giving to the loop sensitivity when installing on different surfaces. Setting the correct sensitivity allows the loop to operate with maximum detection (16 levels via a trimpot). When detection occurs, the detector energises 2 relays for the output (each can be configured individually). This energising of the relay can be configured into different modes, by selecting the respective dip switch.

Technical Data

Supply voltage	12VDC
Standby Current	58 mA
Operating Current	64 mA
Outputs	2 changeover relays rated at 240VAC, 3A
Connection	Screw type terminal

Connections



Pin	Type
1	12VDC+
2	12VDC-
3	Relay B, (NO)
4	Relay B, (COM)
5	Relay A, (COM)
6	Relay A,(NO)
7	Loop
8	Loop
9	Earth
10	Relay A, (NC)
11	Relay B, (NC)

Switch 1 (Trimpot), Sensitivity Selection

Sensitivity of the loop can be adjusted by the trimpot labeled “Sensitivity”. User can select 16 different setting by turning the trimpot with 0 being the least sensitive and “F” being the most sensitive.

Switch 2 (Dipswitch Settings)

Dip switch Settings 1 and 2		Function
Special Functions		
Dip switch 1 is ON		Output has 2 seconds delay. (No relay output if the vehicle speed is over 8km/h).
Dip switch 2 is ON		Increase sensitivity to avoid unwilling relay off for leaving vehicle especially for trailer.

Dip switch Settings 3 and 4		Function
<u>Relay B Output</u>		
Dip switch 3 and 4 is OFF		When vehicle is moving out, output for relay B is 200m/s.
Dip switch 3 ON		When the vehicle has left, output for relay B is 600m/s.
Dip switch 4 ON		Relay B will be present output. No reaction on Dip switches 3.
Dip switch 3 and 4 ON		Can be used to test the Loop. If the loop is faulty, Relay B will be on and it will switch off once the fault is fixed.

Dip switch Settings		Present Mode
<u>Automatic Reset</u>		
Dip switch 5 ON		Vehicle can be permanently present (no auto-reset , unless vehicle has left or manual reset)
Dip switch 5 OFF		Normal mode (automatic reset after 10minutes present of vehicle, used to solve the mistake operation. If it is recommended).

Dip switch Setting 6, 7 and 8		Delay	Vehicle Present
Relay A Delay			
Dip switch 6,7 and 8 is OFF		0 sec	Relay A output
Dip switch 6 ON		2 sec	Relay A output
Dip switch 7 ON		5 sec	Relay A output
Dip switch 6 and 7 ON		8 sec	Relay A output
Dip switch 8 ON		10 sec	Relay A output
Dip switch 6 and 8 ON		15 sec	Relay A output
Dip switch 7 and 8 ON		20 sec	Relay A output
Dip switch 6,7 and 8 ON		30 sec	Relay A output

Dip switch Settings 9 and 10		Frequency
<u>Frequency (30 K to 100 KHz). Used to avoid the interference</u>		
Dip switch 9 and 10 OFF		High
Dip switch 9 ON		Medium-High
Dip switch 10 ON		Medium-Low
Dip switch 9 and 10 ON		Low

Setup Instructions

Power Led

RED power LED indicates “Power ON”

Detecting Led

Continuously On: Indicates vehicle detection.

Blinking slowly: Indicates loop is short circuit or the number of twists after the loop is not enough.

Blinking fast: Indicates loop is open circuit or too many twists after the loop.

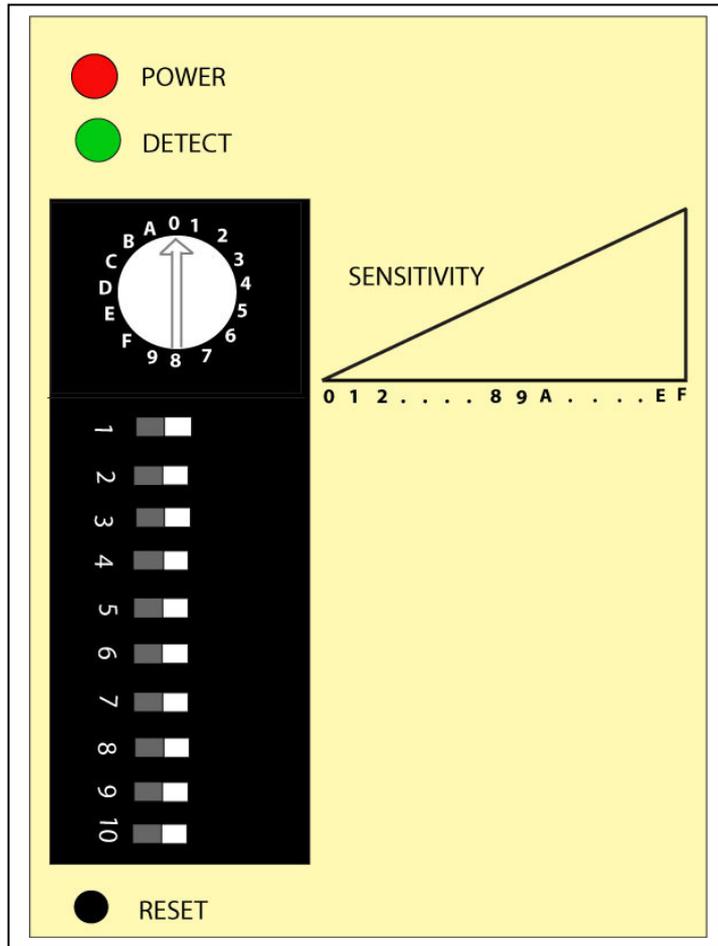
Operation Panel and switches

Power : Red Led	If it is fully lit, power is supplied.
Detect : Green Led	If it is fully lit, a vehicle is detected. If the led blinks, then the loop is faulty.

Sensitivity Selection

Low sensitivity Range	From 0 to 9, with 0 begin the lowest
High sensitivity Range	From A to F, with F begin the highest

Sensitivity Selection



* In the application, where two or more loop detectors and sensing loops have been installed, set one detector to high frequency and the other set to low frequency to minimize the effects of cross-talk between the two systems (The sensing loops and detectors should be positioned at least 2m apart).

Reset Button: Please note: The MD12-1 must be reset every time a setting change is made to the Dip switches.

LOOP

Elsema stocks pre-made loops for easy installation. Our pre-made loops are suitable for all types of installations. Either for cut-in, concrete pour or direct hot asphalt overlay.

see www.elsema.com/auto/loopdetector.htm

Loop1200 : 1.2 x 1.2 metres -- 3 metres Lead-in plus 3 metres twisted wire.

Loop1500 : 1.5 x 0.8 metres -- 3 metres Lead-in plus 3 metres twisted wire.

Loop2000 : 2.0 x 1.2 metres -- 3 metres Lead-in plus 3 metres twisted wire.

We can also make custom size loops. Please contact us for your custom loop size.

Detector position and installation

- Install the detector in a weatherproof housing.
- The detector should be as close to the sensing loop as possible.
- The detector should always be installed away from strong magnetic fields.
- Avoid running high voltage wires near the loop detectors.
- Do not install the detector on vibrating objects.
- 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.

Troubleshooting

Symptoms		Solution
If the detector is not working		Press reset
If red led indicator is not fully lit		Check for power supply
If green led indicator:	Blinks slowly	It maybe because the loop is short circuit or the no: of turns is not enough.
	Blinks faster	It maybe because the loop is open or the no: of turns is too many.
If no: of turns is not enough		Lower the frequency (if the frequency is still too high, you must add more turns).
If no: of turns is too many		Higher the frequency (if the frequency is still too low, you must remove some turns).

Manufactured by

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