

MD-99

Loop Metal Detector with Relay Output

The loop metal detector is used to detect motor vehicles in access or traffic control applications. Automation of gates and doors has become popular with the MD-99 loop detector.



Features Include:

- Frequency selection to prevent crosstalk. This allows two Metal Detectors to operate next to each other.
- Security mode with selectable timer, 2 – 8 minutes.
- Pulse or Presence setting for relay output.
- Sensitivity boost detect, used to detect a truck that is high above the ground.
- Sensitivity selection from low to high.
- Reset
- Audible beeper and LED indicating open or short circuit in the loop setup.

The features are user selectable by the 9-way dip switch. These features are shown below:

	OFF	ON
1	High Frequency	Low Frequency
2	Normal	Security
3	Presence	Pulse
4	Normal	Boost
5	Sensitivity	Sensitivity
6	Sensitivity	Sensitivity
7	Security Timer, 2 – 8 minutes	Security Timer, 2 – 8 minutes
8	Security Timer, 2 – 8 minutes	Security Timer, 2 – 8 minutes
9	Normal	Reset

Dip Switch 1

Selects a different operating frequency for the Metal Detector. Different frequency should be selected when two metal detectors are operating next to each other. This will prevent crosstalk.

Dip Switch 2

Security is a normally closed (NC) input between 0 volts and security button.

- Pressed less than 3 seconds to activate the metal detector for a selected time (dipswitch 7 and 8). This is used to allow a visitor or vehicle out.
- Pressed for more than 3 seconds to activate the relay output to open a door/gate. This is used to allow a visitor in.

Dip Switch 3

Presence keeps the relay on until the vehicle moves off the loop of the metal detector.

Pulse, relay stay on for a short period of time even if vehicle stays on the loop of the metal detector.

Dip Switch 4

Increases the loop detectors sensitivity. Used to detect trucks high of the ground.

Dip Switch 5 & 6

Sets the sensitivity of the loop detector.

Low for Bitumen,

Medium Low and Medium High for Concrete,

High for re-enforced concrete.

Sensitivity Setting		
5	6	Sensitivity
Off	Off	Low
On	Off	Med Low
Off	On	Med High
On	On	High

Dip Switch 7 & 8

Sets security timer.

Security Timer		
7	8	Time
Off	Off	2 minutes
On	Off	4 minutes
Off	On	6 minutes
On	On	8 minutes

Dip Switch 9

Will reset the electronics and audible cycle.

Audible and LED outputs

The metal detector has a red and green LED. 5 seconds after power is applied the unit will beep once and the red status led will flash. The unit will beep for the first 10 activations.

The red status LED will flash once for pulse detect mode (dipswitch 3 on) and stay on during the detection time for presence detect mode (dipswitch 3 off).

The green status LED indicates a fault. Short or open circuit in the loop will make the green led flash and on power up will cause the buzzer to sound continuously. An intermittent fault will make the led stay on.

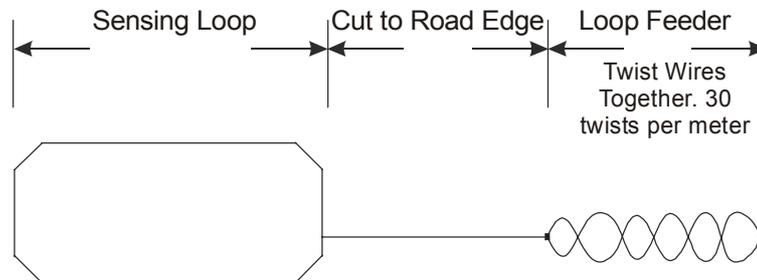
TECHNICAL DATA ON MD-99

SUPPLY VOLTAGE :	12.0 to 24 Volts DC 16.0 to 24 Volts AC
SUPPLY CURRENT :	50mA @ 24 VAC
OPERATING TEMPERATURE RANGE :	0 to 60° C
LOOP :	Use flexible 1.5 mm building wire. It is recommended to use silicon insulated wire that has no joints along its length.
LOOP CONFIGURATION :	Should have 3 to 4 turns, 1.2 X 0.6 metres (Rectangular). A 45-degree crosscut should be made at the corners of the rectangle to reduce the chance of damaging the cable. Slot width at 4 mm Slot depth at 30 mm
LOOP SETUP TIME :	5 seconds
LOOP FEEDER : (Wire from the Control Box to Loop)	The sensing loop feeder should be twisted at least 30 twists per metre and run separately from other wires and be as short a possible.
OUTPUT :	Change over relay output, rated at 1 Amp /120VAC Maximum power 60VA, 24 Watt
OUTPUT RELAY CONTACT:	Common (C), Normally Closed (NC), Normally Opened (NO)
<u>CONNECTIONS</u>	
LOOP :	2-way screw type terminal block.
SUPPLY and SECURITY BUTTON :	3-way screw type terminal block.
RELAY OUTPUT :	3-way screw type terminal block.
DIMENSION :	100 x 50 x 25 mm
WEIGHT :	80 grams

INSTALLATION INSTRUCTIONS FOR THE MD-99 METAL DETECTOR

LOOP

Cut a 4 mm wide slot. Slot to be 30 mm deep. Standard loop size is 1.2 X 0.6 metres with 3 to 4 turns. The sensing loop should be rectangular in shape with 45-degree crosscut at the corners. This reduces the chance of damaging the cable. See diagram below:



Lay 3 or 4 turns one on top of the other into pre-cut slot. The access wires from the loop to MD-99 should be twisted. If distance between loop and MD-99 is more than 50m, shielded wire should be used. Cover and seal wire with sealant (flexible or other).

If the loop feeder is more than 50 metres using normal twisted wire sensitivity will be reduced.

For interference free operation every MD-99 should have its own transformer.