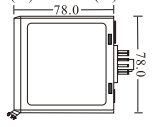


MD100 Bi-Channel Vehicle Detector

■ Warnings

- Please notice the supply voltage. Any faulty connection will cause damage to product.
- Please read this manual carefully before using.

■ Type

Appearance	Model
78mm(H)×45mm(w)×78mm(D) 	MD100 2ch

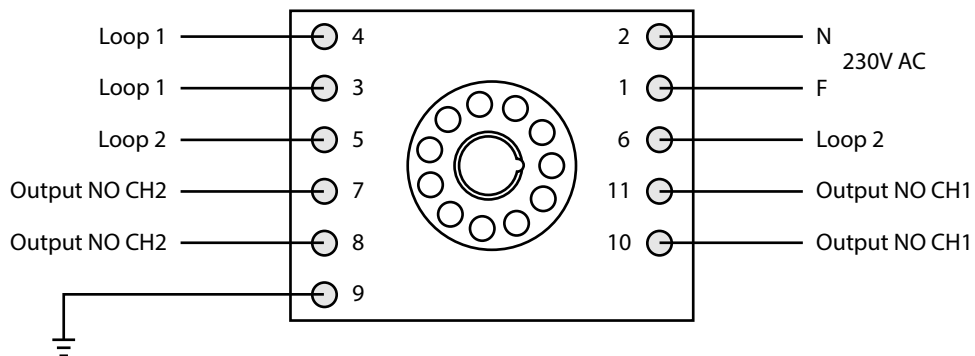


■ Electric Data

Parameter	
Power voltage	220VAC±10% 50/60Hz
Sensing range	20—1500uH
Sensitivity	4 degrees selectable
Frequency	2 degrees selectable
Output	2 output relays (5A/AC230V) CH1 presence relay Ch2 presence relay
Presence mode	Permanent presence / Limited presence
Indicator	power indicator:red LED; status indicator:green LED
Internal protection	Isolation transformer, voltage regulator tube, voltage dependent resistor,thermistance
Operating temp. range	-40℃ ~80℃

■

■ 11-pin wiring diagram





MD100 Bi-Channel Vehicle Detector

■ Settings









● Frequency adjustment

Frequency adjustment of channel 1 could be achieved by Dip-switch #1 on the front board. It depends on the geometrical shape, size as well as the number of turns of the loop.

Frequency	Dip-switch #1
Low	ON 
High	OFF 



● Sensitivity

Sensitivity adjustment of Channel 1 could be achieved by Dip-switch #2, #3 and the adjustment of Channel 2 could be performed by Dip-switch #4, #5. The factors influencing the sensitivity include: loop length, loop turns, feeder length and presence of metal reinforcer under the loop.

Sensitivity degree (low-high)	Dip-switch #2, #3, #4, #5	
	Channel 1 (Dip-switch #2, #3)	Channel 2 (Dip-switch #4, #5)
1	Dip-switch #2 : ON Dip-switch #3 : ON 	Dip-switch #4 : ON Dip-switch #5 : ON 
2	Dip-switch #2 : ON Dip-switch #3 : OFF 	Dip-switch #4 : ON Dip-switch #5 : OFF 
3	Dip-switch #2 : OFF Dip-switch #3 : ON 	Dip-switch #4 : OFF Dip-switch #5 : ON 
4	Dip-switch #2 : OFF Dip-switch #3 : OFF 	Dip-switch #4 : OFF Dip-switch #5 : OFF 

● Relay operating mode of Channel 1 and Channel 2



When vehicle enters Channel 1 or Channel 2, relay of Channel 1 or Channel 2 outputs presence signal and presence time could be set by Dip-switch #7, #8.

Relay operating mode of Channel 1 and Channel 2	Dip-switch #7, #8
Permanent presence	Dip-switch #7 : ON Dip-switch #8 : ON 
Limited presence	Dip-switch #7 : OFF Dip-switch #8 : OFF 

● Automatic Sensitivity Boost



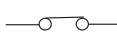

Automatic sensitivity boost causes the sensitivity level to be boosted to a maximum detection of a vehicle, irrespective of current sensitivity level and maintained at this level during the entire presence of the vehicle over the loop. When the vehicle leaves the loop and the detection is lost, the sensitivity level reverts to the pre-selected level.

MD100 Bi-Channel Vehicle Detector

ASB	Dip-switch #6
Disabled	OFF 
Enabled	ON 

■ **Output and LED indicator**

● **Relay contact mode**

Status	Channel 1 Relay	Channel 2 Relay
No vehicle	NO 	NO 
Vehicle presence	NO 	NO 

● **LED indicator**

Status	Channel 1 Green	Channel 2 Green	Red
Power-up	Channel 1 and 2 light simultaneously once indicating sensitivity indication begins.		Light
Sensitivity indication	Channel 1 and 2 light sequentially (flashing frequency=1Hz) , sensitivity=flashing times		Light
Preparation for data collection	Channel 1 and 2 light simultaneously for 2s and then extinguish.		Light
Indicator for connection fault of loop	Short circuit of loop or frequency=17KHz, indicator of corresponding channel flashes(frequency=5Hz). Operating frequency>100kHz, indicator of corresponding channel lights		Light
Beginning of detection	Extinguish		light 1s after power indicator extinguishes indicating beginning of detection
Vehicle presence in loop of Channel 1	Light	Extinguish	Light
No vehicle in both	Extinguish	Extinguish	Light
Vehicle presence in loop of Channel 2	Extinguish	Light	Light
Vehicle presence in both	Light	Light	Light

■ **Loop installation:**

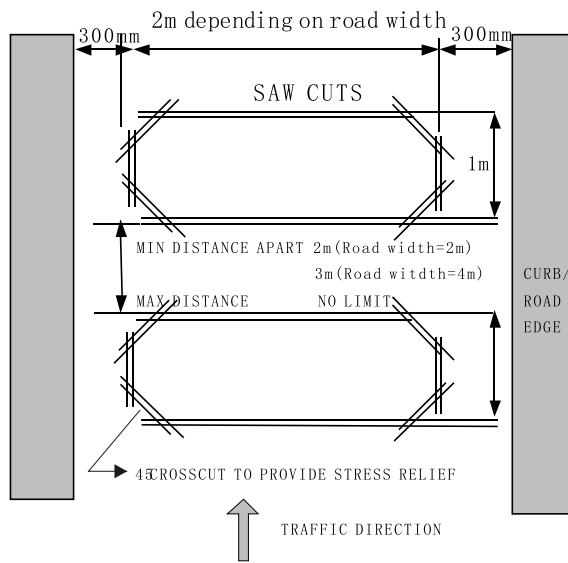
All inductive loop should be in the roadway by cutting slots with a masonry-cutting disc or similar device. A45° crosscut should be made across the loop corners to reduce the change of damage that can be caused to the loop at the right angle corners.

Nominal slotwidth: 4mm

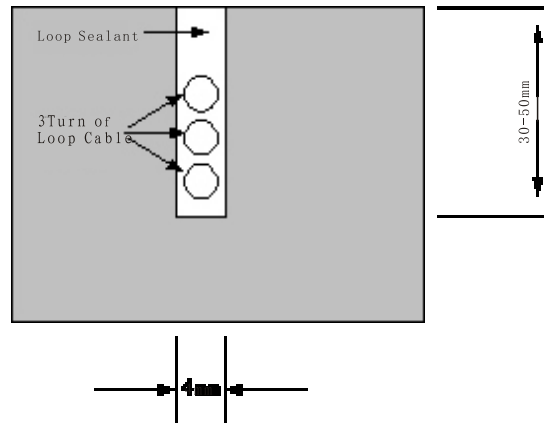
Nominal slotdepth: 30~50mm

A slot must be cut from the loop circumference at one corner of the loop, leading to the roadway edge to accommodate the feeder.

The loops are sealed using a quick-set black epoxy compound or hot bitumen mastic to blend with the roadway surface.



Road Surface



■ Installation Guide

● Crosstalk

When two loop configurations are in close proximity, the magnetic fields of one overlap and disturb the field of the other. This phenomenon, known as crosstalk, can cause false detection and detector lock up.

It could be eliminated by:

- 1) Careful choice of operating frequency with Dip-switch #1;
- 2) A minimum spacing of 2 meters between loops should be adhered to.
- 3) Careful screening of feeder cables. If they are routed together with other electric cables, the end of feeder connected to the detector must be earthed.

● Metal reinforcer

The existence of metal reinforcer such as steel below the road surface could affect the changes of the loop inductance. Hence where reinforcer exists 2 turns should be added to the normal loop.

- Feeder refers to the cable connecting loop and detector. The feeder should be intertwined at least 10-12 times per meter. It should be noticed that sensitivity decreases with increasing feeder length.

● Loop and feeder specifications

- 1) The loop and feeder should constitute a single un-joined length of insulated multi-strand copper conductor, with a minimum of 1.5 square millimeter cross sectional area.
- 2) Joints in the loop or feeder are not recommended. Where this is not possible, joints are to be soldered and terminated in a waterproof junction box.
- 3) The loop length will be determined by the width of the roadway to be monitored. In general, loops with circumference in excess of 10 meters should be installed using two turns of wire, while loops less than 10 meters circumference should have three turns or more. Loops with circumference of less than 6 meters should have four turns.