

# USER MANUAL

Part Number: MIC0302004

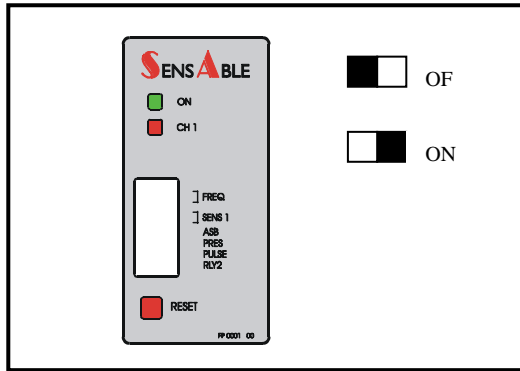
## ULD 910

October 2003  
Revision: 03

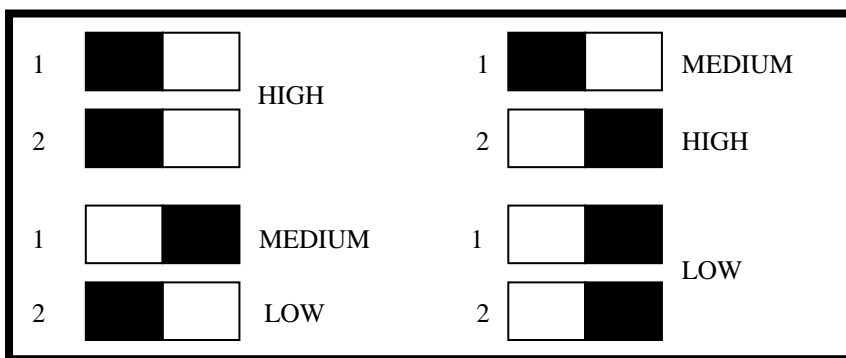
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# DETECTOR COMMISSIONING

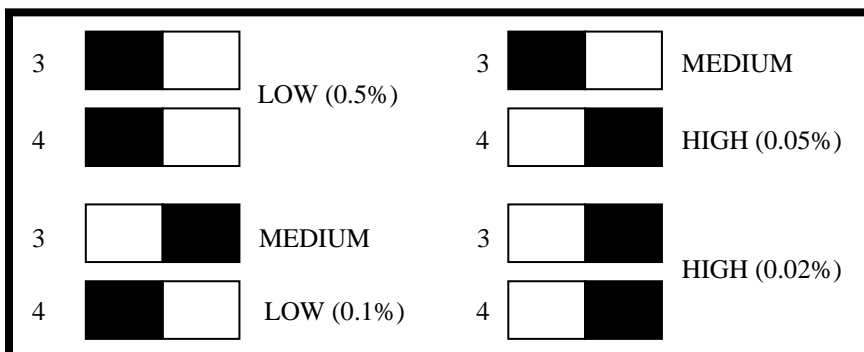


## FREQUENCY (SWITCHES 1 & 2)



Frequency setting is provided to eliminate crosstalk (interface) between adjacent detectors. Crosstalk is indicated by random outputs, chattering relays and possible detector lock-up.

## SENSITIVITY (SWITCHES 3 & 4)



Sensitivity settings have been optimised to reliably produce an output at the required change on inductance, or to ignore certain vehicle types if so required.

Typical inductance changes on a 2m x 1m (3 turns) loop:-

<b>VEHICLE</b>	<b><math>\Delta L/L</math></b>
BICYCLE	0.02 %
MOTORCYCLE	0.12 %
ARTICULATED TRUCK	0.4 %
SEDAN CAR	>1.0 %

#### AUTOMATIC SENSITIVITY BOOST (ASB) (SWITCH 5)

When ASB is selected (ON) the level of sensitivity is increased to HIGH after detection has occurred. This ensures that Detection does not drop away under high-bed vehicles.

#### PRESENCE (PRES) (SWITCH 6)

ON - PERMANENT PRESENCE  
OFF - LIMITED PRESENCE (1 hr for 3 %  $\Delta L/L$ )

#### PULSE (PULSE) (SWITCH 7)

ON - PULSE ON UNDETECT (EXIT)  
OFF - PULSE ON DETECT (ENTRY)

#### PULSE (RLY) (SWITCH 8)

ON - RELAY 2 PRESENCE  
OFF - RELAY 2 PULSE

## INDICATIONS

GREEN LED - POWER ON  
RED LED - CHANNEL OUTPUT

After initial power-up or after a re-tune, the detector automatically tunes to the inductive loop. After 0.2 seconds the **RED LED** will flash out the frequency of operation (50 kHz = 5 flashes)

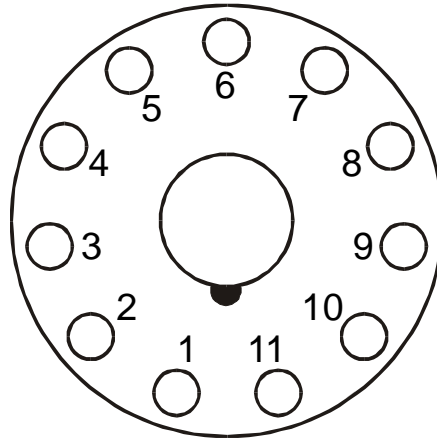
If a fault condition exists on the loop (open circuit / short circuit) the **RED LED** will **FLASH** at a fast rate. If a re-tune occurs the **RED LED** will **FLASH**, but at a slower rate.

## RESET PUSH BUTTON

The Detector must be **RESET** whenever switch settings are altered.

Only a reset will clear the above fault indication conditions, providing the loop fault has been cleared.

## PINOUTS



**\*\*NOTE:-** There are no Customer configurable settings internally.

PIN	DESCRIPTION
1	LIVE (DC+)
2	NEUTRAL (0V)
3	N / O RELAY 2
4	COMMON RELAY 2
5	N / O RELAY 1 (PRESENCE)
6	COMMON RELAY 1 (PRESENCE)
7	LOOP } TWIST THIS PAIR
8	LOOP } (20 TURNS PER METRE)
9	EARTH
10	N / C RELAY 1
11	N / C RELAY 2

# LOOP INSTALLATIONS

## CABLE SPECIFICATION (LOOP + FEEDER)

1.5mm<sup>2</sup> cross sectional area, multi-strand cable.

Insulation material – PVC or Silicone.

Current Rating – 15A.

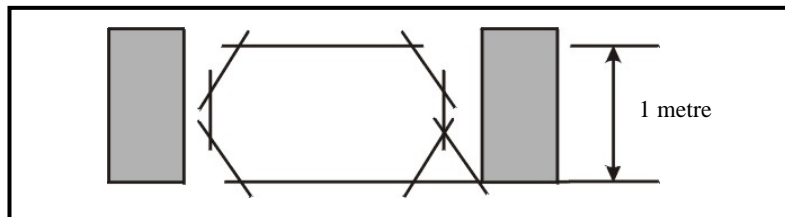
## FEEDER FOR LONG RUNS

Foil screened cable recommended (Earth at equipment end only)

Waterproof cable junction box (Pratley or similar) will be required.

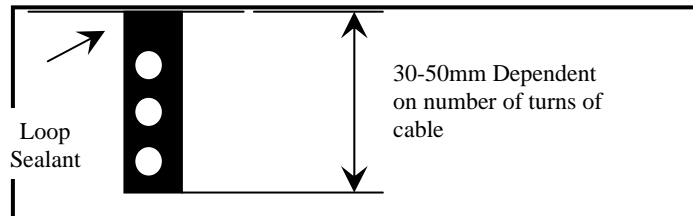
Loop feeder cables should always be twisted from the point of exiting the loop, to the termination of the cables on the equipment. Minimum of 20 twists per metre should be used.

## LOOP GEOMETRY



**\*\*NOTE:-** Avoid large loops, sensitivity will be affected.

## SLOT DEPTH



**\*\*NOTE:-** Clean & dry slots prior to inserting cable.

## DETERMINING NUMBER OF TURNS OF CABLE

PERIMETER	NO. OF TURNS
3 – 6 M	4
6 – 10 M	3
10 – 30 M	2

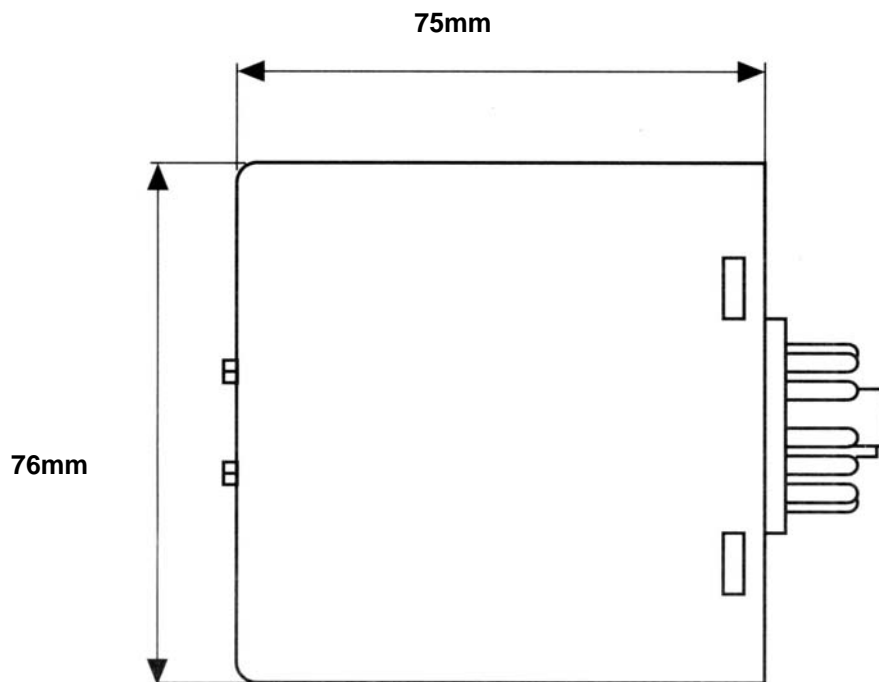
**\*\*NOTE:-** Add 2 additional turns to compensate for the effects of sub-surface re-inforcing on sensitivity.

# **ULD 910 TECHNICAL SPECIFICATIONS**

Tuning	<b>Automatic</b>
Inductive Range	<b>20 – 1500uH</b>
Sensitivity	<b>Four steps adjustable</b> <b>High 0.02% <math>\Delta</math>L/L</b> <b>Medium High 0.05% <math>\Delta</math>L/L</b> <b>Medium Low 0.1% <math>\Delta</math>L/L</b> <b>Low 0.1% <math>\Delta</math>L/L</b>
Sensitivity Boost	<b>Selectable on :</b> <b>Med High</b> <b>Med Low</b> <b>Low</b>
Frequency	<b>Four steps adjustable</b> <b>Range: 20 – 140kHz</b>
Response Time	<b>App. 100ms (Turn on / Turn off)</b>
Output Configuration	<b>2 Output relays</b> <b>Relay 1 – Presence (fail safe)</b> <b>Relay 2 – Presence / Pulse (selectable)</b>
Presence Time	<b>Selectable – Permanent or Limited</b> <b>(1hr for 3% <math>\Delta</math>L/L)</b>
Pulse Output Duration	<b>150ms</b> <b>(250 ms factory option)</b>
Pulse Timing	<b>Selectable – Permanent or limited</b>
Indications	<b>2 LEDs</b> <b>Green – Power</b> <b>Red – Output per channel</b>
Reset push buttons	<b>Flush mount on front panel</b>
Protection	<b>Loop Isolation</b> <b>Transformer/zener diode/GDT</b> <b>Power/Relays – MOV</b>



Power	ULD 911	230V AC ±15
	ULD 912	115V AC ±15
	ULD 913	12/24V AC/DC ±15
Current consumption	100 mA max	
Relay Rating	5A @ 230V DC	
Temperature range	-40°C to +80°C	
Storage Temperature	-40°C to +85°C	
Humidity	Up to 95% RH	
Dimensions	76mm x 40mm x 75mm (H x W x D)	



Connector: Single rear mount 11-pin submagnal