

USER MANUAL

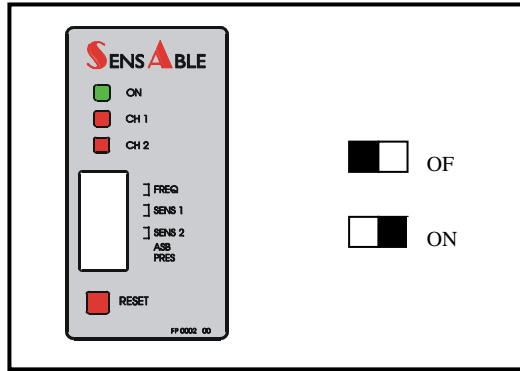
Part Number: MIC0302036

ULD 920

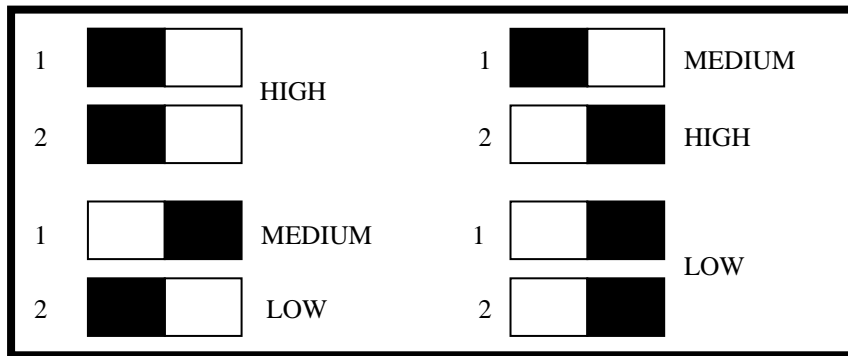
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DETECTOR COMMISSIONING



FREQUENCY (SWITCHES 1 & 2)

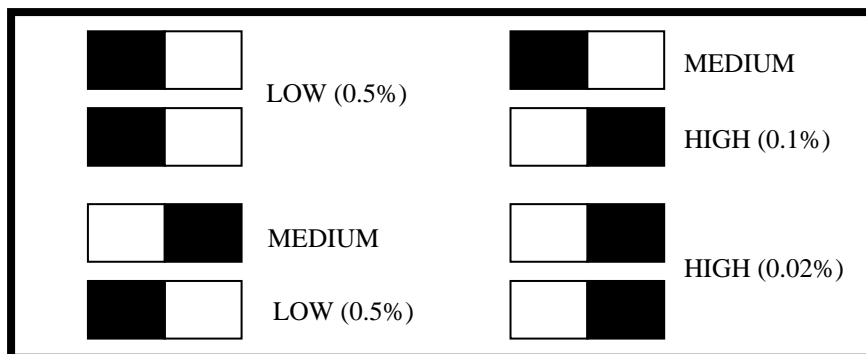


Frequency setting is provided to eliminate crosstalk (interface) between adjacent detectors. Crosstalk is indicated by random outputs, chattering relays and possible detector lock-up.

SENSITIVITY

Channel 1 - switches 3 & 4

Channel 2 - switches 5 & 6



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:-

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

AUTOMATIC SENSITIVITY BOOST (ASB) (SWITCH 7)

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 8)

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

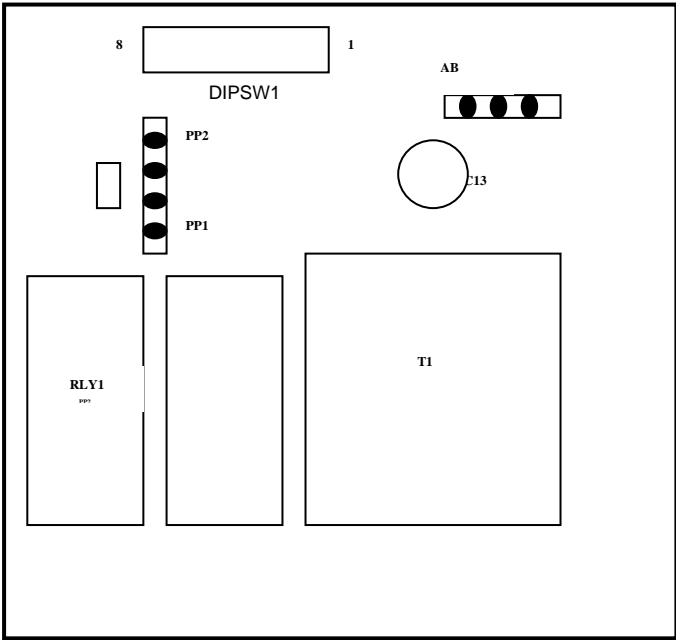
INTERNAL LINKS

AB LOGIC

- No AB Logic . . .
- AB Presence . . .
- AB Pulse . . .

PULSE / PRESENCE

- PP 1 – channel 1
- PP 2 – channel 2
- Presence .
- .
- 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)

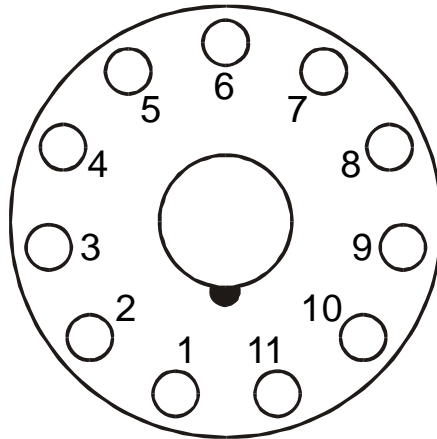
If a fault condition exists on the loop (open circuit / short circuit) the **RED LED** will **FLASH** at a fast rate. If a re-tune occurs the **RED LED** will **FLASH**, but at a slower rate.

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



PIN	DESCRIPTION
1	LIVE (DC+)
2	NEUTRAL (0V)
3	LOOP CHANNEL 1
4	LOOP CHANNEL 1
5	LOOP CHANNEL 2
6	LOOP CHANNEL 2
7	CHANNEL 2 N / O
8	CHANNEL 2 COMMON
9	EARTH
10	CHANNEL 1 N/O
11	CHANNEL 1 COMMON

LOOP INSTALLATIONS

CABLE SPECIFICATION (LOOP + FEEDER)

1.5mm² cross sectional area, multi-strand cable.

Insulation material – PVC or Silicone.

Current Rating – 15A.

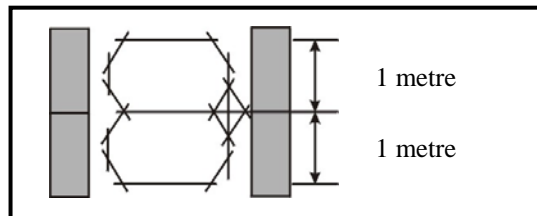
FEEDER FOR LONG RUNS

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 cables on the equipment. Minimum of 20 twists per metre should be used.

LOOP GEOMETRY

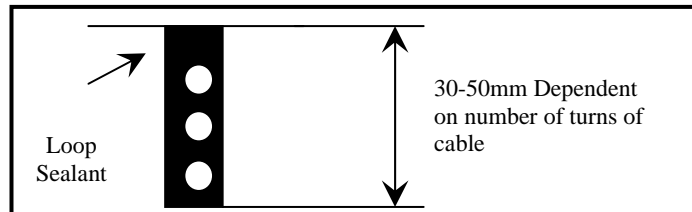


****NOTE:-** That with two adjacent loops connected to a dual channel detector, it is possible for these loops to share a common slot, if so required.

As the channels are multi-plexed, no crosstalk (interference) will occur.

****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

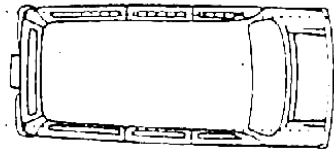
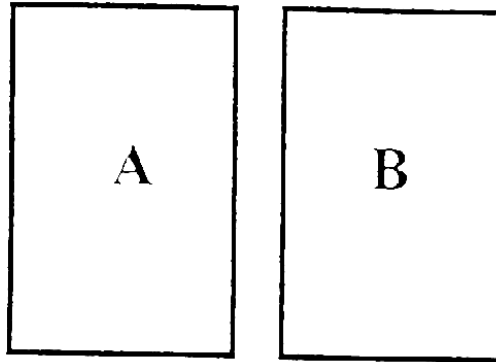
****NOTE:-** Add 2 additional turns to compensate for the effects of sub-surface re-inforcing on sensitivity.

DETECTOR DIRECTION LOGIC OPERATION

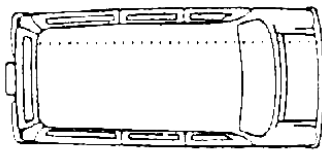
PULSE MODE

3 feet max / 1M

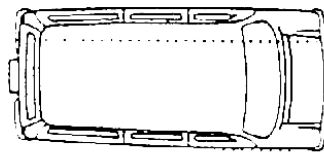
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No output



No output

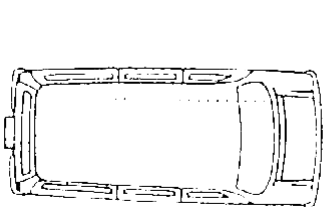
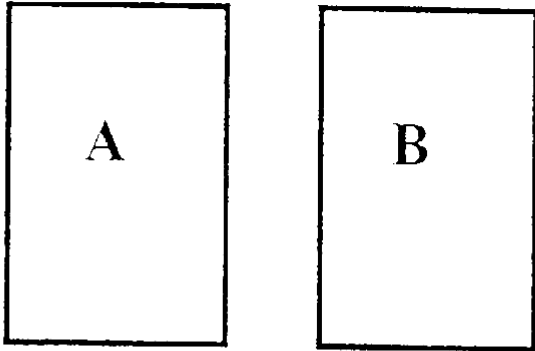


Pulse output
A > B – CH1
B > A – CH2

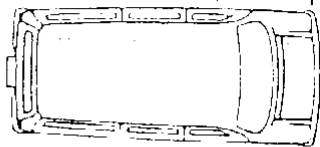
PRESENCE MODE

3 feet max / 1M

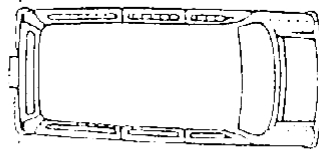
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No output



Presence output begins



Presence output ends
A > B - CH1
B > A - CH2

ULD 920 TECHNICAL SPECIFICATIONS

Tuning	Automatic
Inductive Range	20 – 1500uH
Sensitivity	Four steps adjustable Maximum 0.02% $\Delta L/L$ Minimum 0.5% $\Delta L/L$
Sensitivity Boost	Selectable on : Med High Med Low Low
Frequency	Four steps adjustable Range: 20 – 140kHz
Response Time	App. 100ms (Turn on / Turn off)
Output Configuration	Selectable on PCB 2 Output relays Relay 1 – Presence / Pulse / AB Relay 2 – Presence / Pulse / BA
Direction Logic	Selectable – Presence / Pulse
Presence Time	Selectable – Permanent or Limited (1hr for 3% $\Delta L/L$)
Pulse Output Duration	150ms (250 ms factory option)
Indications	3 LEDs Green – Power Red – Output per channel
Reset push buttons	Flush mount on front panel
Protection	Loop Isolation Transformer/zener diode/GDT Power/Relays – MOV

Power	ULD 921	230V AC ±15
	ULD 922	115V AC ±15
	ULD 923	12/24V AC/DC ±15
Relay Rating	5A @ 230V AC	
Temperature range	-40°C to +80°C	
Storage Temperature	-40°C to +85°C	
Humidity	Up to 95% RH	
Dimensions	75mm x 40mm x 76mm (H x W x D)	

