

ULD 910

MANUAL

Sensor Partners BV

📍 James Wattlaan 15
5151 DP Drunen
The Netherlands

☎ +31 (0)416 - 37 82 39
✉ info@sensorpartners.com
🌐 sensorpartners.com

Sensor Partners BVBA

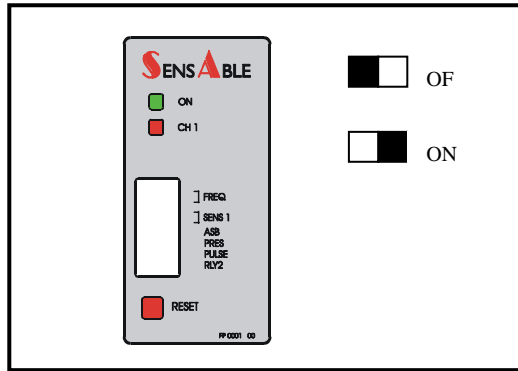
📍 Z.1 Researchpark 310
B-1731, Zellik
Belgium

☎ +32 (0)2 - 464 96 90
✉ info@sensorpartners.com
🌐 sensorpartners.com

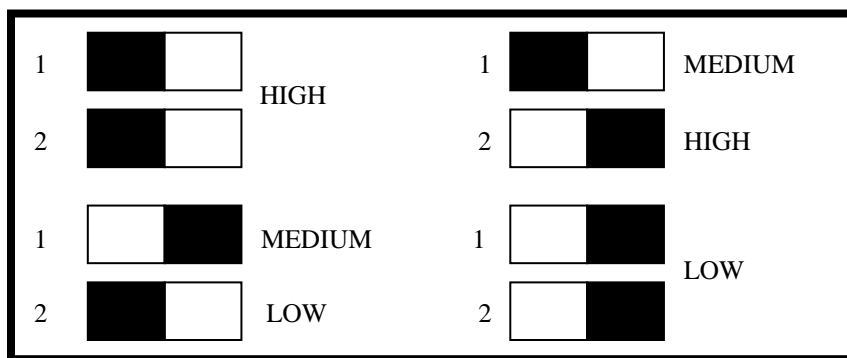
INDEX

	<u>PAGE</u>
Detector Commissioning	1
Frequency	1
Sensitivity	1
Automatic Sensitivity Boost (ASB)	2
Presence (Pres).....	2
Pulse (Pulse)	2
Relay.....	3
Indications	
Reset Push Button	3
Pinouts	4
Loop installations	5
Cable Specification	5
Loop Geometry	5
Slot Depth	5
Determining Number of Turns of Cable	5
Technical Specifications	6

DETECTOR COMMISSIONING

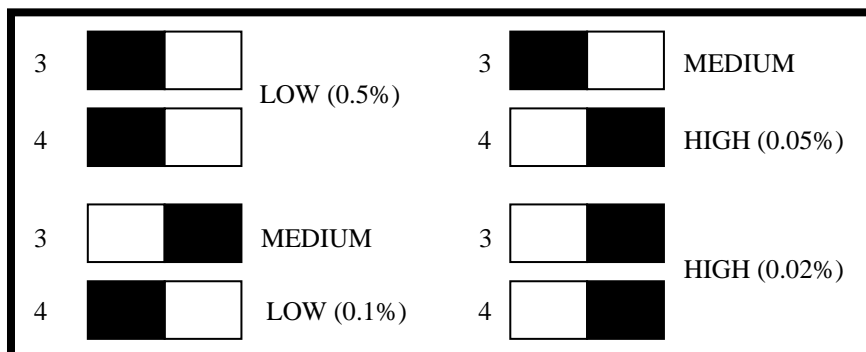


FREQUENCY (SWITCHES 1 & 2)



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:-

VEHICLE	$\Delta L/L$
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)

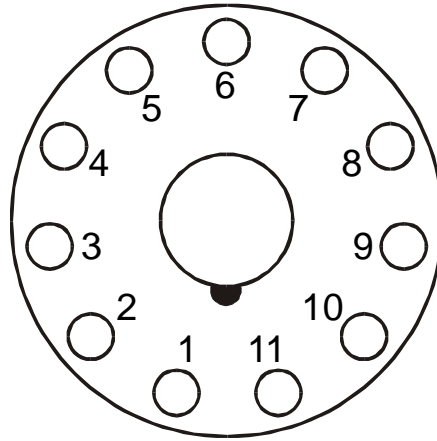
If a fault condition exists on the loop (open circuit / short circuit) the **RED LED** will **FLASH** at a fast rate. If a re-tune occurs the **RED LED** will **FLASH**, but at a slower rate.

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 LOOP } (20 TURNS PER METRE)
8	
9	EARTH
10	N / C RELAY 1
11	N / C RELAY 2

LOOP INSTALLATIONS

CABLE SPECIFICATION (LOOP + FEEDER)

1.5mm² cross sectional area, multi-strand cable.

Insulation material – PVC or Silicone.

Current Rating – 15A.

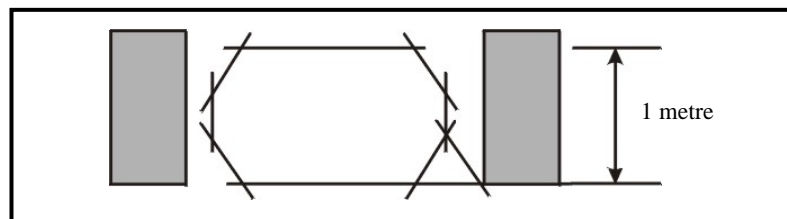
FEEDER FOR LONG RUNS

Foil screened cable recommended (Earth at equipment end only)

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

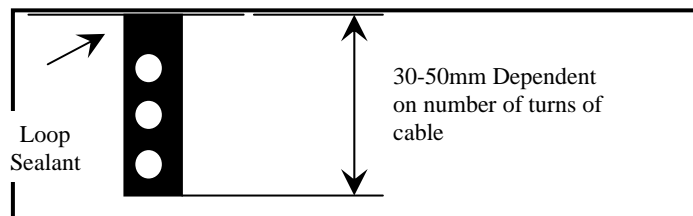
Loop feeder cables should always be twisted from the point of exiting the loop, to the termination of the cables on the equipment. Minimum of 20 twists per metre should be used.

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

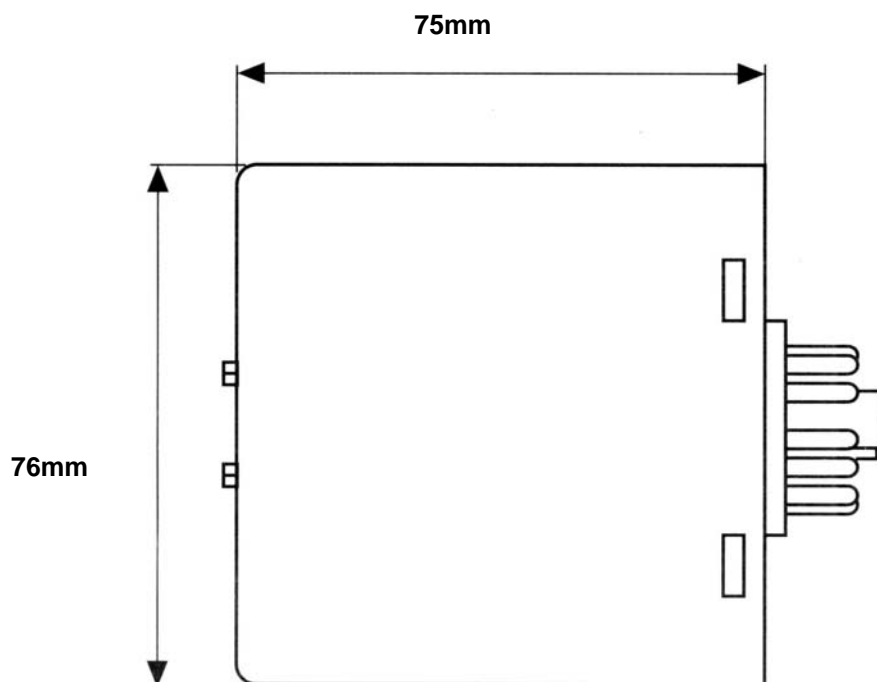
PERIMETER	NO. OF TURNS
3 – 6 M	4
6 – 10 M	3
10 – 30 M	2

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

ULD 910 TECHNICAL SPECIFICATIONS

Tuning	Automatic
Inductive Range	20 – 1500uH
Sensitivity	Four steps adjustable High 0.02% ΔL/L Medium High 0.05% ΔL/L Medium Low 0.1% ΔL/L Low 0.1% ΔL/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	2 Output relays Relay 1 – Presence (fail safe) Relay 2 – Presence / Pulse (selectable)
Presence Time	Selectable – Permanent or Limited (1hr for 3% ΔL/L)
Pulse Output Duration	150ms (250 ms factory option)
Pulse Timing	Selectable – Permanent or limited
Indications	2 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 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