FELIX
Security Systems

DUAL CHANNEL LOOP DETECTOR

Product Features

Tune: The tuning range is from 50μH to 1000μH and such wide tuning range ensures low requirements for loop and wiring. Any inductance changes will feedback to the compensation circuit in detector to ensure normal work.

Adjustable Sensitivity: When in low sensitivity, the detector will detect vehicles with high chassis or trailers correctly except cars, bicycles and other small metals. The sensitivity adjust button is the rotary encoder switch on the panel, "0" with low sensitivity and "9" with high sensitivity. The A switch on left is corresponding to loopA, while B on right is corresponding to loop B.

Reaction Time: 10ms, is the time starting from the metal enters into the loop and ending when the detector gives indication signals.
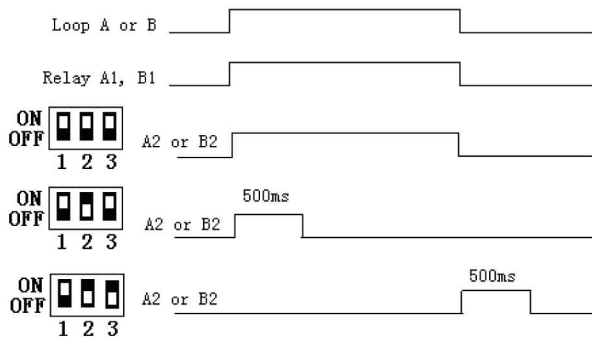
Technical Specifications

Model	F-LP2
Type	Double channel
Operating Voltage	AC 220V ±10%
Power Consumption	<5W
Relay Output	DC24V/3A
Frequency Range	20Khz ~ 170Khz
Reaction time	10ms
Sensitivity	10 Grades adjustable
Loop Inductance	Ideal 100μH ~ 300μH, Max 50μH ~ 1000μH
Loop Conn. Wiring	Max 100m, twisted at least 20 times/meter, total resistance <10 Ohm
Automatic Calibration Time	2s~5s
Operating Temperature	-30°C~+75°C
Storage Temperature	-40°C~+85°C
Relative Humidity	≤95%
Installation	DIN rail
Shell	PC + ABS Engineering plastics
Dimensions	110Lx60Wx100Hmm
Weight	400g

Panel Structure

Frequency adjustment
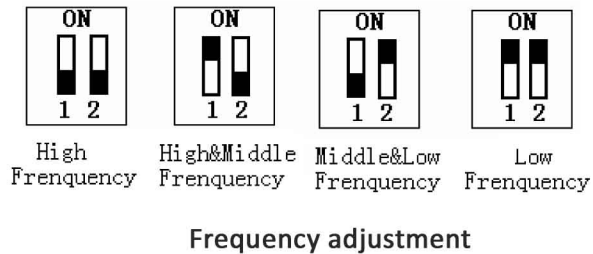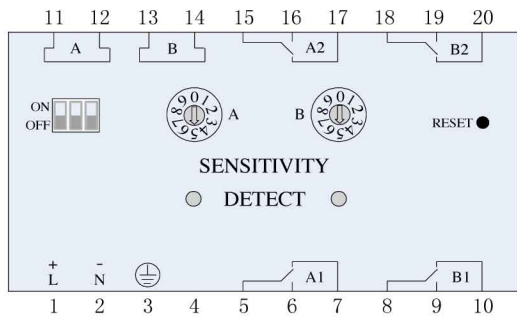
When power ON, the detector can calibrate itself automatically and the two lights are ON which will continue or 2s.

Relay Output Mode

Panel set	Vehicles enter from loop A to B	Vehicles enter from loop B to A
ON OFF 1 2 3	Relay B2 on before vehicle leaving from loop B	Relay A2 on before vehicle leaving from loop A
ON OFF 1 2 3	Relay B2 on for 500ms	Relay A2 on for 500ms

Relay A2 and B2 output vehicles detection signals   Relay A2 and B2 output detection signals

In felix loop detector, every channel has two relay outputs. A1 and A2 are the two relays with channel A, and B1 and B2 are the two relays with channel B. Relay A1 and B1 are existing output (on when metals on the loop and off when metals leaving). Relay A2 and B2 are multifunctional output set by the three bit code switch on the left of the panel.

Installation

Loop Geometry: The loop geometry must be adapted to the respective application. Sensitivity is optimal if the loop is not bigger than the object to be detected.
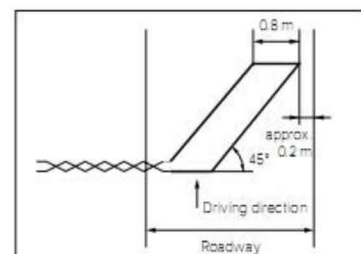
Rectangular Design

The loops generally have a rectangular design. This geometry is suited for detecting passenger cars and motor lorries.
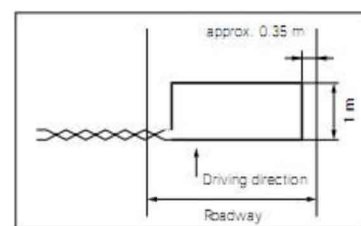

45° Angle

The loops installed at a 45° angle with respective to the road are particularly suited for detecting bicycles.

Eight loop design

The so-called figure of eight loops are mainly used for applications requiring low lateral sensitivity or subject to interference voltages caused by currents in railway tracks. The loop is installed in the form of an "8". This geometry is used if, for technical reasons, a loop has to be installed very close to gate.
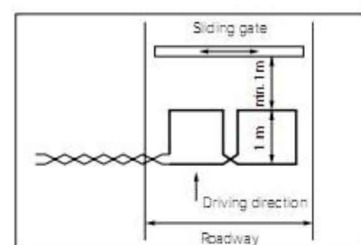
The number of windings strongly depends on the circumference of the loop. The smaller the loop, the more windings are required.

Loop circumference	Number of windings
3-6 m	5 windings
6-10 m	4 windings
10-25 m	3 windings
> 25 m	2 windings

Installing the Loop

After determining the loop geometry, a groove (5-8 mm wide, 30-50 mm deep) must be cut in the floor for installing the loop. We recommend cutting an inclined groove (45° angle) at the corners of the loop. Routing the loop wire along this incline will protect it from excessive wear at the corners. The groove must then be cleaned avoiding any kind of moisture. Run the loop wire as tight as possible along the very bottom of the groove. The commercial copper strand (flexible, insulated, 1.5mm 2) as loop wire.

Prior to sealing up the groove, the loop inductance should be checked using a measuring device, and modified as required (optimum value 80-300 µH). Then run a nylon cord along the loop and seal up the groove. Suitable sealing compounds are for example bitumen or artificial resin. Once the sealing compound has set, an earth leakage measurement must be carried out. The loop detector can then be connected to the power supply.

Caution: When sealing up the groove, ensure that the temperature of the sealing compound (e.g. hot bitumen) does not exceed the maximum admissible temperature of the loop insulation, as this might cause and earth fault. Use a heat-resistant insulated wire for such cases.