

Loop detectors

Sensors

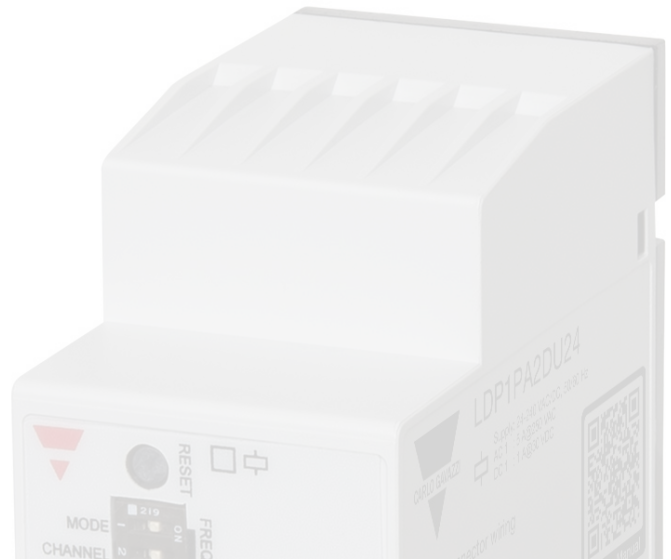
LD series

Loop detectors

LD series loop detectors are ideal to be used in car access applications to control barriers, gates, bollards and ticketing machines.

Loop detectors is the best solution in the market in detecting vehicles and can be found in car parks, toll gantries, traffic lights, on the streets, at the entrance/exit of any premises and in many other places

LD series loop detectors come with many features that are designed specifically to simplify the installation process and also equipped with diagnostic capability to ease troubleshooting while providing a reliable and efficient way of vehicle detection.



Vehicle detection solution

Adjustable sensitivity

Loop input inductance: 20 μ H to 1000 μ H with adjustable sensitivity via 10 step potentiometer easily accessible from the front

Automatic frequency tuning

Loop frequency is automatically tuned to avoid crosstalk between adjacent loops. If manual tuning is preferred, 4 frequency channels are available and can be easily set via dip switches

Automatic sensitivity boost (ASB)

ASB function boosts the loop sensitivity to allow the detection of high bed vehicles such as trucks, buses and trailers

Fail secure and fail safe

In case of power loss or loop fault, the configuration of the output will change to indicate detection (FAIL SAFE) or not detection (FAIL SECURE) of a vehicle and hence open or close the gate or barrier

Wide power supply range

24-240 VAC/VDC rated operational voltage ensures full flexibility

Independently configurable outputs

The loop detectors come with 2 x SPDT outputs. Each output is configurable independently and can be configured in pulse or presence mode. The pulse length and presence duration can also be set as well as whether pulse during entrance or exit of the loop. Independently configuring the 2 outputs provide great flexibility to meet different installation requirements.

Directional logic

Using the dual loop version, the direction of the vehicle can be ascertained via the directional logic function. Relay will activate accordingly to the vehicle direction.

Multicolour LED for easy diagnostic

Multicolor LEDs will indicate different colors depending on the status of the loop detector and of the 2 relay outputs. The Loop LED will indicate the loop status such as inductance too low or too high, loop short circuit or open circuit and many others. This makes the troubleshooting process easy, and enables constant monitoring of the loop health.

Sensors

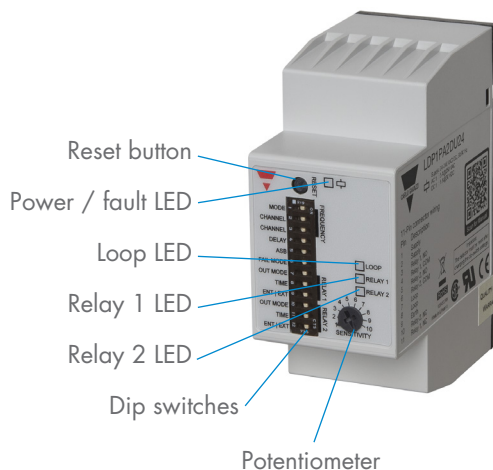
CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

LD series

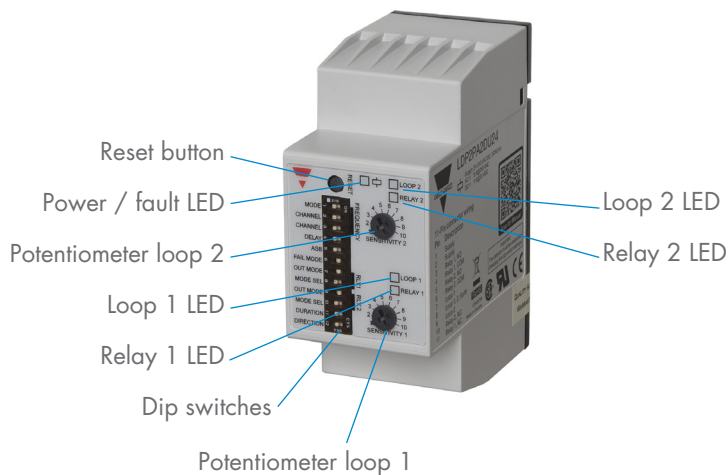
Loop detectors

Structure

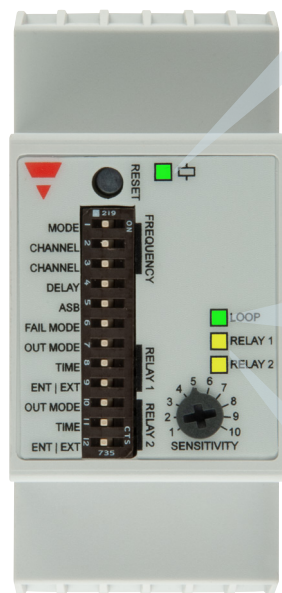
LDP1



LDP2



Multicolour LEDs for easy troubleshooting



Power / fault indicator

LED colour	LED constant	LED Flashing
Green	All OK (ASB OFF)	DIP switch changed, but changes not in effect
Blue	All OK (ASB ON)	-
Yellow	Low signal indication	-
Red	Channel crosstalk	-
White	-	Indication of the frequency channel

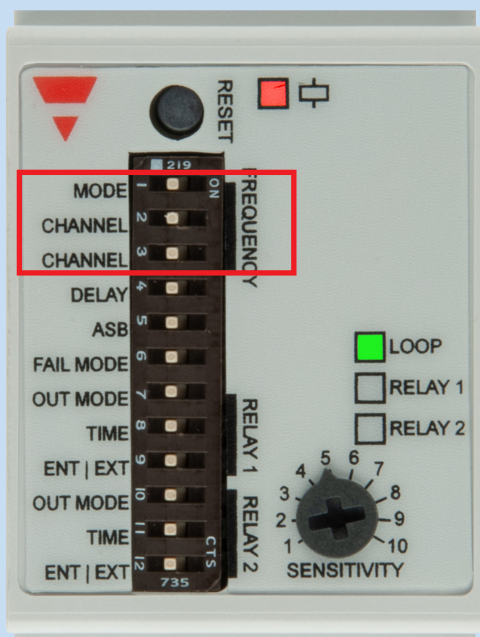
Loop state LED

LED colour	LED constant	LED Flashing
Green	Inductance ok	
Yellow	Inductance too high	Inductance too low
Red	Loop is open circuit	Loop is short circuit

Relay state LED

LED colour	Mode	Relay deactivated	Relay activated
	Presence mode	LED OFF	LED ON
Yellow	Pulse mode, 0.1 s	LED OFF	LED ON for 0.5 s
	Pulse mode, 0.5 s	LED OFF	LED ON for 1.0 s

Automatic frequency tuning

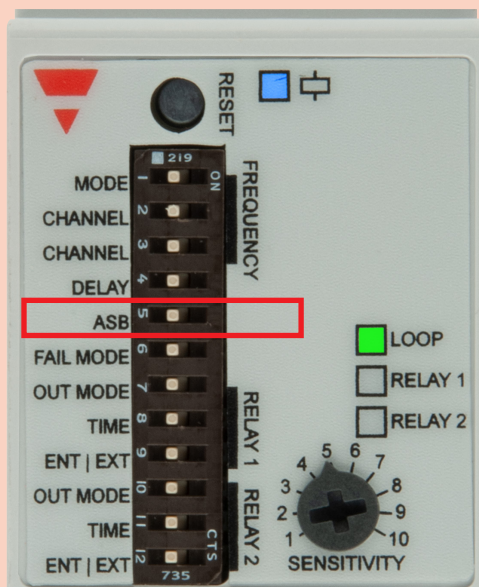


When two or more loops are installed in too close proximity, they may interfere with each other and cause false detections. In order to avoid cross talk issues there are two possibilities:

If LDP automatic frequency tuning mode is selected, the loop detector will automatically select the best frequency channel.

If manual tuning is preferred, the user can select one of the 4 channels available.

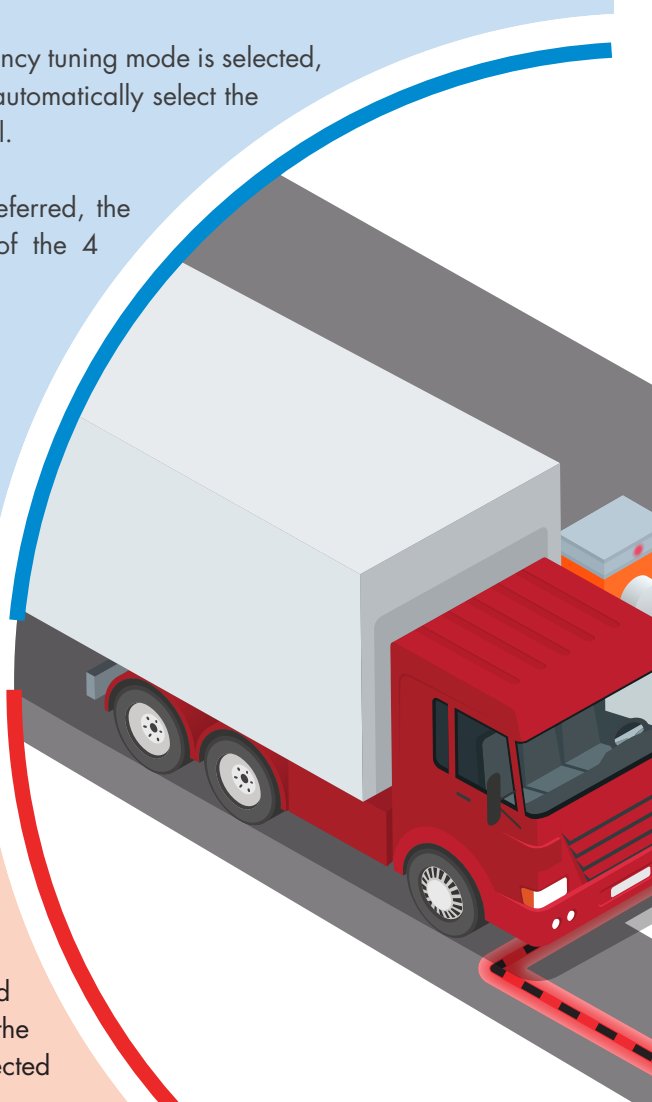
Automatic sensitivity boost



When enabled, the LDP will boost the loop sensitivity to detect high bed vehicles such as trucks, buses and trailers. This ensures the vehicle will be detected correctly.

ASB function can be turned on manually using the dip switch. Blue color power LED will indicate that the ASB mode is ON.

LOOP 1

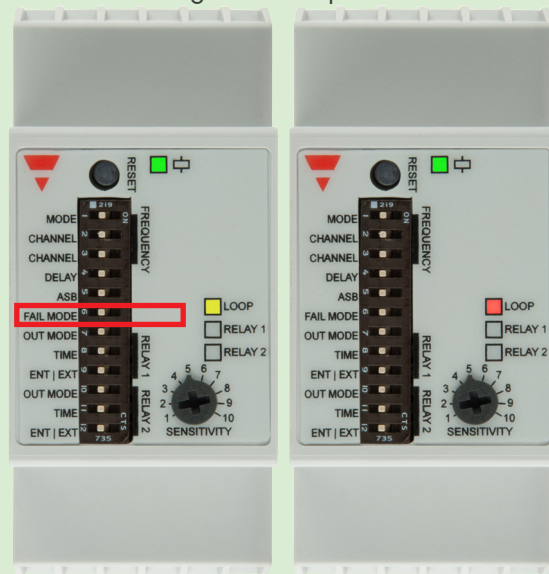


Diagnostic capability

Most of the time, it is indeed a hassle for installer to ascertain the health of the loop.

The multicolour loop LED diagnostic features will definitely reduce troubleshooting time and provide an effective monitoring of the loop status. Different colors will indicate cross talk, short circuit, open circuit, inductance too low or too high.

In case of power loss or loop fault, the LDP can be configured to operate appropriately either to open (fail safe mode) or close (fail secure mode) the barrier.



LOOP 2

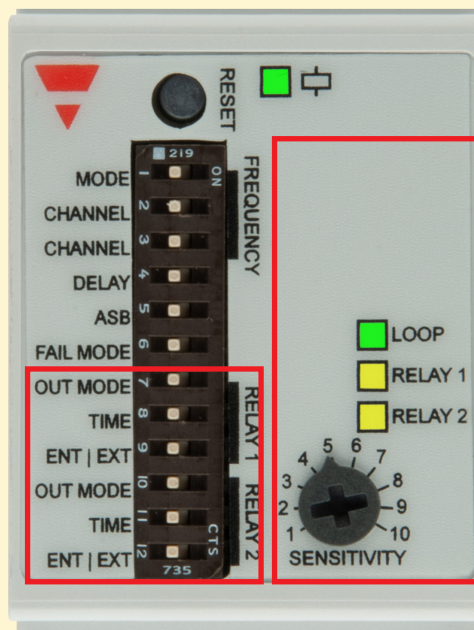
Flexibility

The sensitivity of each loop can be independently and easily adjusted via the 10-step rotary switch on the front.

The 2 x SPDT outputs can be independently configured to operate in pulse or presence mode, with adjustable pulse and presence duration.

The dual loop version can also detect the vehicle direction.

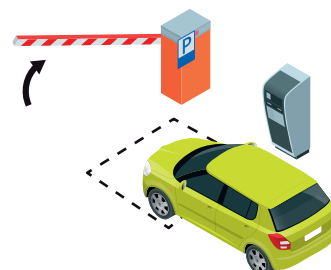
24-240 VAC/VDC universal power supply ensures full flexibility.



Applications

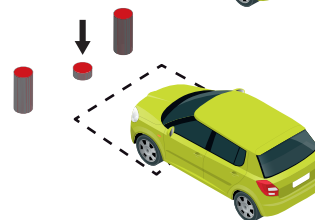
Carpark barriers

Activation of carpark barriers.
Used in public carparks, apartments, shopping malls, hotels and others.
Used also to activate ticketing machine and for occupancy counting.



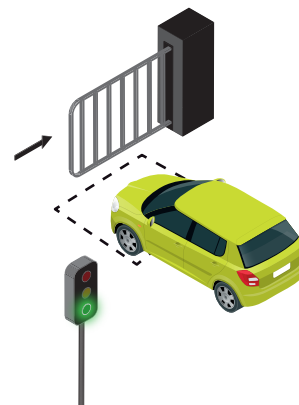
Bollards

Activation of bollards.
Used in streets, single parking space, pedestrian areas, residential security installations.



Gates and industrial doors

Activation of gates and industrial doors.
Used in factories, warehouses, premises gates, private residential.



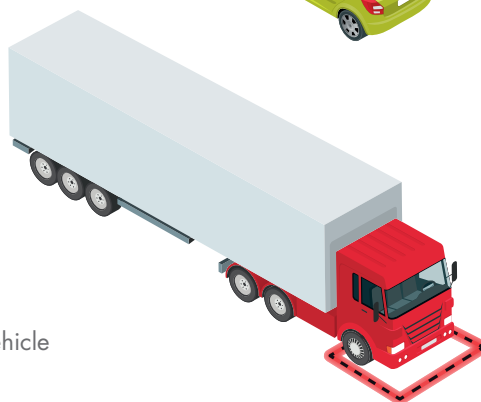
Traffic lights

Used in conjunction with smart street traffic lights, gates traffic lights to optimize traffic flow.
Used on the streets, premises gates, up/down ramps, toll gantries.



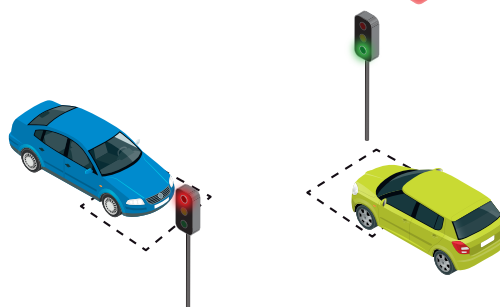
High bed vehicles

Used to detect high bed vehicles.
Used in carparks, streets, factories, warehouses.
Automatic sensitivity boost (ASB) ensures a reliable detection of high bed vehicle such as buses and trucks.



Traffic flow

Detect vehicles from both direction especially in single lane using the directional logic function for smooth traffic flow.



Specifications

Loop input inductance	20 μ H ... 1000 μ H
Adjustable sensitivity	0,01% ... 1,00%
Number of adjustable steps	10
Number of frequency channels	4
Frequency range	10 ... 130 kHz
Loop fault detection	Short circuit, open circuit, inductance out of range, frequency crosstalk
Response time	130 ms
Output type	Relay
No of output	2 x SPDT
Output mode	Pulse or presence; selectable via dip switch
Output Assignment	LDP1: 2 x SPDT for loop 1 LDP2: 1 x SPDT for loop 1 and 1 x SPDT for loop 2
Rated operational voltage (Output)	250 VAC/VDC
Rated operational current (Ie)	AC1: 5 A @ 250 VAC DC1: 1 A @ 30 VDC
Mechanical lifetime	15 x 10 ⁶
Electrical lifetime	>100 000 operations (@5A load)
Protection	Reverse polarity and overvoltage
Rated operational voltage (UB)	24 ... 240 VAC/VDC
LDP1 Power consumption	24 VAC/VDC < 2 W / 2.5 VA 115 VAC/VDC < 2 W / 3 VA 240 VAC/VDC < 2 W / 4 VA
LDP2 Power consumption	24 VAC/VDC < 2.5 W / 3.5 VA 115 VAC/VDC < 2.5 W / 4 VA 240 VAC/VDC < 2.5 W / 5 VA
Rated supply frequency	45 to 65 Hz
Rated insulation voltage	800 V
Rated impulse withstand voltage	4 kV (1.2/50 μ s)
Power-ON delay (tv)	5 s for manual frequency tuning, 10 s for automatic frequency tuning
Protection (output)	Reverse polarity, transients
Ambient temperature	-40° ... +70°C (-40° ... +158°F) (operating) -40° ... +70°C (-40° ... +158°F) (storage)
Ambient humidity range	0% ... 90% (operating) 0% ... 90% (storage)
Overvoltage category	III (IEC)
Degree of protection	IP30 (IEC)
Pollution degree	2 (IEC)
Connection type	11 pin circular plug-in
Connection at socket (ZPD11A)	Screw terminal
Housing material	PPO PX9406-802, PPO Noryl SE1
Colour	RAL 7035 (Grey)
Dimensions	81 mm (h) x 35.5 mm (w) x 60.2 mm (d)
Weight	LDP1: 105 g LDP2: 108 g

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