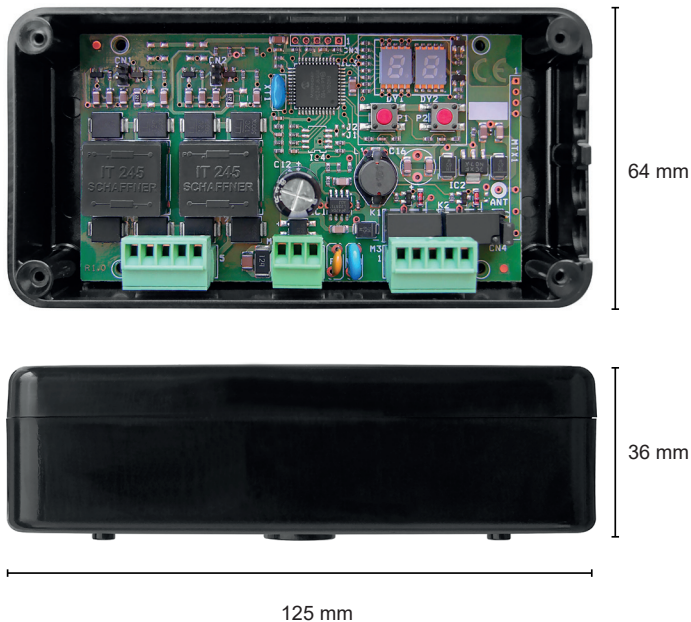




SPIRA-DET2

Operating guide for installer



- Loop detector are designed for vehicles detection
- Designed to connect one loop detector
- Two buttons and one display for an easy programming
- Protection against ESD electro-magnetical interferences
- Inductive loop detector for doors, gates, parking barriers, bollards
- Thermal detection fuse with resettable fuse with protection against over current
- Reliable over time by each condition

Premessa

This manual provides all the specific information you need to familiarize yourself with and correctly operate your unit. Read it very carefully when you purchase the instrument and consult it whenever you have doubts regarding use and before performing any maintenance operations. Nologo has the right to modify the product without previous notice.

Environmental protection measures

Information regarding the environment for customers within the European Union. European Directive EC 2002/96 requires that units bearing this symbol on the unit and/or on the packaging be disposed of separately from undifferentiated urban wastes.



The symbol indicates that the product must not be disposed of with the normal household wastes. The owner is responsible for disposing of this product and other electrical and electronic equipment through specific waste collection facilities indicated by the government or local public agencies. Correct disposal and recycling help prevent any potentially negative impact on the environment and human health. To receive more detailed information regarding disposal of your unit, we recommend that you contact the competent public agencies, the waste collection

Symbols and warning



General Warning

Security warning in case of non-compliance it can provoke damages!



Device under current

Installation only from qualified installers



Read carefully the manual

Read carefully the manual before using the product and keep it for the future.

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1 Introduction

1.1 Fields of application

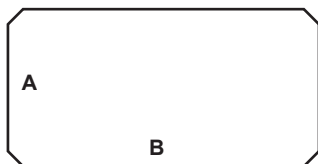
Loop detectors are used to detect vehicles. Connect SPIRA-DET2 to the loop detector which can be pre-assembled or made from a copper cable. The typical installations can be:

- Opening / Closing of the gate or door
- Control of the parking barriers
- Control of the bollards

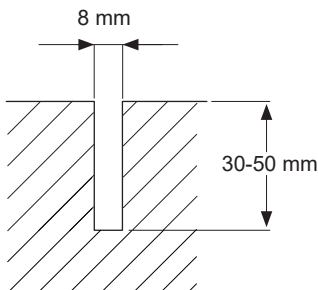
1.2 Notes to install the loop detectors

The loops must be constructed at least 15cm from fixed metal objects, at least 50 cm from moving metal objects and not more than 5cm from the surface of the definitive flooring. Use a normal single-pole section $1 \div 1,5 \text{ mm}^2$ (if the cable is landfilled directly, it must be double insulated) Make a loop, squared or rectangular, using a PVC raceway or making a chase in the floor as shown in the floor on side (corners should be cut at 45° to prevent breaking wires).

Depending on the shape of the flooring and of the perimeter of loop detector it will be necessary some windings in the same groove. Put the cable and look on the table the numbers of windings. The two cable ends must be interwined (at least 20 per meter) from the loop to the detector SPIRA-DET2. Do not make any joints on the cable, solder the conductors and seal the joint with a heat-shrink sheath and keep it away from mains power cables.



Dimension **B** must be double of the dimension **A**.



Loop Perimeter	Number of windings
3 m	8
4 m	6
5 m	5
6 m	4
9 m	3
12 m	2

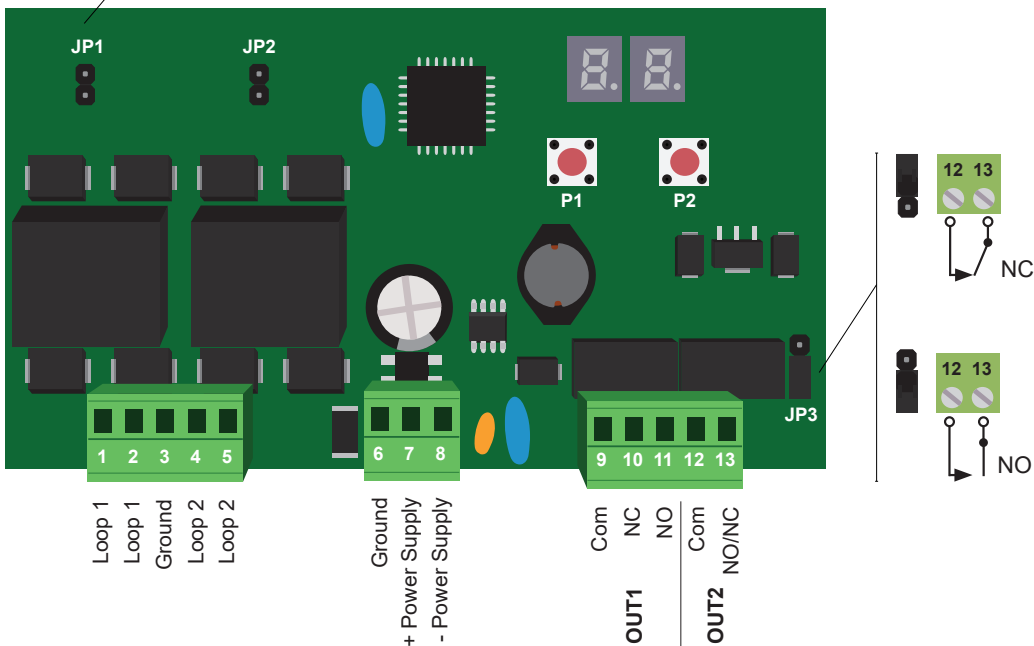
1.3 Technical details SPIRA-DET2






Dimensions	64 x 125 x 36	
Weight	140	g
Power supply	12/24 Vac/dc (min 11,5Vac/dc - max 30Vac, 38Vdc)	
Loop inductiveness	40 ÷ 5000 (recommended 150 ÷ 700uH)	uH
Contact of the output relay	max 500 mA 60Vdc/40Vac	
Operating Temperature	- 10 ÷ + 60	°C
Absorbed power	< 2	W
Overcurrent protection	Resettable fuse	




2 Installation of the control unit






2.1 Diagram of the control unit and electrical connections

Close the contacts JP1 and JP2 only in case of low loop inductiveness.
In this case you need to deactivate the probes P1=0



Loop 1	1		Connection loop 1
Loop 1	2		Connection loop 1
Ground	3		Ground
Loop 2	4		Connection loop 2
Loop 2	5		Connection loop 2

Ground	6		Ground
+ 12/24 Vac/dc	7		+ Power Supply 12/24 Vac/dc
- 12/24 Vac/dc	8		- Power Supply 12/24 Vac/dc

OUT 1 Com	9		Contact loop1: Common
NO	10		Contact loop 1: normally open
NC	11		Contact loop 1: normally closed
OUT 2 Com	12		Contact loop 2: Common
NO/NC	13		Contact loop 2: NO or NC according to Jumper JP3

3 Use and function of the control panel

SPIRA-DET2 has a display for an easy and fast programming. The menu has been carefully designed for a clear and fast set up of the working time and the logic!

3.1 Sensitivity

Sensitivity is set to define, for each channel, the minimum frequency variation that a vehicle must cause to activate the detector output contact. Sensitivity can be adjusted with parameter P7 for loop 1 and P8 for loop 2 and they can be changed from 3 to 25. The standard sensitivity is 8; programming P7 or P8 to 3 the sensitivity is the lowest.

P.7 Sensitivity Loop 1

03
... Values from 3 (MAX) to 25 (MIN)
25
(Standard 8)

P.8 Sensitivity Loop 2

03
... Values from 3 (MAX) to 25 (MIN)
25
(Standard 8)

3.2 Response time of the loop detectors

The response time can be generally define as the time interval of the loop to detect a vehicle in the loop detector. If you set up a lower value (1) you risk loop faults so false contact of the automation while if you set up higher values (30) the loop detector SPIRA-DET2 will open after 3 seconds of the vehicle transit.

P.5 Set up of the RESPONSE TIME LOOP 1

01 Values from 1 to 30
1 intervention of 0,1sec. while 30
... means an intervention of 3sec.
30
(Standard 4 - 0,4 sec.)

P.6 Set up of the RESPONSE TIME LOOP 2

01 Valori da 1 a 30
1 intervention of 0,1sec. while 30
... means an intervention of 3sec.
30
(Standard 4 - 0,4 sec.)

3.3 Exclusion of the loopsnot used

Before any installation it is necessary to activate or deactivate the loops. Set up this parameter with P1as shown according to the installation.

P.1 Exclusion of the loops

00 Deactivation loop 1 and 2 (standard)
01 Activation loop 1 and 2
02 Activation loop 1
03 Activation loop 2

3.4 Reset of the LOOP

This parameter has been designet for a precise attention to detect the inductive values of the wheather conditions. Sun, rain, snow and temperature variation can change the inductive values of the loop SPIRA-DET2. The parameter P9 is set up at 20 minutes, we recommend to change this value if you prevue a car stop at 20 minutes

P.9 Set up of TIME RESET

00 Values from 0 to 60 minutes.
0 exclude the reset
...
60
(Standard at 20 minutes)

3.5 TIME OUTPUT

With parameters P3 and P4 is possible to activate the timing outputs in this way when the vehicle transits on the loop the output is activated for the programmed time.

P.3 Timing output 1

03 Values from 0,0 sec. to 5,0 sec.
 ... with 0 exclude the timing
25 (Standard 0)

P.4 Timing output 2

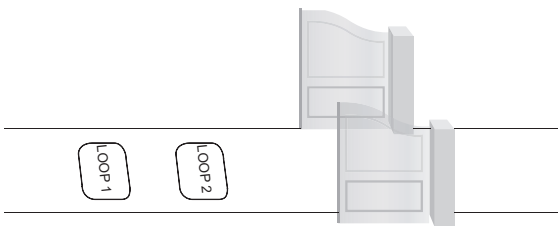
03 Values from 0,0 sec. to 5,0 sec.
 ... with 0 exclude the timing
25 (Standard 0)

3.6 Direction

P2 is possible to choose three different logics. If you activate 01 you choose the direction in case of gate or parking barrier. The directional signal is sounded from the relay of the loop which will be first occupied.

In this way you need to set up P1=1!!! Incase of magnetic loops with a lower inductiveness which is necessary to close the contacts JP1 and JP2 set P1=0.

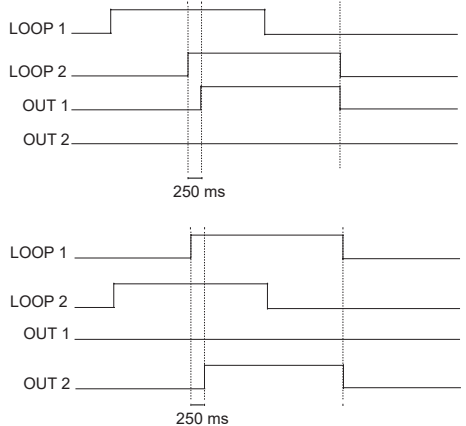
Here is an example of an installation of SPIRA DET2 with "Directional Functional", in can be use for collective use which gate can be open with the remote control only, while from the interior with the magnetic loop it can open or close according to the sens of the two loops. To avoid interferences, the loops must be installed at least 1mt of distance to each other.



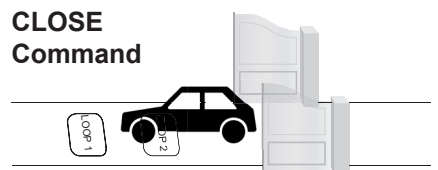
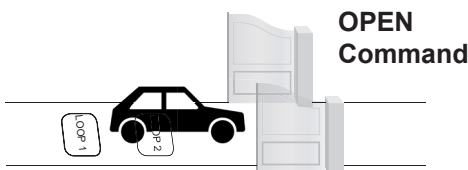
P.2 Set up of the Relay and direction

- 00** Loop1: relay1 / Loop 2: relay 2 (standard)
- 01** Direction Function (Set up P1=1)
- 02** Loop 1: relay 1 & 2 / Loop 2: relay 1 & 2

The drawings indicates the function in case of "Direction Function":



In this case the exit OUT1 is connected to the START while OUT2 with the CLOSE contact:



3.7 Display notification








LOOP 1

LOOP 2

SPIRA-DET2 displays the condition of the inputs loops. The first display is associated to the loop 1 while the second is associated to the loop 2.



The display indicates that the loop has an excellent frequency so the loop inductiveness associated to the display is excellent.

	The display indicates that the loop has a too high frequency but valid, the problem is due to a low inductive value of the loop associated to the display	40 uH ÷ 150 uH	45 KHz ÷ 60 KHz
	The display indicates that the loop has a too low frequency but valid, the problem is due to a high inductive value of the loop associated to the display	700 uH ÷ 5000 uH	10 KHz ÷ 25 KHz
	Frequency of the loop too low: LOW HIGH	> 5000 uH < 40 uH	< 10KHz > 60 KHz
	The display indicates that the output of the loop is activated		
	The display detect an object in the associated display		

If the display indicates the alarm F of the loop, it is possible that a loop has been activated and even the direction function (P2 = 1).

4 Declaration of CE conformity

(according to EC Directive 2006/42, Attachment II, part 1, ses. A)

The undersigned **Ernestino Bandera**,
Administrator



DECLARES THAT:

Company: EB TECHNOLOGY SRL
Address: Corso Sempione 172/5
 21052 Busto Arsizio VA Italy
Product's name: SPIRA-DET2
 Inductive detector
 with magnetic loop

THE PRODUCT COMPLIES with what is outlined in the European Community directive:
2006/42/CE
EC DIRECTIVE 2006/42 ISSUED BY THE EUROPEAN PARLIAMENT AND COUNCIL on may 17, 2006 harmonizing the legislation of the member countries regarding machinery.
Reference: Attachment II, part 1, ses. A (EC Declaration of Conformity issued by the manufacturer).
THE PRODUCT COMPLIES with what is outlined in the European Community directives:
2014/35/EU
DIRECTIVE 2014/35/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits.
Reference to harmonized standards: EN 60335-1
2014/30/EU
DIRECTIVE 2014/30/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility.
Reference to harmonized standards: EN 61000-6-2 EN 61000-6-3
THE PRODUCT COMPLIES with the essential requirements of article 3 of the following European Community Directive, for the use for which the product is designede:
2014/53/CE
DIRECTIVE 2014/53/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment
Reference to harmonized standards: ETSI EN 300 220-3 ETSI EN 301 489-1 ETSI EN 301 489-3
The directive 2006/42/CE remind that it is not allowed the function of the product until the machine, for which the product is included, is not indentify and declared conformed to the 2006/42/CE directive.

Busto Arsizio, 05/04/2017
 The administrator
 Ernestino Bandera

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