

LOOP (23105161)



Technical data

| | |
|------------------------------------|--|
| Power supply | 24 V AC/DC +/- 10 % |
| Absorbed current | 1.5 W max. |
| Operating temperature | -20 °C à +70 °C |
| Humidity | max. 95 % not condensing |
| Loop inductivity | 25-800 uH, recommended 100-300uH |
| Frequency range | 30-130 kHz in 2 steps |
| Sensitivity | 0,01 % up to 0,65 % ($\Delta f/f$) in 4 steps 0,02% up to 1,3% ($\Delta L/L$) |
| Loop lead length | max. 250 m |
| Relays | presence relay pulse relay |
| Power supply | 24 V AC/DC |
| Casing | Plastic casing Ral type C |
| Dimensions: (HxLarghxLungh) | 79 x 22,5 x 90 mm |
| Protection class | IP 40 |

General:

The induction loop detector is a system for inductive recognition of vehicles.

Applications:





- barrier controls
- door and gate controls
- parking and traffic technology

Setting options:

Sensitivity

The setting of the sensitivity calls the electronics to a value of frequency deviation which a vehicle must produce for setting the output of the detector.



Sensitivity adjustment by DIP switches. It is possible to set up to 4 sensitivity levels.

| Sensitivity step | | Channel 1: DIP switches 1 and 2 |
|------------------|-----------------|---|
| 1 low | (0,64% Df/f) |  |
| 2 | (0,16% f/f) |  |
| 3 | (0,04% f/f) |  |
| 4 high | (0,01% f/f) |  |

Hold time and Reset

The hold time can be adjusted with DIP-switch 6.



At the completion of hold time it will be displayed "free loop" and the detector calibrates automatically. The hold time starts with the occupation of the loop.

| Hold times | DIP-switch '6' |
|------------|---|
| 5 minutes |  5/∞ |
| infinite |  5/∞ |

An automatic calibration of the loop frequency will be done by the detector after switch-on of the power supply. In case of short power cuts <0,1s there is no calibration.

Operation principle of the presence relay

The detector is equipped for continuous signals emission or for impulses with free contact. (Normally open). The contact function of the presence relay can be changed with the DIP Switch-r.



| operation principle presence relay | DIP-switch 'r' |
|---------------------------------------|---|
| contact normally closed |  |
| contact normally open |  |

Frequency adjustment

The operation frequency of the detector can be adjusted in two steps. The permissible frequency range is 30kHz to 130kHz. The frequency depends on the loop inductivity (depending itself on: loop geometry, number of loop turns and loop lead) and the adjusted frequency step.

Contact mode of the relays

The following table shows the state of the relay contacts depending on the detector mode.

| detector mode | presence Relay | | pulse relay |
|----------------|---|---|-------------|
| |  |  | |
| free loop | close | open | open |
| covered loop | open | close | open |
| loop gets free | close | open | 200ms pulse |
| loop failure | open | close | open |
| power off | close | close | open |

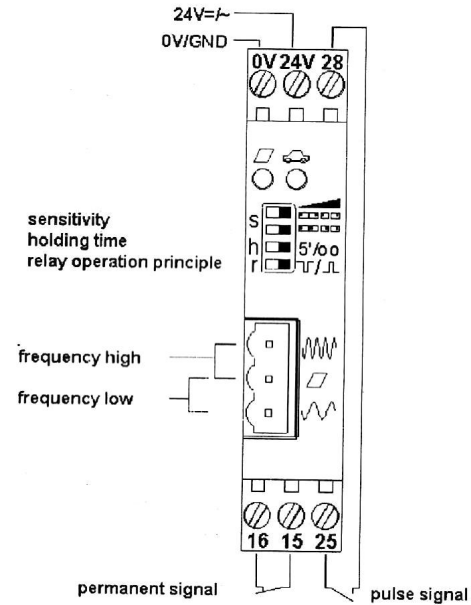
In case of a loop failure the detector checks the loop condition cyclically and continues automatically after elimination.

LED signals

The green LED signals that the detector is ready for operation. Via the red LED, the activation of the relays output is announced depending on the occupation status of the loop.

Output of loop frequency

Approx. 1 sec. after calibration of the detector the loop frequency will be displayed by pulse signals of the green LED. Firstly the 10kHz position of the frequency value will be indicated. For every 10kHz frequency value the green LED flashes once. After a break of 1 sec the 1 kHz position is displayed in the same manner. If there is value of '0' in the 1kHz position there will be displayed 10 flashes. The flashes for 1kHz position are a little bit shorter than for the 10kHz position.



Notice

The indications made in these operating instructions may be altered without previous notice.

With the edition of these instructions, all previous editions become void.

Composition of the information given in this manual has been done to the best of our knowledge.

SEA s.r.l. does not guarantee the correctness of the details given in these instructions and may not be held liable for damages ensuing from incorrect installation.

Since, despite all our efforts, errors may not be completely avoided, we are always grateful for your useful tips.

The installation instructions given in this manual are based on advantageous boundary conditions.

SEA s.r.l. does not give any guarantee promise for perfect function of the traffic detector in cross surroundings.

Realisation of the sensitive element (Fig. 1)

The detectors are suitable for coils made up with an insulated copper wire with a cross-section of at least 1.5 sq. mm. Preferably use twisted copper wires with at least 20 twists per metre to connect the detector to the coil. Jointing in the coil wires and in the twisted cable is not recommended. If the wires used for the twisted cable are especially long or in proximity to other power cables, shielding of said wires is recommended. Earthing of the shield should only be made at the extremity of the detector.

Excepting special cases, the detection coils should be rectangular. Install with the longer sides placed at right angles in the direction of vehicle movement. These sides should ideally be kept at a meter one from the other. Coil length is a function of the width of the road surface to be monitored. A distance of no more than 300 mm is recommended between the coil and each edge of the road surface. For coils running over a perimeter of more than ten metres two wire windings are normally employed, while for coils with a lower perimeter three or more windings are required, and four windings are required for coils with a perimeter below six metres.

All permanent coil components must be secured to the road surface in appropriate grooves made using masonry cutting tools or the like. A cross-cut at a 45° inclination must be made at the circuit angles so as to prevent the risk of the coil cable being damaged in proximity to the apex of the right angles.

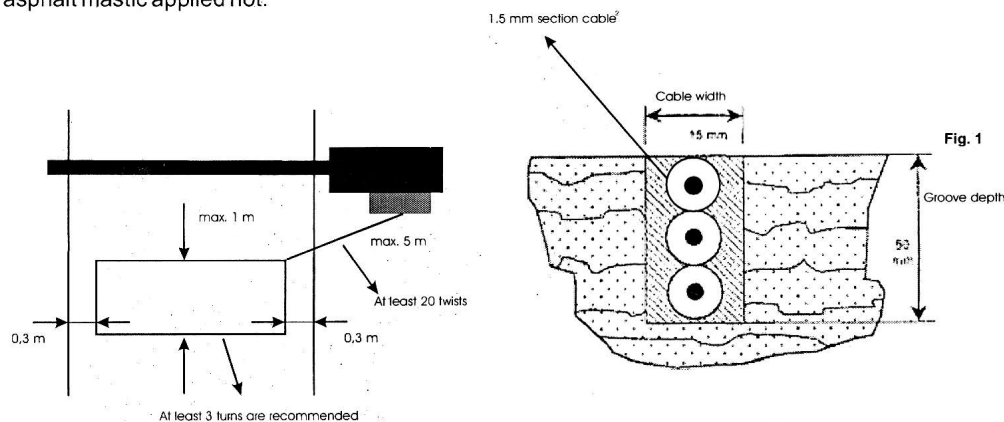
Nominal groove length: 4 mm.

Nominal groove depth: 50 mm.

The coil-detector connection cable must also be laid in an appropriate groove running from one of the circuit angles along the circuit perimeter to the road surface edge. To ensure wiring continuity between the coil and connection cable allow for a long enough lead to reach as far as the detector before inserting the cable inside the coil groove. After laying the required number of wire windings in the groove along the coil perimeter, route the wire towards the road edge through the connection cable groove.

It is advisable that connection cable length not exceed 100 metres. As coil sensitivity diminishes proportionally to connection cable length the latter should be kept as short as possible.

Coils are secured to road surface by means of a quick-drying compound containing epoxy resin or asphalt mastic applied hot.



Note: It is advisable to use an only piece of uninterrupted cable to form the loop. Therefore, it is preferable to make a preliminary of the cable length.

Ex. (Perimeter loop per twists) + distance of the module + 200 mm.

WARNINGS

The electric installation and the functioning logic choice must agree with the laws in force. In any case you must foresee a 16A and threshold 0.030A differential switch. Keep the power cables (motors, power supply) separate from the command cables (push buttons, photocells and so on). In order to avoid any interference it's preferable to use two separate cables and ducts.

PRODUCT USAGE

The electronic equipment 23105161 has been designed to be used exclusively as management equipment for sliding gates automation, swing gates, sectional doors, overhead doors, barriers.

SAFETY AND ENVIRONMENTAL COMPATIBILITY

Disposal of the packaging materials of products and/or circuits should take place in an approved disposal facility.

STORING

| WAREHOUSING TEMPERATURES | | | |
|--------------------------|------------------|------------------------|-------------------------|
| T _{min} | T _{Max} | Dmpness _{min} | Dampness _{Max} |
| - 40°C | + 85°C | 5% not condensing | 90% not condensing |

Materials handling must be made with appropriate vehicles..

REPLACEMENT AND MAINTENANCE

The replacement and/or putting out of service and/or maintenance of the electronic equipment 23105161 must be made only and exclusively by authorised and qualified staff.

WARRANTY LIMITS

The warranty form of the electronic equipment 23105161 is valid for 24 months starting from the printed date on the product. The mentioned product will be considered under warranty if it doesn't show any damage caused by an irregular use or by any modification or breaking. The warranty is valid only for the original buyer.

NOTE: THE MANUFACTURER IS NOT CONSIDERED RESPONSIBLE FOR ANY DAMAGE CAUSED BY IRREGULAR, WRONG OR UNREASONABLE USE.