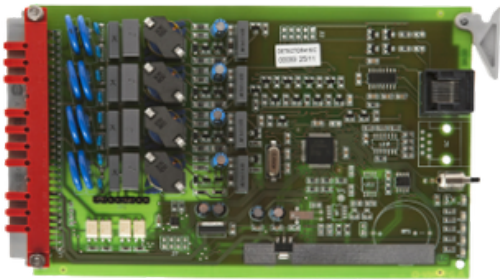




A1100

Loop Vehicle Detectors



The A1100 series detectors use microprocessor technology for vehicle detection via an inductive loop installed in the road surface and connected to the device through a two-wire cable.

Available Models:

- A1101B – “In box” version, single channel;
- A1102B – “In box” version, dual channel (two independent channels);
- A1102S – “Open frame” version, dual channel;
- A1104S – “Open frame” version, four channels;

Each channel can manage one or more loops connected in series or parallel, provided the total inductance remains within the limits specified in the datasheet.

Each channel features a status LED indicating vehicle presence and possible faults (short circuit or broken loop) through a diagnostic blinking mode.

Main Features:

- Automatic channel auto-calibration at startup or on command (front “Reset” button);
- Configurable relay output per channel with the following modes:
 - Presence: the contact remains closed for the entire duration of the vehicle’s presence on the loop, up to a maximum of 15 minutes. After this time, the system ignores the vehicle and resets detection on any free portions of the loop;
 - Pulse: the contact closes and reopens instantly upon vehicle detection, with immediate reactivation of the channel;
- Sensitivity adjustable on 7 levels via front selectors;
- Directional mode (A1102 and A1104): hardware configurable; allows detection of vehicle travel direction;
- Speed detection: available on A1102/A1104 via software configuration.

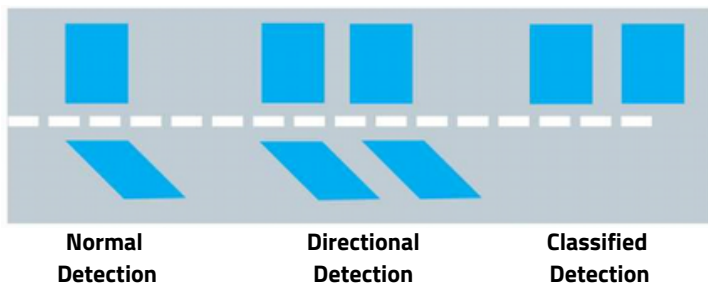


Configuration Features

- Operating frequency: selectable (FL/FH) to avoid interference between adjacent loops (cross-talk);
- Hysteresis filter: reduces false detections caused by inductance variations due to road surface deformations (permanently active on A1104S);
- Relay output exclusion: possible via front selector;
- Directionality: for A1104S models, channels can be paired (1-2, 3-4) to detect vehicle direction;
- Directional mode indication: signaled by four blinks at power-on or reset via channel 1 LED;
- Advanced Functions:
 - Detection of speed threshold exceeding;
 - Recognition of slow traffic or stationary vehicles, with adjustable thresholds.

Loop Installation and Placement

- Loops must be made using single-core conductors of 1.5 mm² with plastic insulation resistant to direct contact with bituminous substances;
- Insulation resistance must exceed 100 MΩ, measured at 500 V DC with the detector disconnected;
- Cable must be laid at a depth of 5 cm inside a groove made by milling the road surface;
- The groove must be sealed with cold bitumen to prevent subsequent cable movement;
- Loops with a perimeter < 8 m must have 3 turns of cable; those > 8 m, 2 turns;
- The junction between loop conductors and the two-wire cable must be made in a sealed potting box;
- Conductors must be twisted in the non-buried section;
- The cable connecting to the detector must be twisted pair.



DETECTOR A1102



DETECTOR A1104

Loop Geometry

The geometry of the loop varies depending on the application. The most common shapes include:

- Rectangular, for most installations, oriented at 90° to the direction of travel;
- Oriented at 45°, for increased sensitivity, for example in bicycle detection.

Loop Sizing

Normal or directional detection:

- Length (direction of travel): at least 1 meter;
- Width (transversal): depending on the lane or area to be covered;
- Recommended distances:
 - Distance between loop and adjacent lane: approximately 70 cm;
 - Minimum distance between two adjacent loops (edge to edge): 1 meter;
 - Maximum distance between two loops for directional detection: 1.5 meters.

Classified detection (speed/length):

- Dimensions must comply with the specifications of the classification system used;
- For SCAE systems, the recommendations are:
 - Width of 1st and 2nd loop: 1.5 meters;
 - Distance between inner edges: 1 meter.