

SWARCO

SW3224

LOOP DETECTOR

VEHICLE CLASSIFICATION AND SPEED MEASUREMENT

SWARCO loop detector for vehicles detection with classification and speed measurement for traffic data acquisition and traffic management.

SW2224 CLASSIFICATION DETECTOR

The SW3224 now offers the functions and outstanding features of the classification detectors in 19" plug-in technology also in a DIN rail mount version. The detector operates with two induction loops per lane, in accordance with ASTRA-SWISS specifications.



FEATURES

- Acquisition of traffic data in accordance with ASTRA¹ for two lanes with speed and length measurement, detection of direction and wrong way drivers with double loop systems, occupancy rate in connection with a controller
- Serial data transfer via interface
- 4 Open collector switching outputs for detection signals or optional functions
- Switching signals depending on vehicle class and/or vehicle speed for the direct control of a VMS with parameterizable blinking frequency and number of light impulses (special version)
- Single-loop version for traffic data acquisition and vehicle classification with single loops² for 4 lanes (special version)
- Maintenance-free
- Low power consumption
- Highly-reliable data acquisition, absolutely independent of climatic conditions and insensitive to interferences
- Automatic alignment, regulation of temperature fluctuations and non-volatile storage of all operating data
- Easy and space-saving integration due to DIN rail mounting
- TBUS system: bus system integrated in DIN rail for power supply, RS485 interface and detector synchronization

¹ ASTRA: Swiss federal roads office

² without speed / length measurement and detection of direction

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FUNCTIONAL DESCRIPTION

The SW3224 classifies the vehicles in ASTRA-SWISS classes (SWISS 10, SSVZ or car-similar/HGV-similar vehicles). When ASTRA-SWISS loops are used, the classification meets the accuracies required by the ASTRA and is not influenced by e.g. weather conditions. On activation of the directional logic, reports of wrong way drivers can be generated. The vehicle type is determined by means of passing-curves which have characteristic features depending on the different classes and the loop types used. The detector can provide the following single-vehicle data via the RS485 interface:

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|----------------------|--|
| Single vehicle data: | vehicle class, speed, length, distance, time of occupancy, time gap, driving direction |
| 2 classes: | car-similar vehicles (vehicles < 3.5 t) / HGV-similar vehicles (vehicles > 3.5 t) |
| SSVZ classes: | motorbike / car (car, car with trailer) / van (van, van with trailer, van with semitrailer) / bus / HGV / HGV with trailer + HGV articulated |
| SWISS 10 classes: | motorbike / car / car with trailer / van / van with trailer / van with semitrailer / bus / HGV / HGV with trailer / HGV articulated |

Via the RS485 bus single-vehicle data is transferred to a controller, which takes over further data aggregation acc. to ASTRA specification. The detector automatically adjusts itself to the attached loop/feed-cable combination. Variations in temperature have no influence on data acquisition. The measuring systems are permanently checked for short or open loops, only when a definite malfunction is detected, systems are put into a failure condition. If one loop of a double-loop system is disturbed, the remaining loop supplies further data on time of occupancy, time gap and a classification of car-similar and HGV-similar vehicles. Speeds and vehicle lengths cannot be determined. Short measuring intervals and a new procedure for speed measurement provide for the high accuracy of the measured data and the high detection speed, according to the requirements of the ASTRA.

TECHNICAL SPECIFICATIONS

| | |
|---------------------------------|---|
| Supply voltage | nominal 24 V DC, range 10 V DC - 38 V DC |
| Power consumption | max. 29 mA / 0.70 W with 24 V DC |
| Interfaces | RS485 data interface, service interface at front (USB adapter type <i>KA-SERVICE_AJ</i> optionally available) |
| Switching outputs | switching output per channel: Open Collector |
| Dimensions | DIN rail enclosure; height: 99 mm, length: 114,5 mm, width: 22,5 mm |
| Operating / storage temperature | -25°C to +80°C / -40°C to +80°C |
| Protection | III (low voltage < 60 V DC) |
| Design | DIN rail mounting (TS35 EN50022), to be installed in housing or cabinet with IP54 necessary (pollution degree 2) |
| Terminal strip | - MSTBT 2.5/4 (top and bottom) - TBUS system 1.5/5 (back side) - functional grounding via integrated contact and DIN rail |

For detailed information about the function, operation and pin assignment as well as further technical data see user manual.

