



## CERTIFIED DETECTOR CD3224

### VEHICLE CLASSIFICATION AND SPEED MEASUREMENT



SWARCO TRAFFIC SYSTEMS GMBH is a member of the internationally active SWARCO group, the one-stop shop for road markings, signage, signalisation and traffic management your reliable partner for traffic solutions.

The CD3224 loop detector was specifically designed for vehicle detection with classification and speed measurement for traffic data acquisition and traffic management. The detector is designed for direct DIN rail mounting and includes a complete surge protection module for the induction loops. The detector is certified by the German federal highway research institute (BAST) for TLS-loops type 1 and type 2 with a feed cable length of 300 m in all classes without double wiring.

#### FEATURES:

- Certified for TLS-loops type 1 and type 2 (optionally)
- Acquisition of traffic data in accordance with TLS<sup>1</sup>/BAST<sup>2</sup> 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
- For feed cable lengths up to 300 m is only one pair of wires per loop necessary
- 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)
- 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 by mounting on DIN rail
- TBUS system: built-in DIN rail bus system for power supply, RS485 interface and detector synchronization
- Fully integrated surge protection for induction loops, no additional components necessary

<sup>1</sup> TLS: Technical delivery terms for roadway stations  
<sup>2</sup> BAST: German federal highway research institute



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### FUNCTIONAL DESCRIPTION:

The CD3224 offers the features and outstanding characteristics of the SWARCO TRAFFIC SYSTEMS classification detectors in 19" technology now also in a device for DIN-rail mounting. Developed on the basis of the proven and certified MC2224 / CD9234, it includes a complete surge protection module. This integration minimizes the wiring and reduces the space requirement considerably.

The CD3224 classifies the vehicles in (8+1), (5+1) or 2 classes acc. to TLS. When TLS loops are used, the classification meets the accuracies required by the German federal highway research institute 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, depending on the TLS classification version:

Single vehicle data:	vehicle class, speed, length, distance, time of occupancy, time gap, driving direction
2 classes acc. to TLS:	car-similar vehicles (other vehicles, motorbike, car, van) / HGV-similar vehicles (car with trailer, HGV, HGV with trailer, HGV articulated, bus)
(5+1) classes acc. to TLS:	other vehicles / car group (motorbike, car, van) / car with trailer / HGV / HGV combination / bus
(8+1) classes acc. to TLS:	other vehicles / motorbike / car / van / car with trailer / HGV / HGV with trailer / HGV articulated / bus

Via the RS485 bus single-vehicle data is transferred to a controller, which takes over further data aggregation acc. to TLS-specifications. 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 TLS 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 German federal highway research institute.

The test pattern certified by the Federal Highway Research Institute consists of the detector CD3224 and an STS-FG1-IOC for the data aggregation and connection to the Federal Highway Research Institute testing system.

### TECHNICAL DATA:

supply voltage	Rated voltage 24 V DC, area: 10 V DC - 38 V DC
Power consumption	max. 29 mA / 0.70 W at 24 V DC
Interfaces	RS485 data interface front-side service port (USB Adapter KA-type SERVICE_AJ optional)
switching outputs	Switching output per channel: Open Collector
dimensions	DIN rail mounting 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
Device protection class	III (low voltage <60 V DC)
Installation	Mounting on DIN rail (TS35 EN50022); installed in housing or cabinet with IP54 required (pollution degree 2)
connecting terminals	- MSTBT 2.5 / 4 (top and bottom) - TBUS system 1.5 / 5 (back) - Function 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.

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### SWARCO TRAFFIC SYSTEMS GMBH

SWARCO TRAFFIC SYSTEMS GMBH is one of the leading suppliers of intelligent traffic systems in Germany. Building on many decades of experience, it offers a wide range of innovative solutions for urban and interurban traffic management, including parking and traffic detection. Its nationwide service and maintenance network guarantees highest possible system availability and improved road safety. With economical, sustainable, and environmentally friendly technologies we help ensure smooth and safe traffic flows.

### SWARCO TRAFFIC SYSTEMS GMBH

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