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Clearguard AC 100 axle counting system

Scalable track vacancy detection system for efficient railway operations

The Clearguard AC 100 electronic axle counting system (Clearguard AC: system family of axle counting systems with a bus and relay interface) is oriented to current hardware and software standards and is based on the proven Simis safety principle (fail-safe microcomputer system made by Siemens).

Clearguard AC 100 is designed for use on mainline, regional, industrial and light-rail rapid transit railways and meets the requirements of many operators.

The Clearguard AC 100 axle counting system can be used for the following applications:

- with all traction types
- with all common car types
- in station areas and on single- and multiple-track lines
- on track sections of any length
- for speeds of up to 400 km/h

Benefits

High level of availability based on a standardized 2-out-of-3 computer architecture

Fail-safe computer platform (Simis ECC)

High level of integration (19" modular system), permitting compact interlockings with enhanced system characteristics

Non-disruptive and flexible extensibility

Innovative maintenance and modification: board replacement possible without interrupting normal operation; adaptation without change of software thanks to alternate WDE connector

Scalable system through use of two detectors with different operating principles, permitting needs-based configuration



Technical data	
Connectable wheel detection equipment Clearguard ZP D 43 I	connection via ISDN interface, max. control distance 21 km
Axle counting system Counting capacity	65,000 axles per track vacancy detection section
Number of connectable Clearguard ZP D 43 I wheel detection equipment	max. 36 per evaluation computer, 72 per axle counting cabinet
Number of control sections IL bus Relay	72 per evaluation computer 30 per evaluation computer
Output of operator-specific information	max. output of indications (e.g. approach indication, block information) for eight track vacancy detection sections
Modular system	SIPAC inch (19" plug-in modules)
Supply voltage Uninterruptible power supply	24 V (-10% +20%) to 60 V (-10% +20%) DC, ripple < 5% 230 V (-0% to +20%) AC
External power supply (ZP D 43 I)	70 V to 110 V (+10%) DC, ripple < 3% 50 V _{rms} to 78 V _{rms} (+10%) AC, 50 Hz
Power consumption of Clearguard AC 100 ZP D 43 I per counting head	approx. 5 W (excluding cable losses)
Clearguard WSD per subsystem	approx. 0.1 W (excluding cable losses)
2-out-of-3 computer	11 W (referring to Simis ECC CU2)
Ambient temperature Indoor equipment	-40 °C to +55 °C
Outdoor equipment	-40 °C to +80 °C

References

German Railways (DB AG), Germany

Clearguard® is a registered trademark of Siemens AG.

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The information in this document contains general descriptions of the technical options available. The required features should therefore be specified in each individual case at the time of closing the contract. For the secure operation of Siemens products and solutions, it is necessary to take suitable preventive action and integrate each component into a holistic, state-of-the-art security concept. Third-party products that may be in use should also be considered.