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Level crossing technology.
Safe. Reliable. Capable.



RBUEP
electronic level-crossing control system

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Applications

The new PINTSCH-type **RBUEP** computer-controlled level-crossing control system combines the advantages of our all-electronic RBÜT system with the more flexible BÜP93 secondary route technology. It can thus be used both for DB Netz AG and non-federally-owned railway systems. Thanks to its flexibility it is also eminently suitable for international use.

The RBUEP has been developed on the basis of the tried and proven SIRES intrinsically safe (fault-tolerant) computer system and meets the requirements of the highest system-integrity level (SIL 4) of the CENELEC series of standards.

The RBUEP can be used on routes featuring trackside signals and monitor signals and combinations of these. In addition, passenger and pedestrian safety systems and manually operated level-crossing barriers can be implemented using the RBUEP.



Equipment variants

In maximum equipment configuration, the RBUEP can actuate and monitor up to 32 road-side traffic lights (2-aspect, yellow/red), 16 barrier actuation systems, 48 track-mounted switching elements, 48 manual switching elements (single-channel) and/or 24 manual switching elements (two-channel).

The PCBs of the RBUEP are mounted in a two-row mounting rack. Single-channel (1x24VDC or 1x36VDC) and two-channel (2x18VDC) power supply arrangements are possible.

The RBUEP is normally housed in a rectangular or square concrete switchgear building, but can also be installed in a control cabinet if necessary.



Excellent visibility

Features:

- All-electronic
- CENELEC SIL 4
- Modular structure
- Flexibility thanks to configurable inputs/outputs
- Extremely compact design
- Ultra-high availability
- Activation of LED signal lamps for road and rail traffic
- All-electronic barrier actuation
- Integrated diagnosis function for fault location

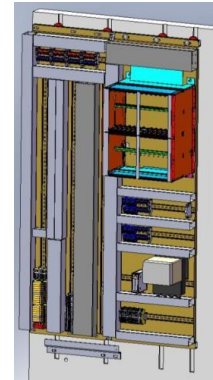


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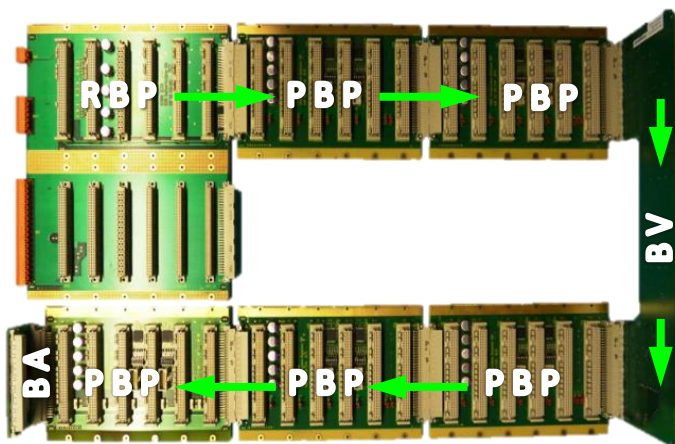
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Compact design

The experience gained from the RBÜT has enabled our development engineers to further optimise the structure of the RBUEP. A new feature is the fact that all the PCBs for connection of the peripherals are arranged successively but in any order on the six vacant slots on the PBP peripherals-bus backplane (see illustration below). In addition, all PCBs and PBP backplanes are fully utilised during project planning. The next PCB or backplane is used when no further inputs/outputs or slots are available. This has made it possible to reduce the number of mounting racks, PCBs and backplanes compared to the RBÜT. Only the modules of the intrinsically safe (fault-tolerant) SIRES computer system have permanently assigned slots on the RBP computer backplane



Installation of RBUEP in the switchgear building



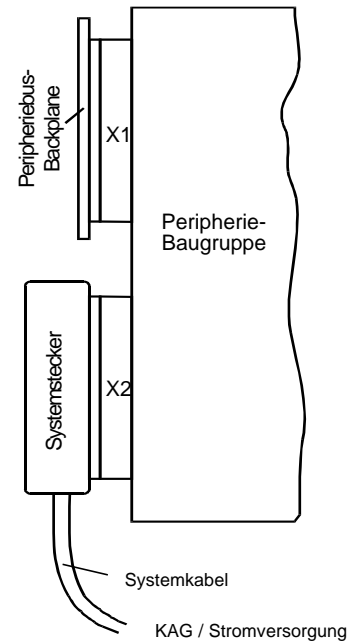
Also new is the capability of activating up to four road-side traffic lights (yellow and red) using an LL PCB. In the RBUEP, the peripherals bus adapters (PBAs) for connection to the BUS system are located directly on the PCBs – additional modules as needed in the case of the RBÜT are thus no longer necessary for this purpose.

Subject to technical changes

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The EA PCB also features a further adapter in addition to the PBA. Various interfaces, such as a stop signal interface, manual barrier actuation, monitor signals and crossing repeater signals, LC/LC interface, level-crossing safety system interface and flexible inputs/outputs can be operated, depending on the type of this additional adapter.

The flexible inputs and outputs of Module EA-4/4 are used for individual adaptation to match customers' specific requirements. "Permission monitor signal (ÜS)" can, for example, be used to include an external criterion (e.g. a factory gate) in the RBUEP's signal enable. RBUEP system states can also be used for an external switching unit via the use of outputs such as, for example, "Activate level-crossing safety system", "Barriers down" or "Signal enable on red".



Connection of system cables to PCBs

Subject to technical changes



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