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Level crossing technology.  
Safe. Reliable. Capable.



**RBÜT**  
electronic level-crossing control system

# RBÜT

## electronic level-crossing control system

### Applications

The PINTSCH **RBÜT** electronic level-crossing control system can be used in all level-crossing control applications. The RBÜT supports trackside signals, main signals, remote monitoring, trackside signals with optimized activation and combinations of these. The RBÜT can also operate as passenger and pedestrian warning systems (PWS), level-crossing with manually operated barriers and on-call level-crossing.

Today, there have been installed more than 1200 RBÜT in the route network of German Deutsche Bahn AG, running proven highly reliable.

### Equipment variants

In maximum equipment configuration, the RBÜT can actuate and monitor up to 36 road-side lights (2-aspect, yellow/red), 12 barrier actuation systems and 4 tracks (8 tracks in the case of monitoring mode Hp). The RBÜT PCBs are installed in standardised mounting racks. The basic rack (see illustration below) can be equipped with PCBs for connection for up to 6 road-side lights (road-traffic signals) and 4 barrier actuation systems. The RBÜT can be expanded for virtually any application by installing additional mounting racks with the corresponding peripheral modules. A Lx-acoustic-module can also be connected to permit emission of acoustic signals.



### Activation/deactivation

Track-mounted switching elements such as FSP train detection systems (induction loops) and wheel sensors (treadle contacts) can be connected to the RBÜT for train-actuated automatic activation and deactivation.

Manual switching equipment such as ETO, ETv, HET, UT, WT, AT and RS is available for manual operation of the system. In addition, the RBÜT can also be activated from the cab by the train driver by means of inductive communication systems such as IMU and/or MK if necessary.



Highly visible by LED

### Features:

- All-electronic
- Centralised control and monitoring
- Modular structure
- Scalable for all monitoring modes
- Ultra-high availability
- Activation of LED signal lamps for road and rail traffic
- All-electronic barrier actuation
- Integrated diagnosis functions for fault location



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### Interfaces

The RBÜT has the capability to operate all standardised interfaces for interchange of information with neighbouring level crossings (Lx-Lx), signal boxes (interlocking towers, IL-Lx or IL-PWS), road-traffic signalling systems and automatic “crossing clear/crossing occupied” scanner systems.

### Further options

Both barriers operating on the closed-circuit principle (fail-safe close function in case of power failure) and those operating on the open-circuit principle (no fail-safe close function) can be used.

Signal-actuated level-crossing control systems with full (“four-quadrant”) crossing closure can be configured with the manual barrier actuation (Stop/Open/Close) function if required.

Specially developed conductor-modules can be installed in the cable termination rack to protect the system against voltage spikes (caused by lightning, for example). These modules feature an automatic self-test function and can thus be integrated into the diagnosis concept.

### System concept

The RBÜT concept is based on the interaction of an intrinsically safe two-out-of-three computer system and the corresponding peripheral modules for tracks (track-mounted switching elements and manual switching equipment, crossing-protection signals), for road-side lights and for barrier actuation systems.

The three computers of the intrinsically safe computer system operate using the same software and run through a specified cycle. System errors are detected by means of comparison of the data of the three separate channels.

System elements, the failure of which would have a direct effect on level-crossing safety, are installed redundant and are continuously monitored by the computer system.

The system structure and computer architecture selected thus assure a high level of safety and technical availability plus low production costs.



RBÜT with two mounting racks



Lx acoustic module

Subject to technical changes

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### Power supply

The RBÜT is designed for connection to a 230V/50Hz AC power supply. The power supply can, where necessary, be implemented ungrounded as an IT system using an isolating transformer. Uninterruptible power supply for the RBÜT is assured by means of the Type GMC-E battery charger and appropriately dimensioned batteries.



Lightning protection on CTR

Subject to technical changes





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