

UTB Electronic Level Crossing Equipment

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Signal Protected Type



The UTB is a completely electronic control equipment to be used for the railway traffic-dependent automatic operation of the signals and barrier drives of the open-line level crossings. The equipment gives check-back towards one or two railway traffic working places, so informing the railway staff about the operation of the equipment in this way it ensures possibilities to handle the irregular situations. The check-back and handling of the equipment is based on electronic communication, therefore, it provides much wider information and it can be installed without distance limitation. UTB is a „signal-protected” type. It is different from other types in a way that it gives signals not only toward the public road but also to the railway traffic; consequently the train staff is informed directly whether the level crossing is closed. In addition, by means of protection signals the role of supervising the place of work is reduced, so ensuring that the staff at railway may be regrouped easily. This solution may be more expensive but it provides higher traffic safety.

The equipment has its own built-in data logging system which can be interrogated on a modem and suitable for fault localization by means of its detailed information content. This type of level crossing can be adapted easily by its flexible parameters. The basic type has the following features:

- Capable of handling the connection by means of a road traffic controller
- Its protection signals can be either its own ones or external signals
- Capable of operating repeating signals if required
- Train detection can be punctiform (13kHz) or by means of axle counters
- Its switch-on point can be its own one, or controlled by an external equipment
- Its timing can be parametered in a flexible way
- Suitable for shunting or branching operations

Parameters

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|--------------------------------|---|---------------------------|
| • Overall dimensions | : | 860 × 860 × 2,100 mm |
| • Operating temperature range | : | -20 ... + 70°C |
| • Operating humidity | : | 0...95% relative humidity |
| • Dust and moisture protection | : | IP 54 |

- Power supply : 220V or 230V AC 50Hz
- Nominal voltage : 48V DC
- Operating voltage range : 42V-60V DC
- Uninterruptable method : buffered battery
- MTBF : 50 000 hours
- Life span : 25 years
- Contact protection : 1st class
- Track : 1, 2 or 3 tracks
- Train detection : punctiform 13kHz, or axle counter
- Quantity of public road signals : 2-16 pieces
- Half-barrier : 2-8 pieces
- Event-logging system : black box, the log of failure is suitable to store 4,095, the operation log can store 16,383 messages, capable for fault localization; it can be interrogated locally on RS232 surface, from remote place on a modem (wired or GSM)
- Check-back : 2 or 4-wire digital data transfer, microprocessor controlled remote handling unit

Construction Assembly Levels

Basic construction

The UTB equipment includes inner components in accordance with the adaptation except for additional elements realizing optional or unique requirements:

- Modules in accordance with the demands of adaptation plan
- Series terminals,
- Control elements,
- Cable reception series terminals,
- Overvoltage protection at each input of the cabinet, except for train detection inputs,
- Power-supply system,
- Batteries (in the inner cabinet in a separate sealed box supplied with a sensor of opening,
- Sealed cabinet equipped with a thermal protection shield, a rain shield roof, an opening sensor and an alarm device (siren)

Train detection (as specified by client):

- Track relays
- Axle counter and their accessories

Recommended special measuring and testing equipments

- Light Circuit Testing Equipment (FTK)

Advantages of the UTB Level Crossing Equipment

- High MTBF value, long life span
- Low power consumption. Integration into a telemonitoring through a public or closed telephone network
- Simple servicing. Application with LED light sources or conventional bulbs in the signals
- Flexible adaptation to the local conditions. Applications with different train detection elements (track circuits, axle counters etc.)
- Easy local fault detection by status LED's placed on the front of the modules, local error correction by means of a simple module change