



MAS-01/7

Signal-Protected Module Automatic Level Crossing



The main feature of signal-protected barrier control equipment is that it gives signals not only towards the public road but also to the railway traffic. It makes a much safer operational principle possible and at the same time it can be operated without supervision.

By means of the railway protection signals the problems of train detection are solved, no need for guaranteed detection of the approaching railway vehicle because the train personnel is directly informed about the unsuccessful detection. We can ensure by the same signalling that in case of an unsuccessful close of the public road (for example failure of the bulb) no emergency situation can occur, in this way the number of the possibilities that can endanger the safety is reduced.

The signal-protected equipment type is a little bit more expensive considering investments but in a long term the expenditures are recovered because there is no need for giving check-back to the places of work (traffic control places) in this way the station workforce can be regrouped easily.

The equipment is of increased availability: in case of failures, if it is possible, it reduces the traffic troubles by white switching-off or giving out a call signal depending on the traffic. In case of non-critical failures, after determined timing, it attempts to restore the normal operational state automatically. For the reduction of the failures we recommend to use LED light sources in our signals, but upon request they also can be supplied with bulb construction.

Our event logging system is recommended to the equipment which can be interrogated on a modem, and it is also suitable for fault diagnostics because of its detailed information content.

During the installations, different equipments with special electric circuit solutions have been completed as follows:

- It handles advance signals or advance signal dependence, (the role of the advance signal can be performed by a nearby neighbouring crossing barrier)
- The advance signal interlocking (dependence) can be either inside or outside the braking distance.
- It operates repeating signals
- Special version for the cases of nearby stops with 5 sensing points,
- Possibility of local handling is ensured upon request.

Parameters

- Overall diameters : 610 × 1286 × 2085 mm
 - Operating temperature : -30 ... + 70°C
 - Operating humidity : 0...95% relative humidity
 - Dust and moisture protection : IP 44
 - Power supply : 230V AC 50Hz or 75 Hz, or
500 V AC 50Hz or 75 Hz
- Rated voltage : 24V DC, 48V DC or 60V DC,
(80V DC in case of repeating signals)
- Operational voltage range : 19V-30V DC
- Uninterrupted method : buffered battery
- MTBF : 50,000 hours (except for potentiometers)
- Life span : 2×10⁶ cycles, or 10 years

- Contact protection : 1st class.
- Troubling (interference) : IEC801
- Trouble protection : MSZ EN 55022-B
- Track : 1 track, expandable for 2 tracks
- Train detection : 13kHz, with electronic receiver circuit
- Quantity of public road signals : 4 pieces, expandable
- Half-barrier : 2pcs, expandable
- Event logger system : also suitable for fault diagnostics, it can interrogated on GSM
- Check-back : simplified with 2 wires

Technical description

Versions with 4 train-sensing points, for distances longer than the braking distance, having neighbouring connections, or without local handling, are available in a separate document.

Construction Levels

Basic construction

The basic construction level of the MAS-01/7 type control cabinet can be featured as follows:

Inner cabinets according to adaptations except options

- Modules, in accordance with the demands of adaptation plan
- Series terminals,
- Control elements, adjustment elements, potentiometers
- Fuses
- Cable reception series terminals
- Over voltage protection at each input of the cabinet, except inputs of train sensing
- Small instruments: battery charger, flashers, timers, grounding checkers, other accessories
- Stand and inner cabinet
- Outer heat-insulated cabinet

Items not included in basic price:

- Axle counters and its accessories

Option

- Event recorder system : ER-2 (link)

Offered special measuring- and testing equipments

- Module and Card Testing Equipment (MKB-1)

Advantages of MAS Automatic Level Crossings

- **High MTBF value**
- **Long life span**
- **Low power demand**
- **Event-logging system can be connected with a GSM modem**
- **Simple service possibility**
- **Increased availability**
- **No need for giving check-back to the traffic control place, therefore, the workforce costs can be reduced**
- **Application of LED light sources or conventional signals with bulbs**
- **Flexible adaptation to the local conditions**
- **Applications with different train detection elements (track circuits, axle counters, etc.)**
- **Easy fault detection by status LED's located on the front of the modules**
- **Local error correction by simple module change**