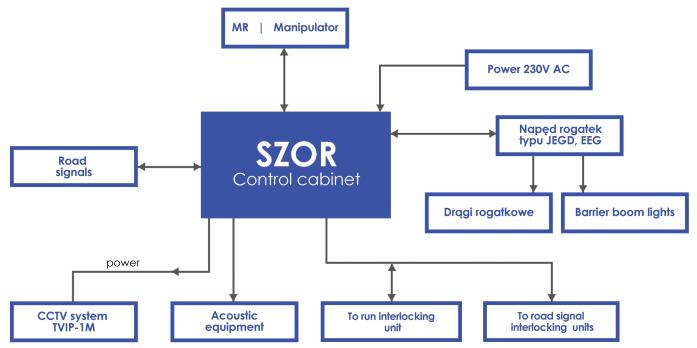
Level crossing system type UP-1 is used to ensure safety at crossings of public roads and railway lines by notifying road users on rail vehicle(s) approaching the crossing and simultaneously blocking the traffic with boom barriers. The system may be installed and operated at level crossings of roads with railway lines, in particular at railway stations, branching posts, block posts, trunk lines and level crossings of roads with railway sidings.

RANGE OF APPLICATION

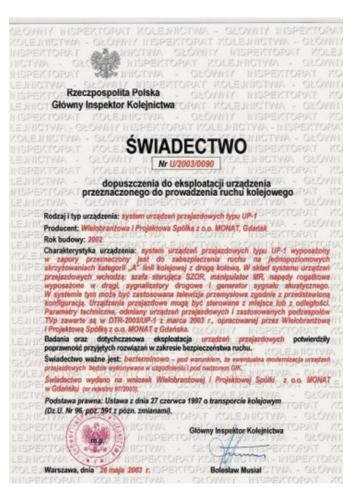
Depending on operating conditions, the system equipment may be controlled locally or remotely. Due to diverse local conditions and design solutions for specific level crossing, the system may comprise components indicated in drawings in the quantity not exceeding four gate machines and four road signals. With remote control capability, permitted distance between the manipulator and the cabinet is up to 2000 m, provided that suitable cross-section of cable wires is selected.

SYSTEM DESIGN DRAWING



CERTIFICATE

Level crossing system UP-1 has "Certificate of admission to operation in rail traffic of PKP" no. U/2003/0090"



SPECIFICATION

| Name and parameters of the device | Parameter value and other characteristics | Notes | |
|--|---|---|--|
| SZOR control cabinet | | | |
| Supply voltage | 230 V (+10% - 15%) 50 Hz | | |
| Max. input power from the grid | 800 VA | | |
| Level crossing UPS | 24 DC,- battery bank 65Ah/12 VDC | | |
| Thermocouple regulated power supply type M1C FTS-W | 26÷31 V DC (variable, in function with temperature) | Power supply units are fitted with battery discharge protection | |
| Device operation time upon failure in power supply 230V/50Hz | 24h/100 pairs of trains | | |
| Electrical strength of insulation | 2 KV AC | | |
| Ambient temperature range | - 40°C ÷ +70°C | | |
| Cabinet dimensions [W/H/D] | 710 mm / 1380 mm / 660 mm | | |
| Cabinet weight | up to 100 kg | Without battery bank and PSUs | |
| Early warning time | 0 ÷ 30 s (adjustable) | As a standard 8 s early warning time is preset | |
| Relative humidity | 0 ÷ 85% | | |
| Grid overvoltage protection | Overvoltage switch | | |
| Protection against overvoltage form the cable connecting the manipulator MR with the cabinet SZOR | Overvoltage protection assembly: ZZP-02 | | |
| Supply voltage of control and monitoring equipment | 24 V DC | | |

| Supply voltage of gate machines JEGD, EEG | 24 V DC or 230 V AC | | |
|--|--|---|--|
| Switched-mode power supply assembly | | | |
| of road signals | Dual circuit switched-mode power supply of road signals type ZZI-11/S; 2 x 50 W; fimp~1 Hz | | |
| | Dual circuit switched-mode power supply of boom barrier | | |
| Switched-mode power supply assembly | lights type ZZI-01/L; 2 x 50 W; fimp~1 Hz | | |
| of boom barrier lights | | | |
| Floor mount | Concrete footing | Concrete footing comprises 6 elements | |
| MANIPULATOR | | | |
| Manipulator type MR | The component controlling and monitoring the state of boom barriers road signals, power supply 230 VAC and sabotage | May be installed outdoors (in dedicated housing) | |
| | GATE MACHINES | | |
| type JEGD–50 | | | |
| type JEGD-6 | Supply voltage: 24 VDC or 230 VAC | | |
| type EEG-1 | | | |
| All gate machines are fitted out with boom barriers type | | | |
| ZDA – single, aluminium type | Length up to 6 m; protection module | | |
| ZDP – single, plastic type | Length up to 6 m; protection module | All boom barriers are suitable for installation of lights* and they are fitted with dedicated electric supply for such lights by MONAT and the boom barrier integrity control system. | |
| ZAA – Aluminium, A profile | Length between 6 and 12 m | | |
| ZMD – metallic-wooden type; A profile | Length between 6 and 12 m | | |
| ZAP – plastic, A profile | Length between 6 and 8 m | | |
| | WARNING DEVICES | | |
| Road signal type SD-1M with two signal lights | | Signal light may be fitted out with a light bulb or TLT diode illuminator | |
| single filament light bulb | 12 V; 24 W | | |
| TLT diode illuminator | 12 V; 13 W | | |
| light visibility | min. 100 m | | |
| flashing frequency | f= 60/min (1 Hz) | | |
| Boom bo | arrier light | Suitable for installation on all types of boom barriers | |
| Bulb light | 24 V 10 W | | |
| Diode light | 24 V 2.7 W | | |
| Visibility | min. 300 m | Power supply 24 VDC Audibility min, 30 m (from the boom | |
| Acoustic signal generator | | barrier) | |
| Typhon | | | |
| | type KBB-6/ | F.U.S.T. Sygnały S.A. Rybnik | |
| Typhon, modulated (electronic) | type KBB-6/ EHL-S10 | F.U.S.T. Sygnały S.A. Rybnik AUER Signalgerate | |
| Typhon, modulated (electronic) | | | |
| Typhon, modulated (electronic) Equipment and configuration as per the order | EHL-S10 | | |
| | EHL-S10 CLOSED CIRCUIT TELEVISION Dedicated camera and video channel amplifier power | | |
| | EHL-S10 CLOSED CIRCUIT TELEVISION Dedicated camera and video channel amplifier power supply - from SZOR cabinet, by Monat | | |

* - for boom types ZAA, ZAP and ZMD boom integrity control system is installed on Customer request and charged additionally.

Immunity of the equipment and SZOR cabinet to interferences and EMC complies with PN-EN 61000-4-4 (Immunity to electrical fast transient/burst); PN-EN 61000-4-5 (immunity to surges) and PN-EN 61000-4-11 and PN-EN 50082-2 (immunity to dynamic changes in supply voltage). Level of interferences generated by the device does not exceed values permitted in the standard PN-EN 50081-2. Above immunity levels and interferences generated were defined by CNTK – Rail Traffic Control Institute under Task no. 8493/23 of February 2000.

SZOR cabinet meets all immunity requirements concerning vibrations and shocks imposed on rail traffic control equipment.