Innovative level crossing solutions for global market
Turn-key solution

OUTDOOR UNITS FOR LEVEL CROSSING PROTECTION SYSTEM

INDOOR EQUIPMENT

RLC23
Central Device

OUTDOOR EQUIPMENT

KS11
LED Driver’s Indication Signal

CS - LHR
LED Road Signal

PB13
Half-barrier

ZK24-2
Rail Wheel Sensor

VUR
Lightning Protection Module
RLC23 central unit (cabinet)

- 2x24 DC power supply with battery backup
- Hot-swappable modules
- SIL4
- -30°C to +70°C
- 40-120 VDC
- Vital event recording – NVRAM, SD card
Central cabinet architecture

Microprocessor control platform APIS-RLC

Interface block

Control indication panel

Overvoltage protection block

Axle counter BO23 indoor unit

*Power supply, interconnection connectors and other auxiliary equipment (rear side of cabinet)
Basic system architecture diagram
Distributed vital platform APIS-RLC

Modules:
- PWR (power)
- SUC (supervision unit with communication)
- TD (train detection)
- RS (road signals)
- BR (barriers)
- DS (driver signals)
- HS1 (house signals)
- HS2 (house signals)
**Distributed vital platform APIS-DK**

- For interfacing with station and/or block interlocking
- For driving operators panel

**Modules:**
- PWR (power)
- SUC (supervision unit with communication)
- DK1 (remote control 1)
- DK2 (remote control 2)

Optional redundant ring link (another 2 fibers in fiber optic cable or another twisted pair in the copper cable)
RLC23 train detection principle with switch point or train stop area
Road signalisation

- Up to 8 pcs. when using two lanterns with double/single filament or two LED lights
- Up to 8 pcs. when using LED-lanterns or single filament wire bulbs with additional light for ‘positive signalization’
- Up to 4 pcs. when using double filament wire bulbs with additional light for ‘positive signalization’

- Alpro designs and produces market specific road signalisation (both electrical and mechanical part)
- One bell/speaker per road signal – electronic bell, electromechanical bell or siren to chose
Train driver signalisation

- Up to 4 pcs. of MAIN driver’s indication signals
- Up to 4 pcs. of AUXILIARY driver’s indication signals or repeaters of main driver’s indication signals
Barrier system

- Simple design for high reliability and availability, price competitive
- DC electromotor with integrated brake system
- All timings adjustable by PC toolkit and locally in barrier drive housing
- Barrier arm up to 11m with fracture (integrity) and position detection / control
Parameter configuration through PC application

ROAD SIGNALS:
- frequencies of red light blinking (60/80 blinks/min..)
- bulbs with two filament wires (main and auxiliary) or single or LED lanterns
- electronic regulation of bulb current
- ‘traffic light’ operation – combination of colours, time intervals...

(HALF) BARRIERS
- use of obstacle detector
- time between LC activation and lowering the barriers
- minimum/maximum time for lowering/lifting the barriers
- with or without light on the barrier; with or without use of heathers
- will fracture of the barrier cause LC permanent switching on, or rising the barriers and switching off...
Application specific additional features

• Video monitoring system, “boom spikes in the concrete (road surface)”, road surface lights, LX house/hut...
Certification

RLC23 system is certified for SIL4 application according to the standards EN 50126, EN 50128 and EN 50129 by TÜV Rheinland, one of the best Type A Independent Safety Assessor.
Testing

Electromagnetic compatibility (EMC) testing according to the EN 50121-4

High and low temperature immunity testing according to the EN 50125-3
100% home made

- All system parts are designed and produced in Croatia – no components compatibility issues
Serial production for global market
Altpro services

- Specific application product design
- Project design documentation
- Specific application safety assessment support
- Training
- Installation support
- Testing and commissioning support
- Maintenance support