



# ELECTRONIC LEVEL CROSSING SYSTEM PZZ-EA

- Automatic control triggered by train operation
- Failsafe and reliable system meeting SIL4 requirements according to CENELEC Standards
- Used as a level crossing system of 1st, 2nd or 3rd category for railway lines without electric traction, or with AC or DC electric traction
- Appropriate replacement of vintage level crossing with valve track circuits
- Failsafe level crossing remote control
- Direct data connection to the AŽD station interlocking
- Failsafe contact interface to other station interlocking
- Internal registry of operation states
- Electronic supervision of wayside elements
- Wide range of switch on/off elements



### General Description

The PZZ-EA level crossing system is designed to protect locations where roads cross a railway (one or multi-track) line. Information about the level crossing state (open/closed) can also be transmitted to barrage signal/protection signal.

Failsafe transmission of indications and commands to the station is carried out by transmission control unit. The control unit can be connected to the interlocking system through data/voltage interface and respective control and indications are provided by means of JOP (Unified

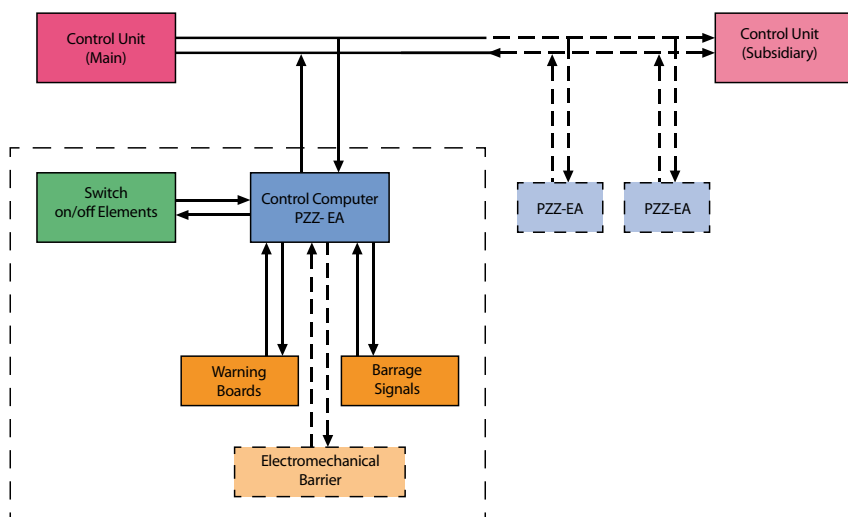
Active Control Place).

PZZ-EA can be used on following lines:

- single or double track lines
- with switch-on by line elements
- and switch-off (annulment) by intermittent elements
- with switch-on/off by intermittent elements including axle counter
- with/without barrage signals
- with/without line signalling.

PZZ-EA can be used in stations:

- with control based on station



Simplified block diagram





- interlocking without respective switch on/off elements
- with control based on the station interlocking and respective switch-on/off elements.

### Basic Technical Description

The safety concept is based on redundant configuration with application of inverse algorithms. Result of the algorithm input data processing is a determination of level crossing state.

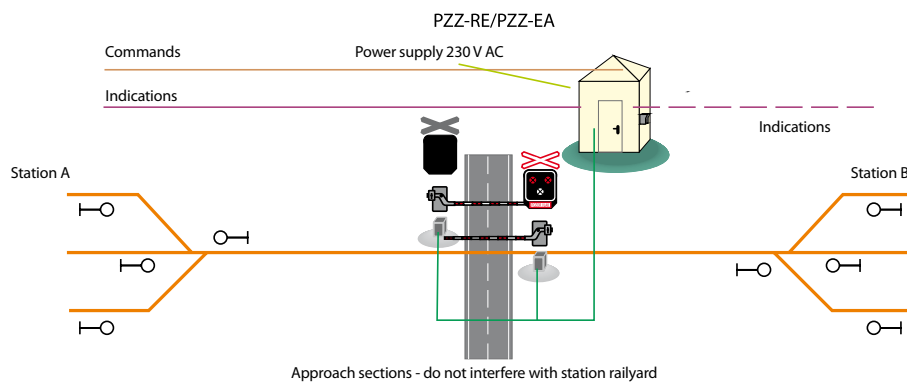
PZZ-EA power supply part consists of accumulator batteries, charger and protection. According to the local conditions the equipment can be placed to the interlocking room or to level crossing shed.

Compatibility with ERTMS/ETCS system is provided by the link to the station. Internal diagnostics and system can be connected to LDS diagnostic system. System can be also provided in design to adverse climatic conditions.



### Basic Technical Parameters

Power supply	230 V ± 10 %, 50 Hz	
Max. input (during fiat battery charging)	according to a charger	
Power supply of electronic device	21,6 to 30 V DC	
Working temperature range	-25 to +70 °C	
PZZ-EA operating input (without wayside elements and charger)	150 W	
Max. number of warning boards	with positive signal and without acoustic signalling supervision	8
	without positive signal and acoustic signalling supervision	12
	with positive signal and acoustic signalling supervision	6
	without positive signal and with acoustic signalling supervision	8
Number of barrier drives	0 to 8	
Max. number of tracks	at open line	2
	at station	unlimited
Max. number of barrage signals	2	
Max. number of repeating barrage signals	2	
System service life	more than 25 years	



Block diagram - example of PZZ-EA on line