

ELECTRONIC VALVE TRACK CIRCUIT (EVKO)

- Failsafe identification of track section occupancy
- Substitute of classic valve track circuit
- Check of track section integrity
- Static and dynamic shunt sensitivity
- Electronic interface to level crossing system (e.g. PZZ-EA)
- Relay interface through N class relays (UIC)
- Connection of diagnostic and measuring systems via RS 485 or RS 232 channels
- Automatic parameter setting without operator intervention
- Low maintenance cost
- Operating diagnostics



DCL and the power supply end

General Description

The electronic valve track circuit EVKO has been designed for the occupancy identification of two track sections A and B. In terms of the equipment type it concerns a standard two-processor unit architecture 2oo2. It consists of a voltage and current sensor connected to the railyard through the transformer with the protection elements.

Basic Technical Description

The generator of working frequency controlled by the amplitude regulator of the generated signal and the amplifier of the generated signal are connected into the sensor input branch.

The current and voltage sensor coupled to inputs of analogue-digital converter whose outputs are

lead to the computer is connected into the output branch.

The computer evaluates the track circuit state, controls the regulator by its commands, checks the state of its peripherals and communicates with adjacent equipment via input-output interface. To secure the correct and failsafe functions the lateral digital and analogue comparison between both control units takes place.

Equipment generates voltage with the determined frequency to the track circuit and measures the actual impedance of the track circuit. Impedance is controlled by a dynamic current limiter connected on the opposite end of the track circuit between the stretch of rails. This way the occupancy of the track

circuit can be determined safely by the analogue method.



EVKO control computer



Basic Technical Parameters

Format of plug-in units	(160 × 100) mm
Temperature range	−25 °C to +70 °C
Nominal DC power supply voltage	24 V
Range of DC power supply voltage	19,2 V ÷ 36 V
EVKO working frequencies	75 Hz, 125 Hz, 275 Hz
Power input	max. 50 W
Permitted voltage on DCL input	max. 4V
Real length of the direct track circuit or the branched track circuit with branches in series	min. 800 m
Minimum length of the track circuit	24 m
Reaction interval	2-5 seconds
Electric strength	4 kV

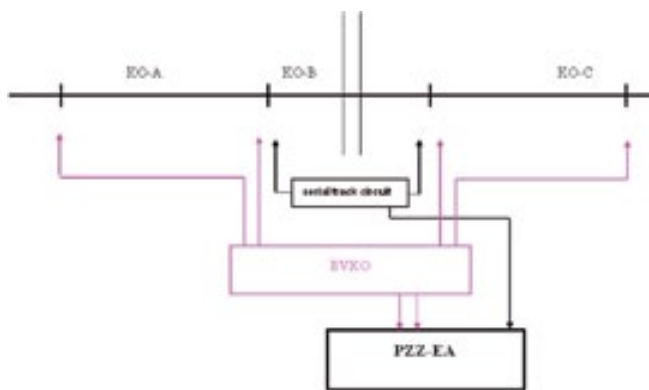
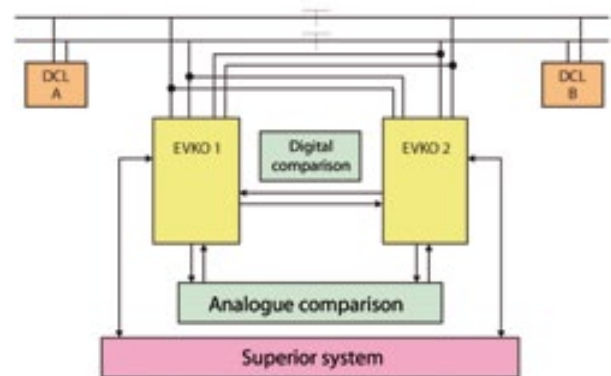


Diagram of the PZZ-EA level crossing system with EVKO



System diagram