



SIGNALLING & CONTROL

Company for engineering " Signalling & Control" Ltd.
Branka Krsmanovica 20, 11000 Belgrade, Serbia

3. EAC – ELECTRONIC AXLE COUNTER

EAC is realized for detection of the track occupation / vacancy in the railway station, area between two stations (both, simple dependency and automatic blocks).



First EAC application, Vreoci, TENT



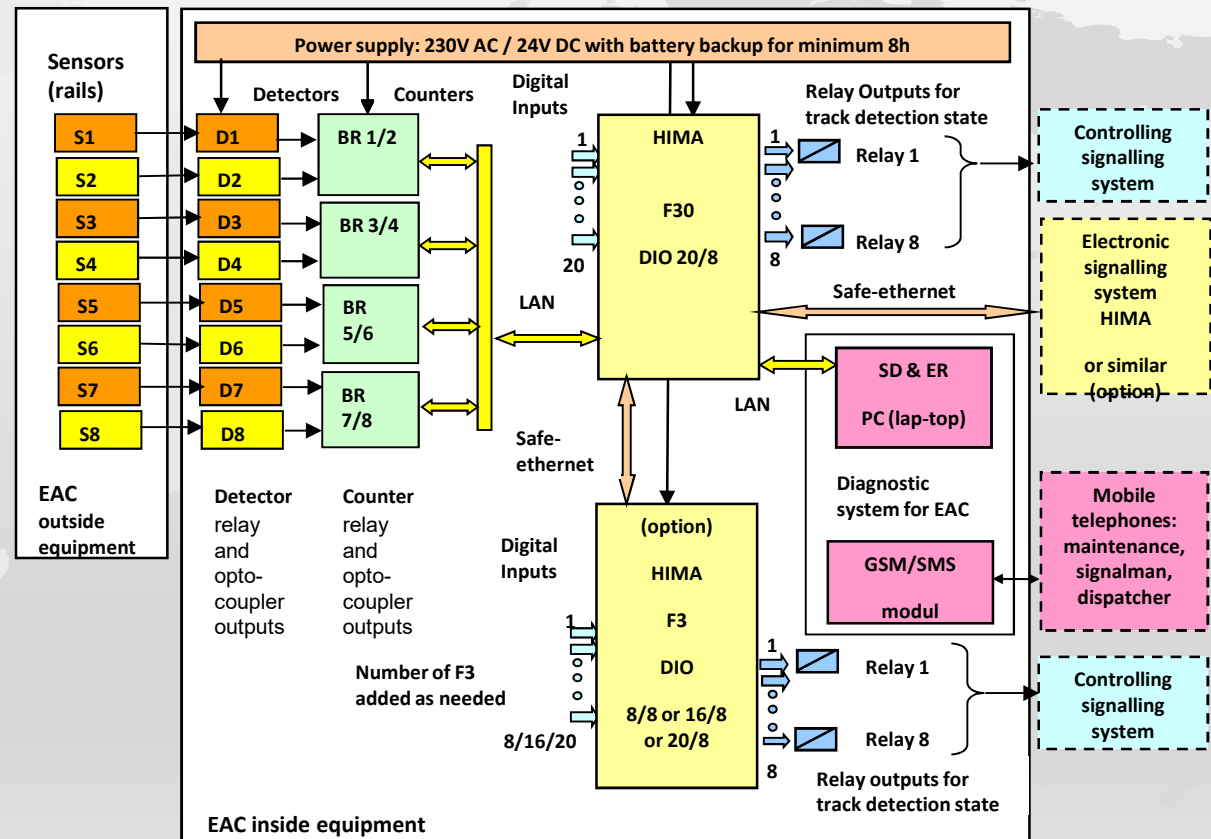


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EAC – Purpose and Architecture

- EAC is based on HIMA HiMatrix PLC family and has the highest safety integrity level - SIL4 in accordance with CENELEC railway standards.
- It can also be used for the approach and island tracks for the level crossings applications.
- Sensor and detector, without PLCs, can be used as a wheel detector





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EAC - Main features

- Architecture based on the HIMA safety PLC HiMatrix F30 and F3 (SIL4)
- Connection with EI via Safe-Ethernet (transmissions of the track vacancy data via software)
- Modular and scalable system. Practically no limitations on number of the sensors per system
- Different application scopes (wheel detection, track detection, level crossings activation, etc.)
- Detection of all rail wheel types according to UIC 510-2
- Detection of the direction of travel and speed of the vehicle
- Detection of move away from the rail and lower down from the adjusted counting level
- Traction current immunity, lightning and overvoltage protection
- Single sensor bricks design with the possibilities to place two bricks on the same holder
- Maximum wheel detection speed: 350 - 650km/h depending on the wheel diameter
- Operational temperature range: -30°C to 85°C for outside and -25°C to 70°C for inside equipment



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EAC - Main features

- Easy installation on the rail with a reliable holder without drilling the rail (LED indication of adjustment)
- Each sensor has an independent power supply and it is connected to its detector with two wires
- Maximum power consumption per one sensor: 480mW / 960mW for 24V DC power supply
- Maximum distance between the sensor and detector for 48V DC power supply:
10km / 23km (2,4V/km for diameter 0,9 or 1,04V/km for diameter 1,4)
- Longer distances are possible with higher power supply voltages or higher diameters of cable wires (subject to cable characteristics)
- Standard detector outputs via opto-coupler and relay contacts
- Detection of the continuity of the rails (option) with use of additional modules that are realized as a long range ERC – Electronic Rail Contact (realized basic frequencies: 16Hz, 25Hz and 33Hz).
- Directorate for Railways of the Republic of Serbia issued the permanent approval for use of the EAC on the Serbian Railways, I-01-1 No.: 340-22-3/2016, from 14.04.2016.y.



EAC – Application examples and advantages

- Fail-safe and fault tolerant configurations are possible.
- Shunting with correction of the counting (moving back).
- Correction of the counting on a pair of sensors depending on the direction of the movement.
- Wheel detector, individual track or malty-tracks functionality depending on the requirements.
- Activation and deactivation of ELC by use of: wheel detectors, three counting tracks (approach tracks and island track) or two overlapping counting tracks.

