



RESEARCH&PRODUCTION CENTRE
PROMELECTRONICA

Axle counter systems ESSO/ESSO-M



Main lines



Mining and
processing complexes



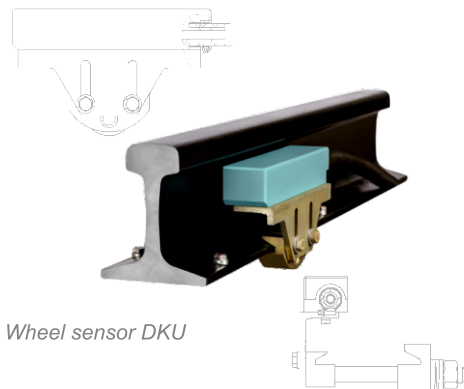
Plants

MAIN IMPLEMENTATIONS WORLDWIDE

 Russia	 Bulgaria	 Latvia
 Afghanistan	 Estonia	 Lithuania
 Armenia	 Georgia	 North Korea
 Azerbaijan	 Indonesia	 Ukraine
 Belarus	 Kazakhstan	 Uzbekistan

GENERAL DESCRIPTION

ESSO-M is a system of new generation and conforms the world trends of railway automation and telecommunication systems development.



Wheel sensor DKU

ESSO-M enables control sections of any length and configuration. In comparison with ESSO system, it is possible to receive expanded process and diagnostic information, displayed on LCD panel with intuitive interface, such as axles, passed over every counting post with respect to direction, pre-fault state of communication channels with the counting posts.



Axle counting system ESSO-M is intended for vacancy/occupancy detection of track sections and is alternative to track circuits. It is used on station sections and railway hauls, as well as in metropolitan and speed tram lines.

ESSO-M is integrated into any existing signalling systems both in new construction as well as in the modernization and repair.



Tower equipment
Case of the evaluation block (KBR)



Less equipment in comparison with ESSO
– one evaluation block controls 15 sections, wayside equipment is reduced by means of using wheel sensor DKU “Koldun”.



Standard structure enables integration of ESSO-M modules into the standard cabinets of the upper-level system.

TECHNICAL PARAMETERS:

- ⦿ supply voltage : 220 V AC, 12, 24, 48 V DC;
- ⦿ max power, consumed by 1 CP: 3.5 W;
- ⦿ train speed - 0...360 km/h;
- ⦿ transmitting distance between wayside and tower equipment: over signalling cable - up to 5 km; via communication cables - up to 35 km; seal-up lines, radio-relay lines and optical fiber lines - unlimited;
- ⦿ outdoor equipment operating temperature range: -60...+70°C; indoor equipment operating temperature range: -40...+70°C;
- ⦿ diagnostic interfaces: RS-485 (Modbus), Ethernet (SNMP).



Tower equipment

COST- EFFICIENCY:

- ⦿ reduction of equipment cost for the track sections in comparison with traditional track circuits (excluding usage of expensive and copper-bearing elements of track circuits);
- ⦿ reduction of operational expenses, including due to fault external relays required periodic maintenance in a part of control instrumentation;
- ⦿ system operation at any up to zero ballast resistance;
- ⦿ operational availability increase due to diagnostics of pre-fault states.



ESSO-M is certified for the compliance with CENELEC standards and conforms with the highest safety integrity level SIL 4.

! **Interfacing with the upper level systems over digital channels; with microprocessor systems via digital serial interface, with relay systems – via integrated safe interface type “dry contact”.**

! **Specific UPS is not required.**

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