RailSWing KOA-1

Electronic track circuits

- **Centralised indoor equipment of track circuits**
- **Failsafe and reliable system meeting SIL4 requirements according to CENELEC**
- **Rail integrity detection**
- **Transmission of automatic train control system (ATC) code**
- **Internal diagnostics**
- **Minimum maintenance**
- **2oo3 architecture**
- **Interoperable – immunity against interference according to TSI CCS**

GENERAL DESCRIPTION

Electronic track circuits RailSWing KOA-1 (further KOA-1) are double rail track circuits bounded by insulated rail joints.

KOA-1 is used on lines electrified with 25 kV, 50 Hz or 15 kV, 16,7 Hz AC catenary voltage and with 3 kV, 1,5 kV or 0,75 kV DC catenary voltage and on non-electrified lines.

BASIC TECHNICAL DESCRIPTION

KOA-1 consists of evaluation part, i.e. set of track receivers (TCR) detecting track voltage including its phase shift against local (referential) voltage and providing relevant digital evaluation.

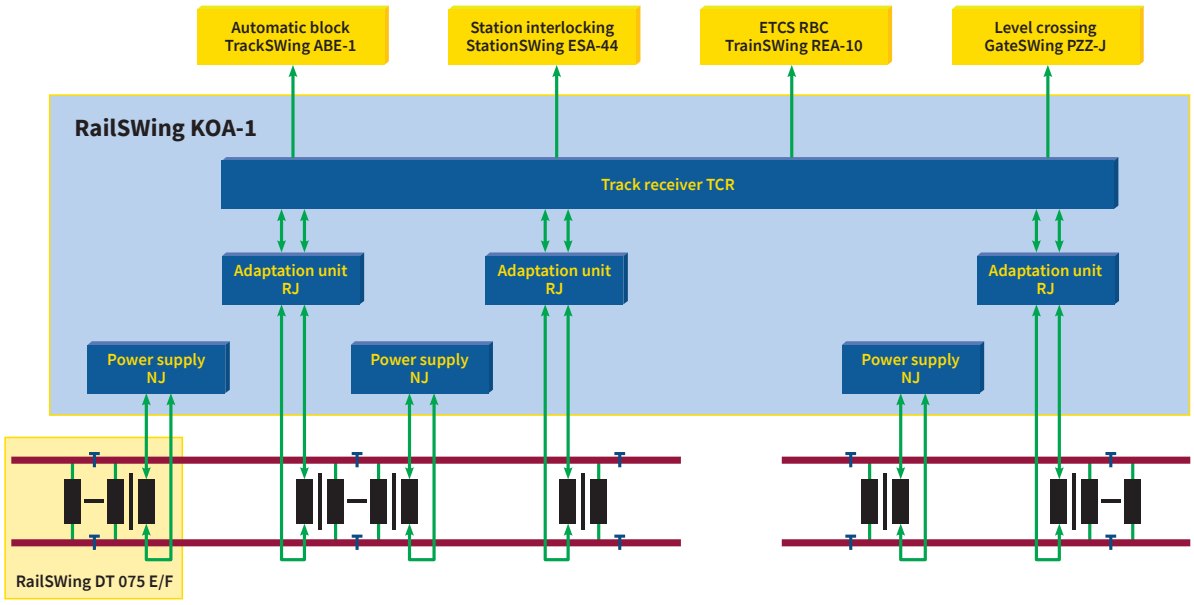
TCR track receiver set consists of three computer units of 2oo3 architecture. Checking of insulated joints is provided by electronic detection of the phase shift or difference between power supply frequencies of adjacent track circuits.

KOA-1 meets requirements for interoperability (in the field of interference immunity) according to TSI CCS. Increased interference immunity is provided by signal current marking technology.

KOA-1 can be used for modernization of existing relay based track circuits. One set of track receivers (TCR) replaces 1 – 8 relay based track circuits.

BASIC TECHNICAL PARAMETERS

Work frequency band	75 Hz and 275 Hz
Frequency shift	± 0,6 Hz
Shunt sensitivity	> 0,1 Ω
Fritting voltage	> 1,1 V
Limit of permitted value of dangerous current	1,2 A
Maximum length of direct circuit 75 Hz	1600 m
Maximum length of direct circuit 275 Hz	1200 m
Maximum length of branched circuit 275 Hz	375 m



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