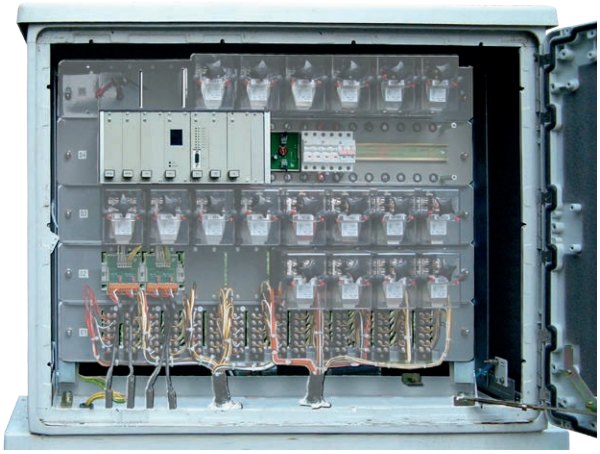
RailSWing ASAR

Track circuit with self-regulation

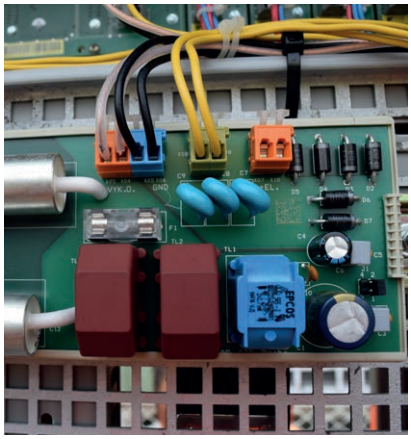
- **Evaluates train passage through short track section**
- **Maintenance-free**
- **Relay interface with N-class relays according to UIC classification**
- **Operating diagnostics**
- **Track section integrity check**
- **Connecting cable check**
- **High resistance against atmospheric overvoltage**



GENERAL DESCRIPTION

RailSWing ASAR (further ASAR) is used for fail-safe identification of short track section occupancy.

Besides the control processor ASAR is equipped with 50 kHz voltage generator, power amplifiers, phase and regulation circuits and with A/D converters for scanning the track circuit current.



BASIC TECHNICAL DESCRIPTION

The generator provides the voltage with working frequency 51,2 KHz. This voltage is brought to the amplitude regulator and the power amplifier. The output of the power amplifier is brought to high frequency transformer where the measuring amplifier for scanning track circuit current is connected to the primary coil. The voltage of secondary coil is further brought into the railyard where it supplies the track circuit through the separating high frequency transformer and serial capacitor.

Arrival of a train or its part causes gradual track section shunting resulting in gradual increase of electric current monitored by measuring amplifier. The other channels implemented in ASAR are connected the same way.

The control processor always compares current in two channels connected to the single track section.

If train arrival is detected in the connecting channel and the current is changed concurrently in adjacent channel the relay armature is attracted. If train arrival was detected in both channels the armature of the second relay is attracted. If there is at least one wheel set within the monitored section delimited by two connecting channels and no failure is detected the relay armatures are not released. The relay armatures are released gradually only after the train leaves the monitored section.

ASAR includes dynamic check of connecting cables. ASAR detects a failure as a result of the break of a rail in the monitored section or loss of cable integrity.

ASAR sets all parameters automatically during activation and in real operation.

BASIC TECHNICAL PARAMETERS

Supply voltage	19,2 V – 36 V DC
Working frequency	51,2 kHz ± 4 kHz
Input	max. 25 W
Earth leakage admittance of the ballast	max. 2 $S.km^{-1}$
Shunt sensitivity	0,12 Ω
Length of monitored section	15 m ± 0,2 m
Temperature range	–25 °C to +70 °C