



# TRACK CIRCUITS

- Selection of 75 Hz signal frequency for line track circuits and for transmission of automatic train control system (ATC) codes
- Selection of 275 Hz signal frequency for station track circuits
- Equipment of track circuits centralized in interlocking room
- Minimum wayside equipment of track circuits
- Minimum assortment of impedance bonds
- Stretch of rails integrity detection



### General Description

#### *KO-3103 Double rail track circuits*

It concerns double rail track circuits for track section occupancy detection.

KO-3103 track circuits are supplied by 2 x 220 V, 75 Hz voltage with 90° phase shift.

For operation the DT-0,75 impedance bonds and so called reception part

are used. As a reception part the track relay DSŠ-12 P or a set of track receivers TCR (see KOA1) can be used. Application for electrified lines and for lines with independent traction and electrical coach heating.

#### *KO-4300 Double rail track circuits*

Track circuits for branched sections at points and for direct track sections.

KO-4300 track circuits are supplied by 2 x 220 V, 275 Hz, two-phase voltage with 90° phase shift.

For operation the DT-0,75 impedance bonds and so called reception part are used.

As a reception part the track relay DSŠ-12 P or a set of track receivers TCR (see KOA1) can be used.

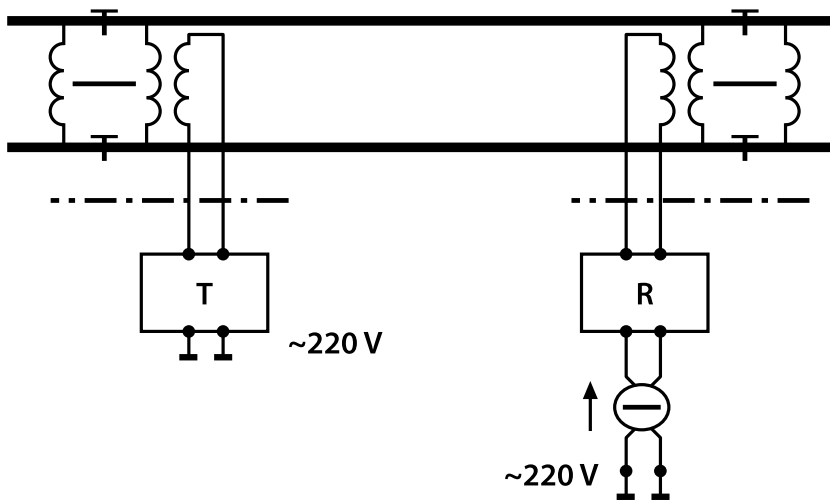
Application for electrified lines and for lines with independent traction and electrical coach heating.





### Basic Technical Parameters

	KO-3103	KO-4300
Earth leakage admittance of railway superstructure	< 0,7 S/km	< 1 S/km
Shunt sensitivity	0,06 $\Omega$	0,1 $\Omega$
Fritting voltage between stretch of rails	> 0,8V	> 0,8V
Nominal supply voltage	220 V	220 V
Permitted fluctuation of the supply voltage	$\pm 10 \%$	$\pm 10 \%$
Permitted traction current sets	1,5 kV DC	1,5 kV DC
	3 kV DC	3 kV DC
	15 kV, 16 2/3 Hz	15 kV, 16 2/3 Hz
	25 kV, 50 Hz	25 kV, 50 Hz
	2 $\times$ 25 kV, 50 Hz	2 $\times$ 25 kV, 50 Hz
	independent traction	independent traction
Resistance nominal value between indoor equipment of track circuit supply rear and impedance bond	50 $\Omega$	50 $\Omega$
Resistance nominal value between indoor equipment of track circuit relay rear and impedance bond	150 $\Omega$	100 $\Omega$
Maximum length of direct track circuit	1600m	1500m



Block diagram