RETURN CABLES CONTINUITY TESTER TCK-2

Return cable continuity tester TCK installed in the traction substation monitors the resistance of the circuit consisting of: substation earthing resistance, rail to earth resistance and return cables resistance.
When measured resistance exceedes the threshold value either a notification or powering-off a substation is initiated depending on the value of the resistance. In most practical situation, too high resistance indicates broken return cables.
Together with voltage limiting device VLD (TUZZ or EZZ) establishes complete earth fault protection system in substations or sectioning cabins. It can also be used in other systems requiring the resistance level monitoring i.e. in the tram or metro traction.

APPLICATION

- permanent monitoring of resistance in the return circuit path
- Establishes complete earth fault protection system with VLD in negative cell

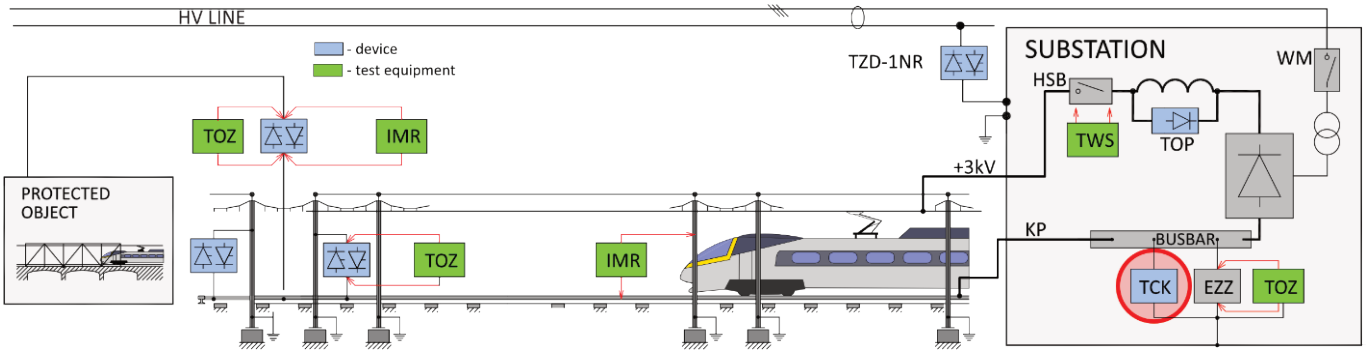
BENEFITS

- Detection of abnormal situation in the return citcuit path
- Abitlity to power of the DC traction substation
- Reliable resitance mesurement
- Two alarms with user pragrammed thresholds
- History of resistance measurememtns and events
- Human interface consitinf of LCD display, buttons and lamps

PARAMETERS

Power supply	220 V DC or 230 V AC
Measurement range	0 ÷ 25 Ω
Accuracy	5% or 0,1 Ω
Probing pulse voltage	100 V
Two output relays	
Protection	level IP65
Dimensions	430 x 320 x 155 mm
Weight	4,5 kg

KOLEN Spółka z ograniczoną odpowiedzialnością
05-091 Ząbki, Bratnia str, Poland
Phone: +48 22 762 84 44



Due to the proper operation of the earth fault protection system it is crucial to maintain and monitor the return cables continuity and low value of earthing electrode resistance of the substation.

To measure the resistance, the meter injects a voltage pulse between its terminals with an amplitude up to 100 V and a duration of up to several dozen milliseconds. The instantaneous voltage and current waveforms on the are stored in the instrument's memory and are used to calculate the measured resistance value. The unique calculation method eliminates the impact of interfering voltages and its harmonics, inductance and DC level existing in the measured circuit on the measurement result.

Too high resistance in measured circuit consisting of substation earthing resistance, rail to earth resistance and return cables resistance indicates in most practical situation broken return cables. In turn, abnormally low resistance may indicate a short-circuit between return cables and substation earthing system.

Normally the successive measurements are performed at regular time intervals, and are taken even more frequently that abnormal situation is detected. Due to the harsh environment in which TCK-2 operates at least three consecutive measurements indicating exceeding of the resistance threshold value, result in triggering appropriate output relay. When relay is triggered staff intervention is required to reset the relay state. Resistance threshold levels can be set by the user.

The microprocessor is used to control the measurement process, computations, triggering the relays, communication with PC over USB interface and human interface that consist of LCD display, buttons and lamps.

Since all events and measurements are stored in the internal memory, user can either manually or via USB interface inspect them to further dig into details of the resistance changes if required.

www.kolen.pl
KOLEN Spółka z ograniczoną odpowiedzialnością
05-091 Ząbki, Bratnia str, Poland
Phone: +48 22 762 84 44