

TrackCircuitAssistor(TCA®)

from Unipart Rail

Improves Track Shunting when rails are contaminated with rust



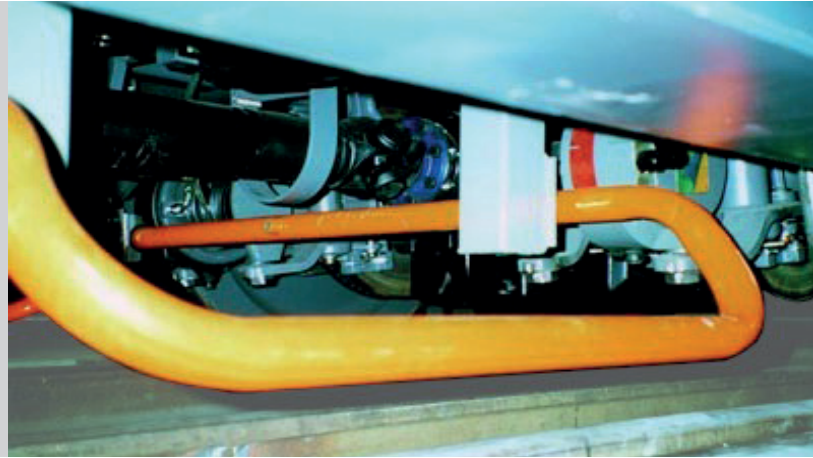
WESTCODE

a Unipart Rail Company

The build-up of rust on rails can prevent the track circuit being activated when a train passes. This problem is overcome with TCA®.

TCA® Principle

GMRT2477 states: "A TCA® is fitted between a pair of wheelsets on a vehicle. It assists the operation of a track circuit by raising the effective track circuit rail-to-rail voltage at the wheelsets either side of the TCA®; this enables a low voltage track circuit to operate as effectively as a higher voltage type."



Track Circuit Failure

Track circuits affected by rust are not a problem for heavier or longer trains, but lighter vehicles and shorter trains can have problems breaking through the high resistance layer and shunting the track circuits, and in certain cases, this can lead to a train not being detected by the signaling system.

The improved suspension, better wheel-rail profiles and widespread use of disc-brakes also contribute to the problem as there is less abrasion to the rail to cut through the high resistance layer.

Different Rail Profiles

This can occur when urban fleets enter Metro systems.

The Service

Unipart Rail offers a comprehensive service including:

- Consultancy service to identify specific fleet requirements
- Customization of the TCA® design for each fleet
- Compliant with rail group standards GM/RT2477 and GM/RT2400
- Customized test and maintenance equipment
- Delivery and commissioning of complete TCA® kits
- Training for installation and maintenance engineers
- Support and technical advice

Benefits of TCA®

- Improved track circuit shunting when wheels and rails are rusty
- Improved safety and reliability of train detection
- Reduced likelihood of costs associated with delays caused by non-shunting of circuits
- Straight-forward, simple installation
- Low-maintenance system supported by Unipart Rail
- Spares and replacements available from Unipart Rail

The System

The TCA® antenna is suspended on the underside of the bogie and the system consists of:

- Robust steel tube antenna
- Tuner unit
- Cab-mounted control box
- Wiring harness kit

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