

TrackCircuitAssistor(TCA[®])

from Unipart Rail

Improves Track Shunting when rails are contaminated with rust



The build-up of rust on rails can prevent the track circuit being activated when a train passes. This problem is overcome with the TCA[®] fitted to DMUs or bi-mode vehicles.

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 trains, but lighter vehicles do not have enough weight to break through the rust layer, and in certain cases this can lead to a train not being detected by the signalling 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 and a resulting build-up of rust which effectively acts as an insulator.

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
- Customisation of the TCA[®] design for each fleet
- Compliant with rail group standards GM/RT2477 and GM/RT2400
- Customised 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

Unipart Rail

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