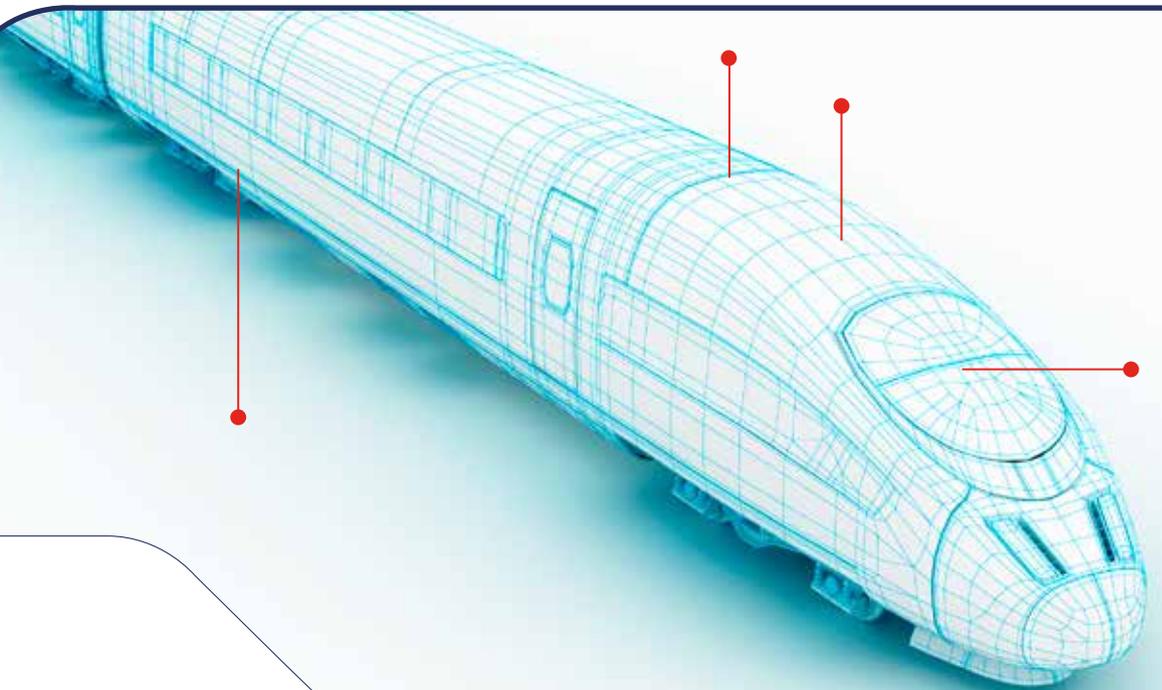


TPWSfourEVO

by Unipart Rai

Updated and reengineered for a new generation of trains



Enhanced safety and performance
on your vehicles

Fully SIL1 Compliant

UNIPART
RAIL

PERFORMANCE IMPROVEMENT PARTNER

Track & Signalling Interface Technology

TPWS Aerial



AWS Receiver (Dual/Twin/Standard/Extra Strength)



Designed to Comply

Our engineers have designed the system to fully comply with GE/RT8075 Issue 2. These updated standards require all new vehicles built or undertaking significant overhaul (after 1st December 2012) to be compliant by being fitted with TPWSfourEVO with its new levels of safety.

The TPWSfourEVO system incorporates the requirements for modification to the in-cab TPWS panel (DMI) to provide separate information on the occurrence of an AWS, OSS and SPAD TPWS intervention. In June 2020 TPWSfourEVO also achieved full SIL1 compliance.

Designed to Monitor

The in-built data monitoring and recording systems ensure:

- Aerial functionality is continuously monitored
- Connection to on-train data recorder (OTMR), enabling the status of each TPWSfourEVO DMI function to be recorded externally
- Internal monitoring system 'remembers' its condition should the system be powered down when a brake demand is active and enables the brake demand to be resumed when power is re-applied
- Additional fault indication via separate TPWS and AWS fault indication
- Analogue output monitoring of the strength of the TPWS trackside signal which can be used to monitor trackside loop installations



AWS & TPWS Junction Boxes

- *The "Optional" rack consists of the:
- AWS/TPWS Control Unit
 - PSU
 - Optional AWS Receiver Dual Cab Switching Unit

For a full list of materials and catalogue numbers, please visit www.unipartrail.com/TPWSfour

Supply & Control Technology

**Optional TPWS
19" Rack Design
Assembly***



Controller



Power Supply (PSU)



Cab Driver Interface Technology

**AWS/TPWS Alarm
& Speech Unit**



**AWS Visual Indicator
"Sunflower"**



AWS Isolation Switch



**TPWS Temporary
Isolation Switch**



**Acknowledge Push
Button**



**Driver Machine Interface
"DMI" Alternative: ETCS -
Direct Customer Interface**



Designed to Perform

We've designed TPWSfour^{evo} to integrate with both driver and machine. The system's enhanced capabilities ensure that brakes are only released after the correct delay and ensure that the likelihood of an inadvertent over-ride (reset and continue) is eliminated and to prompt the driver to contact the signaller.

The factory selected variable audibility approach ensures that the tones and voice systems are 10dBA above ambient (levels required to be confirmed by the customer), in the range of 65dBA to greater than 90dBA, avoiding driver discomfort.

The new spoken warnings are a clear and unambiguous advice to the driver to further eliminate SPAD potential.

'Antifuse Link Logic' is utilised in our system, using field programmable gate arrays. This system design principle is more inherently reliable than software based systems, reducing the potential of unexpected system functionality activation compared to software controlled systems.

Designed to Integrate

TPWSfour^{evo} control units are designed to fit in the same space envelope as the existing TPWS system - reducing the headache of finding additional space for system components.

ETCS compatibility is built into TPWSfour^{evo} to ensure future developments and upgrades can be accommodated without further system developments or performance impacts.

Integration, performance, monitoring and compliance come together in TPWSfour^{evo} to give you the system you need to enhance safety and performance on your vehicles.

Glossary of Terms:

AWS	Automatic Warning System	PSU	Power Supply Unit
AWSI	AWS Isolation	TIS	Temporary Isolation Switch
DMI	Driver Machine Interface	TSO	Train Stop Override
ETCS	European Train Control System	TSS	Train Stop Sensor
OSS	Over Speed Sensor		

About Unipart

The Unipart Group is a leading UK manufacturer, full service logistics provider and consultant in operational excellence. Operating across a range of market sectors, including automotive, manufacturing, mobile telecoms, rail, retail and technology, Unipart offers a breadth of services to a wide range of blue chip clients internationally.

Unipart Rail

Unit 1, 52 Holker Street
Silverwater, NSW, 2128
Tel: +61 (0)2 8787 5910
Email: uga.enquiries@unipart.com



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