



Plug&Play

by Unipart Rail

An integrated approach to track-side systems



SERVING THE WORLD'S RAILWAYS



The problem with trackside working

Or should we say 'problems'?

The whole process of managing a possession is a huge headache. There are immediate effects on the running of trains, as well as time-consuming installation tasks.

The risk of having workers at the track sites is also considerable.

- Complicated designs
- Ensuring the correct skills are available
- Wiring diagrams to be studied, interpreted
- Testing and re-working
- Theft & vandalism
- Lots of equipment to be identified, transported and installed

All are problems faced by contractors every day.

With the accompanying pressure on financial resources, the length of possessions and the risk of an over-run costing thousands in fines, a faster and more efficient way of getting complex signalling and control equipment installed in the fastest, safest and most accurate manner is required.

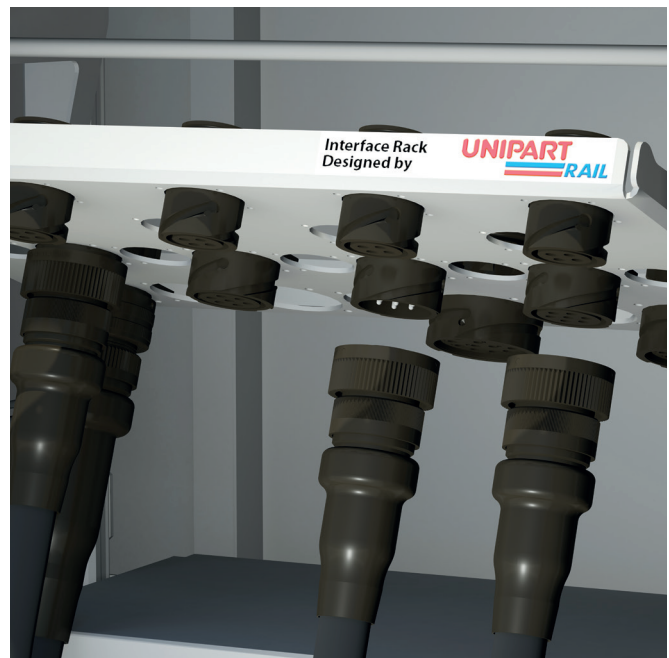
The plug and play solution

Time is the main problem

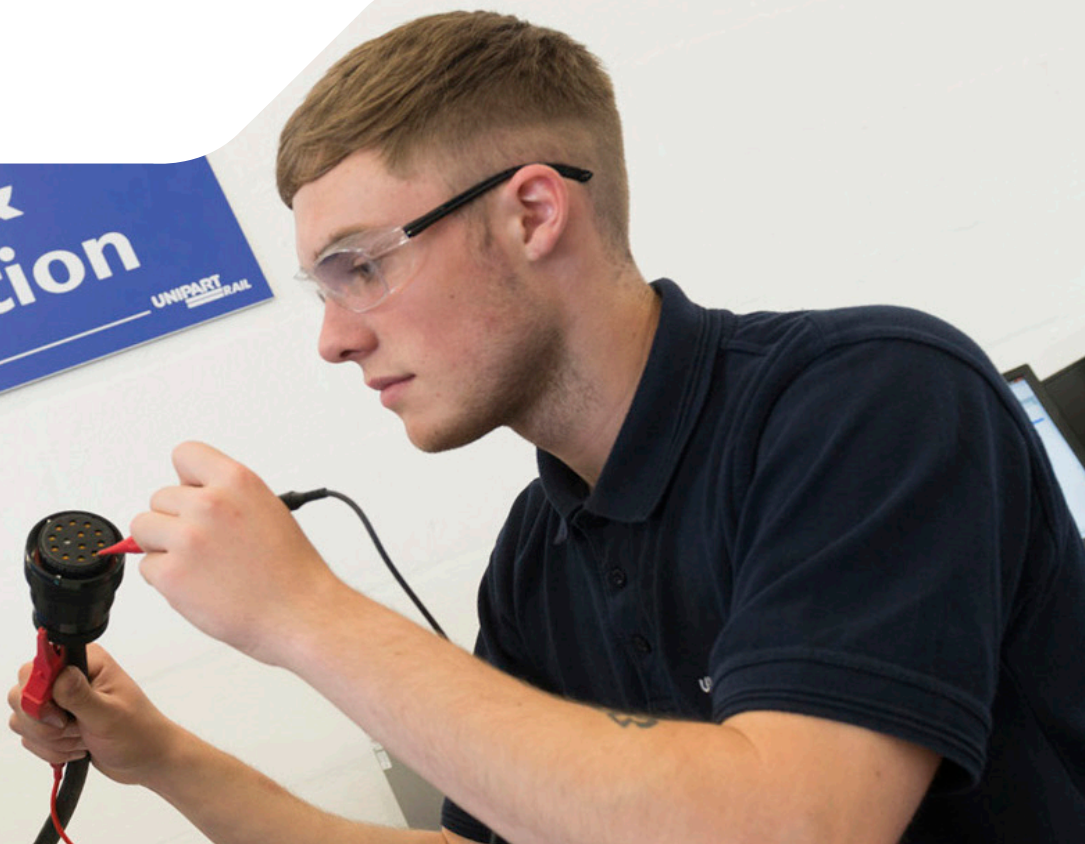
Of course, there's lots of other problems, but being able to reduce a possession time by removing the need for complex track-side engineering and technical skills will make possessions shorter and more effective. The Unipart Rail Plug & Play system solution is an end-to-end solution from signal box through to track-side components. It all sounds so simple: pre-installed tails with plug couplers on the equipment, pre-cut, terminated and coupled cable lengths, and location/equipment housing manufactured and pre-wired with interface racks. It all just fits together with no hard-wiring and no trackside testing - all the equipment is pre-tested in the factory.

Standardisation is simplification

Because everything is standardised, scheme designs become much simpler. Equipment becomes more 'off the shelf' and is fitted in place on standard bases.



Test & Inspection





The equipment

Pre-terminated cable lengths & tails

Each cable length pre-cut to size with plugcouplers fitted and ready to install. Extension pieces and in-line connectors allow for longer lengths to be easily deployed.

New and existing kit can have coupled cable tails attached to enable fast installation and replacement.

PIL & DIL

Points Interface Locations and Detection Interface Location cases are designed and built specifically to control points operating and detection equipment.

- Remote Condition Monitoring integrated as standard
- Configuration variants via Points Configuration Plug
- Re-usable with overhaul and re-certification
- PIL used for simple points

DIL extends PIL functionality for multiple detection locations.

Bespoke Location Racks

Location racks have been designed for pre-wiring into location cases and REBs.

Bespoke Cable Reels

The special Unipart Rail designed cable reels allow plug-coupled cables to be tested on-reel, and couplers are accessible for immediate deployment.

Equipment Enclosures

The Unipart Dorman Integrated Lightweight Signal (iLS) has an option for a small enclosure which can be used with the iLS or independently for the housing of small amounts of control equipment.

Marshalling Boxes (one incoming to many outgoing) and Disconnection boxes (one incoming to one outgoing) are also available to make the site design simpler, and to enable fast change-out of materials.

Break Out Boxes (BoBs)

The Plug Coupler Breakout Box (BoB) is for use at the railway lineside. It is required for testing signalling circuits across in-line plug couplers and to provide a test point for on site cable testing. They will also provide a testing point across plug coupled connections at dis boxes and equipment housings with the use of additional plug coupled cables as appropriate.

The Benefits

Easier Installation

Removing hard-wiring and testing requirements means that the installation time is much reduced. This leads to:

- shorter possessions
- reduce manpower requirements
- less equipment on-site
- less train down-time
- off-the-shelf component availability
- fewer control enclosures
- faster switch-out of vandalised or damaged materials

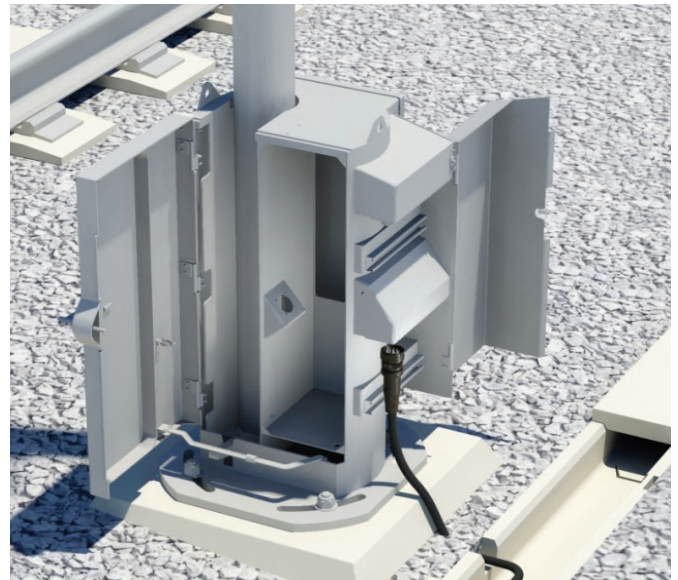
Worker Safety & Skills

Fewer staff trackside, for less time and with less equipment means that the risk of injury is reduced. The reduced complexity of installations - including limited hard-wiring at the trackside - means that less skilled labour is required trackside. Pre-testing in the factory also reduces the skill levels required for project commissioning.

Reduced Costs

Everything about Plug & Play delivers lower costs. Overall Project costs are reduced through:

- Standardisation of component parts with replacements available off-the-shelf - reduced stockholding
- Reduced manpower costs
- Reduced risk of project over-run and fines
- Fewer REBs, making installation of enclosures faster and requiring less handling equipment like cranes
- Faster switch-out of vandalised or damaged materials

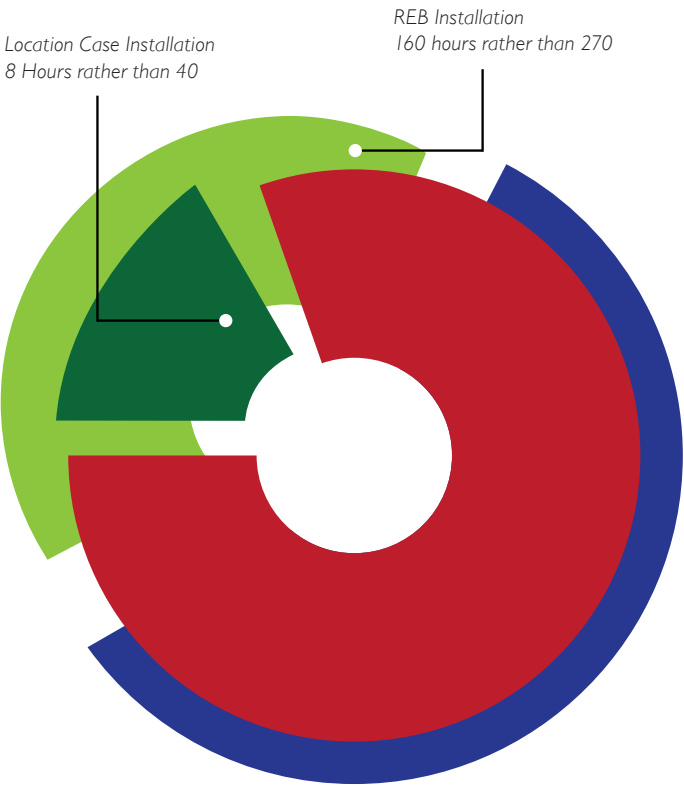


Time saved...

We estimate that 110 hours can be saved installing a Plug & Play REB, and 32 hours for a standard Location Case.

Removing the need for hardwiring of all associated equipment - Axle Counters, TPWS, AWS etc - means that even more time can be saved.

These savings help to contribute to reduced costs in projects. Reduced hours means that resources can be utilised on other project operations.





Specialist Testing

We've even designed specialist testing equipment which lets us test all cables and kit in the factory which means that only limited signal aspect testing is required trackside.

Going beyond the obvious

It's common sense. Isn't it?

Our Plug & Play systems are so straightforward that you may think it's a simple task to put plug couplers on bits of kit. It's actually quite complex, but with our extensive knowledge of railway technology which covers product design & innovation, manufacture, service and repair, we have an intuitive understanding for what's needed. Our system enables us to pre-couple the equipment and make the linking cables and create the interface racks for the equipment housings/ location cases/REBs and signal boxes.

And our **Break Out Boxes (BoBs)** enable testing at the trackside to ensure that system integrity is maintained, or to identify where rodent damage, vandalism or water ingress has occurred.



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.

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