



INTELLIGENT WHEEL AND TYRE SAFETY SYSTEMS





“The introduction of the Wheely-Safe technology across the entirety of our fleet is an important element of our programme to further improve the safety of our operation. We transport thousands of customers across Northern Ireland every day and safety is our top priority.”

DAVID BARNETT, GENERAL MANAGER – ENGINEERING, TRANSLINK

“Wheel loss incidents still happen far too frequently in the industry and the impact can be devastating. But this technology gives us the peace of mind that we will get an immediate alert if a wheel nut starts to loosen, and we may be about to have an issue, even mid-journey.”

MATHEW PARRY, DIRECTOR AT FRENNI TRANSPORT



“We’ve been very impressed. The Wheely-Safe kits were easy to install and give us the reassurance our drivers will be notified at the first sign of a wheel nut loosening, abnormal temperatures being detected from the wheel area or tyre pressures dropping rapidly.”

CHRISTIAN VALE, OPERATIONS MANAGER AT PROCON READYMIX



“We have been big admirers of the Wheely-Safe technology since the very beginning. Wheel loss remains a massive issue in the industry, so to have a system to prevent that installed on every single one of our buses is fantastic.”

JEFF COUNSELL, MANAGING DIRECTOR AT TRENTBARTON



The Wheely-Safe story

Despite all the advances in modern vehicle technology, wheel loss has remained a global road safety issue; albeit one we have set out to solve once and for all.

When a wheel detaches from a moving vehicle – whether the result of poor fitting, damage or worn components – it can trigger a potentially catastrophic series of events. A loose wheel can accelerate to speeds of up to 150 km/h and reach heights of around 50m, before colliding with other road users or infrastructure at a force of around 10 tonnes.

We knew immediately that finding a solution would require an entirely fresh approach. That's why in 2010, as two lifelong school friends, we decided to combine our respective expertise in electronics design and transport compliance to form Wheely-Safe, now part of the GX2 Technology Group.

For the first few years we concentrated on finding the solution, testing prototypes and obtaining global patent protection. We also identified opportunities for our intelligent sensor technology to protect fleets from other hazards including tyre underinflation, plus brake and hub overheating – common sources of downtime, accidents, increased running costs and vehicle fires.

Our first generation wheel and tyre safety systems have been adopted with confidence by some of the biggest fleets on the road, winning multiple industry awards in the process.

Now we are expanding with a brand new generation of Wheely-Safe systems for owner-drivers, fleets, telematics providers and vehicle manufacturers. Plus we are introducing a new range of accessories offering greater peace of mind than ever before.



Gary Broadfield
Group Managing Director



Gary Thomas
Group Director



Wheely-Safe Fitted

Our new range allows customers to select precisely the right level of protection to suit their fleet and budget. We offer standalone and fully connected systems, which can plug directly into a vehicle's telematics or CAN bus.

Entry-level kits start with an intelligent tyre pressure monitoring system (TPMS) and a choice of wired or solar-powered receiver in the cab – and are suitable for almost any type of vehicle, from cars to trucks. Wheel security and brake/hub temperature monitoring can be added to increase protection on commercial and industrial vehicles.

A full range of connected systems is also available – including black box kits and units offering instant driver alerts via either a wired or solar-powered receiver positioned near the driver.

We can also work with original equipment vehicle manufacturers to integrate our sensor technology directly into a vehicle as original equipment, allowing alerts to be delivered through the vehicle's own instrument display.



- ✓ **Protects against wheel loss**
- ✓ **Protects against brake & hub overheating**
- ✓ **Protects against slow & rapid tyre pressure loss, plus high tyre temperatures**
- ✓ **Unrivalled safety & duty of care**
- ✓ **Significant savings in fuel & tyre costs**
- ✓ **Increased uptime & efficiency**



Protecting your fleet



Wheel loss

A Transport Research Laboratory report into wheel loss on commercial vehicles, published for the Department for Transport (DfT), estimated the typical annual frequency of wheel fixing problems in the UK to stand at:

- between 7,500 and 11,000 wheel fixing defects
- between 150 and 400 wheel detachments
- between 50 and 134 resulting in damage only accidents

- between 10 and 27 resulting in injury accidents
- between 3 and 7 fatal accidents

Many fleets fit brightly coloured indicator tags in an effort to prevent wheel loss, but these can only detect potential wheel loss situations on stationary vehicles. Given wheels don't detach when a vehicle is parked, we've focused on developing a system which provides alerts if a wheel begins to loosen during journeys.

Brake/hub overheating

Brake and hub overheating is a major cause of commercial vehicle fires, leading to costly vehicle damage and insurance claims, along with the reputational damage of closed roads and a business making the headlines for all the wrong reasons.

Sticking brakes are often to blame, with the resulting high brake temperatures at risk of triggering a blaze.

Similarly, ineffective brakes will show little or no temperature rise at all – but could result in an accident if the vehicle is unable to stop when maximum braking performance is required. By monitoring the maximum and minimum temperatures of each sensor, any unusual hub temperature patterns can be spotted early.



Tyre underinflation

Tyres are a major running cost, and failing to keep them correctly inflated needlessly increases fuel costs and reduces tyre life as underinflated tyres wear out quicker.

For commercial vehicle fleets, more than 80% of breakdowns are tyre-related, and this often leads to late delivery penalties and breakdown callout charges. Plus underinflated tyres make a vehicle's steering less precise, increase stopping

distances and lead to a higher risk of aquaplaning.

Cars and vans are also far from immune to underinflation. Research by a major tyre manufacturer over a 10-year period found that, on average, at least 60% of light vehicles are driven on underinflated tyres, and half of those are at dangerously underinflated levels (more than 8psi).

Smart sensors making sense of safety

Our patented technology offers fleets a full suite of protection against major safety issues that no single solution has previously tackled.



Wheel loss & brake/hub temperature monitoring

Wheel loss and brake/hub temperatures are monitored via a robust sensor straddling two wheel nuts and held in place with a bracket manufactured from a mild steel with a zinc nickel coating, for maximum durability and minimum weight. A pair of brackets and sensors is recommended for each axle end, with brackets available to fit more than 95% of all commercial and industrial wheel sizes.

The sensors auto-pair and provide an in motion alert in the event a loosening wheel nut is detected, enabling the driver to stop

safely. Alerts can be detected in all weathers and at any speed, after just 1 mm of wheel nut movement.

The same sensor also monitors heat and can quickly identify a temperature abnormality from the brakes or hub. Alerts are transmitted when the temperature exceeds 100°C – a level which can indicate maintenance issues such as sticking brakes or hub failure. The sensor records and retains the highest temperature reached over the last 24 hours.

Intelligent TPMS

We offer a wide choice of TPMS sensors to suit all vehicle types and applications. Choose from external sensors which replace the valve cap and can be secured in place with anti-theft locking nuts, or our smart internal TPMS sensors which can adhere to the rim of any size wheel. Internal sensors are manufactured from a flexible engineering-grade material and are protected from the elements, bringing distinct advantages over valve stem, metal band and tyre mounted sensor applications.

All sensors are fully-sealed for maximum durability and offer a battery life of 3-5 years (external) or 5-10 years (internal), depending on usage and application. An accelerometer wakes the sensor for every journey, allowing a low-power 'overnight' or 'weekend' mode to commence when the vehicle is stationary, given that most underinflation limits occur with slow leakage over time.

Sensors auto-pair and auto-calibrate, enabling quick replacement if ever required – and allowing seamless integration for vehicle and trailer combinations. Manual pairing can be specified for machines which operate in close proximity for extended periods, such as forklift trucks in a warehouse or skid-steers on a building site.

Our sensor technology provides alerts for low pressure and increases in air temperature inside the tyre – often the first sign of an impending tyre blowout. Alerts include:

- Early low pressure warnings (-15% to -25%)
- Extreme low pressure warnings (-25%+)
- Critical high temperature warnings (100°C+)
- 'Maintenance' sensor low battery





Receivers

We offer a full range of receivers to suit all vehicle types, applications and customer requirements.

Select from standalone displays offering clear visual and audible driver alerts, with a choice of solar-powered or wired options.

Or select from our extensive line-up of connected receivers, which can be

configured to ensure both the driver and fleet management team receive alerts in the event of an emergency. These systems also allow alerts for 'maintenance' events, such as when a tyre has dropped below the optimum fuel efficient inflation pressure, to be sent purely to the transport or workshop team, enabling rectification work to be organised when the vehicle returns to base and without interrupting the driver's schedule.

Signal boosters

For longer vehicles we offer both wired and five-year battery-powered dipole antenna boosters, for excellent receipt and

amplification of the signals from sensors on the rearmost axles to ensure the receiver in the cab picks up all transmissions.



Pressure and Brake Temperature Checker

These handy tools are the perfect way to speed up fleet inspections for workshop staff, providing access to instant tyre pressure readings in either Bar or PSI when held next to any Wheely-Safe TPMS sensor.

They provide accurate readings without the hassle of connecting a pressure gauge to the valve, which removes air

and is unhygienic – speeding up the time taken to conduct fleet checks and safety inspections.

Additional functions include reporting the highest and lowest brake/hub temperatures recorded in the last 24 hours, when held against any brake temperature sensor.



WalkAround Checker

Our keyring-mounted WalkAround Checkers are designed to support a driver's daily inspections. They take pressure readings from any Wheely-Safe sensor, providing an immediate green, amber or red alert to advise

the driver whether the tyre is correctly inflated, in need of a top-up at the next workshop visit, or unsafe to operate in the current condition. They also record the walkaround activity to ensure this vital activity occurs regularly.



Warranty

All products are supplied with a comprehensive 12-month manufacturer's warranty and first-class support is available from our UK-based technical team.



The right fit for your fleet

Our multi-award-winning technology can be supplied directly to vehicle manufacturers, contract hire & fleet management companies, end-user fleets, vehicle or tyre dealers and telematics companies.

Many of our systems can be installed in minutes, following simple instructions supplied with all kits. Alternatively, for connected or wired systems, installation is normally arranged through a nominated fleet maintenance provider or tyre dealership.

Our leadership team



Gary Broadfield
Group Managing Director



Gary Thomas
Group Director



Steve Jackson
Managing Director



Andy Congrave
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For further information, pricing and advice specifying the perfect system for your fleet, please contact:

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Woodway is the appointed distributor of Wheely-Safe products to the Emergency Services Sector.

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Transport Technology of the Year
National Technology Awards 2019



Product Innovation of the Year
National Tyre Distributors Association (NTDA) Awards 2019



Most Innovative Product of the Year
FTA Logistics Awards 2019



Fleet Safety Product (in-vehicle) category
Brake Fleet Safety Awards 2019



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