

The use of TMS® products in Test and Research Facilities

Introduction

When working on research, testing and developing OTR Tires, the quality of the test equipment is critical to the whole test and development process. A small error in the pressure measurement or any unreliability can compromise the results and the final conclusions drawn from the testing process.

TMS® is well known for designing and manufacturing Tire Pressure Monitoring Systems (TPMS) for heavy and Off the Road (OTR) vehicles but a little-known fact is that we've also sold many systems over the years to Test Laboratories and Research Facilities.

From our earlier involvement in leading-edge design of TPMS for Formula 1 cars TMS® have developed a culture of precision measurement that continues to influence our product development to this day.

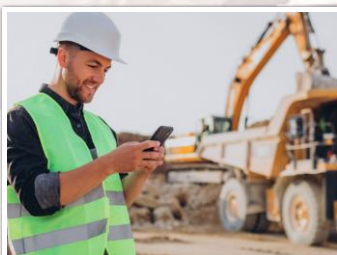
Market leading specification

Test and Research Facilities working on OTR Tires insist on the highest level of accuracy and repeatability and total confidence in the measurement data is essential.

TMS® sensors are designed to provide highly accurate pressure measurements across the full operating range, allowing engineers to compare results with confidence and identify genuine changes in tire behaviour rather than variations in the measurement system.

Our typical sensors have an accuracy quoted at ± 1 psi, across the whole range up to 200psi, but in practice we are achieving much better than that. For this type of product, this is a market leading specification.

Internal sensors also offer similar market leading specification for the measurement of temperatures. Using a separate thermistor that is linearised across the range, we can give an accurate temperature reading inside the tire across its full operating range. This is particularly important when studying tire behaviour under load, investigating thermal build-up, validating operating envelopes or analysing the causes of tire failures.



Automated calibration as standard

To give customers total peace of mind, all our sensors go through a full automated calibration process at multiple points across the whole operating range. This ensures every sensor will be fully compliant to the published specification and have been checked on equipment traceable to national standards.

For organisations operating under ISO9001 quality systems or undertaking formal validation programmes, traceability of measurement equipment is often a requirement. In these situations, we can also supply sensors with Calibration Certificates, which links every sensor ID to a calibration record.

Examples of some of the companies who have been using our TPMS systems

Tire Manufacturers

- Bridgestone OTR Tire Manufacturing – Akron Ohio
- Bridgestone OTR Technical Research Centre – Rome Italy
- Nokian Tires OTR Research and Test Facility – Nokia Finland
- Kumho Tire Co Test Facility - Seoul South Korea

Research and testing organisations

- Safety Engineering & Forensic Analysis Inc – Phoenix USA
- Transport Research Laboratory (TRL) – Berkshire UK
- New Zealand Transport Agency – Christchurch New Zealand
- Applied Research Associates Inc (ARA) - Albuquerque USA

Academic institutions

- Buckingham University School of computing and Technology – High Wycombe UK

Custom TPMS systems

Test and Research Facilities like the above, by their very nature, will be undertaking unique test processes in order to see how tires perform in different conditions, so there is often a requirement for special or additional features from the TPMS system. These can often be provided as custom configurations for each particular requirement.

These include features like the following

- Faster sampling times so fast-moving events can be captured
- Different transmission strategies to link to remote monitoring systems
- Even greater accuracy over specific, calibrated pressure ranges.
- Integration with data acquisition systems
- Remote monitoring through our **TMS-Remote** web portal

If you have a particular requirement, it's highly likely that we've already covered this.

Tire Monitor System

West Road House
West Road
Buxton
Derbyshire
SK17 6HF

T: +44 (0) 1298 77166

E: enquiry@tiremonitorsystem.com

www.tiremonitorsystem.com



Data logging and Analysis

Research projects generate significant quantities of data and that data is only valuable if it can be analysed effectively. The TPMS doesn't simply measure the pressure and temperatures but also timestamps and logs this data, allowing engineers to review events after testing, compare different tire configurations and identify trends that would be impossible to observe using manual measurements alone.

Conclusion

The use of our TPMS systems at the above companies over many years is testament to the quality and accuracy of our equipment. The environment in these test applications is benign, but our unique offering is to bring the quality and accuracy of precise instrumentation equipment suitable for the lab/test house out into the field.

This combination of market-leading accuracy combined with robust designs make the TMS® range unique. Users can enjoy the benefits of laboratory equipment on their vehicles in the mine, port, construction site etc.

[Click here](#) if you would like further information or if you are interested in a free trial of the TMS® Tire Pressure Monitoring System for your industry/application.

Tire Monitor System

West Road House
West Road
Buxton
Derbyshire
SK17 6HF

T: +44 (0) 1298 77166

E: enquiry@tiremonitorsystem.com

www.tiremonitorsystem.com

Company registered in England No. 03306387