

TPMS WHEEL UNIT SENSOR



The TPMS wheel unit sensor introduces the ability to measure pressure & temperature in real time via an ASIC chip element mounted on the wheel unit sensor.

The Data are then transmitted along with the internal air temperature, tire pressure, sensor unique serial number, battery voltage and other diagnostic status on a 433,92MHz RF downlink to antennas that are mounted on the vehicle, or to a hand tool as the LF Trigger.

The wheel sensor also contains a 125kHz Low Frequency (LF) receiver, meaning that on closed wheel race cars a learning system can be fitted which automatically detects where a sensor is fitted on the car. The LF receiver is also used by handheld tools such as the LF Trigger which use this feature to request data on demand from the wheel sensor.

When the wheel assembly does not have a tire fitted, the wheel sensor enters a 'sleep' mode where it does not transmit, to preserve battery life. When a tire is fitted and pressurized, the sensor transmits typically no data except if programmed for Paddock survey, allowing the sensor to be monitored by the Garage Monitoring System.

If the wheel sensor detects a pressure change greater than or equal to 200mbar/minute at any time it will enter a fast transmit mode where it transmits 255 datagrams at a rate of 1Hz.

SPECIFICATIONS

ELECTRICAL

- Supply Voltage – Internal 3V
- Lifetime (typical) – 2 seasons

PRESSURE

14.7mbar/bit Sensor

- Pressure Range 0 – 3.50 Bar
- Pressure Resolution – 14.7mbar/bit
- Accuracy – ± 30 mbar

INTERNAL TEMPERATURE

- Temperature Range 0°C – 125°C
- Temperature Resolution – 0.125°C/bit
- Accuracy – ± 0.5 °C

GENERAL

- Transmit Rate
 - Park Mode – No Data
 - Driving Mode – 1Hz
 - Paddock Mode – 0.1Hz
- RED / FCC certification
- Operating Temperature Range – 0°C – +125° (peak 150°C)
- Mass – 30 $\pm$ 1g
- LF Triggering features – 125KHz
- RF Frequency – 433.92MHz