

| Document Information | | | |
|-------------------------|---------|---------------------|--------------------------------|
| Model | V11B | Release Date | 2026-02-08 |
| Document Version | Rev 1.0 | Firmware | N/A (varies by production lot) |

Scope
 This specification applies to the V11B Bluetooth Low Energy (BLE 4.0) tire pressure monitoring sensor (TPMS). It is intended for OEM/ODM and wholesale customers for product evaluation, integration planning, and quality verification.

Purpose of Document
 This document defines key hardware specifications, wireless capabilities, app compatibility, installation procedures, packaging information, and safety requirements for design review and quality verification.



Bluetooth Low Energy
 BLE 4.0, 2.4 GHz wireless connection to smartphone app (TPMSII)

Pressure Monitoring
 Direct measurement 100-1300 kPa with ±10 kPa accuracy

Temperature Sensing
 Real-time tire temperature monitoring with ±3 °C accuracy

Configurable Alarms
 High/low pressure, high temperature, and low battery warnings

Long Battery Life
 3-5 years typical for outer sensor with low-power design

App Compatible
 TPMSII app for iOS and Android (Bluetooth 4.0+ required)

Physical Specifications
 Weight: 8 g ±1 g (outer sensor)
 Battery: 140 mAh (3V)
 Waterproof Rating: IP67
 Operating Temp: -30 °C to +80 °C

IP67 Water Resistant
 Protected against dust and water for daily outdoor use

Fast Response
 ≤ 5 seconds response time for real-time monitoring

Overview
 V11B is a Bluetooth Low Energy (BLE 4.0) direct tire pressure monitoring sensor (TPMS). It measures tire pressure and temperature at the wheel and transmits data wirelessly to a smartphone running the TPMSII app. The app displays real-time values and provides alarm notifications when thresholds are exceeded or when abnormal conditions are detected.

- Key Functions**
- Real-time tire pressure and temperature monitoring
 - Configurable units (PSI/kPa/bar) and temperature (°C/°F)
 - Low-power operation for long battery life
 - Alarms for abnormal pressure/temperature conditions
 - Sensor binding via QR code or auto pairing
 - Multiple sensor support (LF/RF/LR/RR positions)

| Technical Specifications (Outer Sensor) | | | |
|---|------------------|----------------------------|------------------------|
| Processor | ARM M0 | Working Voltage | 3 V |
| Working Current | 100 µA | Sleep Current | ≤ 2.2 µA |
| Bluetooth | BLE 4.0, 2.4 GHz | Transmitting Power | 0 dBm (max.) |
| Pressure Detection Range | 100-1300 kPa | Pressure Accuracy | ± 10 kPa |
| Temperature Accuracy | ± 3 °C | Response Time | ≤ 5 s |
| Operating Temperature | -30 °C to +80 °C | Storage Temperature | -30 °C to +85 °C |
| Waterproof Rating | IP67 | Working Humidity | 95% RH (max.) |
| Battery Capacity | 140 mAh | Battery Life | 3-5 years (typ.) |
| Sensor Weight | 8 g ±1 g | Display | Mobile app (phone APP) |

Wireless & App Requirements

- **Bluetooth:** BLE 4.0, 2.4 GHz
- **OS Compatibility:** Android and iOS (Bluetooth 4.0+)
- **Transmitting Power:** 0 dBm (max.)
- **App Name:** TPMSII (App Store / Google Play)

Installation & Pairing (Reference)

Installation Steps:

- Each sensor has a unique ID. Install on corresponding tire/valve position (LF/RF/LR/RR).
- For outer sensor: put anti-theft screw on valve first, screw sensor onto valve, then tighten anti-theft screw.

Pairing Methods:

- Recommended: Scan QR code card (one-click binding) or scan/input sensor ID code.
- Alternative: Use Auto Pairing and tap Search while installing/tightening sensor.

Troubleshooting:

- Outer sensor: Re-install and ensure proper tightening (air pressure must contact sensor).
- Inner sensor (if applicable): Drive above 20 km/h for 2-3 km to activate.

Packaging Information

Kit contents and packaging are project-dependent. Typical accessories for outer sensors include:

- TPMS sensor(s) *4
- Anti-theft screw(s) *4 and wrench * 1
- QR code card (app download/binding) *1
- User manual *1

Transportation, Storage & Handling

- Avoid strong impacts and crushing
- Avoid high temperature sources and flames
- Store in dry environment (humidity below max. working humidity)
- Keep away from corrosive chemicals
- Storage temp: -30 °C to +85 °C (outer sensor)

Safety & Precautions

- ⚠ TPMS is an aid; follow vehicle manufacturer recommendations
- ⚠ Check for tire leakage after installation before driving
- ⚠ Keep small parts (screws, wrench) away from children
- ⚠ Installation by professional technician recommended
- ⚠ Do not operate phone while driving; configure alarms before

Notes & Disclaimer

All specifications are provided for reference. Actual performance may vary by vehicle, environment and app version. The manufacturer/seller reserves the right to change specifications and software without prior notice.