

MICHELIN

MEMS 4

**A powerful monitoring system
for Fleet and Tire Optimization.
*Developed with and for miners.***

PRODUCT NOTICE
MEMS EXTERNAL SENSOR V1



Visit our website for more

information on MICHELIN MEMS 4



PRODUCT NAME

MEMS EXTERNAL SENSOR V1 – Part Number CAI 557599 – Model Number PP-ME01

PRODUCT DESCRIPTION

The MEMS EXTERNAL SENSOR V1 is a battery powered air pressure and air temperature sensor designed to operate mounted on a mining tire valve. Those measurements are sent, via a radio transmitter, to a MEMS ACTIVE ANTENNA V3 unit, which is usually mounted on the vehicle.

PRODUCT COMPLIANCE

Conformity:

- FCC : FI5-PP-ME01
- IC : 5056A-PPME01
- CE : PP-ME01
- RoHS

PRODUCT INFORMATION

For correct operation, the sensor must be tightened up to the point where it starts to get difficult to continue to do it by hand. If installed with the help of a torque wrench, the coupling torque must range between 0.5 Nm and 1.5 Nm. Failure to tighten to this range can result in loss of performance and/or damage to the connector during use.

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

ce matériel est conforme aux limites de dose d'exposition aux rayonnements, CNR-102 énoncée dans un autre environnement. cette équipement devrait être installé et exploité avec distance minimale de 20 entre le radiateur et votre corps.

PRODUCT SPECIFICATION

Physical Characteristics

- Approximate dimensions : L= 30mm. W= 30mm. H=27mm
- Approximate weight: < 30g

Storage Conditions

- -40°C to +125°C

Performance Characteristics

- Normal transmission period: 60 seconds $\pm$ 10 seconds
- Fast transmission period 10 seconds
- Tire compatibility: all tyres with large bore valve stem
- Pressure resolution: 1psi/6.9kPa/0.06bar
- Typical pressure accuracy: 2psi/13.8kPa/0.13bar below 130psi/900kPa/9bar and 3psi/20kPa/0.20bar above
- Temperature resolution: 1.4°C, 2.5°F
- Typical temperature accuracy: $\pm$ 2.8 °C, $\pm$ 5°F

RF Performance

- TX frequency: 433.92MHz
- Antenna : integrated

Electrical Performance

- Batteries : 1x 3V Lithium coin cell battery (internal, non-rechargeable)

Operating Conditions

- Operating temperature range: -40°C to +110°C; -40°F to + 248°F
- Operating pressure range: 100kPa to 1400kPa Absolute; 1 bar to 14 bar Absolute; 14.51 psi to 203.05 psi Absolute

- These sensors are designed to operate under warranty for one year, starting at the first mount of the sensors; users may dismount and remount them within this period, but no warranty applies beyond one year of operation. While dismounted, these sensors must be put in storage respecting the storage conditions above.

REACH SVHC Disclosure on Candidate List

REACH (Registration, Evaluation, Authorization and Restriction of Chemicals, EC 1907/2006) is the European Union's (EU) chemical substances regulatory framework. REACH requires Michelin to provide customers with sufficient information on Substances of Very High Concern (SVHC) contained in products in concentration above 0.1% weight by weight (w/w) to allow safe use of the product.

The MEMS EXTERNAL SENSOR V1 contain the following Substances of Very High Concern (SVHC) :

Substance	Lead (Pb)	1,2-dimethoxyethane ethylene glycol dimethyl ether
CAS N°	CAS-No 7439-92-1	CAS-No 110-71-4
Presence into	Brass that mates to valve stem	Sensor battery
Specific safe use information	The article contains lead bound in a brass alloy. No exposure is expected during normal or reasonably foreseeable use. Avoid activities that generate metal dust. Dispose of metal scrap in accordance with local regulations.	The article contains a sealed lithium battery. The substance is fully enclosed and inaccessible during normal or reasonably foreseeable use. No user exposure is expected. Dispose of the product as electronic waste at the end of life

DISPOSAL

The MEMS EXTERNAL SENSOR V1 must not be disposed of in landfill.

At the end of its life, the MEMS EXTERNAL SENSOR V1 must be removed from the vehicle and deposited in a container dedicated to the recycling of electronic equipment that contains batteries. If users do not have access to the appropriate recycling facility, your local Michelin MEMS representative is able to provide a container dedicated to the purpose of collecting MEMS equipment.

CONTACT DETAILS – Technical Support

For more information, please contact your Michelin representative or send an email to:

 services.mining@michelin.com

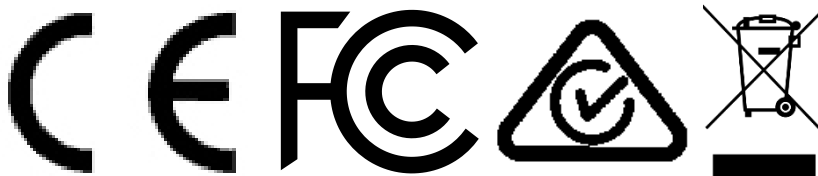
 MFP MICHELIN
23 Place des Carmes-Déchaux
63000 Clermont-Ferrand
France

- This equipment is not suitable for use in locations where children are likely to be present.



Warning:

1. Do not ingest battery. Chemical Burn Hazard!
2. This product contains a coin/button cell battery. If the coin/button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.
3. Improper replacement of the battery with an incorrect type may defeat a safeguard (for example, in the case of some lithium battery types).
4. Do not dispose of the battery into fire or a hot oven, or mechanically crush or cut the battery, which may result in an explosion.
5. Do not leave the battery in an extremely high temperature surrounding environment, which may result in an explosion or the leakage of flammable liquid or gas.
6. Do not subject the battery to extremely low air pressure, which may result in an explosion or the leakage of flammable liquid or gas.
7. Dispose of used batteries according to the instructions.



The product must not be disposed of with unsorted waste but must be sent to separate collection facilities for recovery and recycling.
Features, specifications are subject to change without notification.

Document version 7