

## PRODUCT NOTICE

### DISPOSAL

The MEMS LIQUIDPROOF SENSOR SP40 must not be disposed of in landfill.

At the end of its life, the MEMS LIQUIDPROOF SENSOR SP40 must be removed from the tire 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 or assistance, please contact the Michelin MEMS representative for your country.

|                      |                       |
|----------------------|-----------------------|
| Brasil, Chile & Perú | : +55 (21) 36 21 4646 |
| USA, Canada & México | : +1 864 458 5000     |
| Australia            | : +61 3 86 71 1003    |
| South Africa         | : +27 115 790 300     |
| Russia               | : +7 495 258 09 26    |
| China                | : +86 21 22855000     |



[services.mining@michelin.com](mailto:services.mining@michelin.com)



MFP MICHELIN

23 Place des Carmes-Déchaux  
63000 Clermont-Ferrand  
France



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 1.2

MFP MICHELIN © 2024 All rights reserved.

Exclusive property of Manufacture Française des Pneumatiques Michelin. Any reproduction or utilization prohibited without the consent of Michelin.



**MICHELIN**  
**MEMS 4**

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

PRODUCT NOTICE - MEMS LIQUIDPROOF  
SENSOR SP40



Visit our website for more

information on MICHELIN MEMS 4



## PRODUCT NOTICE

### PRODUCT NAME

MEMS LIQUIDPROOF SENSOR (can be also abbreviated as MEMS LPS)

Part Number / CAI : 693136

### PRODUCT DESCRIPTION

The MEMS LIQUIDPROOF SENSOR is a battery powered air pressure and air temperature sensor designed to operate inside tubeless earthmover tires to measure pressure and temperature of the tyre. Those measurements are sent, via a radio transmitter, to a MEMS TRANSCEIVER A - ALUMINIUM (CAI 068685) unit, which is usually mounted in the cab of the vehicle.

### FCC / IC CERTIFICATION

Model: RV1-40L

HVIN: RV1-40L

PMN: RV1-40L

FCC ID: F15-RV1-40L

IC: 5056A-RV140L

Federal Communications Commission (FCC) Statement  
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.

15.105(a) This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense."

"15.21 You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment"

#### "FCC RF Radiation Exposure Statement:

1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter."

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

Devices shall not be used for control of or communications with unmanned aircraft systems. Les dispositifs ne doivent pas être utilisés pour commander des systèmes d'aéronefs sans pilote ni pour communiquer avec de tels systèmes.

"Caution: Exposure to Radio Frequency Radiation

1. To comply with the Canadian RF exposure compliance requirements, this device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter."

2. To comply with RSS 102 RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.

"Attention: exposition au rayonnement radiofréquence

1. Pour se conformer aux exigences de conformité RF canadienne l'exposition, cet appareil et son antenne doivent pas être co-localisés ou fonctionnant en conjonction avec une autre antenne ou transmetteur."

2. Pour se conformer aux exigences de conformité CNR102 RF exposition, une distance de séparation d'au moins 20 cm doit être maintenue entre l'antenne de cet appareil et toutes les personnes.

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(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.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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

## PRODUCT NOTICE

### PRODUCT SPECIFICATION

Physical Characteristics

- Approximate dimensions: L= 80mm. W= 70mm. H=50mm
- Approximate weight: 110g

Storage Conditions

- Storage temperature: -40°C to +60°C, -40°F to + 140°F

Performance Characteristics

- Normal transmission period: 60 seconds  $\pm$  10 seconds
- Fast transmission period 16 seconds
- Tire compatibility: 49" to 63" earthmover tubeless tires
- Pressure resolution: 1kPa, 0.01 bar, 0.145 psi
- Typical pressure accuracy:  $\pm$  30kPa,  $\pm$  0.3 bar,  $\pm$  4.35 psi (-20 to + 90°C, -4 to + 194°F)
- Temperature resolution: 1°C, - 1.8°F
- Typical temperature accuracy:  $\pm$  2 °C,  $\pm$  3.6°F (- 20 to + 90°C, - 4 to + 194°F)

RF Performance

- TX frequency: 433.92MHz ISM band
- RF output power: < 86.48 dBuV/m @ 3m (Peak) as per FCC 15.231 (b)
- RF data rate 5kHz, Modulation: FSK
- Antenna: Internal helical
- With duty cycle correction as per FCC part 15.35

Electrical Performance

- Batteries: 1 x Li-metal coin cell; Lithium content: 0.16g

Operating Conditions

- Operating temperature range: -20°C to +125°C; -4°F to + 257°F
- Operating pressure range: 100kPa to 1400kPa Absolute; 1 bar to 14 bar Absolute; 14.51 psi to 203.05 psi Absolute

Environment

- RoHS compliant

