MICHELIN SP40 MEMS Dry Sensor User Manual

Contents

MICHELIN SP40 MEMS Dry Sensor User Manual

PRODUCT NOTICE

PRODUCT NAME

MEMS DRY SENSOR SP40 – Part Numbers / CAI : 527706

PRODUCT DESCRIPTION

The MEMS DRY SENSOR SP40 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: RV1-40D
HVIN: RV1-40D
PMN: RV1-40D
FCC ID: FI5-RV1-40D
IC: 5056A-RV140D

Federal Communications Commission (FCC) Statement
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 easonable protection against harmful interference when

the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency nergy 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 F 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.

“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.

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.

PRODUCT SPECIFICATION

Physical Characteristics

- Approximate dimensions: L= 100mm. W= 55mm. D=50mm
- Approximate weight: 100g

Storage Conditions

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

Performance Characteristics

- Normal transmission period: 60 seconds + 10 seconds
- Fast transmission period 16 seconds
- Tire compatibility: 49” to 63” earthmover tubeless tires
- Pressure resolution: 1kPa

- Typical pressure accuracy: ± 30kPa, ± 0.3 bar, ± 4,35 psi (-20 to + 90°C, -4 to + 194°F);
- Temperature resolution: 1°C – 1.8°F
- Typical temperature accuracy: ± 2 °C, ± 1.8°F (- 20 to + 90°C, – 4 to + 194°F)

RF Performance

- TX frequency: 433.92MHz ISM band
- RF output power: < 89.57 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: 2 x Lithium metal coin cell
- Lithium content: 0.16g per cell

Operating Conditions

- Operating temperature range: -40°C to +125°C; -40°F to + 257°F
- Operating pressure range: 100kPa to 1400kPa Absolute; 1 bar to 14 bar Absolute; 14.51 psi to 203.14 psi Absolute

Environment

- RoHS compliant

DISPOSAL

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

At the end of its life, the MEMS DRY 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

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

Features, specifications are subject to change without notification.
Document version 1.0

Documents / Resources

	MICHELIN SP40 MEMS Dry Sensor [pdf] User Manual RV1-40D, FI5-RV1-40D, FI5RV140D, SP40 MEMS Dry Sensor, SP40, MEMS Dry Sensor, Dry Sensor, Sensor

References

- User Manual