M2M Wireless Position Data Transfer Module Provides Remote Sensors Monitoring for Industrial Applications; LoRa-Based Node Operates in License-Free 2.4 GHz ISM Band, Enables Communication Up to 2 km With Low Power Consumption for Long Battery Life

Product Benefits:



- LoRa-based machine to machine (M2M) wireless communication
- License-free 2.4 GHz ISM band operation
- Supports up to two analog position sensors
- 12-bit internal ADC
- Sealed M8x1 three-pole connectors for reliable sensors interfacing
- Supports communication up to 2 km in open-field environments
- High receiver sensitivity of -140 dBm
- Low transmit power of 7.08 mW (8.5 dBm)
- Autonomous battery-powered operation for up to two years on a single battery set
- Battery level monitoring simplifies maintenance planning
- A sealed mechanical switch provides secure activation and pairing during commissioning
- Five selectable frequency bands
- Six configurable spreading factor levels
- Bidirectional communication for reliable data exchange within LoRa networks
- Compact 89 mm x 55.5 mm x 21.6 mm dimensions
- Provides reliable operation in harsh environments:
  - IP67-rated sealed enclosure
  - UV-resistant housing compliant with ISO 4892-2
- RoHS-compliant

Market Applications:

- Industrial automation and infrastructure applications requiring IoT sensor integration for actuators, position data acquisition in low frequency systems, and predictive or condition-based maintenance in Industry 4.0 and smart factory environments
- Energy metering, precision farming, and agritech

The News:

Vishay Intertechnology introduces a new LoRa-based, M2M wireless position data transfer module designed to enable remote monitoring of analog precision sensors in industrial applications. Operating worldwide in the 2.4 GHz ISM band, the Vishay Sfernice WLMO wireless node supports long range communication while maintaining low power consumption for battery-powered operation.

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- The device powers, remotely acquires, and wirelessly transmits data from up to two analog position sensors to users' receiver / gateways for processing within the host system. It operates using a proprietary protocol layer over LoRa modulation, which must be implemented within customers' system and receiver / gateways
- Supporting both potentiometric and contactless technologies, the node delivers actuator position data to communication infrastructures, serving as a key link in the end to end chain toward cloud-based monitoring, for enhanced operational visibility and informed decision making
- Optimized bandwidth utilization, with duty cycles up to 10 %, enables efficient, reliable communication, while high receiver sensitivity delivers robust wireless performance
- The WLMO's radio architecture supports five selectable frequency bands, with independent transmission and reception channels featuring ± 200 kHz bandwidth each. Combined with six configurable spreading factor levels, this provides fine-grained tuning capabilities, ensuring modular integration within existing ecosystems of nodes, receiver / gateways, and sensors
- The module simplifies deployment by eliminating the need for wiring, enhances safety through position verification, and reduces operating expenses through remote configuration via receiver / gateways

The Key Specifications:

- Frequency band: 2.4 GHz ISM
- Communication range: up to 2 km
- Battery life: up to 2 years
- ADC resolution: 12 bit
- Selectable frequency bands:
  - CH0 at 2.402 GHz
  - CH1 at 2.426 GHz
  - CH2 at 2.450 GHz
  - CH3 at 2.465 GHz
  - CH4 at 2.480 GHz
- Receiver sensitivity: -140 dBm
- Transmit power: 7.08 mW (8.5 dBm)
- Enclosure rating: IP67
- Dimensions: 89 mm x 55.5 mm x 21.6 mm

Availability:
Samples and production quantities of the WLMO are available now, with lead times of 14 weeks.

To access the product datasheet on the Vishay Website, go to
http://www.vishay.com/ppg?50089 (WLMO)

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