

BoB ASSISTANT® Predictive maintenance assistant



BoB ASSISTANT makes a thorough analysis of the vibration signature of an industrial piece of equipment, ensuring its remote condition monitoring. The data is transmitted via a public or private LoRaWAN® radio frequency network.

APPLICATIONS

- Supervision of industrial installations equipped with motors (pumps, ventilation, cooling unit, ...)
- Optimization of maintenance operations

BENEFITS & FEATURES

- LoRaWAN®, Class A
- Easy to install and use
- > 3,5 years of autonomy
- Measuring ranges / accuracies:
 - Vibration: 0-400Hz / ± 3Hz and 0-12.4kHz / ± 100Hz
 - Temperature: -20°C to +55°C / ± 1°C

CERTIFICATION

- RED, UKCA, RoHS



BoB ASSISTANT® monitors the vibration signature of a piece of equipment (pump, ventilation, etc...) in the 0 to 400Hz (± 3Hz) and 0 to 12.4kHz (± 100Hz) ranges every 5 minutes (adjustable).

After an automatic learning period of 7 days, the sensor alerts in case of vibration drift, allowing maintenance teams to intervene before a breakage or failure. Data transmission over the public or private LoRaWAN® network is done periodically or immediately in case of alert:

- Exceeding the vibration drift threshold (adjustable)
- Machine on/off (adjustable)

Installation and commissioning are quick and easy.

The sensor is equipped with:

- A button for activation and deactivation,
- An RGB LED to monitor configuration and pairing to the network,
- 2 magnets to facilitate the installation of the sensor on the equipment (also possible by gluing, riveting, screwing...).

Each sensor is identified by a QR code on the label.

The data pre-processed by the on-board artificial intelligence is gathered in a report transmitted over the LoRaWAN® network every 180 minutes.

The sensor periodically reports the machine's operating time over the last 180 minutes, the rate of vibration drift recorded over this period, the battery level, the temperature, and a predictive failure probability.

Machine status alerts (Start/Stop) are also available (can be inhibited by Downlink control).

Powered by a 3.6V/2100mAh battery, the autonomy of the sensor is more than 3 years with a configuration of 8 transmissions per day.

Machine vibration knowledge is stored in flash, and applied back when the device is restarted, or battery is replaced.


Machine vibration knowledge and battery values can be reset either through the HMI interface or network Downlink command.

THE LARGEST IOT PRODUCTS RANGE FOR YOUR PROJECT

WATTECO is a European leader in the design and manufacture of smart IoT devices to suit all remote reading and data collection solutions.

WATTECO is a LoRa Alliance® member.

TECHNICAL DATA

RADIOFREQUENCY		Frequency (MHz)	Transmit Power (dBm)	Receiver Sensitivity (dBm)	
		EU: 863-870	+14	-140	
FIRMWARE					
Protocol		LoRaWAN®, Class A			
Activation method		Over-The-Air Activation (OTAA)			
Data encryption		AES128			
Sampling period		10 minutes (configurable)			
Transmission cycles		Every 180 minutes			
MEASUREMENTS		Vibration	Temperature		
Range		Low frequency: 0 - 400Hz High frequency: 0 - 12800Hz	-20°C to +55°C		
Accuracy		± 3,125Hz (0 - 400Hz) ± 100Hz (0 - 12800Hz)	± 1°C		
ALARMS					
Vibration		Vibration drift of 25% by default (configurable as Downlink at 10, 15 or 20%)			
Status		Switching on / off (status frames can be inhibited by downlink control)			
POWER SUPPLY					
Voltage		3.6V / 2100mAh – Replaceable lithium battery Transmitted battery voltage level in remaining percentage			
Autonomy in a range of +10°C to +25°C		> 3 years: sampling every 10 minutes and 8 transmissions per day			
USER INTERFACES					
QR Code		Product code, serial number, batch number			
Push button + RGB LED		Configuration, network pairing and sensor status			
ENCLOSURE	Size (mm)	Weight (g)	Fastenings	IP rating	Fire resistance
	76 x 79 x 23	75	Supplied 2x magnets and nuts	IP68	UL94-HB
ENVIRONMENT		Operating conditions		Storage conditions	
		-20°C ... +55°C +0%rH ... +95%rH (non-condensing)		+10°C ... +30°C +20%rH ... +60%rH	
DIRECTIVES & STANDARD					
Radio Equipment Directive 2014/53/EU, RoHS					

PRODUCT NUMBER

REFERENCE	DESCRIPTION
50-80-001	LoRAWAN® BoB ASSISTANT® EU868