# **Connected Industrial Sensor Solution | CISS**



The Robust Acceleration, Vibration & Condition Detector

The CISS is a multi-sensor device detecting acceleration and vibration as well as environmental conditions. The robust housing and the small outline makes it perfectly suitable for industrial retrofit applications such as condition monitoring and predictive maintenance. Configuring the device enables the customer to address a broad variety of use cases by interpreting the sensor data by smart algorithms.

# **BUILT-IN SENSORS**



Accelerometer



Humidity Digital sensor sensor



Gyroscope



Pressure

sensor

Microphone

# **USE CASES**

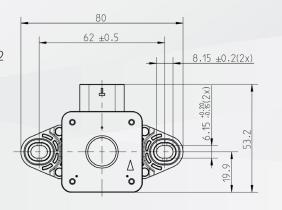


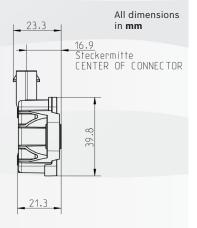
### **SCOPE OF DELIVERY**

- CISS device with a small form factor
- ▶ USB cable (2m)
- Fasteners (2 screws, 2 washers, and 2 magnetic bases)
- Quick Start Guide

# DOWNLOADS

- Example Python script
- Demo App: Virtual CISS
- Windows Driver
- ► Firmware Updates





# MAIN COMPONENTS

- Bluetooth Low Energy (BLE) radio
- ► 32-Bit microcontroller (ARM Cortex M3), 1MB Flash, 128 kB RAM
- ▶ User data memory 2MB
- Accelerometer BMA280, Gyroscope BMG160, Magnetometer BMC150, Temperature sensor, Humidity sensor, Air pressure sensor BME280, Light sensor MAX44009, Microphone AKU340



Operating temperature range

-20 °C - 80 °C

BOSCH

Invented for life

10 – 90 %rH (non-condensing) 300 – 1100 hPa

> IP54 5 V DC

Pressure range

Humidity range

- IP rating
- Supply voltage

# **MEASUREMENT RANGES & ACCURACIES**

Sensor	Measurement Range	Accuracy
Accelerometer	± 2, 4, 8, 16 g (14 bit resolution)	± 50 mg
► Gyroscope	± 2000 °/s	±1°/s
<ul> <li>Magnetometer</li> </ul>	±1300 μT (X,Y-Axis); ±2500μT (Z-Axis)	$0.06 \times M \pm 25 \mu T$
<ul><li>Temperature</li><li>Humidity</li></ul>	-20 °C – 80 °C 20 – 90% (non-condensing)	max. ±2 °C + 3% T °C max. ±7% at +20 °C,
	20 – 90% (non-condensing)	max. ±10% at -20 °C
<ul> <li>Pressure</li> </ul>	300 - 1100 hPa	± 1.5 hPa
▶ Light	0 - 2112800 Lux	± 15 %

# SAMPLING RATE (USB)\*

- ► Inertial sensors ≤ 100 Hz Accelerometer, Gyroscope, Magnetometer
- Environmental sensors ≤ 1 Hz Temperature sensor, Humidity sensor, Air pressure sensor, Light sensor, Microphone

\* Inertial sensor special mode: 2kHz streaming Accelerometer (without Gyroscope, Magnetometer and environmental data)

Hints: BLE sampling rate depends on the quality of the BLE connection; Microphone data can only be transferred via BLE.

# INTERFACE

- ► USB communication protocol
- Bluetooth Low Energy communication protocol

### **GET IN CONTACT WITH US!**

**E-Mail:** support@bosch-connectivity.com **Website:** www.bosch-connectivity.com/CISS

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