



## 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



Temperature sensor



Humidity sensor



Digital light sensor



Gyroscope



Magnetometer



Pressure sensor



Acoustic sensor

### USE CASES

#### Condition Monitoring

Machine Doctor

Predictive Maintenance

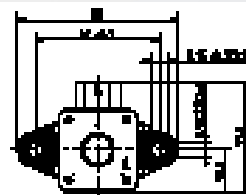
Digital Twin

### SCOPE OF DELIVERY

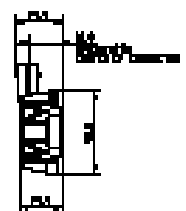
- ▶ CISS device with a small form factor
- ▶ USB cable (2m)
- ▶ Fasteners (2 screws, 2 washers, and 2 magnetic bases)
- ▶ Quick Start Guide

### DOWNLOADS

- ▶ Example Python script 2.7.XX for data recording
- ▶ Windows Driver



in mm



## MAIN COMPONENTS

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



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## OPERATING CONDITIONS

- ▶ Operating temperature range -20 °C ... 85 °C
- ▶ Storage temperature range -20 °C ... 60 °C
- ▶ Humidity range 10...90 %rH (non-condensing)
- ▶ IP rating IP54 (standard), IP67 (with IP67 cable)
- ▶ Supply voltage 5 V DC

## MEASUREMENT RANGES & ACCURACIES

Sensor	Measurement Range	Accuracy
▶ Accelerometer	± 2, 4, 8, 16 g (16 bit resolution)	± 50 mg
▶ Gyroscope	± 2000 °/s	± 1 °/s
▶ Magnetometer	±1300 μT (X,Y-Axis); ±2500μT (Z-Axis)	0.06 × MCISS ± 25 μT
▶ Temperature	-40 °C ... 85 °C	0.03 × TCISS ± 3.7 °C
▶ Humidity	10 – 90% (non-condensing)	20 °C, max. ±7 % ; -20 °C, max. ±10 %
▶ Pressure	30 – 110 kPa	± 1.5 hPa
▶ Light	0.53 ... 2220000 Lux	± 15 %

## SAMPLING RATE (USB)\*

- ▶ Inertial sensor \*\* ≤ 100 Hz  
Accelerometer, Gyroscope, Magnetometer
- ▶ Environmental sensors ≤ 1 Hz  
Environment (Temperature, Humidity, Air pressure), Light meter, Microphone

\*BLE sampling rate depends on transmission performance

\*\* Inertial sensor special mode possible: 2kHz streaming Accelerometer without Gyroscope and Magnetometer data

## INTERFACE

- ▶ USB communication protocol supporting data streaming
- ▶ Bluetooth Low Energy radio protocol supporting data streaming
- ▶ Example software for Windows/Linux

## GET IN CONTACT WITH US!

**E-Mail:** [info@bosch-connectivity.com](mailto:info@bosch-connectivity.com)

**Website:** [www.bosch-connectivity.com/CISS](http://www.bosch-connectivity.com/CISS)

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