

# Bosch Motorsport Yaw/Acceleration Sensor MM5.10



**Brand:** Bosch Motorsport  
**Product Code:** BOSF02UV02590-01  
**Availability:** 7 Days  
**Weight:** 0.10kg  
**Dimensions:** 5.00cm x 5.00cm x 5.00cm

**Price: \$968.00**

## Short Description

The MM5.10 was designed to measure the physical effects of rotational and linear acceleration. In order to achieve this, the sensor includes MEMS measuring elements connected to an appropriate integrated circuit

## Description

The MM5.10 was designed to measure the physical effects of rotational and linear acceleration. In order to achieve this, the sensor includes MEMS measuring elements connected to an appropriate integrated circuit.

A rotational acceleration around the integrated sensing elements generates a Coriolis force which changes the internal capacity of the micro machined sensing parts. Furthermore, a pure surface micromachined element is used to measure the vehicle linear acceleration in all 3 axis. This combination of rotational and linear acceleration sensors enables a precise measurement of the vehicle dynamics.

The main feature and benefit of this sensor is the combination of 3 linear and 2 rotational accelerometers and its high speed 1 Mbaud CAN-signal output.

## Specifications

### Application

Application I  $\pm 163^\circ/\text{s}$  (roll rate/yaw rate)

Application II  $\pm 4.2 \text{ g}$  (X, Y and Z acceleration)

Operating temperature range  $-20$  to  $85^\circ\text{C}$

### Technical Specifications

#### Mechanical Data

Weight w/o wire 35 g

Size 80 x 56 x 21 mm

#### Electrical Data

Power supply 7 to 18 V

Max input current 90 mA

CAN speed 1 Mbaud or 500 kbaud

### CAN Message

#### CAN ID 01 0x174

Byte	Value
0	Yaw Rate
1	
2	Reserved
3	
4	Accel Y-Axis
5	
6	Reserved
7	Unused

## **CAN ID 02 0x178**

Byte	Value
0	Roll Rate
1	
2	Reserved
3	
4	Accel X-Axis
5	
6	Reserved
7	Unused

## **CAN ID 03 0x17C**

Byte	Value
0	Reserved
1	
2	Reserved
3	
4	Accel Z-Axis
5	
6	Reserved
7	Unused

## **CAN Parameters**

Byte order LSB (Intel)

CAN speed 1 Mbaud or 500 kbaud

Bit mask unsigned

Offset (all signals) 0x8000 hex

Quantization Yaw Rate 0.005 [°/s/digit]

Quantization Roll Rate 0.005 [°/s/digit]

Quantization Acc X-axis 0.0001274 [g/digit]

Quantization Acc Y-axis 0.0001274 [g/digit]

Quantization Acc Z-axis 0.0001274 [g/digit]

## **Characteristic**

### **Characteristic Application I**

Measuring range  $\pm 160^\circ/\text{s}$

Over range limit  $\pm 1,000^\circ/\text{s}$

Absolute physical resolution  $0.1^\circ/\text{s}$

Cut-off frequency (-3 dB) 15 Hz; 30 Hz; 60 Hz

### **Characteristic Application II**

Measuring range  $\pm 4.2 \text{ g}$

Over range limit  $\pm 10 \text{ g}$

Absolute physical resolution 0.01 g

Cut-off frequency (-3 dB) 15 Hz; 30 Hz; 60 Hz

## **Connectors and Wires**

Connector (1) AMP 114-18063-076

Mating connector (1) F02U.B00.435-01

Pin 1 Gnd

Pin 2 CANL

Pin 3 CANH

Pin 4 UBat

# Drawings

