

Speed Sensor Hall-Effect HA-M



- ▶ Max. frequency: ≤ 4.2 kHz
- ▶ Air gap: 0.5 to 1.0 mm
- ▶ Bore diameter: 11.8 mm
- ▶ Max. vibration: $1,200 \text{ m/s}^2$ at 10 Hz to 2 kHz
- ▶ Weight w/o wire: 12 g

This sensor is designed for incremental measurement of rotational speed (e.g. camshaft, crankshaft or wheel speed).

Due to the rotation of a ferromagnetic target wheel in front of the HA-M, the magnetic field is modulated at the place of the Hall probe. A Hall-effect sensor element with integrated signal conditioning circuit detects this change and generates a digital output signal. We offer this sensor with two different types of output: Active high and Active low.

The main feature and benefit of this sensor is the combination of a high quality production part and robust design with metal housing and motorsport connectors.

Application

Application	Speed
Max. frequency	≤ 4.2 kHz
Target wheel air gap	0.5 to 1.5 mm
Temperature range	- 40 to 160°C
Output circuit	Open collector for 1 kOhm
Output type	Please see Ordering Information
External magnetic fields	$< 1 \text{ mT}$
Max. vibration	$1,200 \text{ m/s}^2$ at 10 Hz to 2 kHz

Technical Specifications

Variations

Active low with connector / active high with connector

Connector	ASU603-03PN-HE
Mating connector	F02U.000.199-01
ASU003-03SN-HE	

Pin 1	U_s
Pin 2	Gnd
Pin 3	Sig
Active high, without connector	
Red	U_s
Black	Gnd
Green	Sig

Mechanical Data

Weight w/o wire	12 g
Mounting	1 x M6
Bore diameter	11.8 mm
Installation depth L2	30 mm
Tightening torque	6 Nm

Electrical Data

Power supply	5 to 18 V
Current I_s	5.6 to 18 mA

Characteristic

Accuracy repeatability of the falling edge of tooth	$< 4\%$ (≤ 4.2 kHz)
Signal output	0.52 V to $< U_s$

Connectors and Wires

Various motorsport and automotive connectors available on request.	
Pin layout	Please see Variations
Sleeve	DR-25
Wire size	AWG 24
Wire length L	10 to 100 cm

Please specify the required wire length with your order.

Installation Notes

The HA-M can be connected directly to most control units and data logging systems.

Please avoid abrupt temperature changes.

For mounting please use only the integrated plug.

If a wheel with different dimensions is used (see Environment), the technical function has to be tested individually.

Please ensure that the environmental conditions do not exceed the sensor specifications.

Please find further application hints in the offer drawing at our homepage.

Safety Note

The sensor is not intended to be used for safety related applications without appropriate measures for signal validation in the application system.

Legal Restrictions

Due to embargo restrictions, sale of this product in Russia, Belarus, Iran, Syria, and North Korea is prohibited.

Ordering Information

Speed Sensor Hall Effect HA-M

Active low

Order number **B261.209.283-01**

Speed Sensor Hall Effect HA-M

Active high

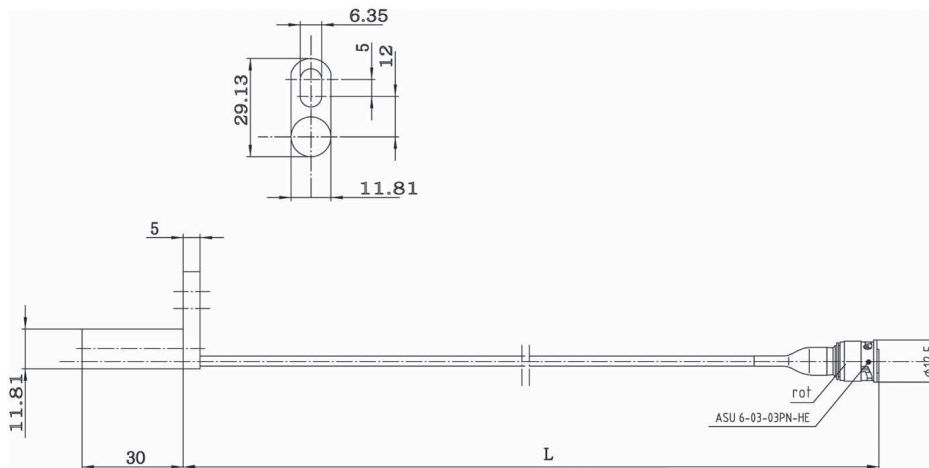
Order number **B261.209.295-01**

Speed Sensor Hall Effect HA-M

Active high, without connector

Order number **F02U.V00.627-01**

Dimensions



Represented by:

Europe:
 Bosch Engineering GmbH
 Motorsport
 Robert-Bosch-Allee 1
 74232 Abstatt
 Germany
 Tel.: +49 7062 911 9101
 Fax: +49 7062 911 79104
 motorsport@bosch.com
 www.bosch-motorsport.de

North America:
 Bosch Engineering North America
 Motorsport
 38000 Hills Tech Drive
 Farmington Hills, MI 48331-3417
 United States of America
 Tel.: +1 248 876 2977
 Fax: +1 248 876 7373
 motorsport@bosch.com
 www.bosch-motorsport.com

Asia-Pacific:
 Bosch Engineering Japan K.K.
 Motorsports Department
 1-9-32 Nakagawa Chuo, Tsuzuki-ku
 Yokohama City
 Kanagawa Prefecture 224-8601
 Japan
 Tel.: +81 45 605 3032
 Fax: +81 45 605 3059
 www.bosch-motorsport.jp

Australia, New Zealand and South Africa:
 Robert Bosch Pty. Ltd
 Motorsport
 1555 Centre Road
 Clayton, Victoria, 3168
 Australia
 Tel.: +61 (3) 9541 3901
 motor.sport@au.bosch.com