

## Hall-Effect Speed Sensor HA-M

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

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	≤ 10 kHz
Target wheel air gap	0.5 ... 1.5 mm
Temperature range	- 40 ... 160 °C
Output circuit	open collector for 1 kΩ
Output type	[1] Active low [2 3] Active high
External magnetic fields	< 1 mT
Max. vibration	1,200 m/s <sup>2</sup> @ 10 Hz ... 2 kHz

Mechanical Data	
Weight w/o wire	12 g
Mounting	1 x M6
Bore diameter	11.8 mm
Installation depth L <sub>2</sub>	30 mm
Tightening torque	6 Nm

Electrical Data	
Power supply	5 ... 18 V
Current I <sub>s</sub>	5 ... 18 mA

Connectors and Wires	
Connector	[1 2] ASU 6-03-03PN-HE [3] without connector
Mating connector	[1 2] ASU 0-03-03SN-HE [3] -
Pin 1	[1 2] U <sub>s</sub> [3] U <sub>s</sub> red
Pin 2	[1 2] Gnd [3] Gnd black
Pin 3	[1 2] Sig [3] Sig green

Various motorsport and automotive connectors available on request.	
Sleeve	DR-25
Wire size	AWG 24
Wire length	15 ... 100 cm

Please specify the required wire length with your order.

### Characteristic

Accuracy repeatability of the falling edge of tooth	< 4 % ( $\leq 6$ kHz) < 8 % ( $\leq 10$ kHz)
Signal output	0.52 V ... < U <sub>s</sub>

### Environment

Target wheel diameter D	162.34 mm
Thickness t	12.5 mm
Width of teeth b1	3.8 mm
Width of gap b2	4.7 mm
Width of sync. gap b3	20.79 mm
Depth of teeth h	3.4 mm
Number of teeth	60-2

### Application Hint

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 (<http://www.bosch-motorsport.com>).

### Part Numbers

Speed sensor HA-M	<b>[1] B 261 209 283-01</b>
Speed sensor HA-M	<b>[2] B 261 209 295-01</b>
Speed sensor HA-M	<b>[3] F 02U V00 627-01</b>

