

Hall-Effect Speed Sensor HA-P

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-P, 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.

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



Application	
Application	speed
Max. frequency	≤ 10 kHz
Target wheel air gap	0.5 ... 1.4 mm
Temperature range	-40 ... 150 °C
Output type	active low
Output circuit	open collector for 1 kΩ
Max. vibration	1,000 m/s ² @ 10 Hz ... 2 kHz

Mechanical Data	
Weight w/o wire	70 g
Mounting	with screw 1 x M6
Bore diameter	18 mm
Installation depth L ₂	24 mm
Tightening torque	8 Nm

Characteristic	
Accuracy repeatability of the falling edge of tooth	< 1.5 % (≤ 6 kHz) < 2 % (≤ 10 kHz)
Signal output	0.4 V ... < U _s

Electrical Data	
Power supply	4.5 ... 24 V
Current I _s	10 mA

Connectors and Wires	
Connector	1 928 404 227
Mating connector	D 261 205 335
Pin 1	Gnd
Pin 2	Sig
Pin 3	U _s

Environment	
Target wheel diameter D	162.34 mm
Thickness t	12.5 mm
Width of teeth b ₁	3.8 mm
Width of gap b ₂	4.7 mm
Width of sync. gap b ₃	20.79 mm
Depth of teeth h	3.4 mm
Number of teeth	60-2

Application Hint

The HA-P 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-P

0 232 103 037

