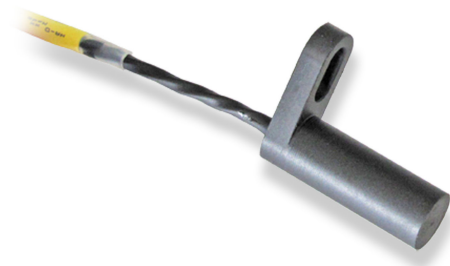


# Hall-Effect Speed Sensor HA-D 90

www.bosch-motorsport.com



- ▶ Camshaft/crankshaft/wheel speed
- ▶ Also available with 0°, 180° and 270° mounting position
- ▶ Very high precision measurement
- ▶ Self-learning
- ▶ Measuring of differences with 2 Hall sensors

This sensor is designed for incremental measurement of rotational speed (e.g. camshaft\*, crankshaft or wheel speed), but it is not a “true power-on” sensor. Due to the rotation of a ferromagnetic target wheel in front of the HA-D 90, the magnetic field is modulated at the place of the Hall probe.

The main feature and benefit of this sensor is a very good detection of the falling edge, due to a differential measuring method. This sensor is a combination of a high quality production part and robust design with a small housing.

\*: see Installation Notes

## Application

Application	Speed
Max. frequency	≤ 10 kHz
Target wheel air gap AG	0.4 to 1.2 mm
Temperature range	-40 to 150°C
Output circuit	Open collector for 1 kOhm
Output type	Active high
External magnetic fields	≤ 50 mT
Max. vibration	1,200 m/s <sup>2</sup> at 10 Hz to 2 kHz

## Technical Specifications

### Mechanical Data

Weight w/o wire	12 g
Mounting	Screw 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 <sub>S</sub>	20 mA

### Characteristic

Accuracy repeatability of the falling edge of tooth	< 1.0 % (≤ 6 kHz) < 1.5 % (≤ 10 kHz)
Signal output	0.52 V to < U <sub>S</sub>

### Environment

Target wheel diameter D	162.34 mm
Thickness t	12.5 mm
Width of teeth b1	3.8 mm

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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

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**Connectors and Wires**

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Connector	ASL 6-06-05PC-HE
Mating connector ASL 0-06-05SC-HE	F 02U 000 228-01
Pin 1	U <sub>s</sub>
Pin 2	Gnd
Pin 3	Sig
Pin 4	Nc
Pin 5	Nc

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Various motorsport and automotive connectors available on request.

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Sleeve	DR-25
Wire size	AWG 24
Wire length L	15 to 100 cm

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Please specify the required wire length with your order.

**Installation Notes**

The HA-D 90 is no true-power-on sensor. It needs the falling edge of two teeth for correct working. After a time of 0.68 s without rotation of the detected wheel it needs again the falling edge of two teeth.

The HA-D 90 can be connected directly to most control units and data logging systems

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Please specify the angle between the mounting and the target wheel.

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Please avoid abrupt temperature changes.

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For mounting please use only the integrated plug.

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

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

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

**Safety Note**

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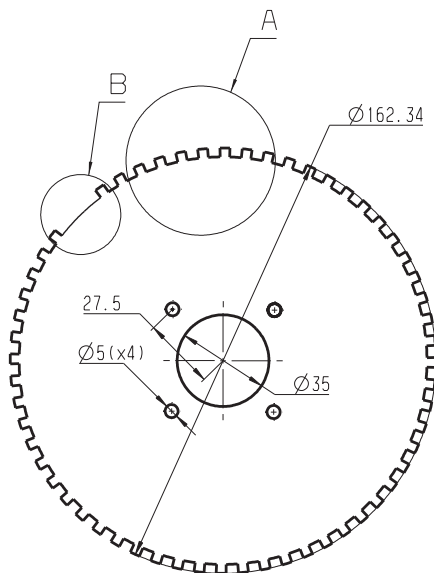
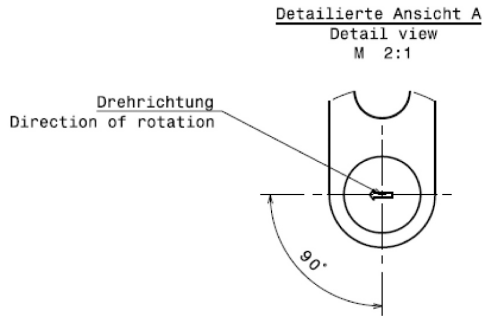
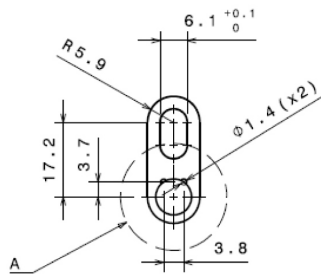
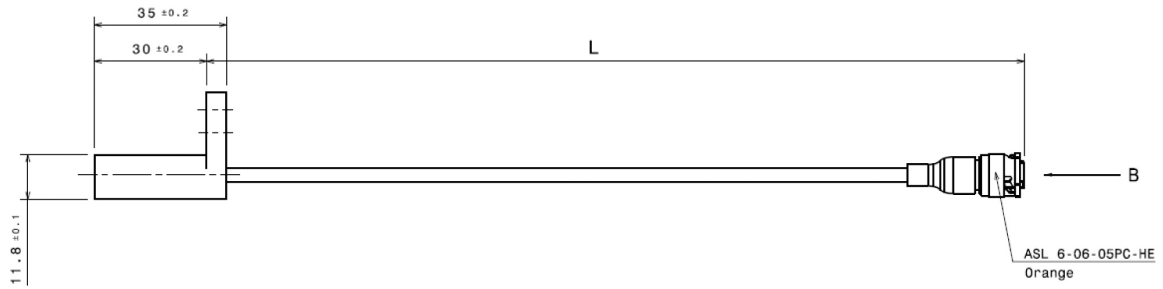
The sensor is not intended to be used for safety related applications without appropriate measures for signal validation in the application system.

**Ordering Information****Hall-Effect Speed Sensor HA-D 90**

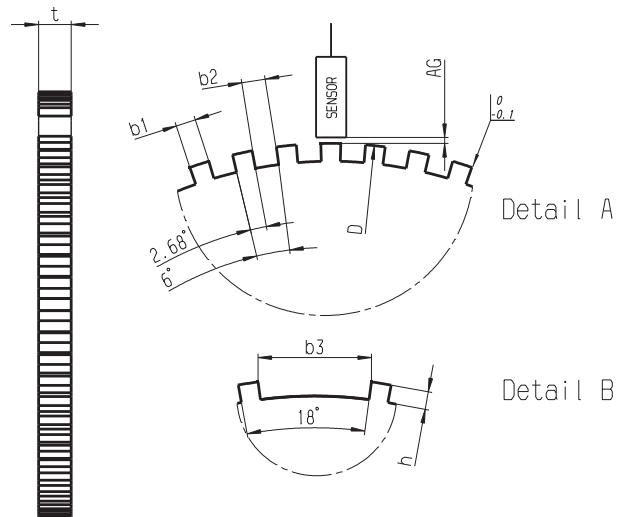
Order number **F 02U V00 334-01**

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Dimensions



60-2 Teeth



Left view

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