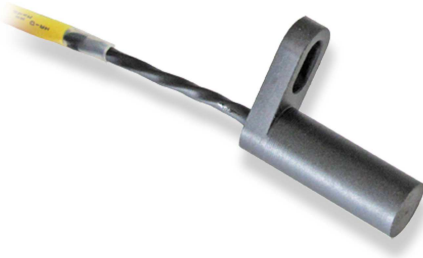


# Speed Sensor Hall-Effect HA-D 90



- ▶ Max. frequency:  $\leq 10$  kHz
- ▶ Air gap: 0.4 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), 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           | $\leq 10$ kHz                           |
| Target wheel air gap AG  | 0.4 to 1.0 mm                           |
| Temperature range        | -40 to $150^\circ\text{C}$              |
| Output circuit           | Open collector for 1 kOhm               |
| Output type              | Active high                             |
| External magnetic fields | $\leq 50$ mT                            |
| Max. vibration           | $1,200 \text{ m/s}^2$ 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 IS   | 20 mA     |

### Characteristic

|   |                             |
|---|-----------------------------|
| Accuracy repeatability of the falling edge of tooth | $< 1.0\%$ ( $\leq 6$ kHz)   |
|   | $< 1.5\%$ ( $\leq 10$ kHz)  |
| Signal output                                       | $0.52 \text{ V}$ to $< U_s$ |

### 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      |

### Connectors and Wires

|  |                 |
|--|-----------------|
| Connector  | ASL606-05PC-HE  |
| Mating connector   | F02U.000.228-01 |
| ASL006-05SC-HE   |                 |
| Pin 1  | $U_s$           |
| Pin 2  | Gnd             |
| Pin 3  | Sig             |
| Pin 4  | Nc              |
| Pin 5  | Nc              |
| Various motorsport and automotive connectors available on request. |                 |
| Sleeve   | DR-25           |
| Wire size  | AWG 24          |

|  |              |
|--|--------------|
| Wire length L  | 15 to 100 cm |
| 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
- Please specify the angle between the mounting and the target wheel.
- 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.

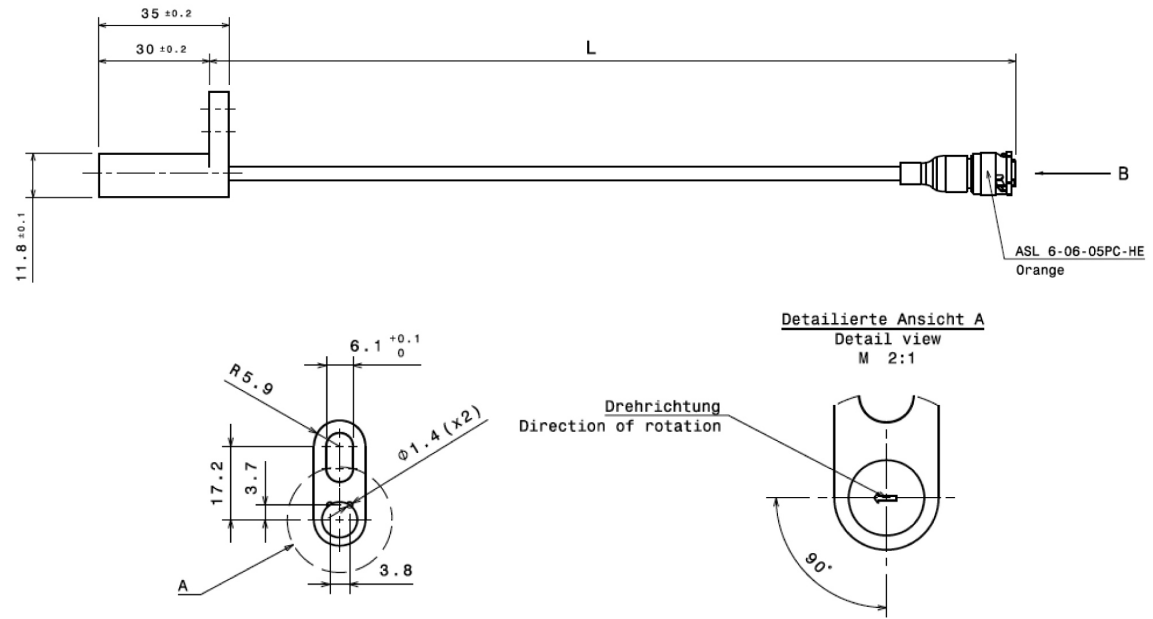
**Legal Restrictions**

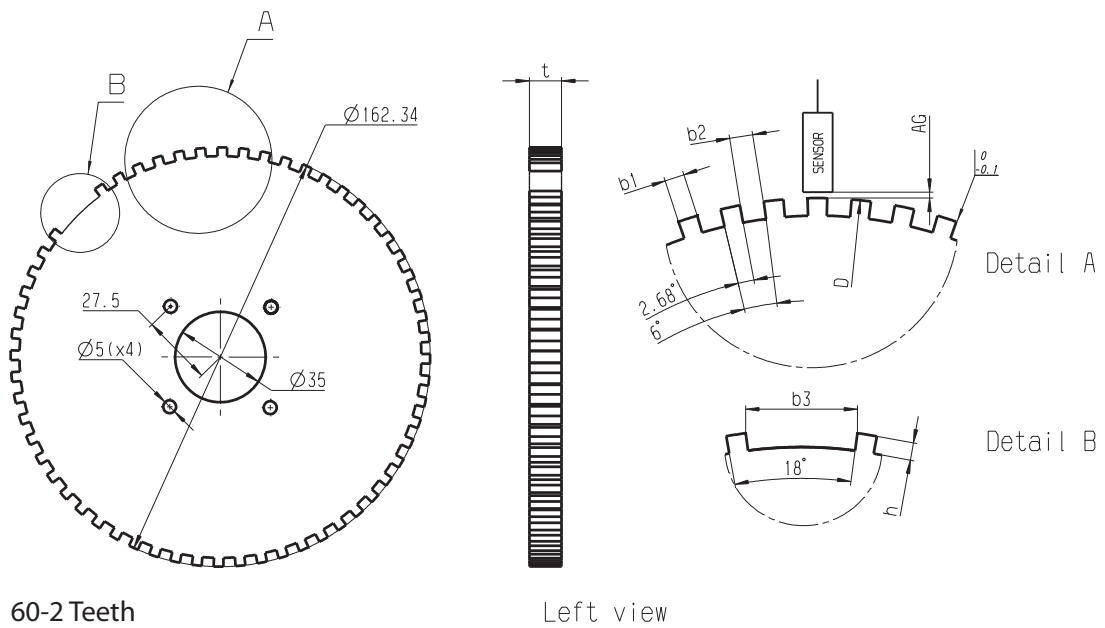
Due to embargo restrictions, sale of this product in Russia, Belarus, Iran, Syria, and North Korea is prohibited.

**Ordering Information**

**Speed Sensor Hall-Effect HA-D 90**  
 Order number **F02U.V00.334-01**

**Dimensions**





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