

Speed Sensor Hall-Effect HA-N



- ▶ Max. frequency: ≤ 4.2 kHz
- ▶ Air gap: 0.4 to 1.5 mm
- ▶ Bore diameter: 10 mm
- ▶ Max. vibration: $1,200 \text{ m/s}^2$ at 10 Hz to 2 kHz
- ▶ Weight w/o wire: 8 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-N, 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 HA-N combines a robust sensing element with a lightweight aluminum housing that is well suited for motorsport use. The sensor element used was specifically selected for its resistance to demagnetization at high temperatures and is programmed for an active low output. This sensor element is approved for NASCAR competition as a camshaft speed sensor.

Application

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

Technical Specifications

Mechanical Data

Weight w/ wire	13 g w/ 254 mm cable length and AS connector
----------------	--

	28.5 g w/ 1,000 mm cable length flying lead
Bore diameter	10 mm
Installation depth L2	14 mm
Tightening torque	6 Nm

Electrical Data

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

Characteristic

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

Connectors and Wires

Sensor AS connector	
Connector	ASL606-05PA-HE
Mating connector	ASL006-05SA-HE
Pin 1	V_s
Pin 2	GND
Pin 3	Signal
Pin 4	Not used
Pin 5	Not used
Shrink sleeve	DR-25
Wire size	AWG 24
Wire length L	254 mm

Sensor Flying lead	
WHT/ORG	V_s
WHT/BLU	GND

Sensor Flying lead	
WHT	Signal
Shrink sleeve	DR-25
Wire size	AWG 24
Wire length L	1,000 mm

Installation Notes

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

If a trigger wheel with different dimensions is used (see environment), the technical function must be tested.

Safety Note

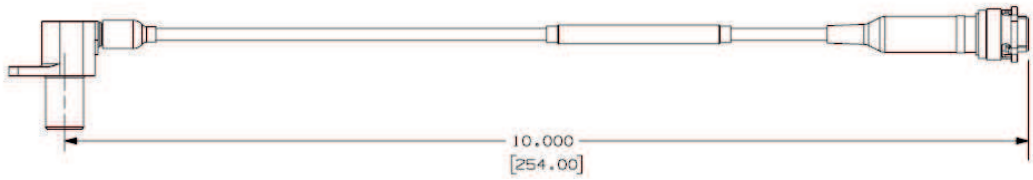
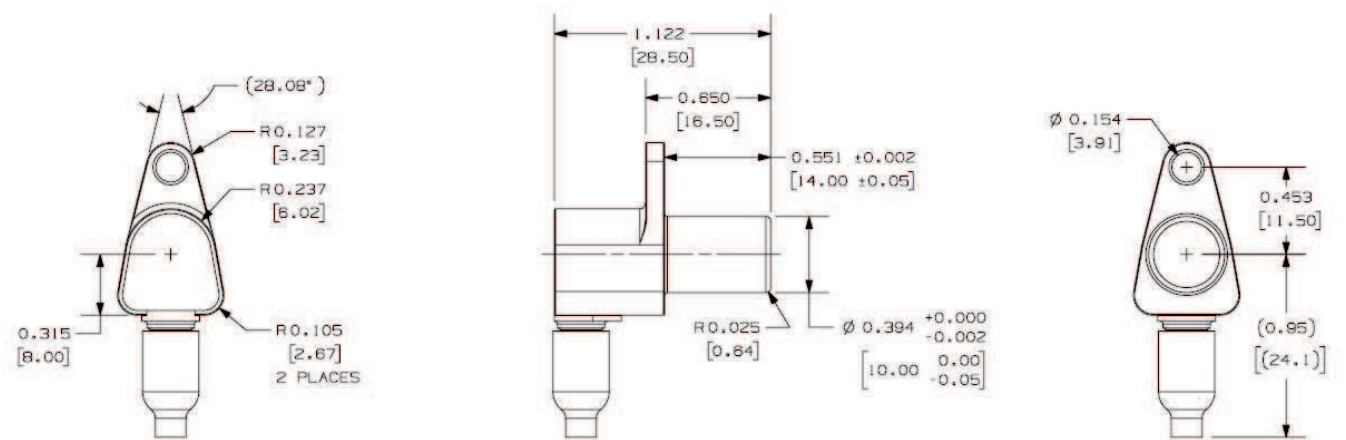
The sensor is not intended to be used for safety related applications without appropriate measures for signal validation in the application system.

Ordering Information

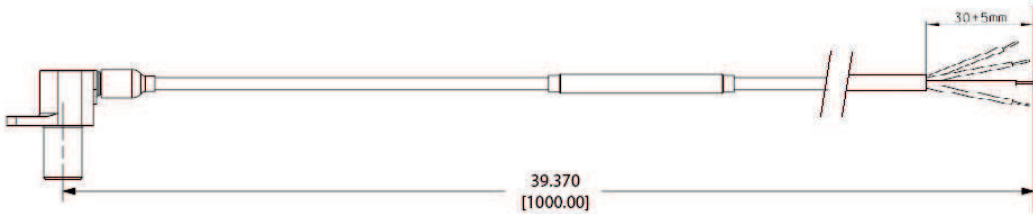
Hall-Effect Speed Sensor HA-N
 Sensor AS connector
 Order number **F 02U V0U 714-01**

Hall-Effect Speed Sensor HA-N
 Sensor Flying lead
 Order number **F 02U V0U 714-90**

Dimensions



Sensor AS connector



Sensor Flying lead

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.
 Motorsport
 18F Queen's Tower C, 2-3-5 Minato
 Mirai Nishi-ku, Yokohama-shi
 Kanagawa 220-6218
 Japan
 Tel.: +81 45 650 5610
 Fax: +81 45 650 5611
 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