

## Inductive Speed Sensor IA

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

The inductive sensor consists of a bar magnet with a soft magnetic pole pin supporting an induction coil with two connections. When a ferromagnetic ring gear turns past this sensor, it generates a voltage in the coil which is directly proportional to the periodic variation in the magnetic flux. The rotational speed is reflected on a periodic interval between the voltage's zero transition points.

The main benefit of this sensor is the combination of a high quality production part and robust, high temperature resistance. Additionally the installation depth can be changed according to the customer request.



Application	
Application	speed
Max. frequency	≤ 15 kHz
Target wheel air gap AG	0.8 ± 0.3 mm
Operating temp. range (sensing head)	-40 ... 230 °C
Storage temperature range	0 ... 100 °C
Max. vibration	800 m/s <sup>2</sup> max. 80 h

Electrical Data	
Coil resistance	1,200 Ω
Inductance max.	400 mH
Output voltage max.	190 V <sub>P-P</sub>

Mechanical Data	
Magnetic pole	round
Bore diameter	12.5 mm
Weight w/o wire	30 g
Installation depth L2	32.2 mm

Environment	
Target wheel diameter D	160.43 mm
Thickness t	> 5 mm
Width of teeth b1	4.1 mm
Width of gap b2	4.3 mm
Depth of teeth h1	3.5 mm
Depth of teeth h2	1.75 mm
Number of teeth	60-2

Connectors and Wires	
Connector	ASL 6-06-05SN-HE
Mating connector	ASL 0-06-05PN-HE
Pin 1	-
Pin 2	Gnd
Pin 3	Sig
Pin 4	-
Pin 5	Scr
Various motorsport and automotive connectors available on request.	
Sleeve	DR-25
Wire	AWG 24
Wire length L	10 ... 100 cm
Please specify the required wire length with your order.	

Application Hint	
The inductive speed sensor IA is developed for wheels made of ferromagnetic material.	
If a wheel with different dimensions is used (see Environment), the technical function has to be tested individually.	
The installation depth $L_2$ can be changed individually according to customer request.	
Please contact our technical consultancy for more information.	
Please find further application hints in the offer drawing ( <a href="http://www.bosch-motorsport.com">http://www.bosch-motorsport.com</a> ).	
Part Number	
Inductive Speed Sensor IA	<b>B 261 209 519-01</b>

**Ua = f (rpm, airgap)**



