

## SNDH-H Series

### Hall-Effect Speed Sensors

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#### DESCRIPTION

The SNDH-H Series Hall-Effect Speed Sensors use a magnetically biased Hall-effect integrated circuit to accurately sense movement of ferrous metal targets. The specially designed IC (integrated circuit) and a permanent magnet are sealed in rugged, probe-type packages.

The flux density of the permanent magnet alters when approached by ferrous metal. This is detected by the Hall ICs. If the sensor is positioned at the circumference of a revolving gear wheel, for example, it detects the teeth and tooth spaces, supplying a digital pulse output with frequency proportional to gear wheel speed.

#### FEATURES

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- Hall-effect magnetic sensing technology
- Digital current sinking output (open collector)
- Advanced performance dynamic offset self calibration
- Air gap up to 2,5 mm [0.098 in]
- Zero speed versions
- High frequency switching capability (0 Hz to 15 kHz)
- -40 °C to 150 °C [-40 °F to 302 °F] operating temperature capability (SNDH-H3C-G03)
- Multiple connector options
- O-ring seal

#### POTENTIAL APPLICATIONS

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- Tachometers/counters
- Speed of gears and shafts in transmissions, hydraulic motors, pumps, and gear boxes
- Flow meters/turbines
- Engine RPM (Revolutions Per Minute)



Optimum performance is dependent upon variables which must be considered in combination: target material, geometry and speed, sensor/target gap, and environmental temperature.

# SNDH-H Series

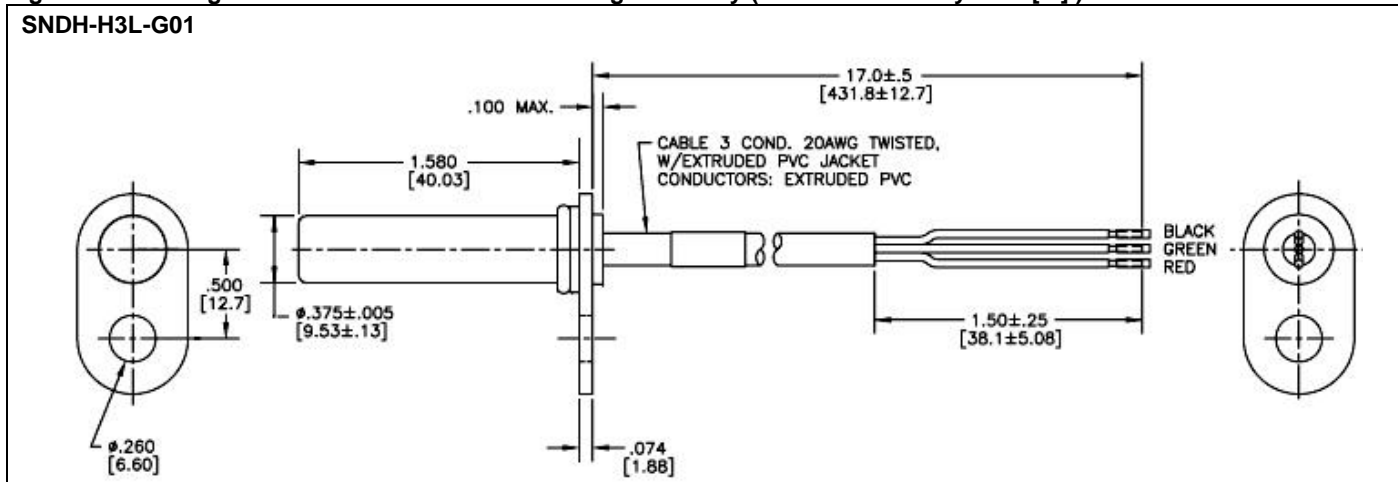
**Table 1. Specifications**

Characteristic	SNDH-H3L-G01	SNDH-H3C-G03	SNDH-H3C-G04	SNDH-H3P-G01
Supply voltage range	4 Vdc to 24 Vdc	4.5 Vdc to 24 Vdc	6.5 Vdc to 24 Vdc	
Output	digital current sinking (open collector)			
Supply current	6 mA max.	20 mA max.	14 mA max.	
Output current	30 mA <sup>1</sup>	20 mA sinking		
Output leakage current	10 μA			
Reverse output voltage	–		-0.5 V	–
Rise time (10% to 90%)	400 ns	15 μs max.	1 μs	
Fall time (90% to 10%)	400 ns	.01 μs max.	0.6 μs	
Target orientation	omnidirectional		alignment required	
Zero speed	yes	no	yes	
Operating frequency range	0 kHz to 15 kHz	2 Hz to 15 kHz	0 kHz to 12 kHz	
Operating temperature range	-40 °C to 100 °C [-40 °F to 212 °F]	-40 °C to 150 °C [-40 °F to 302 °F]	-40 °C to 125 °C [-40 °F to 257 °F]	-40 °C to 125 °C [-40 °F to 257 °F]
Dielectric	200 Vdc	–		
Housing material	stainless steel	plastic		
Sensing air gap <sup>2</sup>	up to 2,5 mm [0.098 in]	up to 2 mm [0.079 in]	up to 2,5 mm [0.098 in]	
Target tooth width	2 mm [0.079 in]	2,5 mm [0.098 in], may vary	3 mm [0.118 in]	
Target slot width	2 mm [0.079 in]	5 mm [0.197 in], constant	>2 mm [0.079 in]	
Tooth height	5 mm [0.197 in]	3 mm [0.118 in]	>2 mm [0.079 in]	
Target width	>3 mm [0.118 in]	>2 mm [0.079 in]		
Sensor misposition to target	dependent on target geometry			
Connector	lead <sup>3</sup>	Bosch 928000453	Delphi-Packard Metripak 150.2 Type 101	Deustch DT06-3S

**Notes:**

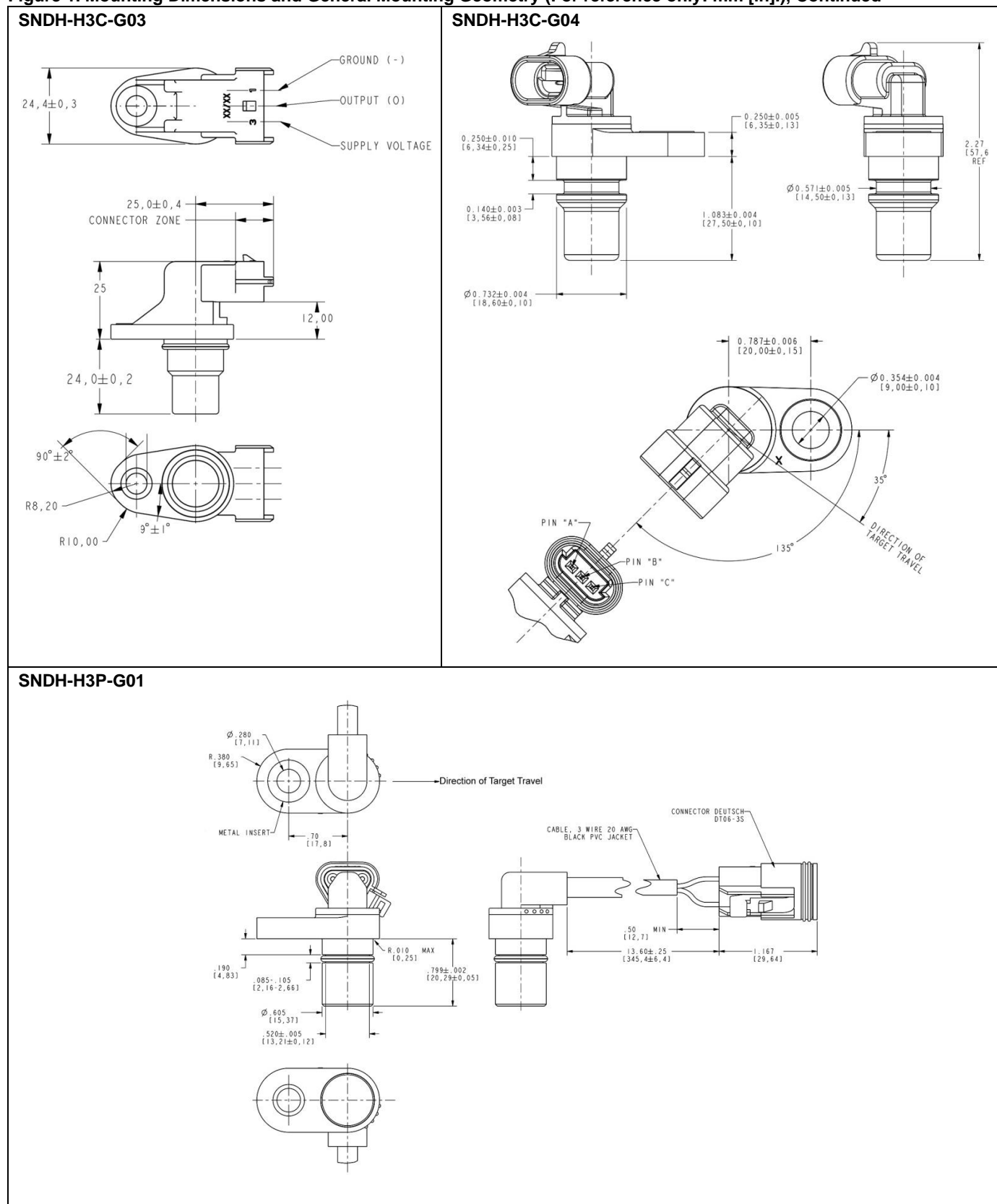
1. Short circuit protected.
2. Recommended air gap for all sensors is  $\leq 2,5$  mm [0.098 in]. This distance may vary dependent upon target geometry.
3. Also available with a Packard connector. Contact customer service for more information.

**Figure 1. Mounting Dimensions and General Mounting Geometry (For reference only: mm [in].)**



## Hall-Effect Speed Sensors

Figure 1. Mounting Dimensions and General Mounting Geometry (For reference only: mm [in.]), Continued



## Order Guide

Catalog Listing	Description
SNDH-H3L-G01	SNDH-H Series, Hall-effect speed sensor, zero speed, omnidirectional, stainless steel, leaded connector
SNDH-H3C-G03	SNDH-H Series, Hall-effect speed sensor, omnidirectional, plastic, Bosch 928000453 connector
SNDH-H3C-G04	SNDH-H Series, Hall-effect speed sensor, zero speed, plastic, Delphi-Packard Metripak 150.2 Type 101 connector
SNDH-H3P-G01	SNDH-H Series, Hall-effect speed sensor, zero speed, plastic, Deustch DT06-3S connector

### WARNING

#### PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

**Failure to comply with these instructions could result in death or serious injury.**

#### WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

### WARNING

#### MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

**Failure to comply with these instructions could result in death or serious injury.**

#### SALES AND SERVICE

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