

SNDJ-T4C-G01 Series

Double Hall-Effect Speed Sensor



DESCRIPTION

The T4C Hall-effect sensor generates square wave signals proportional to rotary speeds and also provides directional indication.

The T4C consists of two back-biased Hall-effect ICs that are zero-speed capable. The sensor must be oriented to the target using a special orientation sleeve. Zero-speed capabilities allow the T4C to also be used as a proximity switch.

FEATURES

- Back biased differential hall sensor
- Direct sensing of ferrous metal target
- Speed and direction output signals
- Zero speed sensing capability
- Rugged 12 mm [0.47 in] stainless steel housing
- IP68 sealing
- 1,5 mm [0.06 in] sensing range
- Quick connect termination

POTENTIAL APPLICATIONS

- Speed and direction monitoring of rotating target
- Over-speed detection
- Monitor shaft rotation
- Detect rotary position of gear or shaft

T4C Series

SENSOR SPECIFICATIONS

Characteristic	Parameter
Supply voltage	11 Vdc to 32 Vdc
Current consumption	20 mA max. (without load)
Signal outputs	1 square wave and 1 direction signal Open collector outputs with 10 kOhm pull-up; I _{max} = -20 mA The sensor is able to drive the coil of a relay by using a simple current limiting resistor. No additional protection against voltage peaks is needed. Limit values: I _{sink} <70 mA, L <800 mH
Frequency range	0 Hz to 15 kHz
Insulation	Housing, cable shield, and electronic galvanically isolated (500 V/50 Hz/1 min.)
Operating temperature	-20 °C to 100 °C [-4 °F to 212 °F]
Housing	Stainless steel 1.4305. Max. allowable pressure applied to the front face: 100 bar
Cable/connector	S variant: with cable PUR, four wires 0.34 mm ² , AWG 22 C variant: with connector 4 pins/M12 standard
Protection class	Sensor head IP68, cable/entrance IP67, connector IP68 (mated)
Vibration immunity	30 g in the range of 5 Hz to 2000 Hz
Shock immunity	50 g during 20 ms, half-sine wave
Weight	~120 g, including 1 m cable
Air gap	For pole wheel M1 (DP 25,4): 0,1 mm to 0,5 mm [0.004 in to 0.02 in] For pole wheel M2 (DP 12,7): 0,1 mm to 1,5 mm [0.004 in to 0.06 in]
Pole wheel	Ferromagnetic toothed wheel, i.e. B. Ust37-2, type 1018 CRS, preferred involute gear form Module ≥(DP 25,4 [1.0 in]), min. tooth width 10 mm [0.4 in], side offset with min. tooth width: <0,2 mm [0.008 in], eccentricity <0,2 mm [0.008 in].

NOTICE

INSTALLATION INFORMATION

- The sensor wires must be laid as far as possible from large electrical machines. They must not run parallel with power cables. The maximum permissible cable length is 20 m [65 ft].
- The sensor should be mounted with the middle of the face side over the middle of the pole wheel. Where the pole wheel has teeth or slots and with radial sensor location, the sensor would normally be mounted over the center. Dependent upon the wheel width, a degree of axial movement is permissible.
- A solid and vibration-free mounting of the sensor is important.



The schematic diagram on the left shows the internal structure of the HBR1000 sensor. It consists of two comparators, each with an input (labeled HRL) and an output. The outputs are connected to a central signal line. The sensor is powered by +V and GND. The pinout diagram on the right shows a circular package with five pins. The pins are labeled 1 to 5 with their corresponding colors and functions:

- 1 +V, Brown
- 4 Signal, black
- 2 Direction, white
- 3 GND, blue
- 5 (unlabeled)

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

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office or:

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