

GTN Series Hall Effect Gear Tooth Sensors



Features

- Digital current sinking output (open collector)
- Integrated reverse polarity protection
- Measuring range 2 Hz to 9 KHz (depending on target)
- Rugged package with connectorized output
- Diagnostic detection of sensor power supply

Benefits

- Better signal to noise ratio than variable reluctance sensors, output amplitude not dependent on speed
- Resistant to damage from incorrect wiring
- Suitable for most vehicle applications
- Physical protection and cost effective installation.
- Allows breakages or short circuits in sensor power supply to be detected.

Description

GTN Series Gear Tooth Sensors use a magnetically biased Hall effect integrated circuit (IC) to accurately sense movement of ferrous metal targets. This specially designed IC, together with protection and diagnostic circuitry and a permanent magnet, is sealed in a rugged probe type package.

Operation

The flux density of the permanent magnet alters when approached by ferrous metal. This is detected by the Hall IC. If the sensor is positioned at the circumference of a revolving gear wheel, for example, it detects teeth and tooth spaces, supplying a digital pulse output with frequency proportional to gear wheel speed. Optimum performance is dependent on the following variables which must be considered in combination : target material, geometry and speed, sensor/ target gap, ambient temperature and stray fields.

An integrated electronic diagnostics feature enables detection of open or short circuits in the power supply line by monitoring levels in the sensor output.

Installation

The sensor is flange mounted with a range of possible lengths, eliminating adjustment and positioning. Connection is by AMP Superseal 1.5 Series.

Typical Applications

The compact design and rugged construction make this sensor the preferred solution for applications such as :

- Measuring rpm in gearboxes
- Monitoring rpm and position of crankshafts and camshafts
- Pulse counters
- Tachometers

WARNING

MISUSE OF DOCUMENTATION

- The information presented in this product sheet (or catalogue) is for reference only. DO NOT USE this document as product installation information.
- 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.

Technical Data

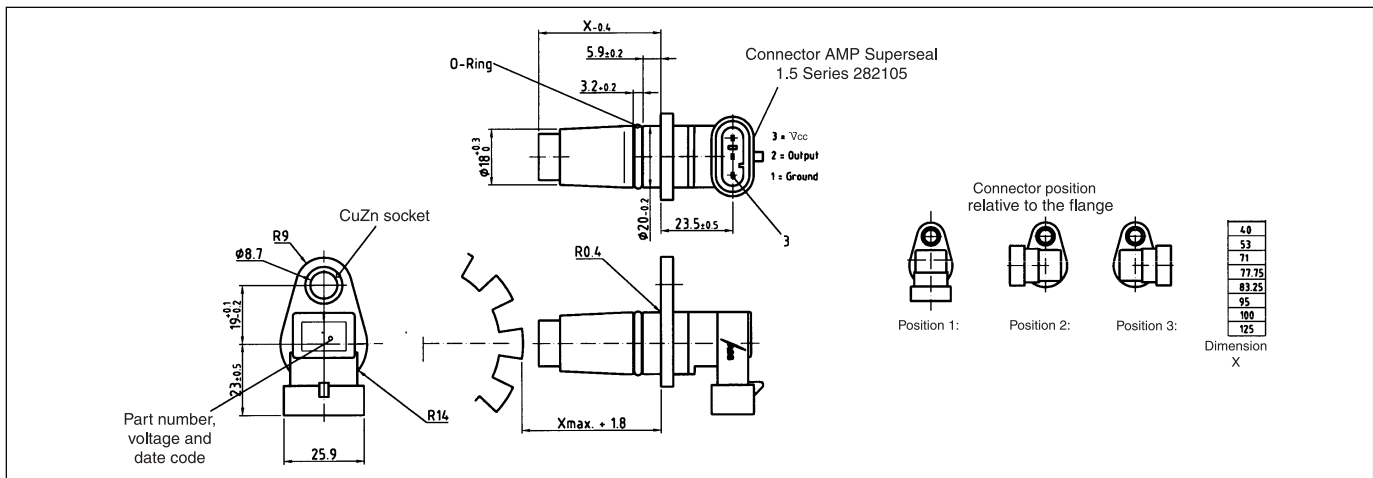
Supply voltage	4.5 V to 32 V absolute maximum 8 V to 16 V nominal (12 V version) 21 V to 32 V nominal (24 V version)
Current input	20 mA nominal (max 40 mA)
Output data (open collector)	high 18 kOhm low 1 kOhm (12 V version) 1.5 kOhm (24 V version)
Pull-up voltage	4.5 V to 15 V (12 V version) 4.5 V to 32 V (24 V version)
Switching performance:	rise time 10% to 90% 15 us (according to external wiring, R _{pull-up} and U _{pull-up}) fall time 90% to 10% 1 us
Measuring range	2 Hz to 9 kHz (depends on target)
Degree of protection	IP 67, IP 68, IP 69K
Ambient temperature	-40 °C to +125 °C Up to +150 °C briefly, max 12 h
Vibration	Vibration test in accordance with DIN IEC 68 T2-6
Shock	Shock in accordance with DIN ICE 68 T2-27 Repetitive shock in accordance with DIN ICE 68 T2-29
EMC protection	Included, details available on request

Order Guide

GTN Geartooth Sensors	
GTN1A111	12 V, connector position 1, 40 mm probe length
GTN1A112	12 V, connector position 1, 53 mm probe length
GTN1A113	12 V, connector position 1, 77.75 mm probe length
GTN1A114	12 V, connector position 1, 83.25 mm probe length
GTN1A115	12 V, connector position 1, 95 mm probe length
GTN1A116	12 V, connector position 1, 100 mm probe length
GTN1A117	12 V, connector position 1, 125 mm probe length
GTN1A211	24 V, connector position 1, 40 mm probe length
GTN1A131	12 V, connector position 3, 40 mm probe length

Other permutations are possible, contact Honeywell for details

Mounting Dimensions in mm



Warranty/Remedy

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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.

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