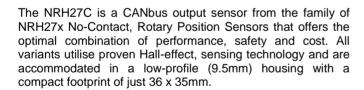


Penny & Giles No-Contact, CANbus Rotary Position Sensor NRH27C

- Non-Contact Hall-effect technology
- Wear-Free no mechanical degradation
- CANbus J1939 output
- Simple mounting, low-profile design
- 360° Measurement angle
- 5V or 9-30V supply options
- Dual Hall-effect sensors
- On-board diagnostics pre-defined error messages
- Encapsulated electronics
- Sealing up to IP69K (connector dependent)
- AMP or Deutsch connector options
- Flying-lead option
- Protective cable conduit option



The full range of the digital output span corresponds to a rotation of 360°, and the positional information is determined by the angle of the supplied magnet relative to the sensor body. The maximum air gap between magnet and sensor is 7mm, while concentric offsets of up to 2mm can be tolerated with minimal impact on output linearity. The magnet can be supplied in a convenient carrier, housed in a bolt, as a plug or loose.

Innovative circuit design allows the sensor to be powered from a regulated 5V supply or a varying voltage in the range of 9-30V, such as a vehicle's battery.



Two physically independent, Hall-effect sensing signals are sent separately with the CAN message structure, to allow for system error checking of the positional data meaning high-performing, safety-critical applications can easily be addressed. Furthermore, an on-board diagnostic function means pre-defined error messages can be sent to define the present state of the sensor. The versatile, factory-programmable electronics can be easily set to different baud and/or frame rates according to system requirements.

A fully-encapsulated design offers exceptional levels of performance with respect to water and dust, shock, vibration and temperature, meaning the sensor is ideal for use in hostile, on- and off-highway vehicle environments.

Connection options are industry-standard AMP Superseal (IP68 rated) or Deutsch DT04 series (IP67 rated) connectors, or simple flying leads for customer termination. The sensor can also be supplied with a protective conduit for the cabling.

SPECIFICATIONS

ELECTRICAL

MEASUREMENT RANGE 360°

RESOLUTION 14-bit (0.022° per LSB)

SUPPLY VOLTAGE 5Vdc ± 0.5Vdc and 9-30Vdc - auto-selects

SUPPLY CURRENT <60mA SHORT-CIRCUIT PROTECTION TO GND Yes

SHORT-CIRCUIT PROTECTION TO SUPPLY When used with 5Vdc supply only

OVER-VOLTAGE PROTECTION up to 40Vdc

POWER-ON SETTLEMENT <1s

TEMPERATURE COEFFICIENT <±30ppm/°C LINEARITY (ABSOLUTE) <±0.4%

OUTPUT

PROTOCOL SAE-J1939

BAUD RATE 50, 125, 250, 500 kbit/s or 1 Mbit/s

NODE ID (IN HEXADECIMAL) Between 01 and F7 FRAME RATE 25. 50 or 100ms INPUT/OUTPUT DELAY (MAX.) Selected frame rate

MECHANICAL

MECHANICAL ANGLE 360° continuous

MAXIMUM OPERATING SPEED 3600°/s WEIGHT <100g

MOUNTING 2x 3.4Ø holes provided

Spec 44A wires 18AWG 1.65mm OD **CABLE**

ENVIRONMENTAL

OPERATING TEMPERATURE -40°C to +85°C (derate by 5°C for each 1Vdc increase above 26Vdc of Vsupply)

STORAGE TEMPERATURE RANGE -55°C to 125°C

SEALING AMP connector (when fully mated): IP68, Deutsch connector (when fully mated): IP67

Sensor body (no connector option): IP69K, IP68, IP67

BS EN 60068-2-64:1995 section 8.4 (31.4gn rms) 20-2000Hz random **VIBRATION**

SHOCK 3m drop onto concrete and 2500g

MTTFd > 150 years

ELECTROMAGNETIC INTERFERENCE Directive 2014/30/EU, EN 61000-4-3 to 100V/m 80-1000MHz & 1.4-2.7GHz

HUMIDITY EN 60068-2-30; 2005 severity Db (55°C, 93%RH)

SALT SPRAY BS EN 60068-2-52 test Kb severity 2



Shanghai

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