SEMIC TRADE

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NCZ14 | Speed Sensor

Product Overview

- Single-channel speed sensor based on Hall principle
- Non-contact measurement of speed of nonferromugnetic gear is simple and reliable, and is free from maintenance
- Current pulse signals, strong capacity of resisting disturbance
- Stainless steel shells, and they are applicable to hash application environments
- Screw installation
- Can be customized according to customer requirements

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Environmental parameters

Service conditions	
Altitude	≤2500m
Operating temperature	-40℃~+125℃
Relative humidity	≤95%(the average minimum temperature of this month is 25℃)
Vibration resistance	Vertical: PSD=18.836g^2/Hz; transverse: PSD=15.892g2/Hz; longitudinal: PSD=24.06 g^2/Hz，5Hz~1200Hz;random vibration;
Shock resistance	10g
Protection grade	IP66

Performance parameter

Electrical Parameters	
Power voltage	DC12V±DC0.72V
Operating frequency	26Hz ~4kHz
Working air gap	0.25mm~1.27mm, standard air gap:0.8mm
Number of output channels	Single channel
Output waveform	Square wave
Load resistance	180Ω ~220Ω
Large current	> 8mA
Low current	< 5mA
Duty ratio	82%±5%
No-load power consumption current	≤20mA
Insulation resistance	A 500V megger is used for testing. Insulation resistances between all cable core and shielded wire and between all leading wire (including shielded wire) and shell should be no less than 50MΩ

Electrical Parameters	
Insulating strength	AC500V, 50Hz can be taken among all cable core and shielded wire, between all leading wires (including shielded wire) and shell for 60s without breakdown or flashover
EMC	Cable shielding grounding
Radio-frequency fields-induced conducted disturbances immunity	Accord with IEC 61000-4-6,Test class: class 1，Performance evaluation: Grade A; Test class: class 2，Performance evaluation: Grade B;
RF electromagnetic filed radiated immunity	Accord with IEC 61000-4-3,Test class: class 1，Performance evaluation: Grade A; Test class: class 2，Performance evaluation: Grade B;
Electrostatic discharge immunity	Accord with IEC 61000-4-2,Test class: class 3，Performance evaluation: Grade B
Limit value of terminal disturbance voltage	Accord with CISPR 11:0.15MHz~230MHz: 99dBμV/m
Limit value of electromagnetic radiation disturbance	Accord with CISPR 11,30MHz~230MHz: 60dBμV/m（1m）; 230MHz~1000MHz: 67dBμV/m（1m）
Protection function	Power polarity protection

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Performance parameter

Mechanical Parameters	
Tachometer disc	Tachometer disc 41B514220ABP1, 8 grooves are uniformly distributed on the Φ135mm circumference
Material of tachometer disc	Low carbon magnetic steel, such as Q235A
Material of sensor shell	Stainless steel
External dimension	Referring to figure 1, line length can be customized according to customer requirements

Electric Connector Parameters	
Auxiliary connector	BOSCH Electric Connector： 1 928 404 227

Outline Drawing

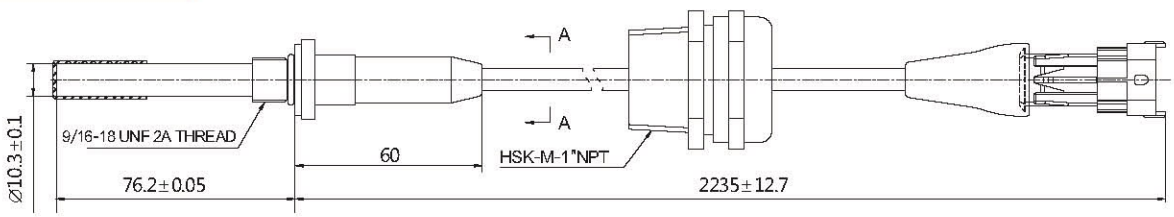

Fig.1 Outline drawing

Mounting Requirements

Mounting threads of sensor: 9/16-18 UNF 2A; mounting threads of cable joint: HSK-M-1"NPT, see Fig.2

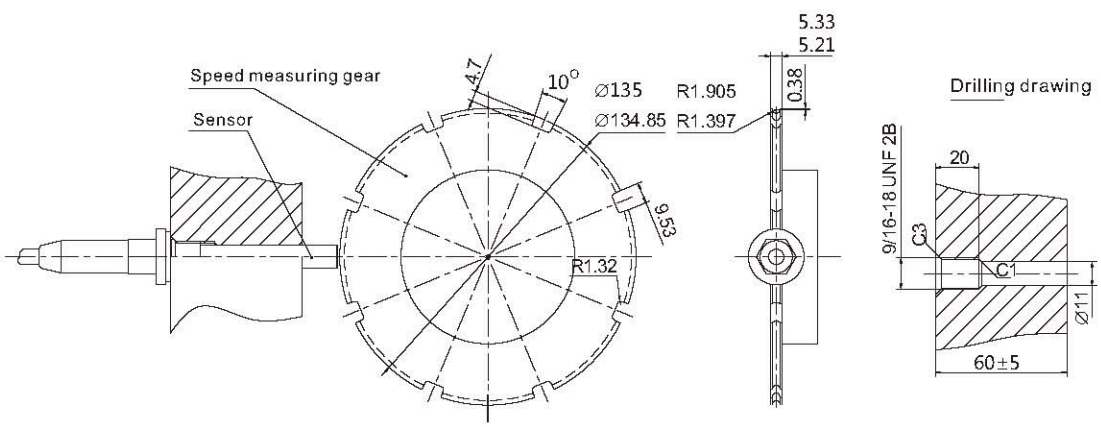

Fig.2 Mechanical Interface drawing

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Electrical Interface

Table 1 Definition of Electrical Interface

Number	Output Functions	Connector Definition
1	Power supply +	Pin 1
2	Power ground (0V)	Pin 2
4	Shield	Pin 3

Mounting Requirements

- Cable laying requirements: sensor conductors and subsequent connecting lines should keep away from large-scale electrical equipment and power lines, and are forbidden to be winded with power lines or transmit in the same pipeline;
- Wire according to the definition of the electrical interface strictly, make sure of right wiring without short circuit and break circuit;
- Grounding way of shielded wire: recommended to be grounded on the control system through one end.

Standards

- IEC 61000-4-2: ELECTROMAGNETIC COMPATIBILITY (EMC)-PART 4-23 TESTING AND MEASUREMENT TECHNIQUES - ELECTROSTATIC DISCHARGE IMMUNITY TEST
- IEC 61000-4-3: ELECTROMAGNETIC COMPATIBILITY(EMC)- PART 4-3: TESTING AND MEASUREMENT TECHNIQUES- RADIATED, RADIO-FREQUENCY , ELECTROMAGNETIC FIELD IMMUNITY TEST
- IEC 61000-4-6: ELECTROMAGNETIC COMPATIBILITY(EMC) - PART 4-6: TESTING AND MEASUREMENT TECHNIQUES- IMMUNITY TO CONDUCTED DISTURBANCES, INDUCED BY RADIO-FREQUENCY FIELDS
- CISPR 11: INDUSTRIAL , SCIENTIFIC AND MEDICAL(ISM) RADIO - FREQUENCY EQUIPMENT - ELECTROMAGNETIC DISTURBANCE CHARACTERISTICS- LIMITS AND METHODS OF MEASUREMENT

Main Application Fields and Achievements

Turbocharger system of diesel locomotive

Main application achievements：HXN5 diesel locomotive

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