

TQG19D7 Speed sensor

The TQG19D7 speed sensor is based on the Hall effect principle to measure the rotational speed of the motor and outputs two square wave signals that are proportional to the motor speed.



Features

- Flange mounting,no-contact speed measuring of rotation and free-maintenance
- Suitable for detection of slow rotation from 0 Hz and high-speed rotation up to 20 kHz
- Two channels shifted 90° provide the direction of rotation
- Stainless steel housing suitable for harsh application

Standards

- GB/T 25119-2021
- TB/T 2760.2-2016

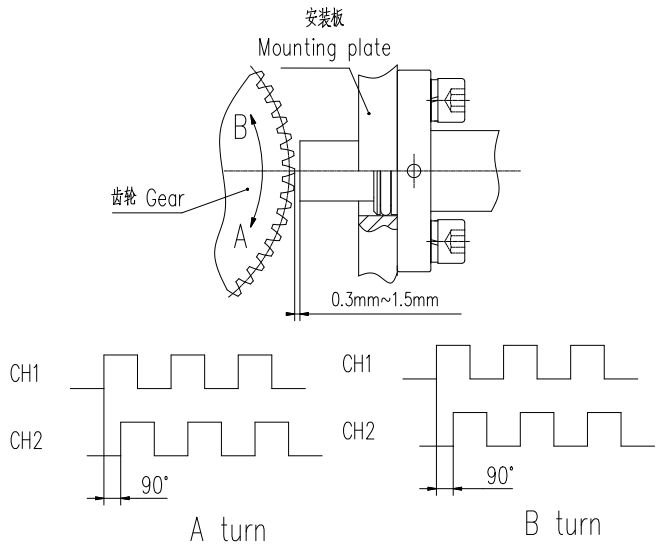
Typical Application

- Speed measurement in motors
- Rail vehicle traction system

Environmental Data

Parameter	Specification
Operating temperature	-40℃~+125℃
Relative humidity	≤95% (monthly mean lowest temperature is 25℃)
Vibration and shock resistance	GB/T 21563-2018 GB/T 21563-2018, Cat. 3 Axle mounted
Protection class	GB/T 4208-2017 IP68 (5Bar@0.5h)
Salt mist resistance	48h (GB/T 2423.17-2024)
Electromagnetic compatibility	GB/T 24338.4-2018、TB/T 2760.2-2016

Electrical Data

Parameter	Specification	Note
Supply voltage (U)	DC10V~DC30V, Nominal voltage: DC15V	 CH1 CH1 CH2 CH2 90° 90° A turn B turn Fig. 1 Direction of Rotation vs Phase Position
Frequency range	0Hz ~20kHz	
Air gap	0.3mm~1.5mm, Nominal air gap: 0.8mm	
Output channel	Double-channel	
Output signal	Square wave , Rising & Falling time≤10μs	
Load resistance	≥1kΩ	
High level for output	≥U-2.5V(Supply voltage: DC12V,Load resistance: 1kΩ)	
Low level for output	≤1.0V	
Duty cycle	50%±20%	
Phase shift	90°±30° (Direction of rotation is shown as Fig. 1)	
Current consumption (without load)	≤30mA	
Insulation resistance	≥100MΩ@500VDC	
Withstand voltage	AC1500V/50Hz/60s	
Output short circuit proof	Integrated	
Reverse voltage protect	Integrated	

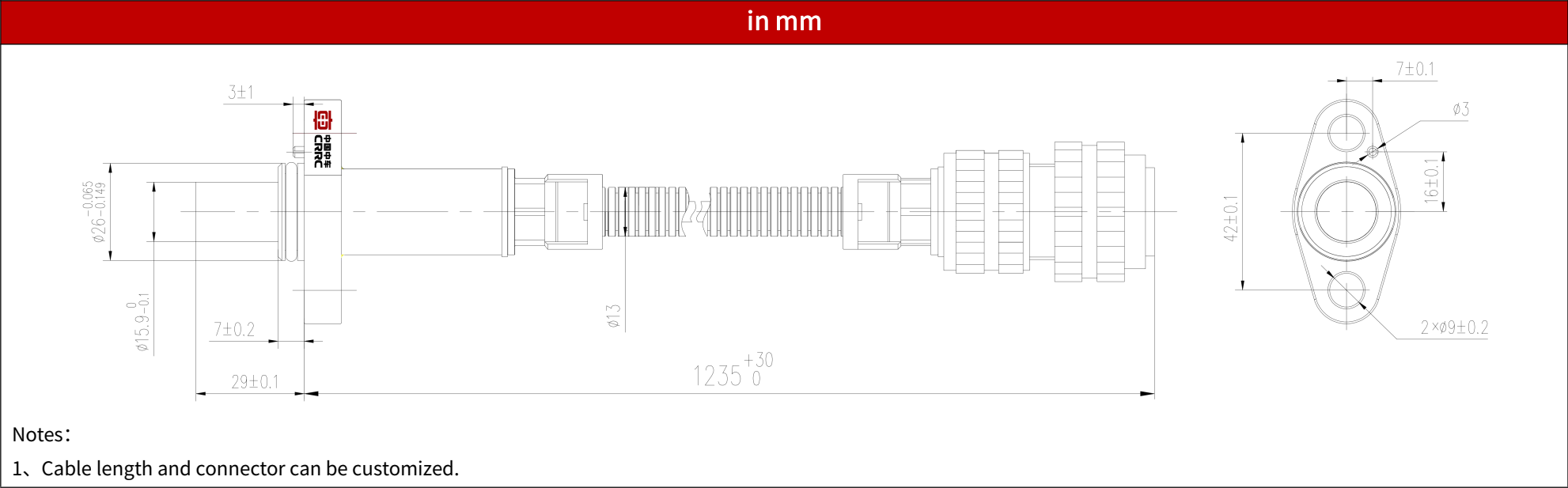
Mechanical Data

Parameter	Specification	Note
Module m of target wheel	2	Other module upon request
Width of target wheel	≥12mm	—
Form of target wheel	Involute gear	According to GB/T 1356 or DIN 867
Material of target wheel	Low carbon magnetized steel	Recommended: Q235 or 45 steel
Housing material	Stainless steel	—

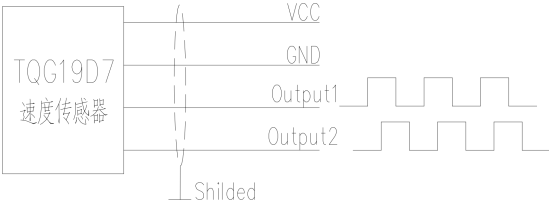
Cables

Parameter	Specification
Cable	4-conductor total shielded cable
Cross area of cable core	0.5mm ²
Corrugated tube diameter	12.8mm±0.5mm
Min. bending radius	50mm
Fire protection	EN 45545-2

Dimensions



Electrical Interface

No.	Cable core	Connector	Output function	Diagram
1	Brown	A	Power supply +	
2	Green	B	GND	
3	Blue	C	Output 1	
4	White	D	Output 2	
5	Shield	E	Shield	

Mounting Requirements

- Mounting screw M8 is recommended.
- TB/T 3153-2007 或 EN 50343-2003 Cable routing requirements: according to TB/T 3153-2007 or EN 50343-2003.
- The sensors must be connected according to definition of electrical interface.
- Shield grounding: connecting to control system in single-end earthed way.
- Position of the connector: vehicle mounting is recommended.

Comments:

- If the application conditions exceeds the above technical parameters,please contact Ningbo CRRC Times.
- Ningbo CRRC Times reserves the right to correct or modify the information and explanations in this manual. It is not subject to any further notice and assumes no responsibility.
- Product updates will not notified separately.The final version of the datasheet shall be confirmed through specific communication between both parties.