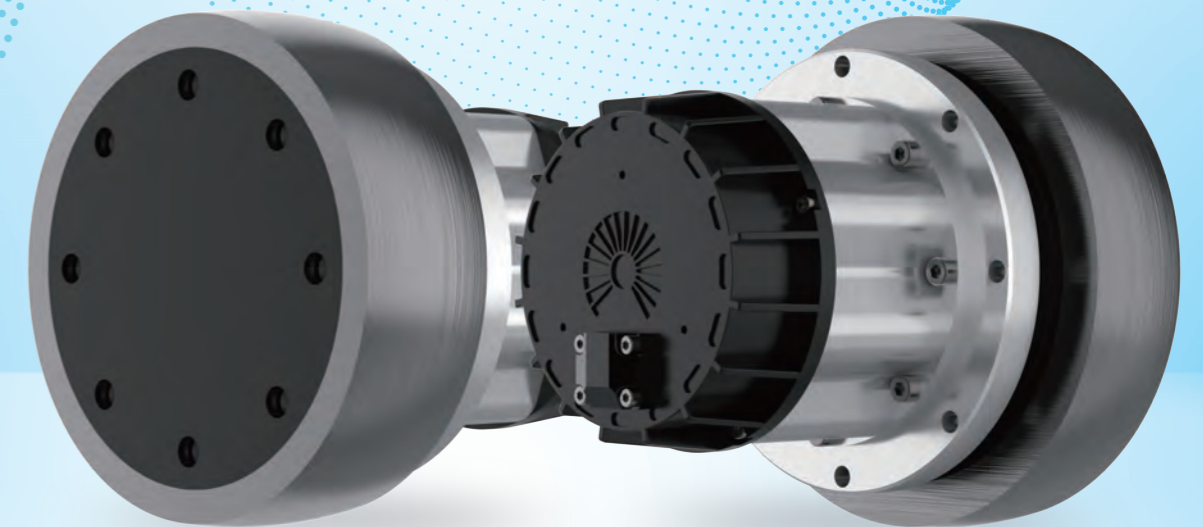


# RB100 Series Integrated Servo Wheel



Official Website

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# About us



VEICHI Electric (stock code: 688698) specializes in electric drive and industry control, establishing itself as a leading high-tech enterprise in the R&D, production, and sales of industrial automation products. With R&D and manufacturing facilities in Suzhou, Shenzhen, and Xi'an, along with a fully-owned subsidiary in India, VEICHI serves the global market by offering competitive, safe, and reliable products and services.

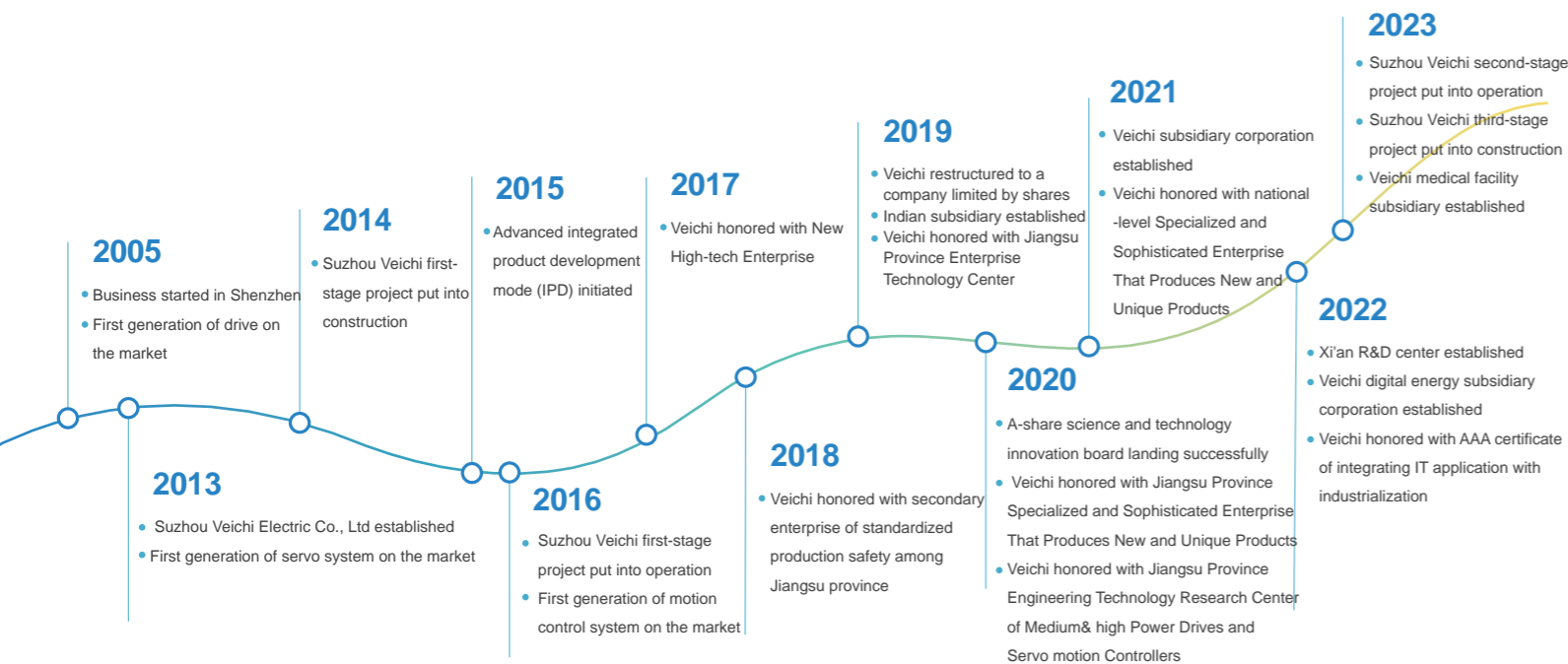
A wide range of VEICHI products and solutions tailored to various scenarios, including AC drives, servo systems, and control systems, have been acclaimed with plentiful proven applications across sectors from light to heavy industries, propelling intellectualization transformation in manufacturing. Keeping pace with development trends, VEICHI is branching into burgeoning sectors like robotics, new energy, and health-care, introducing innovative products such as coreless motors, frameless motors, photovoltaic drives, and surgical power systems for further industrial advancement.

Abundant patented technologies with independent intellectual properties have testified VEICHI's years of dedication to independent R&D and innovation in core motor control technologies including vector control for PMSM, high-frequency pulse injection, speed tracking for start-up,

high-speed field-weakening, scalar V/F and vector control, as well as silicon carbide applications, auto tuning of motor parameters, and protection functions. As of September 30, 2023, VEICHI holds 165 patents, including 44 inventions.

Throughout its history, VEICHI has made significant progress patiently but surely, earning numerous prestigious awards and certifications from national and provincial authoritative entities and organizations. These accolades include titles such as "The Third Batch of Specialized and Sophisticated 'Small Giant' Enterprises with Distinctive New Products," "High-tech Enterprises," "Jiangsu Provincial Engineering Technology Research Center," "Jiangsu Provincial Enterprise Technology Center," and "Jiangsu Provincial Industrial Internet Development Demonstration Enterprise (Benchmarking Factory Category)."

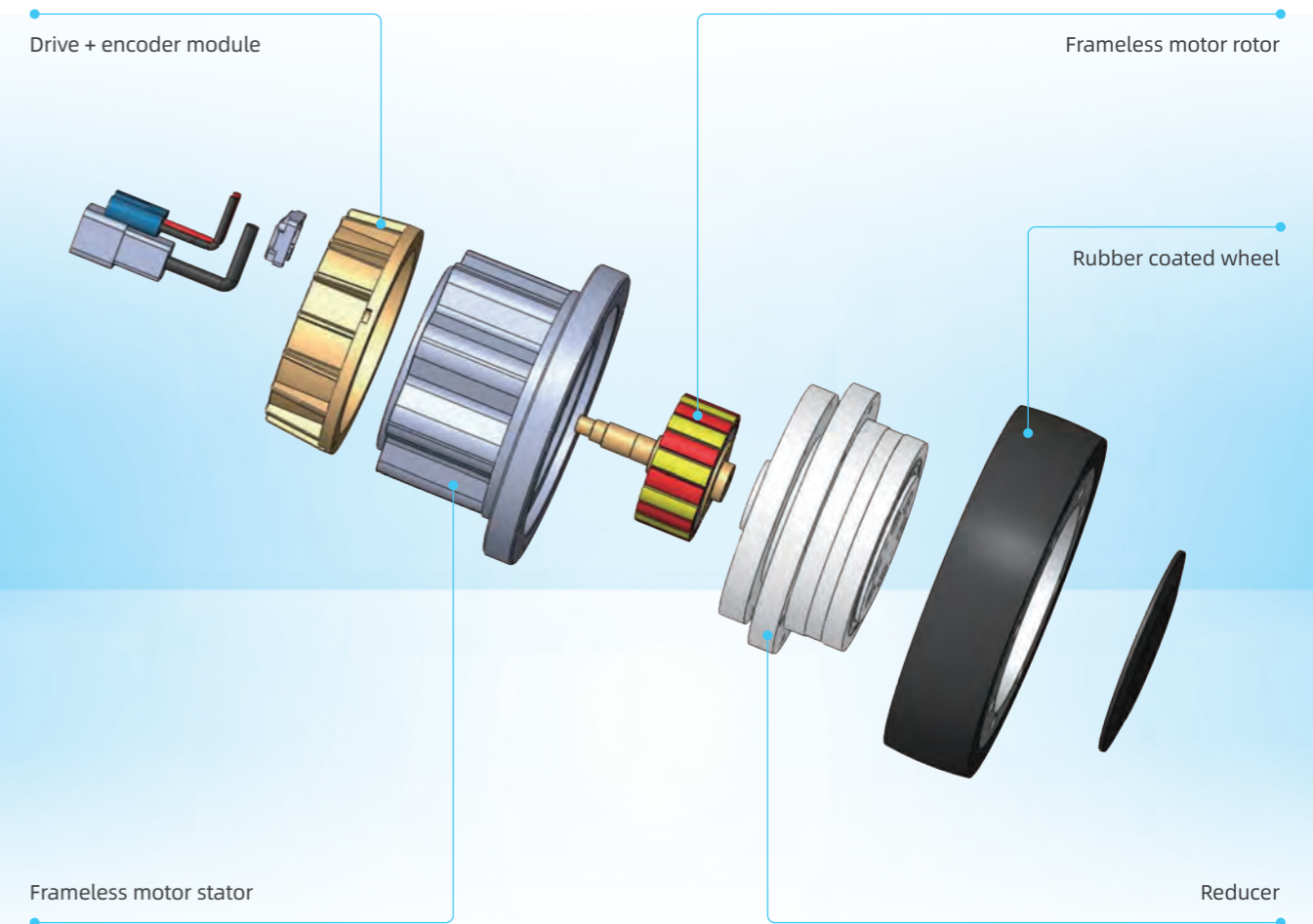
Looking forward, VEICHI will, by the business philosophy of "guided by market demand and driven by technological innovation", make breakthroughs in key core technologies for more refreshing products and explore more reassuring applications based on their competitive performance and quality, energizing the electrical drive and industrial control sector one more step further.



## RB100 Series Integrated Servo Wheel

This innovative product highly integrates the drive, encoder, frameless motor, reducer and rubber-coated wheel, etc., with its core technology independently developed, and the performance and reliability of the whole system in the first echelon.

It features easy installation, easy wiring and stable operation, and its various models are sufficient for AGV/AMR, smart inventory and robots.



## Product Features

**High integration**

Integration of multiple core technologies reduces the comprehensive cost of supply chain, R&D, production and assembly by more than 50%.

**Compact structure**

Compact and lighter body saves at least 30% of installation space compared to previous solutions.

**High load capacity**

Steel and aluminum alloy structure and the output power margin design raises the rated load capacity by more than 5% above compared to the other products on the market with the same specifications, thus matching for more applications.

**High Compatibility**

It is compatible with 2-4 kinds of rubber-coated wheels specifications under the same electrical parameters. And it can be used for different vehicles.

## Naming Rules

RB100 - G 28 22 - 200 K60 - Q 1 C □

**Product Series**  
RB100: Servo wheel series

**Voltage Level**  
E: 24V F: 36V  
G: 48V J: 60V  
I: 72V

**Wheel Rated Torque**  
It is the rated torque on the wheel  
28 means rated torque is 28N.m,  
so are the other values

**Wheel Rated Speed**  
Wheel rated speed = code × 10  
22 × 10, means 220rpm for wheel rated speed,  
so are the other values

**Wheel Diameter**  
200 indicates that the diameter of the rubber-coated wheel is 200mm, so are the other values

**Outlet Method**  
Blank: 200mm cable with plug-in connectors  
Others: Customized outlet wiring (Up to actual conditions)

**Communication**  
C: CANopen  
E: EtherCAT

**Brake**  
1: No brake  
2: With brake

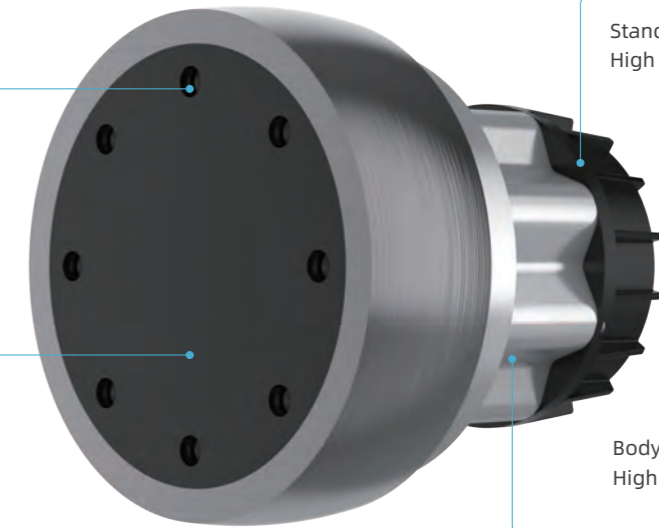
**Encoder Type**  
Q: 17-bit single-turn magnetic encoders  
R: 17-bit multi-turn magnetic encoders

**Wheel Width**  
For example: K60 means that the width of the rubber-coated wheel is 60mm. So are the other values

## Product Introduction

Quick replacement and maintenance of the rubber-coated wheel

Standard with 17-bit serial encoder  
High precision and high anti-interference



Body: All-steel structure with wave pattern  
High strength and good heat dissipation

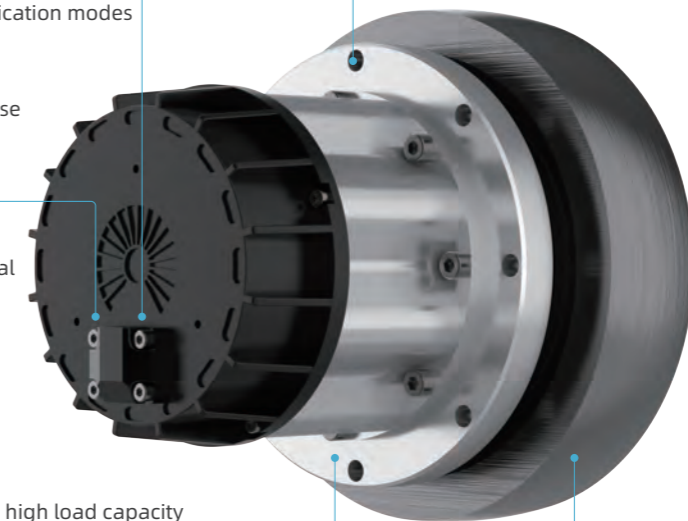
Cover for protection and clearer appearance

Signal terminals:  
Standard with CAN communication and optional with other communication modes

Simple and easy installation with high precision

Brake release terminal:  
For external 48V forced release of the brake

Power terminal:  
DC+, DC- power input terminal

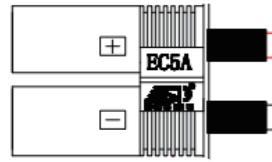


Helical gear reducer:  
Long service life, low noise, high load capacity

Polyurethane material:  
Wear resistant and silent

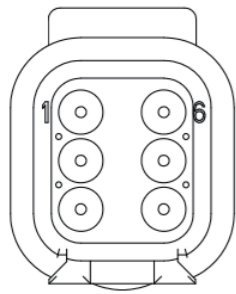
## Terminal Definition

Power terminal



Power Cable		
CONN.1	Color	Signal
+	Red	Power positive
-	Black	Power negative

Signal terminal



Signal Cable		
CONN.1	Color	Signal
1	Red	CAN_H
2	Black	CAN_L
3	Black	PE
4	Green	DC48V+ ( external brake apply/release )
5	Yellow	0V-
6	/	/

Note: These are standard terminals definition, and other terminals can be added flexibly if necessary.

### Tips

- Standard integrated servo wheels are made of polyurethane, so they are suitable for smooth and flat indoor operation, epoxy floor paint is optimal.
- Please customize the rubber tires for outdoor environments such as concrete floors.
- Crawler drive type can also be customized, too. Other customizations are available for wide applications of mobile vehicles.

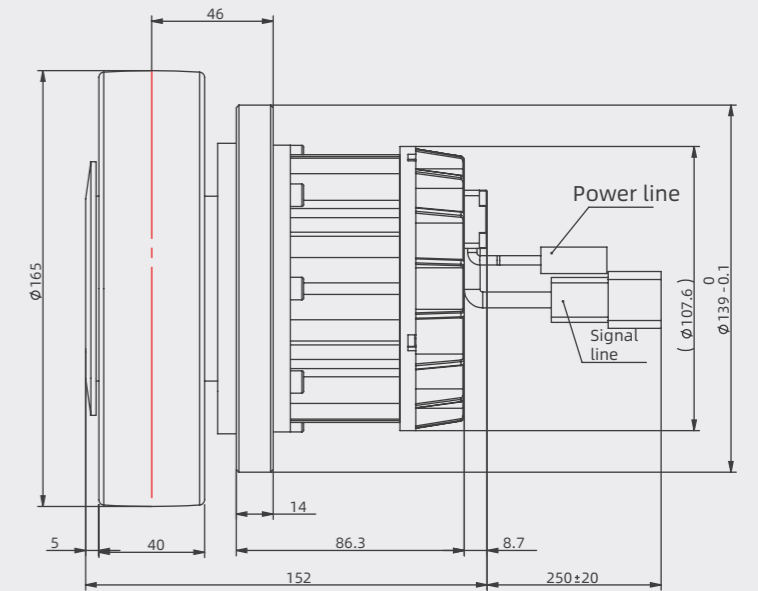
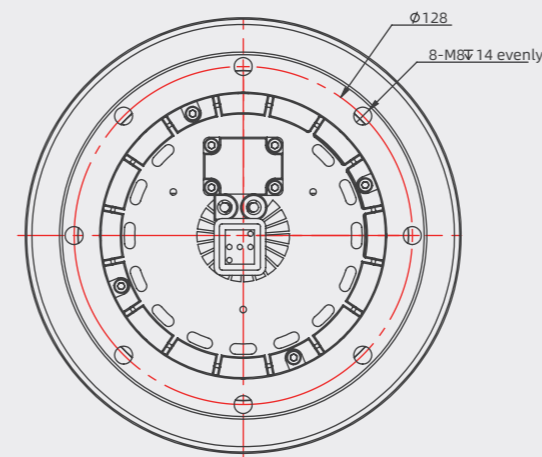
## Specifications

	Model	RB100-G2822-160K50-Q°C	RB100-G2822-165K40-Q°C	RB100-G2822-175K60-Q°C	RB100-G2822-200K60-Q°C	
Electrical Parameters	Rated voltage	48V				
	Rated power	600w				
	Rated current	20A				
	Peak current	60A				
	Motor rated speed	2000rpm				
	Motor peak speed	3000rpm				
	Motor rated torque	2.9N.m				
	Motor pole No.	20				
	Undervoltage	DC 18V				
	Overvoltage	DC 82V				
Dynamic braking	DC 72V (Modifiable)					
Brake(Optional)	Holding braking	3N.m				
	Working voltage	24V				
	Holding voltage	12V				
	Consumed power	4.5W				
Reducer	Reduction ratio	9:1				
	Reducer gear shape	Helical				
Wheel Parameters	Rated torque	26.1N.m				
	Max. torque	70N.m				
	Rated speed	220rpm	220rpm	220rpm	220rpm	
	Max. speed	330rpm	330rpm	330rpm	330rpm	
	Rated line speed	1.86m/s	1.92m/s	2.04m/s	2.33m/s	
	Peak speed	2.79m/s	2.88m/s	3.05m/s	3.49m/s	
	Wheel material	Black polyurethane )				
	Wheel stiffness	Shaw 85±3 (standard)				
	Other Parameters encoder (standard)	Encoder	17-bit single-turn magnetic			
		Noise	≤ 65db			
Weight(with brake)						
Weight (without brake)						
Environment Parameters	IP	IP54				
	Working temp	Working temp. (derate between 55°C~60°C)				
	Storage temp	-20°C ~85°C				
	Working humidity	95%RH (no condensation and freezing)				
Storage humidity	95%RH (no condensation and freezing)					

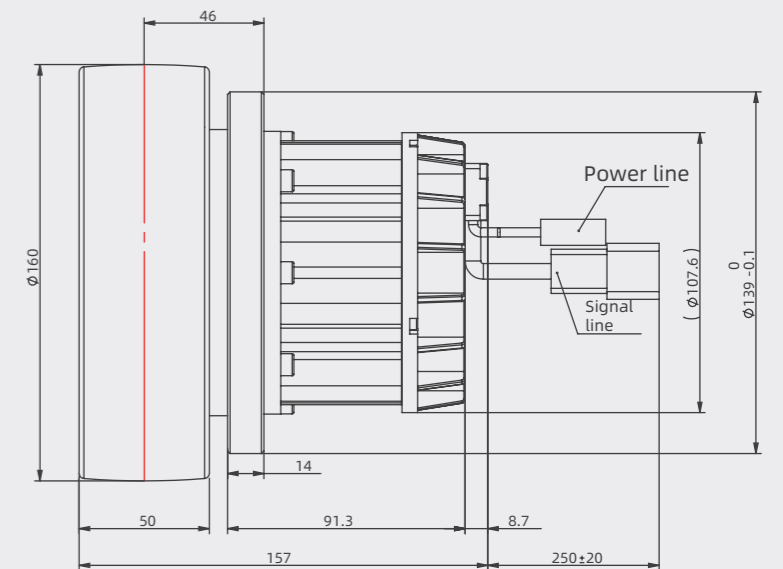
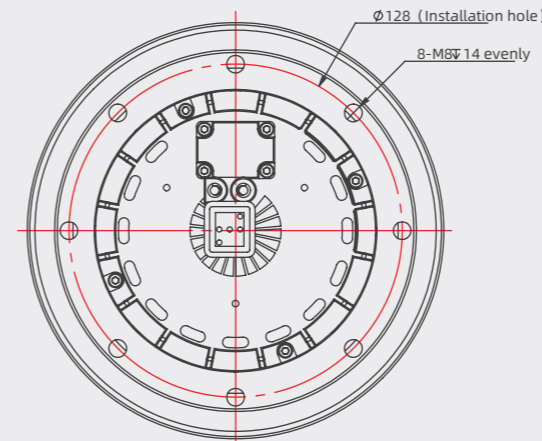
	Model	RB100-G2022-165K40-Q*C
Electrical Parameters	Rated voltage	48V
	Rated power	500w
	Rated current	17.2A
	Peak current	51.6A
	Motor rated speed	2000rpm
	Motor peak speed	3000rpm
	Motor rated torque	2.4N.m
	Motor pole No.	20极
	Undervoltage	DC 18v
	Overvoltage	DC 82v
	Dynamic braking	DC 72V (Modifiable)
	Brake(Optional)	Holding braking
Working voltage		24V
Holding voltage		12V
Consumed power		4.5W
Reducer	Reduction ratio	9:1
	Reducer gear shape	Helical
Wheel Parameters	Rated torque	21.6N.m
	Max. torque	64.8N.m
	Rated speed	220rpm
	Max. speed	330rpm
	Rated line speed	1.92m/s
	Peak speed	2.88m/s
	Wheel material	Black polyurethane (standard)
Other Parameters	Encoder	17bit single-turn magnetic encoder
	Noise	≤65db
	Weight(with brake)	
	Weight (without brake)	
	IP	IP54
Environment Parameters	Working temp.	-5~55°C (derate between 55°C~60°C)
	Storage temp.	-20°C~85°C
	Working humidity	95%RH (no condensation and freezing)
	Storage humidity	95%RH (no condensation and freezing)

## Dimensions

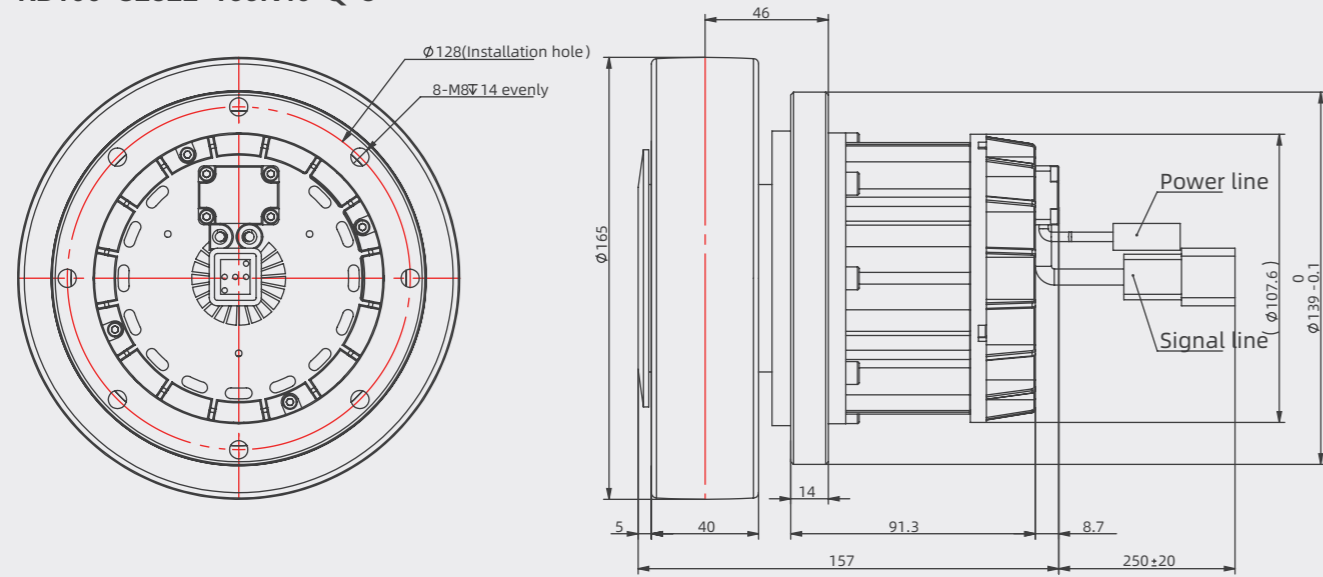
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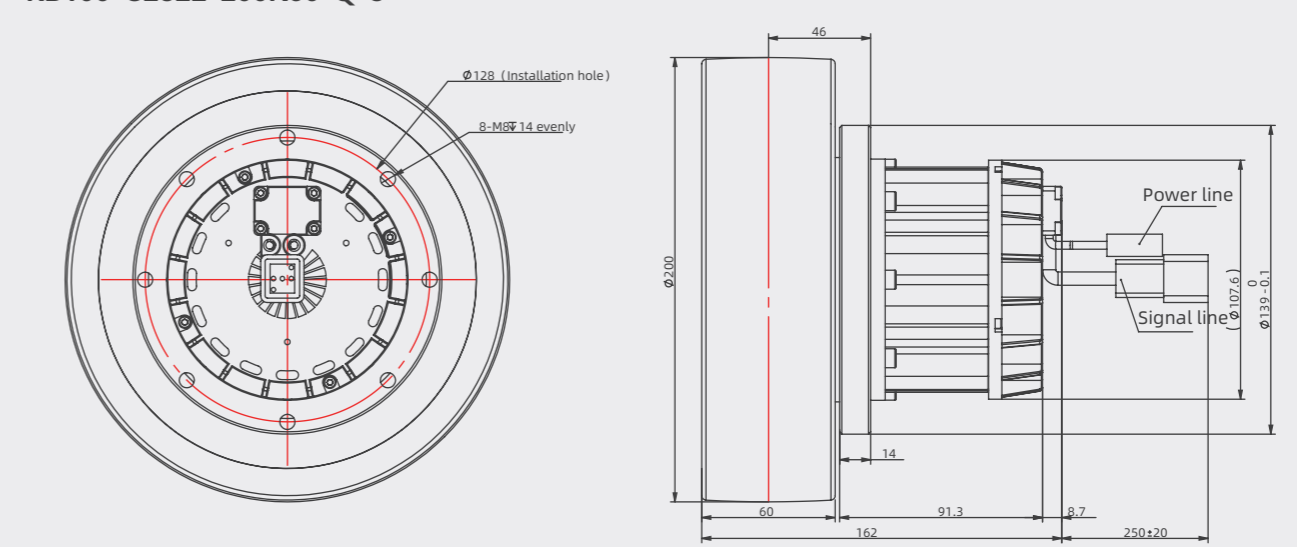
RB100-G2822-160K50-Q\*C



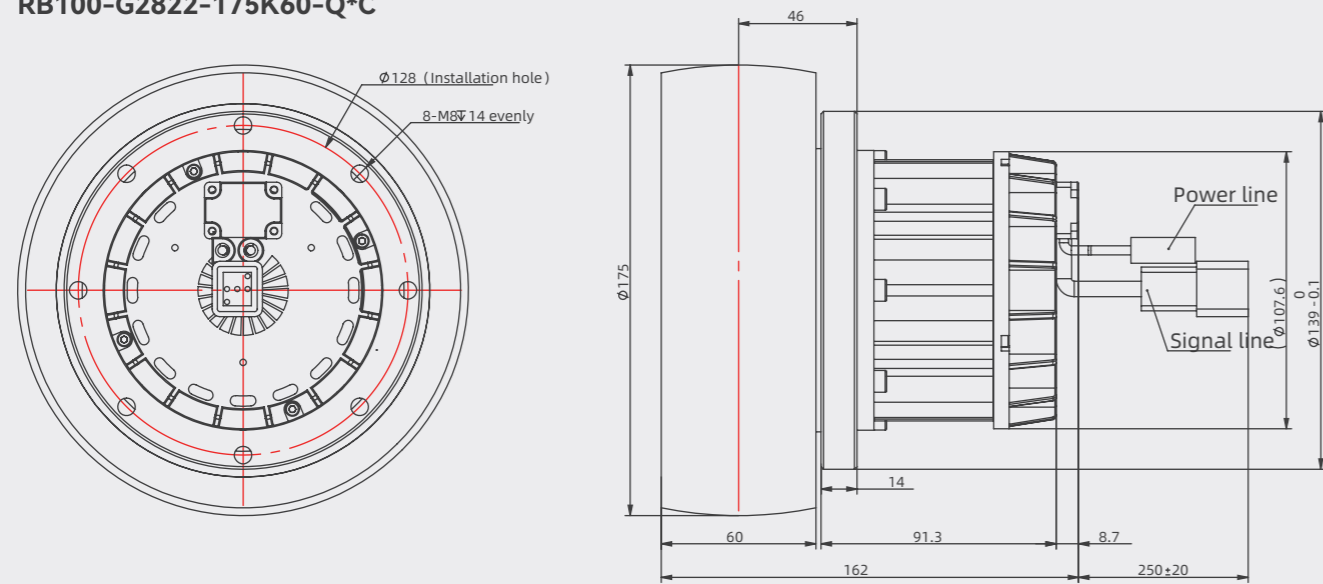
RB100-G2822-165K40-Q\*C



RB100-G2822-200K60-Q\*C



RB100-G2822-175K60-Q\*C



# Integrated Servo Wheel For Mobile Robots



## Manufacturing and Quality Control

### Smart manufacturing with whole-process automation

- > On intelligent manufacturing ,the smart factory yields an annual capacity of 600,000 sets;
- > Fully automatic SMT production line, automatic coating line, assembly line, testing line, packaging line, high temperature aging room and advanced production equipment are established;
- > Enterprise production is implemented with target management and is operated in strict accordance with the production process and management methods, which greatly improves the production efficiency.
- > Complete supply chain system meets the large volume of one-time delivery.

### Inheriting the spirit of craftsmanship, detail-oriented and striving for better

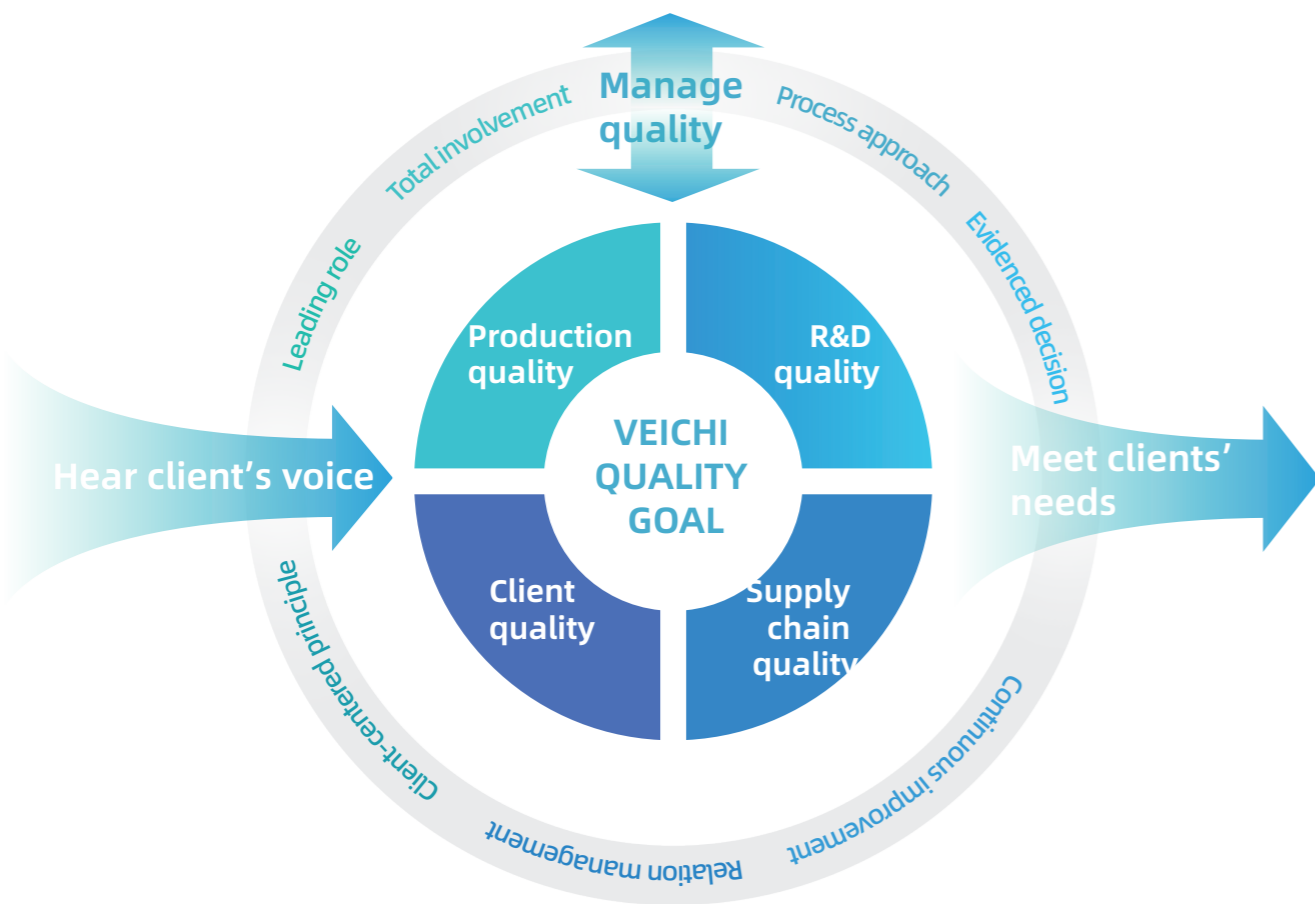
- > Insist on the quality policy and concept of quality first.
- > Procurement, design, manufacturing and other aspects all implemented in strict accordance with the requirements of the ISO9001 quality management system.
- > Talents create high quality, the production line core positions are occupied by 100% college degrees and above.
- > Each product has a unique product code, which can be used in the product traceability system to ensure quality can be controlled and traced.



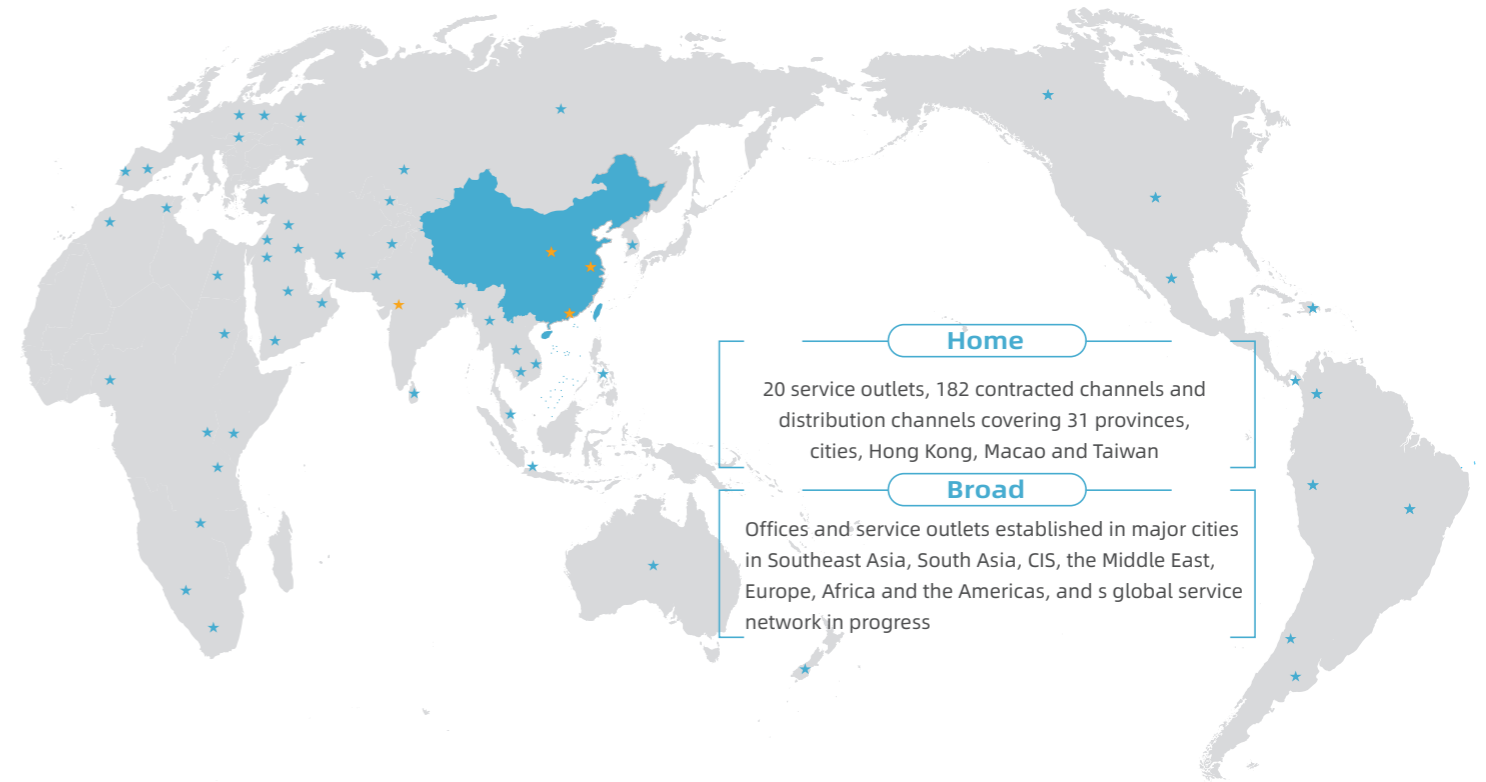
## Quality Management

By the policy and philosophy of quality first, procurement, product development, production and other aspects are all managed by the world's leading standards to ensure the high quality of products. Each code for the products is unique, which can be used in the system to trace its details during production.

### Seven Principles of Quality Management System



## Service and Support



- 01 Pre-sales**  
technology promotion, site survey, proposal design, energy saving assessment
- 02 During-sales**  
customization, design consultation, installation and commissioning, on-site training
- 03 After-sales**  
regular return visits, regular maintenance, timely repairs, application instruction



ISO9001:2015 ISO14001:2015 ISO45001:2018	CE certification for whole series	3C certification for whole series	RoHS2.0 for customized products	AAA certification in measurement management system	5-Star certification in aftersales service	QC080000 management system