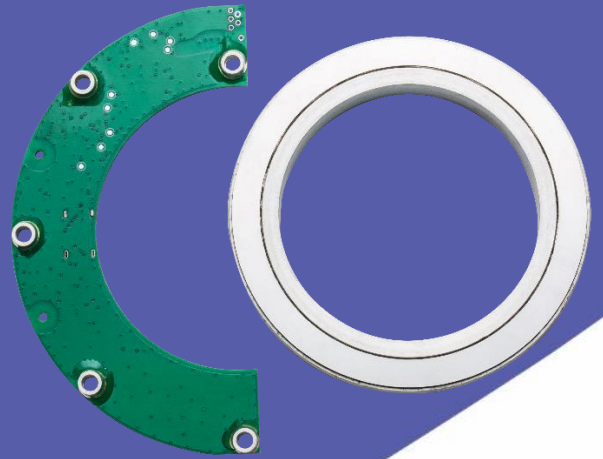


Reflective Hollow Shaft Absolute Encoder

KON113-M16S20SN00-HR63C0V5

KON113-M16S24SN00-HR63C0V5

SPECIFICATION



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1. Summary Info

This manual primarily describes how to use the Reflective Hollow Shaft Absolute Encoder from Reagle Sensing. This product is mainly used in servo-driven control systems, providing the accurate position and speed feedback required by the control units.

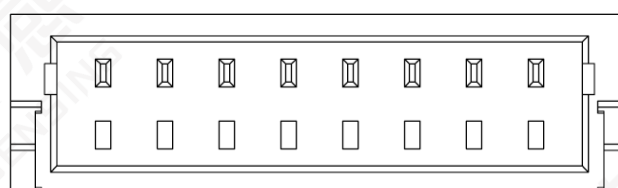
2. Technical Specifications

Product model	KON113-M16S20SN00-HR63C0V5 KON113-M16S24SN00-HR63C0V5	
Resolution	Supports up to 16777216 (24bit), compatible with 20bit.	
Turns	65536 (16bit)	
Auxiliary Functions	Fault Warning * Electromagnetic Environment Warning	
Communication Interface	RS485	
Communication frequency	≤16K	
Baud rate	2.5Mbps	
Input shaft allowable deviation	Axial: - Radial: - Perpendicularity of Shaft to Stator Mounting Surface: 0.05	Axial Runout: < 0.1 mm Radial Runout: < 0.02 mm
Main shaft speed	≤6000rpm	
Moment of Inertia	8.9×10 ⁻⁵ Kg*m ²	
Weight	0.066kg (Rotor)	
Rotor Angular Acceleration	≤80000rad/s	
Vibration	Between 10 and 55Hz, maintain amplitude of 1.5mm. Between 55 and 2000Hz, acceleration is 98m/s ² . 2 hours per axis for XYZ, totaling 6 hours.	
Mechanical shock	Shock acceleration of 980m/s ² , 11 milliseconds. 3 impacts per direction, totaling 18 impacts.	
Operating Temperature	-20°C ~ 95°C	
Relative Humidity	≤ 90% (40 ° C/21 days, based on EN 60068-2-78); No condensation	
Enclosure Protection Rating	— (Motor Rear Case Protection)	

3. Electrical Parameters

Items		T=25°C		
		Min.	Typ.	Max.
Supply Voltage		4.75 V	5V	5.25V
Main power supply Current (Typ)		--	130mA	--
Battery Voltage		--	3.6V	--
Battery Fault Voltage		--	2.9V	--
Battery Warning Voltage		--	3.1V	--
Mode Transition Voltage	Main Power Switch to Low Power Mode	--	4.32V	--
	Low Power Mode Switch to Main Power Mode	--	4.16V	--
Differential Level	High	3.5V	--	--
	Low	--	--	1.7V
Edge Transition Time		--	--	100ns
Insulation Resistance		50MΩ	--	--

4. Cable Definition

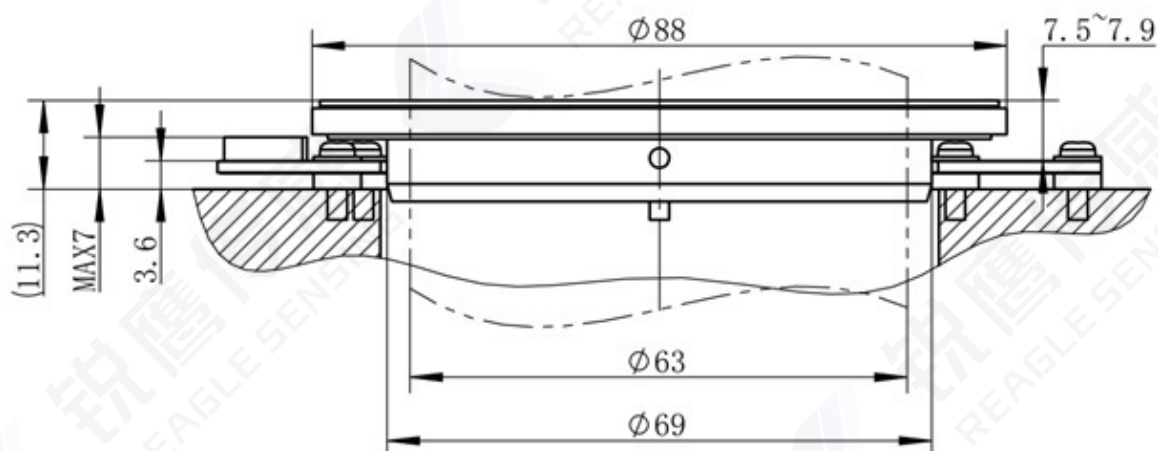


1 2 3 4 5 6 7 8

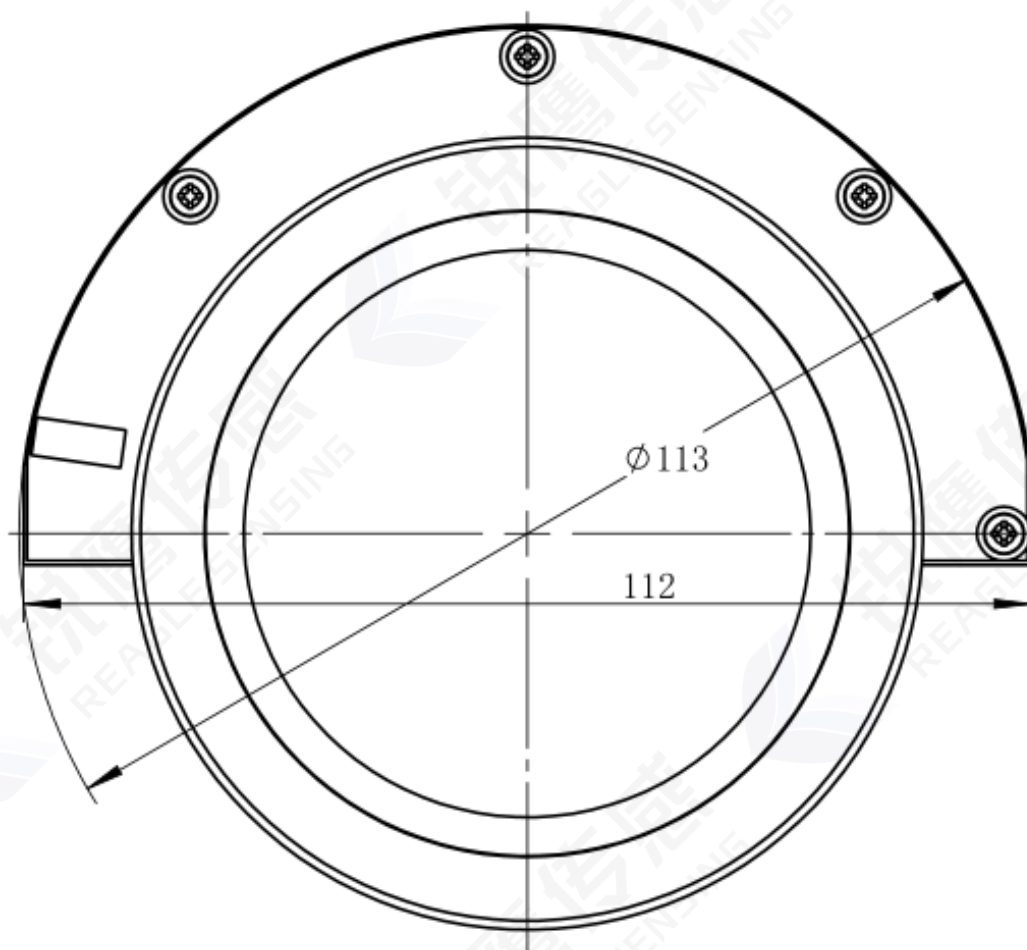
Terminal Numbering	1	2	3	4	5	6	7	8
Definition	5V	GND	485+	485-	Battery +	Battery GND	NC	PE
Cable color	red	black	blue	yellow	brown	white		shielding mesh

5. Mechanical Specifications

◇ Structural Dimensions 1

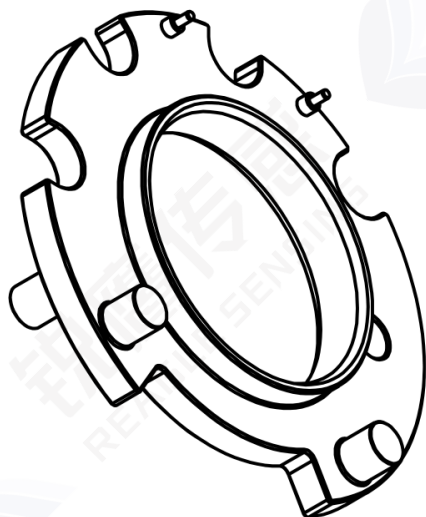


◇ Structural Dimensions 2

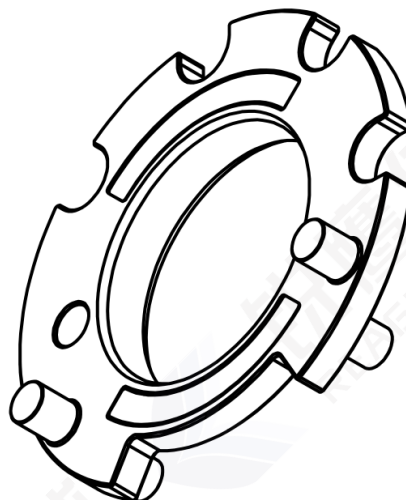


6. Mounting Procedure

6.1 Installation Jig Instructions



Jig Face A (for stator installation)

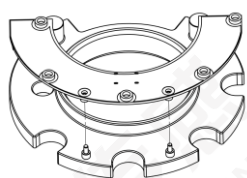


Jig Face B (for rotor installation)

6.2 Installation Accessories

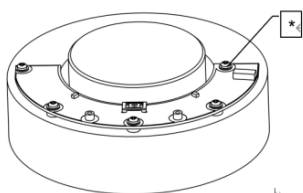
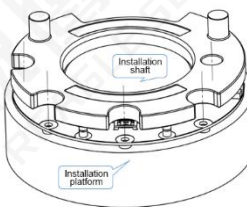
- Phillips torque screwdriver
- Metric 1.5mm hexagonal torque wrench

6.3 Installation Sequence



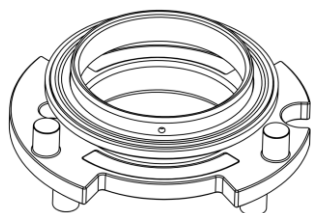
Stator Installation:

- ① Align the front of the stator (electronic device side) with Face A of the installation jig, fitting the pin holes with the jig's positioning pins.
- ② Reverse the assembled stator and jig, making the stator legs flush with the mounting platform, and align the jig's center hole with the installation shaft to determine the position of the mainboard. Use five M2.5×8 Phillips pan head screws with flat washers to fix the mainboard. Tighten with 5-7 kgf·cm of torque.
- ③ Carefully remove the jig without tilting it. The stator installation is complete.



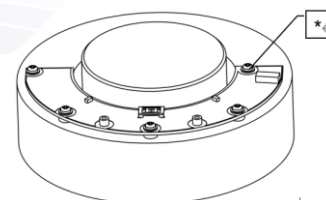
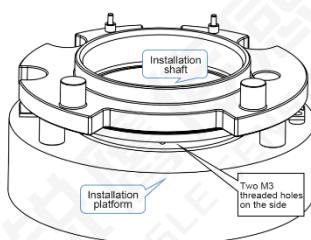
[Note]:

- 1) Pay attention to the screw head height, especially at the locations marked with an "*", where the screw head should not protrude more than 2.3mm from the PCB.
- 2) To prevent screw loosening, pre-apply thread locker in the screw holes or use screws pre-coated with thread locker.



Rotor Installation:

- ① Align the back of the rotor (non-encoder side) with Face B of the installation jig, being mindful of the impact when the magnets attract. Try to center the rotor's shaft hole with the jig's shaft hole.
- ② Reverse the assembled rotor and jig, aligning the rotor's shaft hole with the installation shaft. Gently push the jig, slowly pressing down the rotor, ensuring the jig remains parallel with the mounting platform. Stop when the jig's legs are flush with the mounting platform. Do not push the rotor in too deeply. Use two M3×3 hexagon socket set screws with 7 kgf·cm of torque to lock the rotor to the shaft (be mindful of the rotor magnets' attraction to the screws and tools, and avoid touching the encoder disc).
- ③ Remove the jig. The rotor installation is complete. After installation, rotate the rotor one full turn to check for any interference, especially at the bottom screws of the encoder disc. Remove the protective film from the encoder disc and clean its surface with a cotton swab or lint-free cloth. The installation is complete, and proceed to the next test step.



6.4 Precautions

- This encoder has a split structure; the encoder shaft (including the encoder disc) is separate from the body structure and exposed to the air when installed on the motor shaft. Please assemble in a clean, dust-free environment.
- Before installation, degrease and clean the motor shaft to prevent oil and other contaminants from affecting the tightness of the encoder shaft or contaminating the encoder disc.
- Be careful not to touch the encoder disc directly with hands or hard objects, as fingerprints, oil, dust, etc., can cause abnormal signals, and hard objects may damage the encoder disc.
- After installation, check the cleanliness of the reflective encoder disc surface. If contaminated, gently wipe with lint-free cloth dampened with alcohol. Be careful not to apply excessive force or use other hard materials that could damage the disc.

7. Configuration Instructions

For ordering codes, refer to the "Reagle Sensing KON Series Encoder Ordering Instructions."

For terminal cable specifications, refer to the "Reagle Sensing Absolute Encoder Recommended Terminal Cable Diagrams."

Revision History

Date	Version Number	Modification Details or Changes	
		Location	Content
20230326	V1.0	/	New Version

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