

Hollow Shaft Absolute Rotary Encoder

KIN71-17ST00-SEC0V5

KIN71-23ST00-SEC0V5

SPECIFICATION

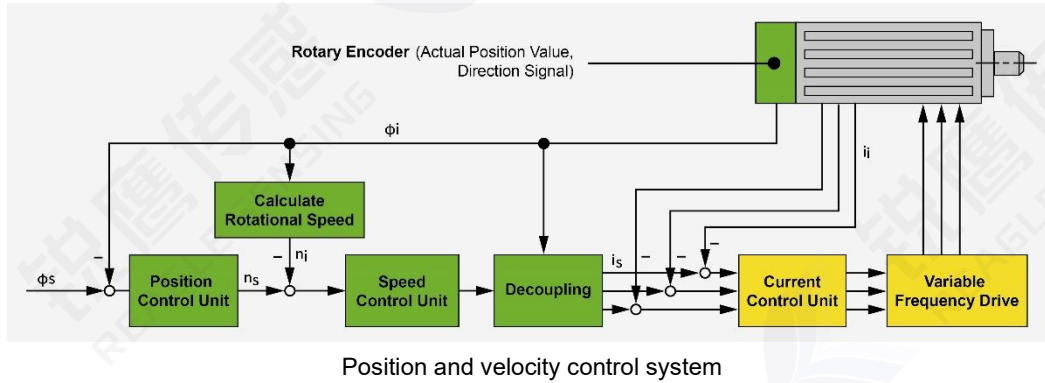


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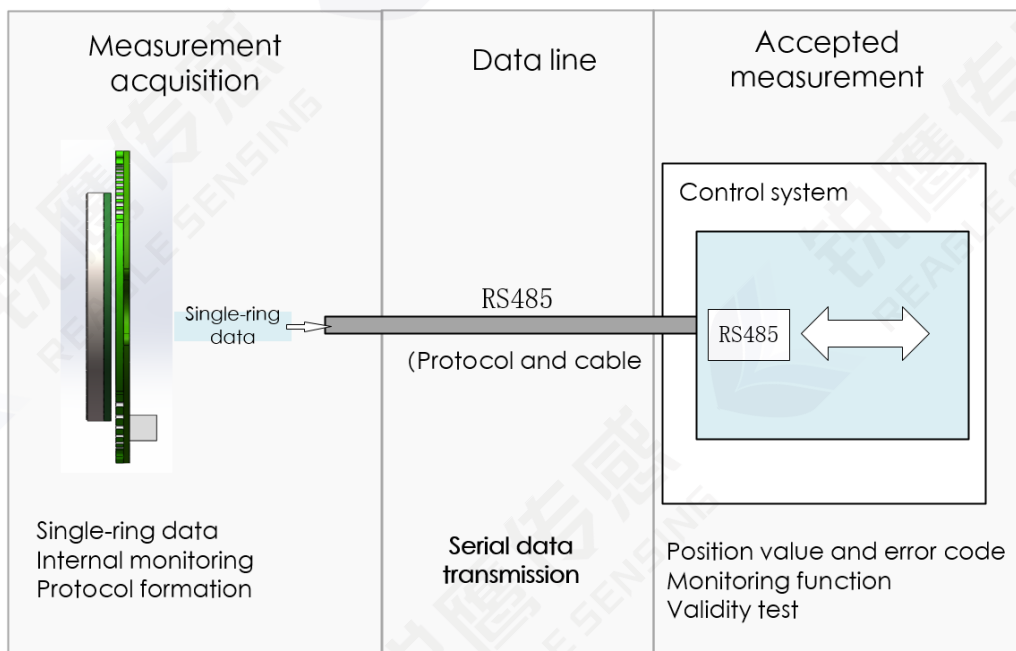
1. Summary Info

This manual primarily describes how to use the hollow inductor series KIN71 single-turn encoder from Reagle Sensing. This product is mainly used in servo-driven control systems, providing the feedback information required for accurate position and speed control units.



The performance of the encoder has a decisive impact on the essential characteristics of the motor, such as:

- Positioning accuracy
- Speed stability
- Bandwidth, determining the response speed to drive command signals and resistance to interference
- Motor size
- Noise



Equipped with RS485 communication encoder

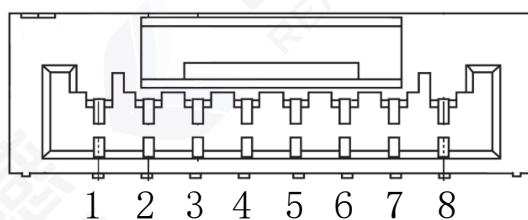
2. Technical Specifications

Product model	Stator Model: KIN71-17ST00-SEC0V5 KIN71-23ST00-SEC0V5 Rotor Model: KIN71-41.5SA KIN71-43SR	
Resolution	Supports up to 8,388,608 (23bit), compatible with 17bit.	
Auxiliary Functions	Fault Warning * Electromagnetic Environment Warning	
Communication Interface	RS485	
Communication frequency	≤16K	
Baud rate	2.5Mbps;	
Input shaft allowable deviation	Axial: ±0.2mm Radial: ±0.1mm	Axial Play: < ±0.03mm
Main shaft speed	≤6000rpm	
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	-40°C~85°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

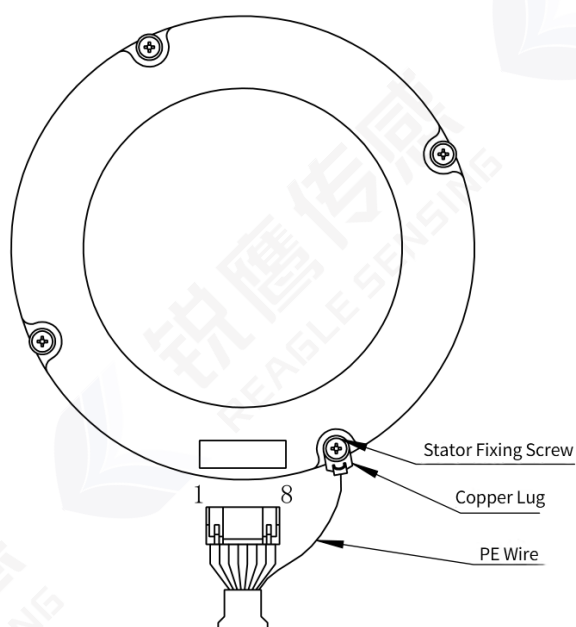
Items		T=25°C		
		Min.	Typ.	Max.
Supply Voltage		4.75V	5V	5.25V
Main power supply Current (Typ)			130mA	
Differential Level	High	3.5V	--	--
	Low	--	--	1.7V
Edge Transition Time		--	--	100ns
Insulation Resistance		50MΩ	--	--

4. Cable Definition



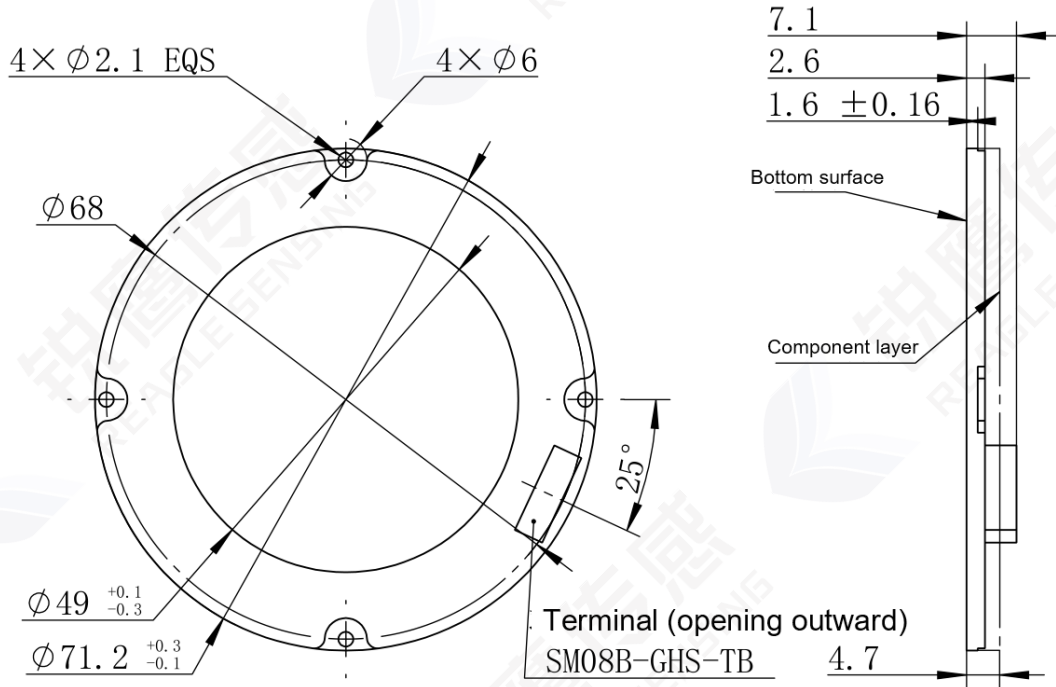
Terminal Numbering	1	2	3	4	5	6	7	8
RS485 Definition	NC	NC	485+	485-	NC	NC	5V	GND

[Note]: PE Wire Installation Diagram

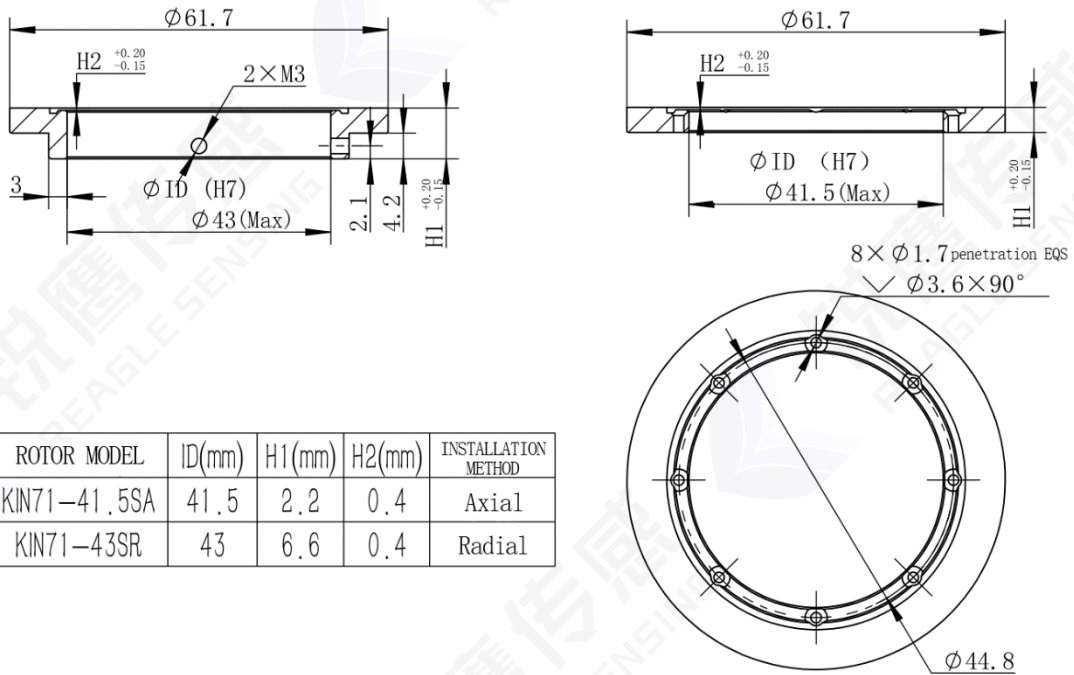


5. Mechanical Specifications

◇ Stator Structure Dimension Diagram



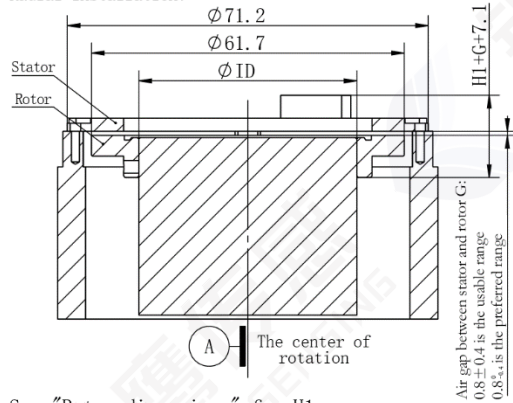
◇ Rotor Structure Dimension Diagram



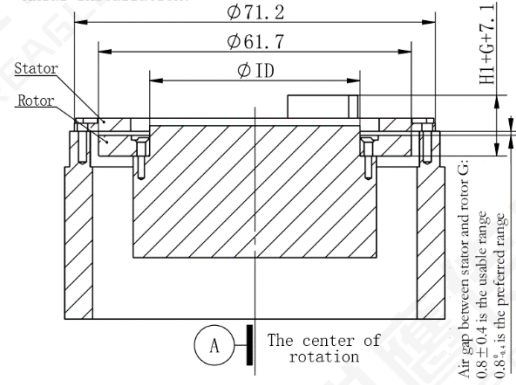
◆ Stator-Rotor Installation Position Requirements

Relative position of stator and rotor after installation:

Radial installation:



Axial installation:

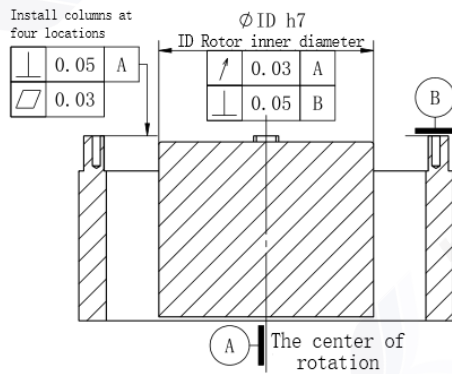


See "Rotor dimensions" for H1

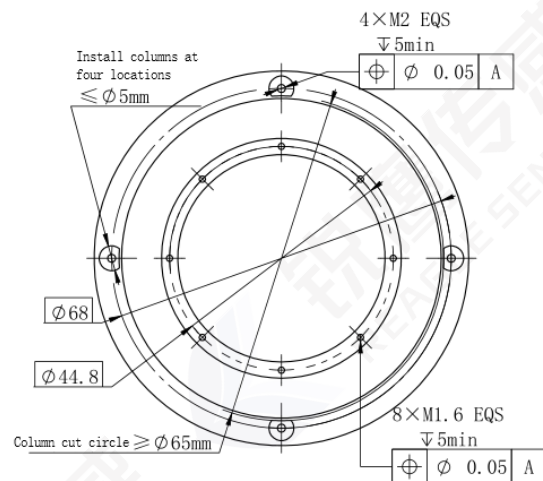
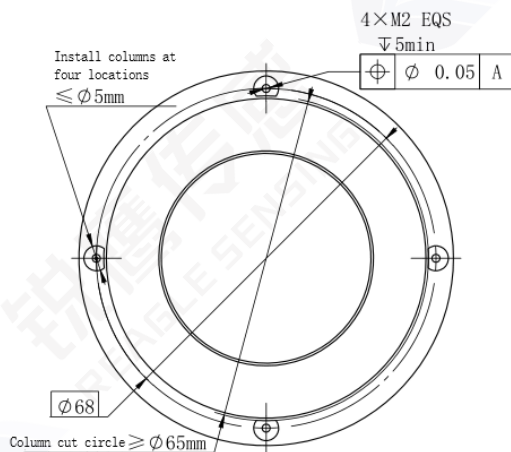
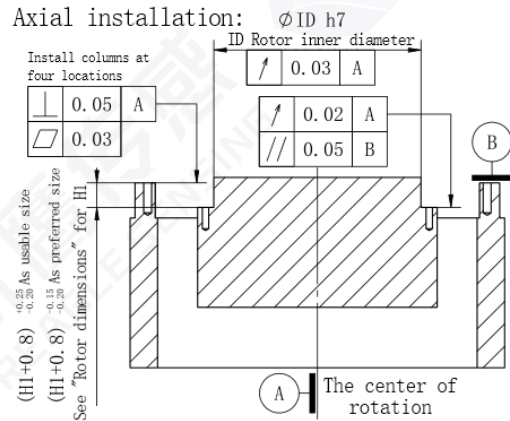
[For other installation requirements, please seek technical support]

◆ Recommended Installation Platform

Radial installation:

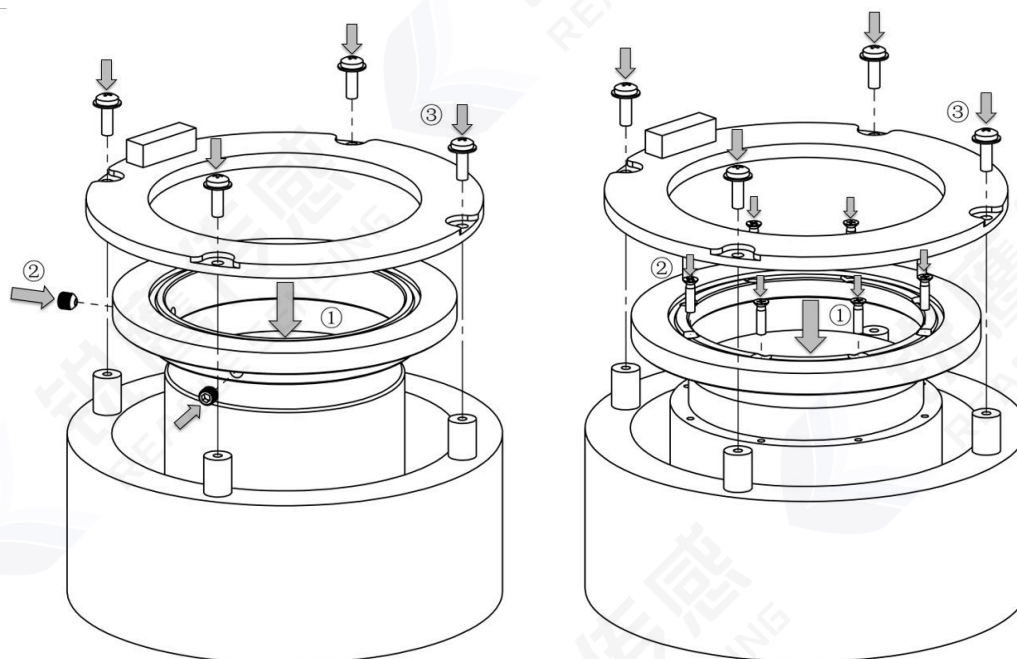


Axial installation:



6. Mounting Procedure

6.1 Installation Diagram



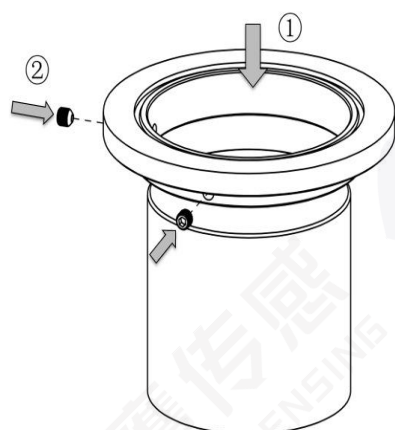
Radial rotor complete assembly schematic diagram

Axial rotor complete assembly schematic diagram

6.2 Installation Accessories

- Phillips torque screwdriver
- Metric 1.5mm hexagonal torque wrench,
- 4-M2×5.5 Phillips pan head screws with flat washers,
- 2-M3×3 hex socket set screws,
- 8-M1.6×6 Phillips countersunk head screws

6.3 Installation Sequence

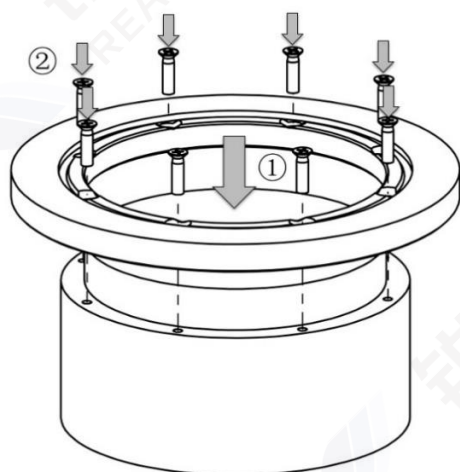


Radial rotor installation:

- Fit the encoder rotor onto the motor shaft to the appropriate position.
- Use the hexagonal torque wrench to sequentially install 2 M3×3 hex socket set screws.

[Note]:

- If rotor height adjustment is needed, lock the rotor after adjusting.
- To prevent screws from loosening, apply thread locker to the threaded holes or use screws with pre-applied thread locker. Recommended screw locking torque is 7 ± 0.2 kgf·cm.

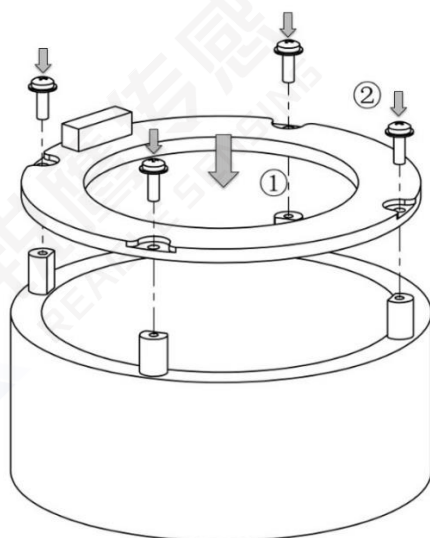


Axial rotor installation:

- Fit the encoder rotor onto the motor shaft until the end face is aligned and all eight screw holes are aligned.
- Use the Phillips torque screwdriver to sequentially install 8 screws (M1.6×6 Phillips countersunk head screws).

[Note]:

- After installing the countersunk screws, ensure that the screw heads are not more than 0.3mm above the rotor surface to avoid interference with the stator.
- To prevent screws from loosening, apply thread locker to the threaded holes or use screws with pre-applied thread locker. Recommended screw locking torque is 1.2 ± 0.2 kgf·cm.



Stator installation:

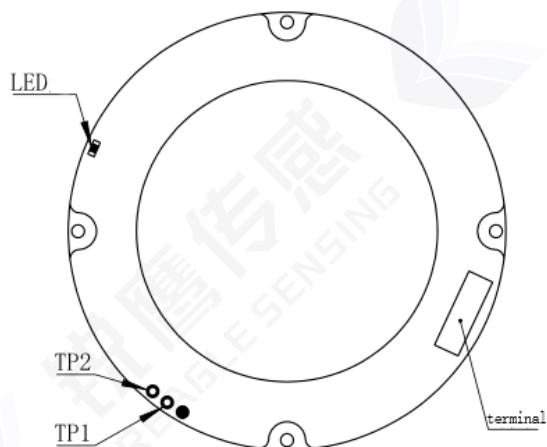
- Place the encoder stator on the stator mounting surface, aligning the four screw holes.
- Use the Phillips torque screwdriver to sequentially install 4 screw assemblies (M2×5.5 Phillips pan head screws with flat washers).

[Note]:

- To prevent screws from loosening, apply thread locker to the threaded holes or use screws with pre-applied thread locker. Recommended screw locking torque is 2.8 ± 0.2 kgf·cm.

7. Calibration Methods

7.1 Calibration Operation



- ① Power the encoder normally;
- ② Short TP1 and TP2, maintain the short for 1 second before releasing. After this, the green light will start flashing at a frequency of 8 times per second;
- ③ While the green light is flashing (within 1 minute), rotate the rotor in the same direction for more than 2.5 turns. If the indicator light remains on, it indicates that the calibration was successful.

7.2 Indicator Light Status Explanation

Status	Indicator Light Display	Status Explanation
Power On	Flash once then off	Indicating power-on initialization
Normal Operation	Off	Indicating initialization is complete after power-on, and there are no
Offline Calibration in Progress	Flashing 8 times per second	Indicating calibration is underway, and there are no alarms
Offline Calibration Failure	Flashing once per second	Indicating offline calibration has failed
Offline Calibration Success	Steady on	Indicating offline calibration has success

8. Communication Specifications

Table 1: TAMA Protocol Parameters

1	Single-turn position resolution	131072 (17bit, ENID = 0x11) 或 8388608 (23bit, ENID = 0x17)
2	Multi-turn position resolution	No Multi-turn
3	Overspeed alarm threshold	7200rpm

The specific content of the "Reagle Communication Protocol Specification (TAMA-STD) [Public]." can be found in the document itself.

9. Configuration Instructions

For order codes, please refer to the "Reagle Sensing Absolute Encoder Ordering Instructions."

Recommended terminal cable specifications can be found in the "Reagle Sensing Hollow Encoder Recommended Terminal Cable Drawings."

Optional Configuration	Description
Single-turn resolution	17Bit/23bit

Revision History

NO.	Version Number	Modification Details or Changes	
		Location	Content
38403	V1.0	/	New Version
385A2	V1.1	Mechanical Specifications	Stator height correction
38606	V1.2	Communication Specifications	Add TAMA protocol parameter table
38671	V1.3	Cable Definition	Copper nose cable installation instructions added

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 www.reagles.cn  sales@reagles.cn  400-636-1110

 Fourth Floor, Block B, Building 9, Intelligence Industry