

绝对式编码器

User's manual of

Absolute encoder

使用说明书



RAA58 · Series

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CHANGCHUN RONGDE OPTICS CO.,LTD

1.1 Appearance features

Appearance:

- 1.Shell color: black, silver, green, army green (optional)
- 2.Surface treatment: black dyeing, sandblasting oxidation (optional)
- 3.Wire outlet mode: side outlet, top outlet (optional)
- 4.Cable length: 1m (customizable)
- 5.Cable color: black, gray (optional)

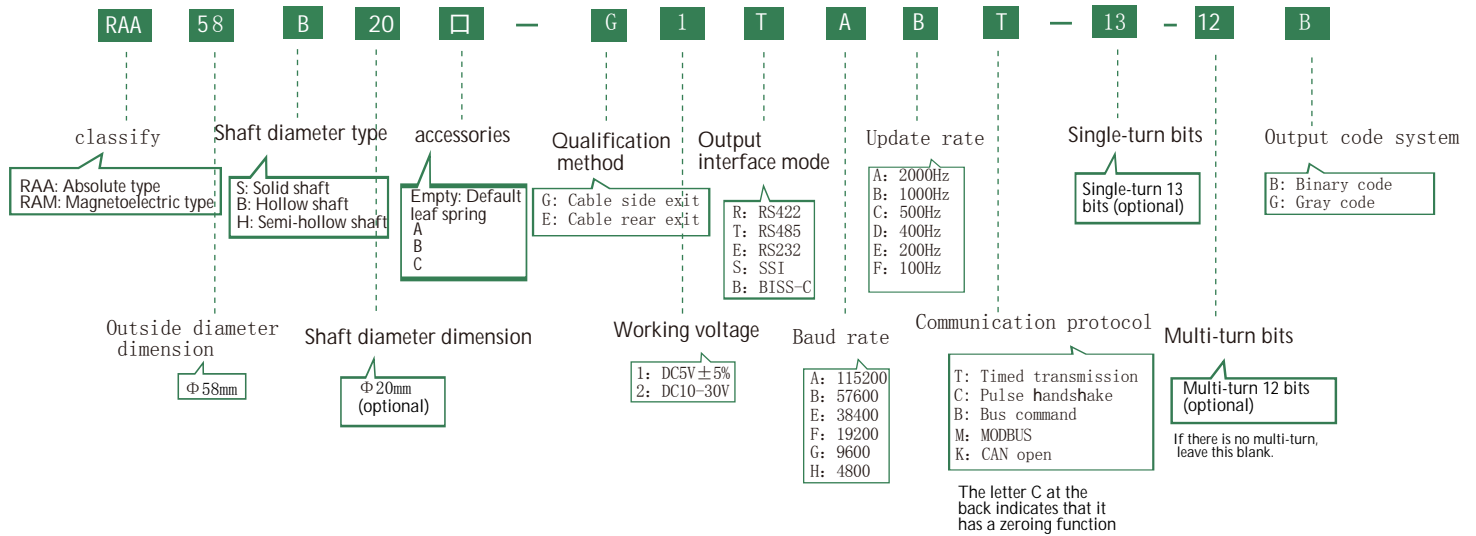
Features:

- 1.Universal market installation dimensions with international standard flanges.
- 2.Multiple mounting screw holes reserved.
- 3.Capability to support various communication protocols.
- 4.Optimized waterproof design, featuring sturdiness and durability, long service life, and anti-interference performance.



RAA58 Series

1.2 Model Description



As shown in the above figure, it indicates: an absolute product with an outer diameter of 58mm, a hollow shaft diameter of 20mm, a dust-proof side - exit cable, a 5V voltage output, an RS485 interface, a baud rate of 115200, an update rate of 1000Hz, a communication protocol of timed transmission, 13 single - turn bits, 12 multi - turn bits, and the output code system is positive logic binary code.

1.3 Precautions

1. To ensure the product's accuracy and service life, please strictly use flexible connections as instructed.
2. This product is a precision instrument that has undergone strict calibration before leaving the factory. Do not disassemble, modify, or subject the encoder to strong collisions.
3. To ensure the normal operation and accuracy of the encoder, the operating voltage should be DC5V±5%:
The length of the power cord must not exceed 2 meters.
The current limit of the power supply must not be less than 0.5A.
The ripple of the power supply must be within ±50mV.

When the operating voltage is 10-30V:
The current limit of the power supply must not be less than 0.3A.
The ripple of the power supply must be within ±50mV.
4. This product shall be installed and used by professional personnel. Pay attention to the corresponding connection between the supply voltage and wire sequence with the equipment to ensure the encoder works normally.
5. Please read this instruction manual carefully before using the product.

2.1 Basic parameters

Number of bits	10~21bit				Measurement range	0 ~ 360° (Single-turn measurement range)						
Number of bits	10 bit	11 bit	12 bit	13 bit	14 bit	15 bit	16 bit	17bit	18bit	19bit	20bit	21bit
Resolution			320"	160"	80"	40"	20"	10"	5"	2.5"	1.25"	0.6"
Accuracy≤			±640"	±320"	±160"	±80"	±40"	±40"	±40"	±40"	±40"	±40"

2.2 Environmental parameters

Operating temperature	-40℃~+65℃(Optional)	Protection class	IP54 (65) (Optional)
Storage temperature	-50℃~+70℃(Optional)		

2.3 Mechanical parameters

Outer diameter	58 mm	Shaft diameter	20 mm (可选)
Height	42 mm	Shaft length	12.5 mm (可选)
Weight	130 g	Maximum rotating speed	5000 r/min
Anti-vibration	2.5 g	Radial shaft load	≤20N
Shock resistance	20 g	Axial shaft load	≤10N

2.4 Electrical parameters

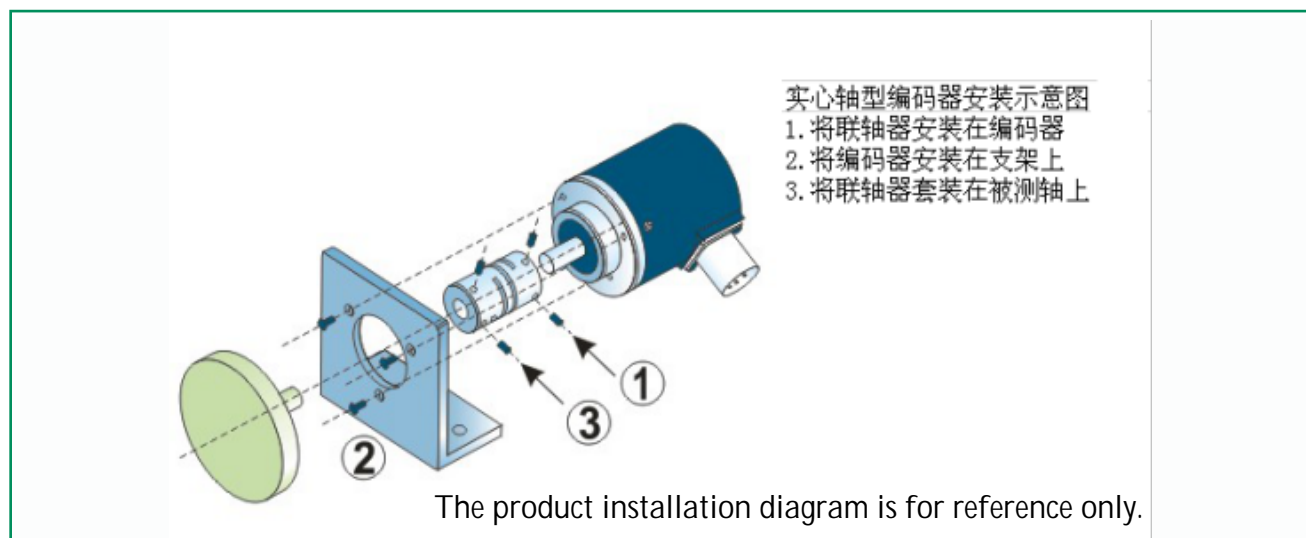
(一) Asynchronous serial

Supply voltage	DC5V, 10~30V
Communication interface	RS485, RS422, RS232, CAN
Communication protocol	MODBUS, CANopen, Timed transmission, Timed + Clear, Pulse handshake, Handshake + Clear, Bus command, Bus + Clear
Baud rate	115200, 57600, 38400, 19200, 9600, 4800, 2400
Update rate	2000Hz, 1000Hz, 500 Hz, 400 Hz, 200 Hz, 100 Hz, 50 Hz, 20 Hz
Output code system	Binary code, Gray code

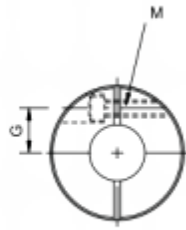
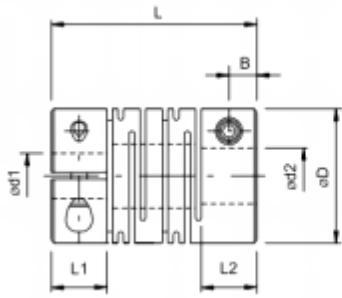
(二) Synchronous serial

Supply voltage	DC5V, 10~30V
Communication protocol	SSI, BISS-C
Output code	Binary code, Gray code

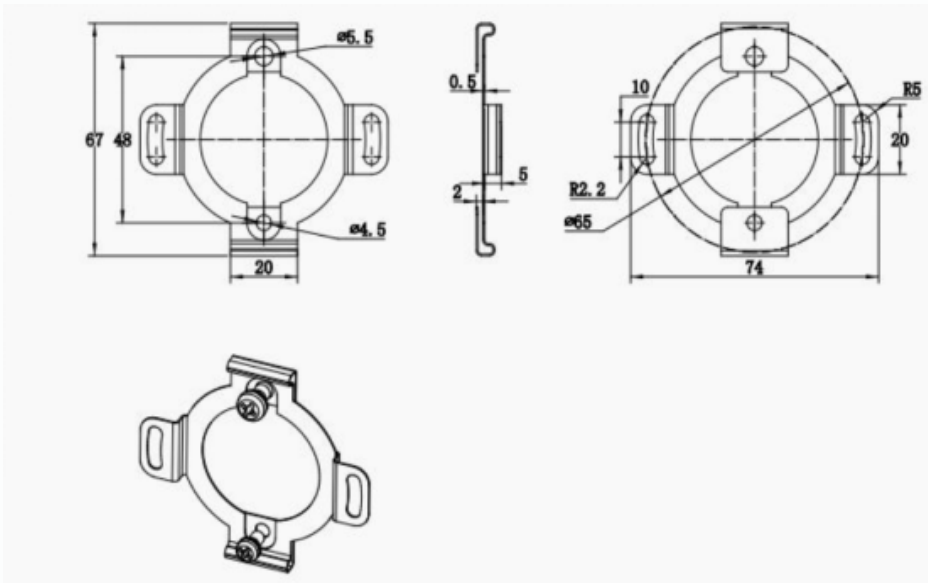
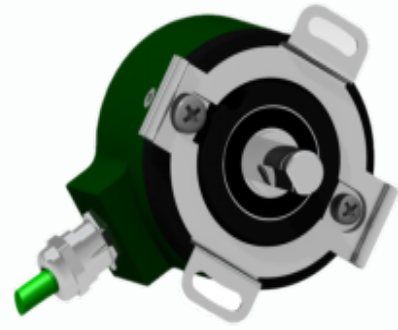
2.5 Mechanical installation drawing



Coupling installation (parameter optional customization)

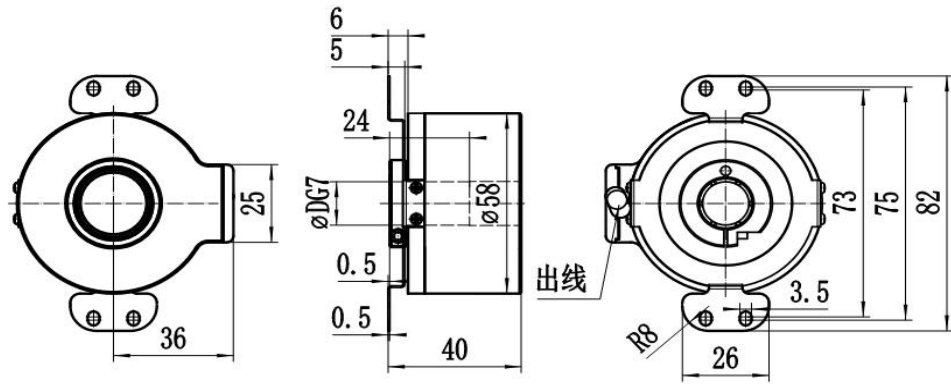


Leaf spring installation diagram

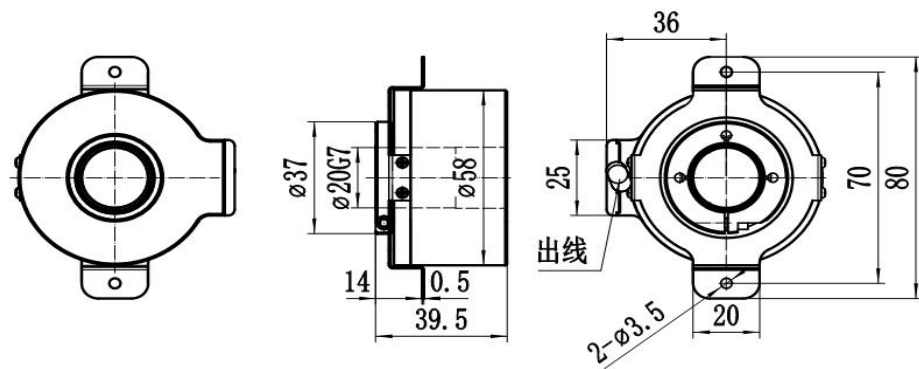


附录

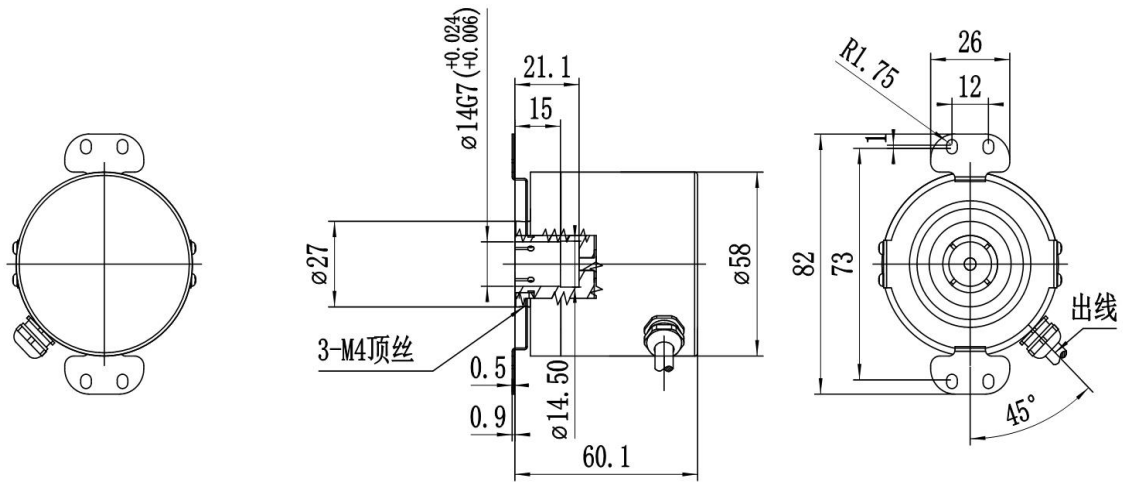
Mechanical outline drawing



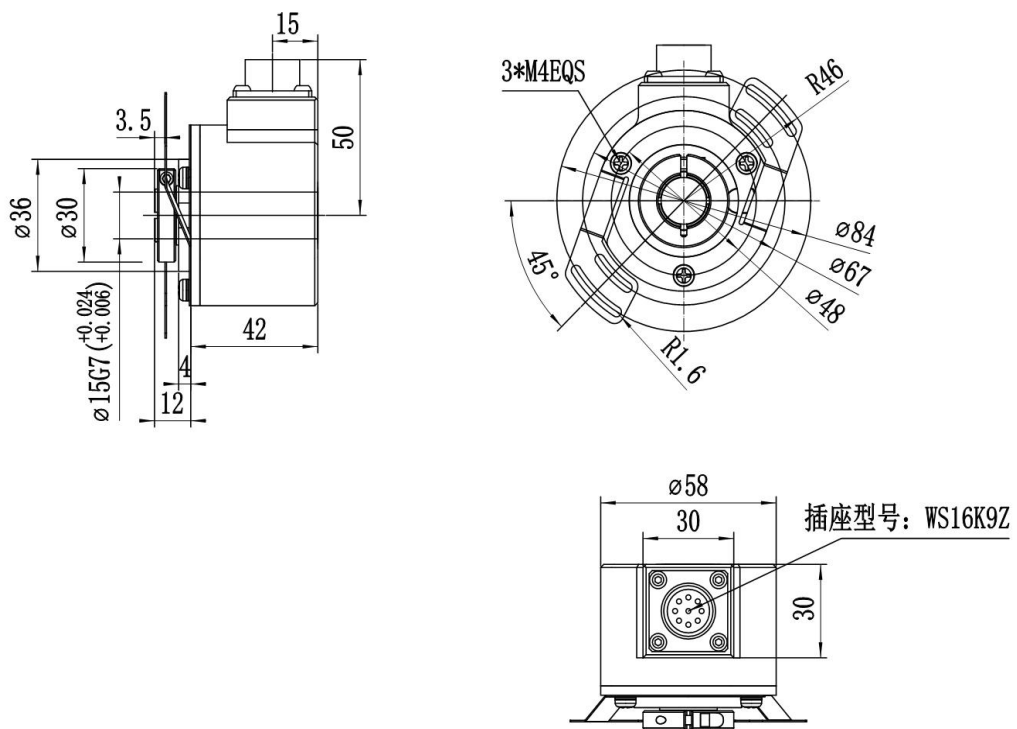
Outline drawing of RAA58B series products (default leaf spring)



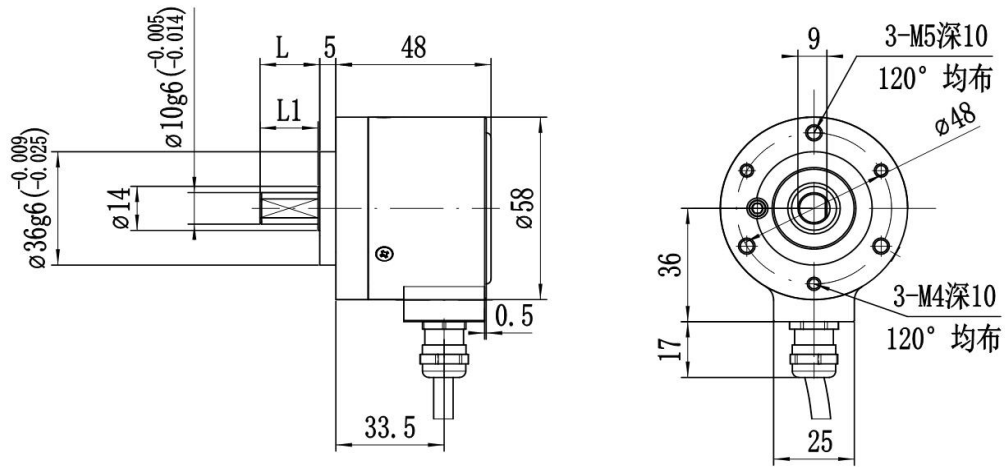
Outline drawing of RAA58B series products (A leaf spring)



Outline drawing of RAA58H series products



Outline drawing of RAA58T15 product



RAA58S10	L=18.5mm	L1=18mm
RAA58.2S10	L=10.5mm	L1=10mm
RAA58L10	L=25.5mm	L1=25mm

Outline drawing of RAA58S10 series products