

ROUNDSS^R

RAA58S series

(Mechanical multi-turn,
Electronic multi-turn)

Absolute Optical Shaft
Rotary Encoder

Oct, 2020

Changchun Rongde Optics Co.,Ltd



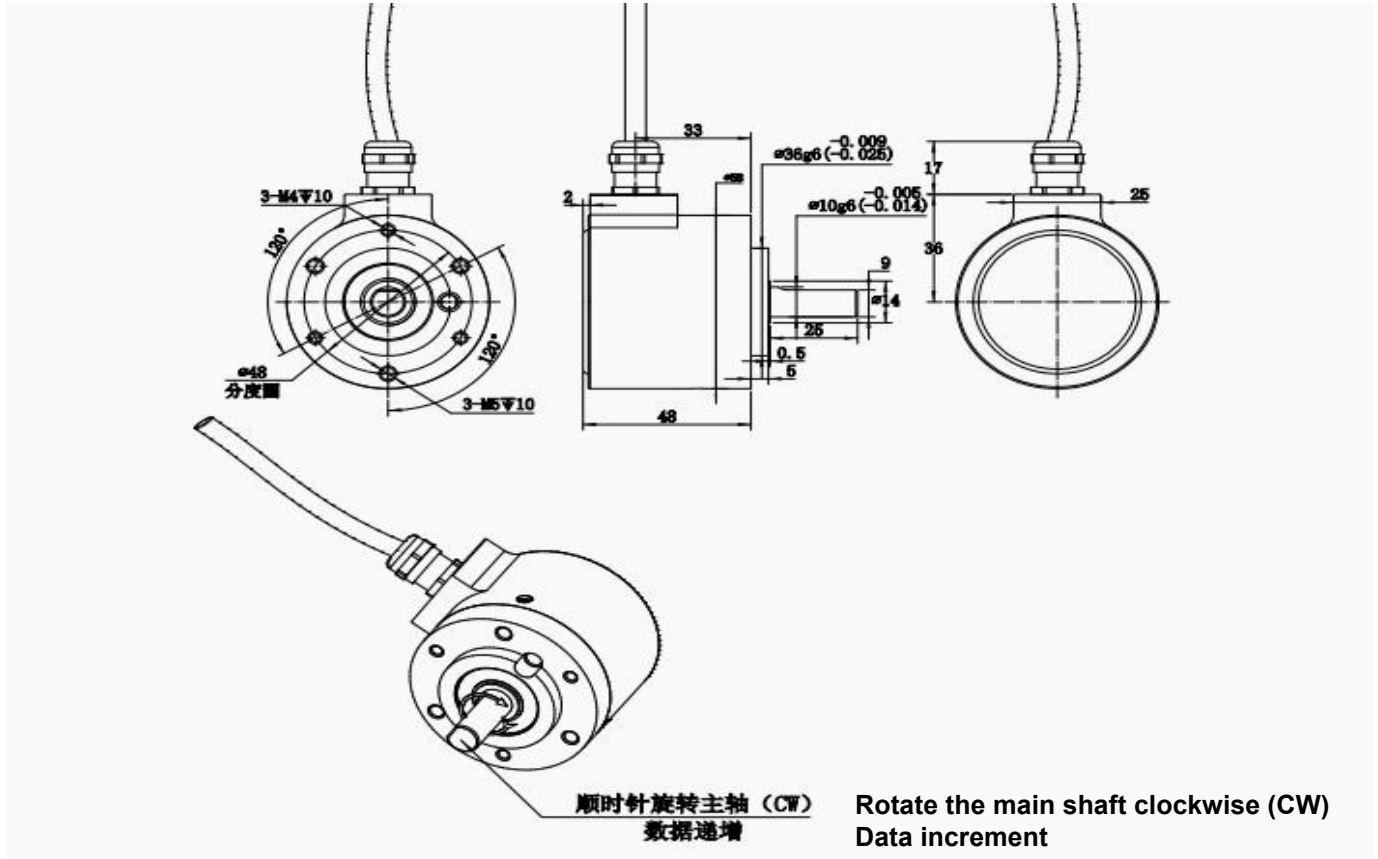
| Items | Mechanical multi-turn | Electronic multi-turn |
|--|--|---|
| Interface | RS422 RS485 RS488 | SSI BISS CAN OPEN |
| Counts Per | Max23bit | |
| Turns | 2048 turns | Infinite |
| Output Code | Binary Code Gray Code | |
| Electrical allowable speed deviation | 8000min-1 (Continuous position value) | 8000min-1 (Continuous position value) |
| Calculation time t clock frequency | $\leq 7\mu s \leq 8MHz$ | |
| System accuracy | $\geq \pm 10''$ | |
| Electrical connection | Conventional 1 meter cable can be customized | |
| Supply Voltage | 5V | 10~30V |
| Power consumption (Max) | 5V : $\leq 0.6W$ 10-30V : $\leq 0.7W$ | 5V : $\leq 0.7W$ 10-30V : $\leq 0.8W$ |
| Current consumption (typical , no load) | 5V : 85mA | 5V : 105mA |
| Shaft Dia. | Solid shaft $S = \phi 10mm$; (8-14mm can be customized) | |
| Allowable mechanical speed | 8000min-1 | |
| Starting torque | $\leq 0.001Nm$ (Room temperature 20°C) | $\leq 0.002Nm$ (Room temperature 20°C) |
| Vibration shock | $\leq 100m/s^2$, 55...2000Hz $\leq 2500m/s^2$, 6ms | |
| Max Operating Temperature | +85°C | |
| Min Operating Temperature | -40°C | |
| Protection Class | Optical IP65 ; | |
| Weight (not include cable) | $\approx 0.2kg$ | |



RAA58S series

- Built-in mechanical gear module (Mechanical multi-turn)
- Built-in electronic memory chip (Electronic multi-turn)
- Multiple electrical interfaces, uniform mechanical dimensions
- Simple installation, Large mechanical tolerance

• Mechanical Dimensions



• Installation instructions

- This product is a precision instrument with precise mechanical structure and has been strictly adjusted before leaving the factory.
- Do not disassemble or modify by yourself.
- Do not reprocess the output shaft.
- Do not forcefully hit the output shaft.
- Do not reprocess the encoder housing.
- If the product fails due to manufacturing reasons within 18 months after leaving the factory, our company is responsible for free repair or replacement.
- In order to ensure the accuracy and service life of the product, please use the soft connection strictly according to the instructions. If the product is not installed properly, the manufacturer will not guarantee the damage!

• Tolerance fit

In general, rotary encoders are divided into solid shaft and hollow shaft.

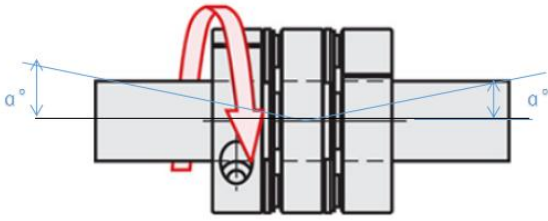
When the encoder is a solid shaft, the factory standard is implemented according to the g6 dimensional tolerance. The client fit tolerance is implemented in accordance with H7 tolerance.

When the encoder is a hollow shaft, the factory standard is in accordance with the H7 dimensional tolerance, and the client fit tolerance is in accordance with the g6 tolerance.

- Shaft deflection angle

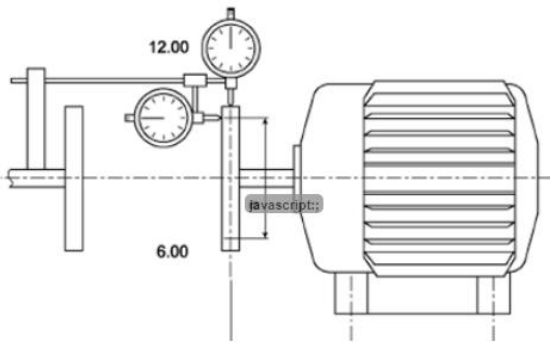
Simply speaking, the shaft deflection angle refers to the deviation angle between the axis of the measured shaft and the axis of the encoder shaft.

When installing and connecting the encoder and the main mechanism, a flexible connection should be adopted to eliminate the error of mechanical installation. When the encoder is a solid shaft, a flexible coupling is generally used for installation. When the encoder is a hollow shaft, a leaf spring is generally used.



- Coaxiality

Coaxiality, as the name implies, refers to the coaxiality of two or more shafts. Simply put, it is the coaxiality of the measured shaft based on the encoder, and the coaxiality of the encoder based on the measured side shaft.



- Radial runout

Radial runout is used to detect shaft deviation, check the roundness of a certain point on the shaft and the deviation from the reference line on the shaft. Radial runout is divided into radial circle runout and radial full runout.

Radial circle runout: The radial circle runout tolerance zone is the area between two concentric circles with the center of the circle on the reference axis in any measurement plane perpendicular to the reference axis, the radius tolerance value is t , and the tolerance zone Limited to the range of three-point coordinates (plane coordinates) on both sides.

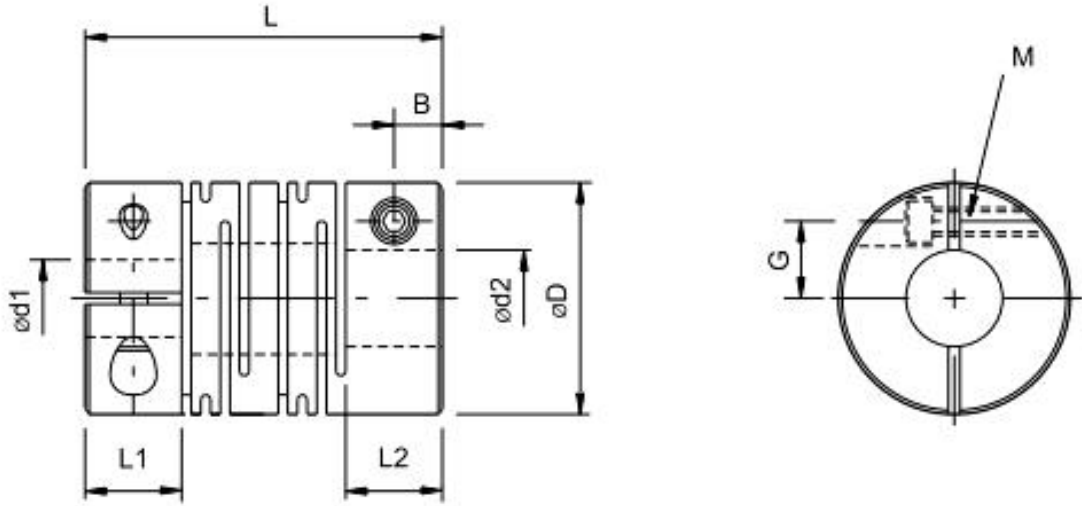
Radial total runout: The radial total runout tolerance is the area between two cylindrical surfaces whose radius difference is t and coaxial with the reference axis. The tolerance zone is limited to the range of three coordinates (spatial coordinates).

- Axial runout

Axial displacement refers to the axial clearance of the measured shaft, the maximum and minimum difference between pushing and pulling the measured shaft. Generally speaking, encoders connected by flexible connections have the ability to absorb axial displacement. But the application scenarios of rigid connections should be focused on. Such as split encoder.

• **Accessory**

- Coupling installation (parameters can be customized)



- Leaf spring installation (Attachment A)

