

R20 Series

Severe Environment AC RVDT Rotary Position Sensors

The R20 series RVDT rotary position sensors launched by Abek Sensors are widely used in a variety of position measurement fields.

The non-contact design of the RVDTs effectively improves long-term reliability compared to other traditional angular displacement gauges such as synchronous analyzers and potentiometers. Its unique design ensures measurement accuracy without the use of wearable moving parts such as slip rings, blades, contact cursors, brushes, etc.

RVDT simulates the linear displacement of linear variable differential transducers (LVDTs) with high reliability and performance. The rotational motion of the rotor shaft produces a linear output signal that moves $\pm 40^\circ$ around the factory-preset zero position (80° total). The phase of this output signal indicates the direction of displacement away from the zero position. The non-contact electromagnetic coupling of the rotor gives the product unlimited resolution, i.e. an absolute measurement accuracy of a few tenths of a degree.

The R20 series RVDT is an AC rotary position sensor. AC excitation from 3 to 12 Vrms produces an AC output voltage that changes linearly with the angular displacement of the shaft. The R20 operates in AC mode and has no built-in signal conditioning electronics, providing the user with an extremely wide operating temperature range (-55°C to 150°C).

The R20 Series RVDT is factory calibrated to operate at ± 30 , ± 35 , ± 40 degrees, with nonlinearity of less than $\pm 1\%$ of full scale.

The R20 series RVDT rotary position sensors offer long-term reliability for applications such as aviation, aerospace, mechanical equipment, valve position feedback, and rotary brake feedback.



● Applications

- drone
- Aircraft wheels
- Flight control system
- Servos
- Aviation Fuel Conditioning System
- Valve position feedback
- Machinery and equipment

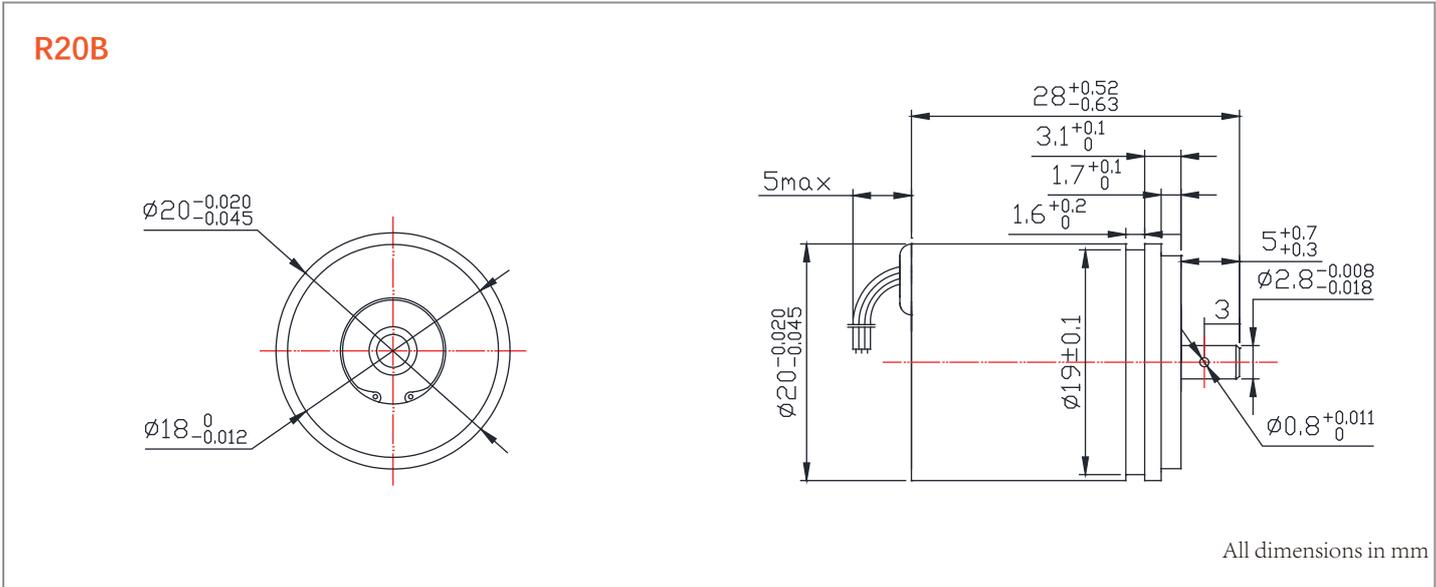
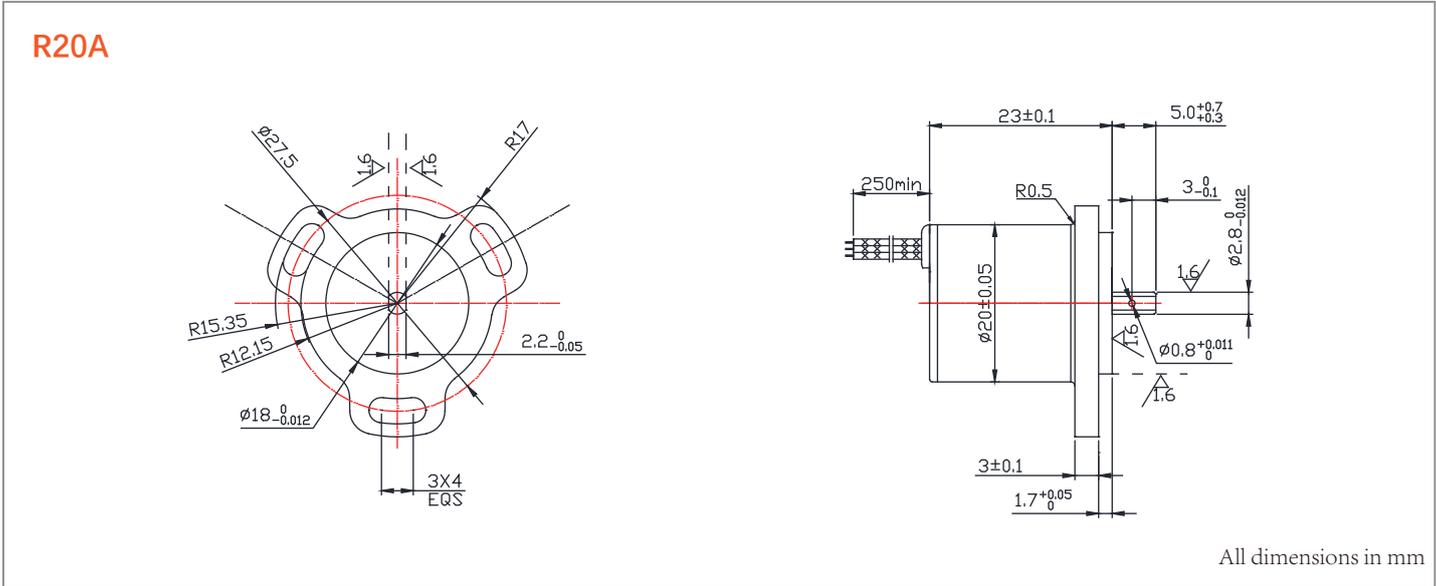
● Features

- Range: $\pm 15^\circ$, 30° , 40°
- Excitation voltage: 3V, 6V, 7V, 12V
- Excitation frequency: 400~2400HZ
- Linearity: $\leq \pm 1\%$
- Operating temperature: -55°C to $+150^\circ\text{C}$

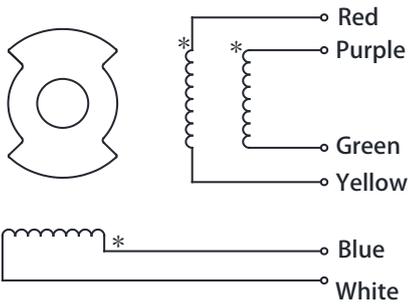
● Specifications

Parameter	Description		
Input Voltage:	3V, 6V, 7V, 12V RMS (optional)		
Input Frequency:	400, 1800, 2400Hz (optional)		
Sensitivity	12.5mV/V/°		
Range:	±15°	±30°	±40°
Linearity (full stroke range):	<±0.5%	<±0.7%	<±1%
Repeatability Error:	<0.01% (Full Range Typical)		
Operating Temperature:	-55°C to +150°C		
Vibration:	20g, 2 kHz		

● Dimensions



Wiring



Excitation: Red、 Yellow
Output: Blue、 White
Constant: purple, green

NOTE:
A constant coil is used to monitor whether the sensor is working properly

Ordering

R20	—	A	3	C	15
Series		mounting interface	Excitation voltage (AC)	Input Frequency:	Range code
		A: Flange	3: 3V	C:400Hz	15: $\pm 15^\circ$
		B: Slot	6:6V	D:1800Hz	30: $\pm 30^\circ$
			7:7V	E: 2400Hz	40: $\pm 40^\circ$
			12:12V		

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