

RSE 1500 Series

Rotary Position Sensors



Description

The Macro Sensors RSE 1500 series of contactless, fractional-turn, absolute output rotary position sensors provide an analog voltage output proportional to shaft rotation over a total range of up to 120°. They are ideal sensors for measuring the position of quarter-turn ball and butterfly valves, flue dampers, weir gates, mail sorters, conveyor check weigher systems, dancer arm tensioners, and myriad other applications involving fractional-turn shaft movements.

The RSE 1500 series is also useful for other limited rotation applications requiring high reliability like pedal position sensing for mobile equipment such as lift trucks, stackers, golf carts, and lawn tractors, or throttle lever position sensing in boats, cranes, and articulating-arm utility service vehicles.

The RSE 1500 series of rotary position sensors utilize built-in electronics to offer DC input/output configuration. They are available for 0° to 30°, 60°, 90°, or 120° rotation ranges with a true-zero 0-to-10 V DC unipolar output. Normal electrical I/O termination is a 5-pin M-12 connector receptacle but

Features

- 0° to 30°, 60°, 90°, or 120° rotational ranges
- Full 360° rotation contactless technology
- Non-linearity less than $\pm 0.1\%$ of FRO
- DC voltage absolute analog outputs
- Environmentally sealed to IEC IP-66
- Integral DC-in / DC-out electronics

Applications

- Quarter-turn valves
- Mail sorter gates
- Flue dampers
- Throttle position
- Dancer arm tensioning
- Fuel rack position

on special order for OEMs, other sensor-mounted connectors or certain cables can be supplied. Contact the factory for more information.

RSE 1500 series rotary sensors are enclosed in a 1-1/2 inch diameter anodized aluminum shell, and have a 0.250 inch stainless steel shaft running in high performance ball bearings. The aluminum mounting flange has a 0.750 inch diameter center pilot for locating centrally in a fixture. These units are environmentally sealed to IEC IP-66.

Mechanically, all RSE 1500 series sensors are full 360° rotation devices. The sensors' measurement range is denoted by the alignment of the flat on the sensor's shaft perpendicular to a witness mark on the face of the mounting pilot. In this position, the analog output increases when the shaft is rotated clockwise as viewed from the shaft end. The absolute output characteristic makes the RSE 1500 series of sensors superior to incremental output sensors like optical encoders that lose their position information in the event of a power failure.

General Specifications

Input Power: 14 to 26 Volts DC
25 mA max.

Full Scale Output: 0 to 10 Volts DC

Resolution: 0.025% of FRO

Output Impedance: <10 Ω

Output Noise & Ripple: <5 mVrms

Frequency Response: 50 Hz (-3dB) (nominal)

Linearity Error: <±0.1% of FRO

Operating Temperature: -40°C to +85°C

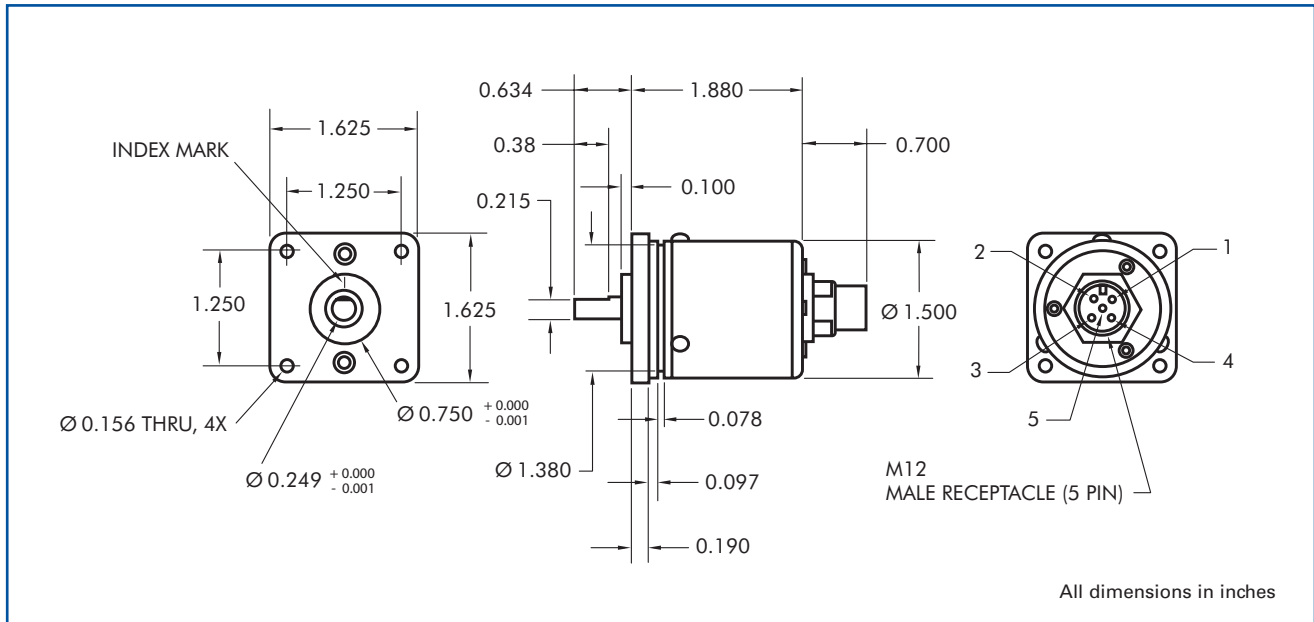
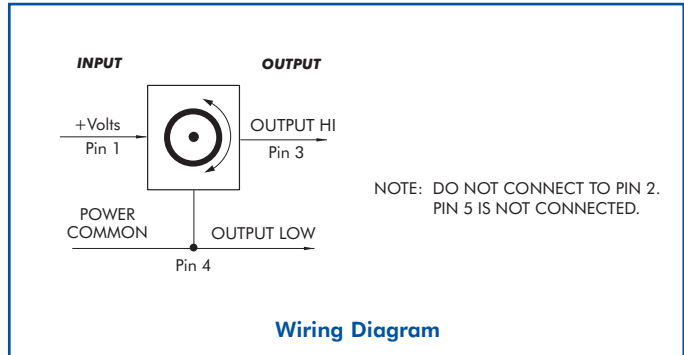
Thermal Coefficient of Scale Factor: ±0.01% FRO/°C (nominal)

Vibration Tolerance: 10 g, 50 to 2000 Hz

Shock Survival: 100 g, 11 ms

Specifications

Model ▶	RSE 1500 -030	RSE 1500 -060	RSE 1500 -090	RSE 1500 -120
Parameter ▼				
Nominal Range (degrees)	0 - 30	0 - 60	0 - 90	0 - 120



Ordering Information

Order by model number followed by range designator.
 Custom flanges and hole patterns available upon special request. Please consult factory.
 For accessories, please visit our website at www.macrosensors.com.



Innovators in Position Sensing

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