RSYN Series

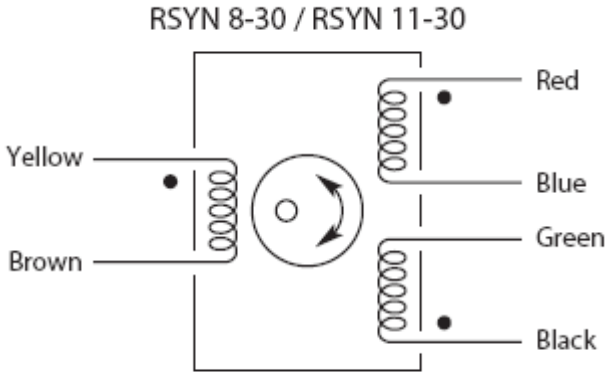
RSYN angular position sensors are non-contact transducers that incorporate proprietary rotor and coil designs. Their basic construction eliminates items such as slip rings, rotor windings, contact brushes or wipers that degrade over time and impair reliability. At the same time the coil design achieves extraordinarily high output and low noise.

RSYNs offer enhanced tolerance to shock and vibration. Shock survival to 30g with an 11 ms half-sine form and vibration tolerance to 20g over 15 to 2000 Hz make these transducers the obvious choice where severe conditions are expected. RSYNs are also resistant to humidity and salt mist. Excellent performance over a temperature range of -67° to 221°F (-55° to 105 °C) provides a significant advantage over comparable rotary sensors.

RSYN angular position sensors are compact. They are available in two sizes: the RSYN-8-30 which is 0.750 inches (19.05 mm) in diameter, and the RSYN-11-30 which is 1.06 inches (26.92 mm) in diameter. The coil design comprises a primary and two secondary windings all placed in the stator. There are no windings in the rotor. The secondary windings act as pickup coils detecting the flux change caused by rotation of the rotor.

The stator core is a lamination stack of highly permeable magnetic alloy material and the rotor is made of the same material. A very small air gap separates these components. This combination provides for an “all-iron” flux path that provides for very high efficiency resulting in a very high signal to noise ratio and a very low temperature coefficient of scale factor. The linear a.c. output represents the rotor shaft angle position providing the user with exceptional resolution even over very small angular ranges. Both models offer the flexibility of six output leads to provide for a variety of connection schemes. Both models are factory calibrated over ±30°. They may be over ranged to ±35°, a total of 70° if necessary.

wiring



Connect Green to Blue for differential output

APPLICATIONS

Long life and high reliability in aggressively hostile environments such as:

- Rotary Valve Position for Process Industries
- Position Feedback of Head Box Spinnerets’ for Paper or Plastic
- Hydrostatic Transmissions for Heavy Off Road Vehicles
- Rudder Position on Boats

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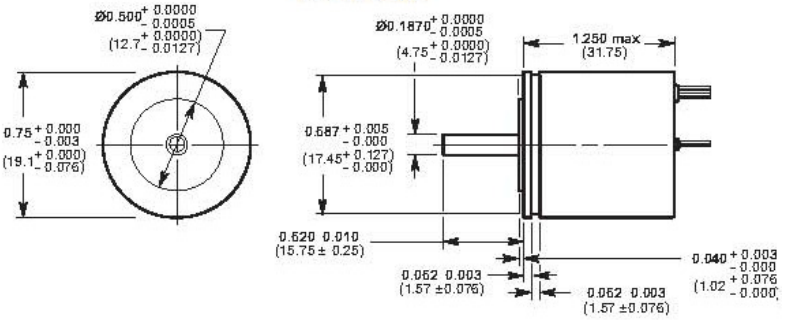
RSYN Series

SPECIFICATIONS	RSYN 8-30	RSYN 11-30
Range	±30°	±30°
Input Voltage (nominal)	7.5 V rms	7.5 V rms
Input Frequency	3 kHz	3 kHz
Primary DCR (nominal)	62 Ohms	46 Ohms
Secondary DCR (nominal)	92 Ohms	53 Ohms
Input Impedance	424 Ohms (@ null)	270 Ohms (@ null)
Output Impedance	341 Ohms (@ full scale)	199 Ohms (@ full scale)
Phase Shift	+5°	+7°
Sensitivity	0.013 ±5% V/V/Deg	0.011 ±5% V/V/Deg
Linearity	±0.5 % of full scale output	±0.5% of full scale output
Operating Temperature Range	-67°F to 221°F (-55°C to 105°C)	-67°F to 221°F (-55°C to 105°C)
Temperature Coefficient of FS	0.02%/°C	0.02%/°C
Null Voltage	0.5% of full scale output	0.5% of full scale output
Shock, 3 axes, ms. half sine	30g	30g
Vibration, 3 axes, random, 15 to 2000 Hz	20g	15g
Torque	0.06 in-oz (4 gm-cm)	0.06 in-oz (4 gm-cm)
Weight	1.58 oz (45 gm)	2.3 oz (65 gm)
Bearings, matched and preloaded	ABEC 3	ABEC 3
Axial Shaft Bearing Load Capability	10 lbs (4.54 kg)	10 lbs (4.54 kg)
Radial Shaft Bearing Load Capability	10 lbs (4.54 kg)	10 lbs (4.54 kg)

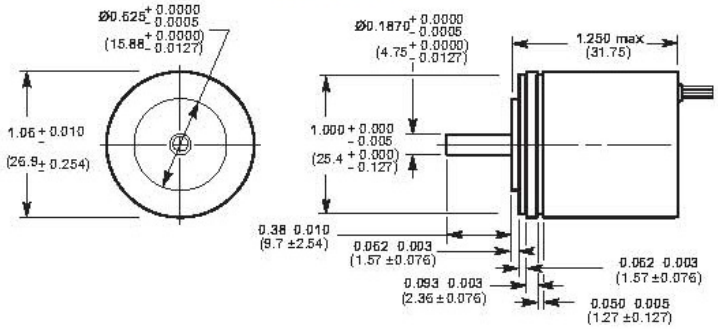
dimensions

in (mm)

RSYN-8-30



RSYN-11-30



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