R11X-J12/5 Specification Sheet

DESCRIPTION

Designed for reliable operation in the harshest industrial environments, the R11X-J12/5 resolver can be used in a wide range of space critical applications where environmental sealing is not needed or can be provided by other means. If environmental sealing is required, contact AMCI for more options.

The resolver is a passive transducer that does not require sensitive electronics or optics to sense the angular position of the shaft. In many ways, a resolver can be thought of as a specialized transformer, and it is manufactured with similar components. Resolvers are primarily made up three precision assemblies of copper wire wound on laminations that are then coated and honed to exacting tolerances. These assemblies, the rotary transformer, rotor, and stators, are then encased in a stainless steel body. The simplicity of the design and inherent ruggedness of the materials yields a position sensor that can survive conditions no other sensor can.

Resolvers are absolute sensors and will not "lose count" if the shaft is rotated with power removed. Another advantage of the resolver is the fact that it is a ratiometric device. This means the ratio of the two return signals is important, not their actual values. Any changes in the resolver's characteristics, such as those caused by aging, or its environment, such as fluctuations in temperature and humidity, or operating frequency and voltage, are ignored.

Due to the small shaft size a flexible coupler must be used when connecting the resolver to your machinery.

Note that the R11X-J12/5 resolver is directly compatible with most AMCI electronics.

DIMENSIONAL DRAWING

(All dimensions are in millimeters unless otherwise noted.)

( ) = Dimensions in millimeters

28 AWG Teflon insulated
10" (25 cm) minimum length

LEADERS IN ADVANCED CONTROL PRODUCTS
R11X-J12/3 Specification Sheet

**SPECIFICATIONS**

**Electrical:**
- Input Voltage: 7.0 V
- Input Freq: 5000 Hz
- Primary: Rotor
- Input Current: 23.0 mA max.
- Input Power: 90 mW max.
- Output Voltage: 6.65 V nom.
- Trans. Ratio: 0.95 ± 5%
- $Z_{ro}$ (Ω): 240 + j245
- $Z_{rs}$ (Ω): 110 + j173
- $Z_{so}$ (Ω): 412 + j590
- $Z_{ss}$ (Ω): 170 + j394
- DC Rotor Res.: 16 Ω
- DC Stator Res.: 41 Ω
- Phase Shift: -6° leading max.
- Null Voltage: 15 mV total max.
- Accuracy: ±5 min. max.

**Mechanical:**
- Shaft Load: 6 lbs. radial¹
  - 3 lbs. axial³
- Starting Torque: 0.08 oz-in @ 25°C
- Rotor Moment: $0.51 \times 10^4$ oz-in-sec²
- Weight: 115 g (4.04 oz)
- Enviro. Rating: IP40 / NEMA 1
- † At the recommended maximum loads, average bearing life is $2 \times 10^7$ revolutions. (L10 rating)

**Environmental:**
- Operating
  - Temperature: -40°C to +125°C
  - -40°F to +257°F
- Shock: 50 g’s for 11 ms
- Vibration: 15 g’s to 2000 Hz

**SCHEMATIC**

**SAMPLE INSTALLATION**

The picture below shows how to connect a R11X-J12/5 to AMCI’s standard cable.

Shields of the cable must not be connected to chassis ground except at the Controller. Strip the shields back to inside the cable.

Wires from R11X-J12/5 Resolver

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