RVIT-15-60/RVIT-15-120i RVITs

DC-Operated Rotary Variable Inductance Transducers

DESCRIPTION

RVITs are DC operated noncontact rotary transducers. The RVIT proprietary design incorporates a set of printed circuit coils and a conductive spoiler to achieve superior performance and low cost. During operation, the conductive spoiler rotates with the transducer shaft, altering the magnetic field generated by the printed circuit coils. The resulting unbalance is precisely measured using a patented autoplexing circuit. This signal is then converted to a linear DC output signal that is directly proportional to the angle of the rotor shaft.

The predominantly digital circuit is very resistant to environmental disturbances and is ideally compatible for use with most digital electronics. For original equipment manufacturers who desire a microprocessor interface, a pulse width modulated output can be supplied as a special order option. Other specialized options for volume applications include, regulated single or bipolar excitation, extended operating ranges, and custom calibration.

RVITs are available with a choice of standard face mounting or optional four hole flange mounting. A shaft seal is available with flange mounting for applications where contamination is critical. RVITs offer wide operating temperature range, infinite resolution, and a virtually infinite rotational life.

RVIT-15-60 and RVIT-15-120i

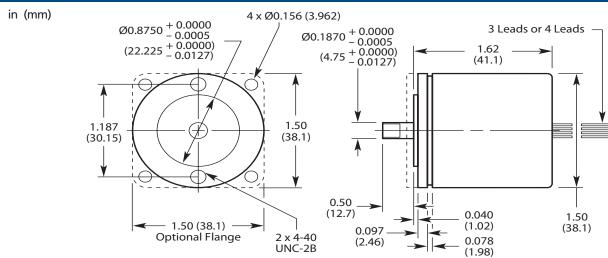
The RVIT-15-60 and RVIT-15-120i rotary transducers are available in a variety of versions which provide a range of supply and output configurations.



Calibrated outputs of ±3 VDC and 4-20 mA offer ideal flexibility for specialized OEM designs where unique power supply and interfacing requirements exist. Other specialized ranges, internal regulation and custom calibrated outputs are available for special order.

The standard RVIT 15-60 transducer emulates a potentiometer in that any change in input voltage results in a proportional change in output voltage. Although this output is ratiometric, the RVIT-15-60 offers a considerably higher scale factor of 50 mV per degree over an extended range of ± 60 degrees. In addition, the noncontact design of the RVIT provides virtually infinite rotational life and extremely high accuracy of $\pm 0.25\%$ FS.

dimensions

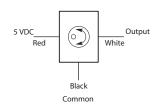


RVIT-15-60/RVIT-15-120i RVITs

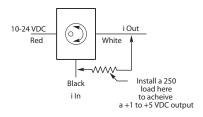
Input Voltage (nom) +5 VDC 10-28 VDC(Not to exceed 30) Scale Factor 0.050 UOM (ie 50mV/degree or 0.050 Volts/degree) 0.13 mA/° Output Voltage (nom) ±3 VDC +1 to +5 VDC (with 25 road) Input Current (max) 14 mA 41 mA Output Umpedance <1 Ohms -250 Ohms Frequency Response 25 Hz @ -3 dB 25 Hz @ -3 dB Linearity Error ±0.25% of full scale output ±0.25% of full scale output Nonrepeatability & Hysteresis (max) ±0.1% of full scale range output ±0.1% of full scale range output Storage Temperature Range -67° to 250° f (-55° C to 125° C) -13° f to 185° f (-25° C to 85° C) Operating Temperature Range -13° f to 185° f (-25° C to 85° C) -13° f to 185° f (-25° C to 85° C) Temperature Coefficient of FS ±0.02% of F5/5° C to 70° C) ±0.02% of F5/20° f to 160° f (±0.04% of F5/-5° C to 70° C) (±0.04% of F5/-5° C to 70° C) Lead Wires 26 AWG, PVC insulation, PVC jacket, 26 AWG, PVC insulation, PVC jacket, 3 or 4 wire depending on configuration, 3 or 4	pecifications	RVIT-15-60	RVIT15-120i
Scale Factor 0.050 UOM (ie 50mV/degree or 0.050 Volts/degree) 0.13 mA/° Output Voltage (nom) 14 mA 41 mA Output Current (max) 14 mA Output Impedance 1 0 hms Frequency Response 25 Hz @ -3 dB Linearity Error \$0.25% of full scale output \$0.25% of full scale output \$0.25% of full scale output \$0.25% of full scale range \$0.25% of f	Full Range	±60°	0 to 120°
Output Voltage (nom) ±3 VDC +1 to +5 VDC (with 25 load) Input Current (max) 14 mA 41 mA Output Current (max) 5 mA 4-20 mA Output Impedance <1 Ohms	Input Voltage (nom)	+5 VDC	10-28 VDC(Not to exceed 30)
Input Current (max) 14 mA 41 mA Output Current (max) 5 mA 4-20 mA Output Impedance <1 Ohms Frequency Response 25 Hz @ -3 dB Linearity Error ±0.25% of full scale output **Nonrepeatability & Hysteresis (max) **Departure Range -67°F to 250°F (-55°C to 125°C) Operating Temperature Range -13°F to 185°F (-25°C to 85°C) Temperature Coefficient of FS ±0.02% of FS/20°F to 160°F ±0.02% of FS/20°F to 160°F ±0.04% of FS/-5°C to 70°C) Lead Wires -26 AWG, PVC insulation, PVC jacket, 3 or 4 wire depending on configuration, minimum 12 inch long Torque -12 in-oz (8 gm-cm) Weight -247 oz (70 gm) Matched and preloaded ABEC 3	Scale Factor	0.050 UOM (ie 50mV/degree or 0.050 Volts/degree)	0.13 mA/°
Output Current (max) 5 mA 4-20 mA Output Impedance <1 Ohms <250 Ohms Frequency Response 25 Hz @ -3 dB 25 Hz @ -3 dB Linearity Error	Output Voltage (nom)	±3 VDC	+1 to +5 VDC (with 25 load)
Output Impedance <1 Ohms <250 Ohms Frequency Response 25 Hz @ -3 dB 25 Hz @ -3 dB Linearity Error ±0.25% of full scale output ±0.25% of full scale output \$0.25% of full scale output \$0.25% of full scale range	Input Current (max)	14 mA	41 mA
Frequency Response 25 Hz @ -3 dB Linearity Error ±0.25% of full scale output ±0.25% of full scale output Nonrepeatability & Hysteresis (max) ±0.1% of full scale range output ±0.1% of full scale range output Storage Temperature Range -67°F to 250°F (-55°C to 125°C) Operating Temperature Range -13°F to 185°F (-25°C to 85°C) Temperature Coefficient of FS ±0.02% of FS/20°F to 160°F (±0.04% of FS/-5°C to 70°C) Lead Wires 26 AWG, PVC insulation, PVC jacket, 3 or 4 wire depending on configuration, minimum 12 inch long Torque 0.12 in-oz (8 gm-cm) Mounting Size 15 servo or flange mount BU-ORD Bearings Matched and preloaded ABEC 3 Shaft Diameter Axial Shaft Bearing Load Capability 10 lbs (4.54 kg)	Output Current (max)	5 mA	4-20 mA
Linearity Error ±0.25% of full scale output ±0.25% of full scale output Nonrepeatability & Hysteresis (max) ±0.1% of full scale range output ±0.1% of full scale range output Storage Temperature Range -67°F to 250°F (-55°C to 125°C) -13°F to 185°F (-25°C to 85°C) Operating Temperature Range -13°F to 185°F (-25°C to 85°C) -13°F to 185°F (-25°C to 85°C) Temperature Coefficient of FS ±0.02% of FS/20°F to 160°F ±0.02% of FS/20°F to 160°F (±0.04% of FS/-5°C to 70°C) Lead Wires 26 AWG, PVC insulation, PVC jacket, 26 AWG, PVC insulation, PVC jacket, 3 or 4 wire depending on configuration, 3 or 4 wire depending on configuration, minimum 12 inch long Torque 0.12 in-oz (8 gm-cm) 0.12 in-oz (8 gm-cm) Weight 2.47 oz (70 gm) 2.47 oz (70 gm) Mounting Size 15 servo or flange mount BU-ORD Size 15 servo or flange mount BU-ORD Bearings Matched and preloaded ABEC 3 Shaft Diameter 3/16 in (4.76 mm) Axial Shaft Bearing Load Capability 10 lbs (4.54 kg) 10 lbs (4.54 kg)	Output Impedance	<1 Ohms	<250 Ohms
Nonrepeatability & Hysteresis (max) ±0.1% of full scale range output ±0.1% of full scale range output Storage Temperature Range -67°F to 250°F (-55°C to 125°C) Operating Temperature Range -13°F to 185°F (-25°C to 85°C) Temperature Coefficient of FS ±0.02% of FS/20°F to 160°F (±0.04% of FS/-5°C to 70°C) Lead Wires 26 AWG, PVC insulation, PVC jacket, 3 or 4 wire depending on configuration, minimum 12 inch long Torque 0.12 in-oz (8 gm-cm) Weight 2.47 oz (70 gm) Size 15 servo or flange mount BU-ORD Bearings Matched and preloaded ABEC 3 Matched and preloaded ABEC 3 Shaft Diameter Axial Shaft Bearing Load Capability 10 lbs (4.54 kg) 10 lbs (4.54 kg)	Frequency Response	25 Hz @ -3 dB	25 Hz @ -3 dB
Storage Temperature Range -67°F to 250°F (-55°C to 125°C) -13°F to 185°F (-25°C to 85°C) Operating Temperature Range -13°F to 185°F (-25°C to 85°C) -13°F to 185°F (-25°C to 85°C) Temperature Coefficient of FS ±0.02% of FS/20°F to 160°F ±0.02% of FS/20°F to 160°F (±0.04% of FS/-5°C to 70°C) (±0.04% of FS/-5°C to 70°C) Lead Wires 26 AWG, PVC insulation, PVC jacket, 3 or 4 wire depending on configuration, 3 or 4 wire depending on configuration, minimum 12 inch long minimum 12 inch long Torque 0.12 in-oz (8 gm-cm) 0.12 in-oz (8 gm-cm) Weight 2.47 oz (70 gm) 2.47 oz (70 gm) Mounting Size 15 servo or flange mount BU-ORD Size 15 servo or flange mount BU-OB Bearings Matched and preloaded ABEC 3 Matched and preloaded ABEC 3 Shaft Diameter 3/16 in (4.76 mm) 3/16 in (4.76 mm) Axial Shaft Bearing Load Capability 10 lbs (4.54 kg) 10 lbs (4.54 kg)	Linearity Error	±0.25% of full scale output	±0.25% of full scale output
Operating Temperature Range -13°F to 185°F (-25°C to 85°C) -13°F to 185°F (-25°C to 70°C) -13°F to 185°F (-25°C to 85°C) -13°F to 185°F (-25°C to 70°C) -15°F to 160°F -10°F to 1	Nonrepeatability & Hysteresis (max)	±0.1% of full scale range output	±0.1% of full scale range output
Temperature Coefficient of FS ±0.02% of FS/20°F to 160°F ±0.04% of FS/-5°C to 70°C) Lead Wires 26 AWG, PVC insulation, PVC jacket, 3 or 4 wire depending on configuration, minimum 12 inch long Torque 0.12 in-oz (8 gm-cm) Weight 2.47 oz (70 gm) Mounting Size 15 servo or flange mount BU-ORD Bearings Matched and preloaded ABEC 3 Shaft Diameter 3 view 160°F ±0.02% of FS/20°F to 70°C) Each Wire depending on configuration, as or 4 wire depending on configuration, as o	Storage Temperature Range	-67°F to 250°F (-55°C to 125°C)	-13°F to 185°F (-25°C to 85°C)
(±0.04% of FS/-5°C to 70°C) Lead Wires 26 AWG, PVC insulation, PVC jacket, 3 or 4 wire depending on configuration, minimum 12 inch long Torque 0.12 in-oz (8 gm-cm) Weight 2.47 oz (70 gm) Mounting Size 15 servo or flange mount BU-ORD Bearings Matched and preloaded ABEC 3 Shaft Diameter (±0.04% of FS/-5°C to 70°C) AWG, PVC insulation, PVC jacket, 26 AWG, PVC insulation, PVC jacket	Operating Temperature Range	-13°F to 185°F (-25°C to 85°C)	-13°F to 185°F (-25°C to 85°C)
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3 or 4 wire depending on configuration, minimum 12 inch long minimum 12 inch long Torque 0.12 in-oz (8 gm-cm) 0.12 in-oz (8 gm-cm) Weight 2.47 oz (70 gm) 2.47 oz (70 gm) Mounting Size 15 servo or flange mount BU-ORD Size 15 servo or flange mount BU-ORD Bearings Matched and preloaded ABEC 3 Matched and preloaded ABEC 3 Shaft Diameter 3/16 in (4.76 mm) 3/16 in (4.76 mm) Axial Shaft Bearing Load Capability 10 lbs (4.54 kg) 10 lbs (4.54 kg)		(±0.04% of FS/-5°C to 70°C)	(±0.04% of FS/-5°C to 70°C)
minimum 12 inch long minimum 12 inch long Torque 0.12 in-oz (8 gm-cm) 0.12 in-oz (8 gm-cm) Weight 2.47 oz (70 gm) 2.47 oz (70 gm) Mounting Size 15 servo or flange mount BU-ORD Size 15 servo or flange mount BU-O Bearings Matched and preloaded ABEC 3 Matched and preloaded ABEC 3 Shaft Diameter 3/16 in (4.76 mm) 3/16 in (4.76 mm) Axial Shaft Bearing Load Capability 10 lbs (4.54 kg) 10 lbs (4.54 kg)	Lead Wires	26 AWG, PVC insulation, PVC jacket,	26 AWG, PVC insulation, PVC jacket,
Torque 0.12 in-oz (8 gm-cm) 0.12 in-oz (8 gm-cm) Weight 2.47 oz (70 gm) 2.47 oz (70 gm) Mounting Size 15 servo or flange mount BU-ORD Size 15 servo or flange mount BU-O Bearings Matched and preloaded ABEC 3 Matched and preloaded ABEC 3 Shaft Diameter 3/16 in (4.76 mm) 3/16 in (4.76 mm) Axial Shaft Bearing Load Capability 10 lbs (4.54 kg) 10 lbs (4.54 kg)		3 or 4 wire depending on configuration,	3 or 4 wire depending on configuration
Weight2.47 oz (70 gm)2.47 oz (70 gm)MountingSize 15 servo or flange mount BU-ORDSize 15 servo or flange mount BU-ORDBearingsMatched and preloaded ABEC 3Matched and preloaded ABEC 3Shaft Diameter3/16 in (4.76 mm)3/16 in (4.76 mm)Axial Shaft Bearing Load Capability10 lbs (4.54 kg)10 lbs (4.54 kg)		minimum 12 inch long	minimum 12 inch long
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Shaft Diameter 3/16 in (4.76 mm) 3/16 in (4.76 mm) Axial Shaft Bearing Load Capability 10 lbs (4.54 kg) 10 lbs (4.54 kg)	Mounting	Size 15 servo or flange mount BU-ORD	Size 15 servo or flange mount BU-ORD
Axial Shaft Bearing Load Capability 10 lbs (4.54 kg) 10 lbs (4.54 kg)	Bearings	Matched and preloaded ABEC 3	Matched and preloaded ABEC 3
	Shaft Diameter	3/16 in (4.76 mm)	3/16 in (4.76 mm)
Padial Chaft Passing Load Canability 10 lbs (4.54 kg)	Axial Shaft Bearing Load Capability	10 lbs (4.54 kg)	10 lbs (4.54 kg)
Radial Shart 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)
Casing Material Aluminum Aluminum	Casing Material	Aluminum	Aluminum

wiring

RVIT-15-60



RVIT-15-120i



ordering information

Specify by model number.

Model Number	Size	Range
RVIT-15-60	15	±60°
RVIT-15-120i	15	0 to 120°



R-Flex coupler available separately.

