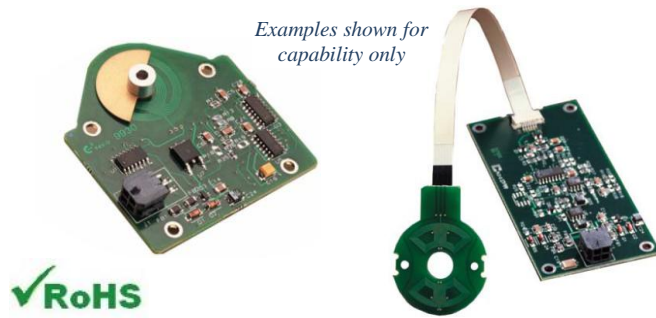


# RVIT-Z Series - OEM Rotary Position Sensors



- OEM low cost custom designs
- Absolute rotary position sensing
- Non-contact technology
- Infinite angular cycle life
- $\pm 60$  degree linear sensing range
- Unipolar or bipolar VDC operation
- PWM output available
- Form factor flexibility
- Remote sensing capability

## DESCRIPTION

The **RVIT-Z Series** from Measurement Specialties Inc. are flat, non-contact, angular displacement sensors, specifically designed to meet the unique physical and electrical requirements of each individual OEM application. The final product is optimized to provide maximum performance at the lowest possible installed cost.

The unique design of the RVIT-Z incorporates our proprietary RVIT (Rotary Variable Inductive Transducer) technology and the signal conditioning circuitry on a single printed circuit board. The RVIT-Z provides an ultra low profile, high accuracy, and infinite resolution solution for rotary and angular measurements in OEM applications. The absence of wipers, brushes, slip rings or magnetic materials eliminates wear, static friction, hysteresis and electrical noise while providing a very low rotor moment of inertia.

Capable of absolute rotary measurement over  $\pm 60$  degrees and extended operation up to  $\pm 75$  degrees (with increased non-linearity), the RVIT-Z provides unsurpassed performance over an extended operating temperature range. Factory calibration and automated testing assures a non-linearity of less than  $\pm 0.5\%$  of full range ( $\pm 60$  degrees). The RVIT-Z provides a high degree of design flexibility for optimum integration into customer applications. Where remote sensing is required, the RVIT-Z can be tailored allowing the rotary sensing element to remain separated from the electronic circuitry by as much as 12 inches.

Measurement Specialties, Inc. (NASDAQ MEAS) offers many other types of rotary and linear position sensors, as well as many other sensor types and related signal conditioning instrumentation. Data sheets can be downloaded at: <http://www.meas-spec.com/datasheets.aspx>

*MEAS acquired Schaevitz Sensors and the **Schaevitz**® trademark in 2000*

## FEATURES

- $\pm 75$  degree total sensing range
- Numerous input and output configurations
- Remote sensing up to 12" away
- Very low rotor moment of inertia
- Extremely light weight
- Low profile design
- Easy integration into applications
- Lowest installed cost

## APPLICATIONS

- Rotary valve position
- Pump swash plate controls
- Robotics
- Pedal/Throttle position
- HVAC vane position control
- Transmission position switch
- Medical equipment
- Mail sorting machines
- Joysticks
- Viscometers
- ATM money dispensing systems

# RVIT-Z Series - OEM Rotary Position Sensors

## PERFORMANCE SPECIFICATIONS

NOTE: The specifications listed below are general capabilities, with the types of input and output configurations that are commonly available. The exact capabilities and performance specifications for a particular design will be defined for each application.

ELECTRICAL AND ENVIRONMENTAL SPECIFICATIONS	
Linear angular range	±60 degrees
Maximum angular range	±75 degrees (with increased non-linearity)
Input voltage options	5VDC (regulated), 10 to 28VDC (unregulated), ±15VDC (unregulated)
Input current	18mA (max)
Output options	1 to 4VDC, ±2.5VDC, ±10VDC (for ±15VDC input only) Pulse Width Modulation: mark/space ratio PWM output, TTL load capable
Sensitivity	Factory adjustable
Temp coefficient of output	0.011% of FSO per °F [0.02% of FSO per °C] over operating temperature range
Output current	2mA
Output impedance	1 Ω maximum
Non-linearity	±0.50% of FR (±60 degrees)
ENVIRONMENTAL SPECIFICATIONS & MATERIALS	
Operating temperature	-13°F to +185°F [-25°C to 85°C]
Mechanical angular range	360 degrees (no stops)
Mounting	Four #4-40 screws; others

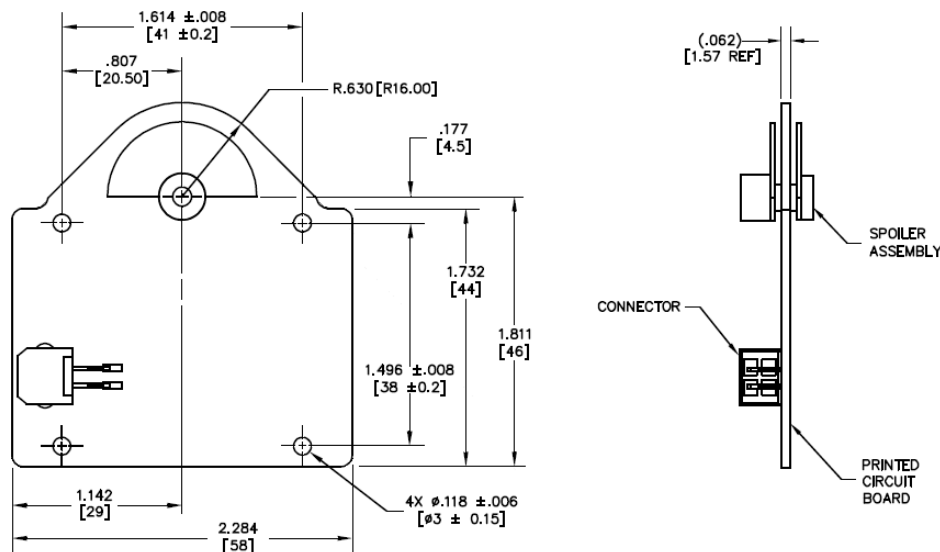
**Notes:**

All values are nominal unless otherwise noted

FR (Full Range) is the angular range, end to end; 2x $A^{\circ}$  for  $\pm A^{\circ}$  angular range

FSO (Full Scale Output) is the largest absolute value of the outputs measured at the range ends

## DIMENSIONS (EXAMPLE ONLY)



Dimensions are in inch [mm]  
Minimum area requirement 2 square inches, double sided PCB

# RVIT-Z Series - OEM Rotary Position Sensors

---

## ORDERING INFORMATION

---

Please consult the factory to discuss your application. RVIT-Z OEM samples for capability demonstration are available to qualified customers.

---

## TECHNICAL CONTACT INFORMATION

---

NORTH AMERICA	EUROPE	ASIA
Measurement Specialties, Inc. 1000 Lucas Way Hampton, VA 23666 United States Phone: +1-800-745-8008 Fax: +1-757-766-4297 Email: <a href="mailto:sales@meas-spec.com">sales@meas-spec.com</a> Web: <a href="http://www.meas-spec.com">www.meas-spec.com</a>	MEAS Deutschland GmbH Hauer 13 D-44227 Dortmund Germany Phone: +49-(0)231-9740-0 Fax: +49-(0)231-9740-20 Email: <a href="mailto:info.de@meas-spec.com">info.de@meas-spec.com</a> Web: <a href="http://www.meas-spec.com">www.meas-spec.com</a>	Measurement Specialties China Ltd. No. 26, Langshan Road High-tech Park (North) Nanshan District, Shenzhen 518057 China Phone: +86-755-33305088 Fax: +86-755-33305099 Email: <a href="mailto:info.cn@meas-spec.com">info.cn@meas-spec.com</a> Web: <a href="http://www.meas-spec.com">www.meas-spec.com</a>

The information in this sheet has been carefully reviewed and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Furthermore, this information does not convey to the purchaser of such devices any license under the patent rights to the manufacturer. Measurement Specialties, Inc. reserves the right to make changes without further notice to any product herein. Measurement Specialties, Inc. makes no warranty, representation or guarantee regarding the suitability of its product for any particular purpose, nor does Measurement Specialties, Inc. assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Typical parameters can and do vary in different applications. All operating parameters must be validated for each customer application by customer's technical experts. Measurement Specialties, Inc. does not convey any license under its patent rights nor the rights of others.