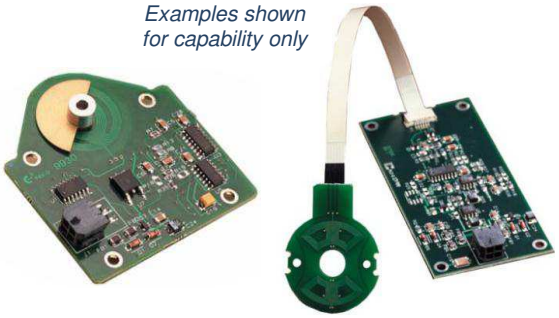
Examples shown for capability only



RoHS

RVIT-Z SERIES

OEM Rotary Position Sensors

SPECIFICATIONS

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

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 ±60 degrees and extended operation up to ±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 ±0.5% of full range (±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.

FEATURES

- ±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

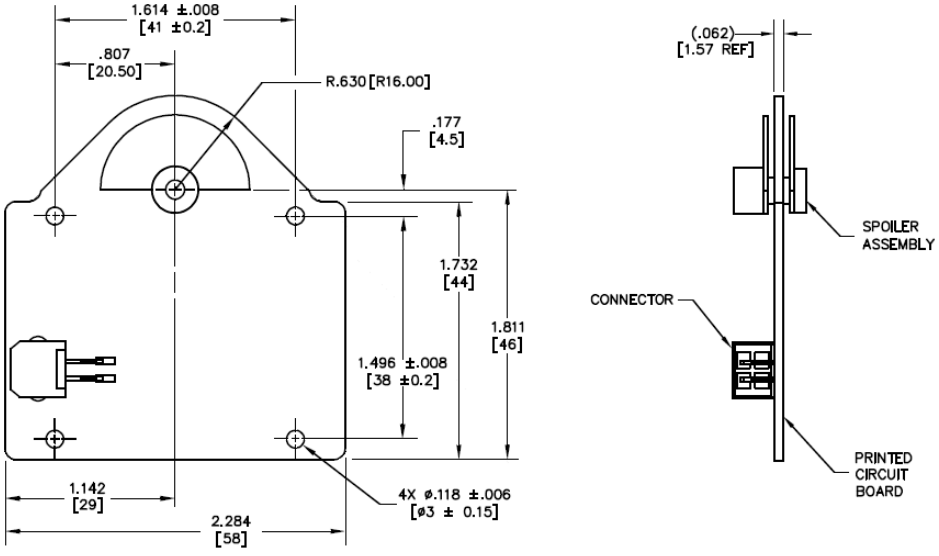
PERFORMANCE SPECIFICATIONS

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 ºF [0.02% of FSO per ºC] 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; 2xAº for ±Aº 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

ORDERING INFORMATION

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