The ZMD Series miniature length sensor is compact in size and easy-to-use, designed for light to medium duty sensing applications. It features a built-in spring-loaded torsion arm that provides a simple-to-adjust torsion load, allowing the unit to be mounted in almost any orientation, including upside down. Using a 152 mm (6") circumference wheel, the ZMD can be used on almost any surface, while operating at speeds up to 3000 feet per minute. The housing is a durable, conductive composite material that will eliminate static build up. Whether you need to measure speed, position, or distances, the ZMD series sensor is the ideal solution.

### SPECIFICATIONS

#### ELECTRICAL

**Input Voltage:** 4.75 to 28 Vdc maximum for temperatures up to 85°C; 4.75 to 24 Vdc for temperatures between 85 to 100°C (185 to 212°F), reverse polarity protected

**Input Current:** 100 mA max (65 mA typical) with no output load

**Outputs:** NPN open collector transistor, 20 mA maximum current

**Maximum Frequency:** 200 KHz standard

**Noise Immunity:** Tested to BS EN61000-6-2; BS EN50081-2; BS EN61000-4-2; BS EN61000-4-3; BS EN61000-4-6; BS EN500811 [Tested with 2 m (6.6') cable]

**Symmetry:** 180° (±18°) electrical

**Quad. Phasing:** 90° (±22.5°) electrical

**Minimum Edge Sep:** 67.5° electrical

**Accuracy:** Within 0.017° mechanical or 1 arc-minute from true position (for PPR>189)

#### MECHANICAL

**Maximum Mechanical Speed:** 6000 RPM. Higher speeds may be achievable, contact the factory

**Shaft Material:** Stainless Steel

**Shaft Tolerance:** +0.0000/-0.0004" (+0.000/-0.010 mm)

**Radial Shaft Load:** 5 lb. maximum rated load of 2 to 3 lb for bearing life of 1.2 x 10 10 revolutions

**Axial Shaft Load:** 5 lb. maximum rated load of 2 to 3 lb for bearing life of 1.2 x 10 10 revolutions

**Starting Torque:** 0.05 oz-in IP50; 0.4 oz-in IP65

**Electrical Connection:** 2 m (6.6") cable, (foil and braid shield, 24 AWG conductors). Drain wire internally connected to case

**Mounting:** Pivot Shaft can be mounted from either side of the housing and is field reversible

**Housing:** Stainless steel fibers in a high temperature nylon composite

**Weight:** 142 g (5 oz) typical

#### ENVIRONMENTAL

**Operating Temperature:** -20 to 85°C (-4 to 185°F)

**Storage Temperature:** -25 to 85°C (-13 to 185°F)

**Humidity:** 98% RH non-condensing

**Vibration:** 10 g @ 58 to 500 Hz

**Shock:** 80 g @ 11 msec duration

**Sealing:** IP50
Open Collector Output Wiring

The ZMD Series length sensors have open collector outputs. An open collector output brings the uncommitted collector of the encoder switching device to the external world. Because the collector element is not associated with the sensor supply voltage, the sensor output collector may be “pulled up” to external voltages different than the encoder supply voltage (30 Vdc maximum). NPN open collector outputs are current sinking devices. An output signal will not be generated unless a pull-up resistor is connected from the open-collector to the positive side of an external supply. The same supply can be used for powering the unit and for the pull-up resistor.

Mounting Bracket

This accessory angle mounting bracket allows for a variety of mounting positions and makes installation of the ZMD even easier.

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>CABLE WIRE COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>+Vdc</td>
<td>Red</td>
</tr>
<tr>
<td>Com</td>
<td>Black</td>
</tr>
<tr>
<td>A</td>
<td>White</td>
</tr>
<tr>
<td>B</td>
<td>Green</td>
</tr>
<tr>
<td>Shield</td>
<td>Bare</td>
</tr>
</tbody>
</table>

To Order Visit omega.com/zmd_series for Pricing and Details

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU-ZMD0250B</td>
<td>Miniature length sensor with quadrature output, 250 ppr.</td>
</tr>
<tr>
<td>AU-ZMD1000B</td>
<td>Miniature length sensor with quadrature output, 1000 ppr.</td>
</tr>
<tr>
<td>AU-W100060F</td>
<td>152 mm (6&quot;) circumference urethane measuring wheel</td>
</tr>
<tr>
<td>AU-W100060K</td>
<td>152 mm (6&quot;) circumference knurled measuring wheel</td>
</tr>
<tr>
<td>AU-RPGMB002</td>
<td>Mounting bracket</td>
</tr>
</tbody>
</table>

Ordering Example: AU-ZMD0250B miniature length sensor with 250 ppr and AU-W100060K 6" circumference knurled measuring wheel. AU-ZMD1000B quadrature length sensor with 1000 ppr, AU-W100060F 6" urethane measuring wheel, AU-RPGMB002 mounting bracket.