

# SHAFT SERVO MOUNT ROTARY PULSE GENERATOR

## HIGH PRECISION SHAFT ENCODER

**NEW**

### ZSD Series



- High Precision Accuracy
- NPN Open Collector Output
- 6.33 mm (0.25") Shaft Diameter
- Quadrature Outputs with Indexing

The ZSD Series encoder is ideal for applications requiring a miniature, high precision, low cost encoder, designed with all metal construction for years of trouble-free operation.

The NPN Open Collector outputs are each current limited to 20 mA. The outputs are standard quadrature with index, available in 100 or 1000 pulses per shaft revolution. The quadrature separation is typically 90 electrical degrees. Output A leads output B for clockwise rotation of the encoder shaft.

### OPEN COLLECTOR OUTPUT WIRING

The ZSD 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 (30 Vdc maximum) different than the encoder supply voltage. 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.

### SPECIFICATIONS

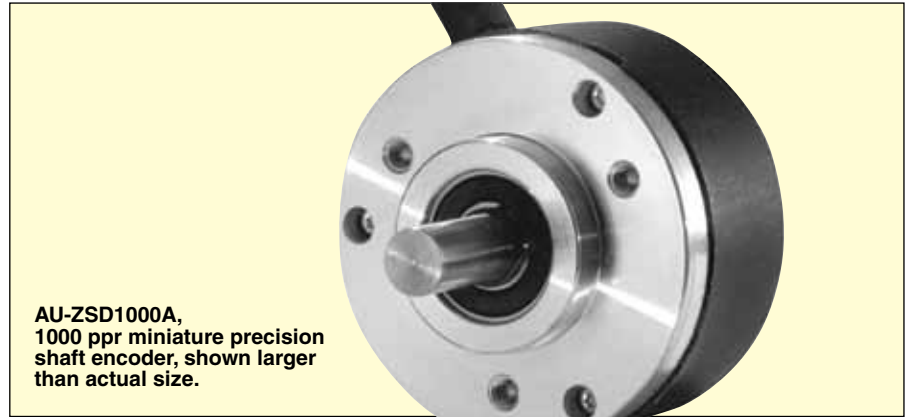
#### ELECTRICAL

**Supply Voltage:** 4.75 to 28 Vdc, 100 mA maximum

**Outputs:** NPN open collector outputs, 20 mA maximum

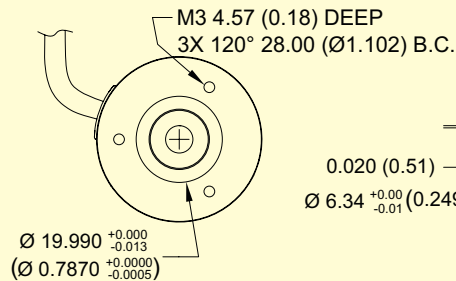
**Maximum Frequency:** 200 KHz

**Symmetry:** 180° (±18°) electrical



#### Dimensions: mm (inch)

CABLE LENGTH  
914.4 (36) STANDARD



**Quad Phasing:** 90° (±22.5°) electrical  
**Minimum Edge Separation:** 67.5° electrical

**Accuracy:** Within 0.017° mechanical

**MECHANICAL**

**Maximum Speed:** 8000 RPM

**Shaft Size:** 6.33 mm (0.25")

**Radial Shaft Load:** 2.25 kg (5 lbs)

**Axial Shaft Load:** 2.25 kg (5 lbs)

**Starting Torque:** 2.82 N-mm (0.4 oz-in)

**Moment of Inertia:** 4.8 gm-cm<sup>2</sup>

(6.7 x 10<sup>-5</sup> oz-in-sce<sup>2</sup>)

**Electrical Connection:** 914.4 mm (36")

long 24 AWG shielded, braided cable

**Weight:** 85 g (3 oz)

FUNCTION	WIRE COLOR
+Vdc	Red
Common	Black
Data A	White
Data B	Green
Index Z	Orange

#### ENVIRONMENTAL

**Operating Temperature:** -20 to 85°C (-4 to 121°F)

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

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

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

**Sealing:** IP64

**To Order Visit [omega.com/zsd\\_series](http://omega.com/zsd_series) for Pricing and Details**

MODEL NO.	DESCRIPTION
AU-ZSD0100A	100 ppr servo mount rotary encoder
AU-ZSD1000A	1000 ppr servo mount rotary encoder
AU-RPGFC001	Flexible shaft coupling, 25 mm (1") long, 0.250 to 0.250"
AU-RPGFC002	Flexible shaft coupling, 25 mm (1") long, 0.250 to 0.375"
AU-RPGFC005	Flexible shaft coupling, 25 mm (1") long, 0.250 - 6 mm

**Ordering Examples:** AU-ZSD1000A, 1000 ppr shaft mount encoder.

AU-RPGFC001, flexible shaft coupling, 0.250 to 0.250".