

## MODEL ZSD - 0.25" SHAFT STANDARD SERVO MOUNT ROTARY PULSE GENERATOR



### SPECIFICATIONS

#### ELECTRICAL SPECIFICATIONS

- SUPPLY VOLTAGE:** 4.75 to 28 VDC, 100 mA max. with no output load
- OUTPUTS:** NPN Open Collector Transistor,  $V_{OH} = 40$  VDC max.; 20 mA max. current. Incremental - Two square waves in quadrature with Channel A leading Channel B for clockwise rotation.
- MAX. FREQUENCY:** 200 KHz
- INDEX:** NPN Open Collector Transistor,  $V_{OH} = 40$  VDC max.; 20 mA max. current. Once per revolution centered over Output Channel A. Index is a positive going pulse.
- 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
- SYMMETRY:** 180° ( $\pm 18^\circ$ ) electrical
- QUAD PHASING:** 90° ( $\pm 22.5^\circ$ ) electrical
- MIN EDGE SEP:** 67.5° electrical
- ACCURACY:** Within 0.017° mechanical or 1 arc minute from true position (for PPR>189)

#### MECHANICAL SPECIFICATIONS

- MAXIMUM MECHANICAL SPEED:** 8000 RPM
- SHAFT SIZE:** 0.25" (6.33 mm)
- RADIAL SHAFT LOAD:** 5 lbs. max. (2.25 kg)
- AXIAL SHAFT LOAD:** 5 lbs. max. (2.25 kg)
- STARTING TORQUE:** 0.4 oz-in. (2.82 N-mm) IP64
- MOMENT OF INERTIA:**  $6.7 \times 10^{-5}$  oz-in-sec<sup>2</sup> (4.8 gm-cm<sup>2</sup>)
- CABLE CONNECTIONS:**

Cable is 36" (914.4 mm) in length

| FUNCTION | WIRE COLOR |
|----------|------------|
| +VDC     | Red        |
| Common   | Black      |
| Data A   | White      |
| Data B   | Green      |
| Index Z  | Orange     |

- WEIGHT:** 3 oz. (85.0 g)

#### ENVIRONMENTAL SPECIFICATIONS

- OPERATING TEMPERATURE:** -20°C to 85°C
- STORAGE TEMPERATURE:** -25°C to +85°C
- HUMIDITY:** 98% RH non-condensing
- VIBRATION:** 10 g @ 58 to 500 Hz
- SHOCK:** 80 g @ 11 msec duration
- SEALING:** IP64 standard

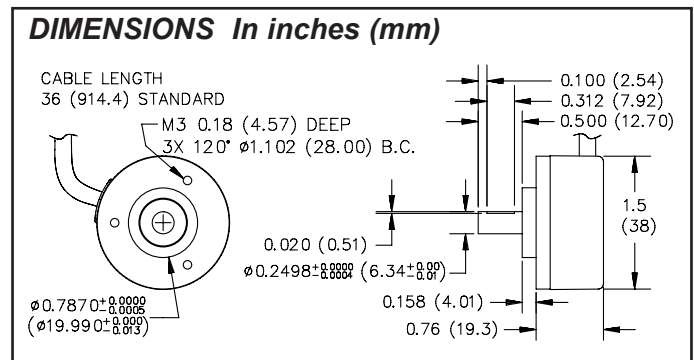
### GENERAL DESCRIPTION

The Model ZSD 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 resolutions up to 2500 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 (40 VDC max.) 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.



### ORDERING INFORMATION

| MODEL NO. | DESCRIPTION  | PPR  | PART NUMBER |
|-----------|--|------|-------------|
| ZSD       | 0.25" Shaft<br>Standard Servo Mount<br>Rotary Pulse Generators | 60   | ZSD0060A    |
|           |  | 100  | ZSD0100A    |
|           |  | 500  | ZSD0500A    |
|           |  | 600  | ZSD0600A    |
|           |  | 1000 | ZSD1000A    |
|           |  | 1200 | ZSD1200A    |
|           |  | 2000 | ZSD2000A    |
|           |  | 2500 | ZSD2500A    |

### ACCESSORIES

| MODEL NO. | DESCRIPTION                                  | PART NUMBER |
|-----------|--|-------------|
| RPGFC     | Flexible Coupling (1" Length) 0.25" - 0.25"  | RPGFC001    |
|           | Flexible Coupling (1" Length) 0.25" - 0.375" | RPGFC002    |
|           | Flexible Coupling (1" Length) 0.25" - 6 mm   | RPGFC005    |

- Notes: The following list of options are available, contact the factory for details
- Additional wiring configurations, including M12 connectors and flying leads
  - Additional output configurations, including Line Driver and Push-Pull
  - Additional mounting and shaft/bore sizes
  - Additional pulses, including 10, 120, 200, 360, 512, 1024, 1500, 1800, and 2048
  - When using higher resolutions, use caution and verify input specifications to avoid frequency limitations
  - CE approved models available