



**THE DATASHEET OF  
ZSD1000A**



## 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,  $V_{OH} = 30$  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,  $V_{OH} = 30$  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)
- MOMENT OF INERTIA:**  $6.7 \times 10^{-5}$  oz-in-sec<sup>2</sup> (4.8 gm-cm<sup>2</sup>)
- ELECTRICAL CONNECTION:** 36" (914.4 mm) cable. 24 AWG foil and braid shield.

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

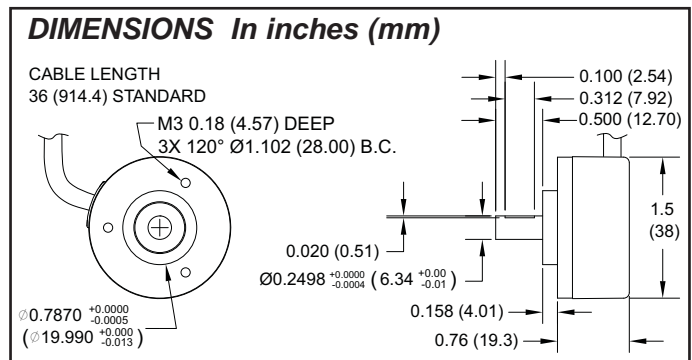
### GENERAL DESCRIPTION

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 (30 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 Standard Servo Mount Rotary Pulse Generators	60	ZSD0060A
		100	ZSD0100A
		500	ZSD0500A
		600	ZSD0600A
		1000	ZSD1000A
		1200	ZSD1200A
		2500	ZSD2500A

Only factory stocked part numbers are listed. Consult the factory for part number and availability of other PPR and output configurations.

### 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

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