

## MODELS ZPJ - LARGE THRU-BORE ROTARY PULSE GENERATOR



### SPECIFICATIONS

#### ELECTRICAL SPECIFICATIONS

- SUPPLY VOLTAGE:** 4.75 to 28 VDC, 100 mA max.
- OUTPUTS:** NPN Open Collector Transistor,  $V_{OH} = 40$  VDC max.; 20 mA max. current. Incremental - Two square waves in quadrature with A leading 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.
- MAXIMUM MECHANICAL SPEED:** 7500 RPM
- NOISE IMMUNITY:** Tested to BS EN61000-6-2; BS EN50081-2; BS EN61000-4-2; BS EN61000-4-3; BS EN61000-4-6; BS EN55011
- SYMMETRY:**  $180^\circ (\pm 18^\circ)$  electrical
- QUAD PHASING:**  $90^\circ (\pm 22.5^\circ)$  electrical
- MIN EDGE SEP:**  $67.5^\circ$  electrical
- ACCURACY:** Within  $0.01^\circ$  mechanical from one cycle to any other cycle, or 0.6 arc minutes.

#### MECHANICAL SPECIFICATIONS

- BORE SIZE:** 0.625" (15.875 mm)
- BORE TOLERANCES:**  $-0.0000"/+0.0006"$
- USER SHAFT TOLERANCES:**  
 Radial Runout: 0.007" max  
 Axial Endplay:  $\pm 0.030"$  max
- STARTING TORQUE:** 2.5 oz-in (17.65 N-mm) IP64
- MOMENT OF INERTIA:**  
 $3.9 \times 10^{-4}$  oz-in-sec<sup>2</sup> (27.5 gm-cm<sup>2</sup>)
- MAX ACCELERATION:**  $1 \times 10^5$  rad/sec<sup>2</sup>
- ELECTRICAL CONNECTION:** 36" (914.4 mm) cable (foil and braid shield, 24 AWG conductors non-commutated, 28 AWG commutated), 5 or 8-pin M12 (12 mm) in-line connector with 36" cable (foil and braid shield)

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

- HOUSING:** Black non-corrosive finish
- MOUNTING:** Flex arm 1.06" to 1.81" radius mounting
- WEIGHT:** 3.5 oz. typical (99.2 g)

### GENERAL DESCRIPTION

The Model ZPJ is a thru-bore encoder with a bore of 0.625" (15.875 mm). Additional mounting kits are available to adapt it to both standard and metric shaft sizes. This unit is ideal for applications requiring a miniature, high precision, low cost encoder, designed with all metal construction for years of trouble-free operation.

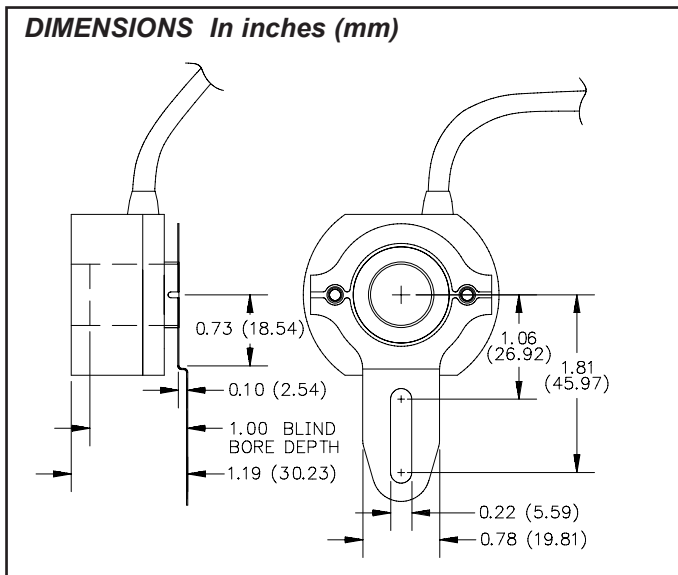
The ZPJ encoder has a flexible arm mount and blind hollow shaft. It uses two set screws that are  $90^\circ$  apart to clamp the encoder's hub to the motor shaft. The NPN Open Collector outputs are each current limited to 20 mA. The outputs are standard quadrature with index, and are available in resolutions 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 ZPJ encoder has 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 (40 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.

### ENVIRONMENTAL SPECIFICATIONS

- OPERATING TEMPERATURE:**  $0^\circ\text{C}$  to  $+70^\circ\text{C}$
- STORAGE TEMPERATURE:**  $-40^\circ\text{C}$  to  $+100^\circ\text{C}$
- HUMIDITY:** 98% RH non-condensing
- VIBRATION:** 10 g @ 58 to 500 Hz
- SHOCK:** 50 g @ 11 msec duration
- SEALING:** IP64



## ORDERING INFORMATION

MODEL NO.	DESCRIPTION	PPR	PART NUMBER
ZPJ	Large Thru-Bore Rotary Pulse Generators	60	ZPJ0060A
		100	ZPJ0100A
		500	ZPJ0500A
		600	ZPJ0600A
		1000	ZPJ1000A
		1200	ZPJ1200A
		2000	ZPJ2000A
		2500	ZPJ2500A

## ACCESSORIES

DESCRIPTION	PART NUMBER
1.575" (40 mm) Bolt Circle Flex Mount Kit	RPGMK000
1.811" (46 mm) Bolt Circle Flex Mount Kit	RPGMK001
Inch Std Bore Insert Kit (includes 0.25, 0.375, and 0.50 inch sleeves)	RPGBII01
Large Metric Bore Insert Kit (includes 11, 12, and 14 mm sleeves)	RPGBIM01
Small Metric Bore Insert Kit (includes 6, 8, and 10 mm sleeves)	RPGBIM02
Mag Coupling Kit (no adapter sleeve necessary)	RPGBM001

Notes: The following list of options are available, contact the factory for details

- ♦ Additional wiring configurations, including M12 connectors
- ♦ Additional output configurations, including Line Driver and Push-Pull
- ♦ Additional mounting and 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

### LIMITED WARRANTY

The Company warrants the products it manufactures against defects in materials and workmanship for a period limited to two years from the date of shipment, provided the products have been stored, handled, installed, and used under proper conditions. The Company's liability under this limited warranty shall extend only to the repair or replacement of a defective product, at The Company's option. The Company disclaims all liability for any affirmation, promise or representation with respect to the products.

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