

## 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,  $V_{OH} = 30$  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,  $V_{OH} = 30$  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 EN55011
- SYMMETRY:**  $180^\circ (\pm 18^\circ)$  electrical
- QUAD PHASING:**  $90^\circ (\pm 22.5^\circ)$  electrical
- MIN EDGE SEP:** 67.5° electrical
- ACCURACY:** Within 0.01° mechanical from one cycle to any other cycle, or 0.6 arc minutes.

#### MECHANICAL SPECIFICATIONS

- MAXIMUM MECHANICAL SPEED:** 7500 RPM
- BORE SIZE:** 0.625" (15.875 mm)
- BORE TOLERANCES:** -0.0000"/+0.0006"
- USER SHAFT TOLERANCES:**  
 Radial Runout: 0.007" max  
 Axial Endplay: +/- 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)

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

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

#### ENVIRONMENTAL SPECIFICATIONS

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

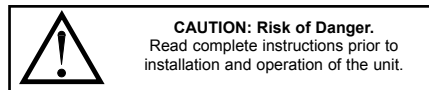
### GENERAL DESCRIPTION

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° 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.

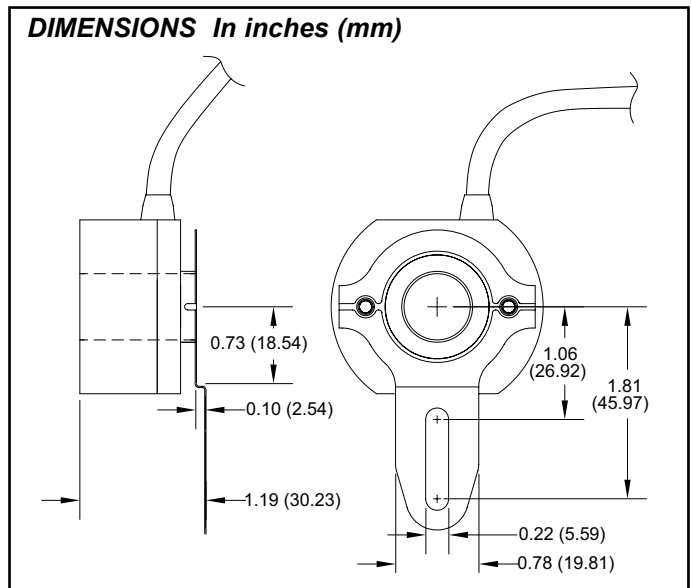
### SAFETY SUMMARY

All safety related regulations, local codes and instructions that appear in the literature or on equipment must be observed to ensure personal safety and to prevent damage to either the instrument or equipment connected to it. If equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.



### 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 (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.



## ORDERING INFORMATION

MODEL NO.	DESCRIPTION	PPR	PART NUMBER
ZPJ	0.625" Thru-Bore Rotary Pulse Generators	60	ZPJ0060A
		100	ZPJ0100A
		500	ZPJ0500A
		600	ZPJ0600A
		1000	ZPJ1000A
		1200	ZPJ1200A
		2000	ZPJ2000A
		2500	ZPJ2500A

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

## ACCESSORIES

MODEL NO.	DESCRIPTION	PART NUMBER
RPGMK	1.575" (40 mm) Bolt Circle Flex Mount Kit	RPGMK000
	1.811" (46 mm) Bolt Circle Flex Mount Kit	RPGMK001
RPGBI	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
RPGMB	Mag Coupling Kit (0.625 inch shaft)	RPGMB001



Do not dispose of unit in trash - Recycle

### LIMITED WARRANTY

(a) Red Lion Controls Inc. (the "Company") warrants that all Products shall be free from defects in material and workmanship under normal use for the period of time provided in "Statement of Warranty Periods" (available at [www.redlion.net](http://www.redlion.net)) current at the time of shipment of the Products (the "Warranty Period"). **EXCEPT FOR THE ABOVE-STATED WARRANTY, COMPANY MAKES NO WARRANTY WHATSOEVER WITH RESPECT TO THE PRODUCTS, INCLUDING ANY (A) WARRANTY OF MERCHANTABILITY; (B) WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE; OR (C) WARRANTY AGAINST INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS OF A THIRD PARTY; WHETHER EXPRESS OR IMPLIED BY LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE OF TRADE OR OTHERWISE.** Customer shall be responsible for determining that a Product is suitable for Customer's use and that such use complies with any applicable local, state or federal law.

(b) The Company shall not be liable for a breach of the warranty set forth in paragraph (a) if (i) the defect is a result of Customer's failure to store, install, commission or maintain the Product according to specifications; (ii) Customer alters or repairs such Product without the prior written consent of Company.

(c) Subject to paragraph (b), with respect to any such Product during the Warranty Period, Company shall, in its sole discretion, either (i) repair or replace the Product; or (ii) credit or refund the price of Product provided that, if Company so requests, Customer shall, at Company's expense, return such Product to Company.

**(d) THE REMEDIES SET FORTH IN PARAGRAPH (c) SHALL BE THE CUSTOMER'S SOLE AND EXCLUSIVE REMEDY AND COMPANY'S ENTIRE LIABILITY FOR ANY BREACH OF THE LIMITED WARRANTY SET FORTH IN PARAGRAPH (a).**