

## MODELS ZUJ AND ZUL - LARGE THRU-BORE ROTARY PULSE GENERATORS FOR MOTOR FEEDBACK



### GENERAL DESCRIPTION

The ZUJ and ZUL are high performance units that are ideal for fast revving motor mount applications. The injection molded housing is grooved with "cooling fins", and can take the extreme heat of the motion control industry.

The unit comes equipped with a 3.5" to 5.90" B.C. tether arm to mount to a 4.5" motor face.

This revolutionary encoder can also be adapted to various standard and metric sized motor shafts by using individual sleeves (Sold separately).

Electrically the unit offers line driver outputs, limited to 20 mA per channel. The outputs are standard quadrature with index and are also available with reverse phasing for the typical motor drive controller application. The separation is 90° with output A leading output B for clockwise rotation. Output B leads output A for the reverse phased output, for clockwise rotation.

### SPECIFICATIONS

#### ELECTRICAL SPECIFICATIONS

- SUPPLY VOLTAGE:** 4.75 to 28 VDC @ 100 mA max. -20°C to 85°C;  
4.75 to 24 VDC @ 100 mA max. -20°C to 105°C
- OUTPUTS:** Line driver,  $V_{OH} = 40$  VDC max.; 20 mA max. current.  
Incremental - two square waves with A leading B for clockwise rotation. B leads output A for the reverse phased.  
*Note: Line driver outputs are intended for motion controllers that have line driver receivers.*
- MAX. PULSE RATE:** 250 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.
- MINIMUM EDGE SEPARATION:** 45° electrical min, 63° electrical or better typical
- RISE TIME:** Less than 1 microsecond
- ACCURACY:** Within 0.1° mechanical from one cycle to any other cycle, or 6 arc minutes.

#### MECHANICAL SPECIFICATIONS

- MAXIMUM MECHANICAL SPEED:** 4000 RPM
- BORE SIZE:** 0.625" or 1.0" (15.875 or 25.4 mm)
- BORE TOLERANCES:** -0.0000"/+0.0008"
- USER SHAFT TOLERANCES:**  
Radial Runout: 0.005" max  
Axial Endplay: +/- 0.050" max
- MAXIMUM ACCELERATION:**  $1 \times 10^5$  rad/sec<sup>2</sup>
- STARTING TORQUE:** 4.0 oz-in typical (28.24 N-mm)

#### 7. MOMENT OF INERTIA:

$$7.6 \times 10^{-4} \text{ oz-in-sec}^2$$

#### 8. ELECTRICAL CONNECTOR: 10-pin MS type connector

FUNCTION	PIN	CABLE WIRE COLOR
+VDC	D	RED
COM	F	BLACK
DATA A	A	WHITE
DATA A'	H	BROWN
DATA B	B	BLUE
DATA B'	I	VIOLET
DATA Z	C	ORANGE
DATA Z'	J	YELLOW
SHIELD	-	BARE
N/A	G	GREEN

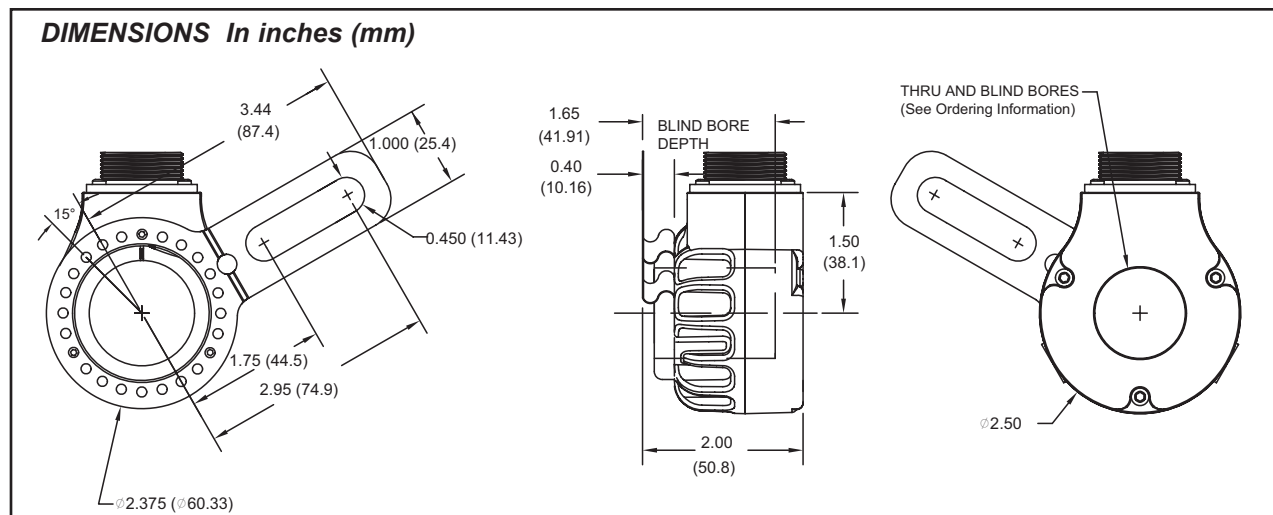
#### 9. HOUSING: Proprietary nylon composite

#### 10. MOUNTING: 3.5" to 5.90" B.C. (4.5" C-Face) tether arm kit

#### 11. WEIGHT: 8 oz. (226.7 g)

#### ENVIRONMENTAL SPECIFICATIONS

- OPERATING TEMPERATURE:** -20°C to 105°C (See Supply Voltage)
- STORAGE TEMPERATURE:** -20°C to 85°C
- HUMIDITY:** 98% RH non-condensing
- VIBRATION:** 20 g @ 5 to 2000 Hz
- SHOCK:** 80 g @ 11 msec duration
- SEALING:** IP66



## ORDERING INFORMATION

MODEL NO.	DESCRIPTION	PPR	PART NUMBER
ZUJ	0.625" Thru-Bore Rotary Pulse Generators For Motor Feedback	1024	ZUJ1024Z
		2048	ZUJ2048Z
ZUL	1" Thru-Bore Rotary Pulse Generators For Motor Feedback	1024	ZUL1024Z
		2048	ZUL2048Z

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
CCBRPG	10-Pin MS Connector	CCBRPG04
	10-Pin MS Connector with 10 ft 24 AWG 9 Conductor Cable w/drain	CCBRPG05
	10-Pin MS Connector with 20 ft 24 AWG 9 Conductor Cable w/drain	CCBRPG06
RPGBSI	0.500 Inch Bore Sleeve	RPGBSI00
	0.625 Inch Bore Sleeve	RPGBSI01
	0.750 Inch Bore Sleeve	RPGBSI02
	0.875 Inch Bore Sleeve	RPGBSI03
RPGBSM	19 mm Bore Sleeve	RPGBSM00
	20 mm Bore Sleeve	RPGBSM01
	24 mm Bore Sleeve	RPGBSM02
	25 mm Bore Sleeve	RPGBSM03
RPGMK	Standard Tether Arm Kit 4.5 Inch	RPGMK002
	Elongated Tether Arm Kit 8.5 Inch	RPGMK003
RPGMB *	Magnetic Coupling Kit (0.625 inch shaft)	RPGMB001
RPGPC	56C Protective Cover	RPGPC000

\* ZUL encoders require 0.625 " bore sleeve to accommodate magnetic coupling.



Do not dispose of unit in trash - Recycle

### 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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