

## MODEL ZUK - LARGE THRU-BORE ROTARY PULSE GENERATORS



### GENERAL DESCRIPTION

The ZUK is a high performance unit that is ideal for fast revving motor mount applications. This industrial strength model features the largest thru bore available in a 2.5" encoder, mounting directly on shafts as large as 1.125" (28 mm.) The injection molded housing is grooved with "cooling fins", and can take the extreme heat of the motion control industry.

The ZUK comes equipped with a 3 point Flex Mount adapting to both 2.25" and 2.75" motor faces. It is also available with an optional "tether arm" mounting kits for additional motor compatibility.

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

Electrically the ZUK offers NPN open collector outputs, each limited to 100 mA. The outputs are standard quadrature with index and are also available with quadrature reverse phasing for the typical motor drive controller application. The quadrature 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.

### Open Collector Output Wiring

The ZUK series of 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 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.

### SPECIFICATIONS

#### ELECTRICAL SPECIFICATIONS

- SUPPLY VOLTAGE:** 4.75 to 28 VDC, 100 mA max. (no load)
- 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. PULSE RATE:** 250 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:** 4000 RPM
- MIN EDGE SEP:** 45° electrical min, 63° electrical or better typical
- RISE TIME:** Less than 1 microsecond
- ACCURACY:** Within 0.01° mechanical from one cycle to any other cycle, or 0.6 arc minutes.

#### MECHANICAL SPECIFICATIONS

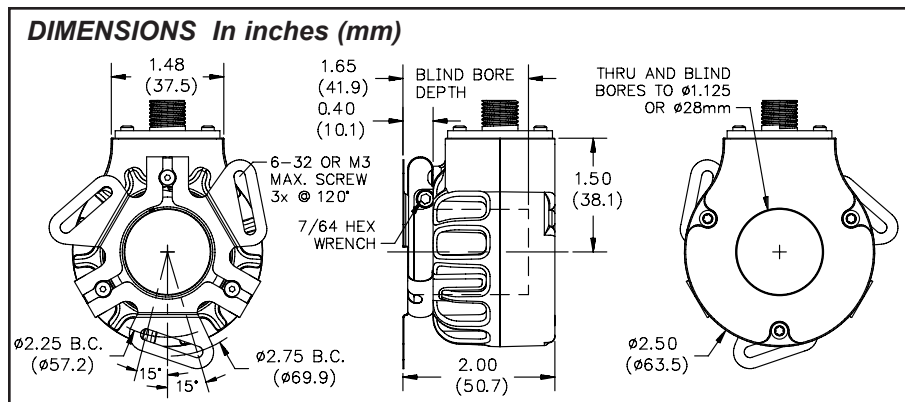
- BORE SIZE:** 1.125" (28 mm)
- BORE TOLERANCES:** -0.0000"/+0.0008"
- USER SHAFT TOLERANCES:**  
 Radial Runout: 0.005" max  
 Axial Endplay: +/- 0.050" max
- STARTING TORQUE:** 4.0 oz-in typical (28.24 N-mm) IP66
- MOMENT OF INERTIA:**  
 $7.6 \times 10^{-4}$  oz-in-sec<sup>2</sup>
- MAX ACCELERATION:**  $1 \times 10^5$  rad/sec<sup>2</sup>
- ELECTRICAL CONNECTOR:** 7-pin MS type connector

FUNCTION	PIN	CABLE WIRE COLOR
+VDC	A	Red
Common	B	Black
Data A	C	White
Data B	D	Green
Data Z	E	Orange
CASE	F	Bare

- HOUSING:** Nylon composite
- MOUNTING:** 2.25" to 2.75" B.C. 3-point flex mount
- WEIGHT:** 8 oz. (226.7 g)

#### ENVIRONMENTAL SPECIFICATIONS

- OPERATING TEMPERATURE:** -20°C to 85°C
- 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
			1.125" Thru-Bore
ZUK	Large Thru-Bore Rotary Pulse Generators	60	ZUK0060H
		100	ZUK0100H
		500	ZUK0500H
		600	ZUK0600H
		1000	ZUK1000H
		1200	ZUK1200H
		2000	ZUK2000H
		2500	ZUK2500H

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 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
- ♦ Additional Tether Arm mounting kits available
- ♦ Additional sleeve kits and individual sleeves available for "sizing down" bores for metric and standard sized shafts

## ACCESSORIES

MODEL NO.	DESCRIPTION	PART NUMBER
CCBRPG	7-Pin Connector	CCBRPG00
	7-Pin Connector with 10 ft Cable	CCBRPG02
	7-Pin Connector with 20 ft Cable	CCBRPG03
RPGBI	Inch Bore Insert Kit (includes 0.5, 0.625, 0.875, and 1 inch sleeves)	RPGBI00
	Large Metric Bore Insert Kit (includes 19, 20, 24, and 25 mm sleeves)	RPGBIM00
RPGBSI	0.625 Inch Bore Sleeve	RPGBSI01
RPGMK	Standard Tether Arm Kit 4.5 Inch	RPGMK002
	Elongated Tether Arm Kit 8.5 Inch	RPGMK003
RPGMB	Magnetic Coupling Kit	RPGMB001

### 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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