

## 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.

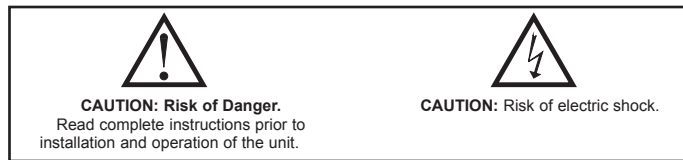
The ZUK comes equipped with a 3 point Flex Mount adapting to both 2.25" and 2.75" motor faces. It is also available with an optional "tether arm" mounting kit for additional motor compatibility.

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.

### 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.



### SPECIFICATIONS

#### ELECTRICAL SPECIFICATIONS

- SUPPLY VOLTAGE:** 4.75 to 28 VDC, 100 mA max. (no load)
- 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. 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.
- MIN EDGE SEP:** 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

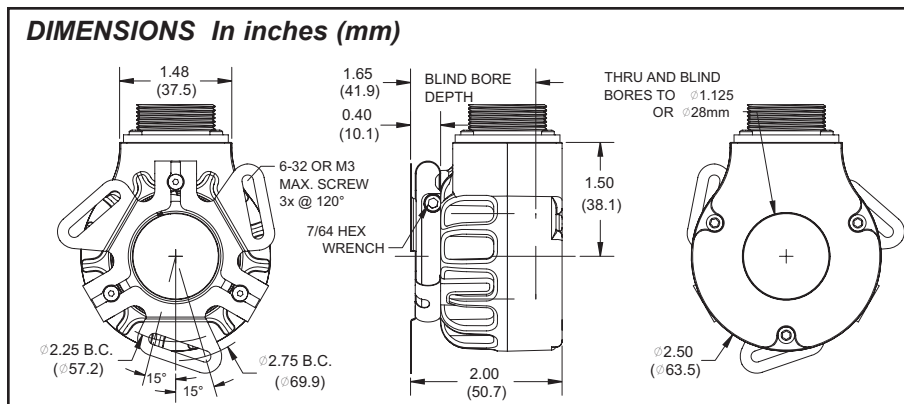
- MAXIMUM MECHANICAL SPEED:** 4000 RPM
- BORE SIZE:** 1.125" (28.58 mm)
- BORE TOLERANCES:**  $-0.0000/+0.0008$ "
- USER SHAFT TOLERANCES:**  
 Radial Runout: 0.005" max  
 Axial Endplay: +/- 0.050" max
- STARTING TORQUE:** 4.0 oz-in typical (28.24 N-mm) IP66
- MOMENT OF INERTIA:**  
 $7.6 \times 10^{-4}$  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



## 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 (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
ZUK	1.125" Large Thru-Bore Rotary Pulse Generators	60	ZUK0060H
		100	ZUK0100H
		500	ZUK0500H
		600	ZUK0600H
		1000	ZUK1000H
		1200	ZUK1200H
		2000	ZUK2000H
		2500	ZUK2500H



Do not dispose of unit in trash - Recycle

## ACCESSORIES

MODEL NO.	DESCRIPTION	PART NUMBER
CCBRPG	7-Pin MS Connector	CCBRPG00
	7-Pin MS Connector with 10 ft 24 AWG 5 Conductor Cable w/drain	CCBRPG02
	7-Pin MS Connector with 20 ft 24 AWG 5 Conductor Cable w/drain	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)	RPGBI00
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
	1 Inch Bore Sleeve	RPGBSI04
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

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

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

## 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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