

# RSE SERIES

Made in  
U.S.A.

## Optical Incremental Shaft Position Encoder

### FEATURES

- Choice of Output Options
- High Noise Immunity
- Short Circuit Protection
- Reverse Polarity Protection
- Variety of Bearing Options
- Low Current Consumption
- Multiple Mounting Options
- Tachometer Mount 5PY Available
- Infrared LED and SMD Circuitry
- Size 25 Flange Available

### APPLICATIONS

- Speed Controls
- Robotics
- Machine Tools
- Cut to Length
- Position Control
- Index Tables



### SPECIFICATIONS

#### Input

Voltage: 5 or 12-28 VDC, others available  
Current: 45 ma. @ 15 VDC typical

#### Output

Squarewave 50/50 duty cycle  
0 - 20,000 pulses/sec.

#### Mechanical

Housing: Rugged anodized aluminum  
Shaft Rotation: Either direction  
Shaft speed: 6000 RPM max. \*  
Bearings: Heavy duty ABEC 3  
Load: 30 lbs. radial \*  
10 lbs. axial \*

**Temperature Range:** 32° - 149° F (0° - 65°C)

\* Please consult factory for details, technical bulletins, and see the safety and warranty sheet for additional information.

### DESCRIPTION

The RSE series is a rotary optical incremental shaft encoder designed with high precision mechanical components and IRED light sources to provide long life and durability. Comparison of the light signal with a reference signal provides high noise immunity and wide operating temperature range. The output is a series of squarewaves, which correspond to the shaft rotation. Single channel, quadrature, index pulse, differential line driver, anti-jitter and other special outputs are available

with standard resolutions up to 1270 PPR. In addition to face flange, foot flange, size 25 flange and 5PY mounts, several bearing and connector options are also available. Over four decades of engineering and manufacturing experience is embodied in every "RSE". FSI is committed to manufacturing quality products and providing complete customer satisfaction!



**FSI / Fork Standards, Inc.**

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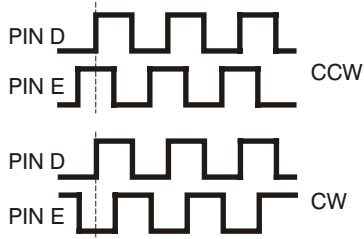


## COMMON OUTPUT OPTIONS



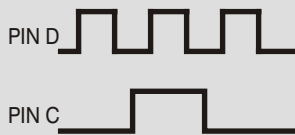
### Option S Squarewave

A series of squarewaves corresponding to shaft rotation in either a clockwise (CW) or a counterclockwise (CCW) direction, will appear on Pin D.



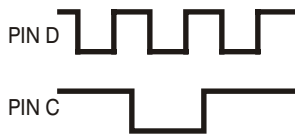
### Option Q Quadrature

Quadrature Output on Pin E will lead the Pin D squarewave output for CCW shaft rotation and lag the Pin D squarewave output for CW shaft rotation.



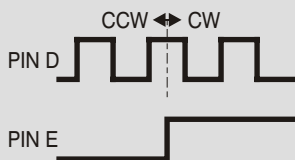
### Option P Positive Index Pulse

In addition to the squarewave(s), one positive going index pulse per revolution will be on Pin C.



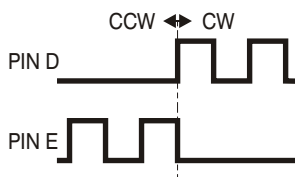
### Option N Negative Index Pulse

In addition to the squarewave(s), one negative going index pulse per revolution will be on Pin C.



### Option D Count / Direction

Squarewave will appear on Pin D regardless of direction of shaft rotation. Pin E will be "high" for CW (Up Count) and "low" for CCW (Down Count).

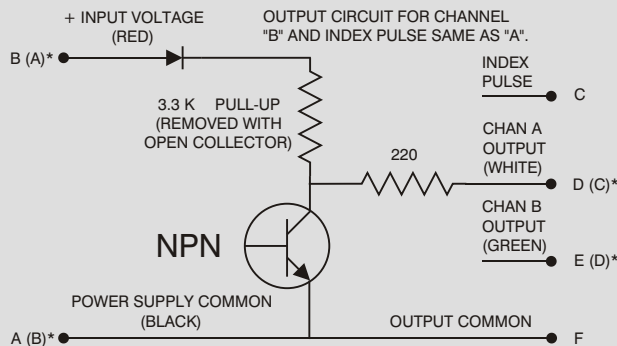


### Option B Up / Down Count

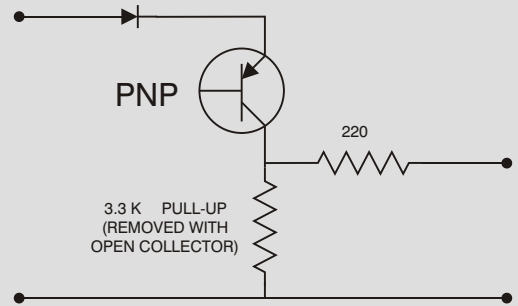
A squarewave will appear on Pin D for CW shaft rotation and on Pin E for CCW shaft rotation.

## WIRING INFORMATION

NOTE: Standard pin out shown - Additional output types are available.



\* NOTES: (1) (X) INDICATES PIN OUT FOR OPTIONS 8 & 9.  
(2) CHANNEL "B" QUAD & INDEX PULSE ARE OPTIONS - SEE ORDERING GUIDE.



NOTE: "PNP" INPUT AND OUTPUT DESIGNATION SAME AS "NPN"

## RSE SERIES MECHANICAL

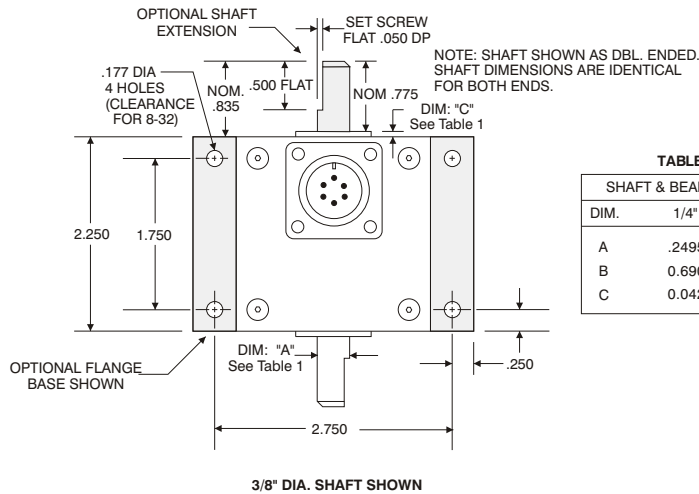
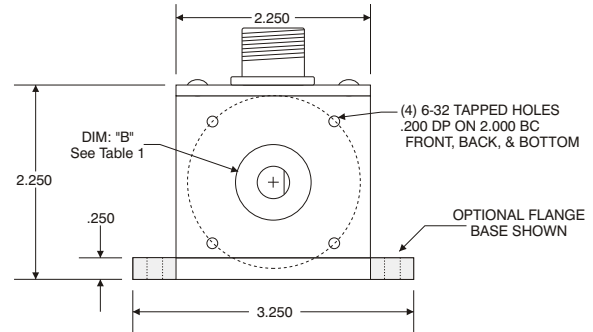


TABLE 1

SHAFT & BEARING DIM.		
DIM.	1/4"	3/8"
A	.2495	.3745
B	0.690	0.969
C	0.042	0.062



## ACCESSORIES - For additional information see the respective product brochures.

- B-1 Sealed back plate cover-kit
  - B-2 Face mount flange-kit
  - B-3 Encoder mounting kit to replace 5PY tachometer - use with shaft dia. type "4"
  - B-4 Encoder mounting kit to replace size 25 flange encoder - use with shaft dia. type "5"
  
  - C-1 6 pin MS Series plug, clamp and boot - unassembled
  - C-1F-XX C-1 plug and "XX" ft. of cable - assembled
  - C-1R-XX C-1 plug with Red Lion pin-out and "XX" ft. of cable - assembled
  - C-2 Watertight Connector (4 pin): unassembled
  - C-2F-xx C-2 (4 pin) and xx feet of cable: assembled
  - C-2S Short mating Connector - 1.3" overall
  - C-3 7 pin MS Series plug, clamp, and boot - unassembled
  - C-4 6 pin MS Series right angle plug, clamp, and boot - unassembled
  - C-4F-XX C-4 plug and "XX" ft. of cable - assembled
  - C-5 10 pin mating connector: unassembled
  - C-5F-xx C-5 and xx ft. of cable: assembled
  
  - F-1 1/4" bore flexicoupling, 1.50" length, 1.00" dia.
  - F-2 3/8" bore flexicoupling, 1.50" length, 1.00" dia.
  - F-3 5/16" bore flexicoupling, 1.50" length, 1.00" dia.
  - F-4 1/4" - 5/16" - 3/8" Bore general purpose flexicoupling, 1.50" length, 1.00" dia.
  - F-5 1/4" Motor pilot to 1/4" - 5/16" - 3/8" bore flexicoupling, 1.25" body length, 1.00" dia.
  - F-6 3/8" Motor pilot to 1/4" - 5/16" - 3/8" bore flexicoupling, 1.25" body length, 1.00" dia.
  
  - WH-1-A 12" circumference measuring wheel with black tire - 80A durometer
  - WH-1-B 12" circumference measuring wheel with non-marking tire - 83A durometer
  - WH-1-C 12" circumference measuring wheel with non-marking tire - 92A durometer
  - WH-1-D 12" circumference measuring wheel with non-marking tire - 70A durometer
- All wheels have 3/8" bore.

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Solutions that Count

