Rotary Shaft Encoder

#380 High-Resolution Digital Pulse Output

- Ideal for use on slow-speed applications
- Multiple mounting configurations for easy installation
- Wide variety of pulse per revolution (PPR) counts available
- Provides precise pulse train for use with Tachometers, Counters, Speed Switches and Speed-to-Analog Converters

### Description

Rotary Shaft Encoders are ideal for use on any moving shaft to provide a digital output signal to tachometers, counters, speed switches, and motor controls. Flexible shaft couplings are available as an option to compensate for shaft misalignment, and are recommended for most applications.

Electro-Sensors’ Rotary Shaft Encoders convert shaft rotation into square wave output pulses. They provide an accurate means of transmitting actual speed information for detecting rate, position, or direction of rotation. The shaft encoder produces an output signal by rotating a disc with clear and opaque segments between a light-emitting diode and a photo-transistor sensor. This signal is then converted into a square wave signal by an internal squaring circuit. The number of output pulses per shaft revolution is determined by the number of clear and opaque segments on the disc. Quadrature models have a second LED and sensor positioned 90 degrees apart to produce two square wave signals.

The #380 Encoder is a standard industrial grade encoder available with single channel or quadrature output. The #470 Encoder has a size 25 heavy-duty industrial housing with rugged sealed ball bearings and an anti-backlash flexible shaft coupling to isolate the internal high precision encoder from both axial and radial shaft loading. The #470 supplies a quadrature output with an index pulse, and optional line driver output.

### Outputs • Waveform Timing:

- **Output A**
- **Output B**
- **Index Z** 180˚ Nominal

### Standard Output:

Available on #380-standard
50% duty cycle square wave output signal in either direction of rotation. (Output A)

### Quadrature Output:

Available on #380-quadrature option
Provides two square wave output pulses offset from each other by 90°. The pulses lead or lag each other, depending on the direction of rotation. (Output A & B)

### Quadrature Output with an Index Pulse:

Available on #470 encoder
In addition to the two square waves provided from the quadrature output (Output A & B) this gives one index pulse per revolution (Index Z)

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**Product Information**

**Electrical**

Connector

**Wiring Color Code**

- **A**: Common... Black
- **B**: Data A... Red
- **C**: Data B... Yellow
- **D**: V+... White/Clear
- **E**: No Connection... Green
- **F**: Case... N/C

**#380 Dimensional Drawing**

- 6-pin Connector

**#470 Dimensional Drawing**

- 7-pin Connector

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Free Catalog and Application Assistance

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