

Traction Wheel Encoder Assembly

Converts Linear Travel to a Digital Pulse Frequency

- Rugged and reliable system is ready-to-install.
- 1 to 1270 pulses per revolution.
- Ideal for belt conveyors or slow speed applications.
- Available with two traction wheels.
- Optional quadrature models available.
- Three models of traction wheels:
 - Black Neoprene Rubber
 - Smooth polyurethane
 - Diamond knurled aluminum tread

Product Information

Description

The Traction Wheel Encoder Assembly consists of three parts: the traction wheel, the encoder and the mounting bracket hinge clamp assembly with mating connector.

Principle of Operation

The traction wheel rides directly on the material being monitored. The wheel is connected to a rotary shaft encoder, which is supported by the mounting bracket. The encoder then generates a digital pulse frequency based on the number of pulses per revolution and the speed of the traction wheel. This digital signal is sent via the mating connector to a counter, ratemeter or other control equipment.

Traction Wheel Options:

All have 12-inch circumference.

Typical Applications: Metal, paper, foil, film, and hard plastics. This wheel can also be used to measure off the end of a roller.

3000 RPM Max Speed

Typical Applications: Delicate materials such as thin paper, matting, fine-weave textiles. The broad wheel width reduces pressure, the white color minimizes marking.

600 RPM Max Speed (Std. Wheel). Balance to 3000 RPM Available as Special Order.

Typical Applications: Coarse weave fabrics, wood, rubber, insulation or any rough surface.

600 RPM Max Speed (Std. Wheel). Balance to 3000 RPM Available as Special Order.

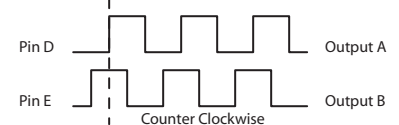
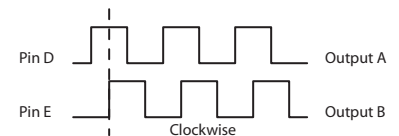
Standard Output:

50% duty cycle square wave output signal in either direction of rotation.



Quadrature Output 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 shaft rotation.



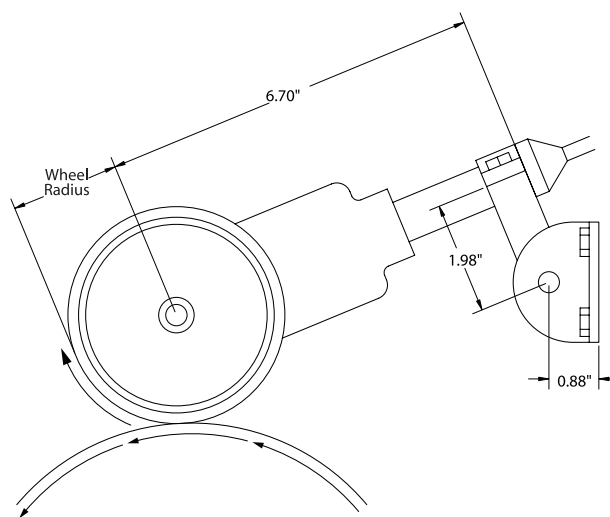
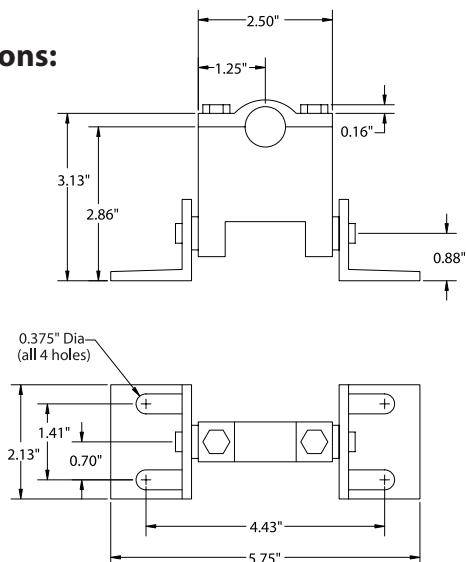
Index Pulse Option:

In addition to the square waves, one index pulse per revolution is output on Pin C.



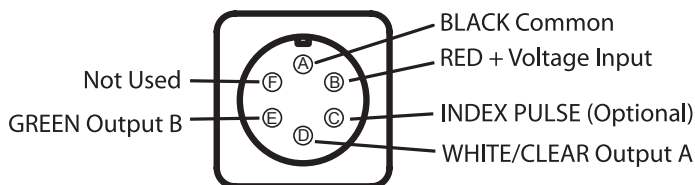
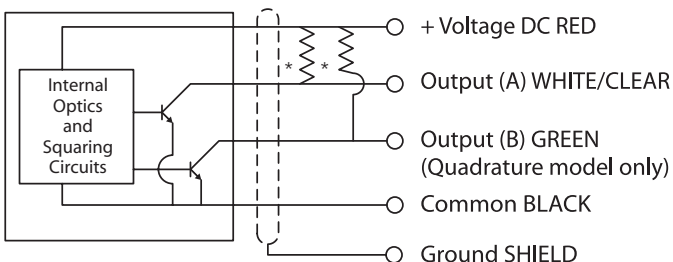
Traction Wheel Encoder Assembly

Dimensions:



Encoder Wiring Diagram:

*External pull-up resistors are not required if the traction wheel encoder assembly is used with another Electro-Sensors, Inc. product. Resistors are necessary if the assembly is used as a stand-alone pulse generator. Maximum recommended current output is 100 mA. Suggested Resistor Value is 2.2 K Ω .



Specifications • Traction Wheel Encoder

Power:

Voltage	5-28 Vdc
Current	100 mA
Ripple	2%
Regulation	$\pm 5\%$

Output:

Amplitude	80% of Voltage Input (min)
Type	Open Collector NPN
Current	Sink 100 mA Max
Polarity	Positive
Wave Shape	Square Wave, 50% Duty Cycle
Pulse Rate	0-20,000 Hz Standard Model
Rise Time	1 Microsecond
Pulses per Revolution	1-1270 (specify)
Channel Types	Single or Quadrature (specify)
Wiring Color Code	Red = Supply Voltage (+) White/Clear = Signal Output (A) Black = Common Green = Signal Output (B) Shield = Ground Common

Mechanical Specifications

Shaft Speed	3000 rpm max
Shaft Direction	Bidirectional
Bearings	Double-Sealed Ball Bearings
Radial Loading	20 lbs Operating
Axial Loading	10 lbs Operating
Shaft Size	0.375 Inch Diameter
Operating Life	100,000 Hrs Average
Housing	Anodized Aluminum & Aluminum
Mounting	Pivot Bracket (4) 0.375 Diameter Holes
Cable	10 Feet 4-Conductor Shield
Operating Temperature	0°C to +70°C

Note: Some Electro-Sensors Interface Electronics may require an external supply to power the encoder. Consult factory for additional information.

Specifications subject to change without notice.

ES-969 Rev B