

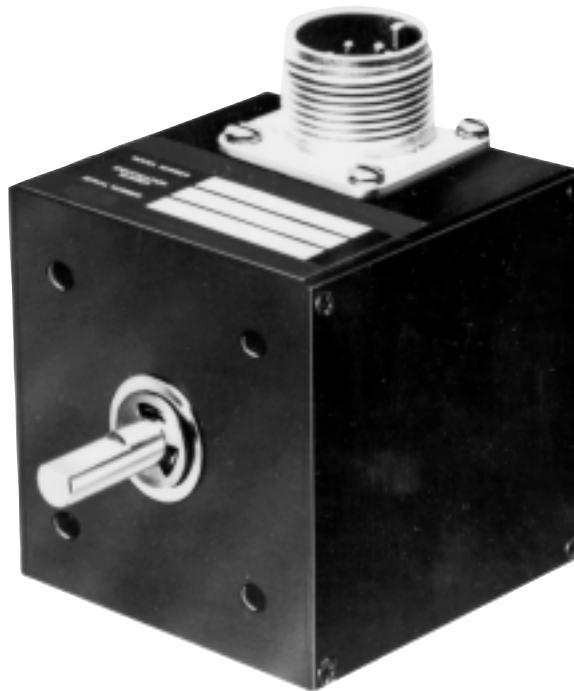
700 Series

Optical Shaft Encoder

DESCRIPTION:

The 700 optical incremental shaft encoders convert input shaft rotation into square wave output pulses to provide an accurate means of digitizing position, rate or direction of rotation. They are designed specifically for industrial applications requiring a rugged and reliable shaft encoder that is sealed against dust, oil vapor and moisture.

The shaft encoder produces an output signal by rotating a shatter-proof plastic disc with clear and opaque segments between a light emitting diode and a photo-transistor sensor. The output signal from the sensor 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. Bidirectional models have a second LED and sensor positioned to produce two square wave signals in quadrature.



SPECIFICATIONS:

ELECTRICAL SPECIFICATIONS

INPUT:

Voltage 5 VDC, or 8 to 30 VDC (Specify Choice)
Current 50 mA $\pm$ 10%
Ripple 2%
Regulation $\pm$ 5%

OUTPUT

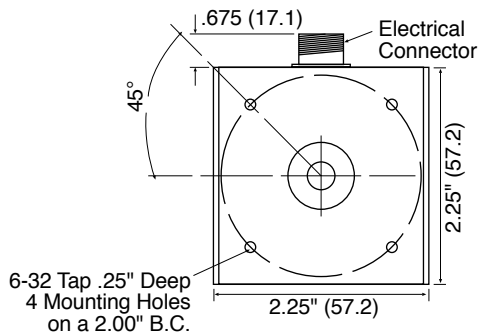
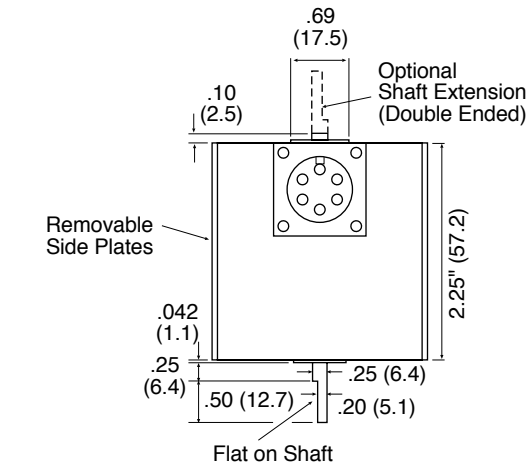
Amplitude 80% of input voltage (min.)
Current Sink up to 20 milliamperes (10 milliamperes on multi-output units). 1.5K pull up to input voltage
Polarity Positive
Wave Shape Square wave, 50% "on" and 50% "off"
Pulse Rate 0 to 20,000 pulses per second
Rise Time Less than 1 microsecond
Pulses per Rev. 1 to 1270 (Specify choice)
Accuracy Within $\pm$ 0.1 degrees from one pulse to any other pulse.

ENVIRONMENTAL SPECIFICATIONS

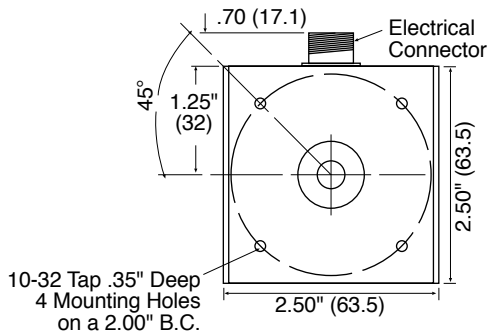
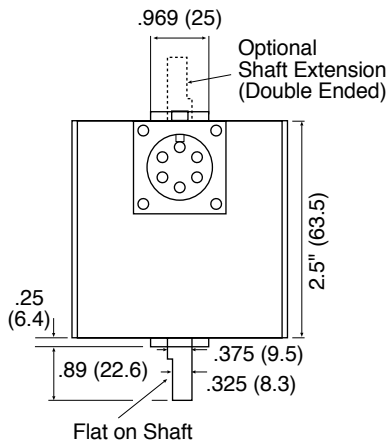
Temperature 0 to 75 degrees C (+32°F to 167°F)
Vibration 3 g's at 5 to 1000 CPS
Shock 20 g's, 10 milliseconds

MECHANICAL SPECIFICATIONS

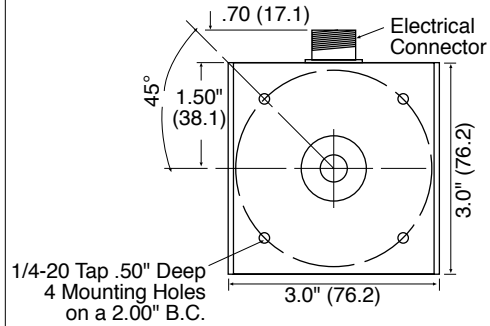
Shaft Speed 6,000 RPM maximum
Shaft Rotation Either direction
Bearings Sealed ball bearings
Starting Torque 0.10 ounce-inches
Moment of Inertia 0.0025 ounce-inches seconds squared
Radial Loading 10 pounds operating
Axial Loading 5 pounds operating
Shaft Size250" or .375" diameter (Specify choice)
Shaft Type Single or double ended (Specify choice)
Operating Life 100,000 hours average
Housing Aluminum with black anodized finish. Sealed against dust, oil vapor and moisture.
Mounting Provisions for either base or face mounting
Weight A-10 oz., B- 3.75 lbs., C- 3.25 lbs., D- 6 lbs.
Connector Type 6-pin MS Connector or Solder Terminals

A HOUSING

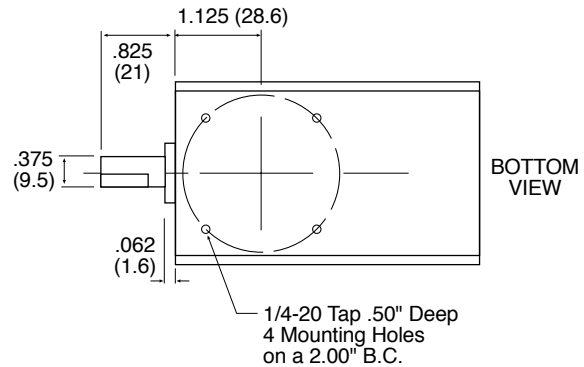
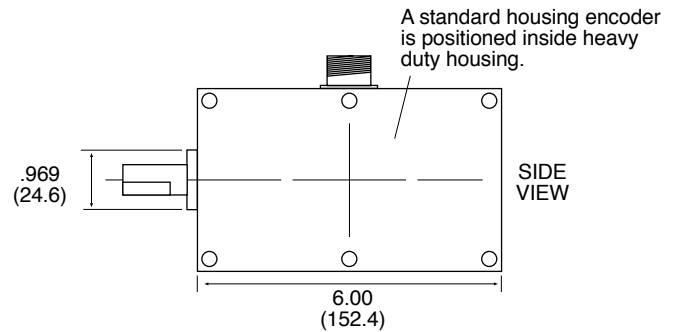
The same mounting hole pattern is also provided on the opposite end and the base.

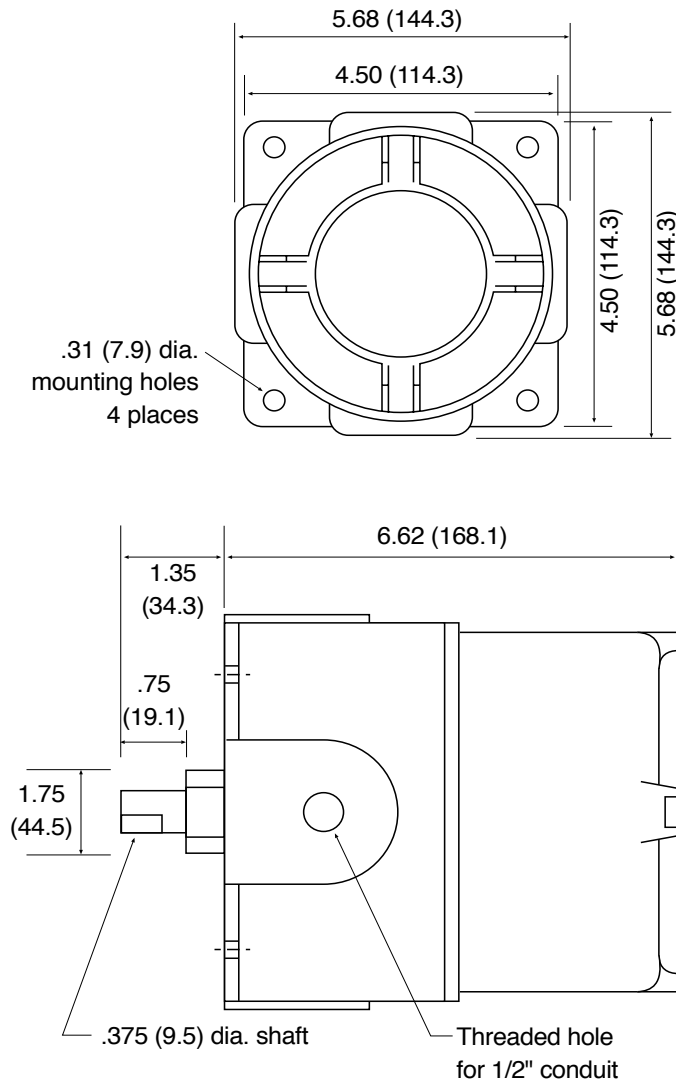
B HOUSING

The same mounting hole pattern is also provided on the opposite end and the base.

C HOUSING

The same mounting hole pattern is also provided on the opposite end and the base.





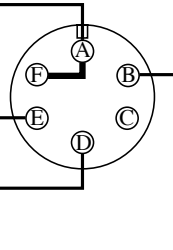
WIRING

Wire A DC ground

Wire E

Wire D

Wire B + DC



Encoder Model #	Wire D	Wire E
711	pulses	N/C
715-1	CW pulses	CCW pulses
715-2	pulses	hi-cw/lo-ccw
716	Quad "A"	Quad "B"
717	pulses	N/C

Type

Order Number

Single Channel **711 12VDC 600PPR A1**
 Square Wave Pulse **711 12VDC 1200PPR A1**

Dual Channel **716 12VDC 600PPR A1**
 Quadrature **716 12VDC 1200PPR A1**

How To Order Special Encoders:

EX: 715-1 12VDC 200PPR 50US 500RPM A1 L2.3

Series

711 (Single Square Wave Pulse)
 712 (711 with Reference Pulse)
 713 (2 Different Square Waves)
 *715-1 (Bi-Directional; 2 Channels)
 *715-2 (Bi-Directional; 1 Channel plus direction)
 716 (Quadrature)
 *717 (High Resolution 711I)

Input Voltage

5 VDC
 12 VDC
 15 VDC
 24 VDC

Pulses Per Rev.

Over 600PPR

(Model 713 ex.: 100/200 PPR)

*Pulse Width (if required)

ms = milliseconds
 us = microseconds

Shaft Maximum RPM (specify)

Housing Type

A. Standard
 A1. Single Shaft
 A2. Dual Shaft
 B. Industrial:
 B1. Single Shaft
 B2. Dual Shaft
 C. Heavy Duty Housing:
 C1 (with mating connector)
 C2 (with mating connector & shaft seal)
 C3 (with 1/2" conduit thread & terminal strip)
 C4 (with shaft seal, 1/2" conduit thread & terminal strip)
 C5 (extra heavy duty up to 50lb. radial load : 10mm shaft)
 D. Explosion Proof

(Class 1, Groups C & D / Class 2 Groups E, F, G / NEMA 7 & NEMA 9)

Other Options

L- Custom Shaft
 B - 3/8" shaft option
 ENC MS: Extra mating connector
 ENC-CABLE##: Extra mating connector with 4-conductor cable
 Reference Pulse - Add 1N (neg. pulse) or 1P (pos. pulse) after PPR

See the following page for Mounting Brackets and Measuring Wheels.

ENCODER ACCESSORIES

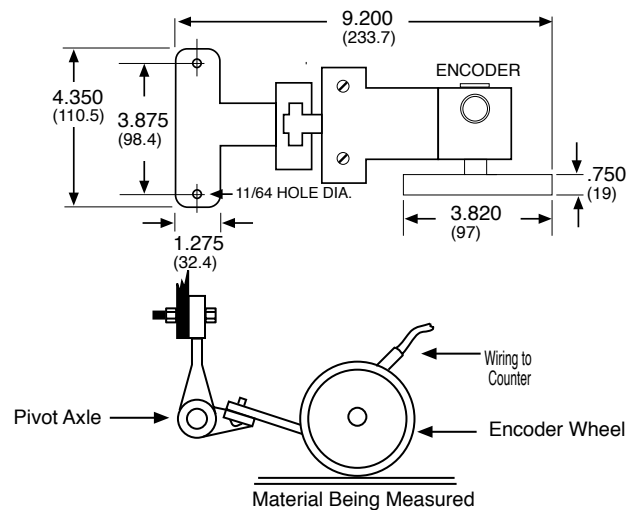


MEASURING WHEELS					
1 FOOT (304.8mm) CIRCUMFERENCE			1/3 METER (13.12" CIRCUMFERENCE)		
Bore	.251 (6.38mm)	ID	Bore	.251 (6.38mm)	ID
Face Width	1/2" (12.7mm)	1" (25.4mm)	Face Width	1/2" (12.7mm)	
Rubber	15537-070	15537-530	Rubber	407186-009	
Smooth	15537-095	15537-525	Smooth	407186-010	
Knurled	15537-510	15537-535	Knurled	407186-011	
Grooved	15537-187				
For 3/8" bore add 3/8 to end of part number					

ENCODER BRACKET

Plate Mount Model 7005

Use with 700 series Encoders



ENCODER BRACKET

Surface Mount Model 7006

Use with 700 series Encoders

