

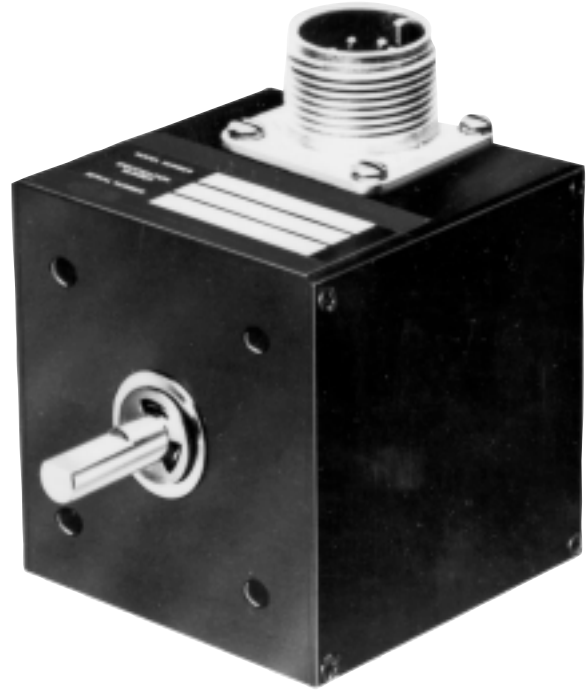
700 Series

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:

Voltage5 VDC, or 8 to 30 VDC (Specify Choice)
Current50 mA \pm 10%
Ripple2%
Regulation \pm 5%

OUTPUT

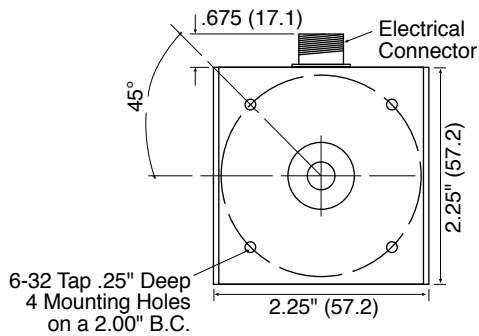
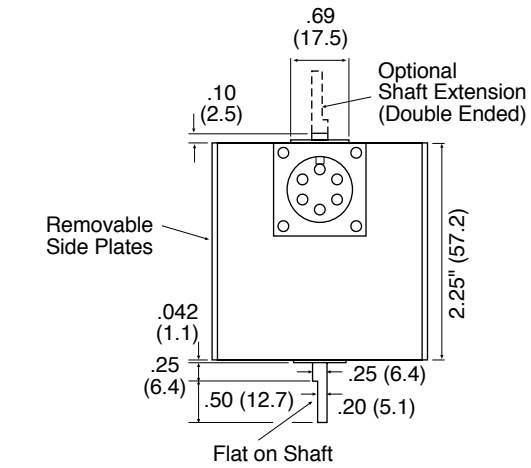
Amplitude80% of input voltage (min.)
CurrentSink up to 20 milliamperes (10 milliamperes on multi-output units). 1.5K pull up to input voltage
PolarityPositive
Wave ShapeSquare wave, 50% "on" and 50% "off"
Pulse Rate0 to 20,000 pulses per second
Rise TimeLess than 1 microsecond
Pulses per Rev.1 to 1270 (Specify choice)
AccuracyWithin \pm 0.1 degrees from one pulse to any other pulse.

ENVIRONMENTAL SPECIFICATIONS

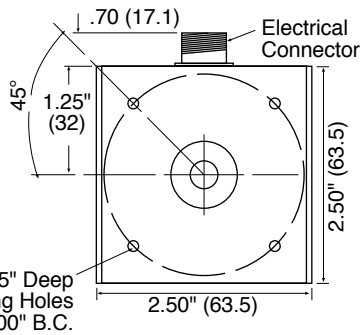
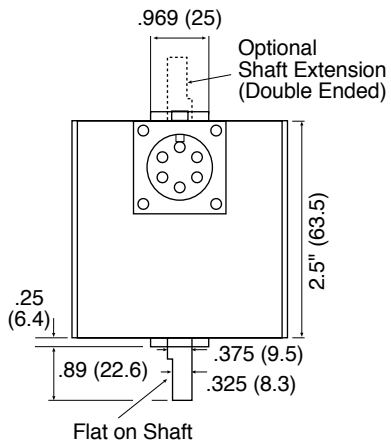
Temperature0 to 75 degrees C (+32°F to 167°F)
Vibration3 g's at 5 to 1000 CPS
Shock20 g's, 10 milliseconds

MECHANICAL SPECIFICATIONS

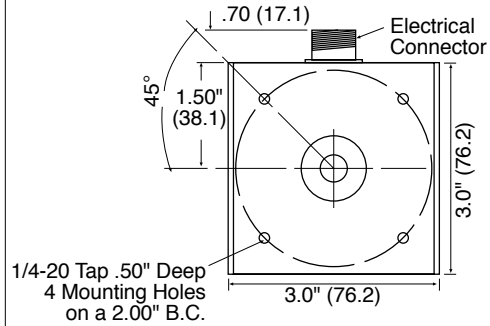
Shaft Speed6,000 RPM maximum
Shaft RotationEither direction
BearingsSealed ball bearings
Starting Torque0.10 ounce-inches
Moment of Inertia0.0025 ounce-inches seconds squared
Radial Loading10 pounds operating
Axial Loading5 pounds operating
Shaft Size250" or .375" diameter (Specify choice)
Shaft TypeSingle or double ended (Specify choice)
Operating Life100,000 hours average
HousingAluminum with black anodized finish. Sealed against dust, oil vapor and moisture.
MountingProvisions for either base or face mounting
WeightA-10 oz., B- 3.75 lbs., C- 3.25 lbs., D- 6 lbs.
Connector Type6-pin MS Connector or Solder Terminals

A HOUSING

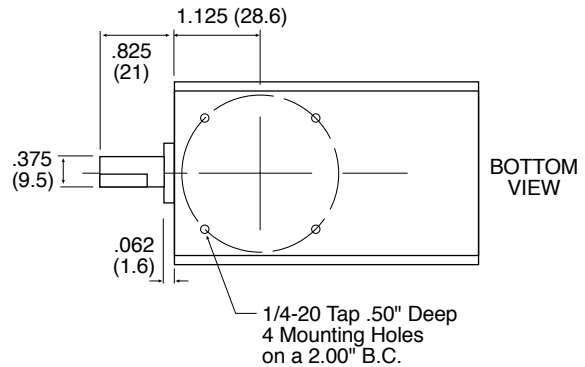
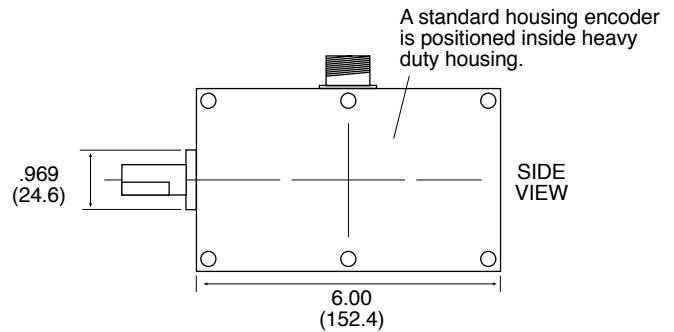
The same mounting hole pattern is also provided on the opposite end and the base.

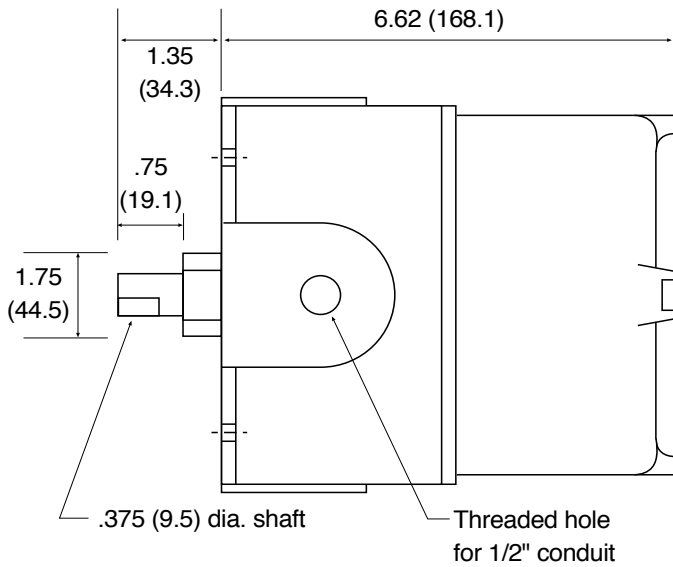
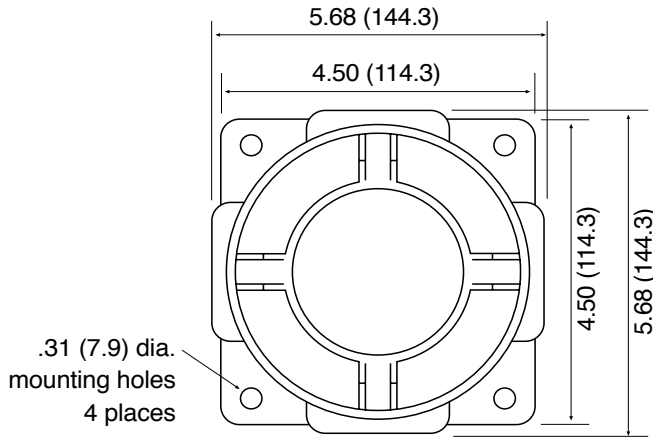
B HOUSING

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.





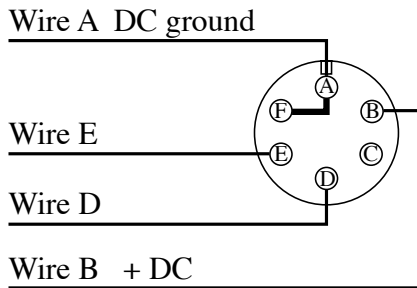
Type	Order Number
Single Channel	711 12VDC 600PPR A1
Square Wave Pulse	711 12VDC 1200PPR A1
Dual Channel	716 12VDC 600PPR A1
Quadrature	716 12VDC 1200PPR A1

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 711l)
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

WIRING



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

See the following page for Mounting Brackets and Measuring Wheels.

ENCODERS

ENCODER ACCESSORIES

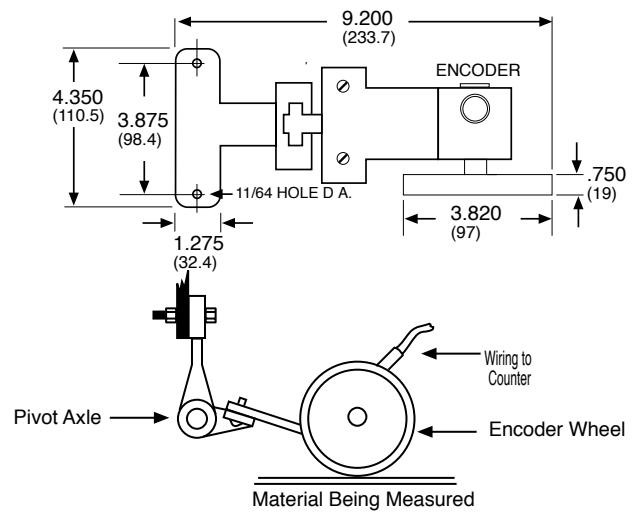
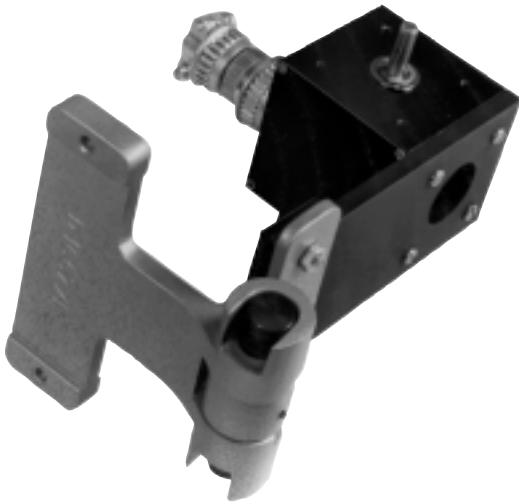


MEASURING WHEELS			
1 FOOT (304.8mm) CIRCUMFERENCE		1/3 METER(13.12" CIRCUMFERENCE	
Bore	.251 (6.38mm) ID	Bore	.251(6.38mm) ID
Face Width	1/2" (12.7mm)	1" (25.4mm)	Face Width 1/2" (12.7mm)
Rubber	15537-070	15537-530	Rubber 407186-009
Smooth	15537-095	15537-525	Smooth 407186-010
Knurled	15537-510	15537-535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

ENCODER BRACKET

Plate Mount Model 7005

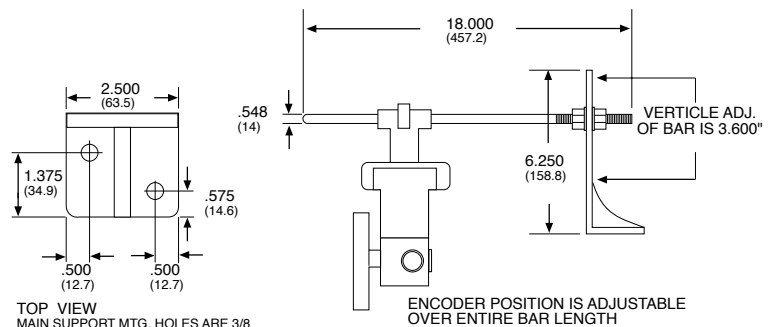
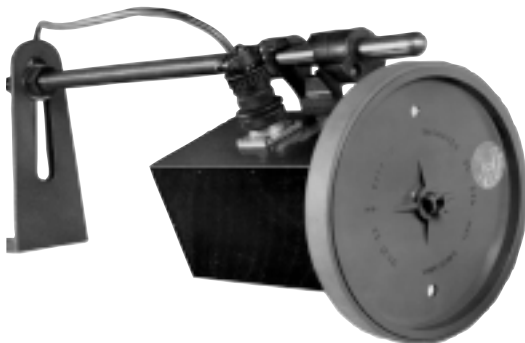
Use with 700 series Encoders



ENCODER BRACKET

Surface Mount Model 7006

Use with 700 series Encoders



ENCODERS