



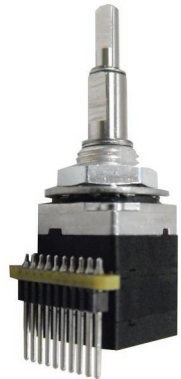
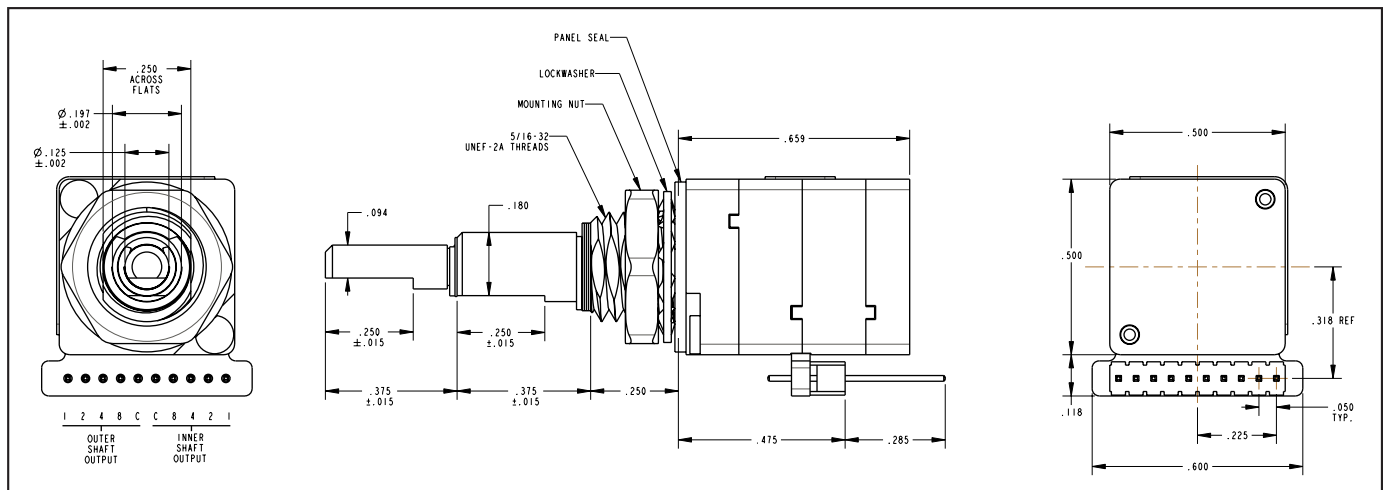
## Mechanical Encoders

### SERIES 20 Concentric Shafts

#### FEATURES

- Compact mechanical encoder with concentric shafts
- Output Code Choices
- Panel and Shaft Seal Option
- Manufactured to ISO 9001 and Military Standards
- Available with a fixed stop or continuous rotation
- Custom Configurations Available

#### DIMENSIONS in inches



Optical and Mechanical Encoders

#### SPECIFICATIONS

##### Electrical Ratings

##### Switching Loads:

150 mA, 115 Vac  
200 mA, 28 Vdc

##### Life Expectancy:

25,000 cycles at rated loads

**Contact Resistance:** 300 mohms max.

(less than 100 mohms initially)

**Insulation Resistance:** 1000 Mohms min.

(10,000 Mohms initially)

**Dielectric Strength:** 500 Vac min.

##### Mechanical Ratings

**Stop Strength:** 5 in-lbs.

**Rotational Torque:**

5 in-oz outer shaft

3.5 in-oz inner shaft

**Mounting Torque:** 12 in-lbs. recommended

**Operating Temperature Range:**

-40°C to +85°C

**Storage Temperature Range:**

-55°C to +100°C

**Immersion:** 15 psi (33ft) for 30 minutes

**Pin Dimensions:** .018 inch square

**Hardware Dimensions:**

Lockwasher: .437inch diameter, .022inch thick

Hex Nut: 5/16-32 UNEF-2B Thread,

.437 inch across flats, .094 inch thick

##### Materials and Finishes

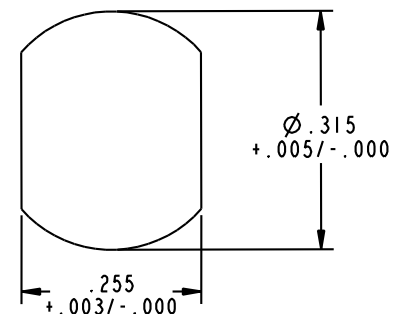
**Terminal Pins:** Phosphor bronze with tin over nickel plating

**Panel Seal:** Buna-N rubber, adhesive coated

**Lockwasher:** Spring steel with zinc plating

**Hex Nut:** Brass with tin/zinc plating

#### RECOMMENDED PANEL CUT-OUT



#### ORDERING INFORMATION (potential combinations)



**Series 20:** Mechanical Encoder, concentric shafts

**Seal:** S = Sealed; A = Not Sealed

**Output code**

**Angle of throw** (outer shaft)

**Stop arrangement:** AC = all positions continuous rotation;

AF = all positions with fixed stop between first and last;

02 to 15: number of positions, if less than maximum

**Termination:** P = Pins; 02 to 25 = Cable Length

**Stop arrangement** (see above)

**Angle of throw** (inner shaft)

**Output code**

**Output Code:**

G = Gray

B = Binary

Q = Quadrature

**Angle of throw / max positions:**

2 = 22.5° / 16 positions

0 = 30° / 12 positions

6 = 36° / 10 positions

5 = 45° / 8 positions