



Optical Encoders

**SERIES 62T**  
Thumbwheel with Pushbutton

**FEATURES**

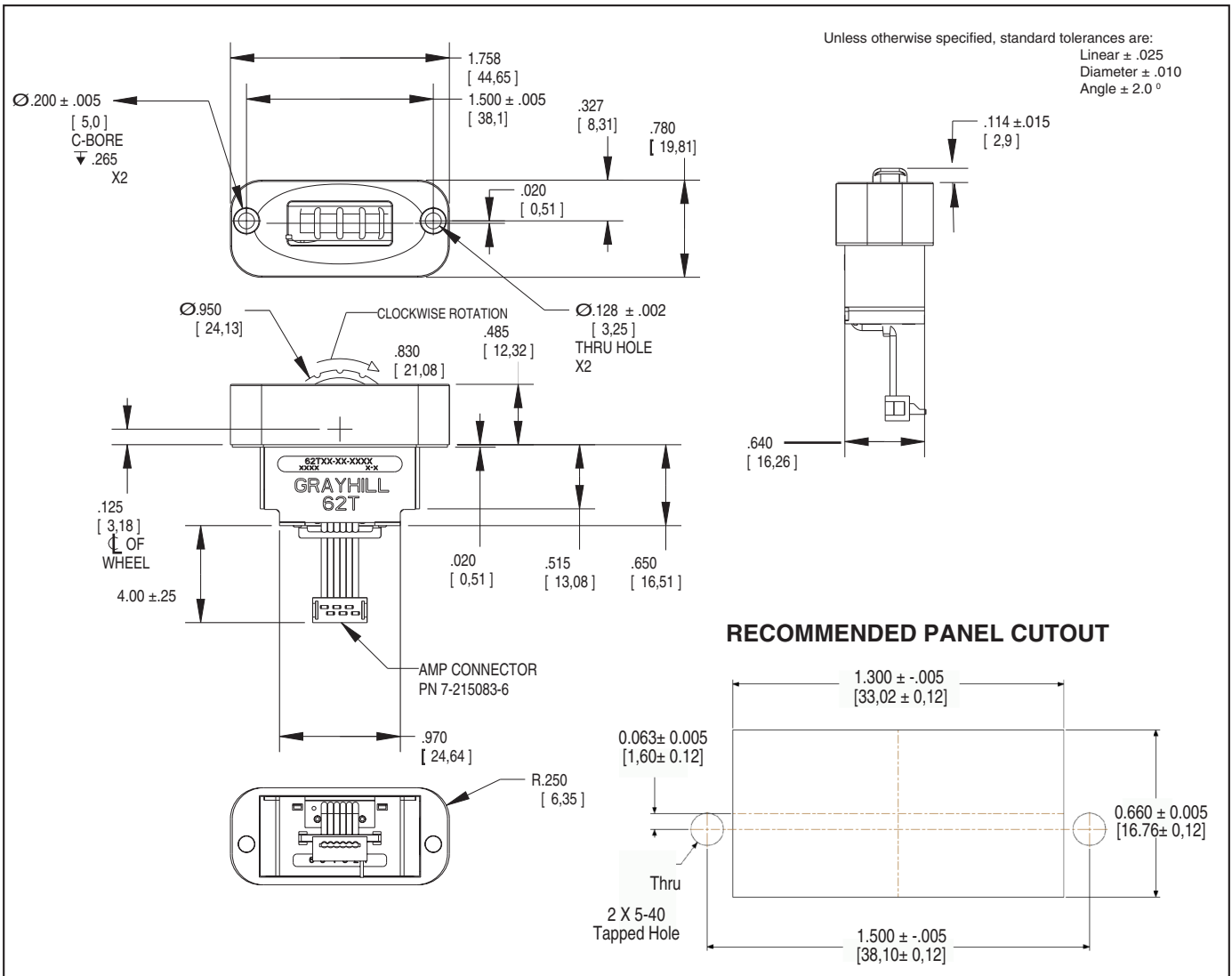
- Scroll and select functions
- Sealed against dust and particles
- Custom bezels that will blend with HMI grips and control panels
- Optional integrated pushbutton with over three million actuations
- MIL-STD-202 and MIL-STD-810F Compliant
- Standard panel seal
- Choice of cable length and termination

**APPLICATIONS**

- Scroll & select equipment in industrial and non-automotive transportation applications
- Display selectors
- Hand-grip joysticks

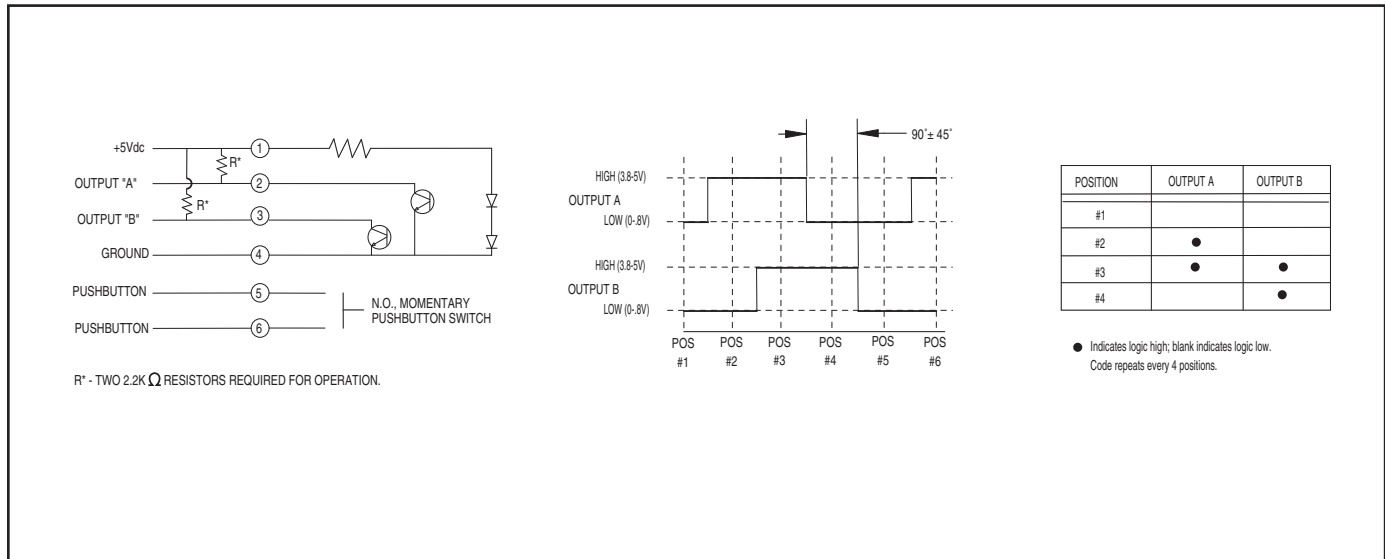


**DIMENSIONS** in inches (and millimeters)



Optical and Mechanical Encoders

## WAVEFORM AND TRUTH TABLE



## SPECIFICATIONS

### Environmental Specifications

MIL-STD-810F Qualified

**Operating Temperature Range:** -40° C to 85° C

**Storage Temperature Range:** -55° C to 100° C

**Humidity:** 240 hours at 95% humidity at 30° C

**Mechanical Vibration:** Harmonic motion with amplitude of 15g, within a varied frequency of 10 to 2000 Hz

### Mechanical Shock:

Test 1: 100g for 6 ms half-sine wave with a velocity change of 12.3 ft/sec

Test 2: 100g for 6 ms sawtooth wave with a velocity change of 9.7 ft/sec

### Pushbutton Electrical and Mechanical Specifications

**Rating:** 10mA @ 5 Vdc

**Contact Resistance:** <10ohms

**Life:** 3 million actuations minimum

**Contact Bounce:** <4 ms make, <10ms break

**Actuation Force:** N – None, 7–700g, 10 – 1000g.

**Thumbwheel Travel:** .060 ± .015 in

### Rotary Electrical and Mechanical Specifications

**Operating Voltage:** 5.00±0.25 Vdc

**Supply Current:** 25mA Max.

**Output:** Open collector phototransistor, external pull up resistors are required

**Output Code:** Two-bit quadrature, channel A leads channel B by 90° electrically during clockwise rotation of the thumbwheel

Logic high shall be no less than 3.8 Vdc

Logic low shall be no greater than 0.8 Vdc

**Power Consumption:** 125 mW Max.

**Mechanical Life:** 1,000,000 cycles of operation for Low and Non-Rotational Torque.

500,000 cycles of operation for Medium

Rotational Torque. 1 cycle is a rotation

through all positions and a full return.

### Average Rotational Torque:

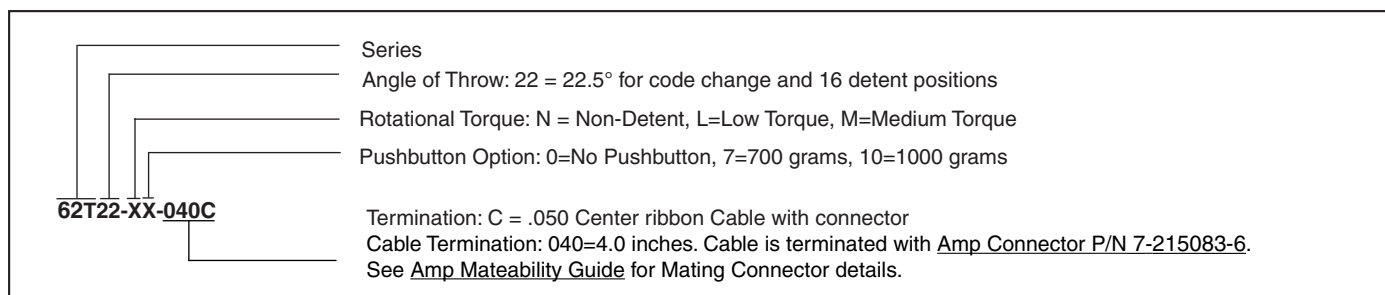
M: 2.2±.75 in-oz, L: 1.2±0.5 in-oz, N: <0.50

in-oz. Initially torque shall be within 75% of initial value throughout life.

### Materials and Finishes

**Face Plate:** Plastic

**Wheel:** Plastic



Available from your local Grayhill Component Distributor. For pricing and discounts, contact a local Sales Office, an authorized local Distributor, or Grayhill.