

## 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

Grayhill

#### 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 guadrature, 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 $\pm$ .75 in-oz, L: 1.2 $\pm$ 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 Housing: ABS Plastic Side Plate: Reinforced thermoplastic Wiper: Silicone rubber with adhesive Gasket: Silicone rubber with adhesive Wheel: Plastic Shaft: Aluminum Slide Springs: Music wire Detent Spring: Music wire Detent Balls: Nickel plated stainless steel PC Boards: NEMA grade FR4. Double clad with copper Plated with gold over nickel Pushbutton board is tin plating over copper LED: Gallium Aluminum Arsenide Phototransistor: Gold and Aluminum Alloys Code Section Housing: Reinforced plastic Detent Housing: Thermoplastic Code Rotor: Delrin 100 plastic Dome: Stainless steel Dome retainer: Delrin 100 plastic Slide Rods: Stainless steel Splining Key: Stainless steel Actuator: Reinforced thermoplastic Screws: Aluminum or Stainless Wiper Plate: Copper Solder: Lead free (96.5% tin, 3% silver, 0.5% copper, no clean)

