

SERIES 61M

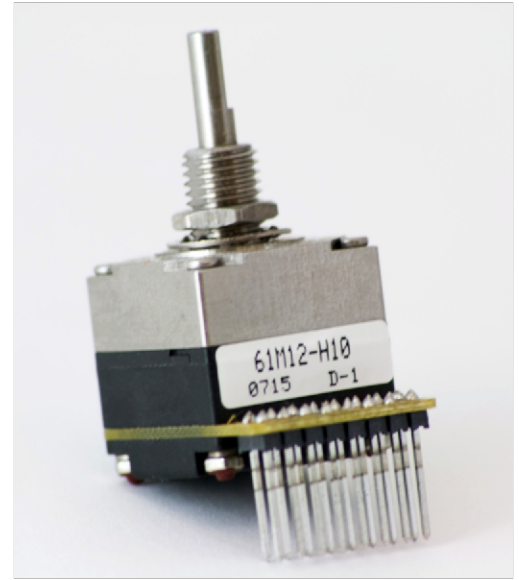
Optically Coupled for Simulated Mechanical Rotary Switch Output

FEATURES

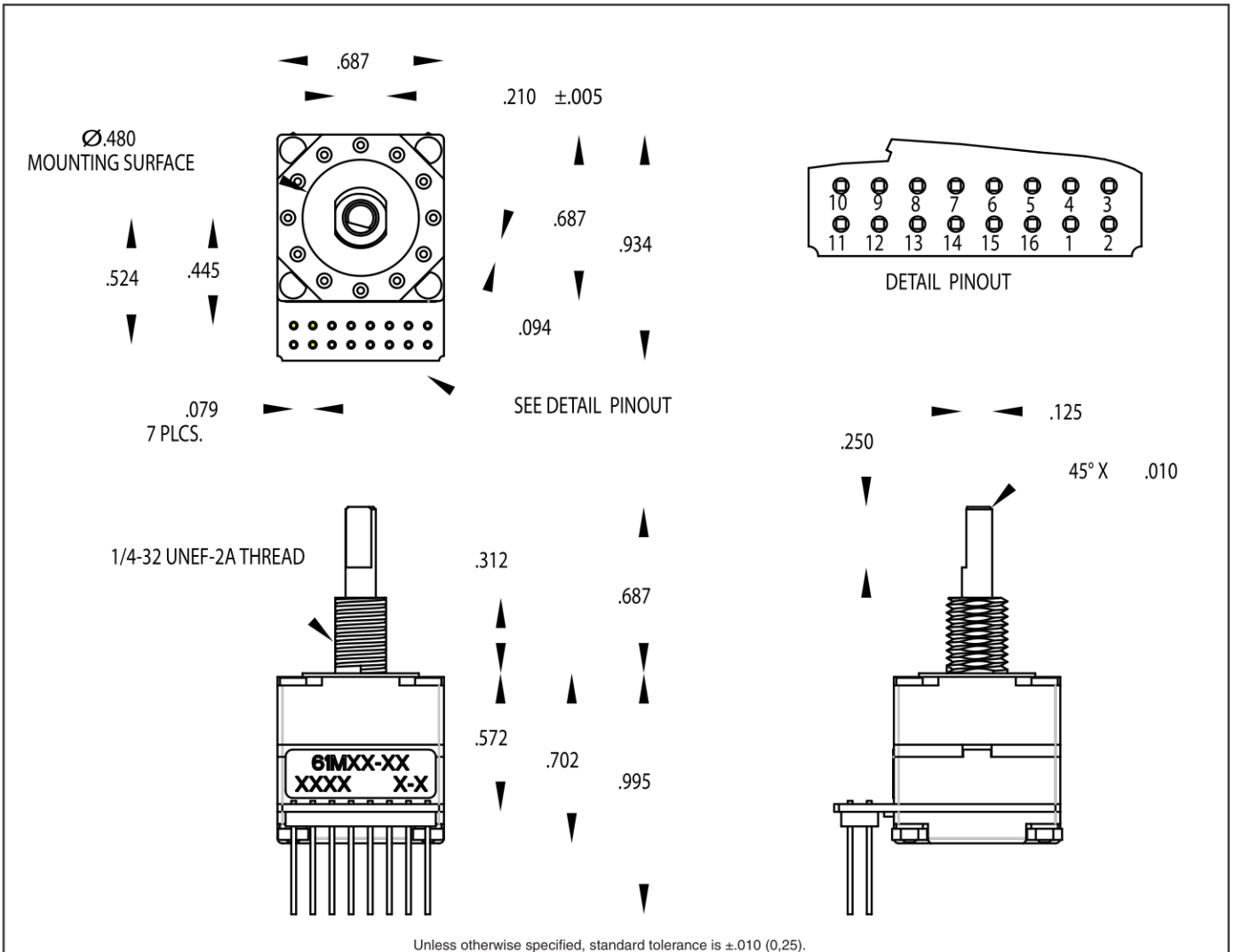
- Optical Alternative to Rotary Contacts
- One Pulse Per Detent Position Per Rotation
- Long Life of a Million Cycles
- With or Without Pushbutton
- Continuous Rotation and Fixed Stops Available
- Rugged Construction

Applications

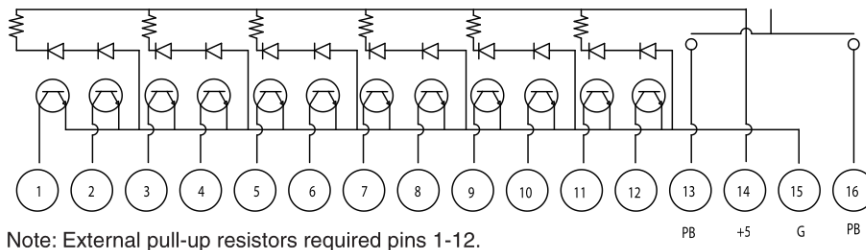
- Avionics
- Any application requiring rotary switch output and the increased reliability of an optical device.



DIMENSIONS In inches (and millimeters)



CIRCUITRY and TRUTH TABLE



POSITION	PIN NUMBER											
	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
1	●											
2		●										
3			●									
4				●								
5					●							
6						●						
7							●					
8								●				
9									●			
10										●		
11											●	
12												●

Note:
Blank Indicates high state
● Indicates low state
Code repeats every 12 positions

SPECIFICATIONS

Pushbutton Specifications

Rating: 10mA at 5 Vdc
Contact Resistance: Less than 10 Ohms
Contact Bounce: Less than 4 mS at make and less than 10 mS at break
Actuation Life: 3,000,000 actuations
Actuation Force: 8- 850±200g, 5- 550±200g
Shaft Travel: .020±.010 inch

Rotary Specifications

Rating: 5.0 ± .25 Vdc
Supply Current: 60mA maximum at 5 Vdc
Output: Open collector phototransistor, external pull-up resistors are required
Output Code: One pulse per position per rotation (360 degrees CW/CCW)
Logic High: 3.0V minimum
Logic Low: 1.0V maximum
Power Consumption: 300mW maximum

Mechanical Life: 1 million cycles of operation (1 cycle=360° rotation)
Rotational Torque: H- 10.0±3.0 in*oz, (initial)
 L- 4.0±1.5 in*oz
 (torque shall be within 50% of initial value throughout life)
Shaft Pushout Force: 50 lbs. minimum
Shaft Pullout Force: 50 lbs. minimum

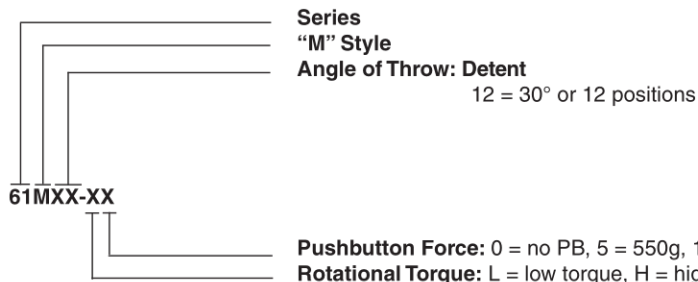
Environmental

Operating and Storage Temperature Range: -40°C to +85°C
Humidity: 90-95% Relative Humidity at 40°C for 96 hours
Vibration: Harmonic motion with amplitude of 15g, within a varied frequency of 10-2000 hZ
Mechanical Shock: 100g's, 6 ms, Half Sine, 12.3 ft/s and 100g's, 6 ms, Sawtooth, 9.7 ft/s

Materials and Finishes

Shaft: Stainless steel
Detent/Bushing Housing: Stainless steel
Code Rotor: Reinforced Thermoplastic
Stop Arm: Stainless steel
Deck Spacer: Reinforced thermoplastic
Detent Springs: Piano wire
Detent Balls: Nickel plated stainless steel
Pushbutton Actuator: Zytel 70G33L
Domes: Stainless steel
Backplate: Reinforced Thermoplastic
Printed Circuit Boards: NEMA Grade FR-4, double clad copper, gold plated over nickel
Phototransistor: Planar silicone
Infrared Emitter: Gallium aluminum arsenide
Solder Pins: Tin plated brass
Header: Hi-temp glass filled thermoplastic UL94V-0, phosphor bronze
Resistor: Metal oxide on ceramic substrate

ORDERING INFORMATION



	Pushbutton Force		
	0 none	5 550g	10 1,000g
Rotational Torque	L 5in-oz	L0	L5
	H 10in-oz	H0	N/A

Custom materials, styles, colors, and markings are available. Control knobs available.

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