# SERIES 62HS High Torque

## **FEATURES**

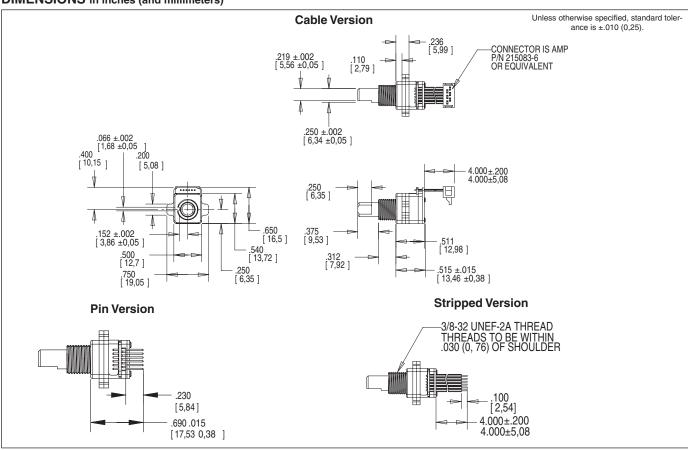
- High Rotational Torque Provides Positive Tactile Feedback
- Optically Coupled for More than a Million Cycles
- Optional Integral Pushbutton
- Compatible with CMOS, TTL and HCMOS Logic
- Available in 8,12 and 16 Detent Positions
- Choice of Cable Length and Terminations

### **APPLICATIONS**

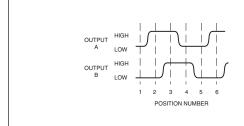
Avionics



# **DIMENSIONS** in inches (and millimeters)



# **WAVEFORM AND TRUTH TABLE**

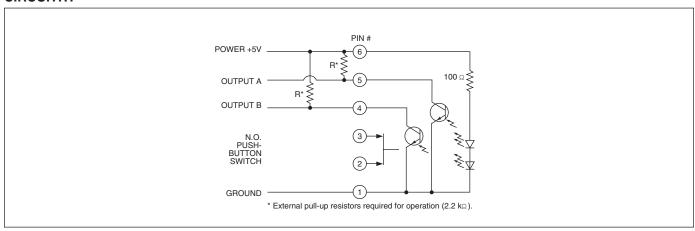


Clockwise Rotation		
Position	Output A	Output B
1		
2	•	
3	•	•
4		•

Indicates logic high; blank indicates logic low. Code repeats every 4 positions.



### **CIRCUITRY**



## **SPECIFICATIONS**

## **Pushbutton Switch Ratings**

Rating: at 5 Vdc, 10 mA, resistive Contact Resistance: less than 10 ohms (TTL or CMOS compatible)

Pushbutton Life: 3 million actuations

minimum

Voltage Breakdown: 250 Vac between

mutually insulated parts

Contact Bounce: less than 4 mS at make and less than 10 mS at break

Actuation Force: 1100 ±300g

# **Encoder Ratings**

Coding: 2-bit quadrature coded output Operating Voltage: 5.0 ±.25 Vdc

Supply Current: 30 mA maximum@5.0 Vdc

**Logic Output Characteristics:** Logic High: 3.0 Vdc minimum Logic Low: 1.0 Vdc maximum

Mechanical Life: 1,000,000 cycles minimum (One cycle is a rotation through all positions

and a full return)

Minimum Sink Current: 2.0 mA for 5 Vdc Power Consumption: 150mW maximum Output: open collector phototransistor Logic Rise and Fall: less than 30 mS max Operating Torque: 5.0 in-oz +/- 1.5 in-oz

Shaft Push Out Force: 45 lbs minimum Mounting Torque: 15 in-lbs maximum Terminal Strength: 15 lbs cable pull-out

force minimum

Operating Speed: 100 RPM maximum

### **Environmental Ratings**

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

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

Vibration Resistance: Harmonic motion with amplitude of 15G, within a varied 10 to 2000

Hz frequency for 12 hours

Mechanical Shock: Test 1: 100G, 6 mS, half sine, 12.3 ft/s; Test 2: 100G, 6 mS, sawtooth,

9.7 ft/s

Relative Humidity: 90-95% at 40°C for 96

hours

#### **Materials and Finishes**

Code Housing: Reinforced thermoplastic

Shaft: Stainless Steel

**Bushing:** Zinc casting

Shaft Retaining Ring: Stainless steel Detent Spring: Stainless steel Detent Ball: Stainless steel **Detent Section:** Hiloy 610

Printed Circuit Boards: NEMA grade FR-4

gold over nickel or palladium Terminals: Brass, tin-plated

Mounting Hardware: One brass, nickel-plated nut and zinc-plated spring steel with clear trivalent chromate finish lockwasher supplied with each switch. (Nut is 0.094 inches thick by

0.433 inches across flats) Rotor: Thermoplastic

Pushbutton Dome: Stainless steel Phototransistor: Planar Silicon NPN Infrared Emitter: Gallium aluminum

arsenide

Flex Cable: 28 AWG, stranded/top coated wire, PVC coated on .050" centers (cabled

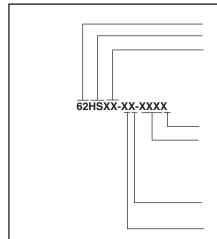
version)

Header Pins: Brass, tin-plated

Spacer: Hiloy 610 Shim: Stainless Steel

Backplate/Strain Relief: Stainless steel

# ORDERING INFORMATION



Series

Style: HS = High Torque

**Angle of Throw:**  $45 = 45^{\circ}$  or 8 positions,  $30 = 30^{\circ}$  or 12 positions,

 $22 = 22.5^{\circ}$  or 16 positions

**Termination:** S = stripped cable, C = connector, P = pins Cable Termination: 040 = 4.0in. Cable is terminated with

Amp P/N 215083-6. See Amp Mateability Guide for mating connector details.

\*Eliminate cable length if ordering pins. (Ex: 62HS22-H9-P)

**Pushbutton Option:** 0 = w/o pushbutton, 9 = 1100g

Rotational Torque: H = High Torque