



## Optical Encoders

### SERIES 62F

#### 1/2" Package, Lighted Shaft

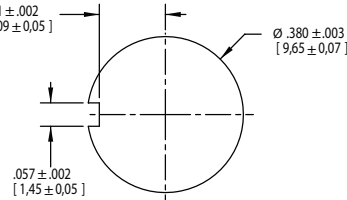
#### FEATURES

- Integrated Self-Lighting System for Knob Illumination
- 1 Million Rotational Cycles
- 1/2" Package
- Compatible with CMOS, TTL and HCMOS Logic
- Optional Integral Pushbutton
- Choices of Cable Length and Terminations
- Customized Solutions Available

#### APPLICATIONS

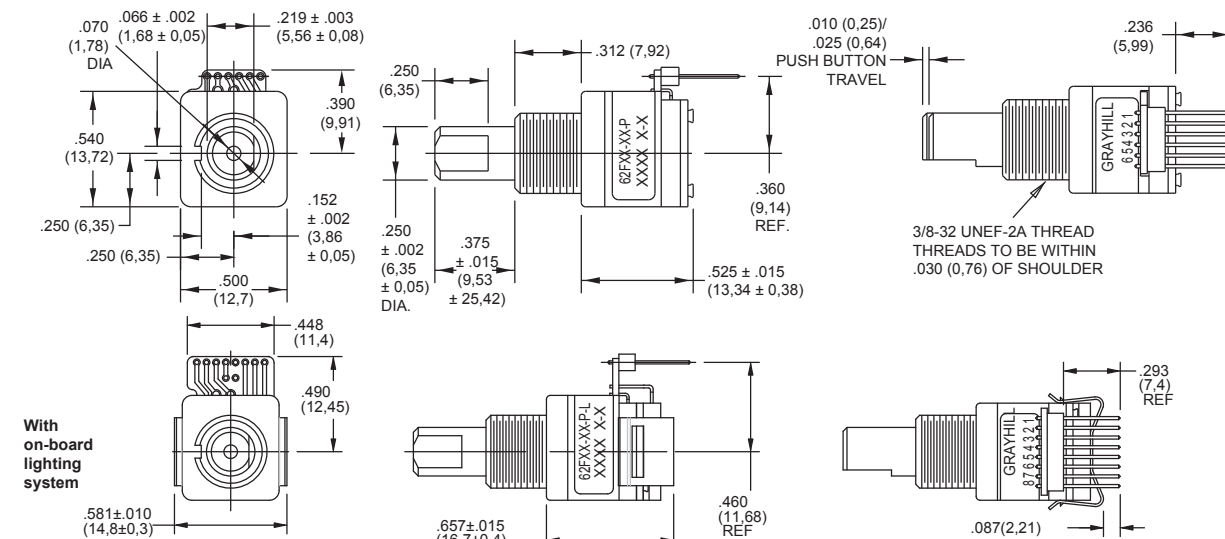
- Global Positioning
- Driver Information Systems
- Medical Equipment
- Cockpit Controls
- Mixing Boards

#### Suggested Mounting Panel Cutout

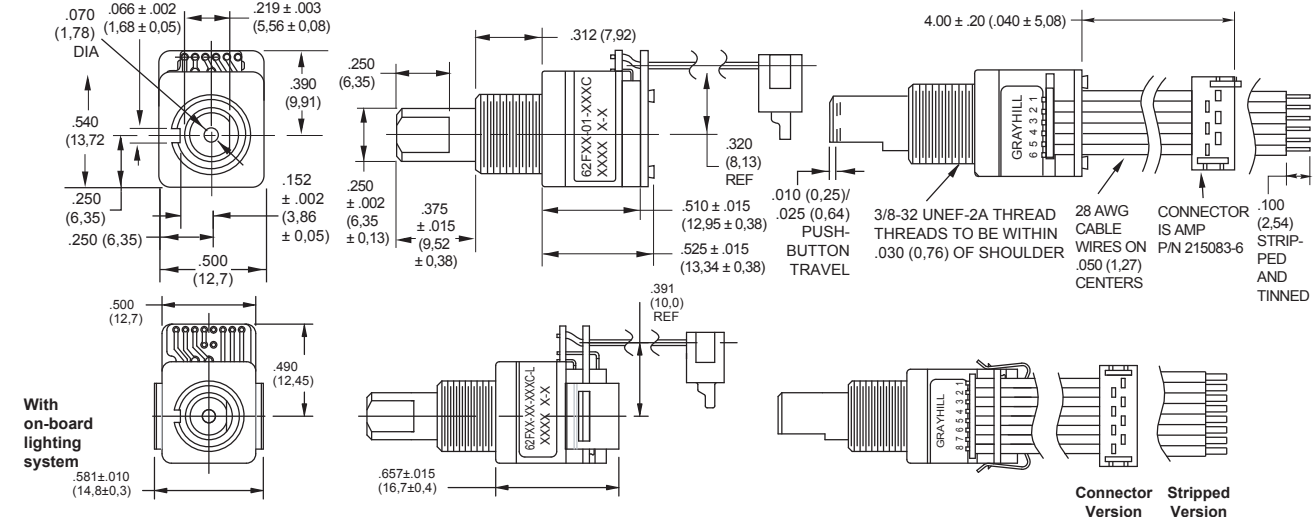


#### DIMENSIONS in inches (and millimeters)

##### Pin Version

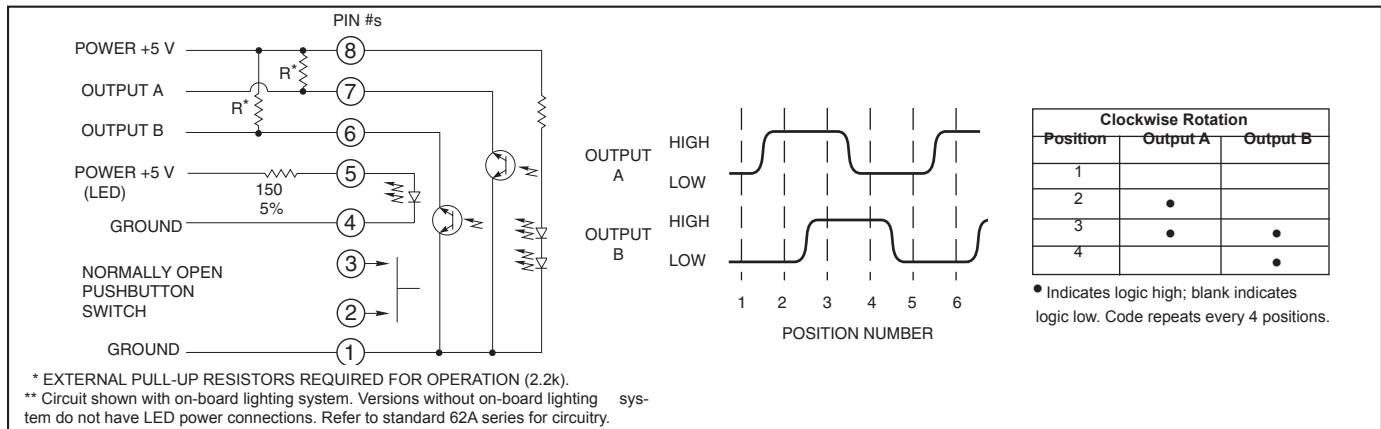


##### Cable Version



Unless otherwise specified, standard tolerance is  $\pm 0.010$  (0.25).

## CIRCUITRY, TRUTH TABLE, AND WAVEFORM Standard Quadrature 2-Bit Code



## SPECIFICATIONS

## Pushbutton Switch Ratings

Rating: 5 Vdc, 10 mA, resistive

Contact Resistance: less than 10 ohms (TTL or CMOS compatible)

Pushbutton Life: 3 million actuations minimum

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

Actuation Force: 1000 ± 300 grams

Pushbutton Travel: .010/.025 inch

## Switch Ratings

Coding: 2-bit quadrature coded output

Operating Voltage: 5.0 ± .25 Vdc

Voltage Breakdown: 250 Vac between mutually insulated parts

Supply Current: 30 mA maximum

Logic Output Characteristics:

Logic High: 3.8 Vdc minimum

Logic Low: 0.8 Vdc maximum

Rotational Life: 1,000,000 cycles minimum (One cycle is a rotation through all positions and a full return)

Minimum Sink Current: 2.0 mA

Power Consumption: 150mW maximum

Optical Rise and Fall Times: less than 30 mS maximum

## Operating Torque:

Detent: 2.0 ± 1.4 in-oz initially

Non-detent: less than 1.5 in-oz initially

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

Axial Shaft Play: .010 maximum

## Environmental Ratings

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

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

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

Vibration Resistance: Harmonic motion with amplitude of 15G's, within a varied 10 to 2000 Hz frequency for 12 hours per MIL-STD-202, Method 204

Mechanical Shock: Test 1: 100G for 6 mS, half sine, 12.3 ft/s; Test 2: 100G for 6 mS, sawtooth, 9.7 ft/s

## Materials and Finishes

Code Housing: Reinforced thermoplastic

Shaft: Aluminum

Bushing: Zinc casting

Shaft Retaining Ring: Stainless steel

Detent Spring: Stainless steel

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

Code Housing: Thermoplastic

Pushbutton Dome: Stainless steel

Dome Retaining Disk: Thermoplastic

Pushbutton Housing: Thermoplastic

Phototransistor: Planar Silicon NPN

Pushbutton Contact: Brass, nickel-plated

Flex Cable: 28 AWG, stranded/top coated wire, PVC coated on .050 or .100" centers (cabled version)

Header Pins: Phosphor bronze, tin-plated

Spacer: ABS

Backplate/Strain Relief: Stainless steel

Light Pipe: Thermoplastic

LED Housing: Thermoplastic

## ORDERING INFORMATION

	<b>Series</b>	
	<b>Angle of Throw: Detent</b>	11 = 11.25° or 32 pos. 15 = 15° or 24 positions 18 = 18° or 20 pos. 22 = 22.5° or 16 positions
	<b>Angle of Throw: Non-detent</b>	01 = 11.25° or 32 positions 05 = 15° or 24 positions 08 = 18° or 20 positions 02 = 22.5° or 16 positions
	<b>Pushbutton Option:</b>	01 = w/o pushbutton, 02 = with pushbutton
<b>62F22-01-040S-L</b>	<b>LED:</b>	blank = no LED, L = supplied with LED
	<b>Termination:</b>	S = Stripped cable; S-L = Stripped cable, LED; C = Connector; C-L = Connector, LED; P = Pin; P-L = Pin, LED
	<b>Cable Termination:</b>	040 = 4.0in. Cable is terminated with Amp P/N 215083-6. See Amp Mateability guide for mating connector details.
	<b>*Eliminate cable length if ordering pins. (Ex: 62A22-02-P)</b>	

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.

# Mouser Electronics

Authorized Distributor

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## Grayhill:

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