SERIES 62F

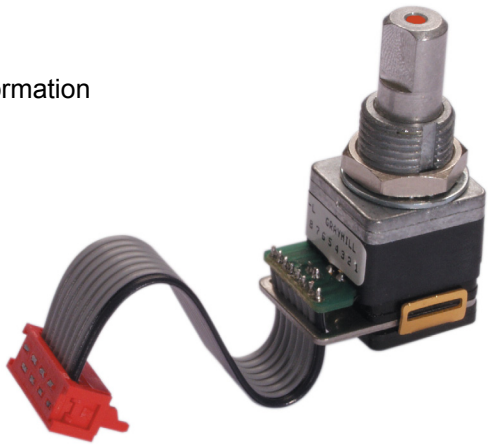
1/2" Package, Lighted Shaft

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

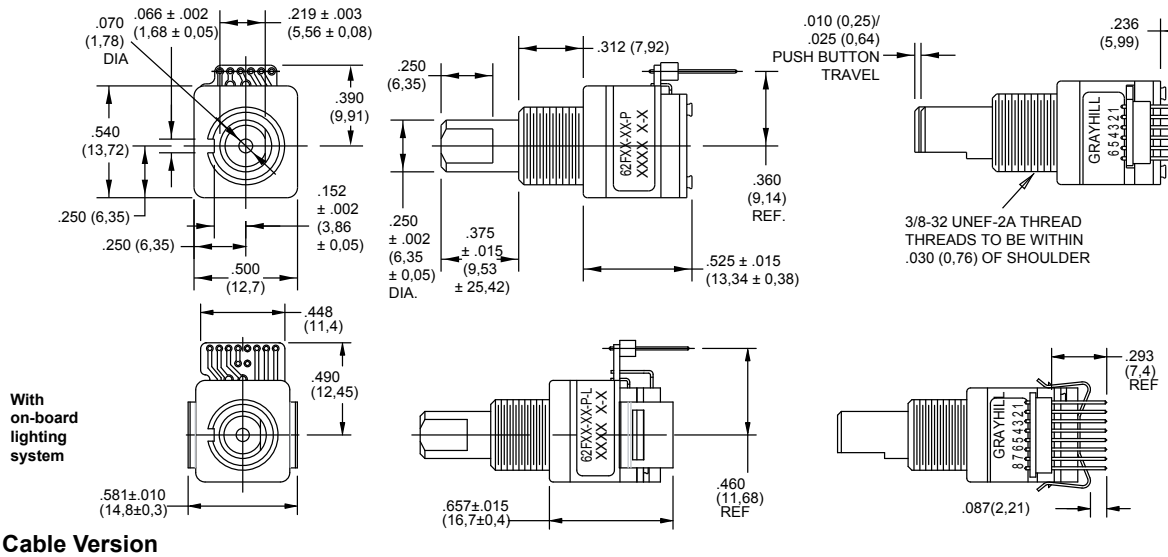
APPLICATIONS

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

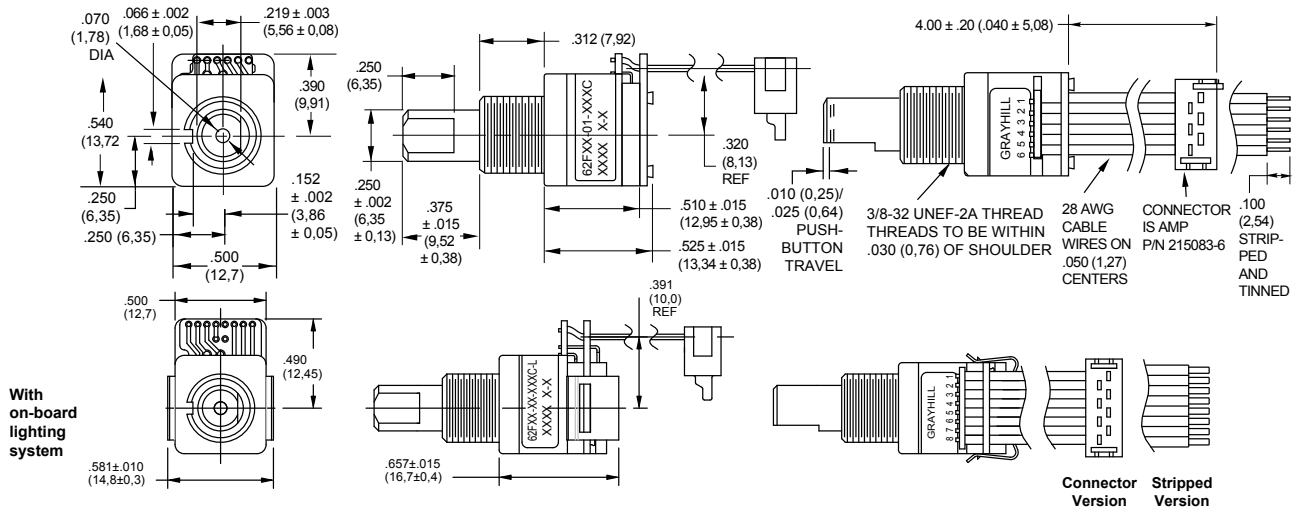


DIMENSIONS in inches (and millimeters)

Pin Version

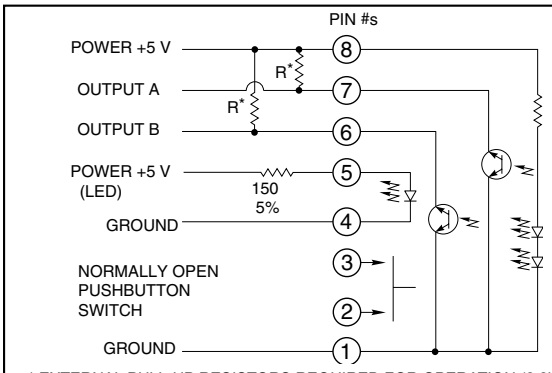


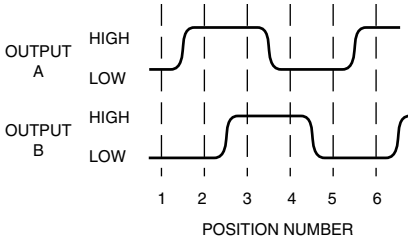
Cable Version



Unless otherwise specified, standard tolerance is ±.010 (0,25).

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





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

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

* EXTERNAL PULL-UP RESISTORS REQUIRED FOR OPERATION (2.2k).
** Circuit shown with on-board lighting system. Versions without on-board lighting system do not have LED power connections. Refer to standard 62A series for circuitry.

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 Characterisitics:
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

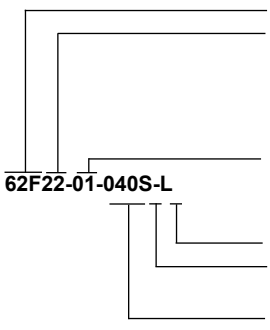
Environmental Ratings

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



Series
Angle of Throw: Detent
11 = 11.25° or 32 pos.
15 = 15° or 24 positions
18 = 18° or 20 pos.
22 = 22.5° or 16 positions
Non-detent
01 = 11.25° or 32 positions
05 = 15° or 24 positions
08 = 18° or 20 positions
02 = 22.5° or 16 positions
Pushbutton Option: 01 = w/o pushbutton, 02 = with pushbutton

LED: blank = no LED, L = supplied with LED
Termination: S = Stripped cable; S-L = Stripped cable, LED; C = Connector; C-L = Connector, LED; P = Pin; P-L = Pin, LED
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: 62A22-02-P)

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.