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)

Unless otherwise specified, standard tolerance is ±0.010 (0.25).
**SPECIFICATIONS**

**Pushbutton Switch Ratings**
- Rating: 5 Vdc, 10 mA, resistive (TTL or CMOS compatible)
- Contact Resistance: less than 10 ohms
- 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

**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:**
- Thermostatic

**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:**
- Phospher 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)*

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**Optical and Mechanical Encoders**

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