

Model 110E

Spectrol

Mechanical Encoder



FEATURES

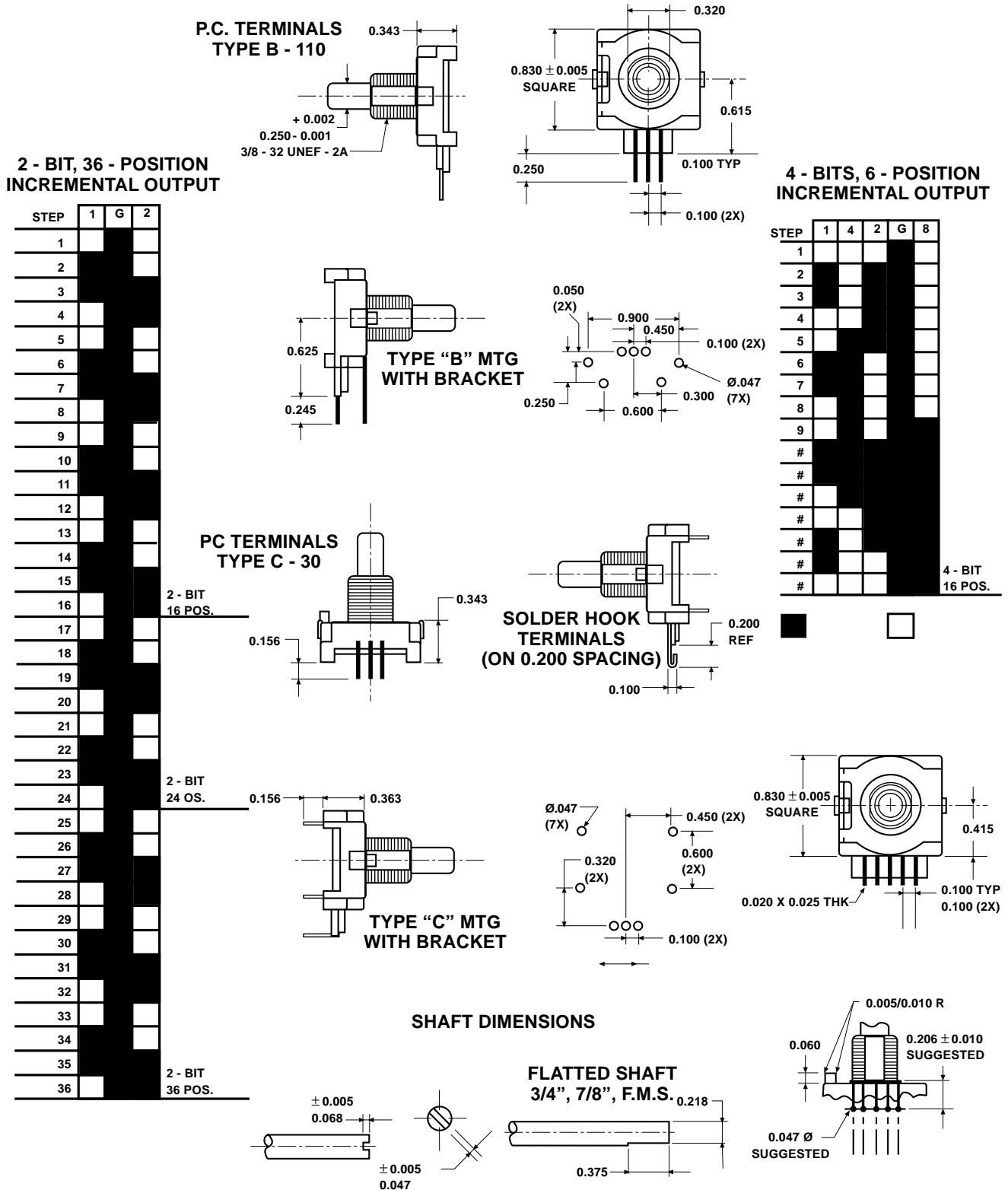
- Cost Effective - Eliminates A/D Converters
- High Resolution - Up to 36 Positions
- Stability - Operating Range of - 40°C to + 105°C
- Variability - Horizontal and Vertical Mounting

The Model 110E is a 7/8" square mechanical encoder which provides a 2 - bit grey code for relative reference and a 4 - bit grey code for absolute reference applications. Manually operated it has a rotational life of 100,000 shaft revolutions, a positive detent feel and can be combined with a second modular section in a concentric - shaft construction. Its small size makes it suitable for panel-mounted applications where the need for costly front - panel displays can be completely eliminated.

| ELECTRICAL SPECIFICATIONS | |
|---------------------------------|--|
| PARAMETER | |
| Output | 2 - bit grey code, channel L leads channel R by 90 degrees electrically in the CW direction 4 bi - grey code, absolute electrical position output |
| Closed Circuit Resistance | 5Ω maximum |
| Open Circuit Resistance | 100KΩ minimum |
| Contact Rating | Resistance load 250mA @ 28VDC |
| Switching Loads | 1.5mA @ 115VDC 150mA @ 14VDC |
| Bounce | 5ms/cycle @ 15 RPM |
| Dielectric Withstanding Voltage | 1000VAC @ sea level |
| Electrical Travel | Continuous |
| Operating Speed | 50 RPM maximum |

| ORDERING INFORMATION | | | | | | |
|---|-----------------------------|--|---------------------------------|--------------------------|---|--|
| 110E | 1 | A | 48 | F | 204P | P |
| MODEL | | BUSHING | SINGLE SHAFT FMS CODED IN 64ths | | 2-4 - BIT GREY CODE OPTIONS | |
| 110E | 1 = @ 9'0 clock 0 = None | A = 3/8 (9.53mm) dia x 1/4 (6.35mm) long G = 3/8 (9.53mm) dia x 3/8 (6.35mm) long | 48 = 0.750" 56 = 0.875" | S: Slotted F: Flatted | 204P = 4 cycles/rev 16 detents/rev 206P = 6 cycles/rev 24 detents/rev 209P = 9 cycles/rev 36 detents/rev 416P = 16 cycles/rev 16 detents/rev | B: PC terminals straight (horizontal mount) C: PC terminals bent back (vertical mount) Type C - 30 P: Type B with mounting bracket D: Type C with mounting bracket S: Solder Hook |
| Example: 110E - 1 - A - 48 - F - 204P - P | | | | | | Hardware not included |

DIMENSIONS in inches



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| MECHANICAL SPECIFICATIONS | |
|---------------------------|--|
| PARAMETER | |
| Rotational Torque | 3.5 oz - in (2.16 - 3.60 Ncm) |
| Mechanical Travel | Continuous |
| Panel Mounting Torque | 7 lbs - in (1.13 Nm) maximum |
| Shaft Load Force | 10 lbs - in (1.13 Nm) maximum |
| Shaft Pull Force | 10 lbs - in maximum |
| Terminals | Standard PC style, 3 terminals on 0.100" (2.54mm) grid - in - line perpendicular or parallel to shaft. Solder hook available on 0.200" grid |
| Molded Construction | Molding compound used for housing/bushing and shaft has a UL94V - 2 rating |
| Rotational Life | 100,000 detented cycles at rated load typical (1 cycle = 720 degrees) |

| ENVIRONMENTAL SPECIFICATIONS | |
|------------------------------|--|
| Temperature Range | - 40°C to + 105°C (Operating temperature) - 55°C to + 120°C (Storage temperature) |
| Humidity | Per MIL-STD 202, Method 106C Insulation resistance shall be 1 MΩ maximum of a relative humidity 90% @ 25°C |
| Shock | Per MIL-STD 202, Method 213, Test Condition G consisting of 1 MIL-STD |