

Model 8150

Position Sensor

7/8" Diameter

10 turn* Non-Contacting

Hall Effect



MODEL STYLES AVAILABLE

| | |
|------|--------------------------|
| 8151 | 1/8" Shaft, 1/4" Bushing |
| 8153 | 1/8" Shaft, Servo Mount |
| 8154 | 6 mm shaft, 3/8" Bushing |
| 8156 | 1/4" shaft, 3/8" Bushing |

ELECTRICAL¹

| | |
|---|--|
| Input Voltage | 4.5 to 5.5 Vdc nominal |
| Output Voltage | 0.2 Vdc (4%) to 4.8 Vdc (96%) Typical (see Feature Codes table) |
| Output Overvoltage Limits | 10 Vdc to -0.3 Vdc; output may be shorted to ground or supply without damage |
| Output Current | ±15 mA maximum |
| Output Load | 1 kΩ Min., 10 kΩ typical |
| Supply Voltage Absolute Limits | 20 Vdc Max., -10 Vdc minimum |
| Independent Linearity ² | ±0.5% (0.25% Available) |
| Hysteresis | 10° maximum (10 turn), 5° maximum (5 turn), 3° maximum (3 turn) |
| Resolution | 0.88° for 3600° travel, 0.44° for 1800° travel, 0.27° for 1080° travel |
| Supply Current | 8.5 mA typical, 12 mA maximum |
| Dielectric Strength | 750 V rms |
| Insulation Resistance | 1,000 MegΩ minimum |
| Electrostatic Discharge (ESD) | Passes 2 kV human body model and 15 kV air discharge |
| Bulk Current Injection (BCI) | Passes 2-500 MHz at 200 mA |
| Actual Electrical Travel | Same as mechanical travel |
| Temperature Coefficient of Output Voltage | ± 20 ppm/°C |

MECHANICAL

| | |
|---|--|
| Total Mechanical Travel | Up to 3600° continuous |
| Bearing | Bushing models use bronze sleeve, Servo model uses two ball bearings |
| Weight | TBD |
| Panel Nut Tightening Torque | 25 in. lb. maximum |
| Start/Run Torque (ES option adds 0.5 oz.-in.) | < 0.1 oz-in |

¹ Specifications subject to change without notice.

² Linearity is measured per voltage code range, inset by 1% of input voltage on each end.

* Model available in 3 & 5 turn versions.

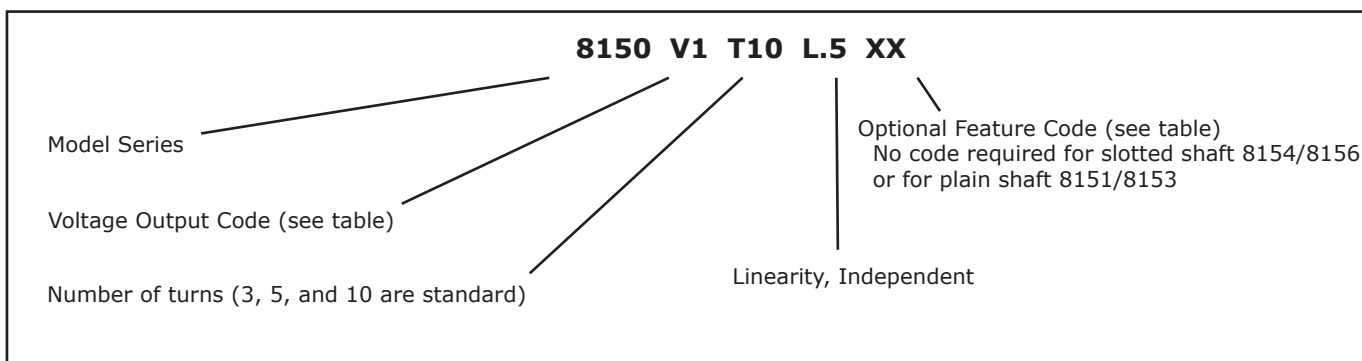


Model 8150

ENVIRONMENTAL

| | |
|-------------------------------------|---|
| Operating Temperature Range | -40°C to +125°C |
| Shock | Per MIL R-39023, 6 ms Saw-tooth 100 G's |
| Vibration | Per MIL R-39023, 10 G's, 100 to 500 Hz |
| Moisture Resistance, Powered | Per MIL 202G, Method 106G |
| Rotational Life | 8153: 50 million shaft revolutions with side load < 0.33 lb, 100 million with side load < 0.25 lb all other models: 10 million shaft revolutions with up to 8 oz side load |
| Storage Temperature Range | -55°C to +125°C |
| Ingress Protection Rating (IP Code) | IP50, IP66 available as option (feature code ES) |

ORDERING INFORMATION



CODES

| Voltage Output Codes | |
|----------------------|---------------|
| V0 | ≤ 3% to ≥ 96% |
| V1 | 4% to 96% |
| V2 | 5% to 95% |
| V3 | 10% to 90% |
| V4 | 15% to 85% |
| V5 | 20% to 80% |
| | |
| | |

When V0 is used the angle specified is the theoretical angle over which the output would vary if the output could actually reach 0% and 100% of Vcc.

| Optional Feature Codes | |
|------------------------|--|
| no code | 8151, 8153 plain shaft. 8154, 8156 slotted shaft |
| SS | Slotted Shaft (8151, 8153 only. Not used for 8154, 8156) |
| FS | Flatted Shaft |
| LT | Linearity Data |
| SL | Shaft Lock (8156 only) |
| CW | Reverse Direction |
| HT | High Torque (8156 only) |
| ES | Seal IP66 (8154, 8156 only) |

When multiple feature codes are used the P/N shall be in the same sequence as listed in this table (top to bottom).

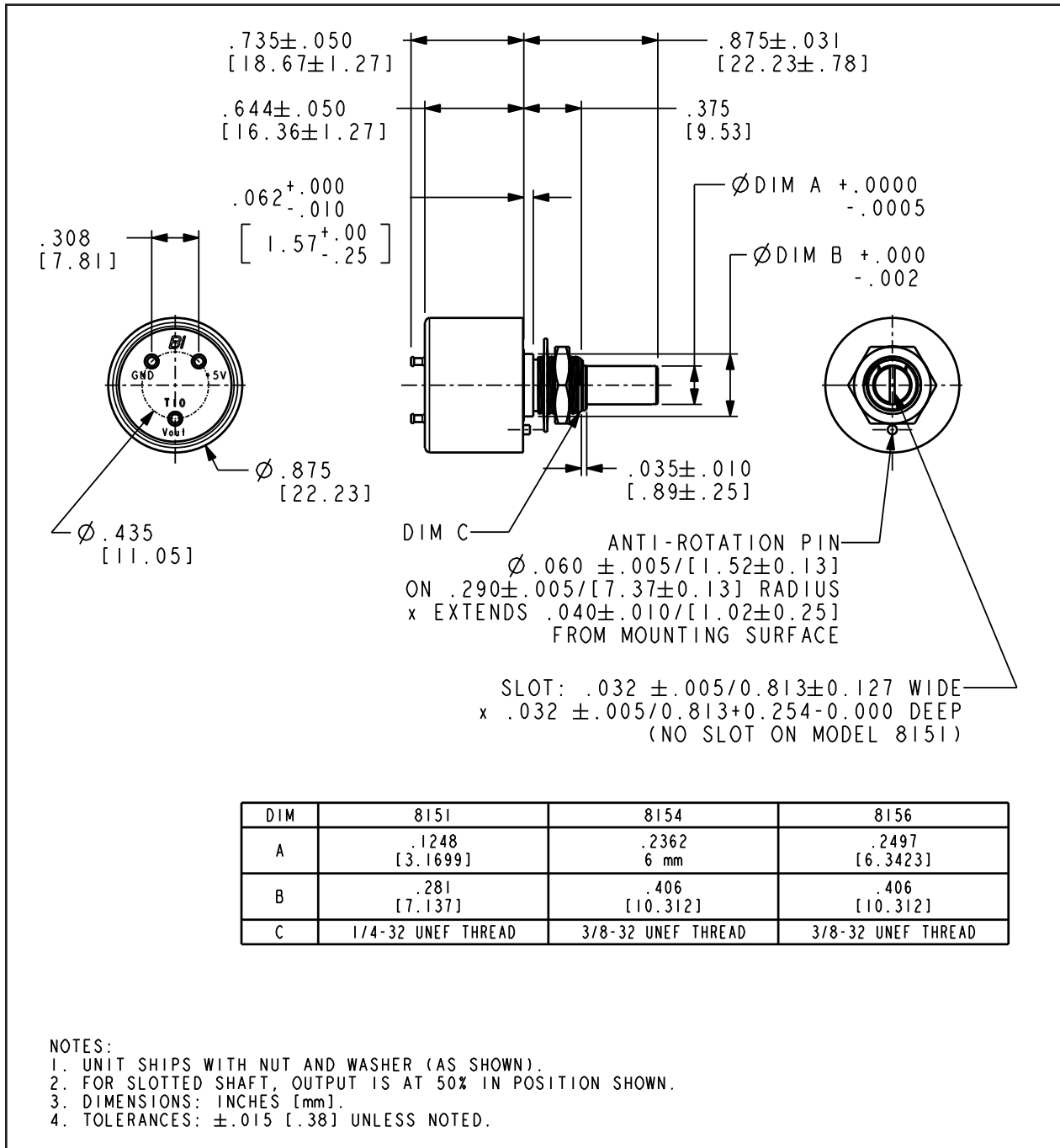
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MATCHING TURNS COUNTING DIALS

8151: RBJ, 2601, 2641

8154, 8156: RB, 2126, 2606, 2606S, 2607, 2607S, 2626, 2627, 2646, 2646S, 2647, 2647S

OUTLINE DRAWING (bushing mounts)



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Model 8150

OUTLINE DRAWING (8153 servo mount)

