

# Non-Contacting Hall Effect Single Turn Position Sensor



## Model 6120 Series

### Features:

- 7/8" diameter
- Non-contacting
- Hall-effect technology
- Single turn
- Multiple styles available
- Custom models available



## Model Styles Available

6121	1/8" Shaft, 1/4" Bushing
6124	6 mm Shaft, 3/8" Bushing
6126	1/8" Shaft, 3/8" Bushing
6127	1/4" Shaft, 3/8" Bushing
612x-XXXX	Custom models are available; Contact Customer Service for special features

## Electrical

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	±8 mA Max.
Output Load	1 kΩ Min., 10 kΩ Typical
Operating Input Voltage Range	4.5 to 5.5 Vdc
Supply Voltage Absolute Limits	20 Vdc Max., -10 Vdc Min.
Independent Linearity <sup>2</sup>	±0.5% (0.25% Available)
Hysteresis	0.2% Max.
Resolution	0.088° for 360° travel, 0.011° for 45° travel
Supply Current	8.5 mA Typical, 12 mA Max.
Dielectric Strength	750 V rms
Insulation Resistance	1,000 MegΩ Min.
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	360° Typical (see Ordering Information)
Temperature Coefficient of Output Voltage	± 20 ppm/°C

## Mechanical

Total Mechanical Travel	360° Continuous (320° with stop feature)
Bearing	Bearing Bronze Bushing
Weight	0.6 oz. Typical
Static Stop Strength	40 in. oz.
Panel Nut Tightening Torque	25 in. lb. Max.
Rotational Speed	500 RPM Max.

<sup>1</sup> Specifications subject to change without notice.

<sup>2</sup> Linearity is measured between 1% and 99% of input voltage.



General Note  
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

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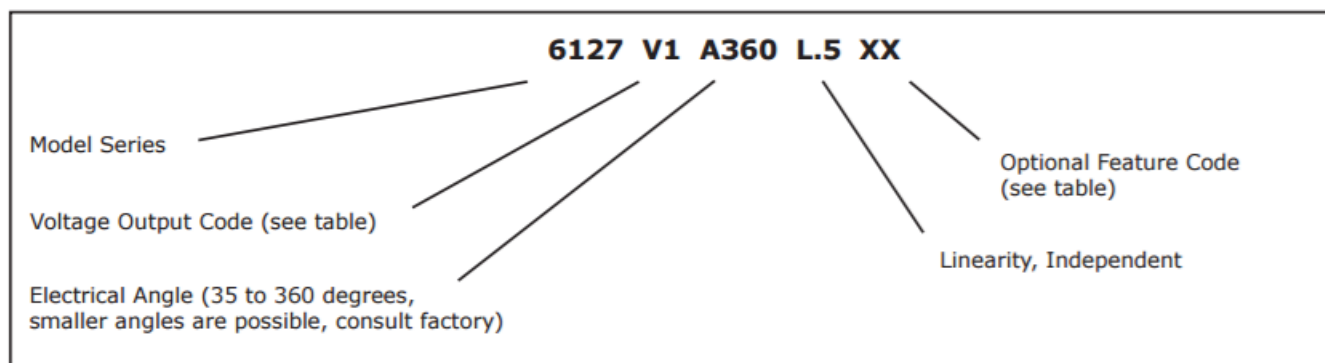
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## Environmental

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	10 million shaft revolutions with up to 8 oz sideload
Storage Temperature Range	-55°C to +125°C
Ingress Protection Rating (IP Code)	IP50, IP66 available as option (feature code ES)

## Ordering



## Feature 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	
ST	Stop (320°)
FS	Flatted Shaft (slot standard)
LT	Linearity Data
SL	Shaft Lock 6127 only
CW	Reverse Direction
ES	Seal (IP66) 6124 or 6127 only

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

### General Note

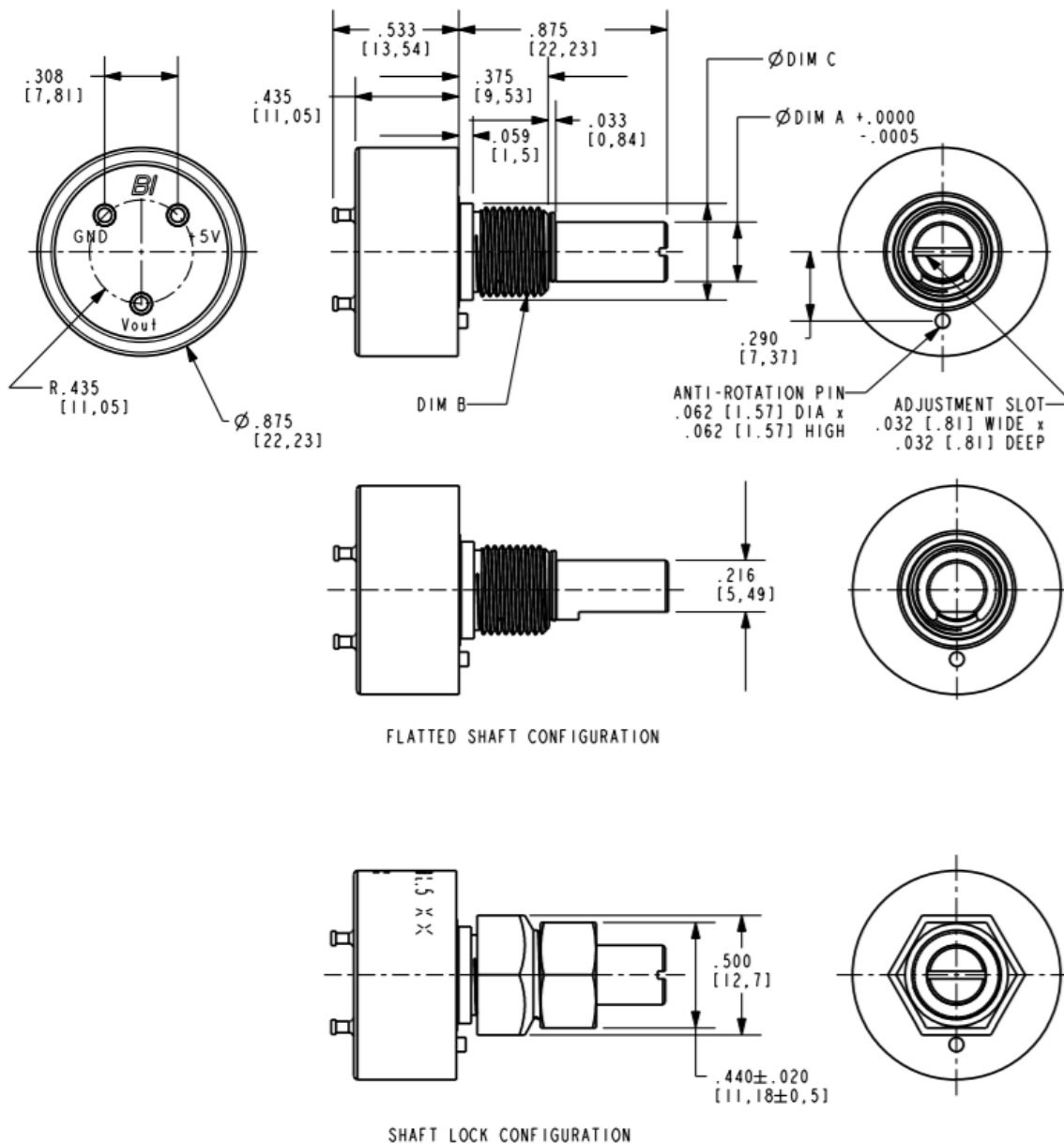
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## Outline Drawings



DIM	6121	6124	6126	6127
A	.1248	6 mm	.1248	.2497
B	1/4-32 UNEF	3/8-32 UNEF	3/8-32 UNEF	3/8-32 UNEF
C	.281	.406	.406	.406

**NOTES:**

1. UNIT SHIPS WITH NUT AND WASHER (NOT SHOWN).
2. FOR SLOTTED OR FLATTED SHAFT, OUTPUT IS AT 50% IN POSITION SHOWN.
3. DIMENSIONS: INCHES [mm].
4. TOLERANCES: ±.015 [.38] UNLESS NOTED.

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