



**THE DATASHEET OF  
6DF-1N6-C2-HWL**



# Non-Contacting Single Turn Position Sensor



## Model 6150 Series

### Features:

- 7/8" diameter
- Non-contacting
- Single turn
- Custom models available



## Model Styles Available

6153	1/8" Shaft, dual ball bearing
615x-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 maximum
Output Load	1 kΩ minimum, 10 kΩ typical
Input Voltage	4.5 to 5.5 Vdc
Supply Voltage Absolute Limits	20 Vdc maximum, -10 Vdc minimum
Independent Linearity <sup>2</sup>	±0.5% (0.25% available)
Hysteresis	0.2% maximum
Resolution	0.088° for 360° travel, 0.011° for 45° travel
Supply Current	8.5 mA typical, 12 mA maximum
Dielectric Strength	750 V rms
Insulation Resistance	1,000 Megohms 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	360° typical (see Ordering Information)
Temperature Coefficient of Output Voltage <sup>3</sup>	± 20 ppm/°C

## Mechanical

Total Mechanical Travel	360° continuous
Number of Gangs	1 maximum
Weight	0.4 oz. nominal
Shaft Runout	maximum T.I.R. 0.003"
Pilot Diameter Runout	maximum T.I.R. 0.003"
Lateral Runout	maximum T.I.R. 0.003"
Shaft Radial Play	maximum 0.005"
Start/Run Torque	maximum 0.5 oz.-in.
Rotational Speed	maximum 1,000 RPM

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

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

<sup>3</sup> Measured with 5 VDC supply and 50% of electrical travel



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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# Non-Contacting Single Turn Position Sensor

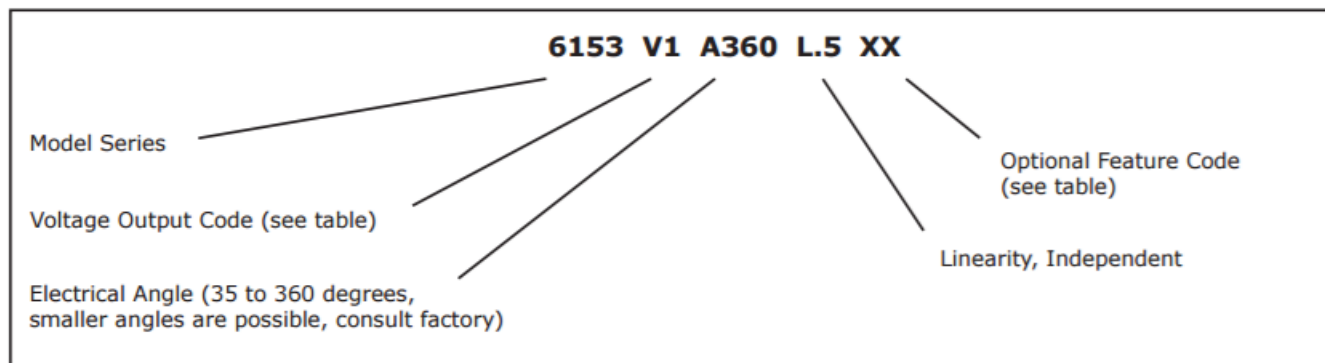


## Model 6150 Series

### 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	50 million shaft revolutions with side load < 0.33 lb, 100 million with side load < 0.25 lb
Storage Temperature Range	-55°C to +125°C
Ingress Protection Rating (IP Code)	IP50

### 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	
FS	Flatted Shaft
SS	Slotted Shaft
LT	Linearity Data
CW	Reverse Direction

When multiple Optional 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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