Model 50 SHE

Vishay Sfernice

Single Turn Servo Mount Hall Effect Sensor in Size 05 (12.7 mm)

FEATURES

- Accurate linearity down to: ± 0.5 %
- All electrical angles available up to: 360° (no dead band)
- Long life: Greater than 50M cycles
- Non contacting technology: Hall effect
- Smallest size available

RoHS COMPLIANT

ELECTRICAL SPECIFICATIONS

PARAMETER	STANDARD	SPECIAL
Electrical Angle	90°, 180°, 270°, 360°	Any other angle upon request
Linearity	± 1 %	± 0.5 %
Supply Voltage	5 V_{DC} ± 10 %	Other upon request
Supply Current	10 mA typical/16 mA max.	16 mA for PWM output
Output Signal	Analog ratiometric 10 % to 90 % of V_{supply} or PWM 1 kHz, 10 % to 90 % duty cycle	Other upon request
Over Voltage Protection	+ 20 V_{DC}	
Reverse Voltage Protection	- 10 V_{DC}	
Load Resistance Recommended	Min. 1 kΩ for analog output and PWM output	
Hysteresis Static	< 0.2° max.	

MECHANICAL SPECIFICATIONS

PARAMETER	
Mechanical travel	360° continuous
Bearing type	2 ball bearings
Standard	IP 51; other on request

ORDERING INFORMATION/DESCRIPTION

50 SHE	1	A	1	W	A	2S16	XXXX	BO 10	e1
MODEL	NUMBER OF CUP	LINEARITY	ELECTRICAL ANGLE	OUTPUT TYPE	OUTPUT SIGNAL	SHAFT TYPE	SPECIAL REQUEST	PACKAGING	LEAD FINISH
	1: 1 Cup	**A**: ± 1 % **B**: ± 0.5 %	**1**: 90° **2**: 180° **3**: 270° **4**: 360° **9**: Other angles	**W**: Wires **Z**: Custom	**A**: Analog CW **B**: Analog CCW **C**: PWM CW **D**: PWM CCW **Z**: Other output	**2**: 3.175 mm **9**: Special **P**: Plain **S**: Slotted **Z**: Other type		Box of 10 pieces	

Shaft length from mounting face, standard: 16 mm

SAP PART NUMBERING GUIDELINES

50 SHE	1	B	9	Z	C	2P22	XXXX
MODEL	**1**: 1 CUP OUTPUT SIGNAL	LINEARITY	ELECTRICAL ANGLE	OUTPUT TYPE	OUTPUT SIGNAL	SHAFT TYPE	SPECIAL REQUEST

For technical questions, contact: sfer@vishay.com

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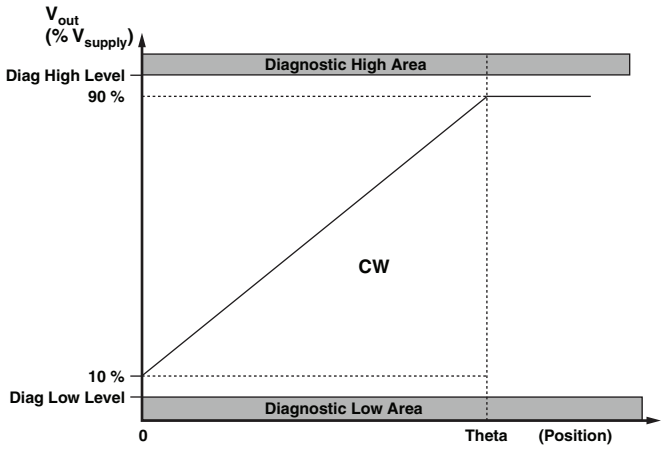
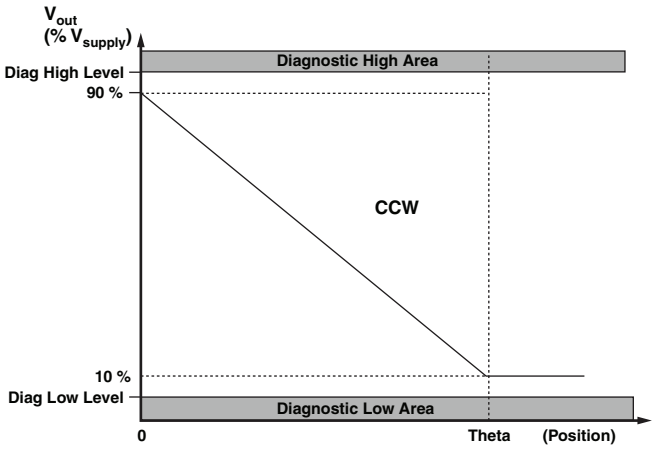
Revision: 10-Dec-08

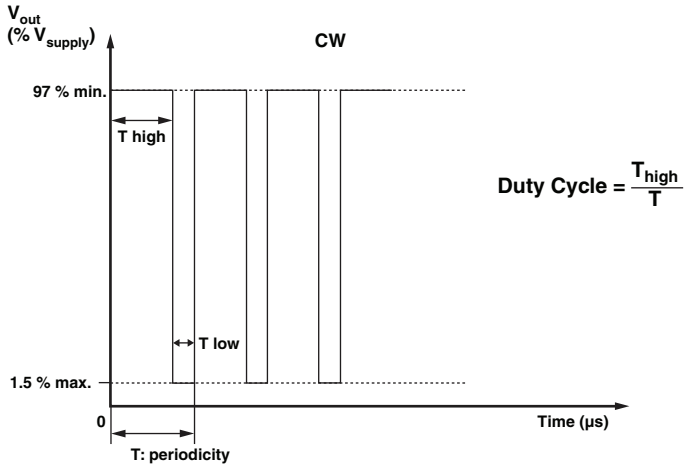
V_{OUT} ANALOG

Operating Temperature	85 °C	125 °C
Diagnostic High Level	96 % min.	96 % min.
Diagnostic Low Level	2 % max.	4 % max.

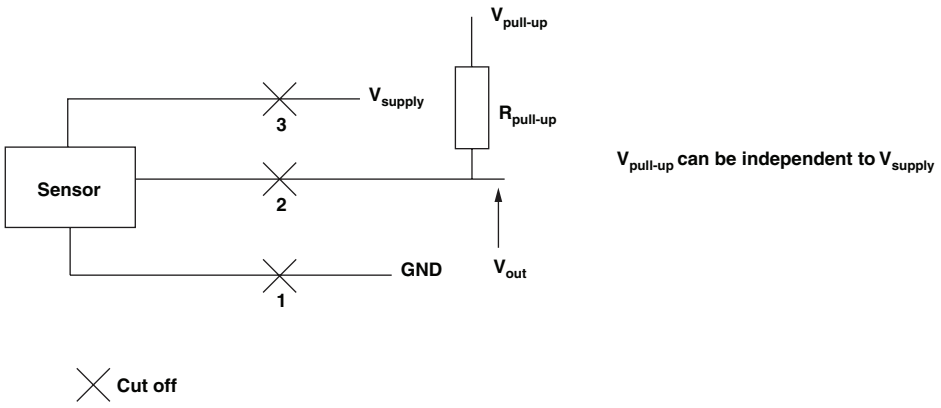




V_{OUT} PWM

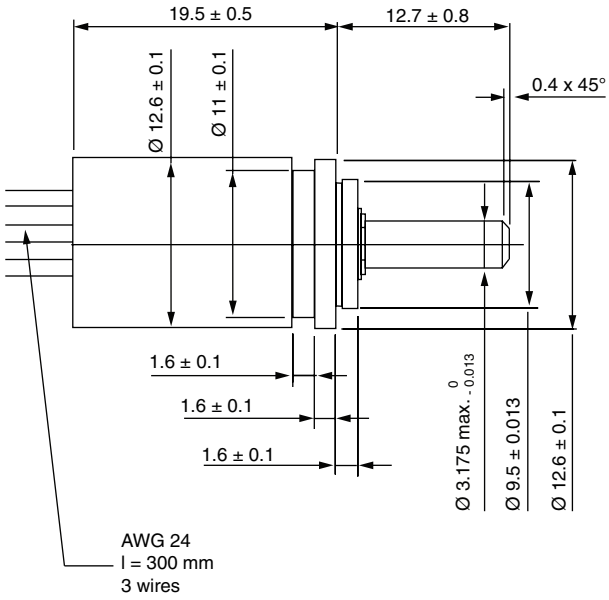


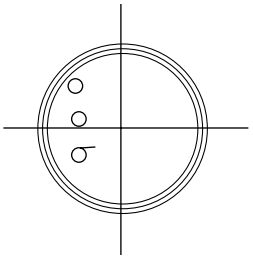
DIAGNOSTIC MODES			
FAILURE	**V_{out} Analog $R_{pull-up}$**	**V_{out} Analog $R_{pull-down}$**	**V_{out} PWM $R_{pull-up}$ = 1 kΩ $V_{pull-up}$ = V_{supply} = 5 V**
1: Broken GND	Diagnostic high area	Diagnostic low area	> 97 % V_{supply} without modulation
2: Broken V_{out}	Diagnostic high area	Diagnostic low area	> 97 % V_{supply} without modulation
3: Broken V_{supply}	Diagnostic high area	Diagnostic low area	> 97 % V_{supply} without modulation
Over Voltage V_{supply} > 7 V	Diagnostic high area	Diagnostic low area	> 97 % V_{supply} without modulation
Under Voltage V_{supply} < 2.7 V	Diagnostic high area	Diagnostic low area	> 97 % V_{supply} without modulation

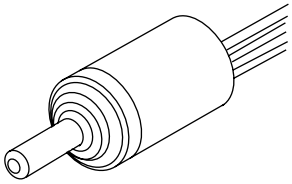


ENVIRONMENTAL SPECIFICATIONS	
Vibrations	20 G from 10 Hz to 2000 Hz, EN 60068-2-6
Shocks	3 shocks/axis; 50 G half a sine 11 ms, EN 60068-2-7
Operating Temperature Range	- 40 °C; + 125 °C
Life	> 50M of cycles
Rotational Speed (max.)	120 rpm
Immunity to Radiated Electromagnetic Disturbances	200 V/m 150 kHz/1 GHz, IEC 62132-2 Part 2 (Level A)
Immunity to Power Frequency Magnetic Field	200 A/m 50 Hz/60 Hz, EN 61000-4-8 (Level A)
Radiated Electromagnetic Emissions	30 MHz/1 GHz < 30 dBµV/m, EN 61000-6-4 (Level A)
Electrostatic Discharges	Contact discharges: ± 4 kV Air discharges: ± 8 kV, EN 61000-4-2
Materials	
Housing	Aluminum
Shaft	Stainless steel
Output	3 lead wires (AWG 24)

DIMENSIONS in millimeters







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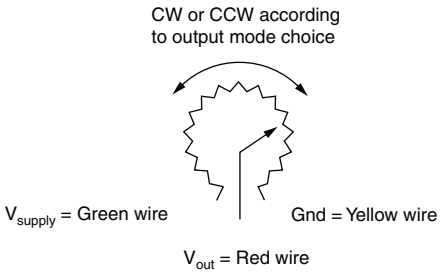

General tolerance: ± 0.5 mm

View from shaft side

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