



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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



FEATURES

- Accurate linearity down to: $\pm 0.5\%$
- All electrical angles available up to: 360° (no dead band)
- Long life: Greater than 50M cycles
- Non contacting technology: Hall effect
- Smallest size available
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



RoHS COMPLIANT

| QUICK REFERENCE DATA | |
|----------------------|-------------------------------------|
| Sensor type | ROTATIONAL, single turn hall effect |
| Output type | Wires |
| Market appliance | Professional |
| Dimensions | 1/2" (12.7 mm) dia. |

| ELECTRICAL SPECIFICATIONS | | |
|-----------------------------|--|------------------------------|
| PARAMETER | STANDARD | SPECIAL |
| Electrical angle | 90°, 180°, 270°, 360° | Any other angle upon request |
| Linearity | $\pm 1\%$ | $\pm 0.5\%$ |
| Supply voltage | 5 V _{DC} $\pm 10\%$ | 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 k Ω 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 |

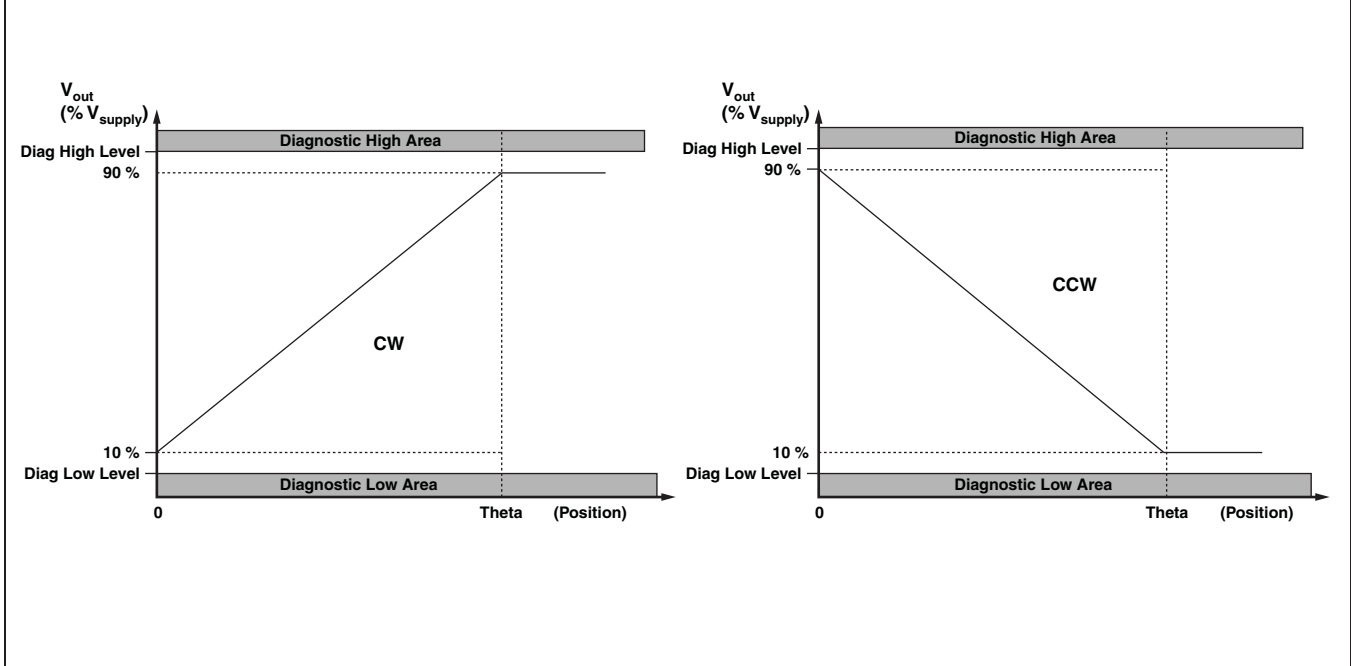
| ORDERING INFORMATION/DESCRIPTION | | | | | | | | | |
|--|---------------|--------------------------------|--|-----------------------|---|--|-----------------|------------------|-------------|
| 50 SHE | 1 | A | 1 | W | A | 2S16 | XXXX | BO 10 | e1 |
| MODEL | NUMBER OF CUP | LINEARITY | ELECTRICAL ANGLE | OUTPUT TYPE | OUTPUT SIGNAL | SHAFT TYPE | SPECIAL REQUEST | PACKAGING | LEAD FINISH |
| | 1:1 Cup | A: $\pm 1\%$ B: $\pm 0.5\%$ | 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 | LINEARITY | ELECTRICAL ANGLE | OUTPUT TYPE | OUTPUT SIGNAL | SHAFT TYPE | SPECIAL REQUEST |
| | OUTPUT SIGNAL | | | | | | |

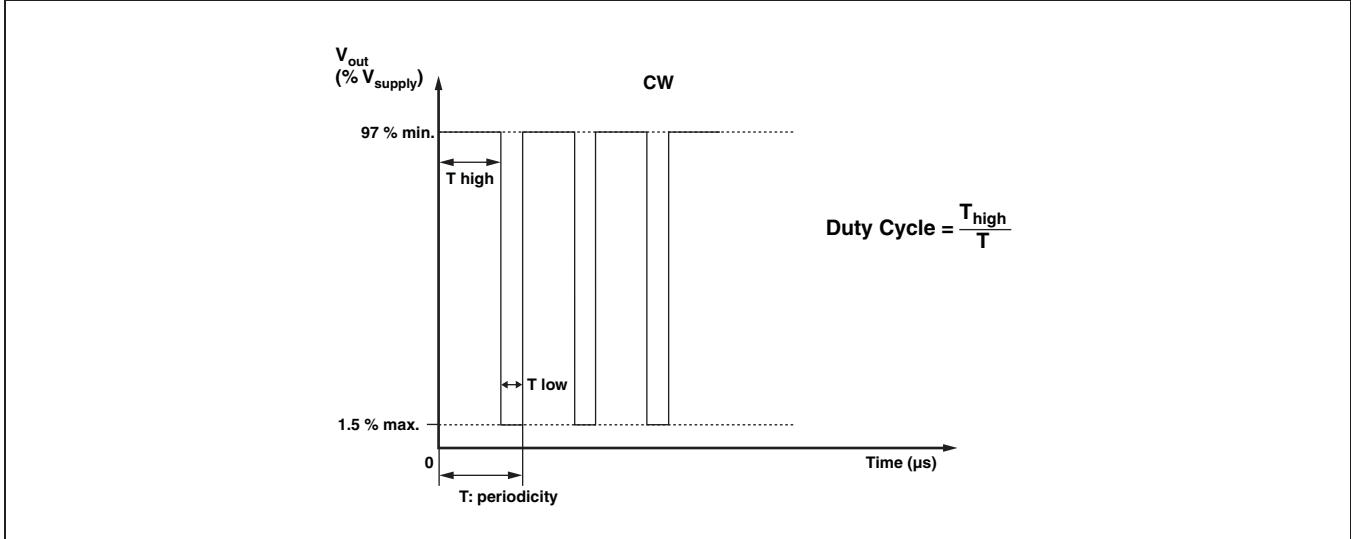


V_{OUT} ANALOG

| | | |
|-----------------------|-----------|-----------|
| 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 |

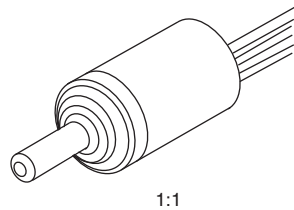
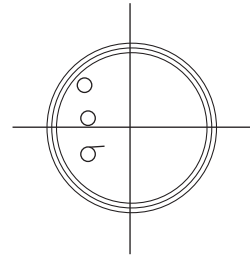
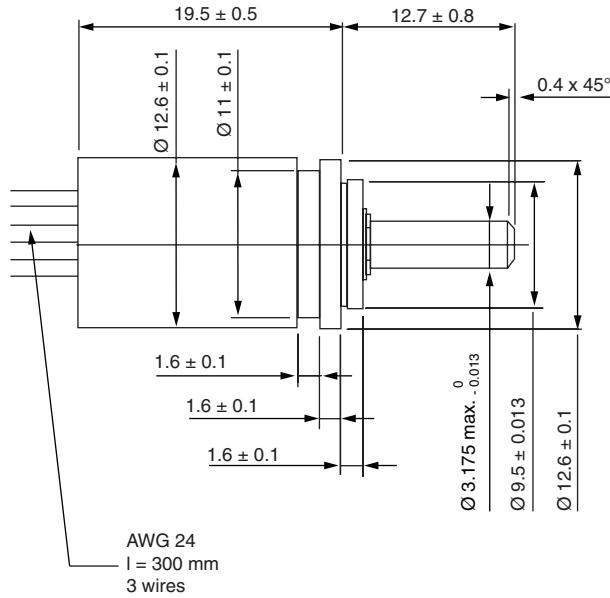
V_{pull-up} can be independent to V_{supply}

X Cut off

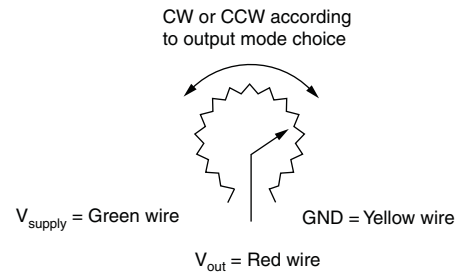
| ENVIRONMENTAL SPECIFICATIONS | |
|---|--|
| Vibrations | 20 g from 10 Hz to 2000 Hz, EN 60068-2-6 |
| Shocks | 3 shocks/axis; 50 g half a sine 11 ms, EN 60068-2-7 |
| Operating temperature range | - 40 °C; + 125 °C |
| Life | > 50M of cycles |
| Rotational speed (max.) | 120 rpm |
| Immunity to radiated 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



General tolerance: ± 0.5 mm



View from shaft side