

Linear Position Sensor in Hall Effect Technology (0 mm to 10 mm max.)



FEATURES

- Accurate linearity down to: $\pm 1\%$
- Electrical strokes from 0 mm to 10 mm
- Long life: Greater than 10M cycles
- Non contacting technology: Hall effect
- Model dedicated to all applications in harsh environments
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

QUICK REFERENCE DATA

| | |
|------------------|------------------------------------|
| Sensor type | LINEAR, non contacting hall effect |
| Output type | Wires |
| Market appliance | Industrial |
| Dimensions | 46 mm x 20.8 mm x 37 mm |

ELECTRICAL SPECIFICATIONS

| PARAMETER | STANDARD |
|-----------------------------|--|
| Electrical stroke | Up to 10 mm |
| Linearity | $\pm 2\%$ or $\pm 1\%$ |
| Supply voltage | $5 V_{DC} \pm 10\%$ |
| Supply current | < 16 mA typical |
| Output signal | Analog ratiometric 10 % to 90 % of V_{supply} or PWM 10 % to 90 % duty cycle |
| 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: 0.1 % of V_{supply} /Dynamic: 0.25 % of V_{supply} |
| Resolution | 12 bits |

MECHANICAL SPECIFICATIONS

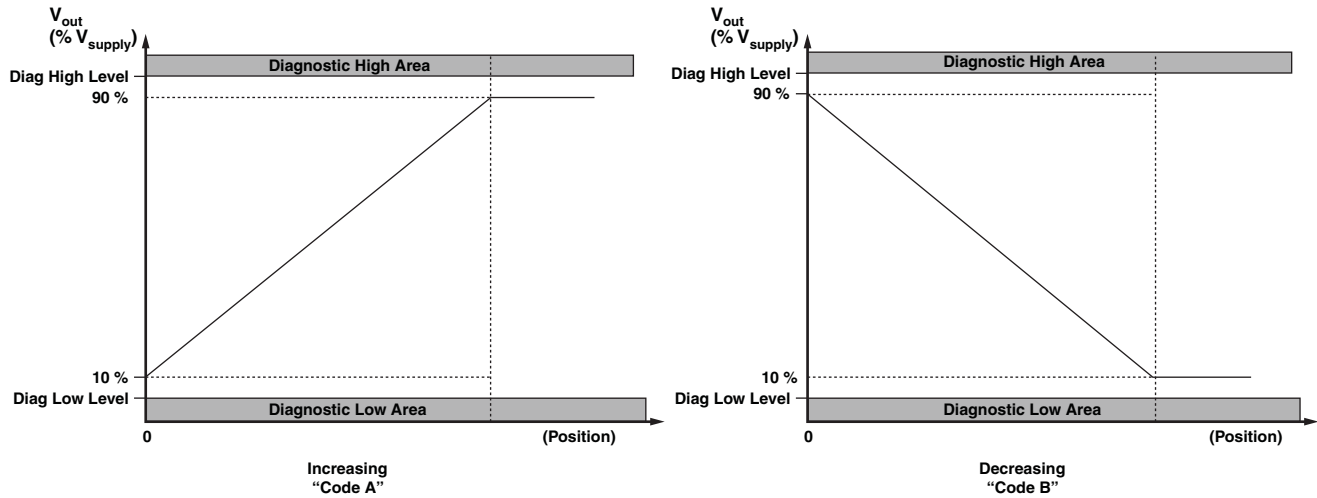
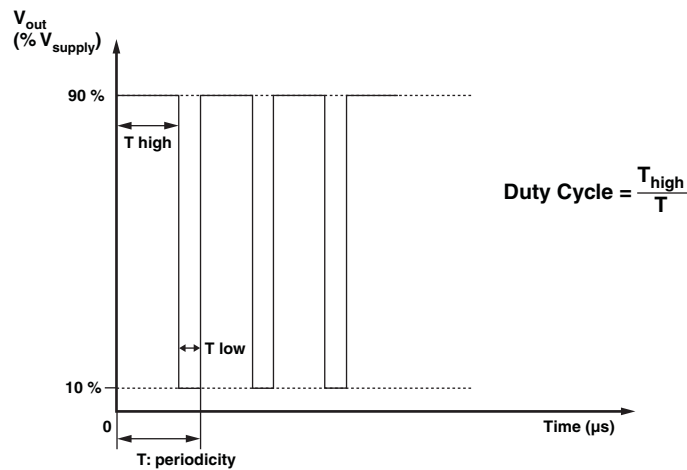
| PARAMETER | |
|-------------------|---|
| Mechanical travel | 12 mm max. |
| Bearing type | Sleeve bearing |
| Standard | For spring loaded model: IP 51/without spring: Other on request |
| Weight | 26 g \pm 4 g |

ORDERING INFORMATION/DESCRIPTION

| 20 LHE | 1 | A | W | A | 1P30 | xxxx | e1 |
|--|---------------------------------------|------------------------------|-----------------------|--|--|-----------------|-------------|
| MODEL | FEATURES | LINEARITY | OUTPUT TYPE | OUTPUT SIGNAL | SHAFT TYPE | SPECIAL REQUEST | LEAD FINISH |
| | 1: Spring return 2: Without spring | X: $\pm 2\%$ A: $\pm 1\%$ | W: Wires Z: Custom | A: Analog increasing B: Analog decreasing C: PWM increasing D: PWM decreasing | 1: 3.175 mm 9: Special P: Plain T: Threaded M3 x 6 Z: Other type | | |
| Shaft length from mounting face 30 mm when full extended | | | | | | | |

SAP PART NUMBERING GUIDELINES

| 20 LHE | 2 | X | Z | C | 1T35 | xxxx |
|--------|------------------------------|-----------|-------------|----------------|------------|-----------------|
| MODEL | FEATURES | LINEARITY | OUTPUT TYPE | OUTPUT SIGNAL | SHAFT TYPE | SPECIAL REQUEST |
| | Without spring return system | $\pm 2\%$ | "Custom" | PWM increasing | | |

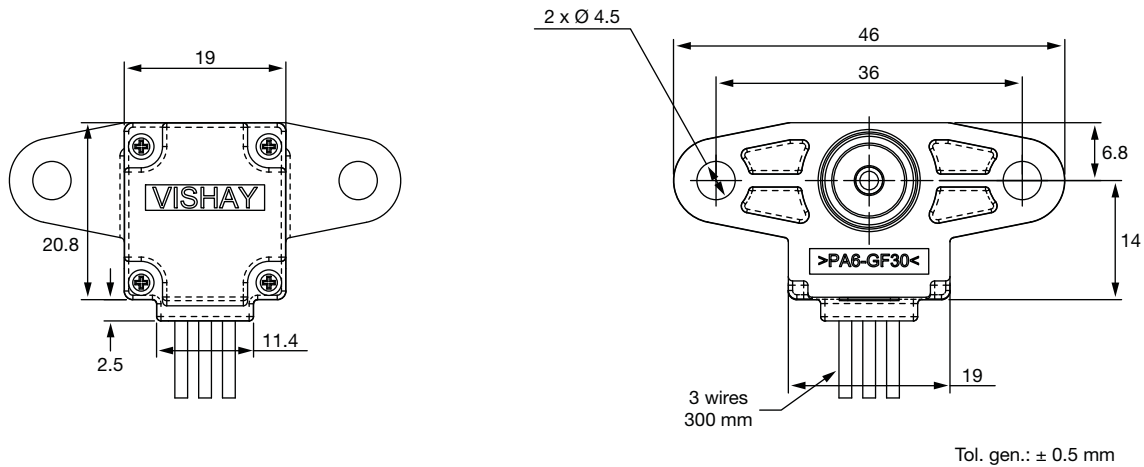
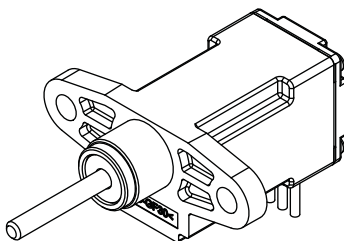
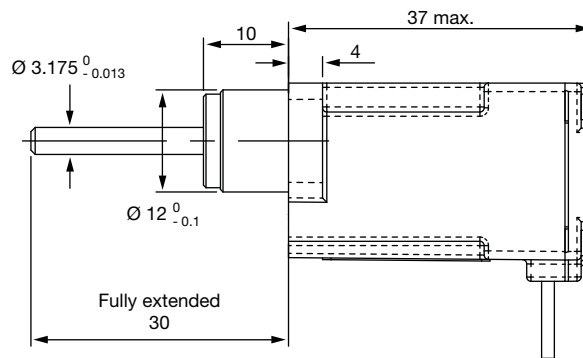
V_{OUT} ANALOG

V_{OUT} PWM

ENVIRONMENTAL SPECIFICATIONS

| | |
|---|--|
| Vibrations | 20 g from 10 Hz to 2000 Hz |
| Shocks | 3 shocks/axis; 50 g half a sine 11 ms |
| Operating temperature range | -40 °C; +85 °C |
| Life | > 10M of cycles |
| Speed (max.) | 60 mm/s |
| 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 |
| Radiated electromagnetic emissions | 30 MHz/1 GHz < 30 dBµV/m EN 61000-6-4 |
| Electrostatic discharges | Contact discharges: ± 4 kV Air discharges: ± 8 kV EN 61000-4-2 |
| Immunity to radiated RF field | 10 V/m 80 MHz to 1 GHz EN6100-4-3 |

| ENVIRONMENTAL SPECIFICATIONS | |
|------------------------------|--|
| Materials | |
| Housing | Thermoplastic housing |
| Mounting type | Flange with 2 holes \varnothing 4.5 mm |
| Shaft | \varnothing 3.175 mm (stainless steel) |
| Output | 3 lead wires (AWG 20) Length: 300 mm |
| Centering diameter | \varnothing 12 mm |
| Spring force | From 1.5 N to 7 N along stroke (typical) |

Note

- Nothing stated herein shall be construed as a guarantee of quality or durability.

DIMENSIONS in millimeters

 Tol. gen.: \pm 0.5 mm


| | |
|--------|---------------------|
| Wire | |
| YELLOW | GND (-) |
| RED | SIGNAL |
| GREEN | V _{cc} (+) |



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