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

FEATURES

- Accurate linearity down to: ± 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	± 2 % or ± 1 %
Supply voltage	5 V_{DC} ± 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 recommanded	Min. 1 kΩ 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 ± 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**: ± 2 % **A**: ± 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	± 2 %	"Custom"	PWM increasing		

For technical questions, contact: sferprecisionpot@vishay.com

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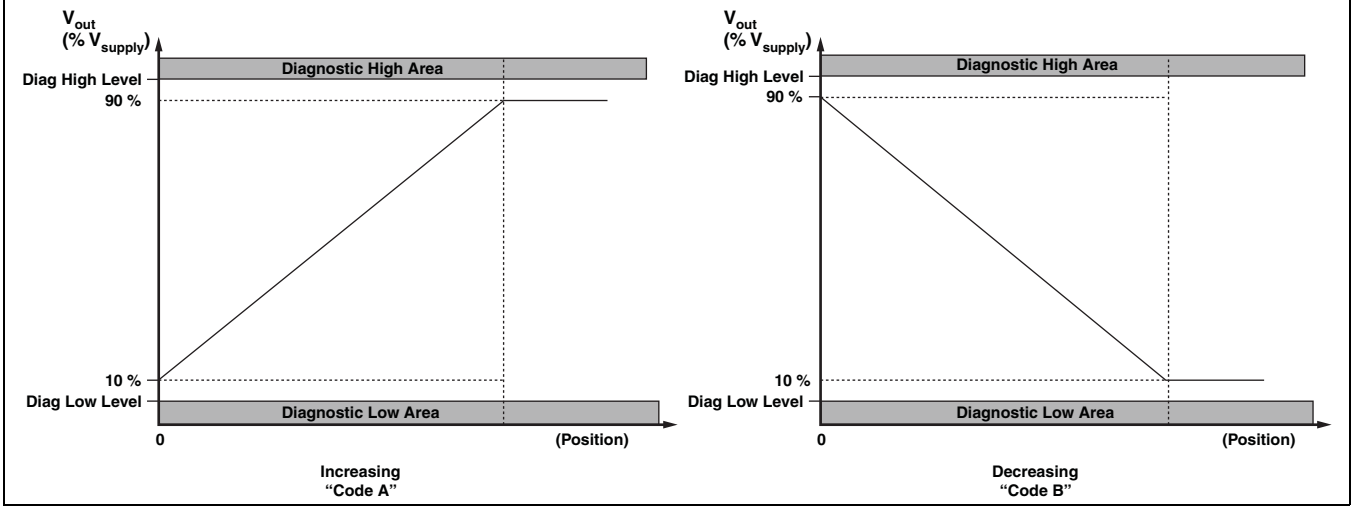
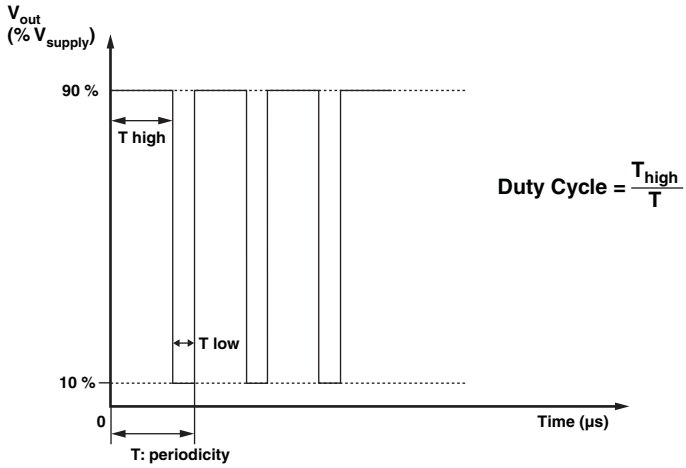
V_{OUT} ANALOG



V_{OUT} PWM



$$\text{Duty Cycle} = \frac{T_{high}}{T}$$

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

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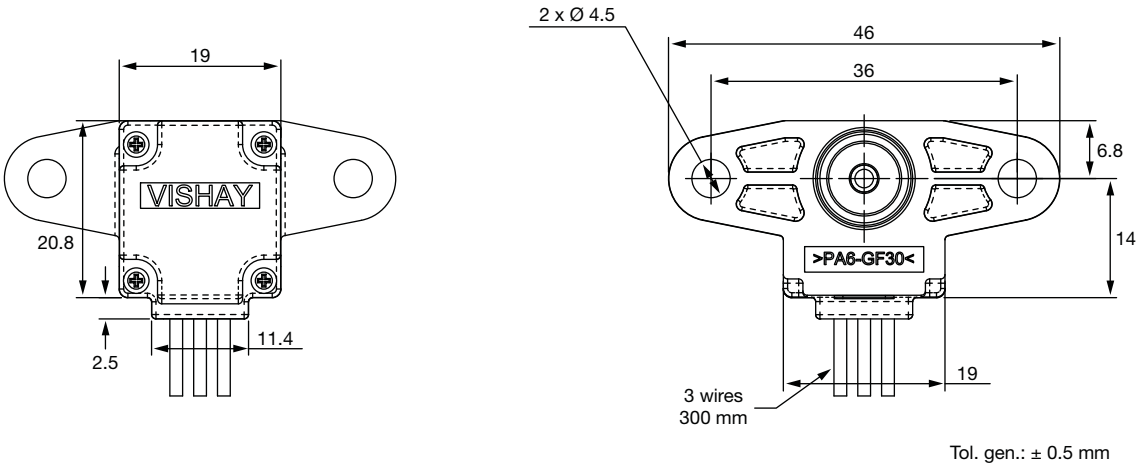
ENVIRONMENTAL SPECIFICATIONS	
Materials	
Housing	Thermoplastic housing
Mounting type	Flange with 2 holes Ø 4.5 mm
Shaft	Ø 3.175 mm (stainless steel)
Output	3 lead wires (AWG 20) Length: 300 mm
Centering diameter	Ø 12 mm
Spring force	From 1.5 N to 7 N along stroke (typical)

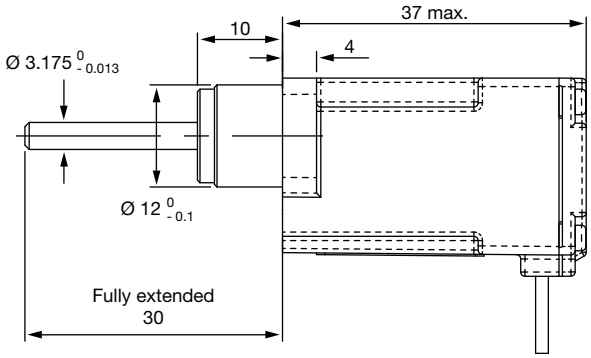
Note

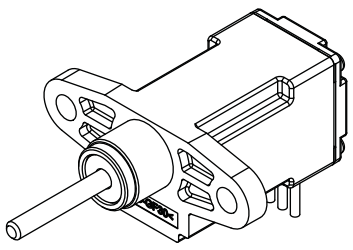
- Nothing stated herein shall be construed as a guarantee of quality or durability.

DIMENSIONS in millimeters



Tol. gen.: ± 0.5 mm





Wire	
YELLOW	GND (-)
RED	SIGNAL
GREEN	V_{cc} (+)

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