

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	$< 16 \text{ mA}$ 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. $1 \text{ k}\Omega$ 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	$26 \text{ g} \pm 4 \text{ g}$

ORDERING INFORMATION/DESCRIPTION

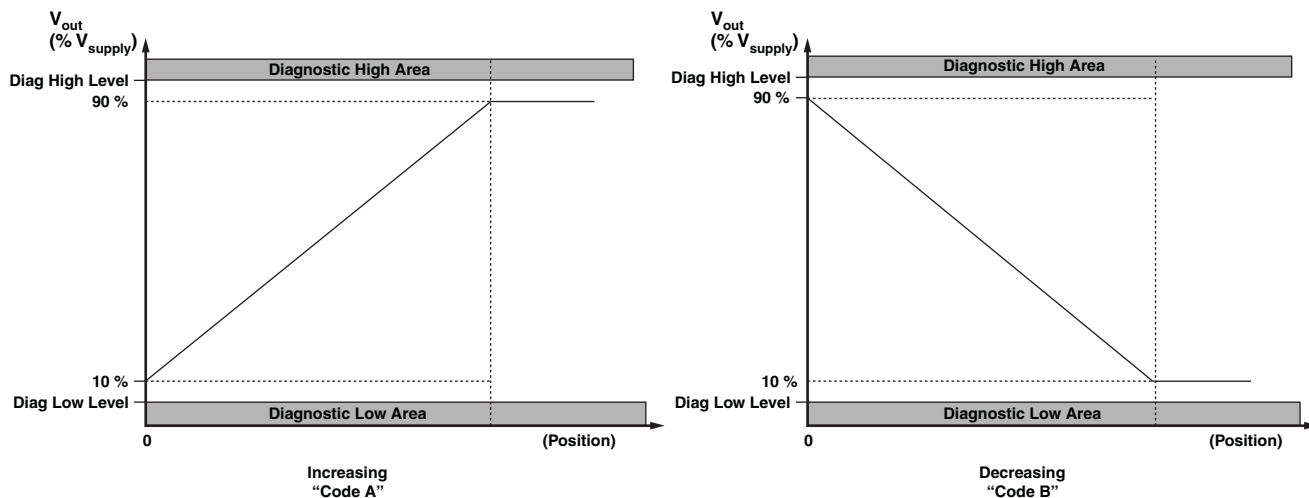
20 LHE	1	A	W	A	1P30	xxxx	e1
MODEL	FEATURES	LINEARITY	OUTPUT TYPE	OUTPUT SIGNAL	SHAFT TYPE	SPECIAL REQUEST	LEAD FINISH
	1: Spring return 2: Without spring	X: $\pm 2 \%$ A: $\pm 1 \%$	W: Wires Z: Custom	A: Analog increasing B: Analog decreasing C: PWM increasing D: PWM decreasing	1: 3.175 mm 9: Special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

SAP PART NUMBERING GUIDELINES

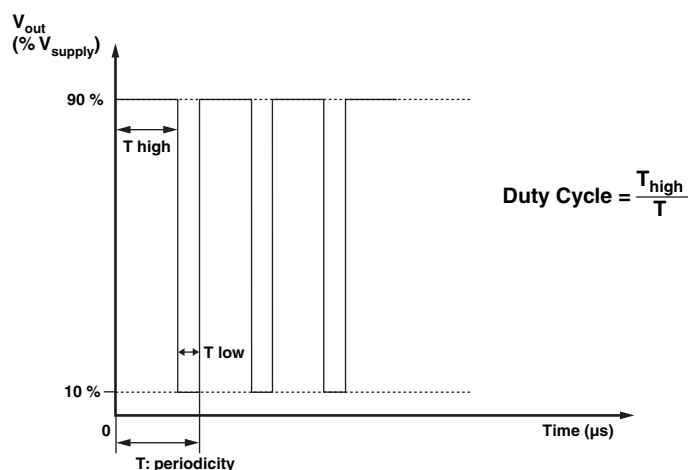
20 LHE	2	X	Z	C	1T35	xxxx
MODEL	FEATURES	LINEARITY	OUTPUT TYPE	OUTPUT SIGNAL	SHAFT TYPE	SPECIAL REQUEST
	Without spring return system	$\pm 2 \%$	"Custom"	PWM increasing		



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 dB μ V/m EN 61000-6-4
Electrostatic discharges	Contact discharges: $\pm$ 4 kV Air discharges: $\pm$ 8 kV EN 61000-4-2
Immunity to radiated RF field	10 V/m 80 MHz to 1 GHz EN6100-4-3

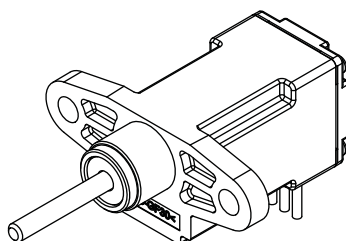
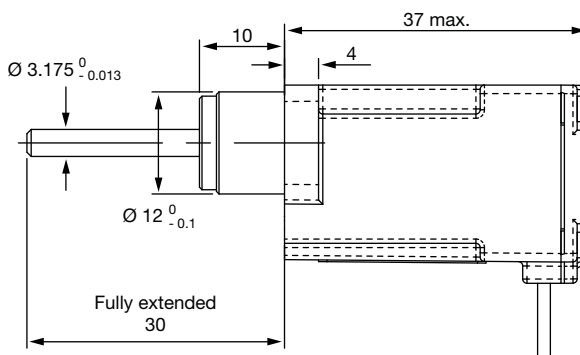
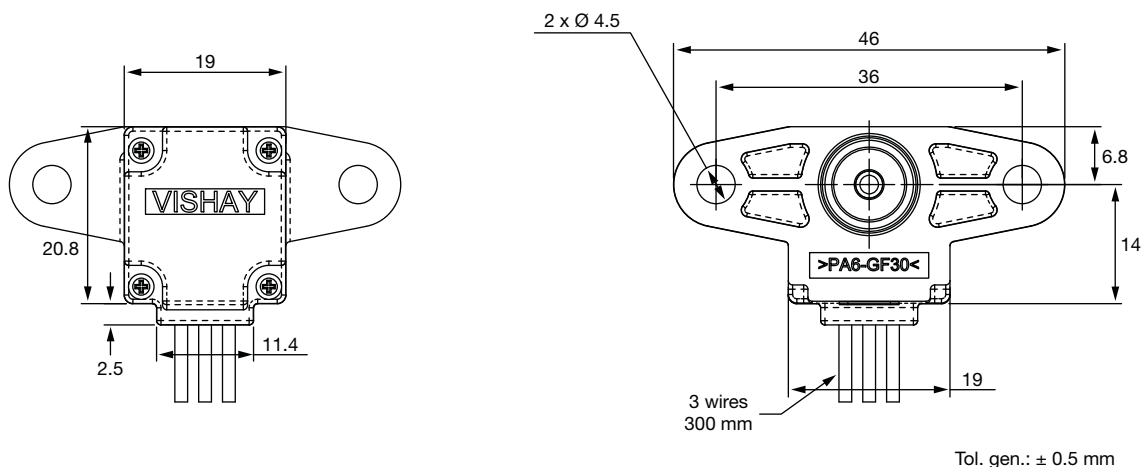
ENVIRONMENTAL SPECIFICATIONS

Materials	
Housing	Thermoplastic housing
Mounting type	Flange with 2 holes 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



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



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