

Ten Turns Bushing Mount Hall Effect Sensor in Size 09 (7/8" - 22.2 mm)



FEATURES

- All electrical angles available up to: 3600°
- Accurate linearity down to: $\pm 1\%$
- CW / CCW analog or digital outputs (PWM)
- Dual output signal available
- Long life: 10M cycles
- Non contacting technology: Hall effect, true power on sensor
- Temperature range: -40 °C to +85 °C
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

LINKS TO ADDITIONAL RESOURCES



3D Models

QUICK REFERENCE DATA

Sensor type	ROTATIONAL, multi turn Hall effect
Output type	Rear turrets
Market appliance	Industrial
Dimensions	7/8" (22.2 mm)

ELECTRICAL SPECIFICATIONS

PARAMETER	STANDARD	SPECIAL
Electrical angle	10 turns 3600°	Any other angle upon request
Linearity	$\pm 1\%$	Other upon request
Resolution	1° (0,024% of V_{supply}) (full angle 3600°)	
Supply voltage	5 $V_{DC} \pm 10\%$	Other upon request
Supply current (analog / PWM)	Single output: 8.5 mA (typ.) / 10 mA max.; dual redundant output: 17 mA (typ.) / 20 mA max.	Other upon request
Output signal	Analog ratiometric 5 % to 95 % of V_{supply} or PWM 1 kHz, 10 % to 90 % duty cycle	Other upon request
Over voltage protection (input)	+28 V_{DC}	
Reverse voltage protection (input)	-14 V_{DC}	
Over voltage protection (output)	+28 V_{DC} (+34 V_{DC} peak - 1 h at +25 °C)	
Recommended load resistance	Min. 1 k Ω for analog (pull-up / pull-down) and PWM outputs (pull-up)	
Hysteresis dynamic	20° max. on drive shaft (CW / CCW travels)	

MECHANICAL SPECIFICATIONS

PARAMETER	
Mechanical travel	3600° continuous
Mounting type	Bushing mount (delivered with nut and washer)
Bearing type	Sleeve bearing
Starting torque (25 °C)	0.2 N.cm (0.283 oz.in)
Running torque (25 °C)	0.1 N.cm (0.142 oz.in)
Marking	Ink marking (PN / date code / pin identification / Vishay logo)

**ORDERING INFORMATION/DESCRIPTION**

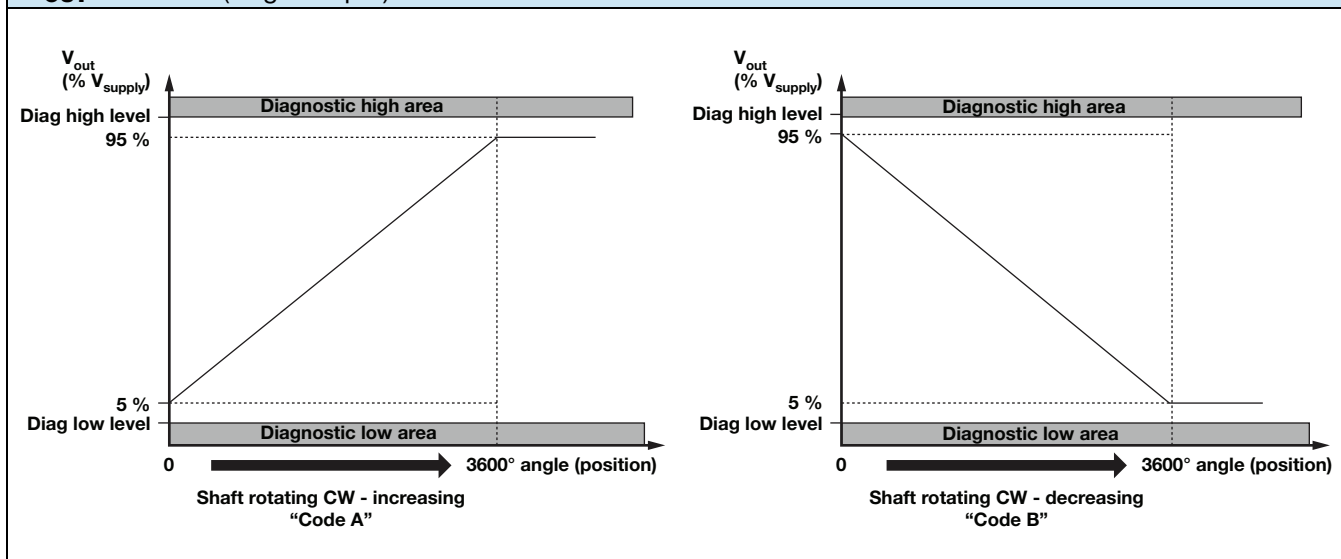
34PHE	B	1	A	T	A	2S22xx	xx
MODEL	STYLE	NUMBER OF SIGNALS	LINEARITY	OUTPUT TYPE	OUTPUT SIGNALS	SHAFT TYPE	SPECIAL REQUEST
	B: bushing	1: single 2: dual / redundant	A: $\pm 1\%$	T: turrets W: wires (on request) Z: custom	A: analog increasing ⁽¹⁾ B: analog decreasing ⁽¹⁾ C: PWM increasing ⁽¹⁾ D: PWM decreasing ⁽¹⁾ G: analog inverted slope ⁽²⁾ H: PWM inverted slope ⁽²⁾ Z: other / custom	Standard 2: 3.175 mm (1/8") S: slotted 22: 22 mm distance from mounting surface On request 0: 6 mm 1: 6.35 mm (1/4") 9: custom P: plain Z: other type	

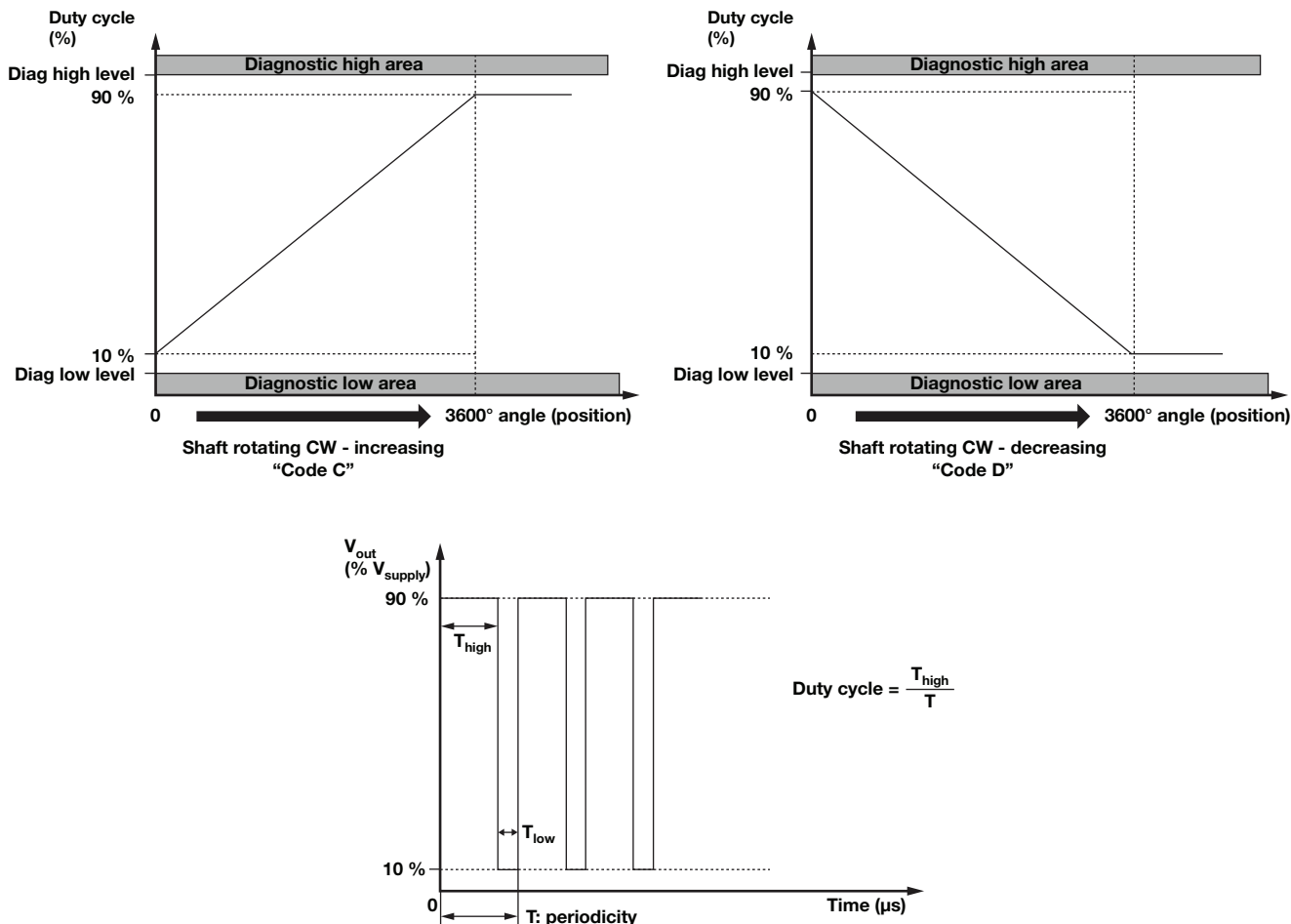
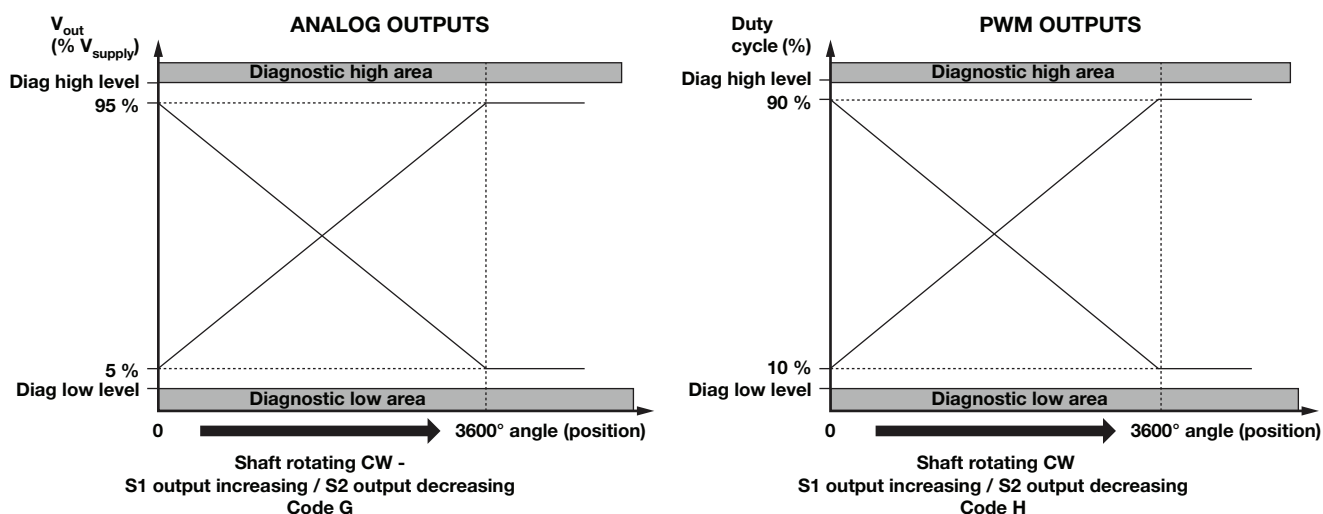
Notes

- (1) Shaft rotating CW
 (2) Shaft rotating CW - S1 output increasing / S2 output decreasing

ORDERING INFORMATION (part number)

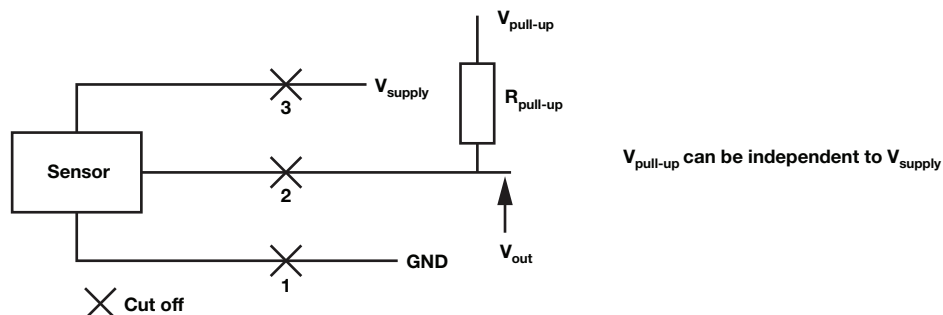
34PHE	B	1	A	T	A	2S22	xxxx	e1
MODEL	STYLE	NUMBER OF SIGNALS	LINEARITY	OUTPUT TYPE	OUTPUT SIGNAL	SHAFT TYPE	SPECIAL REQUEST	LEAD (Pb)-FREE

V_{OUT} ANALOG (single output)

PWM OUTPUT (duty cycle / V_{OUT} - active high)

DUAL ANALOG AND PWM OUTPUTS (inverted slopes)


DIAGNOSTIC MODES

FAILURE	V_{out} ANALOG $R_{pull-up}$	V_{out} ANALOG $R_{pull-down}$	V_{out} PWM $R_{pull-up} = 1\text{ k}\Omega$ $V_{pull-up} = V_{supply} = 5\text{ V}$
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 $V_{supply} > 7\text{ V}$	Diagnostic high area	Diagnostic low area	> 97 % V_{supply} without modulation
Under voltage $V_{supply} < 2.7\text{ V}$	Diagnostic high area	Diagnostic low area	> 97 % V_{supply} without modulation

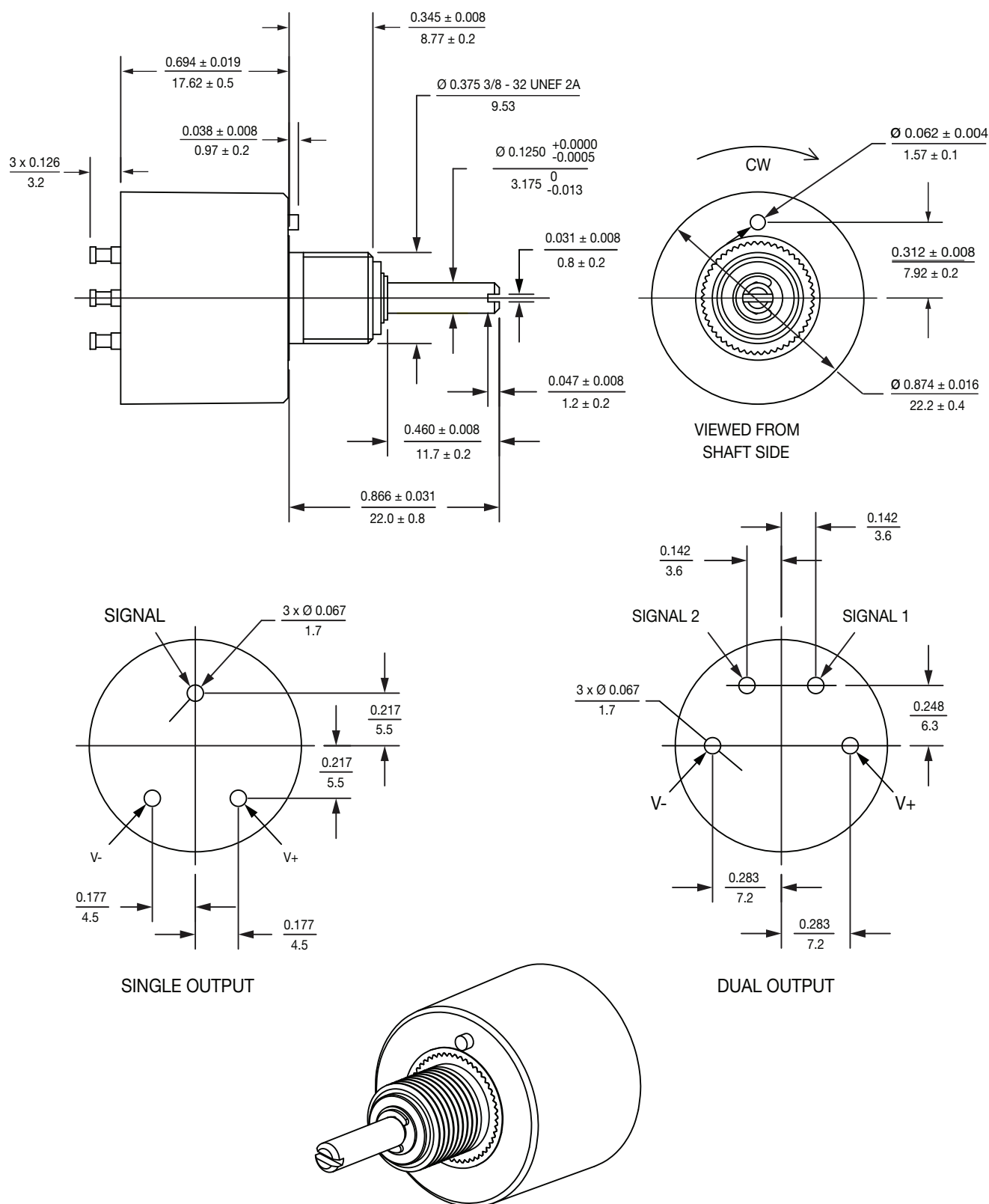

ENVIRONMENTAL SPECIFICATIONS

Life	> 10M of cycles
Rotational speed (max.)	240 rpm
Ingress protection level (Sealing)	IP 50 (shaft side) IP 65 rear side (after soldering and protection of turrets)
Vibrations	Sine vibration on 3 axes, 20 g from 10 Hz to 2000 Hz (EN60068-2-6)
Shocks	18 shocks/axis - 50 g half a sine - 11 ms (EN60068-2-27)
Operating temperature range	-40 °C to +85 °C
Electrostatic discharges	Contact discharges: $\pm 4\text{ kV}$ air discharges: $\pm 8\text{ kV}$, (EN 61000-4-2)
Immunity to radiated electromagnetic disturbances	200 V/m, 150 kHz to 1 GHz, (IEC 62132-2 part 2 (level A))
Immunity to power frequency magnetic field	200 A/m - magnetic field frequencies 50 Hz / 60 Hz, (EN 61000-4-8 (level A))
Radiated electromagnetic emissions	At 3 m 30 MHz to 230 MHz < 50 dB μ V/m 230 MHz to 1 GHz < 57 dB μ V/m

MATERIALS

Housing	Black thermoplastic
Shaft	Stainless steel
Bushing	Nickel plated brass alloy
Shaft guiding	Sleeve bearing (bronze)
Outputs	Gold plated brass alloy turrets

DIMENSIONS in millimeters



Note

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



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