

Single-Turn Continuous Rotation Analog Displacement Sensor



FEATURES

- Conductive plastic potentiometer technology, infinite resolution
- Servo mount anodized light alloy housing
- Precious metal contacts
- Stainless steel shaft and bearings
- Applicable standards: NFC 93255, MIL R39023
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



LINKS TO ADDITIONAL RESOURCES



3D Models

QUICK REFERENCE DATA

Sensor type	ROTATIONAL, conductive plastic
Output type	Output by turrets
Market appliance	Industrial, avionics
Dimensions	1/2" (12.7 mm)

ELECTRICAL SPECIFICATIONS

PARAMETER	
Theoretical electrical travel	340° ± 5°
Independent linearity standard	± 1.0 %
Independent linearity optional	± 0.5 %
Total resistance range (R _n)	1 kΩ to 4.7 kΩ (E3) or 10 kΩ
Tolerance on R _n	± 20 %
Output smoothness	≤ 0.1 %
Power rating at 70 °C	0.5 W (see "Power Rating Chart")
Temperature coefficient	-300 ± 300 ppm/°C
Wiper current	≤ 1 mA
Recommended load impedance	≥ 100 R _n for a linearity = 1 % ≥ 1000 R _n for a linearity ≤ 0.5 %
Insulation resistance	≥ 10 GΩ at 500 V _{DC}
Dielectric strength	500 V _{RMS} , 50 Hz, 1 min

MECHANICAL SPECIFICATIONS

PARAMETER	
Mechanical rotation	360° continuous
Running and starting torque	≤ 10 cN cm
Moment of inertia	≤ 0.2 g cm ²
Protection class	IP 50
Weight	< 5 g
Mounting	Synchro

PERFORMANCE

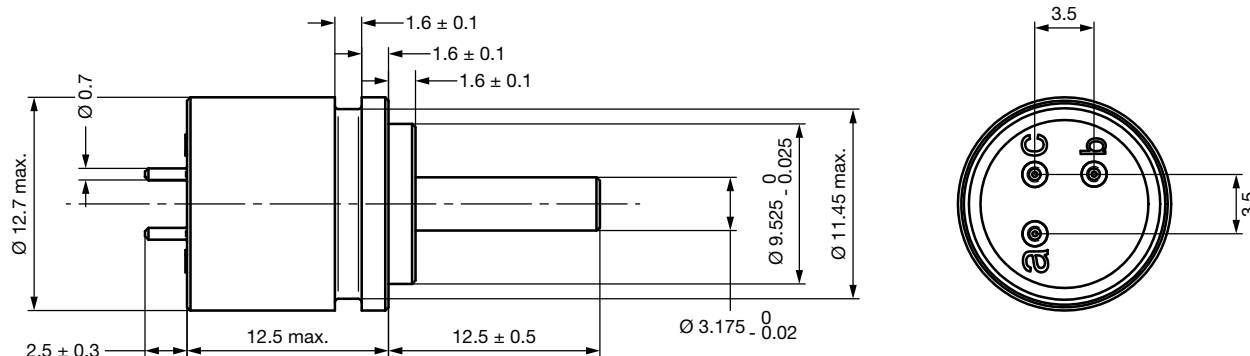
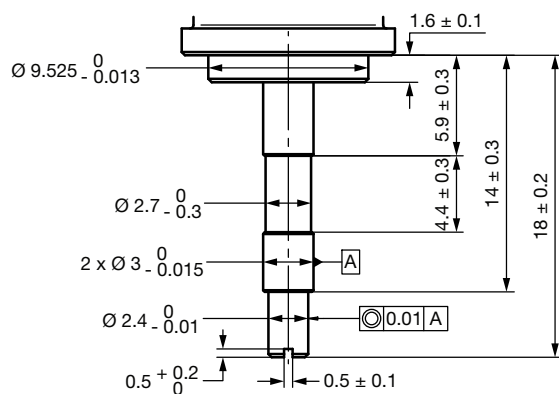
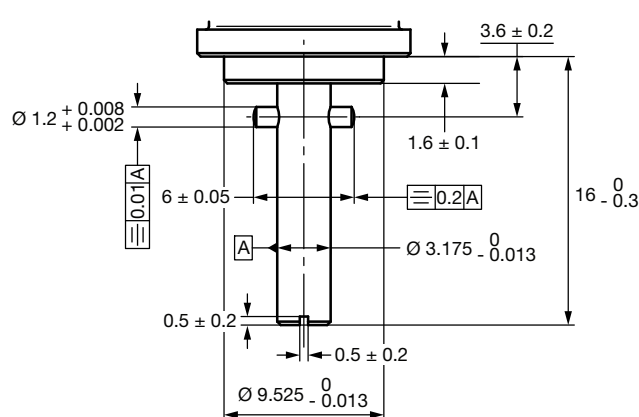
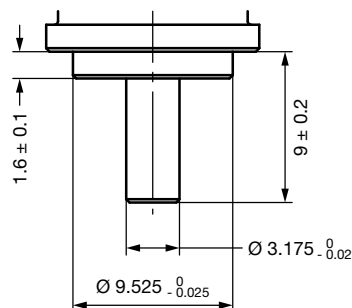
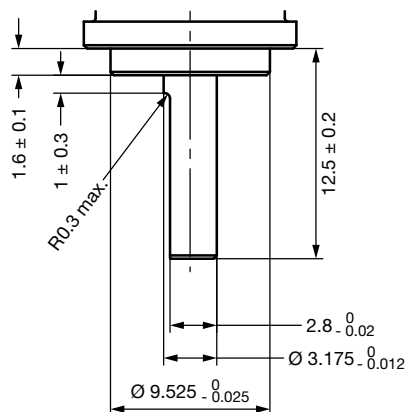
PARAMETER	
Operating temperature range	-55 °C to +125 °C
Life	10M cycles
Rotation speed (max.)	600 rpm (1000 rpm on request)

Note

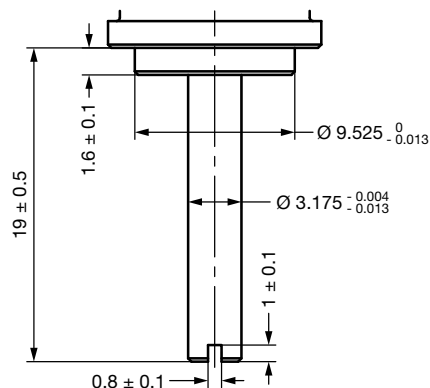
- Nothing stated herein shall be construed as a guarantee of quality or durability

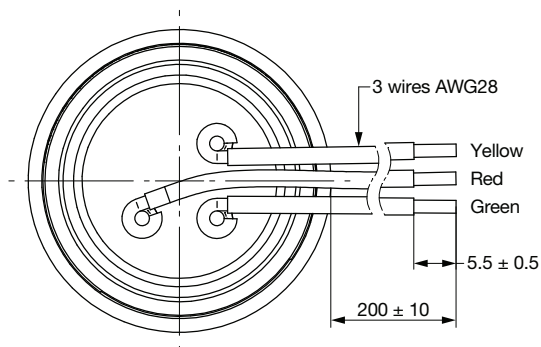
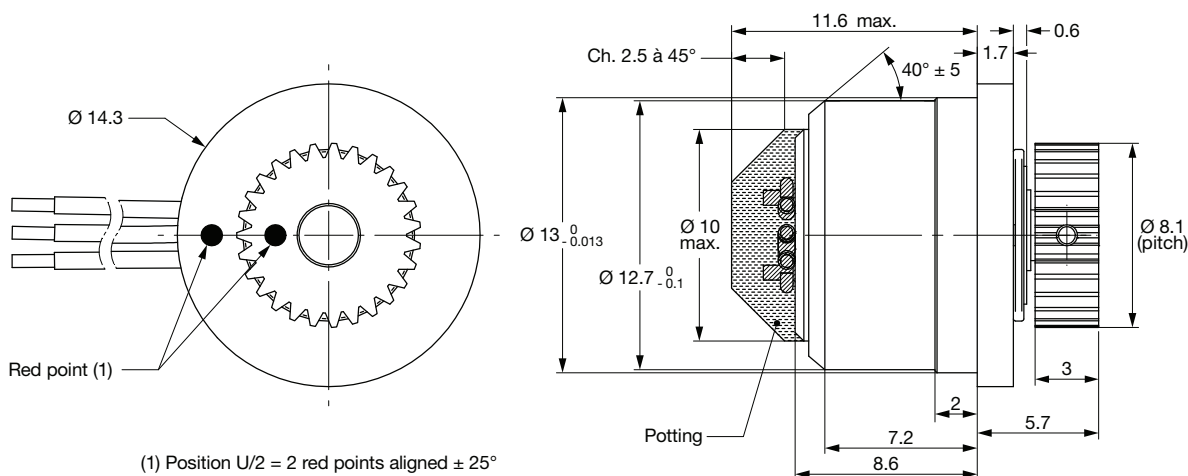
SAP PART NUMBERING GUIDELINES

MODEL	MOUNTING	TYPE	VALUE	LINEARITY	ANGLE	PACKAGING
PP12	S = servo	R = ball bearing	102 = 01K 472 = 4.7K	A	340	B = box

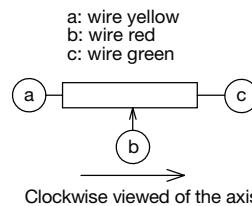
DIMENSIONS in millimeters

SHAFT DESIGNS ON REQUEST
OPTION 1

OPTION 2

OPTION 3

OPTION 4


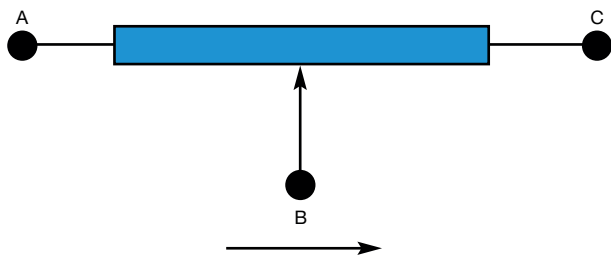
DIMENSIONS in millimeters

OPTION 5

DESIGN ON REQUEST
DIMENSIONS in millimeters

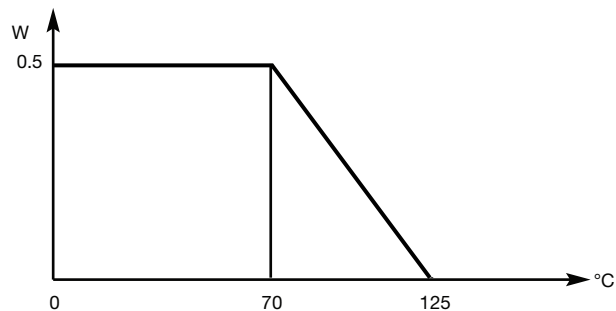
OPTION: BODY SMALL HEIGHT WITH GEAR WHEEL AND WIRES OUTPUT


Spur gear:
Module: 0.3
Number of teeth: 27
Rack pinion ref.: NFE23011
Pitch Ø: 8.1
Radial tolerance: 0 / - 0.07
Surface finish: Ra0.8



ELECTRICAL DIAGRAM


Clockwise direction viewed from control shaft side

POWER RATING CHART

OPTIONS (on request)

- Other ohmic values (R_n): 2 k Ω
- Other tolerances on R_n : $\pm 10\%$; $\pm 5\%$
- Other linearities: $\pm 0.3\%$ (on 340°)
- Other theoretical electrical travels and useful electrical travels ($\leq 340^\circ$): consult us
- Center tap
- Other shaft designs (see “Dimensions”)
- Gear wheel (details of design to be discussed with customer)
- Antirotation hole



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