

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 R 39023

QUICK REFERENCE DATA

Sensor type	ROTATIONAL, conductive plastic
Output type	Output by turrets
Market appliance	Industrial, avionics
Dimensions	1 1/16" (27 mm)

ELECTRICAL SPECIFICATIONS

PARAMETER													
Theoretical electrical travel (TET)	345° ± 3°												
Theoretical electrical travel (TET) - on request	30°	60°	90°	100°	140°	170°	180°	210°	308°	308°	348°	333°	20'
Useful electrical travel (UET) - on request	30°	44°	70°	90°	140°	170°	100°	210°	140°	180°	342°	300°	
Independent linearity standard	± 1 %												
Independent linearity optional	± 0.8 %, ± 0.5 %, ± 0.25 %, ± 0.2 %, ± 0.1 %												
Total resistance (R _n)	4.7 kΩ or 10 kΩ												
Tolerance on R _n	± 20 %												
Output smoothness	≤ 0.1 % (≤ 0.05 % on request)												
Power rating at 70 °C	1.25 W (see "Power Rating Chart")												
Temperature coefficient	-300 ± 300 ppm/°C												
Wiper current	≤ 1 mA												
Recommended load impedance	≥ 100 R _n for linearity = 1 % ≥ 1000 R _n for linearity ≤ 0.1 %												
Insulation resistance	≥ 1 GΩ at 500 V _{DC} (≥ 10 GΩ at 500 V _{DC} on request)												
Dielectric strength	750 V _{RMS} , 50 Hz, 1 min												

MECHANICAL SPECIFICATIONS

PARAMETER	
Mechanical rotation	360° continuous
Moment of inertia	≤ 0.4 g cm ² (for 1 stage), ≤ 0.2 g cm ² (per additional stage)
Mounting	Standard
Running and starting torque	≤ 12 cN cm (for 1 stage), ≤ 10 cN cm (per additional stage)
Protection class	IP 50
Weight	< 18 g (for 1 stage), < 6 g (per additional stage)

PERFORMANCE

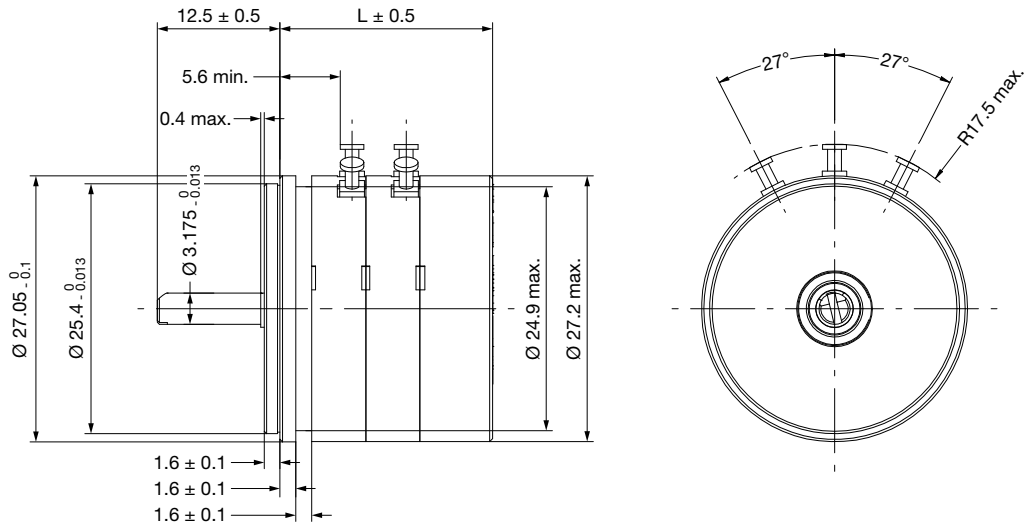
PARAMETER	
Operating temperature range	-55 °C to +125 °C
Life	25M cycles
Rotation speed (max.)	600 rpm

Note

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

SAP PART NUMBERING GUIDELINES						
MODEL	SIZE (mm)	GANG	VALUE	LINEARITY	ANGLE	PACKAGING
POPR	27	1	472 = 4K7	A = 1 % B = 0.5 % C = 0.25 % D = 0.1 %	345	B = box
		2	103 = 10K			
		3				
		4				
		5				
		6				

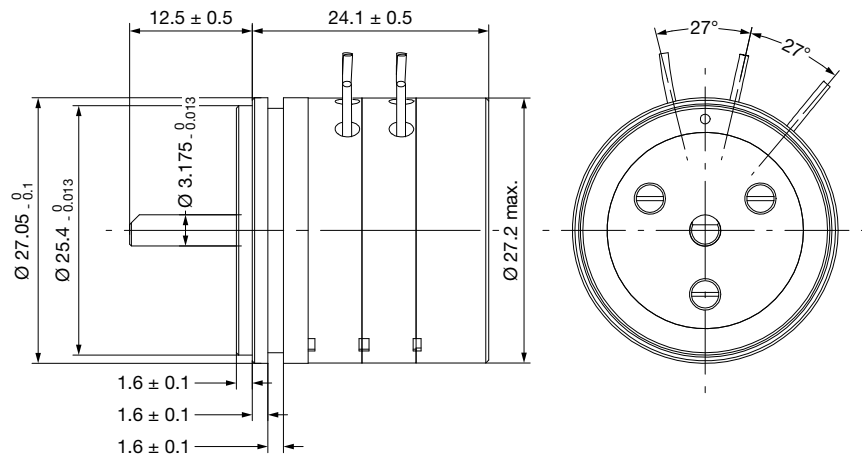
DIMENSIONS in millimeters



Number of cups	1	2	3	4	5	6
L	16	21.5	27	32.5	38	43.5

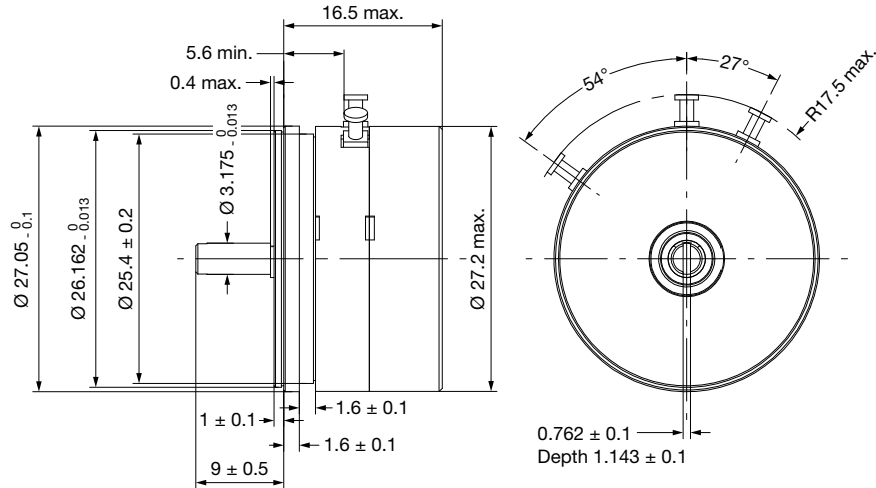
DESIGNS ON REQUEST

OPTION 1

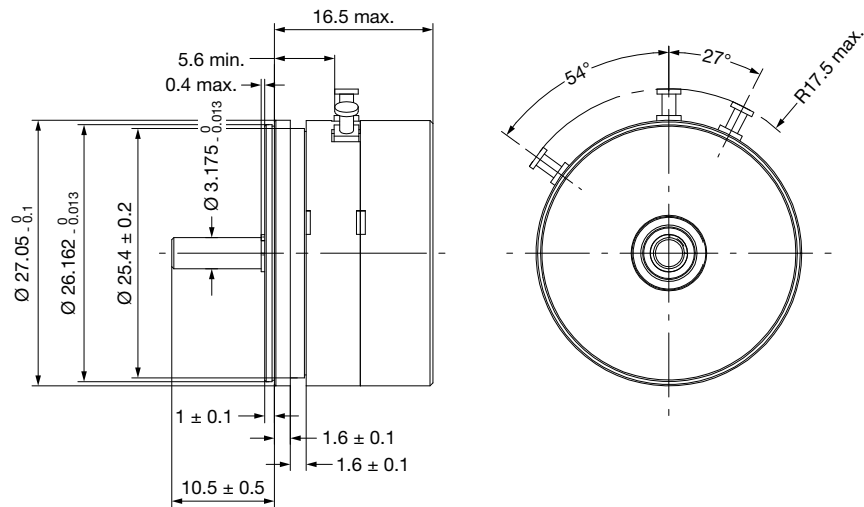


DIMENSIONS in millimeters

OPTION 2

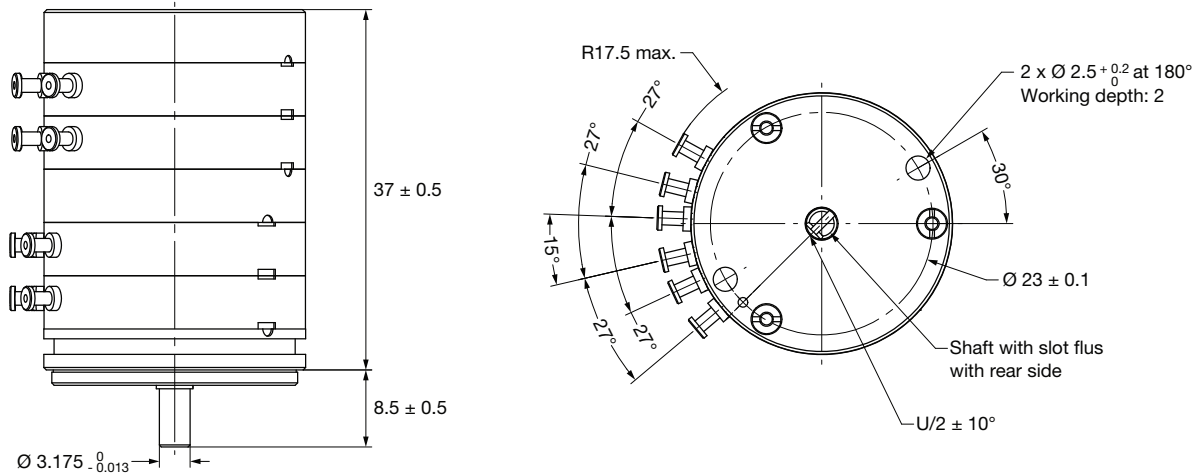


OPTION 3

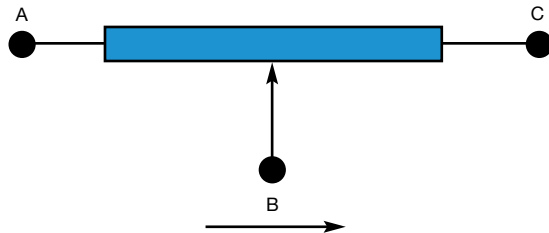


DIMENSIONS in millimeters

OPTION 4: 4 CUPS WITH INTERMEDIATE HOUSING

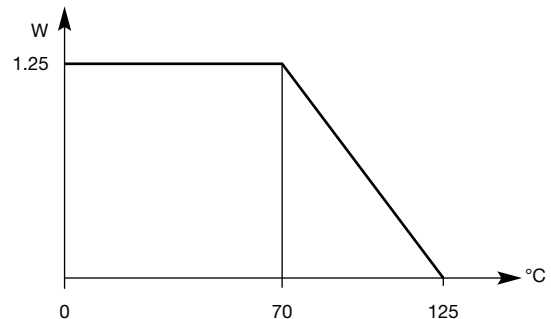


ELECTRICAL DIAGRAM



Clockwise direction viewed from control shaft side

POWER RATING CHART



OPTIONS (on request)

- Other ohmic value: 2 k Ω ; 5 k Ω ; 50 k Ω
- Other tolerances on R_n : $\pm 10\%$
- Other linearities: $\pm 0.065\%$
- Other theoretical electrical travel
- Connectors (center tap)
- Through shaft
- Insulating resistance: ≥ 10 G Ω at 500 V_{DC}
- Shaft: without flat surface (without D shape)
- Total length (old model with one gang):
14 mm in place of 16 mm
- Type of wiper: 5 strands or 2 or 3 lamellas
- Protection class: IP 65 (front flange)
- Electrical reference: $0.5 U \pm 0.1\%$ U
- Electrical phasing between cups: $\pm 0.1\%$ or 0.03% at $U/2$
- Mechanical reference: $U/2$ printing flange / shaft at $\pm 10^\circ$ (by printing or machined hole on the flange)
- Intensity accidental = 5 mA
- Function: sine and / or cosine with accuracy $\pm 1\%$



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.