Single-Turn Continuous Rotation Analog Displacement Sensors

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

QUICK REFERENCE DATA	
Sensor type	ROTATIONAL, conductive plastic
Output type	Output by turrets
Market appliance	Avionics, military
Dimensions	1/2" (12.7 mm) to 1 1/16" (27 mm)

ELECTRICAL SPECIFICATIONS

PARAMETER	H12	H19	H22	H27	HR27
Theoretical electrical travel	330° ± 3°	340° ± 3°	340° ± 3°	345° ± 3°	345° ± 3°
Standard linearity (≤)	± 1 %	± 1 %	± 0.5 %	± 0.5 %	± 0.5 %
Optional linearity (≤)	± 0.5 %, ± 0.25 %	± 0.5 %, ± 0.25 %, ± 0.1 %	± 0.25 %, ± 0.1 %	± 0.25 %, ± 0.1 %, ± 0.05 %	± 0.25 %, ± 0.1 %, ± 0.05 %
Total resistance range (E3)	1 kΩ to 4.7 kΩ	1 kΩ to 22 kΩ	1 kΩ to 47 kΩ	1 kΩ to 47 kΩ	1 kΩ to 47 kΩ
Tolerance on R_n	± 10 %, ± 5 % optional				
Output smoothness	< 0.1 %				
Power rating at 70 °C	0.5 W	0.8 W	1 W	1 W	1.25 W
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 ≤ 0.05 %				
Insulation resistance	≥ 10 GΩ at 500 V_{DC}				
Dielectric strength	500 V_{RMS}, 50 Hz, 1 min	750 V_{RMS}, 50 Hz, 1 min	750 V_{RMS}, 50 Hz, 1 min	750 V_{RMS}, 50 Hz, 1 min	750 V_{RMS}, 50 Hz, 1 min

MECHANICAL SPECIFICATIONS

PARAMETER		H12	H19	H22	H27	HR27
Size		05	08	09	11	11
Running and starting torque (c N cm)	first stage	6	8	10	12	12
	additional stage	-	7	9	10	10
Moment of inertia (g cm^2)	first stage	≤ 0.2	≤ 1	≤ 0.8	≤ 1	≤ 0.4
	additional stage	-	≤ 0.5	≤ 0.4	≤ 0.4	≤ 0.2
Weight (g)	first stage	6	17	18	23	12
	additional stage	-	7	8	22	5
Protection class		IP 50				

PERFORMANCE

PARAMETER	
Operating temperature range	-55 °C to +125 °C
Life	25M cycles, exception: H12 = 10M cycles
Rotation speed (max.)	600 rpm

Note

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

For technical questions, contact: mcbfixedresistors@vishay.com

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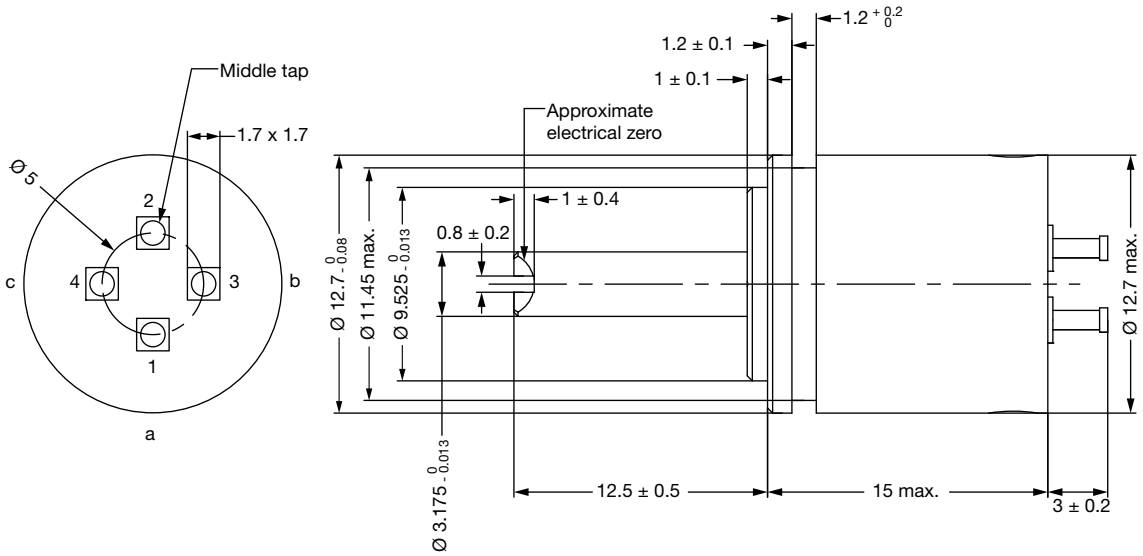
ORDERING INFORMATION / DESCRIPTION

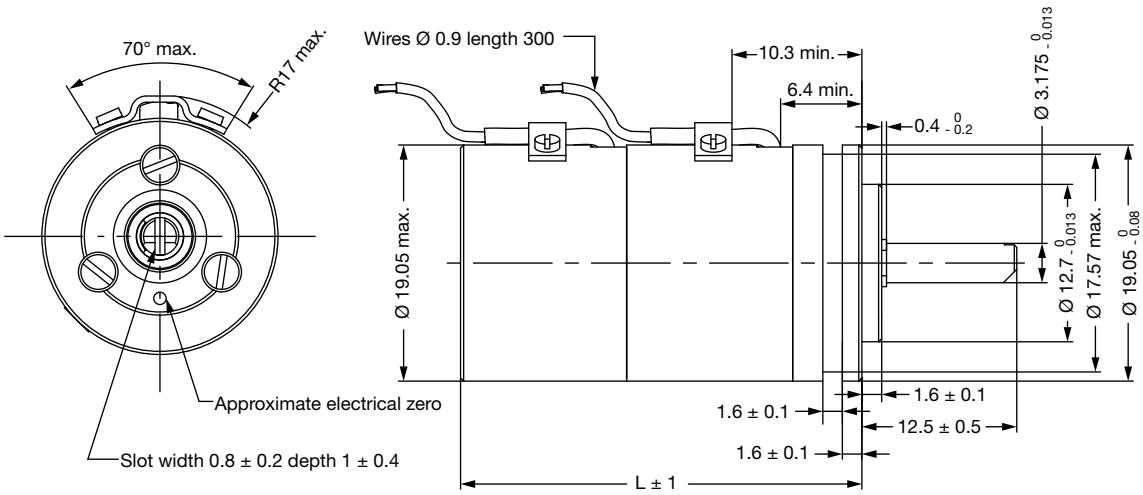
HR27	4.7K	6	F	.....
SENSOR TYPE (H12, H19, H22, H27, HR27)	OHMIC VALUE	NUMBER OF STAGES IF > 1 (Max. number of stages: see “Dimensions”)	WIRE OUTPUT (Exception: H12, soldering terminals only)	SPECIAL FEATURE OR OPTION (Plain language)

DIMENSIONS in millimeters

H12



H19



Number of cups	1	2	3	4
L	19	32.4	45.8	59.2

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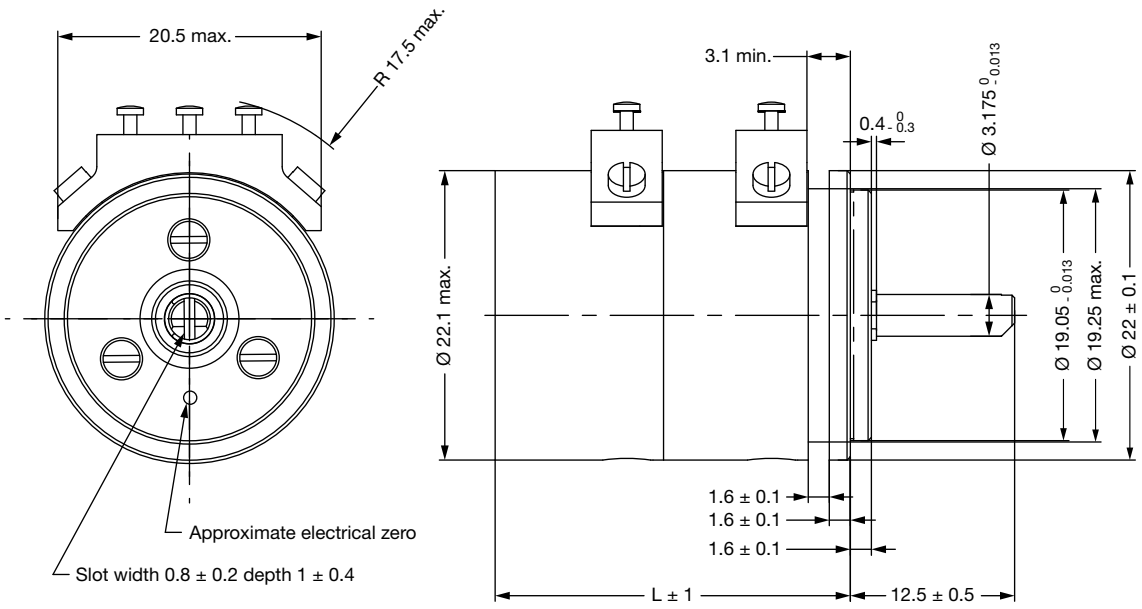
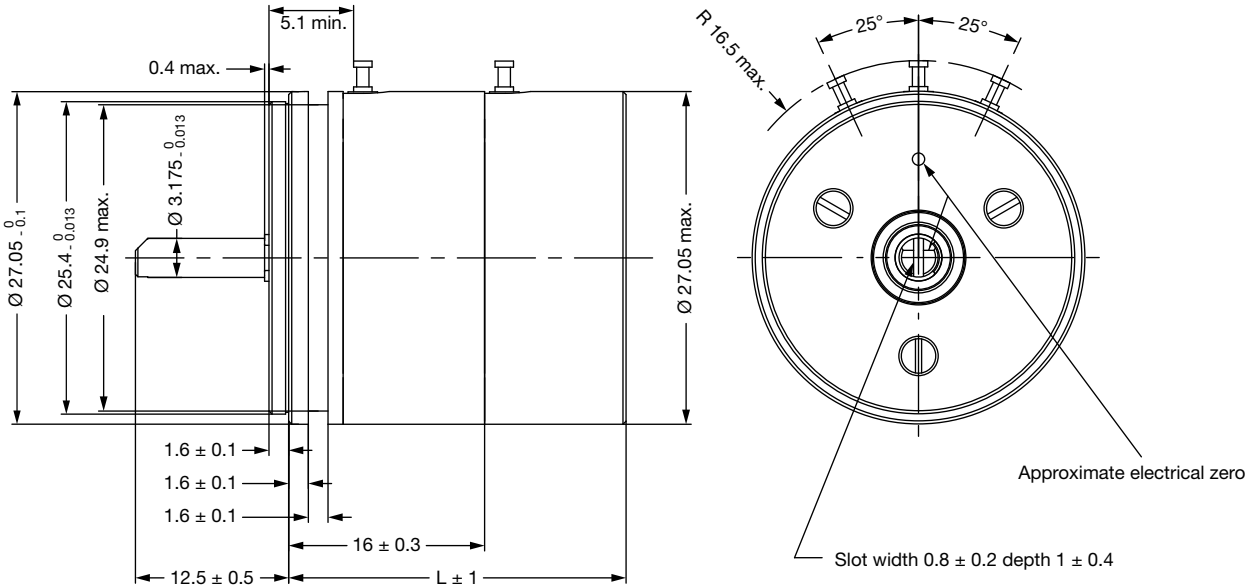
DIMENSIONS in millimeters

H22



Number of cups	1	2	3	4
L	16	27	38	49

H27



Number of cups	1	2	3	4
L	16	27	38	49

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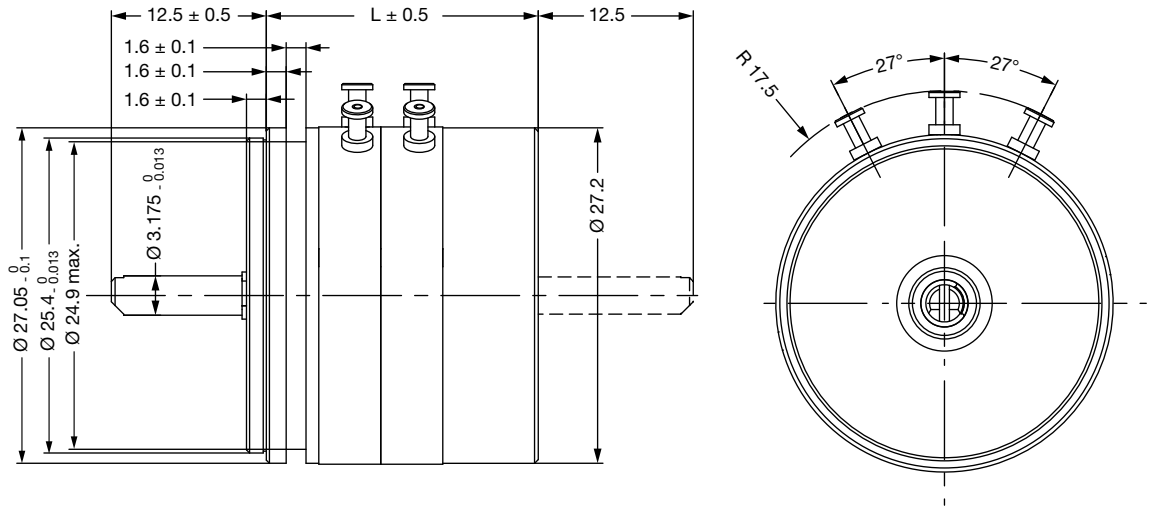
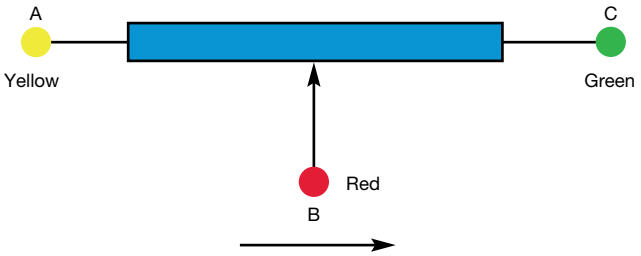
DIMENSIONS in millimeters

HR27



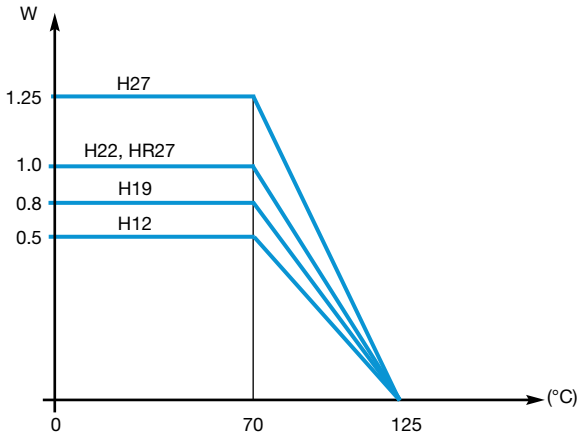
Number of cups	1	2	3	4	5	6
L	17	22	27	32	37	42

ELECTRICAL DIAGRAM



Clockwise direction viewed from control shaft side

POWER RATING CHART



OPTIONS (on request)

- Other total resistance
- Other tolerances on R_n (see “Electrical Specifications” table)
- Other linearities (see “Electrical Specifications” table)
- Other theoretical electrical travel
- Connectors (center tap)
- Wire outputs (except H12)
- Through shaft (except H12)

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