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

DESIGN SUPPORT TOOLS AVAILABLE

3D Models

QUICK REFERENCE DATA	
Sensor type	ROTATIONAL, conductive plastic
Output type	Output by turrets
Market appliance	Industrial, avionics
Dimensions	Ø 36, Ø 44, Ø 50, Ø 76

ELECTRICAL SPECIFICATIONS					
PARAMETER	**POHR36**	**POHR44**	**POTH44**	**POTH50**	**POTH76**
Theoretical electrical travel (TET)	350° ± 3°	350° ± 3°	350° ± 3°	350° ± 2°	350° ± 1°
Theoretical electrical travel (on request)	-	62.5° 90° 120° 120° 182.5° 210°	90°	-	-
Useful electrical travel (on request)	-	60° 90° 90° 119° 180° 180°	89°	-	-
Standard linearity (≤)	± 0.5 %	± 0.5 %	± 0.5 %	± 0.25 %	± 0.1 %
Optional linearity (≤)	± 0.25 %, ± 0.1 %, ± 0.05 %	± 0.4 %, ± 0.25 %, ± 0.1 %, ± 0.05 %, ± 0.04 %	± 0.25 %, ± 0.2 %, ± 0.1 %, ± 0.05 %	± 0.1 %, ± 0.05 %, ± 0.03 %	± 0.05 %, ± 0.02 %
Total resistance range (E3)	4.7 kΩ or 10 kΩ	4.7 kΩ or 10 kΩ	4.7 kΩ or 10 kΩ	4.7 kΩ or 10 kΩ	4.7 kΩ or 10 kΩ
Tolerance on R_n	± 10 %, optional: ± 20 %, ± 15 %, ± 5 %				
Output smoothness	< 0.1 % (on request: 0.5 %, 0.05 %, 0.025 %)				
Power rating at 70 °C	2 W	2.5 W	2.5 W	3 W	4 W
Temperature coefficient	-300 ± 300 ppm/°C				
Wiper current	≤ 1 mA				
Recommended load impedance	≥ 1000 R_n				
Insulation resistance	≥ 10 GΩ at 500 V_{DC}				
Dielectric strength	1000 V_{RMS}, 50 Hz, 1 min				

MECHANICAL SPECIFICATIONS						
PARAMETER		**POHR36**	**POHR44**	**POTH44**	**POTH50**	**POTH76**
Size		15	18	18	20	30
Running and starting torque (cN cm)	first stage	20	20	20	25	35
	additional stage	18	18	18	22	30
Moment of inertia (g cm^2)	first stage	≤ 2.2	≤ 2.6	≤ 6	≤ 8	≤ 20
	additional stage	0.6	≤ 0.6	≤ 5	≤ 6	≤ 17
Weight (g)	first stage	50	80	100	100	230
	additional stage	12	12	50	55	80
Protection class		IP50				

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PERFORMANCE

PARAMETER	
Life	25M cycles
Temperature range	-55 °C to +125 °C
Rotation speed	600 rpm

Note

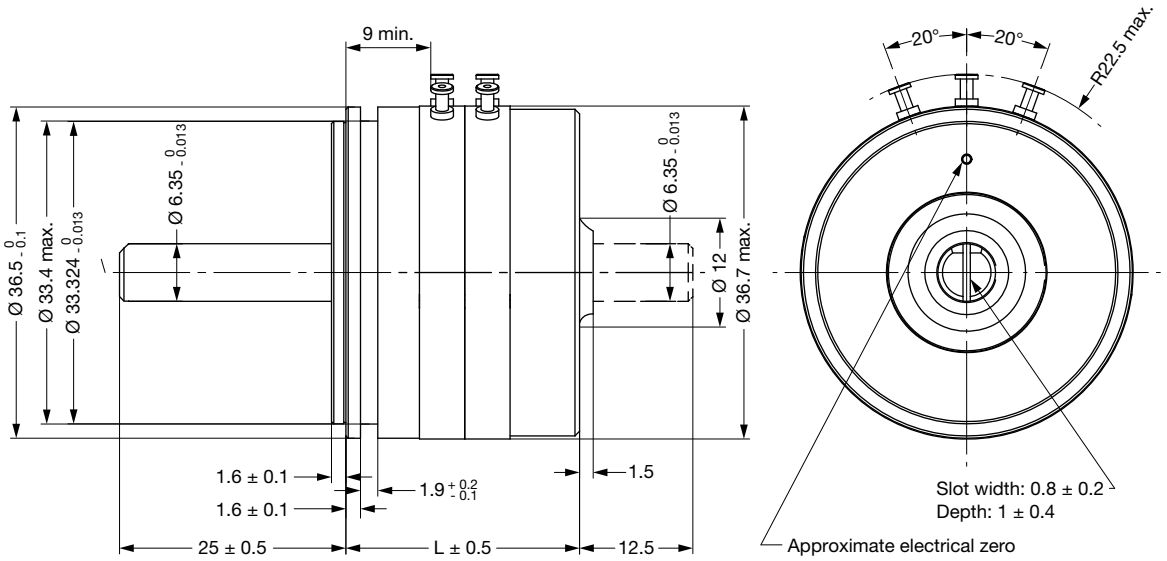
- Nothing stated herein shall be construed as a guarantee of quality or durability.

SAP PART NUMBERING GUIDELINES

MODEL	SIZE (mm)	GANG	VALUE	LINEARITY	ANGLE	PACKAGING
POTH	44 50 76	1 2 3 4 5 6 7 8 (max. number of stages: see “Dimensions”)	472 = 4K7 103 = 10K	B = 0.5 % C = 0.25 % D = 0.1 % E = 0.05 % (see “Electrical Specifications”)	350	b = box
POHR	36 44					

DIMENSIONS in millimeters

POHR36



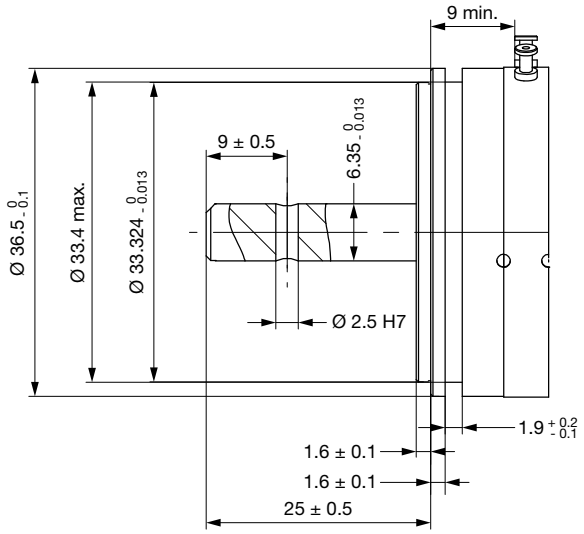
Number of cups:	1	2	3	4	5	6	7	8
L:	21	26	31	36	41	46	51	56

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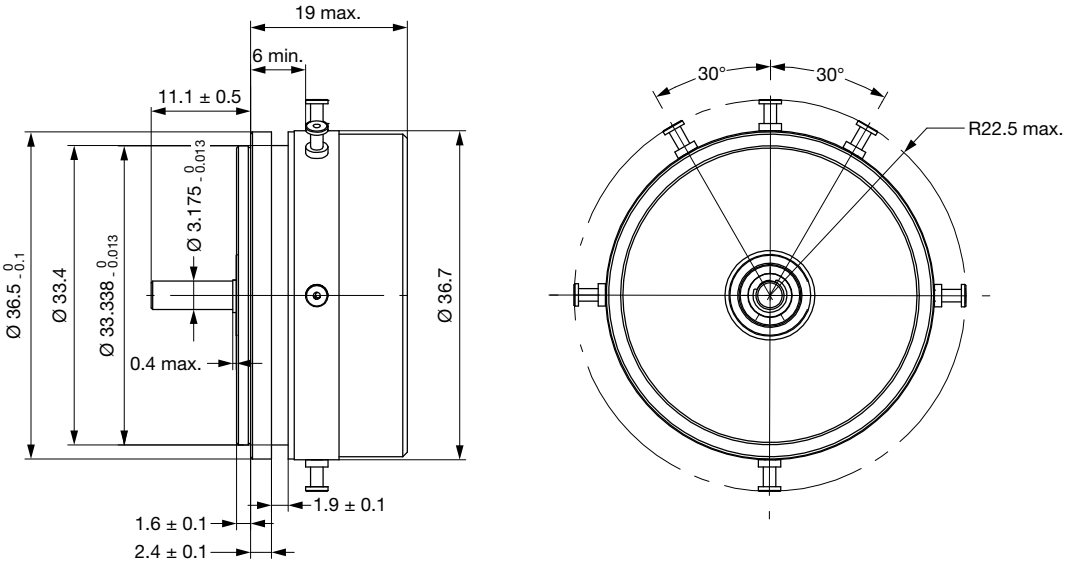
DIMENSIONS in millimeters

DESIGNS ON REQUEST FOR POHR36

OPTION 1



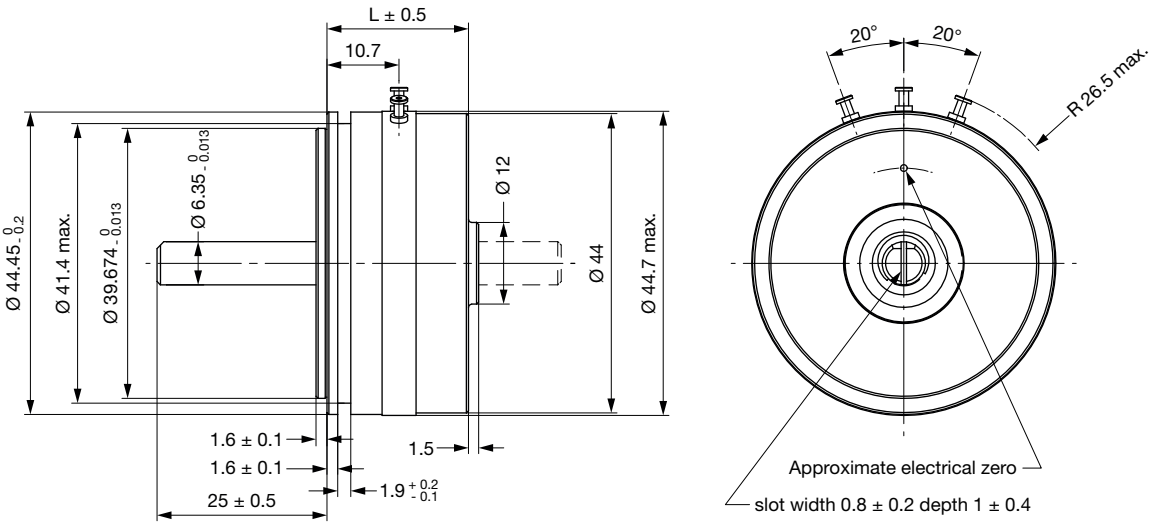
OPTION 2



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DIMENSIONS in millimeters

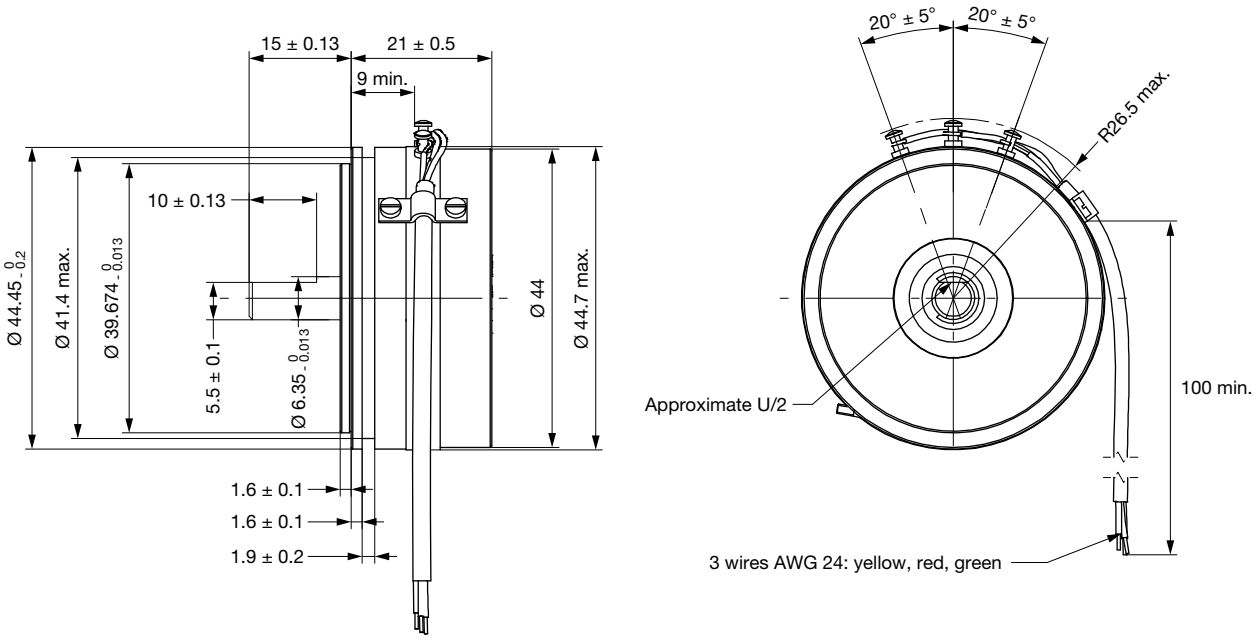
POHR44



Number of cups:	1	2	3	4	5	6	7	8
L:	21	26	31	36	41	46	51	56

DESIGNS ON REQUEST FOR POHR44

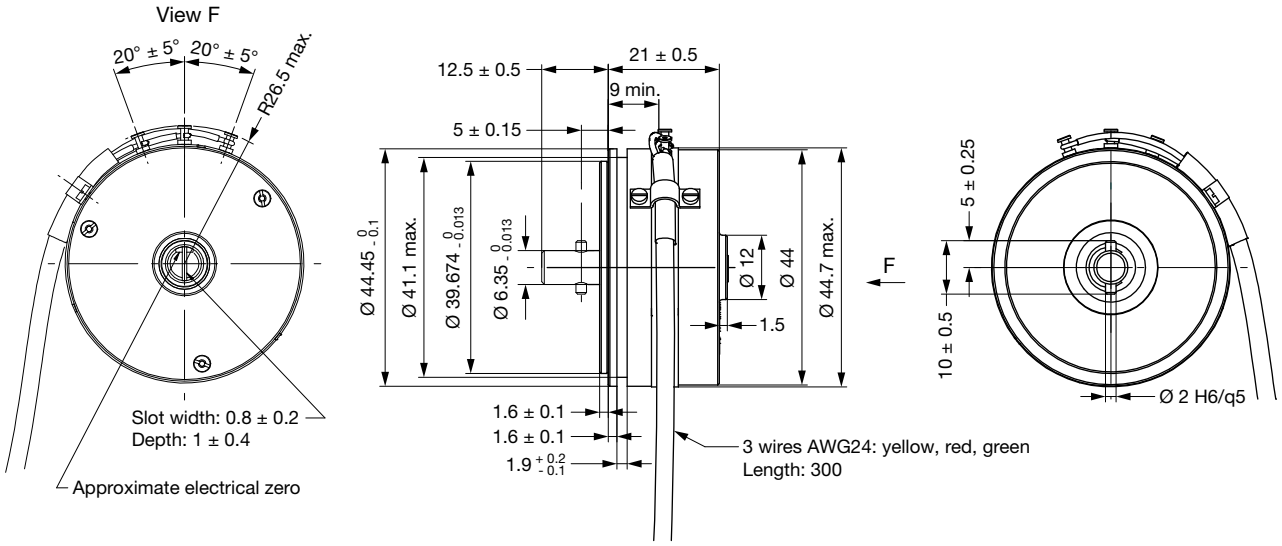
OPTION 1



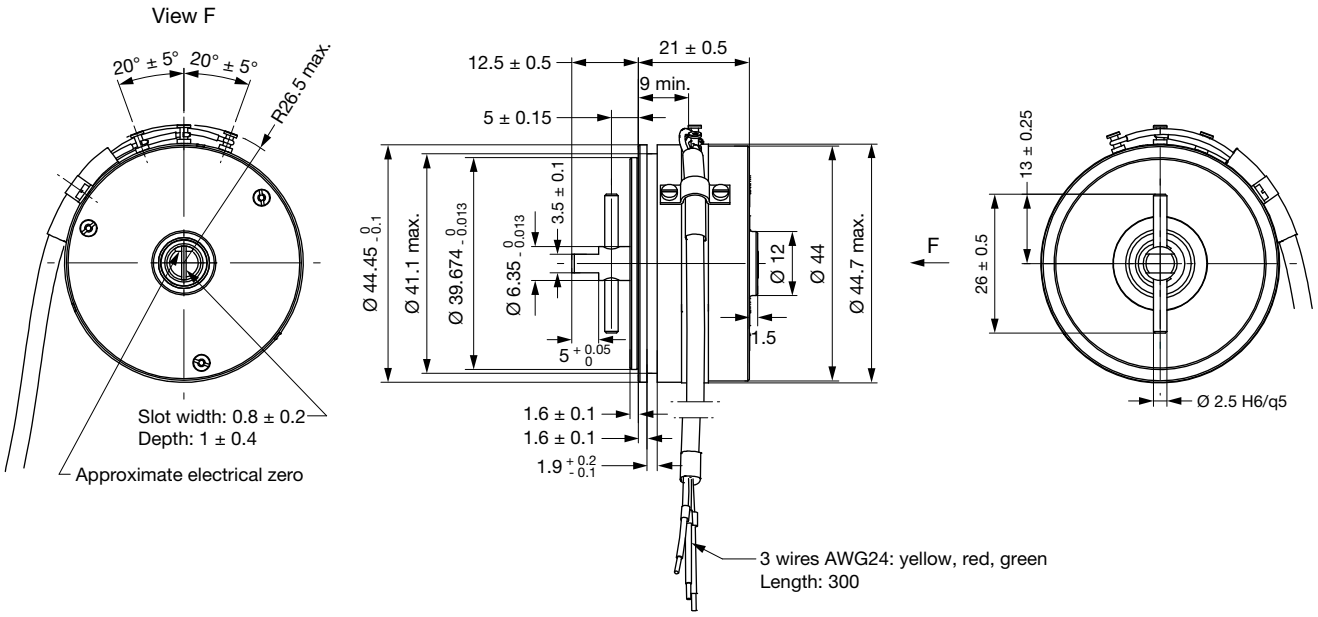
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DIMENSIONS in millimeters

OPTION 2



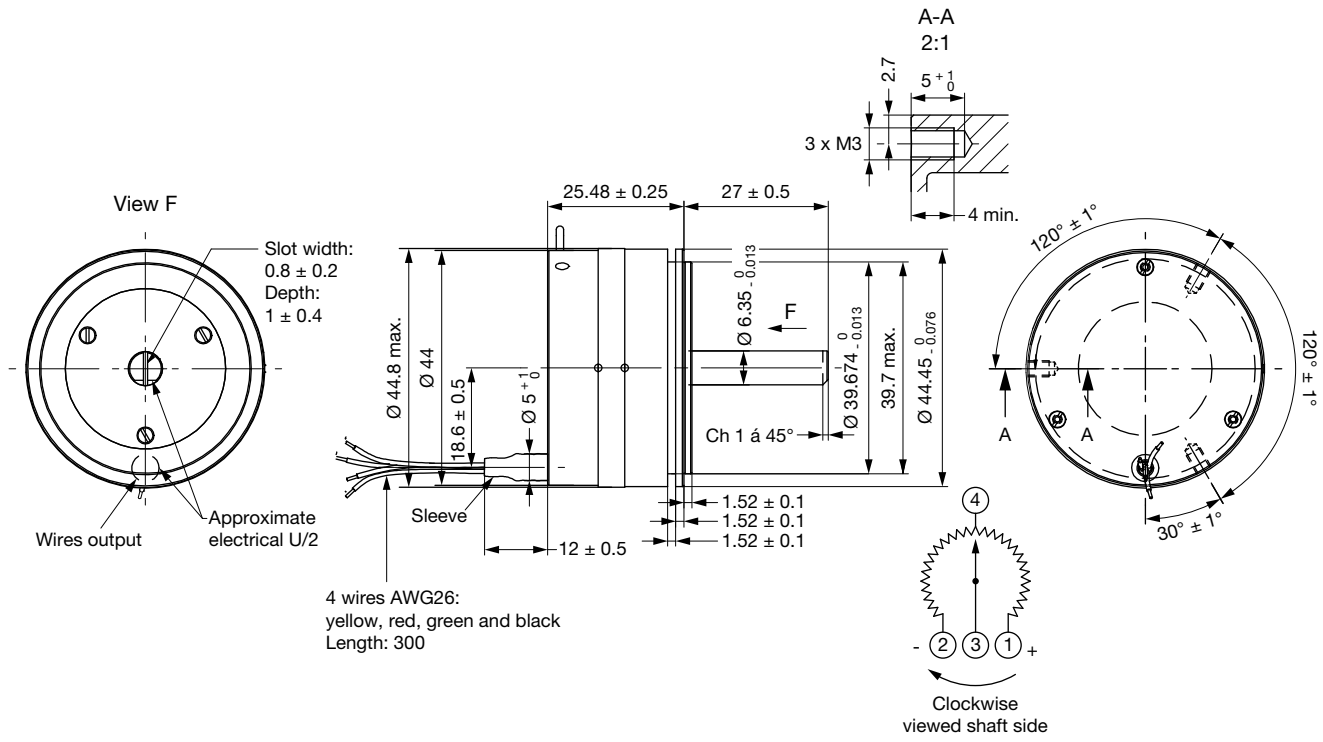
OPTION 3



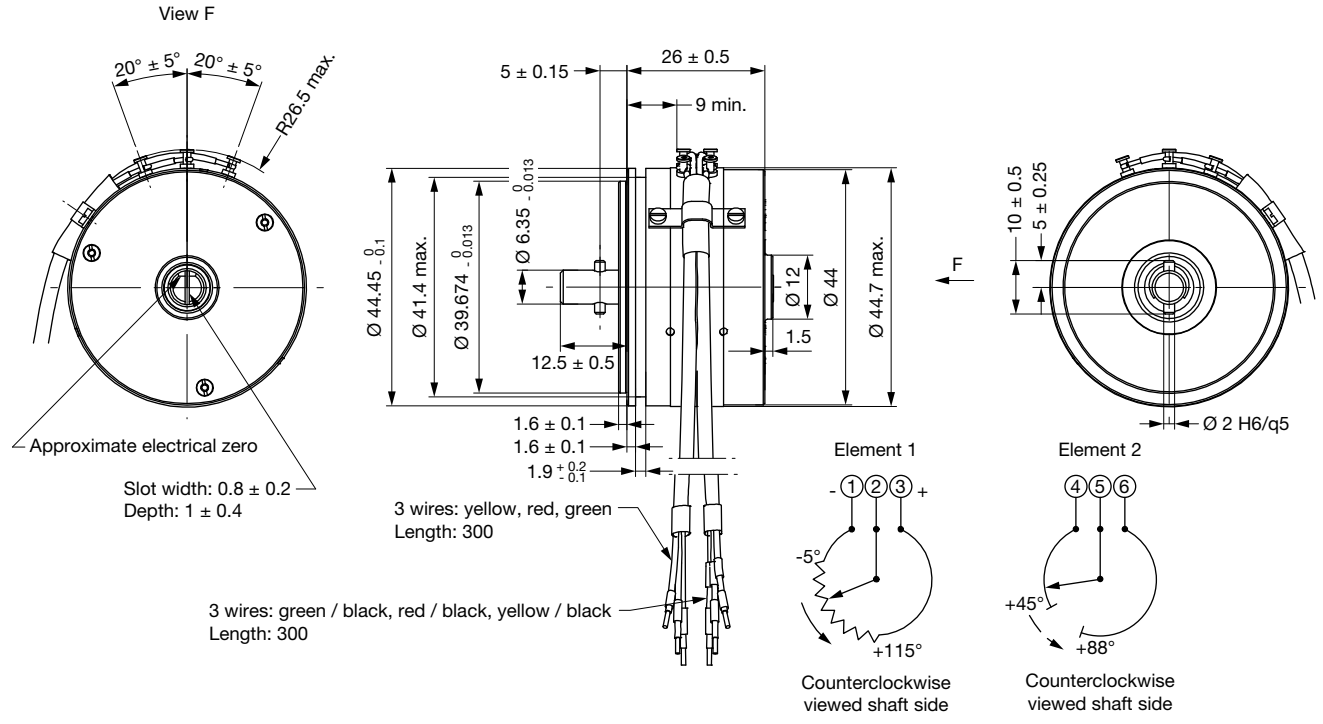
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DIMENSIONS in millimeters

OPTION 4



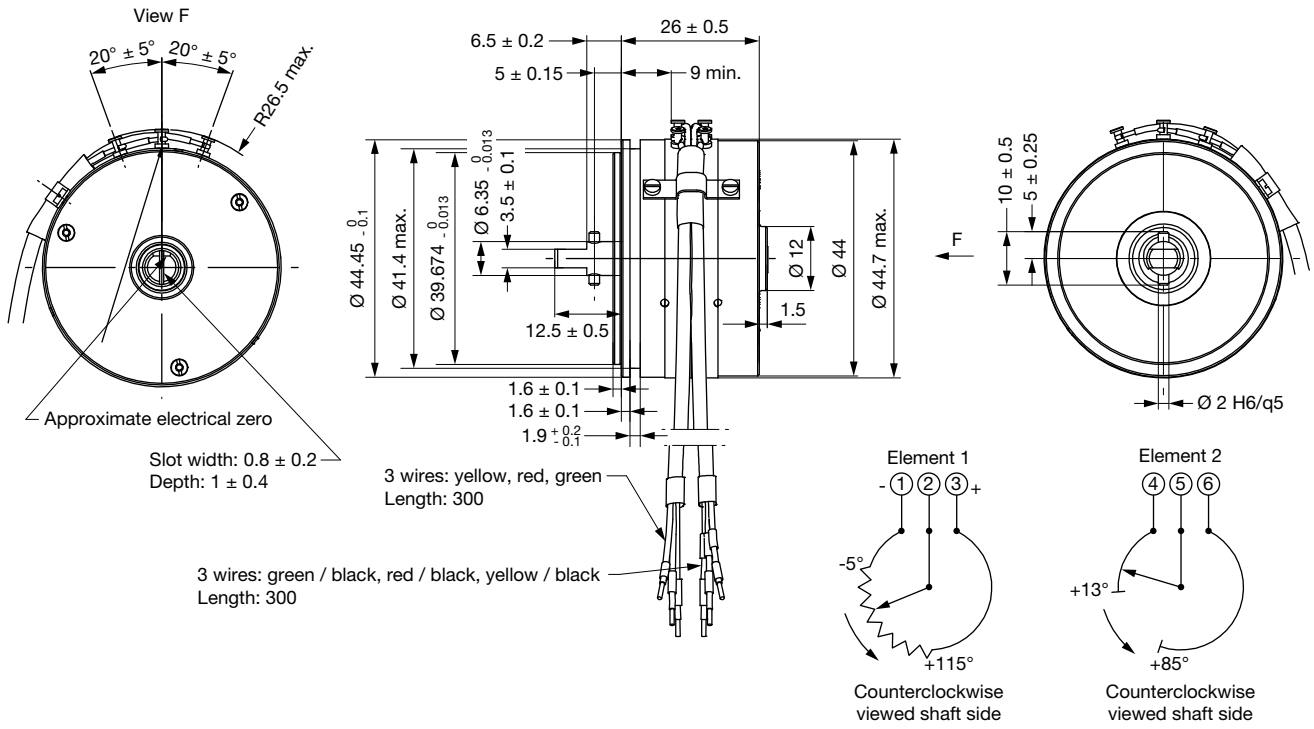
OPTION 5



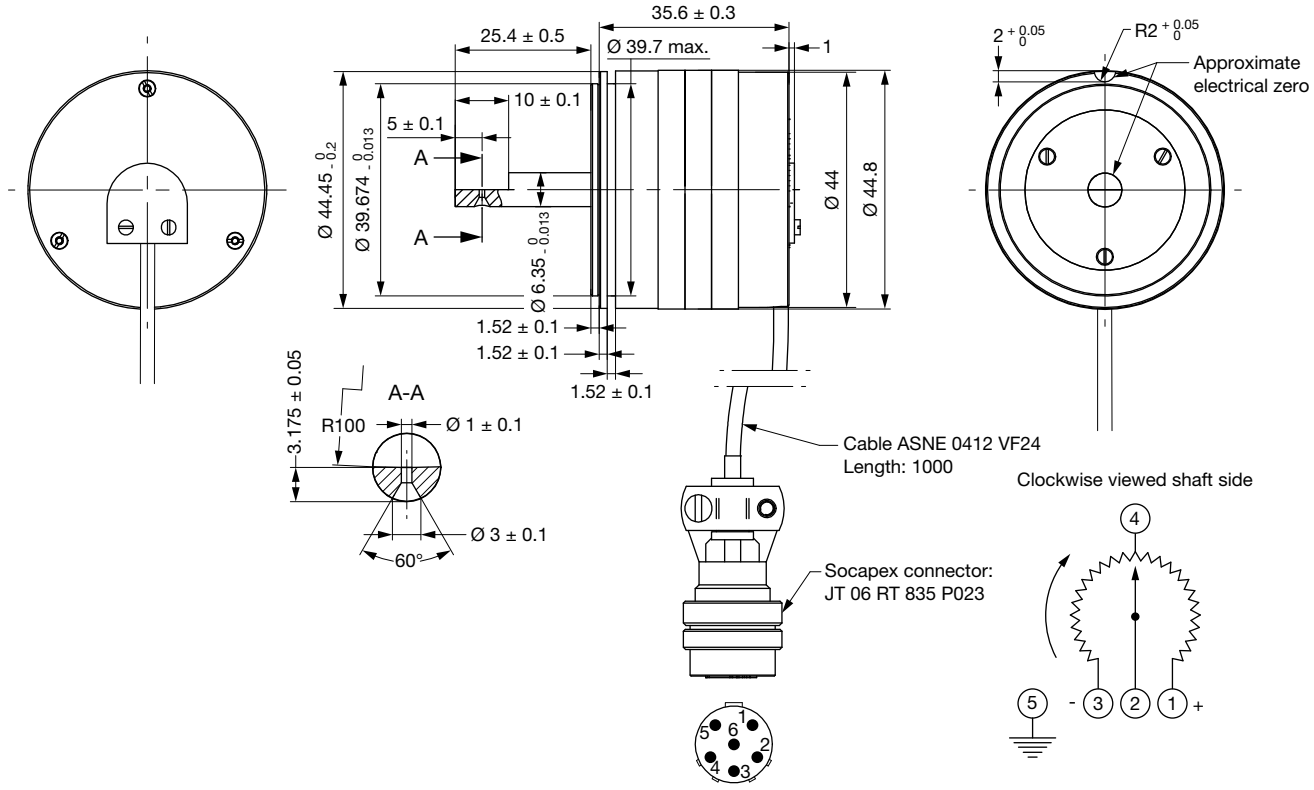
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DIMENSIONS in millimeters

OPTION 6



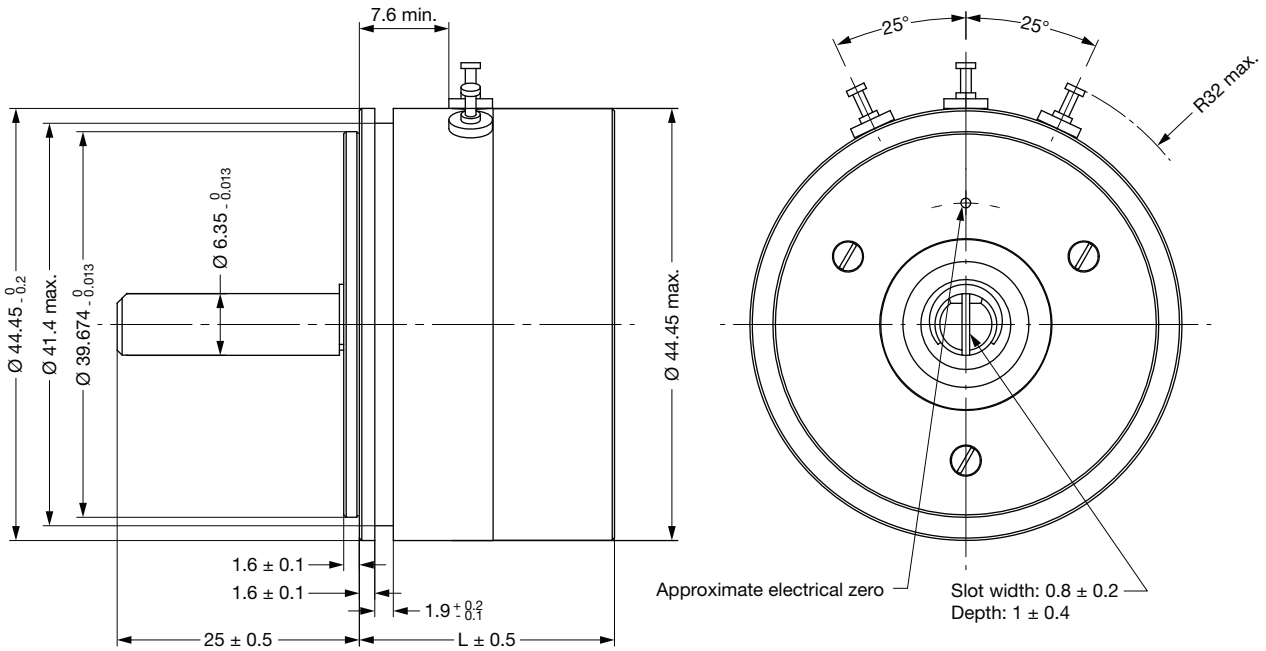
OPTION 7



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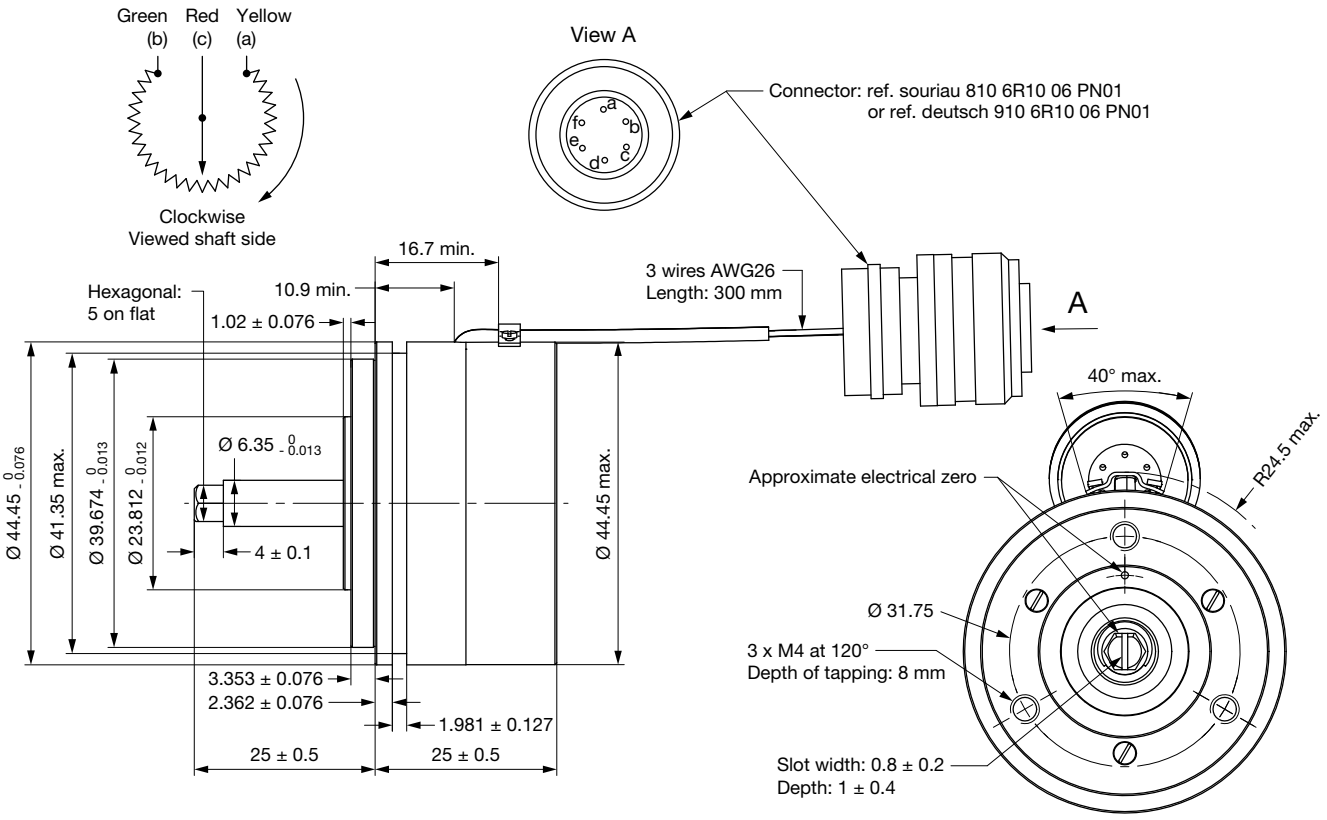
DIMENSIONS in millimeters

POTH44



Number of cups:	1	2	3	4
L:	26.5	42	57.5	73

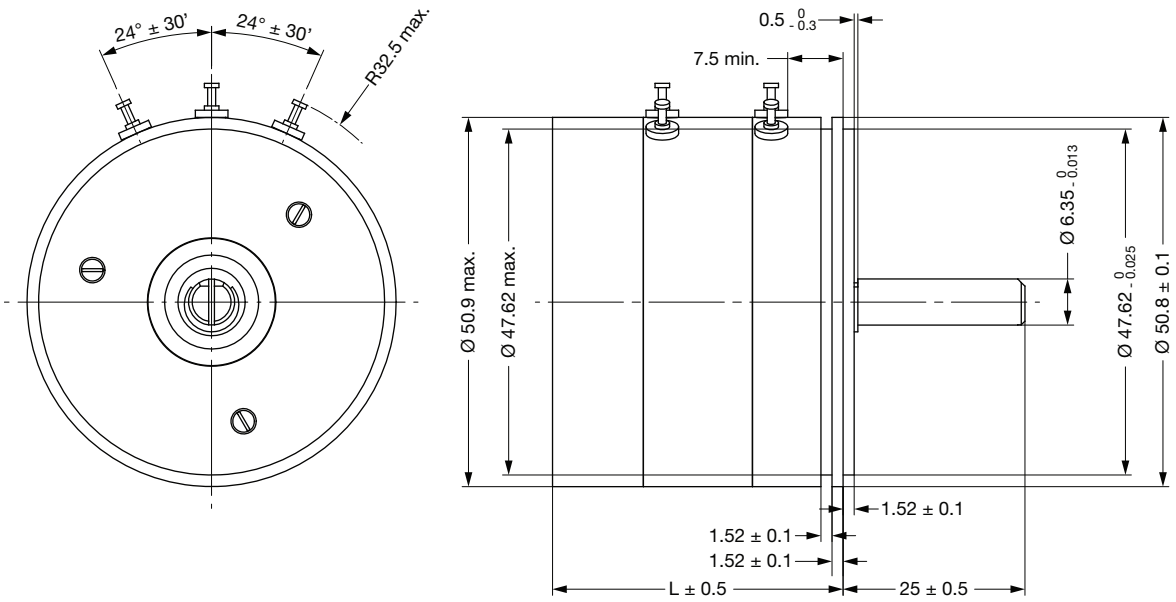
POTH44 WITH CONNECTOR (ON REQUEST)



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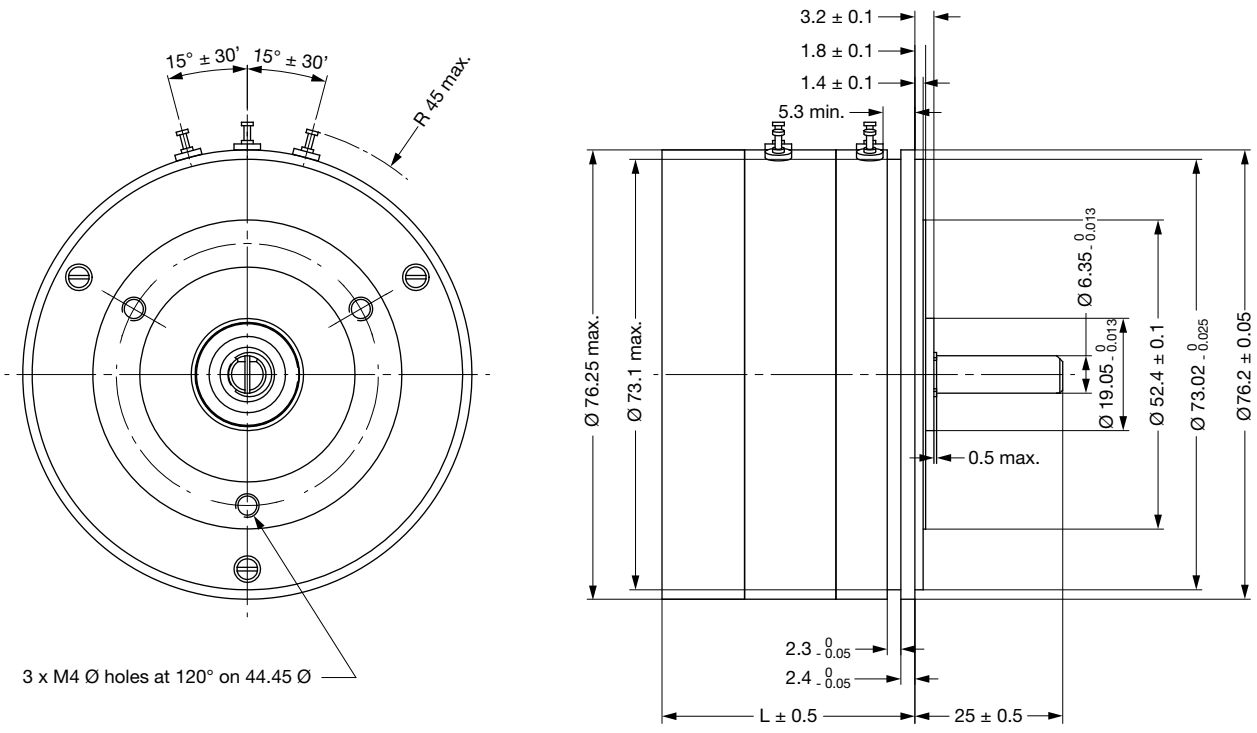
DIMENSIONS in millimeters

POTH50



Number of cups:	1	2	3	4	5
L:	25	40	55	70	85

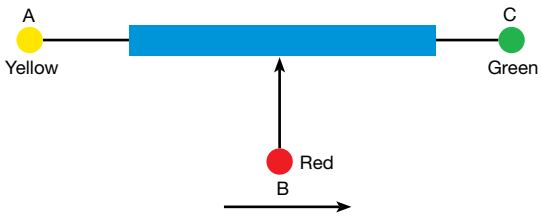
POTH76



Number of cups:	1	2	3	4	5
L:	27.5	43	58.5	74	89.5

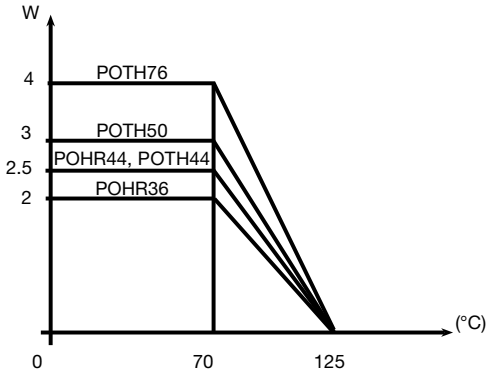
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ELECTRICAL DIAGRAM



Clockwise direction viewed from control shaft side

POWER RATING CHART



OPTIONS (on request)

- Other ohmic values: 2.5 kΩ (POHR36); 1.6 kΩ, 2 kΩ, or 2.8 kΩ (POHR44); 1 kΩ (POTH44)
- Other tolerances on R_n (see “Electrical Specifications” table): ± 20 %
- Other linearities (see “Electrical Specifications” table): 0.2 % (POHR36)
- Other theoretical electrical travel: 354° ± 1° and 120° (with UET = 100°) (POHR36); 120° (with UET = 100°) (POHR44)
- Connectors (center tap)
- Wire outputs (only on POHR44 and POTH44)
- Through shaft
- Phasing between wipers: 180° ± 2° (POHR36 x 2)
- Specific function:
  - sine and cosine (360°) with accuracy ± 0.2 %
  - switch sector with accuracy ± 1° or ± 30’ (POHR44)
- Middle tap: POHR44 U/2 ± 0.5 %
- For space application: removing of fabrication for tracks and ball bearings
- Protection resistor in series with wiper: 150 Ω; 300 Ω (± 15 %)
- Version waterproof: POHR44 (starting torque ≤ 60 cNcm)
- Electrical output by connector: plug Socapex: JT 06 RT 835 P023 (or equivalent) with cable length 1 m
- Version supplying voltage: 6 V < U < 30 V

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