Single-Turn Continuous Rotation Analog Displacement Sensors

FEATURES

- Conductive plastic potentiometer technology, infinite resolution
- Metal housing (SS and SR)
- Stainless steel shaft
- Precious metal contacts
- Soldering terminal outputs
- Applicable standards: NFC 93255, MIL R 39023
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

QUICK REFERENCE DATA	
Sensor type	ROTATIONAL, conductive plastic
Output type	Output by turrets
Market appliance	Industrial
Dimensions	7/8" (22.2 mm)

ELECTRICAL SPECIFICATIONS			
PARAMETER	**P22SBS**	**P22SSS**	**P22SSR**
Theoretical electrical travel	340° ± 3°		
Independent linearity standard	± 2.0 %	± 2.0 %	± 1.0 %
Independent linearity optional	± 1 %	± 1 %	± 0.5 %
Total resistance range (R_n)	4.7 kΩ or 10 kΩ (1 kΩ on request)		
Tolerance on R_n	± 20 %		
Output smoothness	≤ 0.1 %		
Power rating at 70 °C	1 W (see “Power Rating Chart”)		
Temperature coefficient	-300 ± 300 ppm/°C		
Wiper current	≤ 1 mA		
Recommended load impedance	≥ 100 R_n		
Insulation resistance	≥ 1 GΩ at 500 V_{DC}		
Dielectric strength	750 V_{RMS}, 50 Hz, 1 min		

MECHANICAL SPECIFICATIONS			
PARAMETER	**P22SBS**	**P22SSS**	**P22SSR**
Mechanical rotation	360° continuous		
Moment of inertia	1 g cm^2		
Mounting	Bushing	Servo	Servo
Shaft guiding	Sleeve bearings	Sleeve bearings	Precision ball bearings
Running and starting torque	≤ 0.5 N cm	≤ 0.5 N cm	≤ 0.1 N cm
Panel tightening torque	≤ 250 N cm	-	-
Protection class	IP 50		
Weight	< 16 g	< 13 g	< 13 g

PERFORMANCE			
PARAMETER	**P22SBS**	**P22SSS**	**P22SSR**
Operating temperature range	-55 °C to +125 °C		
Life	5M cycles	10M cycles	20M cycles
Rotation speed (max.)	400 rpm	400 rpm	600 rpm

Note

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

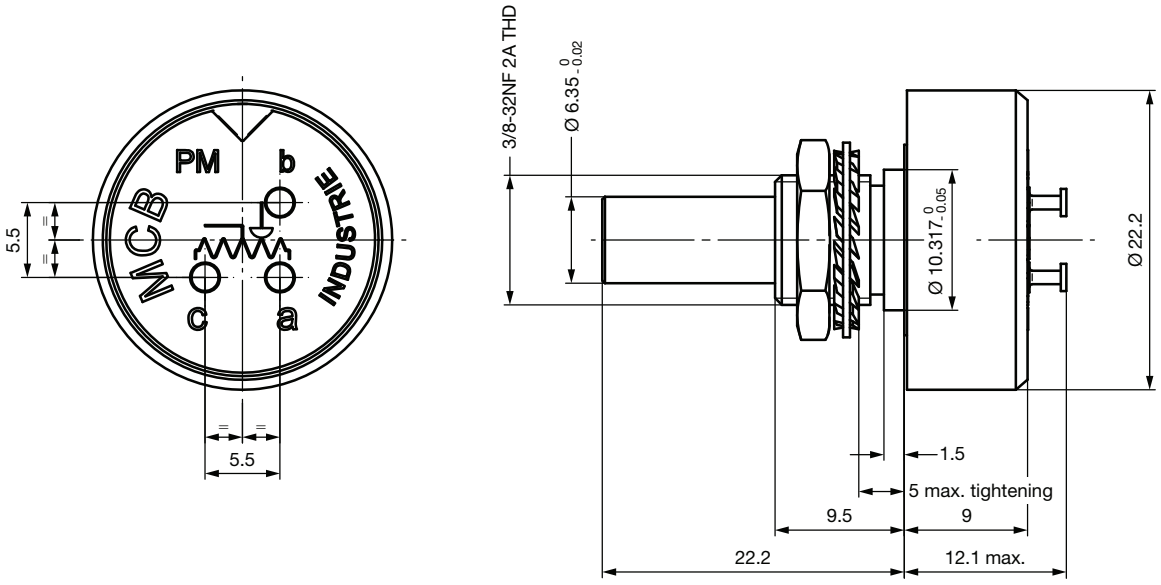
For technical questions, contact: mcbprecisionpot@vishay.com

SAP PART NUMBERING GUIDELINES

MODEL	FUNCTION	MOUNTING	TYPE	VALUE	LINEARITY	ANGLE	PACKAGING
P22	S = single	B = bushing (only with sleeve bearing) S = servo (with sleeve bearing or ball bearing)	S = sleeve bearing R = ball bearing	472 = 4K7 103 = 10K	X = 2 % (bushing or servo) A = 1 % (servo)	0340	B = box

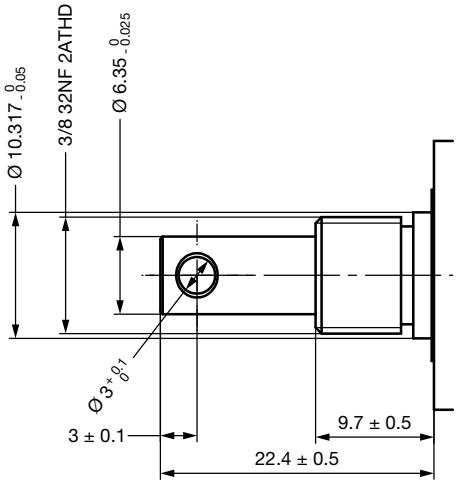
DIMENSIONS in millimeters

P22SBS

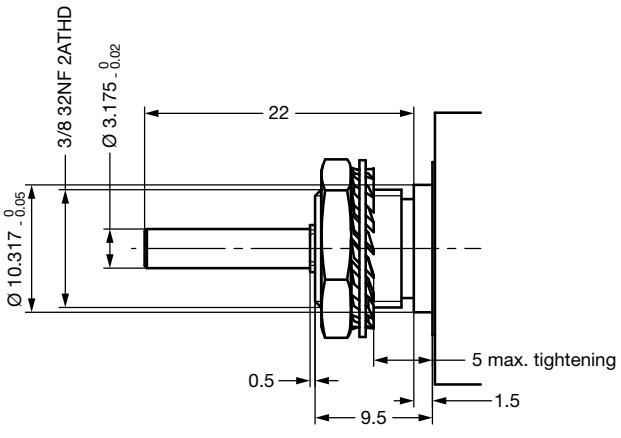


OPTIONS ON REQUEST

OPTION 1

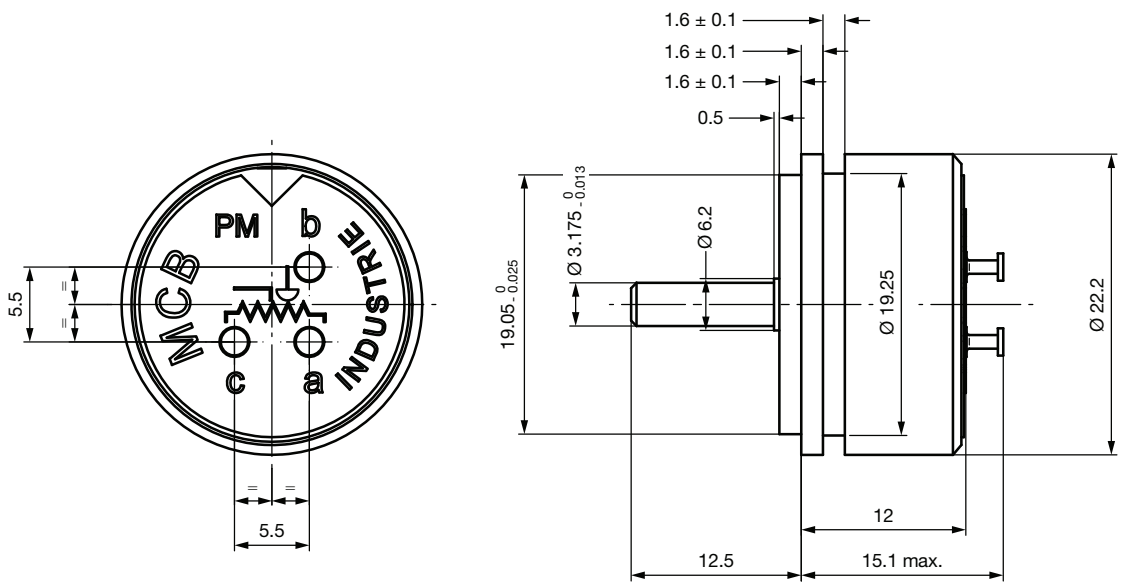


OPTION 2

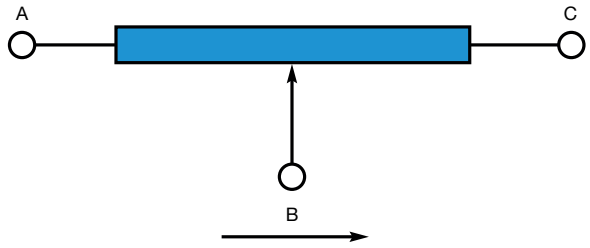


DIMENSIONS in millimeters

P22SSS AND P22SSR

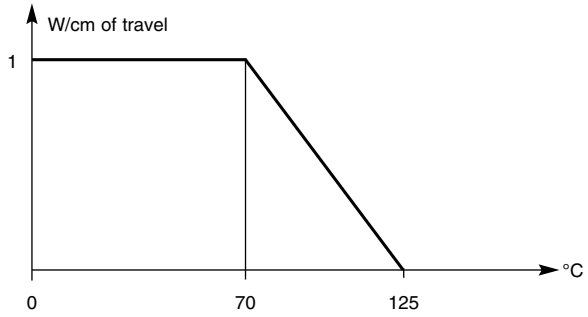


ELECTRICAL DIAGRAM



Clockwise direction viewed from control shaft side

POWER RATING CHART



OPTIONS (on request)

- Other nominal resistance
- Other tolerances on R_n
- Other linearity
- Other electrical travels: 205° ± 5°; 58° (-2°; 0)
- Center tap: U/2 ± 1 %; U/2 ± 1.5 %
- Other shaft diameter
- Anti-rotation system
- Mechanical stops
- Other pinning
- Reinforced mechanical fixation on track to support big efforts (by gluing)

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