


Single-Turn Continuous Rotation Analog Displacement Sensors



FEATURES

- Conductive plastic potentiometer technology, infinite resolution 
- Metal housing
- Stainless steel shaft
- Precious metal contacts
- Soldering terminal outputs
- Dust proof
- Applicable standards: NFC 93255, MIL R39023
- Variant to be specify:
 - PP22 B: bush mounting, plain bearing self lubricating
 - PP22 S: servo mounting, plain bearing self lubricating
 - PP22 SR: servo mounting, precision ball bearing
- 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, avionics |
| Dimensions | 7/8" (22.2 mm) |

ELECTRICAL SPECIFICATIONS

| PARAMETER | |
|---|---|
| Total and useful electrical travel | 340° ± 3° |
| Total and useful electrical travel (on request) | 90° ± 2° (SR), 120° + 0° - 2° (SR) |
| Independent linearity standard | ± 1.0 % |
| Independent linearity optional | B or S: ± 0.5 %, SR: ± 0.25 % and ± 0.2 % |
| Rated resistance range (R _n) | 4.7 kΩ, 10 kΩ |
| Tolerance on R _n | ± 20 %, ± 10 %, ± 5 % (on request) |
| Output smoothness | ≤ 0.1 % |
| Power rating at 70 °C | 1 W |
| Temperature coefficient | -200 ± 200 ppm/°C |
| Wiper current | ≤ 1 mA |
| Insulation resistance | ≥ 1 GΩ at 500 V _{CC} |
| Test voltage | 750 V, 50 Hz, 1 min |

MECHANICAL SPECIFICATIONS

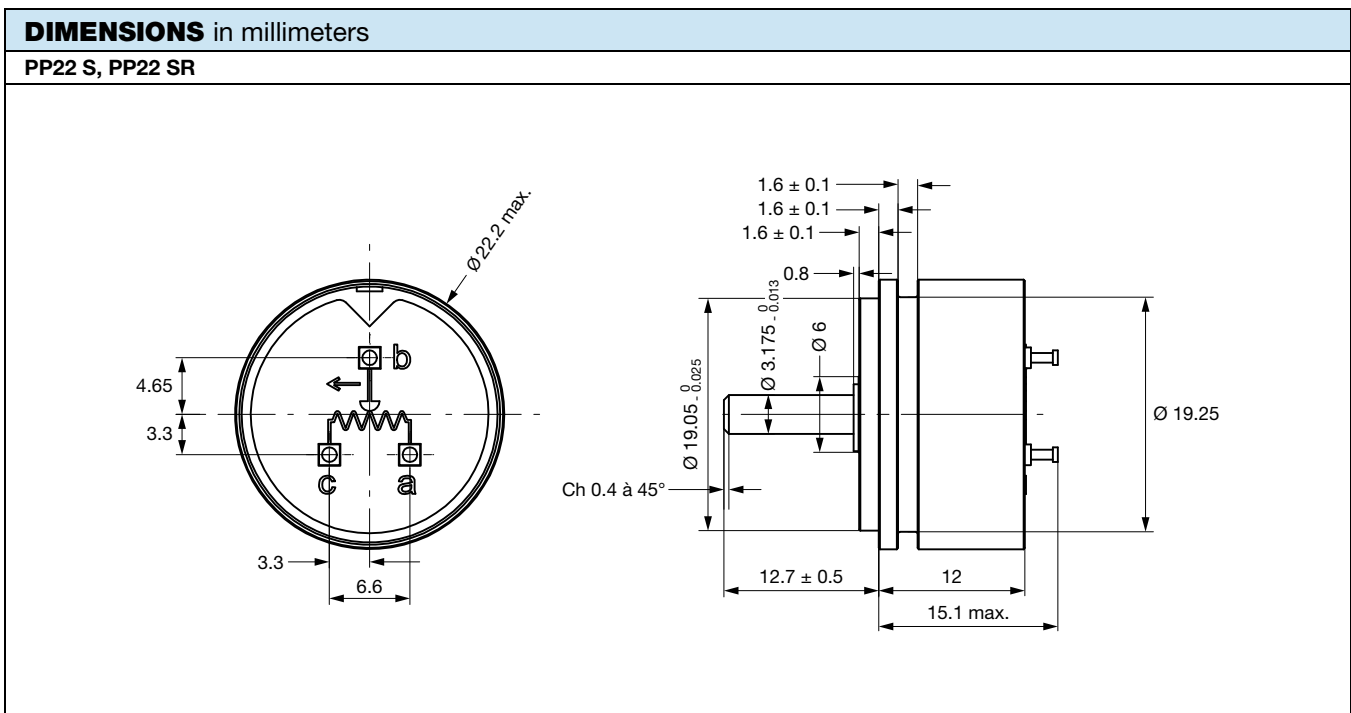
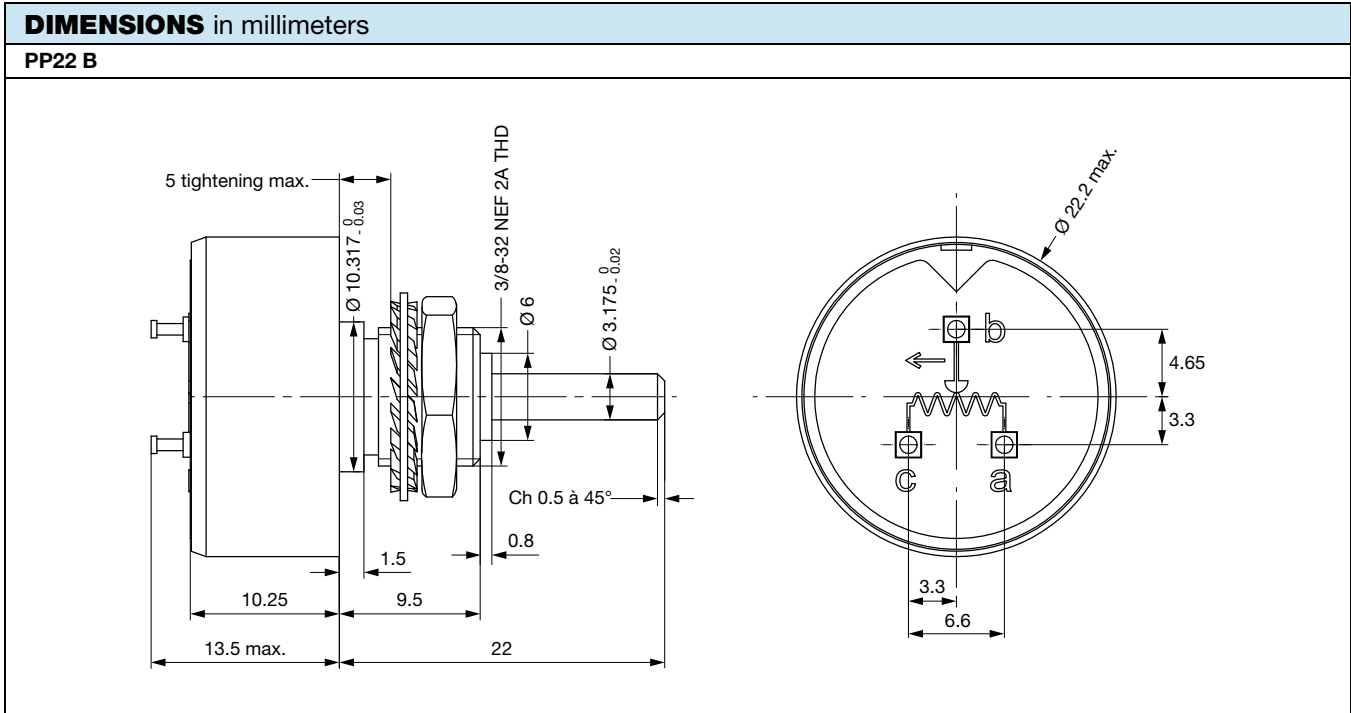
| PARAMETER | |
|--|--------------------------------------|
| Mechanical rotation | 360° continuous |
| Starting and running torque | B or S: ≤ 0.5 N cm SR: ≤ 0.1 N cm |
| Starting torque (on request) | ≥ 5 cN cm and ≤ 10 cN cm |
| Running torque (on request) | ≥ 3.5 cN cm and ≤ 10 cN cm |
| Bush tightening torque (for bushing mount) | ≤ 250 N cm |
| Moment of inertia | ≤ 1 g cm ² |
| Weight | S or SR: < 13 g B: < 15 g |

PERFORMANCE

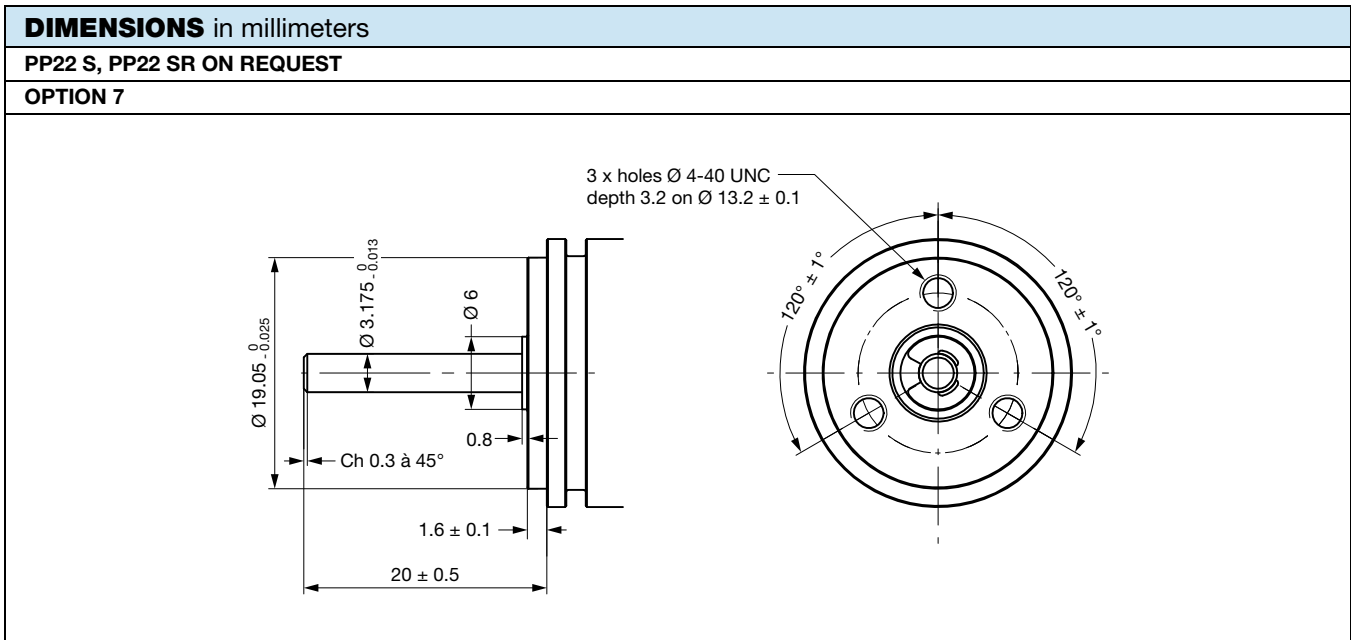
| PARAMETER | |
|-----------------------------|--|
| Operating temperature range | -55 °C to +125 °C |
| Life | 10M cycles; on request (to test in function of specific cycles) 20M cycles |
| Rotation speed (max.) | SR: 600 rpm S and B: 120 rpm |



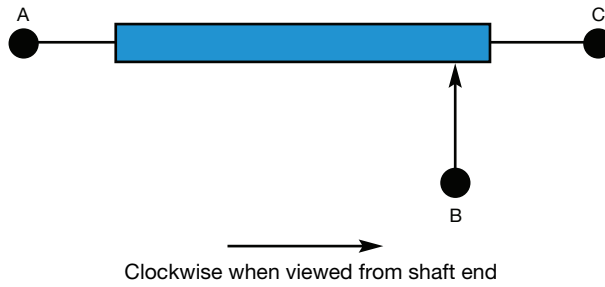
| SAP PART NUMBERING GUIDELINES | | | | | | |
|-------------------------------|-------------|--|-------------------------|----------------------|-------|-----------|
| MODEL | MOUNTING | TYPE | VALUE | LINEARITY | ANGLE | PACKAGING |
| PP22 | B = bushing | S = sleeve bearing | 472 = 4.7K 103 = 10K | A = 1 % B = 0.5 % | 340 | B = box |
| | S = servo | R = ball bearing S = sleeve bearing | | | | |



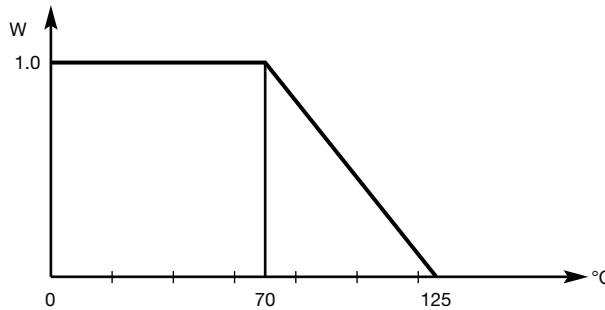
| DIMENSIONS in millimeters | | |
|----------------------------|----------|----------|
| PP22 S, PP22 SR ON REQUEST | | |
| OPTION 1 | OPTION 2 | OPTION 3 |
| | | |
| OPTION 4 | OPTION 5 | OPTION 6 |
| | | |



ELECTRICAL DIAGRAM



POWER RATING CHART



OPTIONS (on request)

- Other electrical travels: 345° (0°; + 2°); 345° ± 3° (SR), 72° ± 2°
- Other ohmic value: 1 k Ω , 2 k Ω , 5 k Ω , and 47 k Ω
- Other tolerances on R_n
- Other linearities (example: 0.9 %)
- Middle tap: 8° ± 1°
- Reinforced mechanical fixation on turrets and track to support big efforts (by gluing)
- Insulation resistance 10 G Ω - 500 V_{CC}



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