

# Redundant Sensor Dedicated to Aeronautic Applications



## FEATURES

- Conductive plastic potentiometer technology
- Up to 4 electrical functions with possibility of mechanical segregation
- Precious metal contacts, stainless steel shaft and bearings, anodized light alloy flange
- Insulating materials (housing...): recyclable thermoplastic
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



## QUICK REFERENCE DATA

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

## ELECTRICAL SPECIFICATIONS

PARAMETER			
Number of cup	2, 3, or 4		
Total electrical travel	285.7°	301.6°	316.8°
Useful electrical travel	164°	164°	164°
Middle tap	$U_{supply}/2$		
Rated resistance	10 k $\Omega$ $\pm$ 20 % on request (+ 10 %; - 6 %)		
Independent linearity standard	$\pm$ 1 %		
Independent linearity optional	$\pm$ 0.5 %, $\pm$ 0.25 %		
Output smoothness	$\leq$ 0.025 %		
Resolution	Infinite		
Insulation resistance	$\geq$ 100 M $\Omega$ at 50 V <sub>DC</sub>		
Dielectric strength	Leakage current $\leq$ 1 mA under conditions 500 V <sub>AC</sub> , 50 Hz, 1 min		
Wiring	According customer request		

## MECHANICAL SPECIFICATIONS

PARAMETER	
Mechanical angle	$\geq$ 166°
Running torque	$\leq$ 50 cN cm
Rotation speed	$\leq$ 600 rpm

## PERFORMANCE

PARAMETER	
Life	10M cycles

### Note

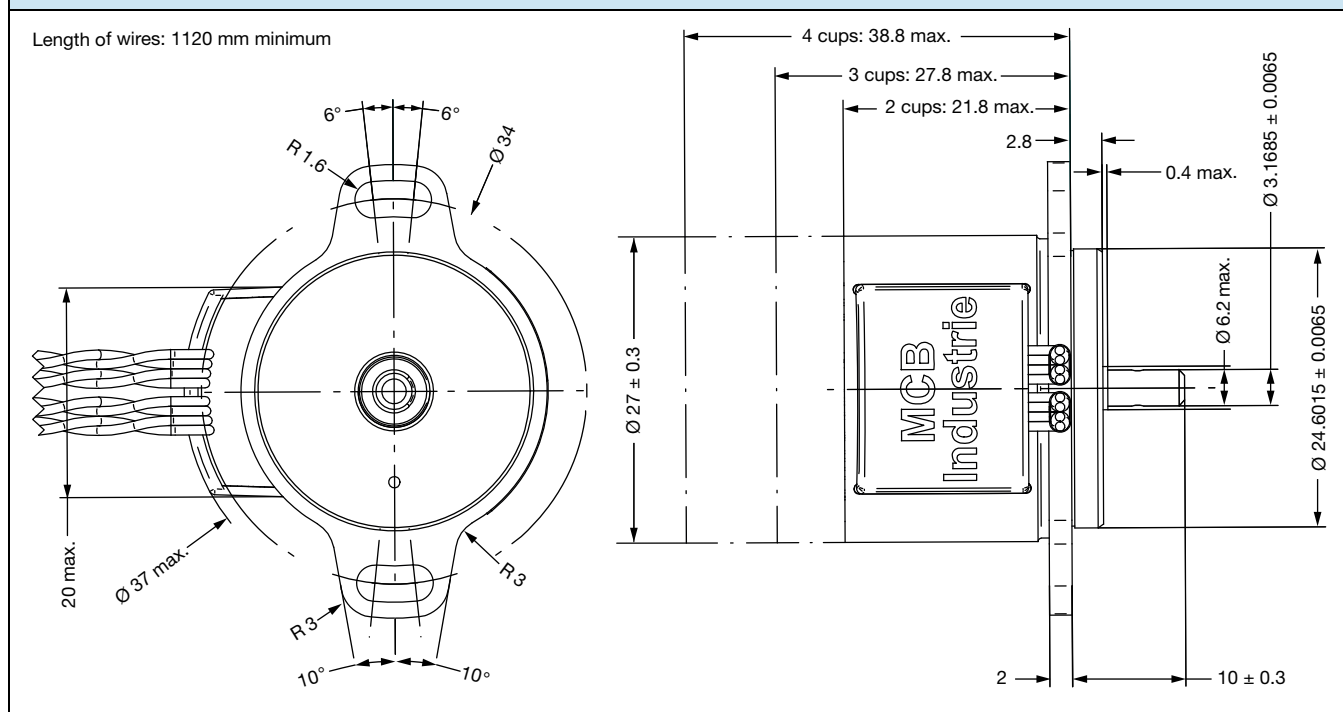
- Nothing stated herein shall be construed as a guarantee of quality or durability.

## ENVIRONMENTAL SPECIFICATIONS

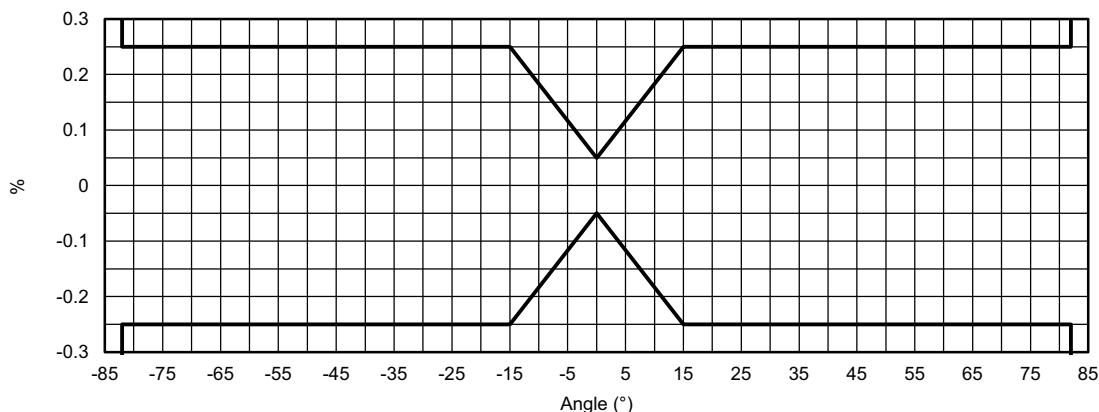
PARAMETER	
Operating temperature	-15 °C to +55 °C (RTCA DO 160F - section 4.5.2 and 4.5.4, category A1)
Short-time operating temperature	-40 °C to +70 °C (RTCA DO 160F - section 4.5.1 and 4.5.3, category A1)
Ground survival temperature	-55 °C to +85 °C (RTCA DO 160F - section 4.5.1 and 4.5.3, category A1)
Steady state altitude	2 h, 15 000 ft (RTCA DO 160F - section 4.6.1, category A1)
Decompression	10 min, 50 000 ft (RTCA DO 160F - section 4.6.2, category A1)
Overpressure	10 min, 199 kPa (RTCA DO 160F - section 4.6.3, category A1)
Temperature variation	2 °C/min (RTCA DO 160F - section 5, category C)
Humidity	RTCA DO 160F - section 6, category A
Operational shocks / crash safety	6 g - 11 ms - saw-tooth (RTCA DO 160F - section 7, category E)
Vibration	RTCA DO 160F - section 8, category S - curve S
	RTCA DO 160F - section 8, category H - curve R
Constant acceleration	ISO 2669 - category B (functional test)

**SAP PART NUMBERING GUIDELINES**

MODEL	MOUNTING	TYPE	GANG	VALUE	LINEARITY	ANGLE	PACKAGING
PP27	E = ears	A = aeronautic (including ball bearing)	2 3 4	103 = 10K	A = 1 % B = 0.5 % C = 0.25 %	316	B = box

**DIMENSIONS in millimeters**

**OPTIONS (on request)**

- Other ohmic value and tolerances on this ohmic value
- Other length of wires: 740 mm minimum
- Other total and useful electrical travel
- Other shaft designs
- Possibility to remove the middle tap
- Mechanical phasing  $\leq 250$  mV
- Phasing between gang  $\leq 0.1$  % U
- Independent linearity  $\pm 0.125$  %;  $\pm 0.1$  %
- Middle point  $\pm 5 \pm 0.05$  U
- Other linearities and absolute functions

**OUTPUT VOLTAGE ERROR**




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