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

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 kΩ ± 20 % on request (+ 10 %; - 6 %)		
Independent linearity standard	± 1 %		
Independent linearity optional	± 0.5 %, ± 0.25 %		
Output smoothness	≤ 0.025 %		
Resolution	Infinite		
Insulation resistance	≥ 100 MΩ at 50 V_{DC}		
Dielectric strength	Leakage current ≤ 1 mA under conditions 500 V_{AC}, 50 Hz, 1 min		
Wiring	According customer request		

MECHANICAL SPECIFICATIONS	
PARAMETER	
Mechanical angle	≥ 166°
Running torque	≤ 50 cN cm
Rotation speed	≤ 600 rpm

PERFORMANCE	
PARAMETER	
Life	10M cycles

Note

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

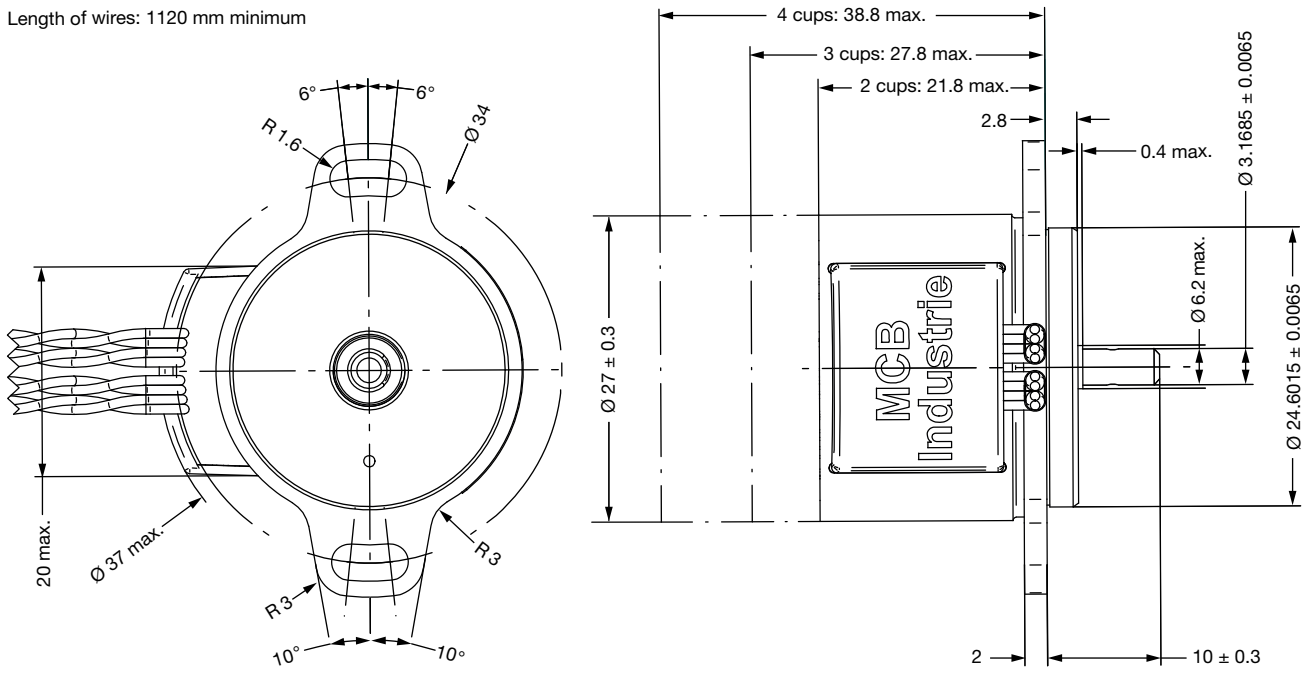
ENVIRONMENTAL SPECIFICATIONS	
PARAMETER	
Operating temperature	-15 °C to +55 °C (RTCA DO 160F - section 4.5.2 and 4.5.4, category A1)
Short-time operating temperature	-40 °C to +70 °C (RTCA DO 160F - section 4.5.1 and 4.5.3, category A1)
Ground survival temperature	-55 °C to +85 °C (RTCA DO 160F - section 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)

For technical questions, contact: mcbprecisionpot@vishay.com

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

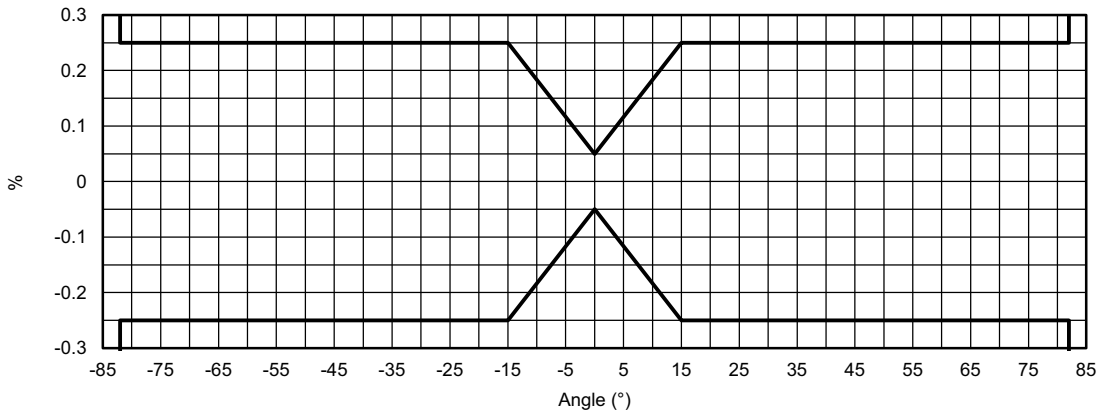
DIMENSIONS in millimeters



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 ≤ 250 mV
- Phasing between gang ≤ 0.1 % U
- Independent linearity ± 0.125 %; ± 0.1 %
- Middle point ± 5 ± 0.05 U
- Other linearities and absolute functions

OUTPUT VOLTAGE ERROR



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