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Vishay Spectrol

1-5/16" (33.3mm) Low Cost Industrial Single Turn Wirewound, Conductive Plastic, Cermet



FEATURES

- Choice of Three Elements for Broad Resistance Range
- Center Tap Available
- · Continuous Rotation & Mechanical Stops Both Standard
- High Power Rating (139)

ELECTRICAL SPECIFICATIONS								
PARAMETER		MIL-PRF-12934/MIL-PRF-39023 TEST PROCEDURES APPLY						
-		STANDARD		SPECIAL				
Total Resistance: Model 132 V		5Ω to 20KΩ	to 35KΩ					
Tolerance: 50Ω and above			± 3%	± 1%				
Below 50Ω			± 5%	± 3%				
Model 138 Conductive Plastic			1KΩ to 50KΩ	_				
Tolerance:			± 10%	± 5%				
Model 139 Cermet			500 Ω to 2M Ω	_				
Tolerance:			± 20% ± !					
Linearity (Independent)			STANDARD	BEST PRACTICAL				
Iotal Resistance (132)			1.1.00/	1.0.75%				
512 to 2012		$\pm 1.0\%$ $\pm 1.0\%$ $\pm 1.0\%$		± 0.75%				
2000 and above			± 1.0% + 0.5%	± 0.30% + 0.25%				
138/139			+ 0.5%	+ 0.25%				
Noise (132)		1000 FNB						
Output Smoothness (138 & 13	9)	0.1% maximum						
Power Bating	~,	40°C Amhient						
Model 132		2.75 watts						
Model 138			2 wa	itts				
Model 139			5 wa	itts				
			All Models derated	to zero at 125°C				
Electrical Rotation		MOD	DEL 132 MODE	L 138 MODEL 139				
Continuous		352	$2^{\circ} \pm 2^{\circ}$ 345° :	$\pm 4^{\circ}$ $345^{\circ} \pm 4^{\circ}$				
Stops		$336^{\circ} \pm 2^{\circ} \qquad 336^{\circ} \pm 4^{\circ} \qquad 336^{\circ} \pm 4^{\circ}$						
Insulation Resistance		1000M Ω minimum at 500VDC						
Dielectric Strength		1000V _{RMS} , 60Hz						
Absolute Minimum Resistance		1.0% of total resistance or 0.5Ω whichever is						
		greater (132 only)						
Minimum Voltage		0.5% maximum						
Iemperature Coefficient of Re	sistance		Defende steadend					
13∠ 129		Refer to standard resistance element data						
130		± 500ppm/°C maximum						
100								
MATERIAL SPECIFIC	CATIONS		ENVIRONMENTAI	L SPECIFICATIONS				
Housing	Molded glass filled therm	noplastic	Vibration	15Gs thru 2000 Hz				
g			Shock	50g				
Bear Lid	Glass filled thermoset of	astic	Salt Spray	48 Hours				
			Rotational Life					
Snatt	Stainless steel, non-magnetic		Shaft Revolutions					
Terminals Brass, plated for soldera		ıbility,	Model 132	500,000				
	Non-passivated		Model 138	2 million				
Mount Hardware			Model 139	2 million				
Lockwasher Internal Tooth:	Steel, nickel plated		Operating Temperature Ra	ange - 55°C to + 125°C				
Panel nut:	Brass, nickel plated		Moisture Resistance	-				
ORDERING INFORM	ATION							
The Models 132, 138 and 139	can be ordered from this s	pecification	sheet by stating. Example: 1	39 - 0 - 0 - 203				
139	0		0	203				
MODEL MECHANICAL OPTIONS			OTHER OPTIONAL RESISTANCE CODE					
132, 138 or 139 0. Continuous 0. Standard (End Taps) 2: 1st Significant digit 2 Stops 1 Center Tap (Within 5° of Electrical Center) 0: 2nd significant digit								
						2. otops 1. ocnici nap (Within 5 or Electrical Center) 2. Zho significant digit 3: Number of Zero's		
Other characteristics will be st	andard as described on this	s specification	on sheet. If special characte	ristics are required such as special				
linearity tolerance, special resistance tolerance, non-linear functions, etc., please state these on your order								

Model 132, 138, 139

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DIMENSIONS in inches (millimeters)



TOLERANCES: UNLESS OTHERWISE NOTED DECIMALS \pm 0.005 ANGLES \pm 2°

MECHANICAL SPECIFICATIONS					
PARAMETER					
Rotation	360° (continuous) $340^{\circ} \pm 5^{\circ}$ stops				
Bearing Type	Sleeve				
Torque (Maximums)	STARTING	RUNNING			
	1.0 oz - in (72gm - cm)	0.7 oz - in (50, 40gm - cm)			
Runouts (Maximums)					
Shaft Runout (TIR)	0.002 in (0.05mm)				
Pilot Dia. Runout (TIR)	0.003 in (0.08mm)				
Lateral Runout (TIR)	out (TIR) 0.005 in (0.13mm)				
Shaft End Play	0.008 in (0.20mm)				
Shaft Radial Play	0.003 in (0.08mm)				
Weight	1.0 oz maximum (28,35gm)				
Stop Strength8.0 in - lbs (9.21 Kgm - cm) (Stops Version Only)					



MARKING

Unit Identification	Units shall be marked with Spectrol name, model number, resistance and tolerance,		
	linearity, terminal identification, and data code		
	R-12934: Model 138 & 139. MIL-R-39023		

RESISTANCE ELEMENT DATA								
			MAXIMUM	MAXIMUM				
			CURRENT	VOLTAGE	WIRE			
RESISTANCE	RESO-	OHMS	AT 40°C	ACROSS	TEMP.			
VALUES	LUTION	PER	AMBIENT	COIL	COEF.			
(Ω)	(%)	TURN	(mA)	(V)	(ppm/°C)			
F	0.410	0.021	740	9.71	900			
5	0.419	0.021	742	5.71	800			
10	0.327	0.032	524	5.24	800			
20	0.280	0.056	371	7.42	800			
50	0.290	0.145	234	11.7	20			
100	0.251	0.251	166	16.6	20			
200	0.212	0.424	122	24.4	20			
500	0.161	0.806	74.2	37.1	20			
1K	0.150	1.50	52.4	52.4	20			
2K	0.132	2.64	37.1	74.2	20			
5K	0.107	5.34	23.4	117	20			
10K	0.080	7.98	16.6	166	20			
20K	0.067	13.4	12.2	244	20			
35K	0.057	20.0	8.88	311	20			



Vishay

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