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 Wirewound	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	500Ω to 2MΩ	–
Tolerance:	± 20%	± 5%
Linearity (Independent)	**STANDARD**	**BEST PRACTICAL**
Total Resistance (132)		
5Ω to 20Ω	± 1.0%	± 0.75%
20Ω to 200Ω	± 1.0%	± 0.50%
200Ω and above	± 0.5%	± 0.25%
138/139	± 0.5%	± 0.25%
Noise (132)	100Ω ENR	
Output Smoothness (138 & 139)	0.1% maximum	
Power Rating	40°C Ambient	
Model 132	2.75 watts	
Model 138	2 watts	
Model 139	5 watts	
	All Models derated to zero at 125°C	
Electrical Rotation	**MODEL 132**	**MODEL 138** / **MODEL 139**
Continuous	352° ± 2°	345° ± 4°
Stops	336° ± 2°	336° ± 4°
Insulation Resistance	1000MΩ 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	
Temperature Coefficient of Resistance	Refer to standard resistance element data	
132	± 500ppm/°C maximum	
138	± 100ppm/°C maximum	
139		

MATERIAL SPECIFICATIONS

Housing	Molded glass filled thermoplastic
Rear Lid	Glass filled thermoset plastic
Shaft	Stainless steel, non-magnetic
Terminals	Brass, plated for solderability, Non-passivated
Mount Hardware	
Lockwasher Internal Tooth:	Steel, nickel plated
Panel nut:	Brass, nickel plated

ENVIRONMENTAL SPECIFICATIONS

Vibration	15Gs thru 2000 Hz
Shock	50g
Salt Spray	48 Hours
Rotational Life	
Shaft Revolutions	
Model 132	500,000
Model 138	2 million
Model 139	2 million
Operating Temperature Range	- 55°C to + 125°C
Moisture Resistance	–

ORDERING INFORMATION

The Models 132, 138 and 139 can be ordered from this specification sheet by stating. Example: **139 - 0 - 0 - 203**

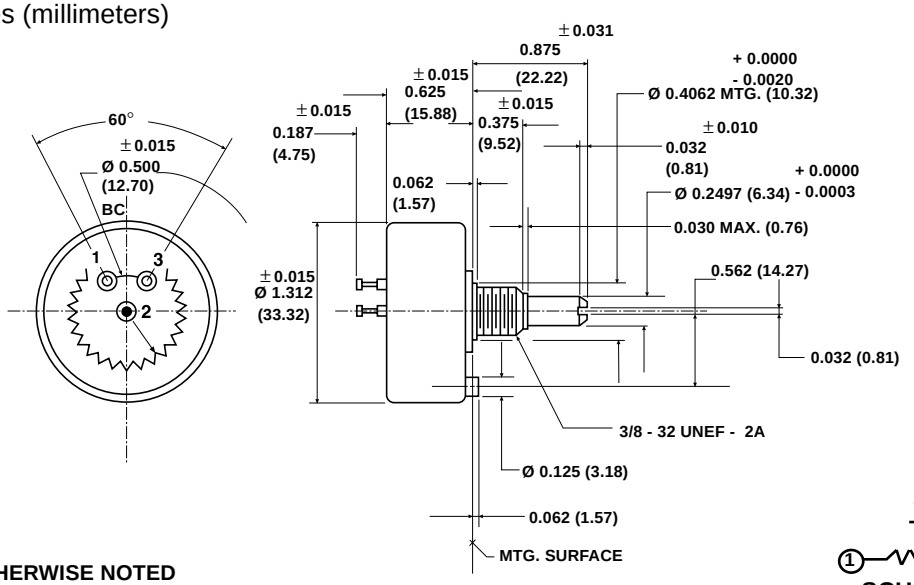
139	**0**	**0**	**203**
MODEL	MECHANICAL OPTIONS	OTHER OPTIONAL FEATURES	RESISTANCE CODE
132, 138 or 139	**0**. Continuous **2**. Stops	**0**. Standard (End Taps) **1**. Center Tap (Within 5° of Electrical Center)	**2**: 1st Significant digit **0**: 2nd significant digit **3**: Number of Zero’s

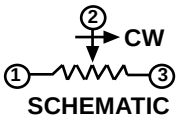
Other characteristics will be standard as described on this specification sheet. If special characteristics are required such as special linearity tolerance, special resistance tolerance, non-linear functions, etc., please state these on your order

Model 132, 138, 139

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

DIMENSIONS in inches (millimeters)

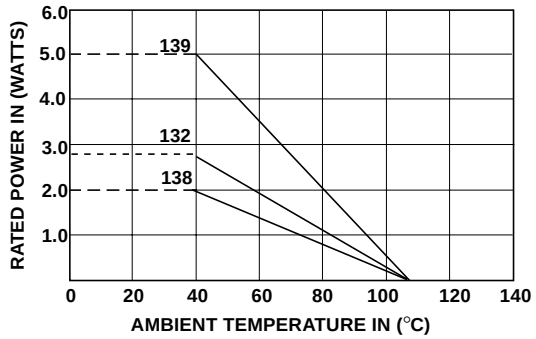




TOLERANCES: UNLESS OTHERWISE NOTED
DECIMALS ± 0.005 ANGLES ± 2°

MECHANICAL SPECIFICATIONS		
PARAMETER		
Rotation	360° (continuous) 340° ± 5° stops	
Bearing Type	Sleeve	
Torque (Maximums)	**STARTING** 1.0 oz - in (72gm - cm)	**RUNNING** 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)	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 Strength	8.0 in - lbs (9.21 Kgm - cm) (Stops Version Only)	

POWER RATING CHART



MARKING	
Unit Identification	Units shall be marked with Spectrol name, model number, resistance and tolerance, linearity, terminal identification, and data code Applicable test procedures: Model 132, MIL-R-12934: Model 138 & 139. MIL-R-39023

RESISTANCE ELEMENT DATA

RESISTANCE VALUES (Ω)	RESOLUTION (%)	OHMS PER TURN	MAXIMUM CURRENT AT 40°C AMBIENT (mA)	MAXIMUM VOLTAGE ACROSS COIL (V)	WIRE TEMP. COEF. (ppm/°C)
5	0.419	0.021	742	3.71	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