

# Size 11 Single Speed Brushless Resolvers

## TYPICAL APPLICATIONS

Where precise position indication is required to interface with computers\*

- Brushless DC servo commutation, position, and velocity feedback
- Robotics and factory automation
- Machine tools
- Material handling equipment
- Medical instrumentation
- Packaging equipment

## FEATURES

- Uncompromised reliability
- $\pm 7$  minutes accuracy standard,  $\pm 3$  minutes available
- Eliminates electrically generated noise
- High speed rotation
- Reliable performance in presence of high vibration
- 400 – 10,000 Hz frequency range standard
- Compatible with converters
- $.250^{+.0000}_{-.0005}$  diameter shaft readily available
- Short housing lengths available
- Low cost
- Custom modifications available



### ***Accurate, reliable position sensing for computer interface\****

For use in applications that range from computer-controlled machine tools to sophisticated medical instrumentation, Moog Components Group resolvers with their proven brushless design – are the accurate, safe and quiet way to sense position and / or velocity\* in your position feedback system. Their rugged design provides reliable performance in even the toughest, vibration-prone industrial and instrument applications. As a custom manufacturer, Moog Components Group can provide a size 11 brushless resolver to the exact configuration and accuracy your application demands.

\* Used in conjunction with resolver-to-digital converter.

# Resolvers

## ELECTRICAL SPECIFICATIONS - Size 11 Single Speed Brushless Resolvers

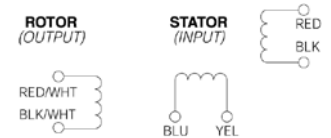
PARAMETER	11-BHW-27□	11-BHW-31□	11-BHW-32□	11-BHW-37□	11-BHW-38□	11-BHW-42□
Primary	Stator	Rotor	Stator	Stator	Rotor	Rotor
Input Voltage	12V, 2000 Hz	6.5V, 5000Hz	12V, 400Hz	12V, 5000Hz	6V, 1000Hz	5.6V, 10,000Hz
Input Current	0.0091 amp	0.0088 amp	0.0132 amp	0.0114 amp	0.0163 amp	0.00231 amp max
Input Power	0.060 watt	0.35 watt	0.058 watt	0.081 watt	0.057 watt	0.0071 watt
Transformation Ratio (±5%)	0.500	0.954	1.750	0.500	0.454	0.485
Phase Shift	0.5° ±2°	-1.2°	18°	-4.6°	3.9°	-8.8°
Impedance Z <sub>so</sub>	725 + j1100	1064 + j1647	332 + j848	625 + j848	131 + j166	237 + j428
Z <sub>ro</sub>	480 + j704	450 + j586	3736 + j4856	373 + j447	216 + j299	1621 + j2155
DC Resistance						
Stator	110 ohms	143 ohms	147 ohms	110 ohms	28.6 ohms	106 ohms
Rotor	58 ohms	83 ohms	1135 ohms	47 ohms	33.8 ohms	97 ohms
Null Voltage, Max.	0.015V	0.015V	0.030V	0.015V	0.030V	0.015V
Electrical Error †	±7 minutes	±7 minutes	±7 minutes	±7 minutes	±7 minutes	±7 minutes
Output Voltage	6V (±5%)	6.2V (±5%)	21V (±5%)	6V (±5%)	2.72V (±5%)	2.72V (±5%)
Schematic Diag.	A	B	A	A	B	B

† Higher accuracies available  
Typical performance characteristics at 25°C

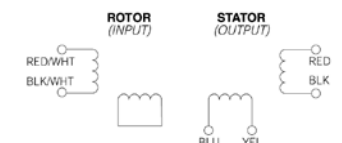
PARAMETER	11-BHW-43□	11-BHW-52□	11-BHW-53□	11-BHW-58□	11-BHW-60□	11-BHW-62□
Primary	Rotor	Stator	Rotor	Rotor	Rotor	Rotor
Input Voltage	7.5V, 4000 Hz	12V, 400Hz	8.5V, 1000Hz	12V, 1000Hz	26V, 2381Hz	5.9V, 2500Hz
Input Current	0.014 amp	0.011 amp	0.0104 amp	6.9 mA	10 mA	0.019 amp
Input Power	0.070 watt max.	0.049 watt	0.047 watt	0.0437 watt	0.176 watt	0.060 watt
Transformation Ratio (±5%)	0.535	1.933	1.000	1.000	0.454	2.000
Phase Shift	0° ±5°	15.4°	3.7°	3.4°	0° ±5°	-5°
Impedance Z <sub>so</sub>	192 + j155	375 + j980	720 + j1154	2340 + j3082	738 + j980	2400 + j4600
Z <sub>ro</sub>	360 + j400	4652 + j6080	434 + j695	919 + j1480	1775 + j1910	165 + j263
DC Resistance						
Stator	110 ohms	147 ohms	120 ohms	465 ohms	180 ohms	378 ohms
Rotor	72 ohms	1480 ohms	29 ohms	120 ohms	92 ohms	33.4 ohms
Null Voltage, Max.	0.015V	0.030V	0.030V	0.030V	0.030V	0.030V
Electrical Error †	±7 minutes	±7 minutes	±7 minutes	±7 minutes	±7 minutes	±7 minutes
Output Voltage	4V (±5%)	23.2V (±5%)	8.5V (±5%)	12V (±5%)	11.8V (±5%)	11.8V (±5%)
Schematic Diag.	B	A	B	B	B	B

### Typical Schematics

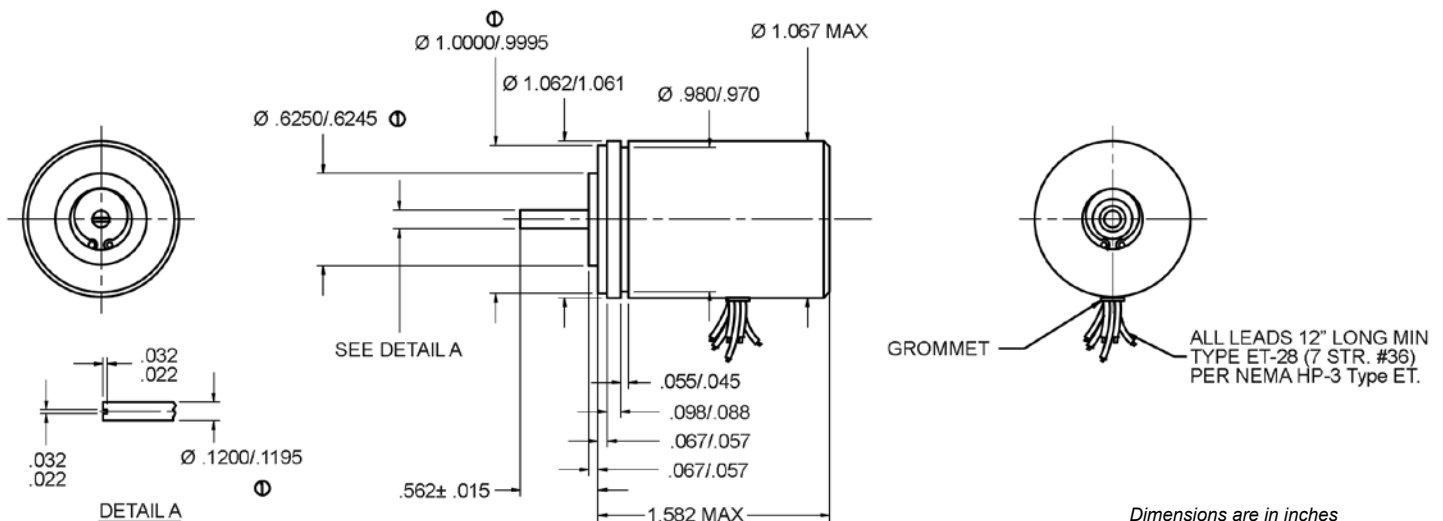
#### Schematic A



#### Schematic B



### Typical Outline Drawing



Dimensions are in inches