

# BLWRPG11 Series - Brushless DC Planetary Gearmotors



FEATURES

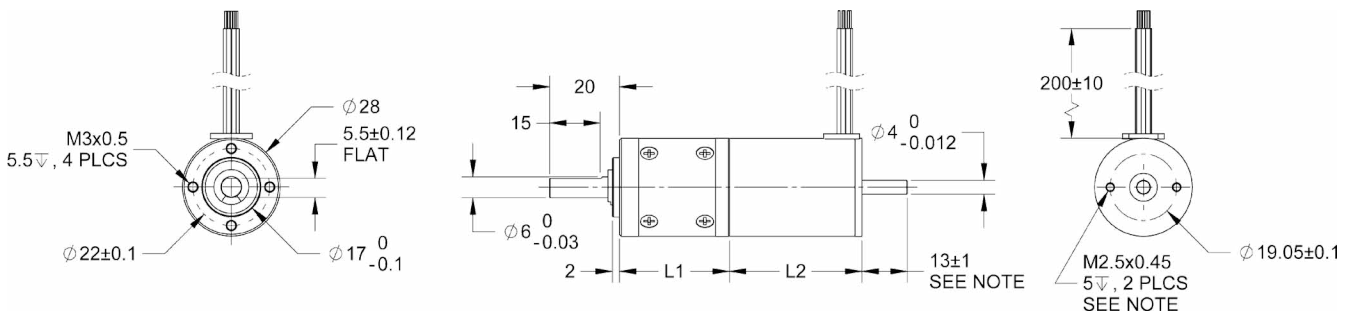
- **NEMA 11 Size**
- **Long Life - 20,000 Hour Operation**
- **Cost-Effective Replacement for Brush DC Motors**
- **Can be Customized for**
  - Operating Voltage
  - Rated Speed
  - Cables and Connectors
- **CE Certified and RoHS Compliant**



DESCRIPTION

The BLWRPG11 Series are cost-effective Brushless DC Planetary Gearmotors. These motors were designed keeping the OEM in mind, using state-of-the-art design parameters and low-cost manufacturing. This allows us to offer these quality motors at exceptional prices. The BLWRPG11 Series include a planetary gearbox and a brushless DC motor in a compact, fully integrated package. The brushless DC gearmotor is a perfect solution for applications requiring high torque or speeds under 500 RPM. These star-wound motors come with integrated hall sensors for closed-loop control for velocity applications. If the off-the-shelf gearmotors do not match your application, a motor can be wound or a gearbox can be selected to meet your specific requirements. We specialize in providing both off the shelf and custom solutions to handle any demanding application.

DIMENSIONS



Note: Dual shaft version

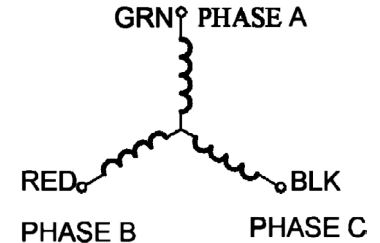
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Wire Color	Description
Green	Phase A
Red	Phase B
Black	Phase C

Wire Color	Description
Yellow	Hall Vc
Blue	Hall A
Orange	Hall B
Brown	Hall C
White	Hall Ground

Hall Sensor Specifications
Supply Voltage: 4.5VDC to 28VDC
Current, $I_{off}$ : 10mA max
Current, $I_{on}$ : 11.3mA max
Rated Sinking Current: 20mA
Saturation Voltage: 0.4VDC max @ 25°C
Output Leakage Current: 10µA
Output Switching Time @ 25°C
Rise, 10% to 90% 1.5µs
Fall, 90% to 10% 1.5µs
Output Type: Open Collector



**Create a complete Model Number by selecting a motor from Table 1 and Gear Box from Table 2**

## BLWRPG110S-24V-2000-R3.7

Table 1		Output on Shaft of Motor Before Gear-Box											
Model #	FRAME Size	Rated Voltage (V)	Rated Power (W)	Peak Current (A)	Line to Line Resistance (ohms)	Line to Line Inductance (mH)	Back EMF Voltage (V/kRPM)	Weight (lbs)	"L2" Length (mm)	Torque Constant (oz-in/A)	Rated Speed (RPM)	Rated Torque (oz-in)	Rotor Inertia (oz-in-sec <sup>2</sup> )
BLWRPG111S-24V-2000	Size 11	24	1.0	0.23	93.3	28	8.0	0.18	38	9.32	2000	0.708	3.00x10 <sup>-5</sup>
BLWRPG111S-24V-2700	Size 11	24	2	0.42	55	18.3	6.0	0.38	38	7.05	2700	0.991	5.22x10 <sup>-5</sup>
BLWRPG112S-36V-10000	Size 11	36	42	8.45	1.56	0.75	1.5	0.62	77	2.01	10000	5.664	8.47x10 <sup>-5</sup>

Table 2		Output on Shaft of Gearbox									
Parameters/Gear Box Ratio	3.7	5.2	14	19	27	51	71	100	139	264	
Peak Torque (oz-in)	83	83	166	166	166	417	417	417	417	833	
Number of Gear Trains	1	1	2	2	2	3	3	3	3	4	
"L1" (Length of Gear Box In mm)	31.50	31.50	39.88	39.88	39.88	48.51	48.51	48.51	48.51	57.40	
Gearbox Weight (lbs)	0.13	0.13	0.18	0.18	0.18	0.20	0.20	0.20	0.20	0.24	
Rated Torque (oz-in)	28	28	55	55	55	139	139	139	139	278	
Efficiency (%)	90	90	81	81	81	73	73	73	73	66	

Notes: Custom leadwires, cables, connectors, and windings are available upon request.

- Rated Speed of the output shaft (after gear-box) = (Rated Motor Speed)/(Gear Ratio)
- Torque of the output shaft (after gear-box) = (Peak Motor Torque) X (Gear Ratio)
- Rotor Inertia of the output (shaft after gear-box) = (Rotor Motor Inertia) X (Gear Ratio)<sup>2</sup>

Winding Type:	Star, 4 Poles	Planetary Gear Radial Play of Shaft:	0.04mm
Planetary Gear Housing:	Metal	Planetary Gear Thrust Play of Shaft:	0.3mm
Planetary Gear at Output:	Sleeve Bearings	Planetary Gear Shaft Press fit force, max:	5.5lbs
Planetary Gear Radial Load:	10mm @ 7.7lbs	Planetary Gear Shaft Axial Load:	22lbs