

BLWRPG23 - Brushless DC Planetary Gearmotors



FEATURES

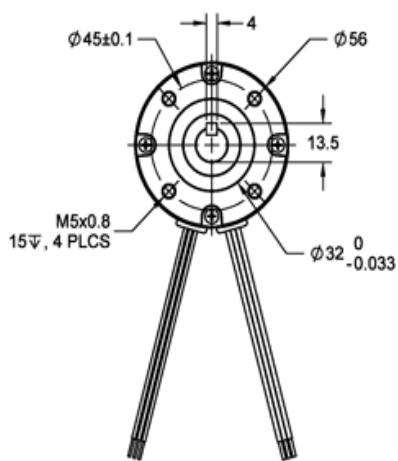
- **NEMA Size 23 Brushless DC Motor and Economy Gearbox**
- **Over 3,000 Hour Operation**
- **14 Gear Ratios Available from 3.6:1 to 326:1**
- **Efficiency Up to 90%**
- **Backlash Less than 3°**
- **Can be Customized for**
 - **Speed Requirements**
 - **Current Requirements**
 - **Special Shaft Options**
 - **Cables and Connectors**
- **CE Certified and RoHS Compliant**



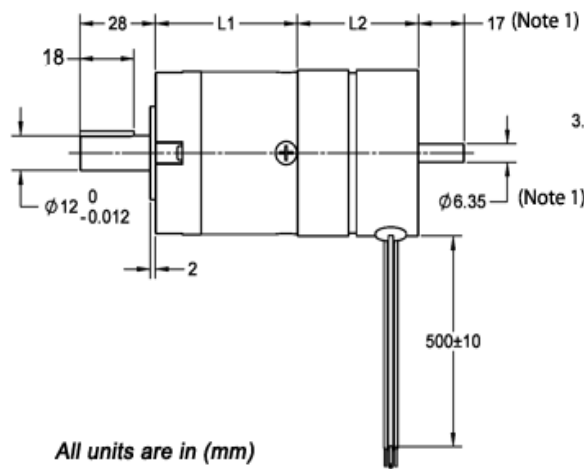
DESCRIPTION

The BLWRPG23 Series are cost-effective Brushless DC Planetary Gearmotors. These motors were designed keeping the OEM customer in mind, using state-of-the-art design parameters and low-cost manufacturing. This allows for Anaheim Automation to offer quality motors at exceptional prices. The BLWRPG23 Series includes 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 delta 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 demanding applications.

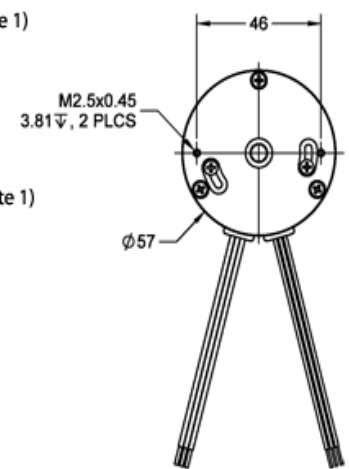
DIMENSIONS



NOTE 1: Dual Shaft



All units are in (mm)



Note: All Dimensions in (mm)

L010407

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

BLWRPG231S-24V-4000-R3.7

FEATURES

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 ²)
BLWRPG231S-36V-4000	23	36	23	3.5	4.2	9.7	5.5	2.7	47.4	7.5	4000	7.79	0.00042
BLWRPG232S-36V-4000	23	36	46	7.0	1.5	4.2	6.6	2.9	54.9	9.0	4000	15.58	0.00106
BLWRPG233S-36V-4000	23	36	92	15.0	0.64	2.0	6.6	3.5	77.4	9.0	4000	31.15	0.00169
BLWRPG234S-36V-4000	23	36	134	18.0	0.45	1.5	6.6	4.0	97.4	9.0	4000	45.31	0.00245
BLWRPG235S-36V-4000	23	36	168	22.5	0.33	0.95	6.6	4.82	117.4	9.0	4000	56.64	0.00326
BLWRPG235S-24V-4000	23	24	184	16.5	0.2	0.44	3.5	4.82	117.4	5.5	4000	62.30	0.00160

Note: The 10th character "S" denotes a single shaft, use "D" for double shaft. Custom leadwires, cables, connectors, and windings are available upon request.

*Weight will vary based on the gear ratio selected.

**The length of the gearmotor will vary based on the gear ratio selected.

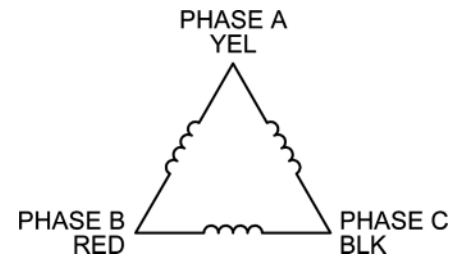
Table 2	Output On Shaft of Gear-Box													
Parameters/Gear Box Ratio	R3.6	R4.25	R13	R15	R18	R47	R55	R65	R77	R168	R198	R234	R276	R326
Rated Torque (oz-in)	210	210	695	695	695	1390	1390	1390	1390	2080	2080	2080	2080	2080
Peak Torque (oz-in)	625	625	2083	2083	2083	4166	4166	4166	4166	6249	6249	6249	6249	6249
Number of Gear Trains	1	1	2	2	2	3	3	3	3	4	4	4	4	4
"L1" (Length of Gear Box in mm)	52.6	52.6	52.6	52.6	52.6	64.0	64.0	64.0	64.0	84.0	84.0	84.0	84.0	84.0
Efficiency (%)	83.6	90	81	81	81	73	73	73	73	66	66	66	66	66

- 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)²

WIRING DIAGRAM

Wire Color	Description
Red	Hall Supply
Blue	Hall A
Green	Hall B
White	Hall C
Black	Hall Ground
Yellow	Phase A
Red	Phase B
Black	Phase C

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



SPECIFICATIONS

Winding Type:	Delta, 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:	Ball Bearings	Planetary Gear Shaft press fit force, max:	66 lbs
Planetary Gear Radial Load:	10mm @44 lbs	Planetary Gear Shaft axial load:	22 lbs