BLWRPG09 Series - Brushless DC Planetary Gearmotors

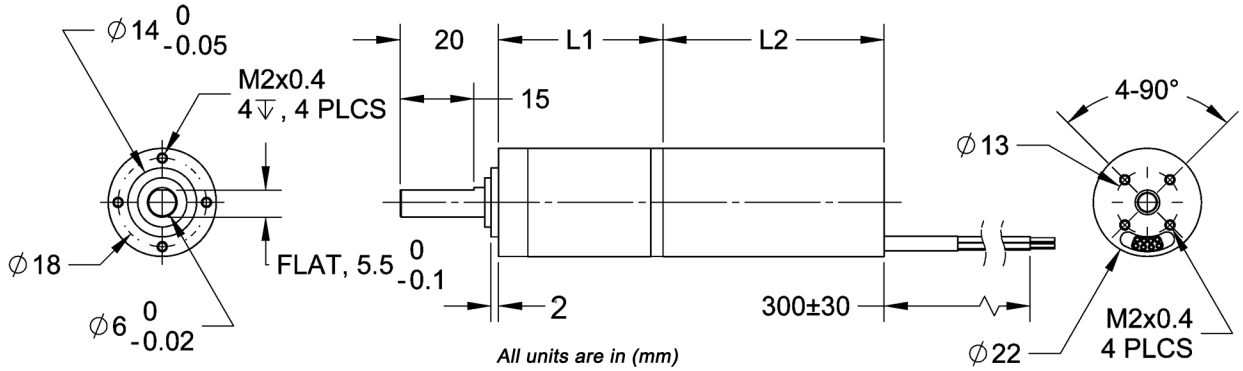
FEATURES

- ***NEMA 09 Size***
- ***Long Life - 3,000 - 5000 Hour Operation***
- ***Cost-Effective Replacement for Brush DC Motors***
- ***Backlash Less than 3°***
- ***Can be Customized for***
  - ***Operating Voltage***
  - ***Rated Speed***
  - ***Cables and Connectors***
- ***CE Certified and RoHS Compliant***

DESCRIPTION

The BLWRPG09 Series is a cost-effective Brushless DC gearmotor. These motors were designed keeping the OEM in mind, using state of the art design parameters and low cost manufacturing. This allows Anaheim Automation to offer these quality motors at exceptional prices. This gearmotor includes a planetary gearbox and a brushless DC motor in a compact fully integrated package. The DC gearmotor is a perfect solution for applications requiring high torque or speeds under 500 RPM. The star wound motor comes with integrated hall sensors for closed loop control for velocity applications. If the off-the-shelf gearmotors do no match your application, a motor can be wound or a gearbox can be selected to meet your specific requirements. Anaheim Automation specializes in providing both off the shelf and custom solutions to handle any demanding application.

DIMENSIONS



All units are in (mm)

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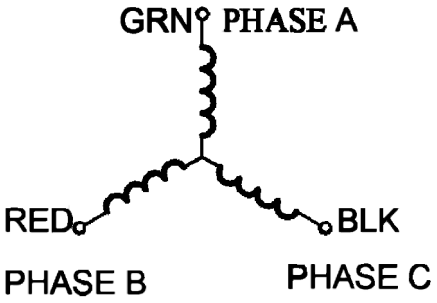
4985 E. Landon Drive Anaheim, CA 92807 **Tel. (714) 992-6990** Fax. (714) 992-0471 **www.anaheimautomation.com**

WIRING INFORMATION

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



SPECIFICATIONS

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

BLWRPG090S-15V-8000-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)	Peak Torque (oz-in)	Rotor Inertia (oz-in-sec^2)
BLWRPG092S-24V-4600	09	24	3.8	1.1	23.0	6.2	3.4	0.28	45	4.27	4600	2.97	$9.3x10^{-6}$
BLWRPG093S-24V-3500	09	24	8.0	1.7	11.6	4.3	4.0	0.34	68	5.03	3500	8.50	$18.7x10^{-6}$
BLWRPG092S-12V-4600	09	12	3.8	1.8	5.25	1.6	1.15	0.15	45	2.24	4800	3.39	$9.3x10^{-6}$
BLWRPG092S-12V-8000	09	12	4.2	1.7	2.8	1.6	1.09	0.20	45	1.25	8000	2.12	$9.3x10^{-6}$
BLWRPG093S-12V-3500	09	12	7.2	3.4	2.8	1.0	2.0	0.28	68	2.50	3500	8.50	$18.7x10^{-6}$

Table 2	Output on Shaft of Gear-Box									
Parameters/Gear Box Ratio	3.7	5.2	14	19	27	51	71	100	139	264
Peak Torque (oz-in)	69.44	69.44	138.87	138.87	138.87	416.62	416.62	416.62	416.62	416.62
Number of Gear Trains	1	1	2	2	2	3	3	3	3	4
"L1" (Length of Gear Box In mm)	24.4	24.4	34.4	34.4	34.4	41.5	41.5	41.5	41.5	49.8

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

Winding Type:	Star, 8 Poles	Max. Radial Force:	3.30 lbs @ 10mm from the flange
Hall Effect Angle:	120 Degree Electrical Angle	Max. Axial Force:	1.98 lbs
Shaft Run Out:	0.025mm	Insulation Class:	Class B
Radial Play:	0.02mm @ 0.992in	Dielectric Strength:	500VDC for one minute
End Play:	0.08mm @ 0.992in	Insulation Resistance:	100MOhm, 500VDC