

# BLK32 Series - Brushless DC Motors



FEATURES

- 80mm Frame Size BLDC Motors
- IP65 Rating, When Used With Shaft Seal
- Complete Protection from Dust Particles
- Can be Subjected to Moist or Humid Environments
- Long Life and Highly Reliable
- Cost-Effective Replacement for Brush DC Motors
- Hall Sensor Feedback
- Available in Two Different Stack Lengths
- CE Certified and RoHS Compliant



DESCRIPTION

The powerful BLK32 Series are square-bodied 80mm frame size Brushless DC Motors that can meet the splash-proof requirements for most applications. BLK32 Series motors have an ingress protection rating of IP65 for the motor body and IP54 at the shaft. These motors ship with an **included shaft seal**, which should be used in installation to maintain the overall IP65 rating. The sealed shafts provide complete protection from debris and dust particles, allowing for a longer life cycle. The square-bodied BLK32 Series motors include an aluminum square-mounting flange to allow for easy installation, Class F insulation for higher temperature operation, and rated torque of 293-450 oz.in. The BLK32 Series is available in two different stack lengths, has a rated speed of 3,000 RPM and utilizes Hall Sensor Feedback.

SPECIFICATIONS

Model #	Frame Size (mm)	Rated Voltage (VDC)	Rated Torque (oz-in)	Rated Current (A)	Line to Line Resistance (ohms)	Line to Line Inductance (mH)	Torque Constant (oz-in/A)	Back EMF Voltage (V/kRPM)	Rotor Inertia (oz-in-sec <sup>2</sup> )	Weight (lb)	"L" Length (mm)
BLK321S-48V-3000	80	48	293	18	0.11	0.43	12.46	7.99	0.019176	7.20	133
BLK321D-48V-3000	80	48	293	18	0.11	0.43	12.46	7.99	0.019176	7.20	133
BLK321S-170V-3000	80	170	338	5.5	0.72	4.90	46.73	27.20	0.019259	7.05	133
BLK321S-310V-3000	80	310	340	3	1.47	9.30	130.27	34.00	0.019176	6.83	133
BLK321D-310V-3000	80	310	340	3	1.47	9.30	130.27	34.00	0.019176	6.83	133
BLK322S-48V-3000	80	48	378	23	0.07	0.37	13.88	8.00	0.026790	9.30	156
BLK322D-48V-3000	80	48	378	23	0.07	0.37	13.88	8.00	0.026790	9.50	157
BLK322S-170V-3000	80	170	453	7.0	0.51	3.40	46.73	26.60	0.026906	9.30	156
BLK322S-310V-3000	80	310	450	4.1	1.03	7.20	126.03	34.00	0.026790	8.16	156
BLK322D-310V-3000	80	310	450	4.1	1.03	7.20	126.03	34.00	0.026790	8.16	156

### Hall Sensor Specifications

Supply Voltage: 4.5VDC to 28VDC

Current, I<sub>off</sub>: 10mA max

Current, I<sub>on</sub>: 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

**Note: The 7th character "S" denotes a single shaft, use "D" for double shaft.**

Winding Type: Star Connected, 8 Pole

Hall Angle: 120 Degree Electrical Angle

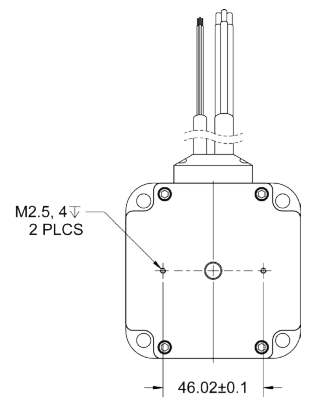
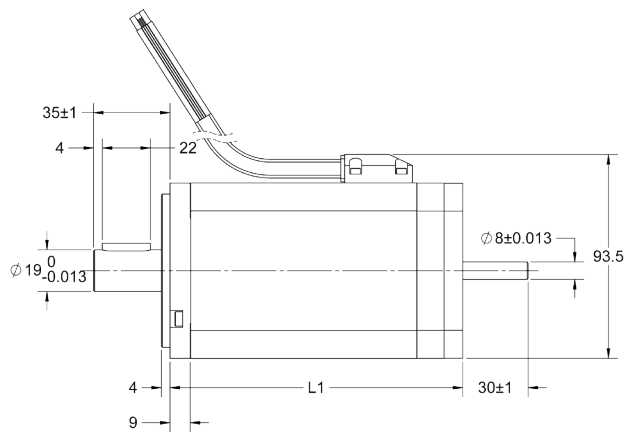
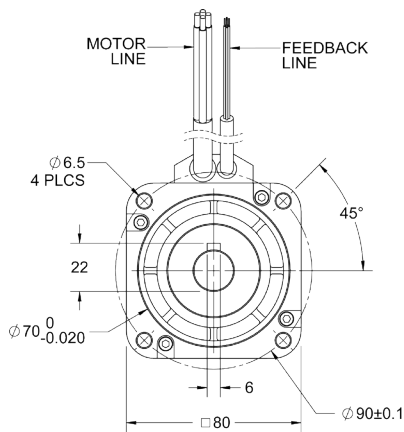
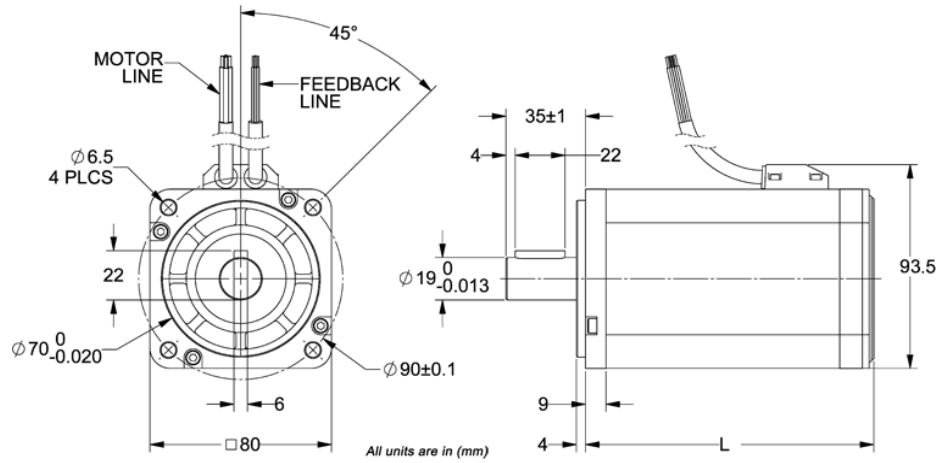
Insulation Resistance: >= 100M Ohm, 500VDC

Insulation Class: Class F

Dielectric Strength: 1500VDC, 1 min., 5mA

L010759

DIMENSIONS



WIRING INFORMATION

Motor Phase		
Color	Function	AWG
Yellow	Phase A	16
Red	Phase B	16
Black	Phase C	16
GND/Yel	Case GND	16

Hall Sensors		
Color	Function	AWG
Red	Vcc +5V	24
Blue	GND	24
Gray	Hall A	28
Green	Hall B	28
White	Hall C	28

