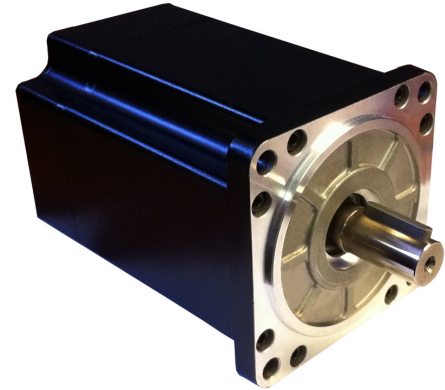


BLK42 Series - Brushless DC Motors



FEATURES

- **NEMA Size 42 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 Three Different Stack Lengths**
- **CE Certified and RoHS Compliant**



DESCRIPTION

The powerful BLK42 Series are NEMA 42 Brushless DC Motors that can meet the splash-proof requirements for most applications. BLK42 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. These sealed shafts provide complete protection from debris and dust particles, allowing for a longer life cycle. The square-bodied BLK42 Series motors include an aluminum square-mounting flange to allow for easy installation, Class F insulation for higher temperature operation, and rated torque of 566-850 oz-in. The BLK42 Series is available in three different stack lengths with varying power levels, has a rated speed of 3,000 RPM and utilizes Hall Sensor Feedback.

SPECIFICATIONS

Model #	Frame Size	Rated Voltage (VDC)	Rated Speed (RPM)	Rated Power (W)	Rated Torque (oz-in)	Line to Line Resistance (ohms)	Line to Line Inductance (mH)	Torque Constant (oz-in/A)	Motor Efficiency	Back EMF Voltage (Vrms/kRPM)	Rotor Inertia (oz-in-sec ²)	Weight (lbs)	"L" Length (mm)
BLK421S-160V-3000	42	160	3000	1260	566	0.42	3.10	61	88.6%	30	0.0817800	13.67	153.92
BLK421D-160V-3000	42	160	3000	1260	566	0.42	3.10	61	88.6%	30	0.0817800	13.67	153.92
BLK421S-310V-3000	42	310	3000	1260	566	1.26	9.70	93	-	54	0.0821280	13.67	154.94
BLK421D-310V-3000	42	310	3000	1260	566	1.26	9.70	93	-	54	0.0821280	13.67	154.94
BLK422S-170V-3000	42	170	3000	1570	708	0.32	2.40	64	88.2%	31	0.1019000	15.87	170.94
BLK422D-170V-3000	42	170	3000	1570	708	0.32	2.40	64	88.2%	31	0.1019000	15.87	170.94
BLK422S-310V-3000	42	310	3000	1570	708	1.00	7.50	126	-	54	0.1019520	15.87	187.96
BLK422D-310V-3000	42	310	3000	1570	708	1.00	7.50	126	-	54	0.1019520	15.87	187.96
BLK423S-170V-3000	42	170	3000	1880	850	0.3	1.4	72.2	-	30.3	0.1203701	15.90	189.00
BLK423D-170V-3000	42	170	3000	1880	850	0.3	1.4	72.2	-	30.3	0.1203701	15.90	189.00
BLK423S-310V-3000	42	310	3000	1880	850	1.03	7.31	136	96.3%	58	0.120360	15.87	189.00
BLK423D-310V-3000	42	310	3000	1880	850	1.03	7.31	136	96.3%	58	0.120360	15.87	189.00

Hall Sensor Specifications

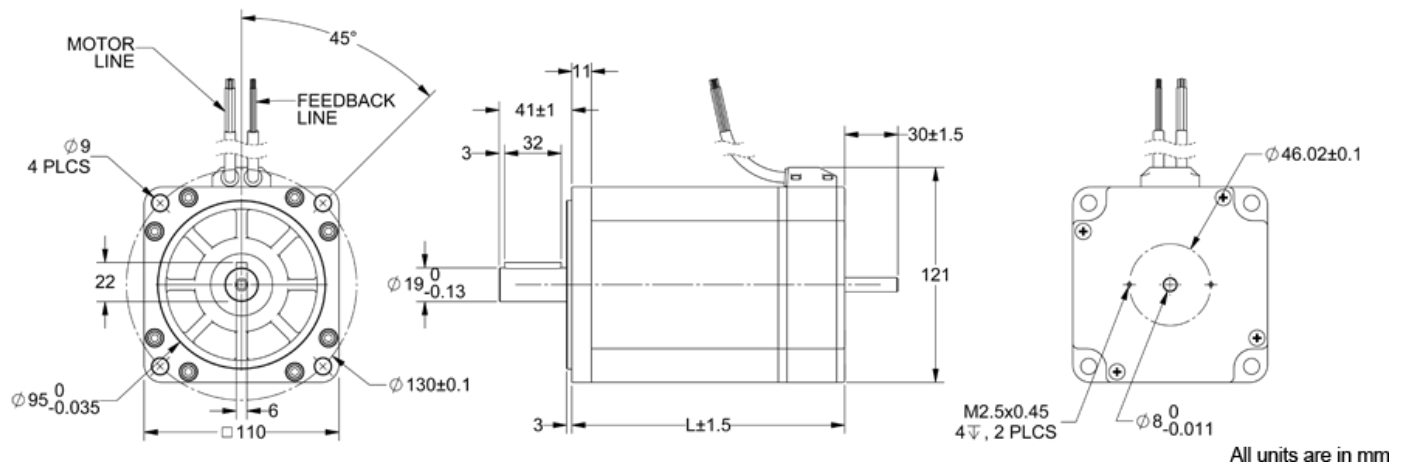
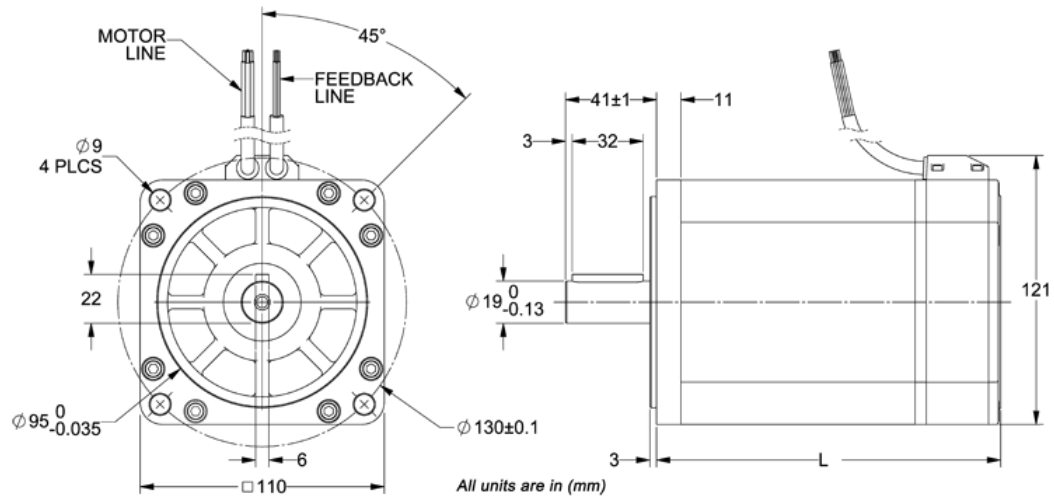
- Supply Voltage: 4.5VDC to 28VDC
- Current, I_{off} : 10mA max
- Current, I_{on} : 11.3mA max
- Rated Sinking Current: 20mA
- Saturation Voltage: 0.4VDC max @ 25°C
- Output Leakage Current: 10µA
- Output Switching Time @ 25°C
 - Rise, 10% to 90% 1.5µs
 - Fall, 90% to 10% 1.5µs
- Output Type: Open Collector

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

- Winding Type: Star, 8 Poles
- Hall Effect Angle: 120 Degree Electrical Angle
- Insulation Class: Class F
- Dielectric Strength: 1500VDC for the minute
- Insulation Resistance: >=100MOhm, 500VDC

L010749

DIMENSIONS



WIRING INFORMATIONS

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

