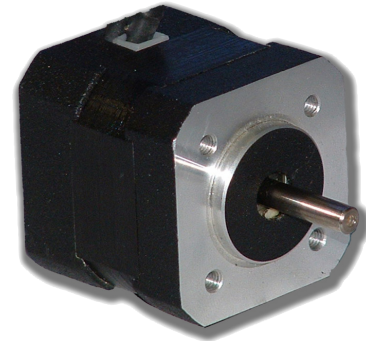


# BLY17 Series - Brushless DC Motors



## FEATURES

- **42mm Square Body**
- **Compact Size and Power Density**
- **Cost-Effective Replacement for Brush DC Motors**
- **Long Life and Highly Reliable**
- **Can Be Customized for:**
  - **Maximum Speed**
  - **Winding Current**
  - **Shaft Options**
  - **Cables and Connectors**
- **CE Certified and RoHS Compliant**



## DESCRIPTION

The BLY17 Series Brushless DC Motors come in a compact package with high power density. These motors are cost-effective solutions to many velocity control applications. They come in four different stack lengths to provide you with just the right torque for your application. A number of windings are available off-the-shelf and all the motors can be customized to fit your machine requirements. The motors come in a standard 8-lead configuration with three wires for the phases and five wires for the hall sensors. We can also customize the windings to perfectly match your voltage, current, and maximum operating speed. Special shaft modifications, cables and connectors are also available upon request.

## SPECIFICATIONS

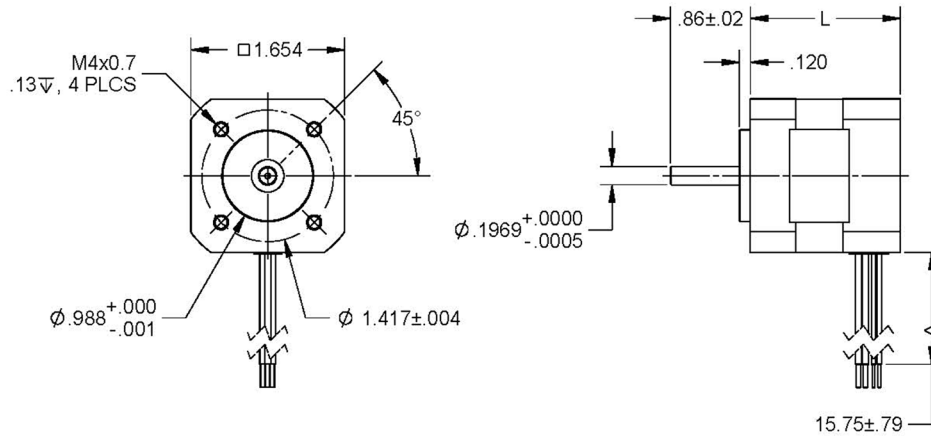
Model #	Rated Voltage (V)	Rated Speed (RPM)	Rated Power (W)	Peak Torque (oz-in)	Rated Current (A)	Line to Line Resistance (ohms)	Line to Line Inductance (mH)	Torque Constant (oz-in/A)	Back EMF Voltage (V/kRPM)	Rotor Inertia (oz-in-sec <sup>2</sup> )	Weight (lbs)	"L" Length (in)
BLY171S-15V-8000	15	8000	26	14	2.2	0.35	0.35	1.98	1.14	0.00034	0.66	1.59
BLY171S-17V-8000	17	8000	42	21	3.6	0.20	0.26	1.98	1.14	0.00034	0.66	1.59
BLY171S-24V-4000	24	4000	26	27	1.8	1.50	2.10	4.96	2.45	0.00034	0.66	1.59
BLY172S-17V-9500	17	9500	70	30	6.4	0.09	0.09	1.56	0.90	0.00068	0.99	2.37
BLY172S-24V-2000	24	2000	41	63.72	3.6	1.60	2.70	8.78	5.00	0.00068	0.99	2.37
BLY172S-24V-4000	24	4000	53	54	3.5	0.80	1.20	5.81	3.35	0.00068	0.99	2.37
BLY173S-24V-4000	24	4000	77	79	4.9	0.46	0.70	5.38	3.10	0.00102	1.43	3.19
BLY174S-24V-4000	24	4000	104	106	7.0	0.30	0.50	5.32	3.10	0.00136	1.76	3.95
BLY174S-24V-12000	24	12000	113	38	5.4	0.07	0.08	1.97	1.55	0.00136	1.76	3.95
BLY171D-17V-8000	17	8000	42	21	3.6	0.20	0.26	1.98	1.14	0.00034	0.66	1.59
BLY171D-24V-1400	24	1400	9.8	27	0.9	8.00	10.50	10.62	8.42	0.00034	0.66	1.59
BLY171D-24V-2800	24	2800	25	31	2.0	2.78	3.36	6.09	4.57	0.00034	0.66	1.59
BLY171D-24V-4000	24	4000	26	27	1.8	1.50	2.10	4.81	2.7	0.00034	0.66	1.59
BLY171D-24V-6000	24	6000	25	27	1.4	1.15	1.47	3.97	4.00	0.00034	0.66	1.59
BLY172D-24V-2000	24	2000	41	54	3.6	1.40	2.25	7.79	5.66	0.00068	0.99	2.37
BLY172D-24V-4000	24	4000	53	54	3.5	0.80	1.20	5.03	3.1	0.00068	0.99	2.37
BLY173D-24V-4000	24	4000	77	79	4.9	0.46	0.70	5.38	4.14	0.00102	1.43	3.19
BLY173D-160V-4000	160	4000	77	79	0.7	26.67	20.00	36.96	18.83	0.00102	1.43	3.19
BLY174D-24V-4000	24	4000	104	106	7.0	0.30	0.50	5.32	3.1	0.00136	1.76	3.95
BLY174D-24V-12000	24	12000	113	38	5.4	0.07	0.08	1.97	1.55	0.00136	1.76	3.95

### Notes:

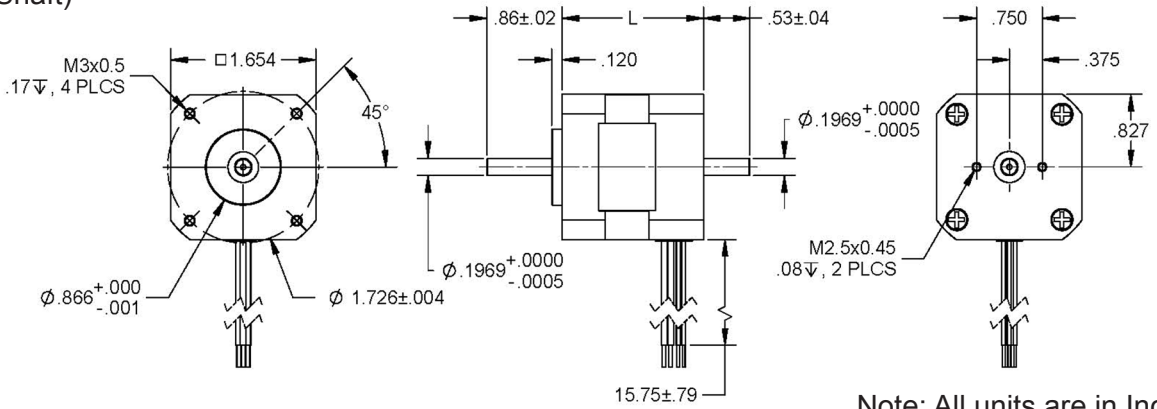
- Custom leadwires, cables, connectors, and windings are available upon request.
- The 7<sup>th</sup> character "S" denotes a single shaft, use "D" for double shaft.
- Dual Shaft motors have different mounting dimensions; please see drawings on next page.

L010228

(Single Shaft)



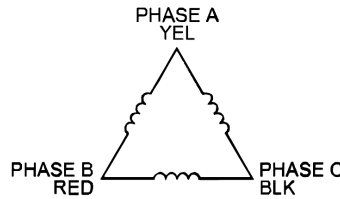
(Double Shaft)



Note: All units are in Inches

Notes: Dual Shaft motors have different mounting dimensions.

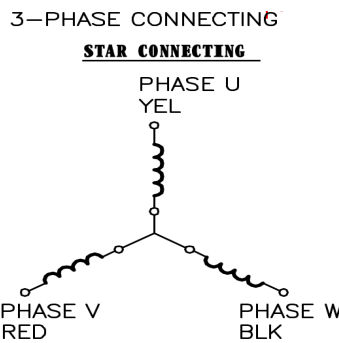
Wire Color	Description
Red	Hall Supply
Blue	Hall A
Green	Hall B
White	Hall C
Black	Hall Ground
Yellow	Phase A
Red	Phase B
Black	Phase C



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

BLY171S-15V-8000 Wiring Diagram

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



Winding Type:	8 Poles	Max. Radial Force:	28N @ 20mm from the Flange
Hall Effect Angle:	120 Degree Electrical Angle	Max. Axial Force:	10N
Shaft Run Out:	0.025mm	Insulation Class:	Class B
Radial Play:	0.02mm@450g	Dielectric Strength:	500VDC for one Minute
End Play:	0.08mm@450g	Insulation Resistance:	100MOhm, 500VDC

TORQUE CURVES

