

BLDC MOTORS



MOONS'
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Introduction of BLDC Motors

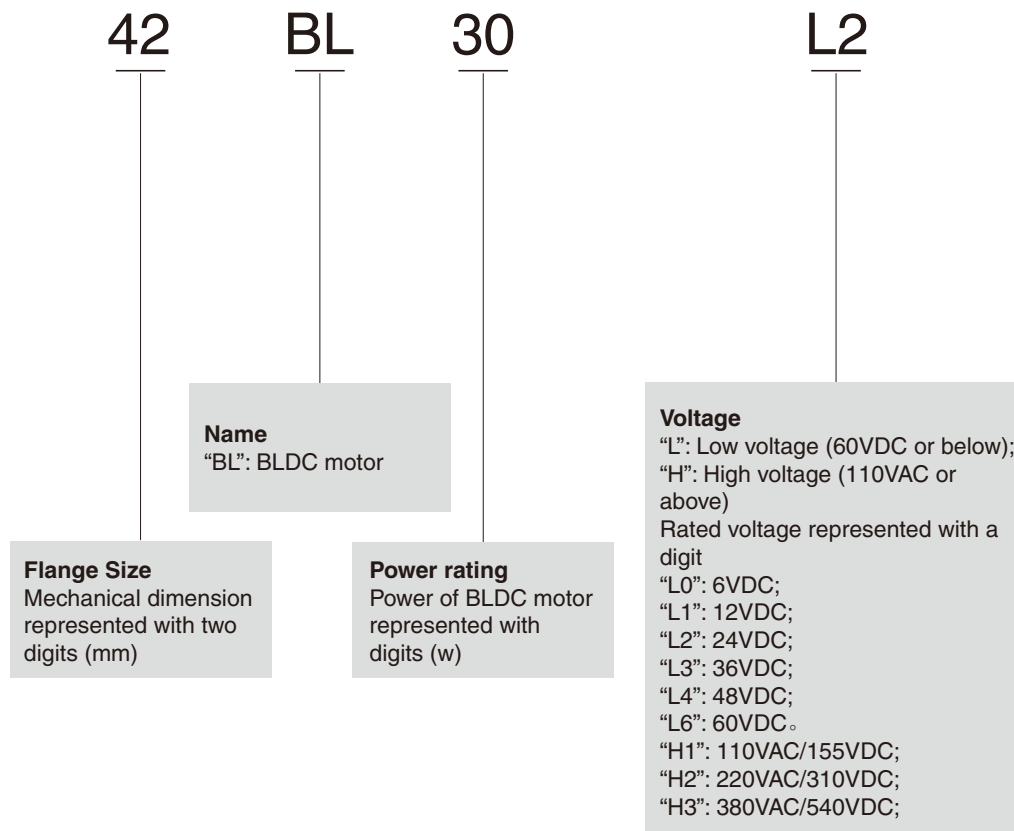
Characteristics

- Wide range of speed control and smooth torque output
- Excellent speed stability
- Small size, high power
- Low temperature rise, low noise, low vibration
- Long life, low maintenance costs
- Low positioning torque
- Energy efficient

Applications

- Mechanical automation (textile machines)
- Financial automation (ATM)
- Office equipment (printer)
- Solar energy equipment
- Drive system
- Speed setting and regulation devices in various industries
- Automotive On-board equipment
- Pump (metering pump)
- Food industry
- Sorting equipment

Model Numbering System



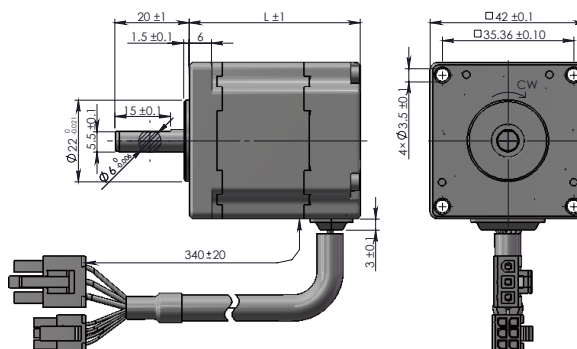
42BLDC Motors

Technical Specification

	Units	Type					
		42BL30L2	42BL30L4	42BL60L2	42BL60L4	42BL90L2	42BL90L4
Length	mm	46	46	70	70	100	100
Input power	VDC	24	48	24	48	24	48
Rated power	W	30	30	60	60	90	90
Pole-pair number		3					
Phase number		3					
Rated speed	RPM	4000	4000	4000	4000	4000	4000
Max. speed	RPM	5000	5000	5000	5000	5000	5000
Rated torque	Nm	0.072	0.072	0.144	0.144	0.215	0.215
Max. torque	Nm	0.144	0.144	0.288	0.288	0.43	0.43
Rated current	A	1.67	0.81	3.28	1.63	4.92	2.40
Max. current	A	3.34	1.62	6.56	3.26	9.84	4.80
Voltage constant	Vrms/Krpm	2.95	6.13	3.00	6.00	3.00	6.10
Torque constant	Nm/Arms	0.043	0.089	0.044	0.088	0.044	0.089
Moment of inertia	10 ⁻⁴ kgm ²	0.0388	0.0388	0.072	0.072	0.114	0.114
Resistance	Ω	1.34	5.92	0.68	2.62	0.40	1.47
Inductance	mH	1.15	5.00	0.60	2.50	0.37	1.57
Sensor		Hall					
Ins. class		E					
Protective rating		IP40					
Operating temperature		0~+50°C					
Storage temperature		-25~+70°C					
Operating RH		85% RH or below (non-condensing)					
Operating environment		Outdoor (no direct sunlight), no corrosive gas, no flammable gas, no oil mist, no dust					
Altitude		1000m or below					

Mechanical Dimension Unit: mm

Series	L
	mm
42BL30	46
42BL60	70
42BL90	100



Introduction of BLDC Motors

42 BLDC Motors

57 BLDC Motors

70 BLDC Motors

80 BLDC Motors

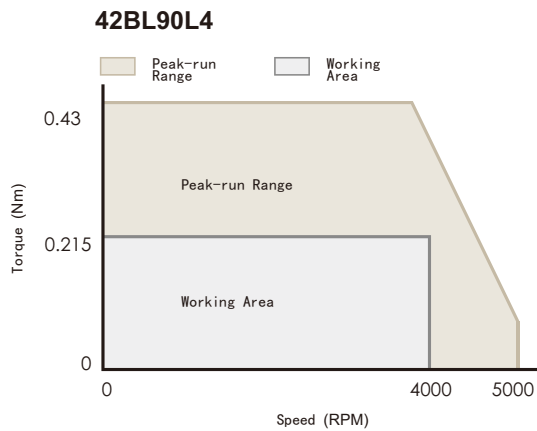
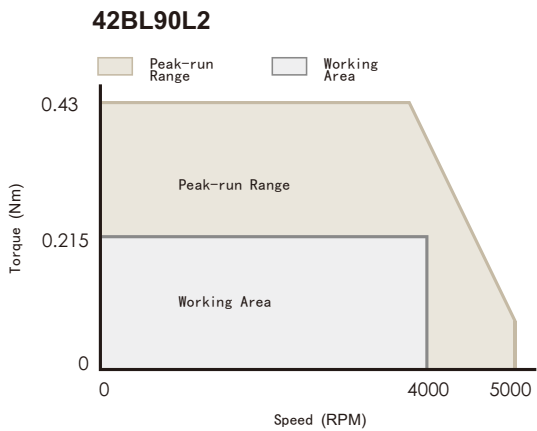
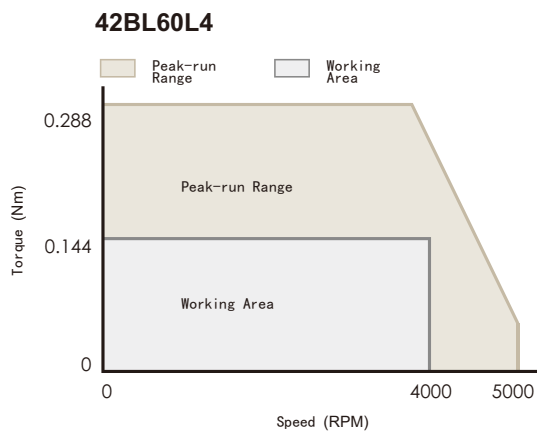
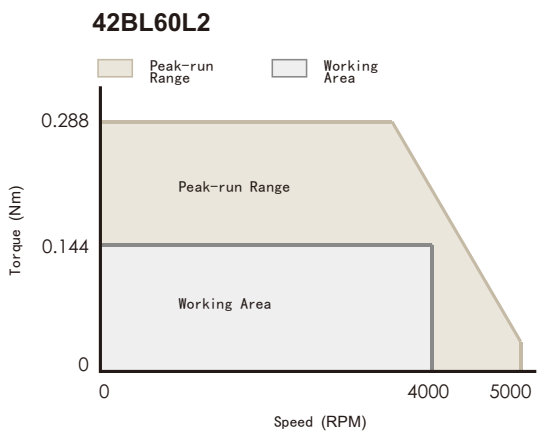
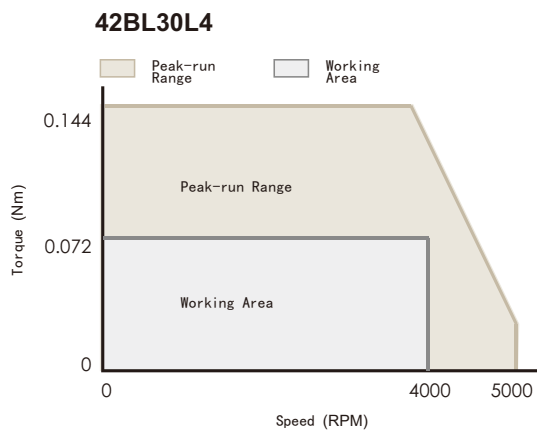
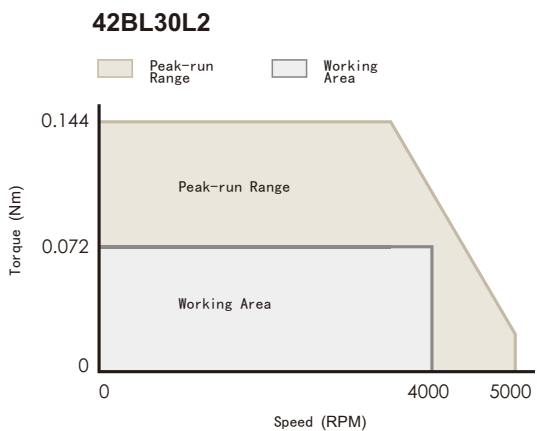
Round BLDC Motors

R42BL

R57BL

Connector Specification

Torque - Speed Features



Introduction of BLDC Motors

42 BLDC Motors

57 BLDC Motors

70 BLDC Motors

80 BLDC Motors

Round BLDC Motors

R42BL

R57BL

Connector Specification

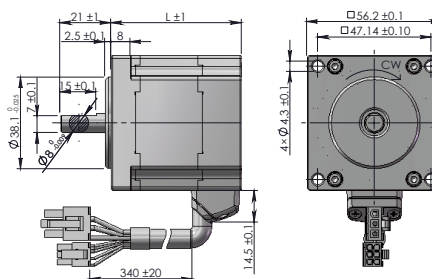
57BLDC Motors

Technical Specification

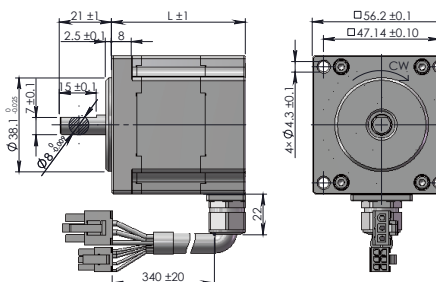
	Units	Type										
		57BL30L2	57BL30L4	57BL60L2	57BL60L4	57BL60H2	57BL120L2	57BL120L4	57BL120H2	57BL180L2	57BL180L4	57BL180H2
Length	mm	41.5	41.5	54.5	54.5	54.5	82.5	82.5	82.5	120.5	120.5	120.5
Input power	VDC	24	48	24	48	310	24	48	220	24	48	310
Rated power	W	30	30	60	60	60	120	120	120	180	180	180
Pole-pair number		4										
Phase number		3										
Rated speed	RPM	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
Max. speed	RPM	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Rated torque	Nm	0.072	0.072	0.145	0.145	0.145	0.29	0.29	0.29	0.43	0.43	0.43
Max. torque	Nm	0.145	0.145	0.29	0.29	0.29	0.58	0.58	0.58	0.86	0.86	0.86
Rated current	A	1.71	0.86	3.20	1.60	0.25	6.90	3.00	0.46	10.50	4.50	0.70
Max. current	A	3.43	1.71	6.40	3.20	0.50	13.80	6.00	0.93	21.00	9.00	1.39
Voltage constant	Vrms/Krpm	3	6.45	3.08	6.35	41.00	3.00	6.40	41.30	3.00	6.45	41.65
Torque constant	Nm/Arms	0.042	0.084	0.045	0.090	0.580	0.042	0.097	0.626	0.041	0.096	0.620
Moment of inertia	10 ⁻⁴ kgm ²	0.087	0.087	0.148	0.148	0.148	0.279	0.279	0.279	0.456	0.456	0.456
Resistance	Ω	0.71	3.25	0.48	1.80	75.00	0.18	0.76	31.7	0.11	0.44	18.35
Inductance	mH	0.71	3.25	0.45	1.90	79.20	0.18	0.84	35.04	0.11	0.54	22.52
Sensor		Hall										
Ins.class		E										
Protective rating		IP40/IP65										
Operating temperature		0--+50°C										
Storage temperature		-25--+70°C										
Operating RH		85%RH or below (non-condensing)										
Operating environment		Outdoor (no direct sunlight), no corrosive gas, no flammable gas, no oil mist, no dust										
Altitude		1000m or below										

Mechanical Dimension Unit: mm

Series	L
	mm
57BL30	41.5
57BL60	54.5
57BL120	82.5
57BL180	120.5

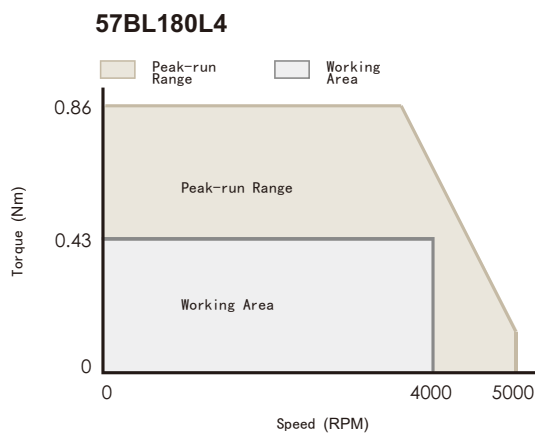
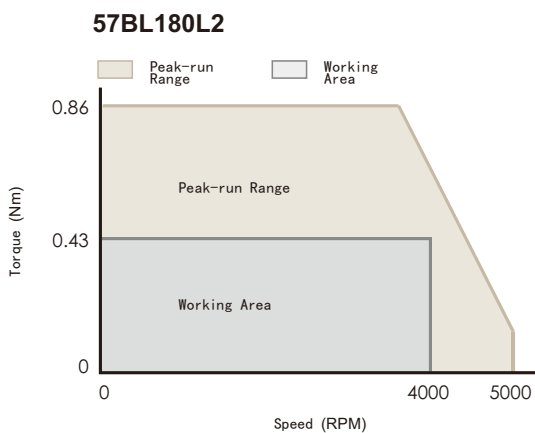
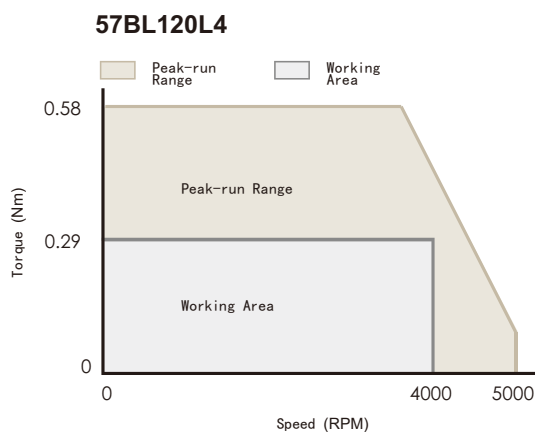
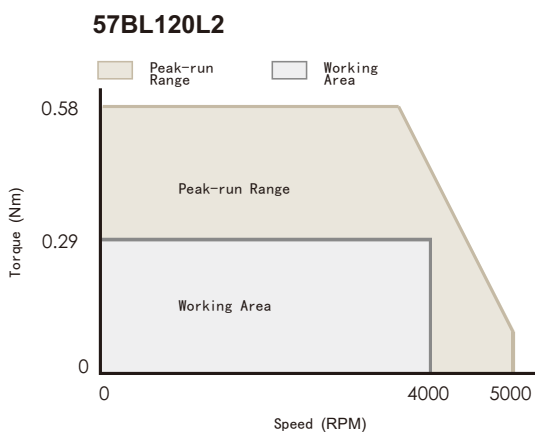
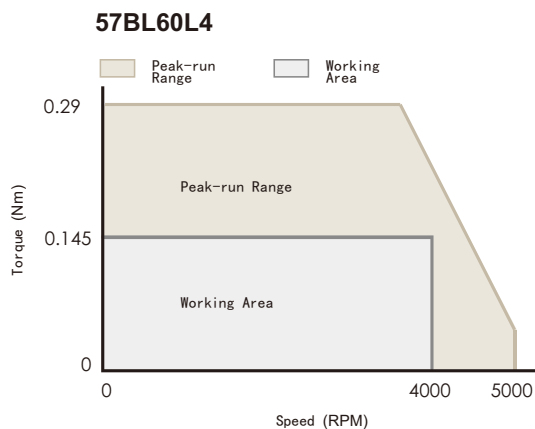
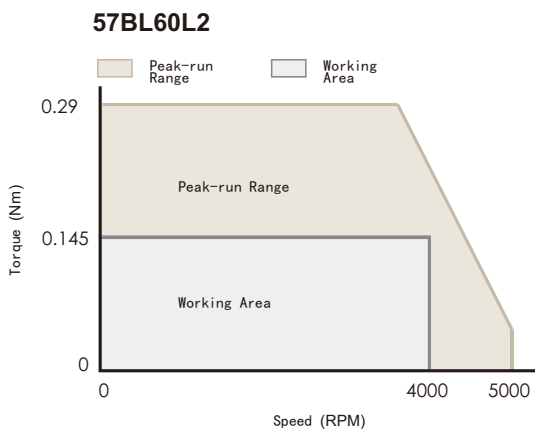


Series	L
	mm
57BL30	51.5
57BL60	64.5
57BL120	92.5
57BL180	130.5



High-voltage 57BL series motor: 57BL60H2, 57BL120H2 and 57BL180H2 will be put into mass production after March 2018. 57BL series motor products conforming to IP65 protective rating will be put into mass production after July 2017.

Torque - Speed Features



Introduction of BLDC Motors

42 BLDC Motors

57 BLDC Motors

70 BLDC Motors

80 BLDC Motors

Round BLDC Motors

R42BL

R57BL

Connector Specification

70BLDC Motors

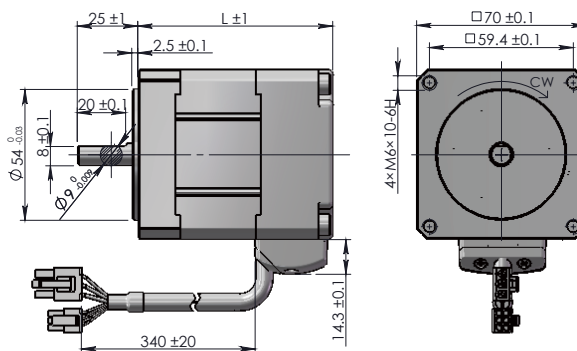
Technical Specification

	Units	Type	
		70BL200H1	70BL200H2
Length	mm	81	81
Input power	VDC	155	310
Rated power	W	200	200
Pole-pair number		2	
Phase number		3	
Rated speed	RPM	4000	4000
Max. speed	RPM	5000	5000
Rated torque	Nm	0.48	0.48
Max. torque	Nm	0.96	0.96
Rated current	A	2.76	1.83
Max. current	A	5.52	3.66
Voltage constant	Vrms/Krpm	15.30	19.30
Torque constant	Nm/Arms	0.17	0.26
Moment of inertia	10 ⁻⁴ kgm ²	0.50	0.50
Resistance	Ω	1.50	2.60
Inductance	mH	8.00	12.70
Sensor		Hall	
Ins.class		E	
Protective rating		IP40	
Operating temperature		0~+50°C	
Storage temperature		-25~+70°C	
Operating RH		85%RH or below (non-condensing)	
Operating environment		Outdoor (no direct sunlight), no corrosive gas, no flammable gas, no oil mist, no dust	
Altitude		1000 m or below	

Mechanical Dimension

Unit: mm

Series	L
	mm
70BL200	81



70BL series motor will be put into mass production after July 2017. If you have any special requirements, please contact salesman for consultation.

80BLDC Motors

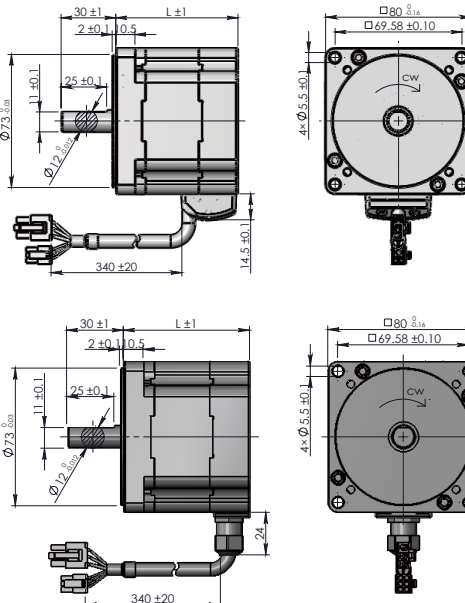
Technical Specification

	Units	Type								
		80BL100L2	80BL100L4	80BL100H2	80BL200L2	80BL200L4	80BL200H2	80BL300L2	80BL300L4	80BL300H2
Length	mm	50	50	50	67	67	67	84	84	84
Input power	VDC	24	48	310	24	48	310	24	48	310
Rated power	W	100	100	100	200	200	200	300	300	300
Pole-pair number		4								
Phase number		3								
Rated speed	RPM	4000	4000	4000	4000	4000	4000	3000	4000	4000
Max. speed	RPM	4500	4500	4500	4500	4500	4500	4000	4500	4500
Rated torque	Nm	0.24	0.24	0.24	0.48	0.48	0.48	0.72	0.72	0.72
Max. torque	Nm	0.48	0.48	0.48	0.96	0.96	0.96	1.20	1.44	1.44
Rated current	A	5.00	2.43	0.37	10.10	5.06	1.83	12.00	7.49	1.16
Max. current	A	10.00	4.86	0.75	20.20	10.12	3.66	19.00	14.98	2.32
Voltage constant	Vrms/Krpm	3.44	6.88	44.40	3.38	6.76	38.70	4.53	7.03	45.40
Torque constant	Nm/Arms	0.048	0.099	0.640	0.048	0.095	0.260	0.060	0.096	0.620
Moment of inertia	10 ⁻⁴ kgm ²	0.38	0.38	0.38	0.74	0.74	0.74	1.08	1.08	1.08
Resistance	Ω	0.18	0.71	29.60	0.08	0.32	2.60	0.07	0.20	8.32
Inductance	mH	0.34	1.35	56.30	0.18	0.70	12.70	0.19	0.47	19.58
Sensor		Hall								
Ins.class		E								
Protective rating		IP40/IP65								
Operating temperature		0~+50°C								
Storage temperature		-25~+70°C								
Operating RH		85%RH or below (non-condensing)								
Operating environment		Outdoor (no direct sunlight), no corrosive gas, no flammable gas, no oil mist, no dust								
Altitude		1000 m or below								

Mechanical Dimension Unit: mm

Series	L
	mm
80BL100	50
80BL200	67
80BL300	84

Series	L
	mm
80BL100	60
80BL200	77
80BL300	94



High-voltage 80BL series motor: 80BL100H2, 80BL200H2 and 80BL300H2 will be put into mass production after March 2018. 80BL series motor products conforming to IP65 protective rating will be put into mass production after July 2017.

Introduction of BLDC Motors

42 BLDC Motors

57 BLDC Motors

70 BLDC Motors

80 BLDC Motors

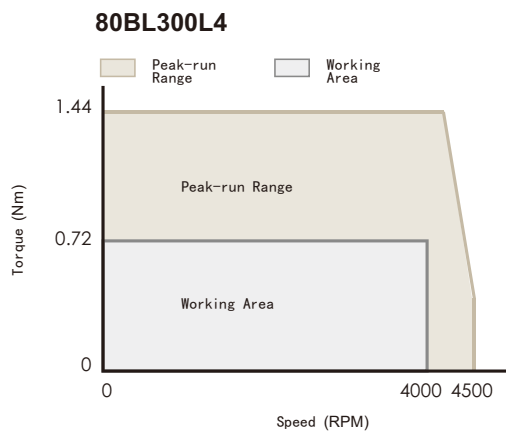
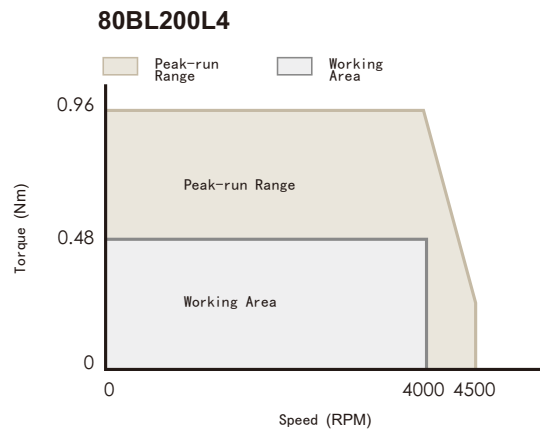
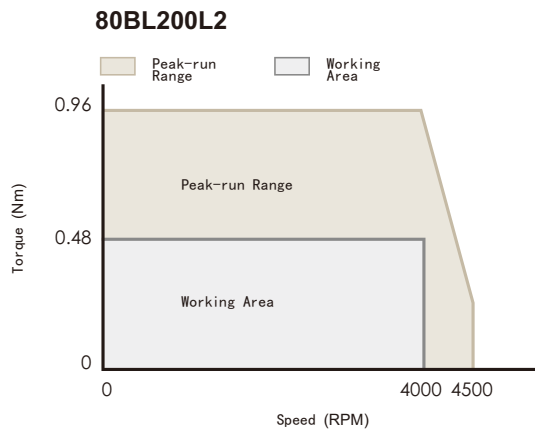
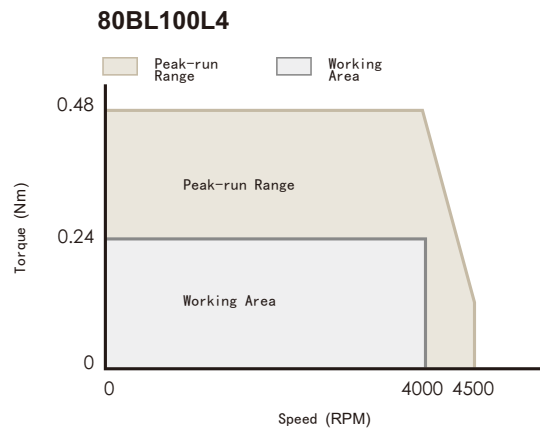
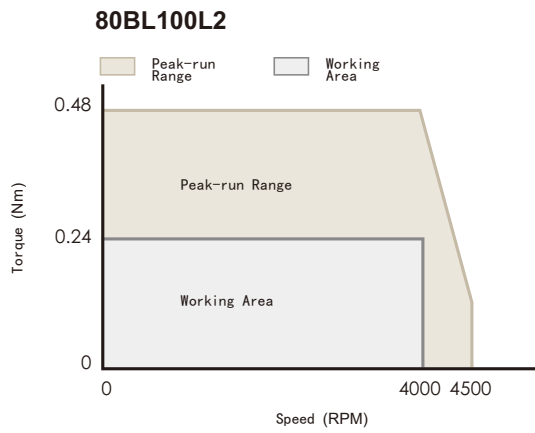
Round BLDC Motors

R42BL

R57BL

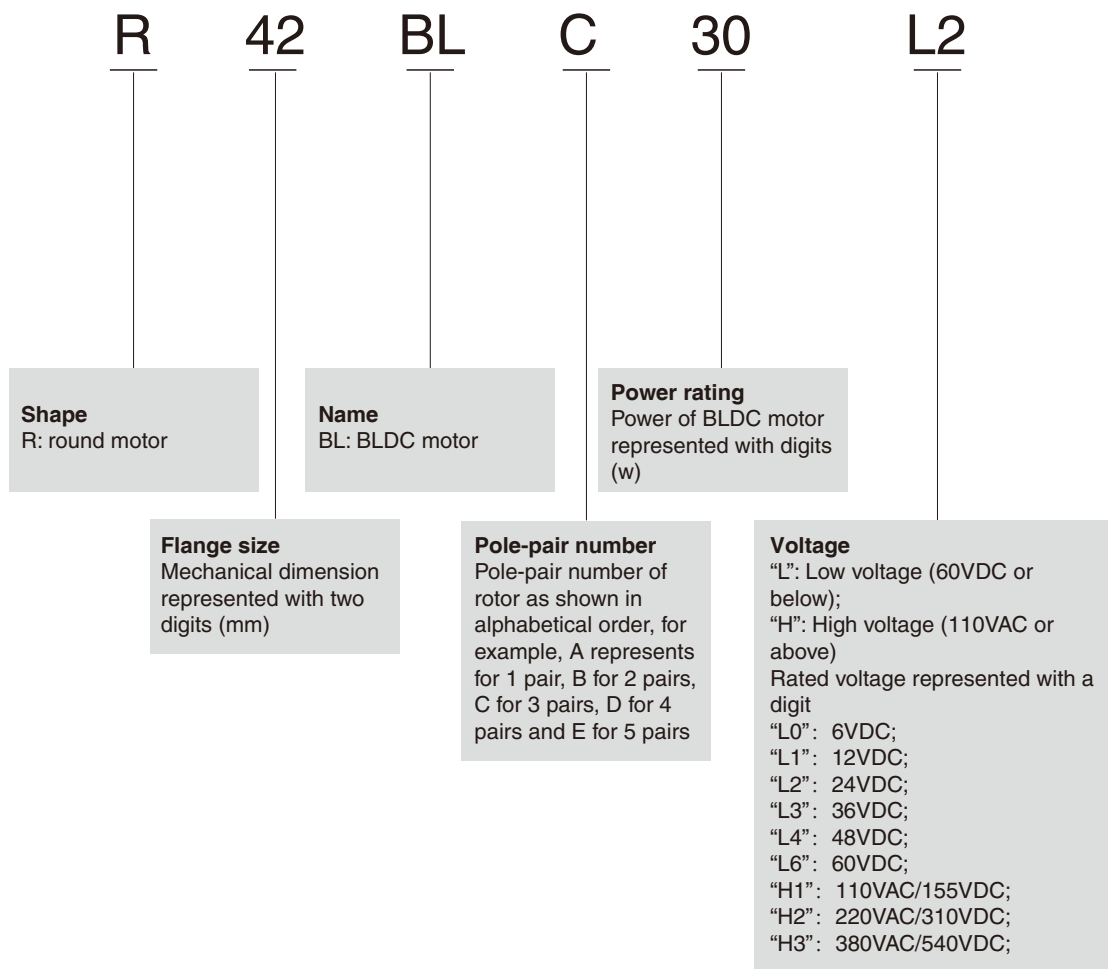
Connector Specification

Torque - Speed Features



Round BLDC Motors

Model Numbering System



Introduction of BLDC Motors

□ 42 BLDC Motors

□ 57 BLDC Motors

□ 70 BLDC Motors

□ 80 BLDC Motors

Round BLDC Motors

R42BL

R57BL

Connector Specification

R42BL

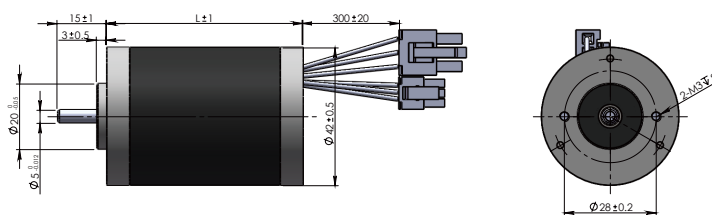
Technical Specification

	Units	Type			
		R42BLD10L2	R42BLD30L3	R42BLD60L2	R42BLD75L2
Length	mm	30	60	85	93
Input power	VDC	24	36	24	24
Rated power	W	10	30	60	75
Pole-pair number		4			
Phase number		3			
Rated speed	RPM	4000	4000	4000	4000
Max. speed	RPM	4500	4500	4500	4500
Rated torque	Nm	0.018	0.08	0.15	0.18
Max. torque	Nm	0.054	0.24	0.45	0.54
Rated current	A	0.50	1.67	2.50	3.30
Max. current	A	1.50	5.00	7.50	10.00
Voltage constant	Vrms/Krpm	3.0	4.5	3.0	3.0
Torque constant	Nm/Arms	0.036	0.048	0.060	0.055
Moment of inertia	10 ⁻⁴ kgm ²	0.016	0.033	0.084	0.094
Resistance	Ω	6.50	1.60	0.71	0.50
Inductance	mH	5.00	1.90	0.80	0.50
Sensor		Hall			
Ins.class		E			
Protective rating		IP40			
Operating temperature		0~+50°C			
Storage temperature		-25~+70°C			
Operating RH		85%RH or below (non-condensing)			
Operating environment		Outdoor (no direct sunlight), no corrosive gas, no flammable gas, no oil mist, no dust			
Altitude		1000 m or below			

Mechanical Dimension

Unit: mm

Series	L mm
R42BLD10	30
R42BLD30	60
R42BLD60	85
R42BLD75	93



R42BL series round motor will be put into mass production after June 2017. If you have any special requirements, please contact salesman for consultation.

R57BL

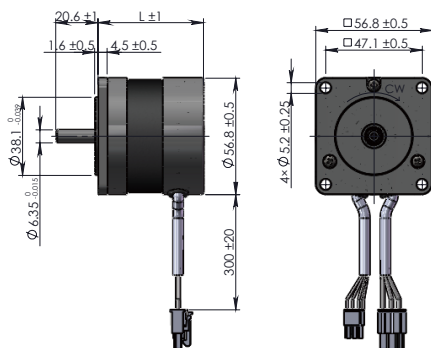
Technical Specification

	Units	Type							
		R57BLB50L3	R57BLB50L2	R57BLB100L3	R57BLB100L2	R57BLB180L3	R57BLB180L4	R57BLB200L5	R57BLB200L3
Length	mm	52	52	72	72	92	92	115	115
Input power	VDC	36	24	36	24	36	48	56	36
Rated power	W	54	51	104	100	175	179	173	190
Pole-pair number		2							
Phase number		3							
Rated speed	RPM	4000	3800	4000	3800	4000	4090	3000	3175
Max. speed	RPM	5000	5000	5000	5000	5000	5000	5000	5000
Rated torque	Nm	0.13	0.13	0.25	0.25	0.42	0.42	0.55	0.55
Max. torque	Nm	0.23	0.23	0.49	0.49	0.83	0.83	1.10	1.10
Rated current	A	2.00	2.60	3.90	5.30	6.80	4.30	5.30	6.86
Max. current	A	4.00	5.20	7.80	10.60	13.60	8.60	10.60	13.72
Voltage constant	Vrms/Krpm	7.5	5.0	7.4	5.1	7.3	9.9	11.1	8.3
Torque constant	Nm/Arms	0.065	0.050	0.064	0.047	0.062	0.098	0.104	0.1
Moment of inertia	10 ⁻⁴ kgm ²	0.067	0.067	0.122	0.122	0.172	0.172	0.234	0.234
Resistance	Ω	1.80	0.92	0.77	0.32	0.53	0.80	0.92	0.49
Inductance	mH	4.40	1.84	2.00	0.68	1.29	2.08	2.38	1.19
Sensor		Hall							
Ins.class		E							
Protective rating		IP40							
Operating temperature		0~+50°C							
Storage temperature		-25~+70°C							
Operating RH		85%RH or below (non-condensing)							
Operating environment		Outdoor (no direct sunlight), no corrosive gas, no flammable gas, no oil mist, no dust							
Altitude		1000 m or below							

Mechanical Dimension

Unit: mm

Series	L mm
R57BLB50	52
R57BLB100	72
R57BLB180	92
R57BLB200	115



R57BL series round motor will be put into mass production after June 2017. If you have any special requirements, please contact salesman for consultation.

Introduction of BLDC Motors

□ 42 BLDC Motors

□ 57 BLDC Motors

□ 70 BLDC Motors

□ 80 BLDC Motors

Round BLDC Motors

R42BL

R57BL

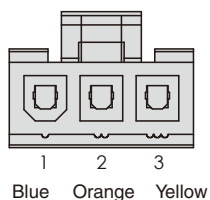
Connector Specification

Connector Specification

Motor connection

MOLEX Housing: 39-01-4031

MOLEX Terminal: 39-00-0207

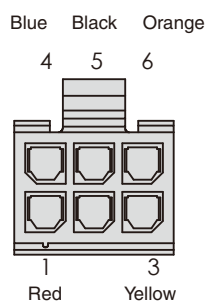


Terminal	1	2	3
Function	W	U	V
Color	Blue	Orange	Yellow

Encoder connection

MOLEX Housing: 43025-0600

MOLEX Terminal: 43030-0005



Terminal	Color	Function
1	Red	VCC (+5V)
3	Yellow	Hv
4	Blue	Hw
5	Black	GND
6	Orange	Hu

Attention: All specifications, dimensions, drawing, etc. in catalog are for customer's reference. We recommend customer confirm specifications with our salesman before placing orders.

■ MOONS' Headquarter

168 Mingjia Road, Minhang District, Shanghai 201107,
P.R. China
Tel: +86 (0)21 52634688
Fax: +86 (0)21 52634098

■ MOONS' International Trading Company

4/F, Building 30, 69 Guiqing Road, Cao He Jin Hi-Tech
Park, Shanghai 200233, P.R. China
Tel: +86 (0)21 64952755
Fax: +86 (0)21 64951993

■ Domestic Offices

Shenzhen

Room 2209, 22/F, Kerry Center, 2008 Renminnan Road,
Luohu District, Shenzhen 518001, P.R. China
Tel: +86 (0)755 25472080
Fax: +86 (0)755 25472081

Beijing

Room 816, Tower B, China Electronics Plaza, 3 Danling
Street, Haidian District, Beijing 100080, P.R. China
Tel: +86 (0)10 58753312
Fax: +86 (0)10 58752279

Nanjing

Room 1101-1102, Building 2, New Town Development
Center, No.126 Tianyuan Road, Moling Street,
Jiangning District, Nanjing 211106, P.R. China
Tel: +86 (0)25 52785841
Fax: +86 (0)25 52785485

Qingdao

Room 1012, Zhuoyue Tower, No.16 Fengcheng Road,
Shibei District, Qingdao 26000, P.R. China
Tel: +86 (0)532 80969935
Fax: +86 (0)532 80919938

Wuhan

Room 3001, World Trade Tower, 686 Jiefang Avenue,
Jianghan District, Wuhan 430022, P.R. China
Tel: +86 (0)27 85448742
Fax: +86 (0)27 85448355

Chengdu

Room 1917, Western Tower, 19, 4th Section of South People
Road, Wuhou District, Chengdu 610041, P.R. China
Tel: +86 (0)28 85268102
Fax: +86 (0)28 85268103

Xi'an

Room 1006, Tower D, Wangzuo International City,
1 Tangyan Road, Xi'an 710065, P.R. China
Tel: +86 (0)29 81870400
Fax: +86 (0)29 81870340

Ningbo

Room 309, Tower B, Taifu Plaza, 565 Jiangjia Road,
Jiangdong District, Ningbo, 315040, P.R. China
Tel: +86 (0)574 87052739
Fax: +86 (0)574 87052365

Guangzhou

Room 4006, Tower B, China Shine Plaza, 9 Linhe Xi Road,
Tianhe District, Guangzhou 510610, P.R. China
Tel: +86 (0)20 38010153
Fax: +86 (0)20 38103661

■ North America Company

MOONS' INDUSTRIES (AMERICA), INC.

1113 North Prospect Avenue, Itasca, IL 60143 USA
Tel: +1 630 8335940
Fax: +1 630 8335946

APPLIED MOTION PRODUCTS, INC.

404 Westridge Dr. Watsonville, CA 95076, USA
Tel: +1 831 7616555

LIN ENGINEERING, INC.

16245 Vineyard Blvd., Morgan Hill, CA 95037
Tel: +1 408 9190200
Fax: +1 408 9190201

■ European Company

MOONS' INDUSTRIES (EUROPE) S.R.L.

Via Torri Bianche n.1 20871 Vimercate(MB) Italy
Tel: +39 039 6260521
Fax: +39 039 9631409

■ South-East company

MOONS' INDUSTRIES (SOUTH-EAST ASIA) PTE. LTD.

33 Ubi Avenue 3 #08-23 Vertex Singapore 408868
Tel: +65 66341198
Fax: +65 66341138

■ Japan Company

MOONS' INDUSTRIES JAPAN CO., LTD.

Room 601, 6F, Shin Yokohama Koushin Building,
2-12-1, Shin-Yokohama, Kohoku-ku, Yokohama,
Kanagawa, 222-0033, Japan
Tel: +81 (0)45 4755788
Fax: +81 (0)45 4755787



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E-Mail: info@moonsindustries.eu
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