

# Servo Drives & Motors by Unitronics

## B5 & E5-S Series



### Servo Made Simple. Eliminate Complexity.

The new Servo series expands your Motion potential Via a wider power range up to 7.5kW (10 HP), common DC bus, auto tuning, built-in STO (Safe Torque Off) and more.

### Minimal Programming Needed!

"Servo Made Simple" is free, ready-made motion code to get you moving out of the box. All-in-one software enables easy synchronized multi-axis motion—and is the environment for all motion, communication, and hardware configuration.

### Hardware

- Wide servo power range: 50W to 7.5kW (0.06 – 10HP)
- Drives: Single and three-phase grid support
- Motors: Low and medium inertia motors
- 23-bit high-resolution absolute encoders
- Built-in communications: EtherCAT or CANopen
- Common DC bus saves energy
- Built-in braking resistors<sup>\*1</sup>
- Comprehensive Protection functions: motor overheating, short-circuit protection, DB braking fault and more<sup>\*2</sup>
- Built-in STO<sup>\*3</sup>
- Zero stacking installation
- 350% momentary maximum torque<sup>\*4</sup>
- IP 65/67 motors<sup>\*5</sup>

<sup>1</sup> 50W ~ 400W products without built-in brake. 750W and above provides built-in braking resistor.

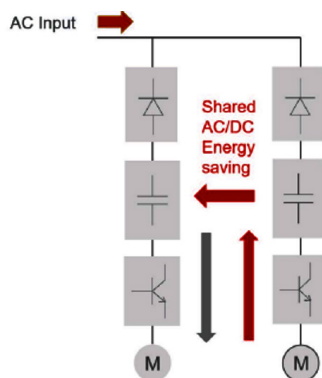
<sup>2</sup> For additional protection functions, refer to the product user guide.

<sup>3</sup> Only for EtherCAT drives.

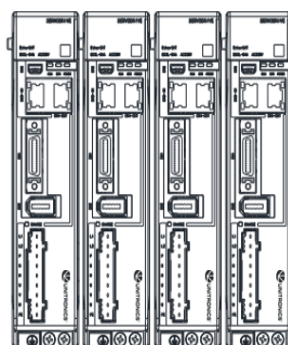
<sup>4</sup> Only for 50W-750W B5 motor series (Small capacity, High speed, Low inertia).

<sup>5</sup> Depends on motor series.

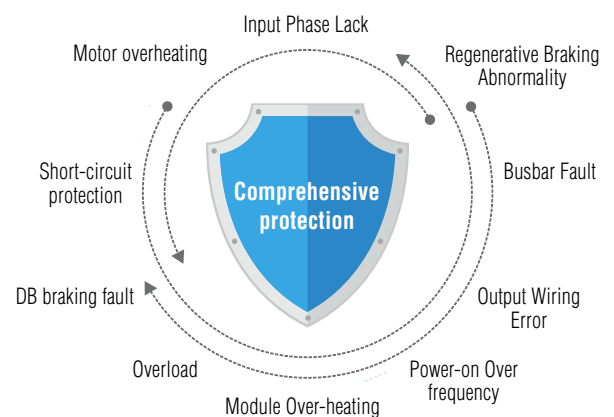
### Save Energy & Improve Efficiency



### Save Space: Zero Stacking



### Comprehensive Protection

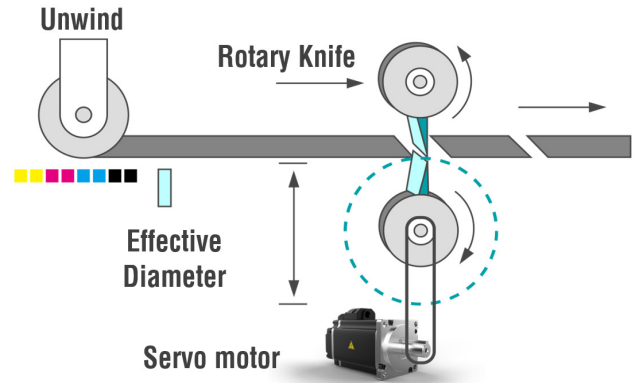


# UniLOGIC® Software: Eliminates the complexity of Motion Control

## Software:

- Control up to 8 Axes
- Motion Control programming:  
Drag & Drop PLCOpen function blocks
- Ready-made code: Embedded  
Diagnostics Application
- Auto-tuning

## Touch Probe Function



Motion Control programming:  
drag & drop function blocks

Test & view performance  
via built-in powerful,  
high-speed scope

Analyzes mechanical  
properties, and recommends  
safe values



Add Axes,  
drag & drop  
actuators;  
Automatic user  
units calculation

UniLogic automatically  
defines the correct  
configuration & sets up  
communications

**One Project—Motion, PLC Control, HMI/Web, all Hardware Configuration and Communications—in One Simple Software Environment**

# Product Offering



Servo Drive Model*	Voltage	Drive Power (kW / HP)	Suitable Motor**	Frame Size (MM)	Rated Motor Current (A)	Peak Current (A)	Rated Motor Torque (NM / lb-in)	Peak Torque (NM / lb-in)	Rated Speed (RPM)	Max Speed (RPM)	Encoder Type
UMD-0000B□5-□	1-Phase 220V	0.05/0.06	UMM-0000BA□-B5	40	0.9	3.3	0.159/1.4	0.557/4.92	3000	7000	Absolute 23bit
UMD-0001B□5-□		0.1/0.13	UMM-0001BA□-B5	40	1.1	4	0.318/2.81	1.11/9.82	3000	7000	Absolute 23bit
UMD-0002B□5-□		0.2/0.26	UMM-0002BA□-B5	60	1.5	5.8	0.637/5.63	2.23/19.73	3000	7000	Absolute 23bit
UMD-0004B□5-□		0.4/0.53	UMM-0004BA□-B5	60	2.9	11.5	1.27/11.23	4.46/39.47	3000	7000	Absolute 23bit
UMD-0007CU□5-□	1/3-Phase 220V	0.75/1	UMM-0007CA□-B5	80	5.1	19.5	2.39/21.15	8.37/74.07	3000	7000	Absolute 23bit
UMD-0010CU□5-□		1/1.34	UMM-0008CA□-B6 UMM-0010CA□-B5	130 80	6.8 6.9	22.6 21	5.41/47.87 3.18/28.14	16.2/143.37 9.54/84.42	1500 3000	3000 7000	Absolute 23bit
UMD-0015CU□5-□		1.5/2.01	UMM-0013CA□-B6 UMM-0015CA□-B5	130 100	9.7 9.5	29.7 31.6	8.28/73.27 4.78/42.3	24.8/219.48 14.3/126.55	1500 3000	3000 5000	Absolute 23bit
UMD-0020C□5-□	3-Phase 220V	2/2.68	UMM-0018CA□-B6 UMM-0020CA□-B5	130 100	14.5 12.6	42	11.5/101.77 6.37/56.37	31/274.35 19.1/169.03	1500 3000	3000 5000	Absolute 23bit
UMD-0010E□5-□	3-Phase 400V	1/1.34	UMM-0008EA□-B6	130	3.4	10.9	5.41/47.87	16.2/143.37	1500	3000	Absolute 23bit
UMD-0015E□5-□		1.5/2.01	UMM-0013EA□-B6 UMM-0015EA□-B5	130 100	5 4.9	15.6 16.3	8.28/73.27 4.78/42.3	24.8/219.48 14.3/126.55	1500 3000	3000 5000	Absolute 23bit
UMD-0020E□5-□		2/2.68	UMM-0018EA□-B6 UMM-0020EA□-B5	130 100	7.1 6.4	21.2 20.5	11.5/101.77 6.37/56.37	31/274.35 19.1/169.03	1500 3000	3000 5000	Absolute 23bit
UMD-0030E□5-□		3/4.02	UMM-0029EA□-B6 UMM-0030EA□-B5	180 130	11.5 10.5	37 33	18.6/164.61 9.8/86.73	55.8/493.83 29.4/260.19	1500 3000	3000 5000	Absolute 23bit
UMD-0050E□5-□		5/6.7	UMM-0040EA□-B5 UMM-0044EA□-B6 UMM-0050EA□-B5	130 180 130	13 16.8 15.9	40 49.5 50	12.8/113.28 28.4/251.34 15.9/140.71	38.4/339.84 80/708 47.7/422.145	3000 1500 3000	5000 3000 5000	Absolute 23bit
UMD-0075E□5-□		7.5/10.05	UMM-0055EA□-B6 UMM-0075EA□-B6	180	20.3 26.5	64 70	35/309.75 48/424.8	105/929.25 120/1062	1500	3000	Absolute 23bit

All motors are offered with oil seal as standard.

\* Ordering:

Product Numbers:

- CANopen models - include the letter B as shown here: UMD-0000B-B5

- EtherCAT models - include E and S as shown here: UMD-0000B-E5-S

\*\* Motors - add the latter B in the square for motor with holding brake eg. UMM-0000BA -B5 -> UMM-0000BAB-B5



# Product Designation



Drive				Motor						Cables				
UMD -	XXXX	XX	XX	UMM -	XXXX	X	A	XX	X	UMC -	XXX	XX	X	XX
1	2	3	4	1	2	3	4	5	6	1	2	3	4	5
Example: UMD-0001B-B5				Example: UMM-0001BAB-B5						Example: UMC-B5A-PN-05, UMC-B5-FA-10				
No.	Key	Description		No.	Key	Description				No.	Key	Description		
1	Product Line	Unitronics Servo Drive		1	Product Line	Unitronics Servo Motor				1	Product Line	Unitronics Servo Cable		
2	Rated Power	0001=100W 0010=1kW		2	Rated Power	0001=100W 0010=1kW				2	Motor series + Size Range	<b>For Px (power cable):</b> <b>B5 motor Series</b> B5A=50W-400W B5B=750W-1kW B5C6A=1.5kW-3kW B5D=4kW-5kW <b>B6 motor Series</b> B5C6A=850W-1.8kW B6B=2.9kW B6C=4.4kW-5kW B6D=7.5kW <b>For FA (Encoder cable):</b> <b>B5 motor Series</b> B5=50W-1kW B56=1.5kW-5kW <b>B6 motor Series</b> B56=For all B6 series		
3	Input Voltage	B= 1PH 200-240V C=3PH 200-240V CU=1/3PH 200-240V E=3PH 380V-480V		3	Input Voltage	B= 1PH 200V-240V C= 3PH 200V-240V E= 3PH 380V-480V				3	Cable Functionality	PN-Power cable without brake PB-Power cable with brake FA-Feedback cable absolute encoder		
4	Product Series	B5= CANopen, Pulse E5-S=EtherCAT + STO		4	Encoder	A= Absolute				4	Cable Type	None: Standard Cable R-Roboric cable		
				5	Brake	None= No Brake B= With Brake				5	Cable Length	03/05/10 Meters		
				6	Product Series	B5/B6								

# Drive Specification

General Specification			Description
Input Power	200VAC		Single-phase AC 200V to 240VAC 200V~240V, -15%~+10%, 50Hz/60Hz Three-phase AC 200V~240V, -15%~+10%, 50Hz/60Hz (Power ≥ 0.75kw)
	400VAC		Three-phase AC 380V~480V, -15%~+10%, 50Hz/60Hz
Operation Condition	Work environment	Temperature	When used on a single device : -5°C~55°C ; When multiple devices are installed snugly : -5°C~40°C
		Humidity	5% to 95% (with no condensation)
	Storage environment	Temperature	-20°C~85°C
		Humidity	5% to 95% (with no condensation)
	Protection class		IP20
	Altitude		Below 1000 m
	Vibration resistance impact resistance		Vibration Resistance:4.9m/s <sup>2</sup> Shock Resistance:19.6m/s <sup>2</sup>
Power system		TN System	
Installation Structure		Base-mounted	
Performance	Coefficient of speed fluctuation		±0.01% of rated speed max. (For a load fluctuation of 0% to 100%) 0% of rated speed max. (For a load fluctuation of ±10%) ±0.1% of rated speed max. (For a temperature fluctuation of 25°C±25°C)
	Soft start time setting		0 s to 10 s (Can be set separately for acceleration and deceleration.)
Display		5 bit digital tube	
Panel Operator		4 Buttons	
Regenerative Braking		50W ~ 400W products without built-in brake resistance Other power products have built-in brake resistance	
Protection Function		Overcurrent, Overvoltage, Undervoltage, Overload, Regeneration Error, Overspeed, etc.	
Utility Functions		Alarm recording, JOG running, load inertia recognition, etc	
I/O Signals	Input Signals	CANopen	10 Digital Inputs (2 of them are occupied by Touch probe feature) Allowable voltage range: 24 VDC±20%
		EtherCAT	5 Digital Inputs (2 of them are occupied by Touch probe feature) Allowable voltage range: 24 VDC±20%
	Output Signals	CANopen	4 Digital outputs
		EtherCAT	3 Digital outputs (1 of them fixed for Servo Alarm)

# Servo Drive Dimensions

Drive rated power kW/HP	200V WxHxD (mm)	400V WxHxD(mm)
0.05/0.06	40 X 172 X 180	-----
0.1/0.13	40 X 172 X 180	-----
0.2/0.26	40 X 172 X 180	-----
0.4/0.53	40 X 172 X 180	-----
0.75/1	55 X 172 X 180	-----
1/1.34	55 X 172 X 180	60 X 172 X 180
1.5/2.01	70 X 172 X 180	60 X 172 X 180
2/2.68	70 X 172 X 180	85 X 172 X 180
3/4.02	-----	85 X 172 X 180
5/6.7	-----	90 X 260 X 230
7.5/10.05	-----	90 X 260 X 230



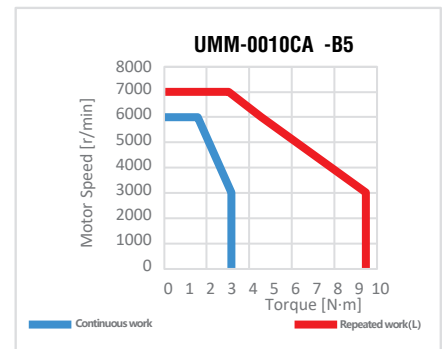
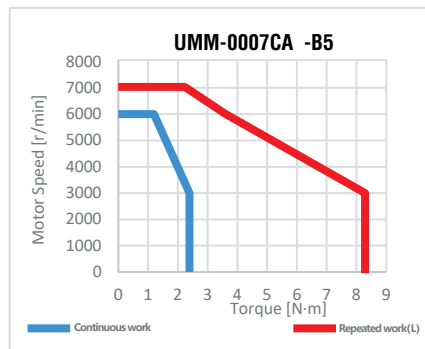
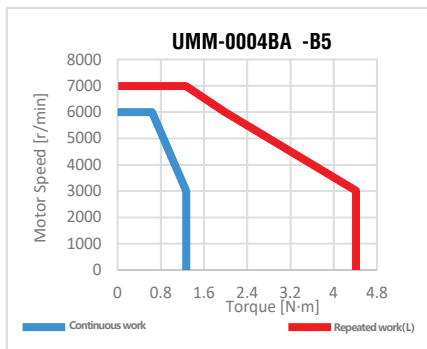
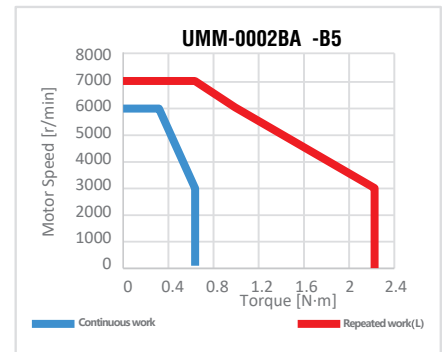
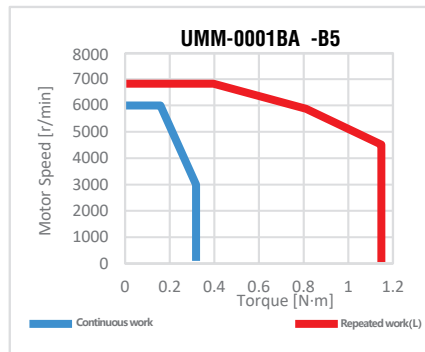
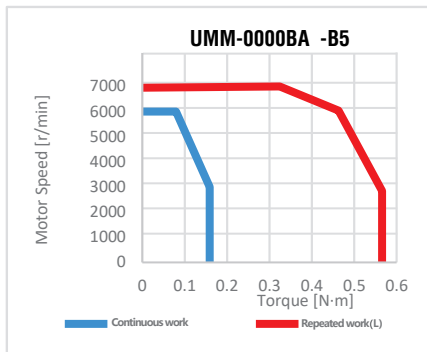
# Servo Motor Specification



## B5 Series (50W-1kW) 3000/7000rpm 200V - Small Capacity, High Speed, Low Inertia

UMM-	0000BA-B5	0001BA-B5	0002BA-B5	0004BA-B5	0007CA-B5	0010CA-B5
Flange [mm]	40	40	60	60	80	80
Rated power [kW/HP]	0.05/0.06	0.1/0.13	0.2/0.26	0.4/0.53	0.75/1	1/1.34
Rated speed[r/min]	3000	3000	3000	3000	3000	3000
Maximum speed [r/min]	7000	7000	7000	7000	7000	7000
Rated torque [N·m / lb-in]	0.159/1.4	0.318/2.81	0.637/5.63	1.27/11.23	2.39/21.15	3.18/28.14
Peak torque [N·m / lb-in]	0.557/4.92	1.11/9.82	2.23/19.73	4.46/39.47	8.37/74.07	9.54/84.42
Rated current [Arms]	0.9	1.1	1.5	2.9	5.1	6.9
Maximum current [Arms]	3.3	4	5.8	11.5	19.5	21
Motor inertia [kg·m <sup>2</sup> ×10 <sup>-4</sup> -4/lb-in <sup>2</sup> ]	0.0230(0.0268)/ 0.0078(0.00915)	0.0428(0.0465)/ 0.01462(0.01588)	0.147(0.179)/ 0.0502(0.0611)	0.244(0.276)/ 0.0833(0.0943)	0.910(1.07)/ 0.3109(0.3656)	1.14(1.30)/ 0.3895(0.4442)
Encoder type (Absolute)	23bit	23bit	23bit	23bit	23bit	23bit
Brake specification	Rated voltage	24VDC	24VDC	24VDC	24VDC	24VDC
	Holding torque[N·m/ lb-in]	≥0.32/2.832	≥0.32/2.832	≥1.5/13.276	≥1.5/13.276	≥3.2/28.32
Weight[kg/lb]	0.4(0.6) / 0.881(1.322)	0.5(0.7) / 1.102(1.543)	0.9(1.3) / 1.984(2.866)	1.3(1.7) / 2.866(3.747)	2.6(3.2) / 5.732(7.054)	3.1(3.8) / 6.834(8.377)
IP Class	IP 67					
Heat resistance class	F					

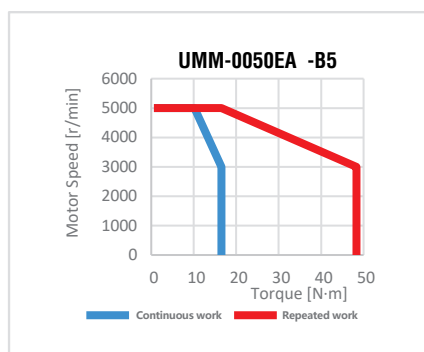
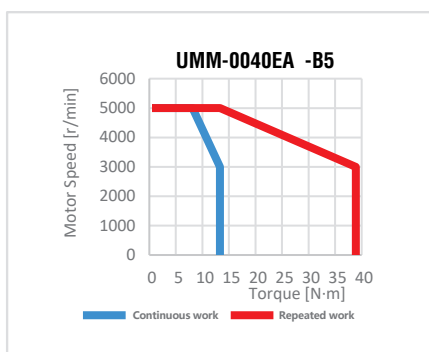
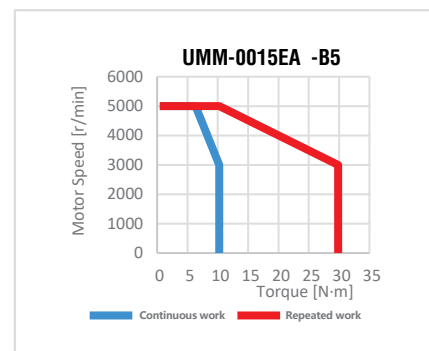
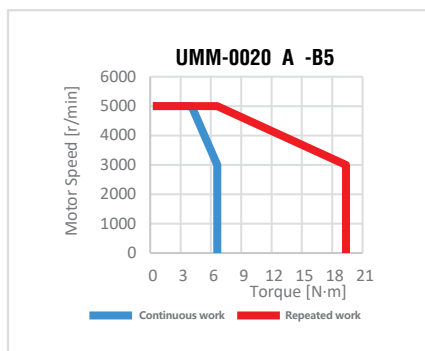
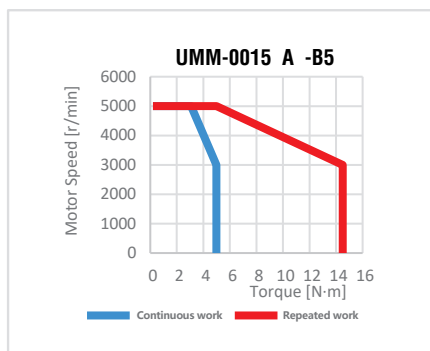
Note: The values in parentheses “( )” or “(B)” represent the values of motors with brakes.



**B5 Series (1.5-5kW) 3000/5000rpm - Medium Capacity, High Speed, Low Inertia**

UMM-	200V		400V				
	0015CA-B5	0020CA-B5	0015EA-B5	0020EA-B5	0030EA-B5	0040EA-B5	0050EA-B5
Flange [mm]	100	100	100	100	130	130	130
Rated power [kW/HP]	1.5/2.01	2/2.68	1.5/2.01	2/2.68	3/4.02	4/5.3	5 / 6.7
Rated speed[r/min]	3000	3000	3000	3000	3000	3000	3000
Maximum speed [r/min]	5000	5000	5000	5000	5000	5000	5000
Rated torque [N·m / lb-in]	4.78/42.3	6.37/56.3	4.78/42.3	6.37/56.3	9.8/86.73	12.8/113.28	15.9/40.72
Peak torque [N·m / lb-in]	14.3/126.56	19.1/169.04	14.3/126.56	19.1/169.04	29.4/260.21	38.4/339.86	47.7/422.18
Rated current [Arms]	9.5	12.6	4.9	6.4	10.5	13	15.9
Maximum current [Arms]	31.6	42	16.3	20.5	33	40	50
Motor inertia [kg·m <sup>2</sup> ×10 <sup>-4</sup> /lb-in <sup>2</sup> ]	2.33(3.10)/0.7962(1.0593)	2.95(3.72)/1.008(1.2711)	2.33(3.10)/0.7962(1.0593)	2.95(3.72)/1.008(1.2711)	7.72(9)/2.638(3.0754)	10.2(11.6)/3.4855(3.9639)	14(15.4)/4.784(5.2624)
Encoder type (Absolute)	23bit	23bit	23bit	23bit	23bit	23bit	23bit
Brake specification	Rated voltage	24VDC	24VDC	24VDC	24VDC	24VDC	24VDC
	Holding torque[N·m/lb-in]	≥8/70.8	≥8/70.8	≥8/70.8	≥8/70.8	≥20/177.01	≥20/177.01
Weight[kg/lb]	5.1(6.4)/11.24(14.109)	6.1(7.5)/13.448(16.535)	5.1(6.4)/11.24(14.109)	6.1(7.5)/13.448(16.535)	10(12)	12(14)	5.5(17.5)
IP Class	IP 65						
Heat resistance class	F						

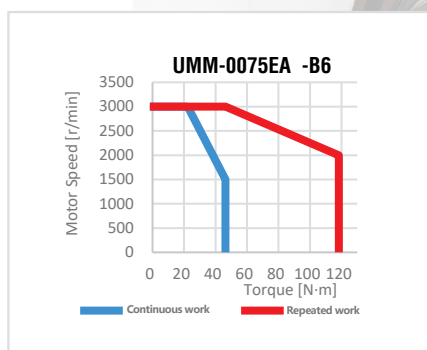
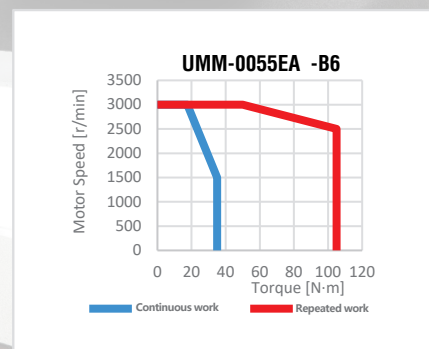
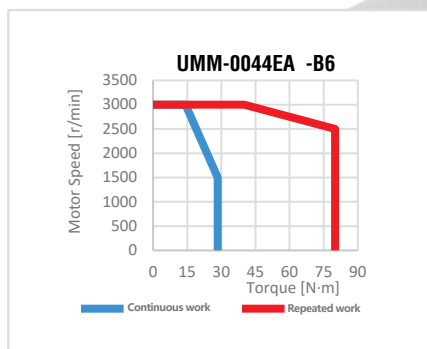
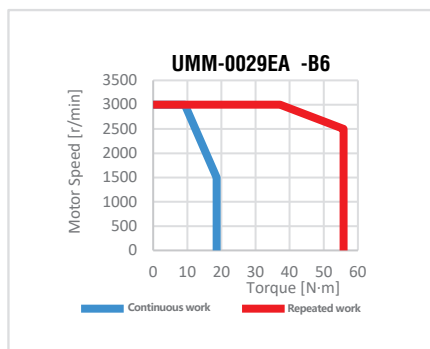
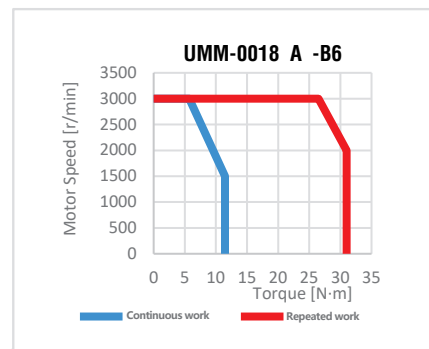
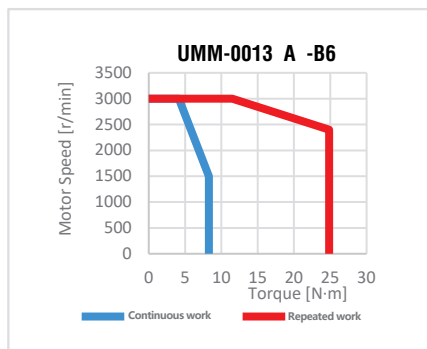
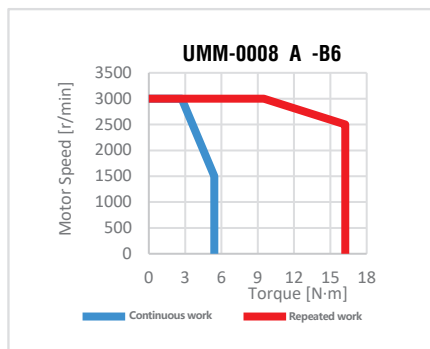
Note: The values in parentheses "( )" or "(B)" represent the values of motors with brakes.



**B6 Series (850W-7.5kW) 1500/3000rpm - Medium Capacity, Medium Speed, Medium Inertia**

UMM-		200V			400V						
		0008CA-B6	0013CA-B6	0018CA-B6	0008EA-B6	0013EA-B6	0018EA-B6	0029EA-B6	0044EA-B6	0055EA-B6	0075EA-B6
Flange [mm]		130	130	130	130	130	130	180	180	180	180
Rated power [kW/HP]		0.85/1.13	1.3/1.74	1.8/2.41	0.85/1.13	1.3/1.74	1.8/2.41	2.9/3.88	4.4/5.89	5.5/7.37	7.5/10
Rated speed[r/min]		1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Maximum speed [r/min]		3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Rated torque [N-m / lb-in]		5.41/47.88	8.28/73.28	11.5/101.78	5.41/47.88	8.28/73.28	11.5/101.78	18.6/164.62	28.4/251.36	35/309.77	48/424.83
Peak torque [N-m / lb-in]		16.2/143.38	24.8/219.49	31/274.37	16.2/143.38	24.8/219.49	31/274.37	55.8/493.87	80/708.05	105/929.32	120/1,062.08
Rated current [Arms]		6.8	9.7	14.5	3.4	5	7.1	11.5	16.8	20.3	26.5
Maximum current [Arms]		22.6	29.7	42	10.9	15.6	21.2	37	49.5	64	70
Motor inertia [kg·m <sup>2</sup> x10 <sup>-4</sup> /lb-in <sup>2</sup> ]		11.9(12.5)/4.066(4.271)	17.3(17.9)/5.911(6.116)	22.3(22.9)/7.62(7.825)	11.9(12.5)/4.066(4.271)	17.3(17.9)/5.911(6.116)	22.3(22.9)/7.620(7.825)	43.4(49.2)/14.830(16.812)	58.8(64.6)/20.092(22.074)	85.5(91.5)/29.216(31.267)	117(123)/39.98(42.031)
Encoder type (Absolute)		23bit	23bit	23bit	23bit	23bit	23bit	23bit	23bit	23bit	23bit
Brake specification	Rated voltage	24VDC	24VDC	24VDC	24VDC	24VDC	24VDC	24VDC	24VDC	24VDC	24VDC
	Holding torque[N-m/lb-in]	≥20/177	≥20/177	≥20/177	≥20/177	≥20/177	≥20/177	≥44/389.4	≥44/389.4	≥72/637.2	≥72/637.2
Weight[kg/lb]		5.6(7.3)	7.0(8.7)	8.3(10.0)	5.6(7.3)	7.0(8.7)	8.3(10.0)	14.6(18.8)	17.6(21.8)	23.2(27.8)	29.0(33.6)
IP Class		IP 65									
Heat resistance class		F									

Note: The values in parentheses "( )" or "(B)" represent the values of motors with brakes.



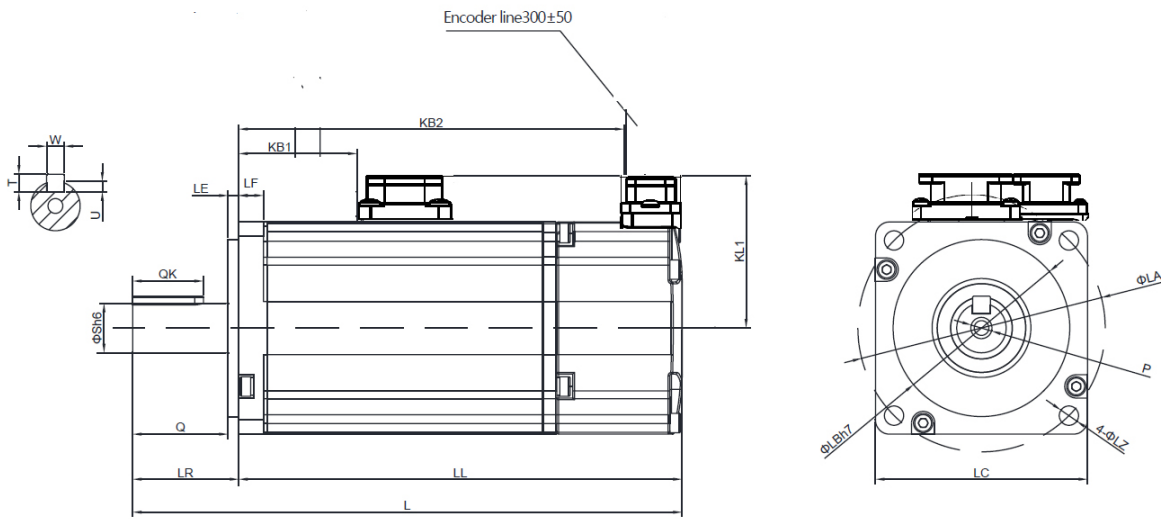


# Servo Motor Dimension



## B5 Series (50W-1kW) 3000/7000rpm 200V

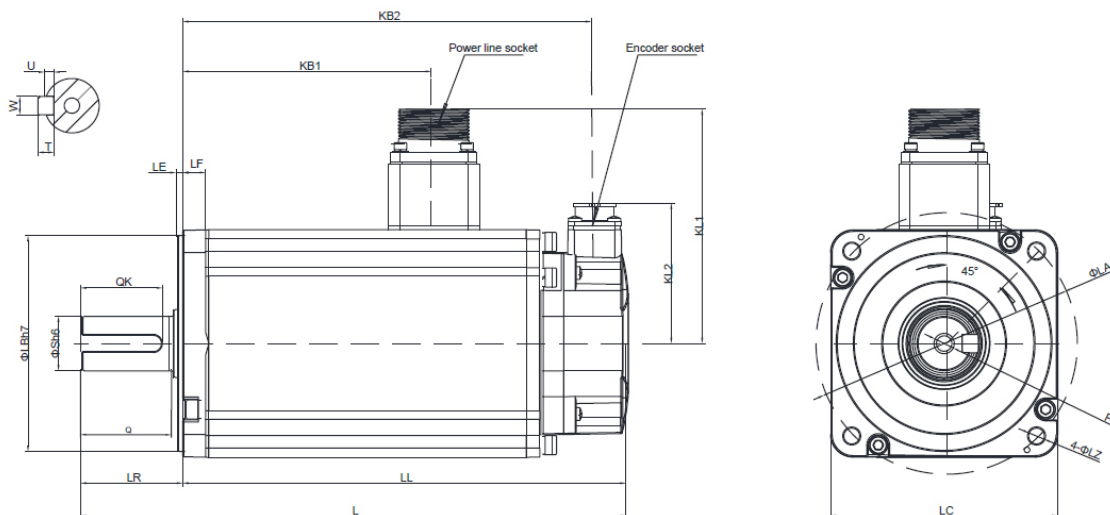
Part Number	L	LL	KB1	KB2	KL1	Flange Dimensions							S	P	Key				
						LR	LE	LF	LC	LA	LB	LZ			QK	Q	W	T	U
UMM-0000BA□-B5	87.5 (121)	62.5 (96)	22.9	52.9(86.4)	29.3	25	2.5	5	40	46	30	4.3	8	M3× 6	14	22	3	3	1.8
UMM-0001BA□-B5	103.5(137)	78.5 (112)	38.8(38.3)	68.9(102.4)	29.3	25	2.5	5	40	46	30	4.3	8	M3× 6	14	22.5	3	3	1.8
UMM-0002BA□-B5	108 (137)	78 (107)	37.4	65.1(94.1)	39.4	30	3	7	60	70	50	5.5	14	M5× 12	20	27	5	5	3
UMM-0004BA□-B5	129 (158)	99 (128)	57.8	86.1(114.8)	39.4	30	3	7	60	70	50	5.5	14	M5× 13	20	27	5	5	3
UMM-0007CA□-B5	151 (184)	111(144)	66.8	97.6(130.6)	49.6	40	3	8	80	90	70	6.6	19	M6× 12	25	37	6	6	3.5
UMM-0010CA□-B5	165 (198)	125(158)	80.8	111.6(144.6)	49.6	40	3	8	80	90	70	6.6	19	M6× 12	25	37	6	6	3.5



## B5 Series (1.5-5kW) 3000/5000rpm

Part number	L	LL	KB1	KB2	KL1	KL2	Flange Dimensions							S	P	Key				
							LR	LE	LF	LC	LA	LB	LZ			QK	Q	W	T	U
UMM-0015CA/0015EA□-B5	210(240)	165(195)	97(109)	150(180)	102	60	45	3	10	100	115	95	7	24	M8× 16	36	40	8	7	4
UMM-0020CA/0020EA□-B5	230(260)	185(215)	117(129)	170(200)	102	60	45	3	10	100	115	95	7	24	M8× 16	36	40	8	7	4
UMM-0030EA□-B5	257(289.5)	194(226.5)	160.5	179(211.6)	110	60	63	6	12	130	145	110	9	28	M8× 16	54	55	8	7	4
UMM-0040EA□-B5	284(316.5)	221(253.5)	187.5	206(238.5)	110	60	63	6	12	130	145	110	9	28	M8× 16	54	55	8	7	4
UMM-0050EA□-B5	324(356.5)	261(293.5)	227.5	246(278.5)	110	60	63	6	12	130	145	110	9	28	M8× 16	54	55	8	7	4

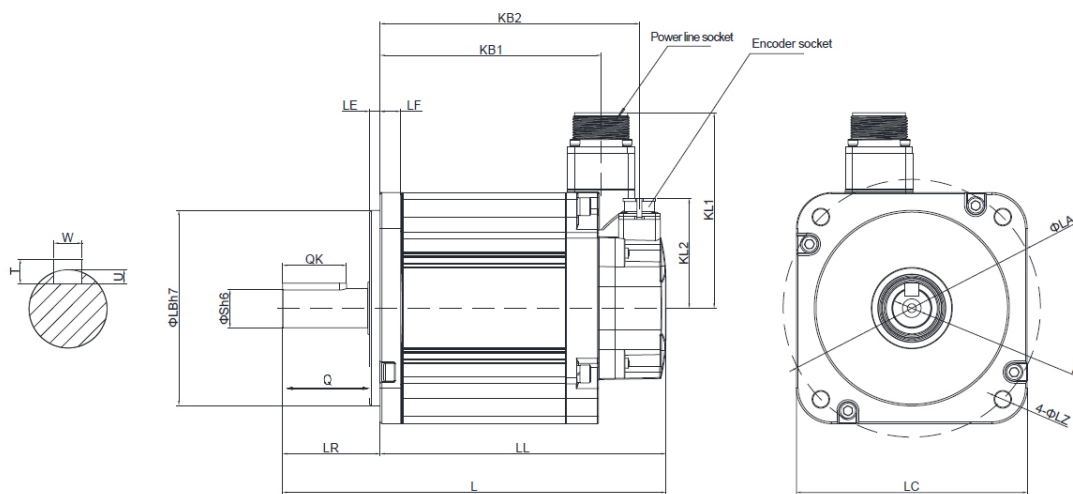
Note: The values in parentheses represent the values of motors with brakes.



## B6 Series (850W-7.5kW) 1500/3000rpm

Part number	L	LL	KB1	KB2	KL1	KL2	Flange Dimensions							S	P	Key				
							LR	LE	LF	LC	LA	LB	LZ			QK	Q	W	T	U
UMM-0008CA/008EA-B6	185(215)	131(161)	94.5	116(146)	112	60	55	6	12	130	145	110	9	22	M6× 20	32	49	8	7	4
UMM-0013CA/0013EA-B6	200(230)	146(176)	109.5	131(161)	112	60	55	6	12	130	145	110	9	22	M6× 20	32	49	8	7	4
UMM-0018CA/0018EA-B6	215(245)	161(191)	124.5	146(176)	112	60	55	6	12	130	145	110	9	22	M6× 20	32	49	8	7	4
UMM-0029EA-B6	239(284)	160(205)	135.5(139.8)	145.5(190.2)	142	60	79	3.2	18	180	200	114.3	13.5	35	M12× 25	65	75.8	10	8	5
UMM-0044EA-B6	258(303)	179(224)	154.5(158.8)	164.5(209.2)	142	60	79	3.2	18	180	200	114.3	13.5	35	M12× 25	65	75.8	10	8	5
UMM-0055EA-B6	324(377)	221(264)	186.5(198.8)	196.5(249.2)	142	60	113	3.2	18	180	200	114.3	13.5	42	M16× 32	96	109.8	12	10	5
UMM-0075EA-B6	360(413)	247(300)	222.5(234.8)	232.5(285.2)	142	60	113	3.2	18	180	200	114.3	13.5	42	M16× 32	96	109.8	12	10	5

Note: The values in parentheses represent the values of motors with brakes.





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