



# Automation and motion control BSDL and BSMS series

## BSDS and BSMS series

The newest ABB BDS and BSMS brushless servosystem series create a complete range of high dynamics/high performance packages for the motion market. This new series includes torque, speed, position control and embedded positioning system within the same system. This advanced but easy to use servosystem family is available in 3 frames with a range from 100W to 3 kW with 200V power supply and torque from 0.32 to 14,32 N·m. The applications can interact with the drive via analog +/- 10 VDC control, pulse train, embedded motion table or MODBUS RTU.



# Feature-rich, intelligent drive solutions



## Homing (Referencing / Datuming)

Homing provides a configurable approach to finding a start or reference position for an axis.



## JOG (in position or velocity control)

Jogging of an axis while maintaining position control. Combined with JERK control provides a smooth method to adjust an axis or run a conveyor for example.



## INCR/A target change on the fly

Final position of an axis can be adjusted 'on the fly' to compensate for some measurement or trigger, for example, cut to length of printed material, accurate product positioning, press feeder applications, etc.



## New servo operator BSDS-CP

The new external servo operator make easy connect a PC and can be used as standalone for changing parameters.



## Incremental / Absolute Moves

Simple point to point positioning up to 15 table points.



## BSDS Configurator

New and improved PC software for configuring the drive and embedded digital scope.



## Jerk control (S ramp)

Jerk limitation controls the rate of change of acceleration during motion, to provide a smooth control reducing shock and vibration on the load. This results in "softer" motion and improves mechanical life of the system.



## Autotuning

New generation of autotuning dynamically adjust speed and position loop to achieve the optimal performance during the motion.



## Torque control

Control the torque of the motor by 14bit analog input.



## Speed control

Control the speed of the motor by 15bit analog input.



## Filters

Two NOTCH adjustable filters and vibration suppressing permit the easiest way to obtain optimal performance.

# BSDS series servo drives

## Technology highlights

### Perfectly matched for BSMS series motors

ABB's BSDS drives offers a power range from 100 to 3000 W drives that exactly suit the BSMS series. BSDS servo drives include 2 analog inputs +/-10V for speed and torque control; in addition a fully configurable pulse train input is used for position control. The drive also include a positioning table up to 15 positions and homing capability. On board are available 2 ports using Modbus RTU and can be used to create a max31 units network.

### Common drive features

- Direct online single/tri-phase 200-240 VAC
- 100 to 3000W continuous output with 300% overload for 3 seconds
- 1500Hz bandwidth
- Improved auto tuning for better machine control
- 2 embedded notch filter for vibration suppression
- 4 antiresonance filter

### Easy programming for best performance

Parameters in the drive can be easily set by the embedded panel or by external operator that is also an USB-RS485 converter. By connecting the servo drive to a PC the following features can be readily accessible: waveform trace, parameter editing, various monitor display, alarm history, maintenance information, test run, and machine characteristic analysis, etc. In that way the user can achieve the optimum performance of the motion system.

### Modbus RTU

2 RS485 port featuring Modbus RTU 9600/19200/38400/115200 bps (connection of max. 31 units) is used for PLC, HMI or other device communications like PC's software.

### Dynamic overload

A peak overload of 300 percent of rms current maximizes available torque for dynamic acceleration. 300 percent peak torque for 3 seconds delivers faster cycle times and increase productivity.

### New style connectors

New style 6 pins connectors for the encoder signals enhance reliability and performance. For drives the line power and motor power connectors are spring type.

### I/O-digital and analog

5 DI and 3DO are used for configurable drive functions, such as end limits or home sensor or standard drive functionality.



# BSDS series servo drives

## Technical details



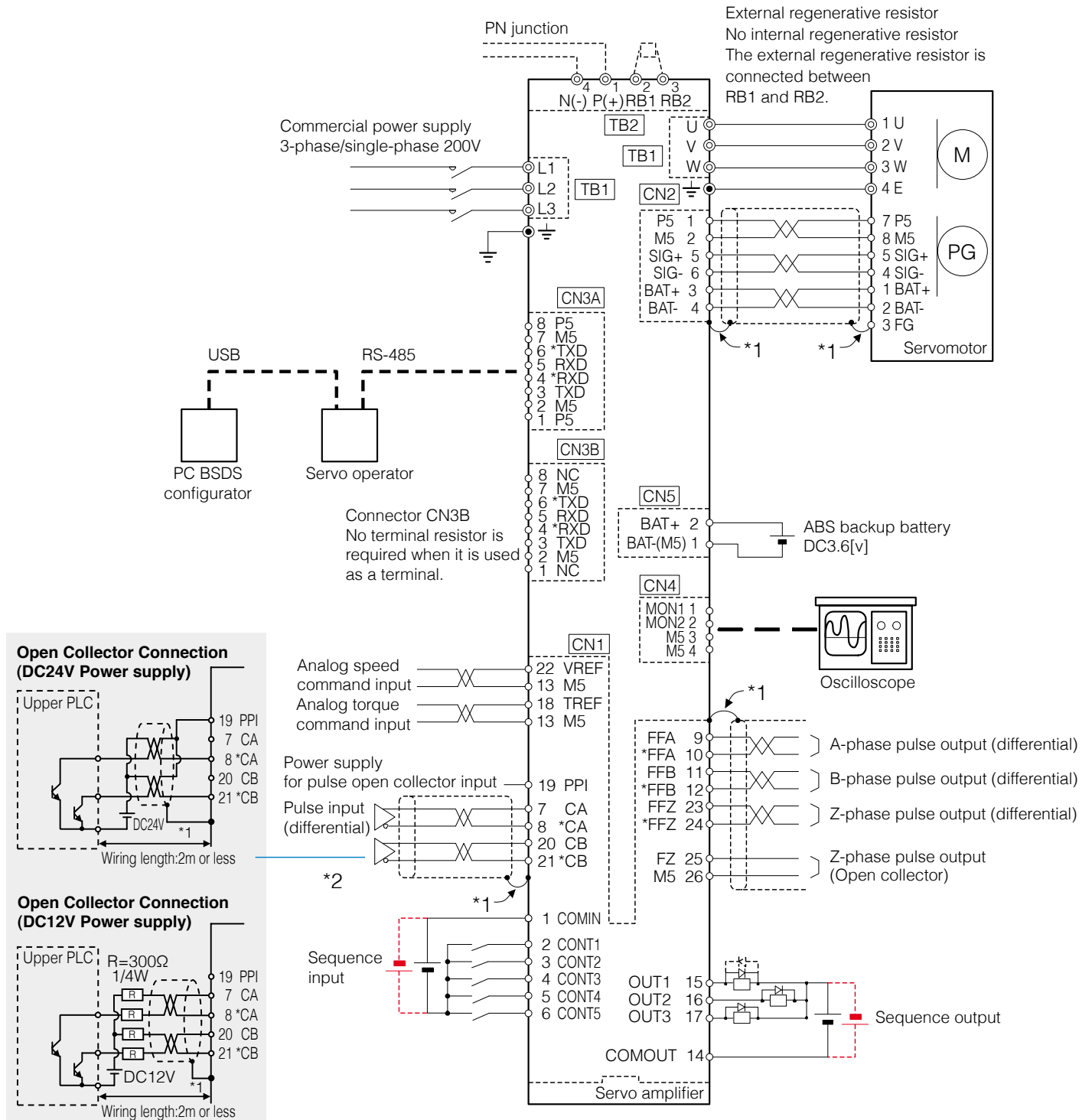
### Common specifications

<b>Applicable motor rated speed</b>		3000r/min				2000r/min				
<b>Applicable motor output</b>		[kW]	0.1	0.2	0.4	0.75	1.0	1.5	2.0	3.0
Protective construction / cooling		Open / natural cooling				Open / mechanical cooling				
Power supply		Phase	Single-phase, 3-phase				3-phase			
		Voltage / frequency	200 to 240VAC 50/60Hz							
		Allowable voltage fluctuation	3-phase : 170 to 264 VAC, Single-phase : 180 to 264 VAC							
Control system		Full digital sinusoidal PWM drive								
Max voltage for regenerative resistance W	Built-in resistor	-				20	20	45		
	External resistor	50				50		260		
Feedback		INC 20bit/rev				INC 17bit/rev				
Overload capability		300% / 3 sec.								
Speed fluctuation ratio*	Load fluctuation	Within $\pm 0.01\%$ (load fluctuation 0 to 100% at rated operation speed)								
	Power supply fluctuation	0% (power supply fluctuation -10 to +10% at rated operation speed)								
	Temperature fluctuation	Within $\pm 0.2\%$ ( $25 \pm 10^\circ\text{C}$ at rated operation speed)								
Capability and function VV type	Speed control	Closed loop control with speed adjuster, acceleration/deceleration time setting, manual feed rate/max. rotation speed, speed command zero clamp, etc.								
	Number of position data sets	15-point (position, speed, acceleration/deceleration time setting, timer, M code and various statuses)								
	Position control	Closed loop control with position adjuster, electronic gear, output pulse setting, feed forward, homing, interrupt positioning, auto startup, etc.								
	Torque control	Closed loop control with current adjuster (proportional open loop control of current and torque), torque limit, speed limit at torque control, etc.								
Accessory functions		Easy tuning, profile operation, sequence test mode, auto tuning, auto notch filter, vibration suppressing online learning, etc.								
Protective function (Alarm display)	Over Current (oc1, oc2), Over Speed (oS), High Voltage (Hu), Encoder Trouble (Et1, Et2), Circuit Trouble (ct), Data Error (dE), Combination Error (cE), Resistor Tr Heat (tH), Encoder Communication Error (Ec), Cont (CONTRol signal) Error (ctE), Over Load (oL1, oL2), Power Low Voltage (LuP), Resistor Heat (rH1, rH2, rH3), Over Flow (oF), Amp Heat (AH), Encoder Heat (EH), Absolute Data Lost (dL1, dL2, dL3), Absolute Data Over Flow (AF), Initial Error (IE)									
Operation and display section of main body (keypad)		4-digit alphanumeric display with 7-segment LED 4 operation switches (MODE, SET, UP and DOWN)								
Working conditions	Installation place	Indoors at altitude $\leq 1000\text{m}$ , free from dust, corrosive gases and direct sunlight In case of compliance with CE marking: pollution degree 2, over voltage category III								
	Temperature / humidity	-10 to $55^\circ\text{C}$ /10 to 90%RH (without condensation)								
	Vibration / shock resistance	Vibration resistance: 3mm: 2 to 9Hz or less, 9.8m/s <sup>2</sup> : 9 to 20Hz or less, 2m/s <sup>2</sup> : 20 to 55Hz or less, 1m/s <sup>2</sup> : 55 to 200Hz or less Shock resistance: 19.6m/s <sup>2</sup> (2G)								
Standards		UL/cUL (UL508c), CE marking (low voltage directive EN61800-5-1), RoHS directive (Some of the models are in the process to be certified.)								

\*This value represents the average value of the speed fluctuation that is generated from load fluctuation, power supply fluctuation, and temperature fluctuation as the percentage to the rated rotation speed.

# BSDS series servo drives

## Main circuit and control connections



Caution: The diagram shown above is given as a reference for model selection.

When actually using the servo system, make wiring connections according to the connection diagram and instruction described in the user's manual.

# BSDS series servo drives

## Interface specification

Terminal name	Symbol	Specifications
Pulse input	CA,*CA	Differential input: max. input frequency $\leq 1.0\text{MHz}$
	CB,*CB	Open collector input: max. input frequency $\leq 200\text{kHz}$ (in case of signals at 90-degree phase difference, the above relationship is true for the four-fold frequency.) Pulse format* - Command pulse/Command direction - Forward/Reverse pulse - Two signals at 90-degree phase difference
Pulse output	PPI	Pull-up power input at open collector input (24VDC $\pm 5\%$ )
	FFA,*FFA	Differential output: max. output frequency $\leq 1\text{MHz}$
	FFB,*FFB	Two signals at 90-degree phase difference Pulse output count setting n (pulses/rev): $16 \leq n \leq 262144$
	FFZ,*FFZ	Differential output: 1 pulse/rev
	FZ	Open collector output: 1 pulse/rev
Analog monitor voltage output	M5	Reference potential (0V)
	MON1	0V to $\pm 10\text{VDC}$
	MON2	Resolution: 14bits / $\pm$ full scale The output data depends on internal parameter.
Common for sequence I/O	COMIN	Common for sequence input signal
	COMOUT	Common for sequence output signal
Sequence input signal	CONT1 to CONT5	12VDC-10% to 24VDC+10% Current consumption 8mA (per contact; used at circuit voltage of 12 to 24VDC ) Function of each signal depends on parameter setting Compatible with both sink and source input methods
	COMIN	Reference potential
Sequence output signal	OUT1 to OUT3	30VDC / 50mA (max.) Function of each signal depends on parameter setting Compatible with both sink and source output methods
	COMOUT	Reference potential
Analog voltage input (for speed and torque control)	VREF	Speed command voltage input Input range: from -10 to 0 to -10V, input impedance 20k $\Omega$ Resolution: 15 bits / $\pm$ full scale
	TREF	Torque command voltage input Input range: from -10 to 0 to +10V, input impedance 20k $\Omega$ Resolution: 14 bits / $\pm$ full scale
	M5	Reference potential (0V)

\* Select one of these formats with a parameter setting.

Item	Specifications	
Command interface	Positioning function	RS-485 (Modbus-RTU), Di/Do
	Position control	Pulse input
	Speed control	Analog voltage input
	Torque control	Analog voltage input
Communication interface	Two RS-485 ports (for parameter editing and monitor)	
	Original protocol Modbus-RTU	
	9600/19200/38400/115200 bps, connection of max. 31 units	

# BSDS series servo drives

## New handy sized portable servo operator BSDS CP

Servo Operator has the following three modes depending on how it is connected:

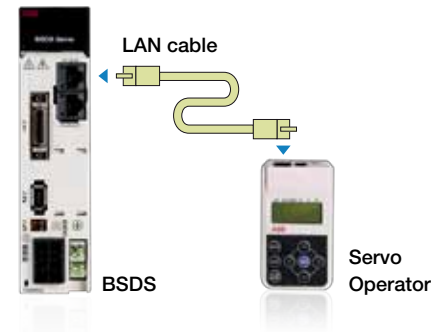
### 1. Servo Operator mode

#### Function overview

The following functions can be used for servo amps by operating Servo Operator.

- Sequence monitor
- Monitor
- Parameter copy (up to 4 copies can be saved)
- Positioning data copy (up to 2 copies can be saved)
- Alarm history copy (up to 1 copy can be saved)
- Parameter editing
- Positioning data editing
- Test operation

#### Connection drawing



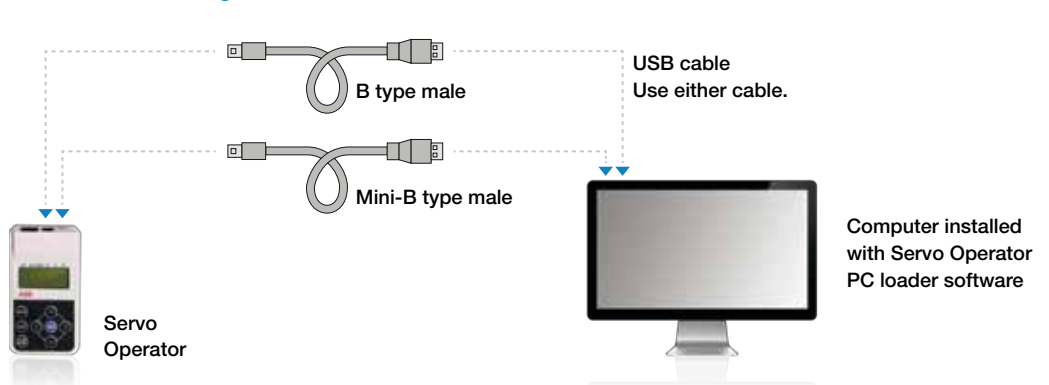
### 2. PC Loader mode

#### Function overview

The following Servo Operator data can be read and written using BSDS configurator PC software.

- Parameters
- Positioning data
- Alarm history data

#### Connection drawing

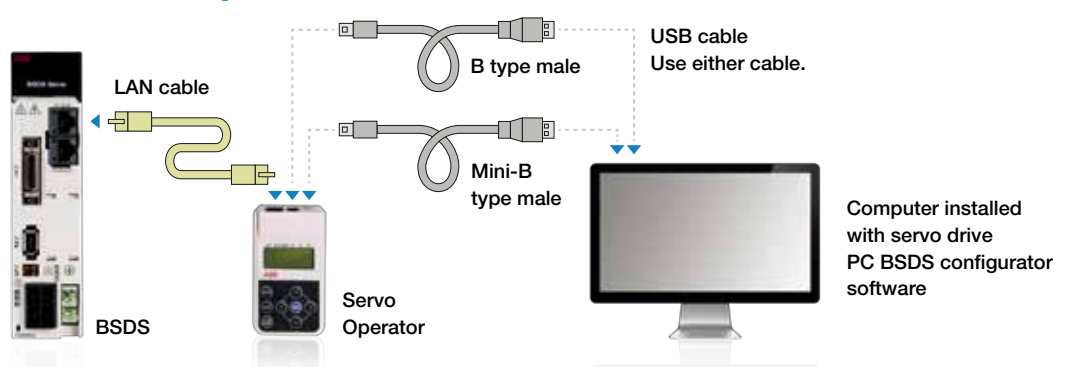


### 3. Through mode

#### Function overview

Can be used as a USB-RS485 converter when using BSDS configurator PC software.

#### Connection drawing



All versions of PC Loader can be downloaded free of charge from the ABB ([www.abb.com](http://www.abb.com)).

This product does not come with a cable for connecting servo amps to a computer. Cables satisfying the following specifications should be purchased by the customer.

- LAN cable Straight, 100BASE-TX or 1000BASE-T, 15 [m] or shorter USB cable USB standard compliant;
- A type male connector - mini-B type male connector, or A type male connector male - B type male connector
- Use either one of these USB cables. Only the USB cable connected first will be recognized.

Connect the amp connector to CN3A(IN), and the computer connector to the A type connector. Do not connect to CN3B(OUT).

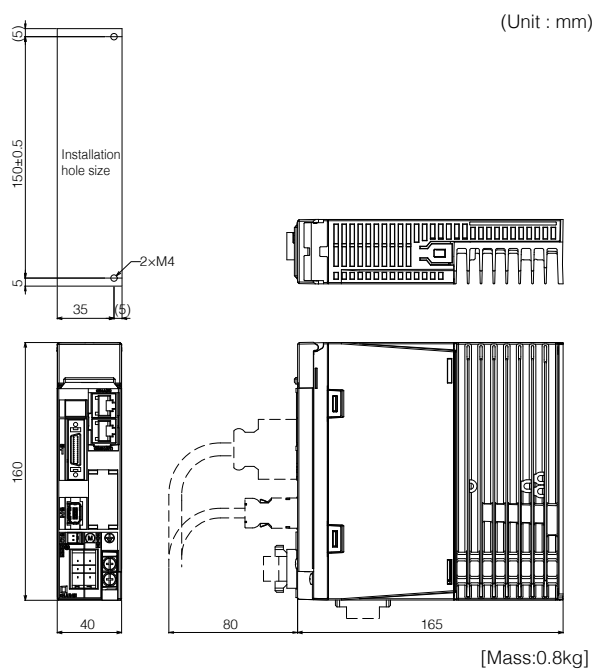


# BSDS series servo drives

## Dimensions

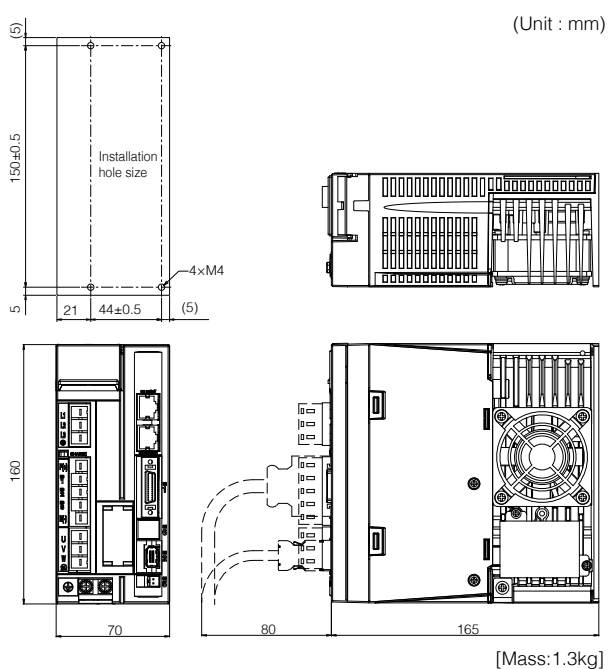
### Frame 1

Applicable motor output	Type
200W, 100W	BSDS0200/BSDS0100
400W	BSDS0400



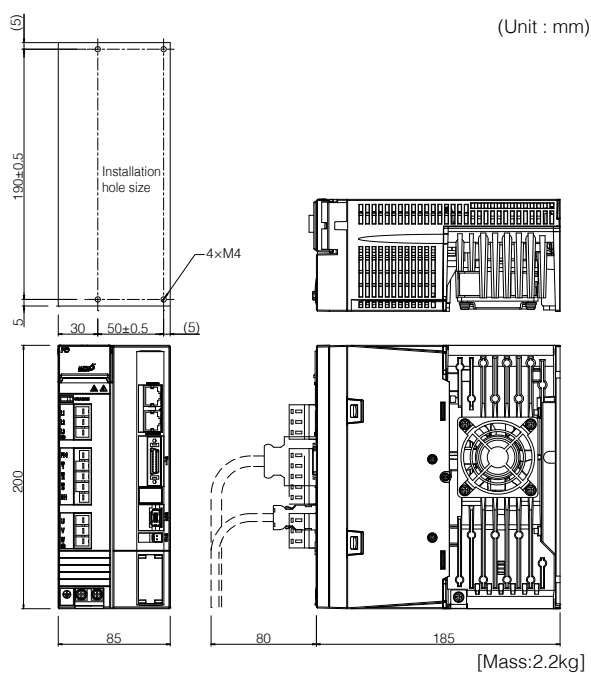
### Frame 2

Applicable motor output	Type
750W, 1.0kW	BSDS0750/BSDS1000
1.5kW, 2.0kW	BSDS1500/BSDS2000



### Frame 3

Applicable motor output	Type
3.0kW	BSDS3000



# BSMS series motors

## Technology highlights

### BSMS servomotors for high dynamic precision motion

Thanks to its high torque density and low rotor inertia, the BSMS series servomotor is perfect for highly dynamic, precision motion. All the motors are equipped with full digital serial incremental encoder. Motors up to 750W takes benefits from the new 20bit encoder and maximum rotation speed of 6000rpm.

BSMS Series motors are IP67 (excluding shaft housing). With a power ratings from 100 to 3kW watts, the range is available with an optional holding brake. Same mechanical dimension of the flange and shaft of the previous series provide full mechanical compatibility.

### Practical installation options

A complete choice of motor and encoder cables provide great flexibility and save installation costs.

### Dynamic performance

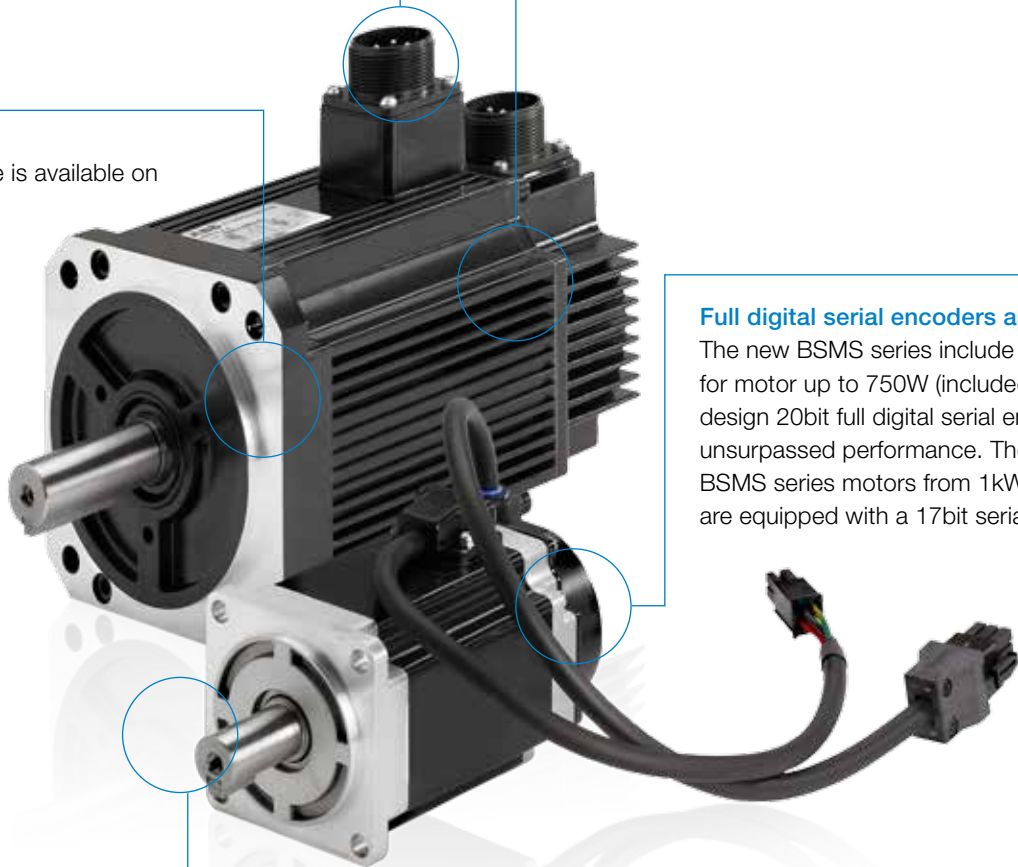
With a choice of 100, 200, 400, 750, 1000, 1500, 2000 and 3000 W output and continuous torque from 0.32 to 14,32 N·m.

### Brake option

A 24 V DC holding brake is available on the whole series.

### Full digital serial encoders as standard

The new BSMS series include as standard for motor up to 750W (included) the new design 20bit full digital serial encoder for unsurpassed performance. The other BSMS series motors from 1kW to 3 kW are equipped with a 17bit serial encoder.



### Compact and rugged brushless motors

Available in a range from 100W to 3kW with high torque to inertia ratio and rapid acceleration capability.

### Approvals and certification

BSMS series motors have UL, cUL TUV certification and CE marking.



# BSMS series motors

## Technical details (3000 rpm)



### Standard specifications

Motor type (-B) indicates the brake-incorporated type	BSMS0100C□00	BSMS0200C□00	BSMS0400C□00	BSMS0750C□00
Rated output	kW 0.1	0.2	0.4	0.75
Rated torque	N · m 0.318	0.637	1.27	2.39
Rated speed	r/min 3000			
Max. speed	r/min 6000			
Max. torque	N · m 0.955	1.91	3.82	7.17
Inertia	kg · m <sup>2</sup> 0.0371×10 <sup>-4</sup>	0.24 × 10 <sup>-4</sup>	0.42 × 10 <sup>-4</sup>	1.43 × 10 <sup>-4</sup>
( ) indicates brake-incorporated type	(0.0402×10 <sup>-4</sup> )	(0.29 × 10 <sup>-4</sup> )	(0.46 × 10 <sup>-4</sup> )	(1.61 × 10 <sup>-4</sup> )
Rated current	A 0.85	1.5	2.7	5.2
Max. current	A 2.55	4.5	8.1	15.6
Winding insulation class	Class B			
Degree of enclosure protection	Totally enclosed, self-cooled (IP 67, excluding the shaft-through)*			
Terminals (motor)	Cable 0.3m (with connector)		0.3m cable	
Terminals (encoder)	Cable 0.3m (with connector)		0.3m cable	
Overheat protection	Not provided (The servo amplifier detects temperature.)			
Mounting method	By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53)			
Encoder	18-bit serial encoder (absolute/incremental), 20-bit serial encoder (incremental)		20-bit serial encoder (incremental)	
Vibration level	V5 or below			
Installation place, altitude and environment	For indoor use (free from direct sunlight), 1000m or below, locations without corrosive and flammable gases, oil mist and dust			
Ambient temperature, humidity	-10 to +40°C, within 90% RH (without condensation)			
Vibration resistance	m/s <sup>2</sup> 49			
Mass	kg 0.55	1.0	1.5	3.0
( ) indicates brake-incorporated type	(0.72)	(1.5)	(2.1)	(3.9)
Compliance with standards	UL/cUL (UL1004), CE marking (EN60034-1, EN60034-5), RoHS directive		UL/cUL (UL508c) (Some models are in the process to be certified), CE marking (low power directive EN61800-5-1), RoHS directive.	

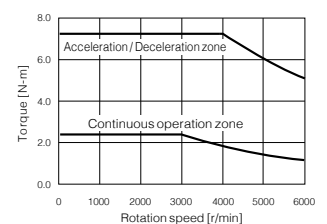
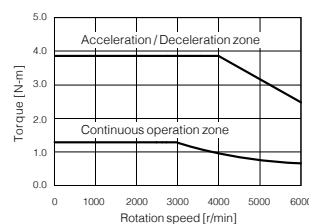
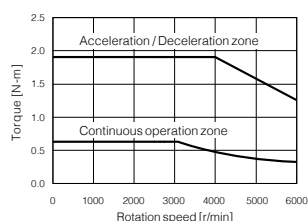
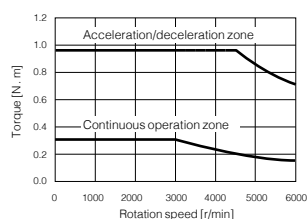
\* Protection degree IP67 is initial value

### Brake specifications (motor equipped with a brake)

Motor type	BSMS0100CB00	BSMS0200CB00	BSMS0400CB00	BSMS0750CB00
Static friction torque	N · m 0.34	1.27		2.45
Rated DC voltage	V DC24±10%			
Attraction time	ms 35	40		60
Release time	ms 10	20		25
Power consumption	W 6.1 (at 20 °C)	7.2 (at 20 °C)		8.5 (at 20 °C)

### Torque characteristics diagrams (at 3-phase 200 [V] or single-phase 230 [V] source voltage)

BSMS0100C□00	BSMS0200C□00	BSMS0400C□00	BSMS0750C□00
0.1kW	0.2kW	0.4kW	0.75kW



These characteristics indicate typical values of each servomotor combined with the corresponding servo amplifier BSDS series.

The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink.

Model BSMD0100: 200 x 200 x 6 [mm] - Model BSMS0200,400 : 250 × 250 × 6 [mm] - Model BSMS0750 : 300 × 300 × 6 [mm]

# BSMS series motors

## Technical details (2000 rpm)



### Standard specifications

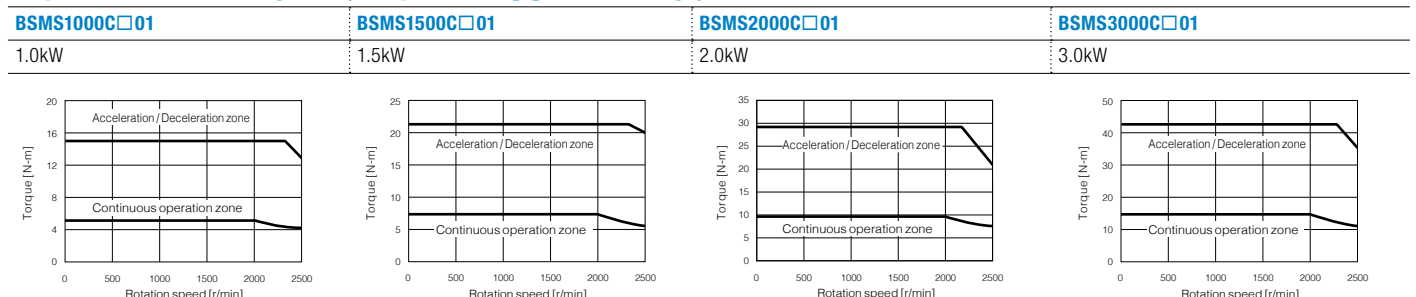
Motor type (-B) indicates the brake-incorporated type	BSMS1000□01	BSMS1500□01	BSMS2000□01	BSMS3000□01
Rated output	kW 1.0	1.5	2.0	3.0
Rated torque	N · m 4.77	7.16	9.55	14.32
Rated speed	r/min 2000			
Max. speed	r/min 2500			
Max. torque	N · m 14.3	21.4	28.6	42.9
Inertia	kg · m <sup>2</sup> 6.26 × 10 <sup>-4</sup>	8.88 × 10 <sup>-4</sup>	12.14 × 10 <sup>-4</sup>	17.92 × 10 <sup>-4</sup>
( ) indicates brake-incorporated type	(6.96 × 10 <sup>-4</sup> )	(9.58 × 10 <sup>-4</sup> )	(12.84 × 10 <sup>-4</sup> )	(18.62 × 10 <sup>-4</sup> )
Rated current	A 5.1	7.3	9	13.7
Max. current	A 15.3	21.9	27	41.1
Winding insulation class	Class F			
Degree of enclosure protection	Totally enclosed, self-cooled (IP 67, excluding the shaft-through)*			
Terminals (motor)	Cannon connector			
Terminals (encoder)	Cannon connector			
Overheat protection	Not provided (The servo amplifier detects temperature.)			
Mounting method	By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53)			
Encoder	17-bit serial encoder (incremental)			
Vibration level	V15 or below			
Installation place, altitude and environment	For indoor use (free from direct sunlight), 1000m or below, locations without corrosive and flammable gases, oil mist and dust			
Ambient temperature, humidity	0 to +40°C (there should be no freezing), within 90% RH (without condensation)			
Vibration resistance	m/s <sup>2</sup> 19.6			
Mass	kg 6.5	8.1	10.2	13.9
( ) indicates brake-incorporated type	(8.1)	(9.7)	(11.8)	(15.5)

\* If the motor is used in the environment rated to IP67 protection degree, use the wiring connector suitable for the protection degree.

### Brake specifications (motor equipped with a brake)

Motor type	BSMS1000CB01	BSMS1500CB01	BSMS2000CB01	BSMS3000CB01
Static friction torque	N · m 20			
Rated DC voltage	V DC24±10%			
Attraction time	ms 100			
Release time	ms 27			
Power consumption	W 19.5 (at 20°C)			

### Torque characteristics diagrams (at 3-phase 200 [V] source voltage)

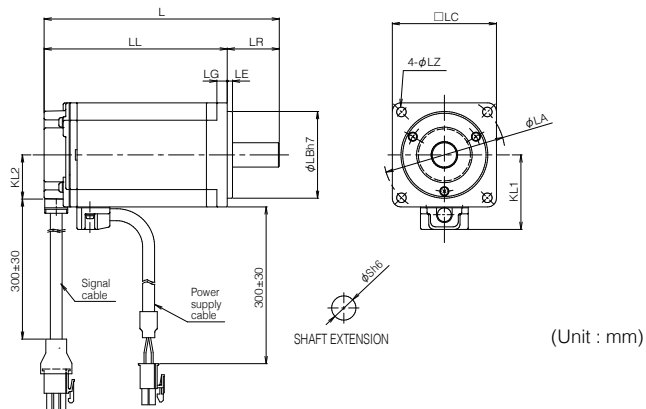


These characteristics indicate typical values of each servomotor combined with the corresponding servo amplifier BSDS series. The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink. Model BSMS1000, 1500, 2000 and 3000 : 400 × 400 × 12 [mm]

# BSMS series motors

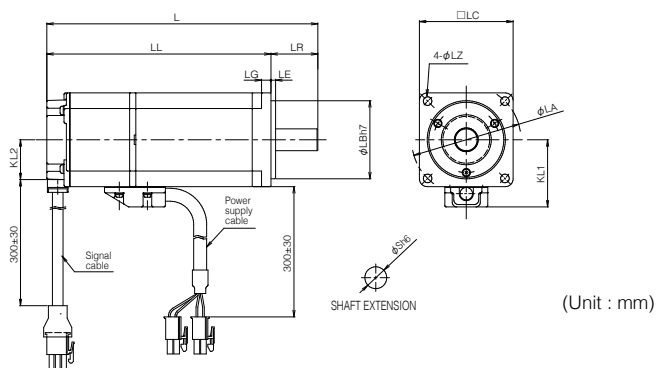
## Dimensions (3000 rpm)

Without Brake

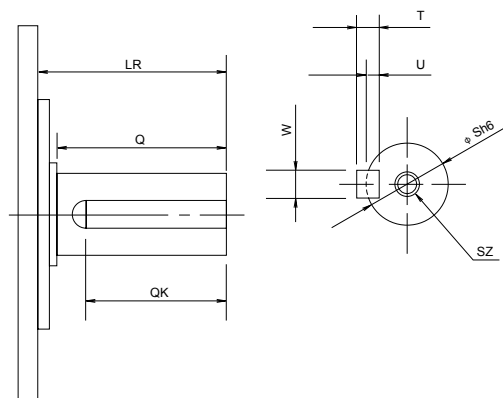


Rated speed r/min	Rated output kW	Model codes (without brake)	L	LL	Flange dimensions									S	Mass kg
					LR	LG	LE	LB	KL2	LC	LA	LZ	KL1		
3000	0.1	BSMS0100CN00	107	82	25	5	2.5	30	21	40	46	4.3	33	8	0.55

With Brake



Rated speed r/min	Rated output kW	Model codes (with brake)	L	LL	Flange dimensions									S	Mass kg
					LR	LG	LE	LB	KL2	LC	LA	LZ	KL1		
3000	0.1	BSMS0100CB00	141.5	116.5	25	5	2.5	30	21	40	46	4.3	33	8	0.72

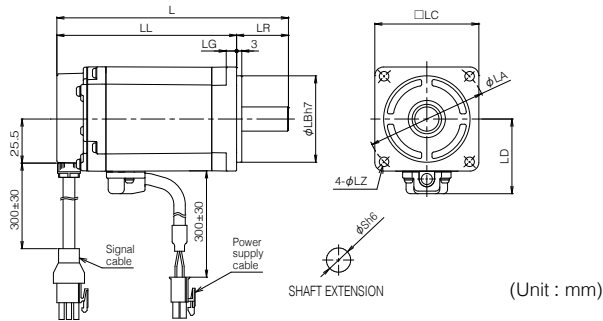


Motor type	LR	Q	QK	S	T	U	W	SZ
BSMS0100Cx00	25	--	14	8	3	1,8	3	M2,5 H5

# BSMS series motors

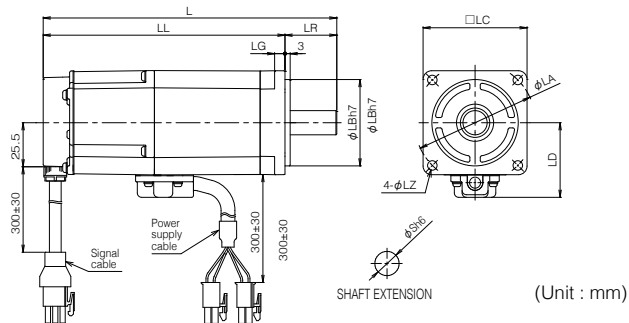
## Dimensions (3000 rpm)

Without Brake

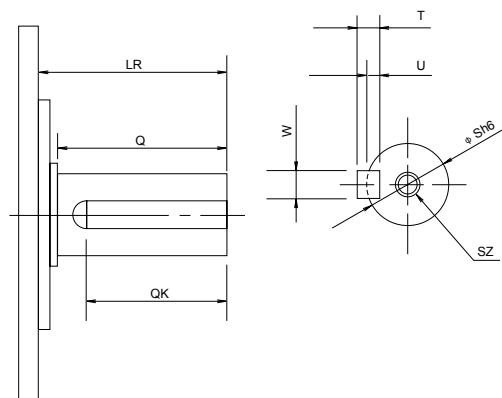


Rated speed r/min	Rated output kW	Model codes (without brake)	L	LL	Flange dimensions							S	Mass kg
					LR	LG	LB	LC	LA	LD	LZ		
3000	0.2	BSMS0200CN00	112	82	30	6	50	60	70	43	5.5	11	1.0
	0.4	BSMS0400CN00	134	104	30	6	50	60	70	43	5.5	14	1.5
	0.75	BSMS0750CN00	157	117	40	8	70	80	90	53	7	19	3.0

With Brake



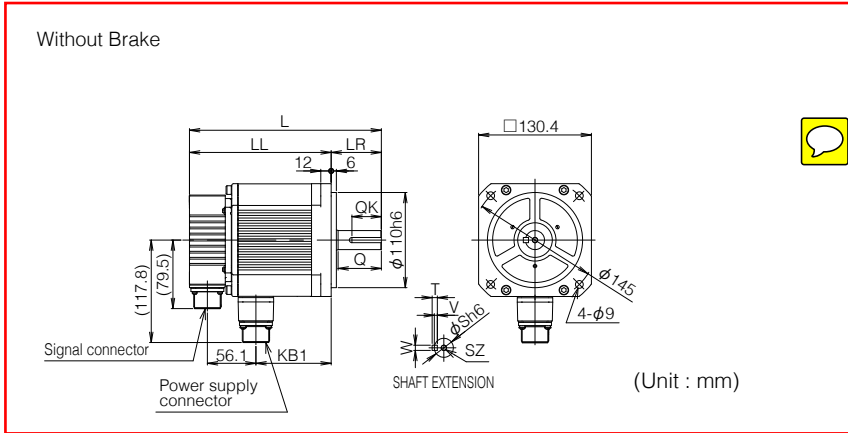
Rated speed r/min	Rated output kW	Model codes (with brake)	L	LL	Flange dimensions							S	Mass kg
					LR	LG	LB	LC	LA	LD	LZ		
3000	0.2	BSMS0200CB00	148	118	30	6	50	60	70	43	5.5	11	1.0
	0.4	BSMS0400CB00	170	140	30	6	50	60	70	43	5.5	14	1.5
	0.75	BSMS0750CB00	194.5	154.5	40	8	70	80	90	53	7	19	3.0



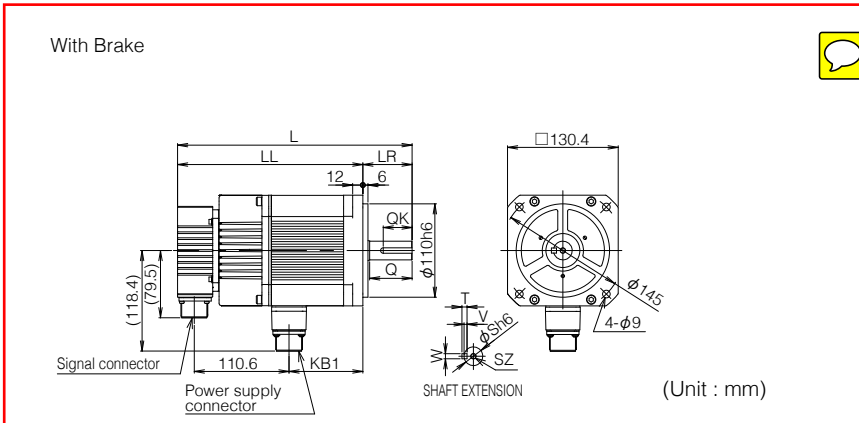
Motor type	LR	Q	QK	S	T	U	W	SZ
BSMS0200Cx00	30	--	14	11	5	3	5	M5 H8
BSMS0400Cx00	30	--	14	14	5	3	5	M5 H8
BSMS0750Cx00	40	--	22	19	6	3.5	6	M6 H10

# BSMS series motors

## Dimensions (2000 rpm)



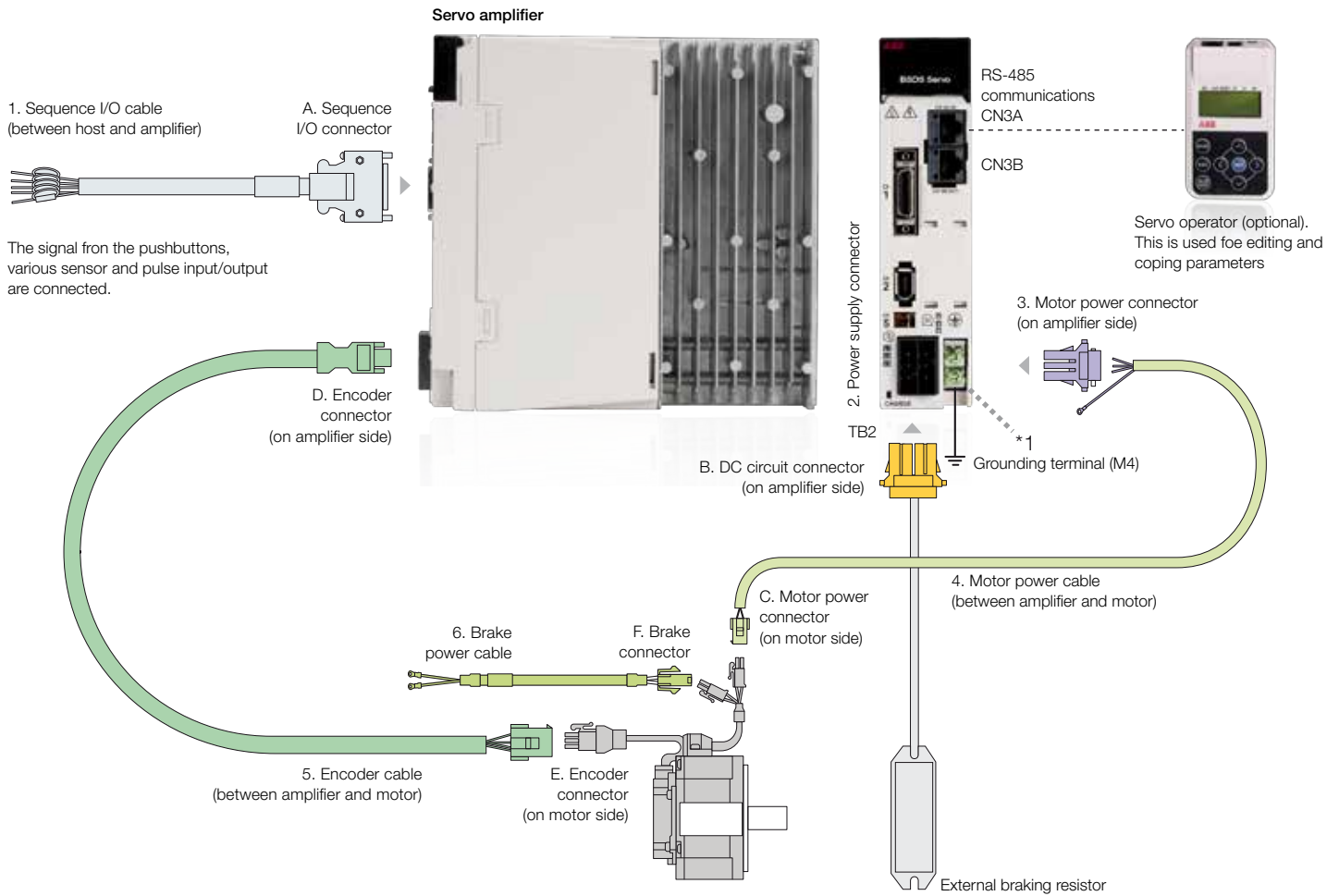
Rated speed r/min	Rated output kW	Model codes (without brake)	Fig	L	LL	LR	S	Q	QK	W	T	V	SZ	KB1
2000	1.0	BSMS1000CN01	A	221.8	163.8	58	22	50	35	6	6	3.5	M6 depth:15	87
	1.5	BSMS1500CN01	A	241.8	183.8	58	22	50	35	6	6	3.5	M6 depth:15	107
	2.0	BSMS2000CN01	A	271.8	213.8	58	22	50	35	6	6	3.5	M6 depth:15	137
	3.0	BSMS3000CN01	A	321.8	263.8	58	22	50	35	6	6	3.5	M6 depth:15	187



Rated speed r/min	Rated output kW	Model codes (with brake)	Fig	L	LL	LR	S	Q	QK	W	T	V	SZ	KB1
2000	1.0	BSMS1000CB01	C	276.3	218.3	58	22	50	35	6	6	3.5	M6 depth:15	87
	1.5	BSMS1500CB01	C	296.3	238.3	58	22	50	35	6	6	3.5	M6 depth:15	107
	2.0	BSMS2000CB01	C	326.3	268.3	58	22	50	35	6	6	3.5	M6 depth:15	137
	3.0	BSMS3000CB01	C	376.3	318.3	58	22	50	35	6	6	3.5	M6 depth:15	187

# BSDS and BSMS series

## Options and cables



\*1: "power supply connector" and "motor power connector on amplifier side" are shared with the models with the motor output of 0.4 kW or less.

### External braking resistor

Drive code	Rated Power	Built in resistor	External braking resistor	W	Ohm	Ohm value
BSDS100	100	-	BSR6850	50	68	39 to 180
BSDS200	200	-	BSR6850	50	68	39 to 180
BSDS400	400	-	BSR6850	50	68	39 to 90
BSDS750	750	20 W / 40 Ohm	BSR1550	50	15	13 to 47
BSDS1000	1000	20 W / 40 Ohm	BSR1550	50	15	13 to 47
BSDS1500	1500	20 W / 15 Ohm	BSR10260	260	10	8.2 to 27
BSDS2000	2000	20 W / 15 Ohm	BSR10260	260	10	8.2 to 27
BSDS3000	3000	45 W / 12 Ohm	BSR10260	260	10	8.2 to 20



Motor code	Rated Power	Brake	Connectors and kits					
			1. Sequence I/O cable 3m*	A. Sequence I/O connector	2. Power supply connector	B. DC circuit connector/resistor*	Motor power connector 3. on amplifier side	C. on motor side
BSMS0100Cx00	100	W/o	BS1SG90026BM030	BSC1KSG	BSCSKIT01	BSCSKIT01	BSCSKIT01	BSCS1KIT
		W/						
BSMS0200Cx00	200	W/o						
		W/						
BSMS0400Cx00	400	W/o						
		W/						
BSMS0750Cx00	750	W/o			BSCSKIT02	On board	BSCSKIT02	
		W/						
BSMS1000Cx01	1000	W/o						BSCS2PT
		W/						BSCS2PTFR
BSMS1500Cx01	1500	W/o						BSCS2PT
		W/						BSCS2PTFR
BSMS2000Cx01	2000	W/o						BSCS2PT
		W/						BSCS2PTFR
BSMS3000Cx01	3000	W/o						BSCS2PT
		W/						BSCS2PTFR

\* Between host and drive

Motor code	Rated Power	Brake	Connectors and kits			Cables (Flex)		
			D. Encoder connector on amplifier side	E. on motor side	F. Brake connector	4. Motor power cable**	5. Encoder cable*	6. Brake power cable
BSMS0100Cx00	100	W/o	BSCS1KIT	BSCS1KIT	BSCS1KIT	BSC1PN9A005BMxxx	BSC1ES99840BMxxx	-
		W/						BSC1FR9A005BMxxx
BSMS0200Cx00	200	W/o						-
		W/						BSC1FR9A005BMxxx
BSMS0400Cx00	400	W/o						-
		W/						BSC1FR9A005BMxxx
BSMS0750Cx00	750	W/o						-
		W/						BSC1FR9A005BMxxx
BSMS1000Cx01	1000	W/o	BSCS2EN	BSCS2EN	Integrated with motor power connector	BSC2PN9C010BMxxx	BSC2ES99840BMxxx	-
		W/				BSC2PB9C010BMxxx		-
BSMS1500Cx01	1500	W/o				BSC2PN9C010BMxxx		-
		W/				BSC2PB9C020BMxxx		-
BSMS2000Cx01	2000	W/o				BSC2PN9C020BMxxx		-
		W/				BSC2PB9C020BMxxx		-
BSMS3000Cx01	3000	W/o				BSC2PN9C020BMxxx		-
		W/				BSC2PB9C020BMxxx		-

\*\* Between drive and motor

The xxx have to be replaced with the cable length in meter x10: available are 025,050,075,100,150,200 which correspond a length of 2.5, 5, 7.5, 10, 15 and 20 meters

## Selecting the right BSDS/BSMS servosystem

Power W	Drive	Motor without brake	Motor with brake	Rated speed	Max speed	Rated torque	Max torque
100	BSDS0100	BSMS0100CN00	BSMS0100CB00	3000	6000	0,32	0,96
200	BSDS0200	BSMS0200CN00	BSMS0200CB00	3000	6000	0,64	1,91
400	BSDS0400	BSMS0400CN00	BSMS0400CB00	3000	6000	1,27	3,82
750	BSDS0750	BSMS0750CN00	BSMS0750CB00	3000	6000	2,39	7,17
1000	BSDS1000	BSMS1000CN01	BSMS1000CB01	2000	2500	4,77	14,3
1500	BSDS1500	BSMS1500CN01	BSMS1500CB01	2000	2500	7,16	21,5
2000	BSDS2000	BSMS2000CN01	BSMS2000CB01	2000	2500	9,55	28,6
3000	BSDS3000	BSMS3000CN01	BSMS3000CB01	2000	2500	14,32	42,9

Having calculated your application torque and speed requirements, use the following speed/torque table and select the most suitable BSMS motor (you can choose version with or without brake) and couple it with the BSDS drive in the same row.



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