MINAS-BL KV series

Speed Control Type

50 W to 750 W

• 60 mm square 200 W

Contents

Check the model number

<Motor>

MBMS 08 2 B L ○

Type

- **Motor rated output**
  5A: 50 W
  01 : 100 W
  02 : 200 W
  04 : 400 W
  08 : 750 W
- **Input power supply**
  1 : 100 V
  2 : 200 V
  Z : 100 V/200 V
- **Mounting method**
  L : Flange type
- **Rated rotation speed**
  B: 3000 r/min
- **Motor specifications**
  ○: Refer to the table below.

		Shaft		
		Round	Keyway, center tap	D-cut
Oil seal	without	A	S	N
	with	C	U	Q

<Brushless amplifier>

MBEK 08 3 B C V

Type

- **Motor rated output**
  5A: 50 W
  01 : 100 W
  02 : 200 W
  04 : 400 W
  08 : 750 W
- **Function 1**
  B: with circuit for regenerative resistor
- **Input power supply**
  1: Single phase AC100 V to 120 V
  3: 3-phase AC200 V to 240 V
  5: Single phase/ 3-phase AC200 V to 240 V
- **Function 2**
  C: RS485 communication,
  Signal input/Sink type (NPN transistor)
  D: RS485 communication,
  Signal input/Source type (PNP transistor)
  Source type made to order item.
  Please contact us if you'd like detailed information.
- **Control mode**
  V: speed control

Brushless motor specifications

Item	Specifications						
Flange size	38 mm sq.	60 mm sq.					80 mm sq.
Motor model No. *1	MBMS5AZBL○	MBMS011BL○	MBMS012BL○	MBMS021BL○	MBMS022BL○	MBMS042BL○	MBMS082BL○
Motor rated output (W)	50	100		200		400	750
Voltage (V)	for 100/200	for 100	for 200	for 100	for 200	for 200	
Rated torque (N·m)	0.16	0.32		0.64		1.27	2.4
Starting torque*2 (N·m)	0.30	0.70		1.4		3.0	5.5
Rated input current (A(rms))	0.7	1.2	0.7	2.9	1.8	2.8	3.6
Moment of inertia of rotor ($\times 10^{-4}$ kg·m^2)	0.025	0.07		0.14		0.26	0.87
Rating	Continuous						
Rated rotation speed*3 (r/min)	3000						
Speed control range (r/min)	100 to 4000						
Ambient temperature	0 °C to +40 °C (free from freezing) * Ambient temperature is measured at a distance of 5 cm from the motor.						
Ambient humidity	20 % to 85 % RH (free from condensation)						
Altitude	Lower than 1000 m						
Vibration	24.5 m/s^2 or less X,Y,Z (Center of frame)						
Motor insulation class	130(B)						
Protection structure	IP65*4,*5						
Number of poles	8						
Motor mass (kg)	0.32	0.63		0.80		1.2	2.3

*1 Suffix of "○" in the motor model represents shape of shaft.
*2 Representative value
*3 Motor shaft speed: to be multiplied by the reduction ratio when the gear head is used.
*4 Excluding the shaft pass-through section and cable end connector.
*5 These motors conform to the test conditions specified in EN standards (EN60529, EN60034-5).
Do not use these motors in application where water proof performance is required such as continuous wash-down operation.

Brushless amplifier specifications (KV series)

Item		Specifications									
Amplifier model No.		MBEK5A1BCV	MBEK5A5BCV		MBEK011BCV	MBEK015BCV		MBEK021BCV	MBEK025BCV		MBEK043BCV	MBEK083BCV
Applicable Motor *1		MBMS5AZBL○			MBMS011BL○	MBMS012BL○		MBMS021BL○	MBMS022BL○		MBMS042BL○	MBMS082BL○
Motor rated output (W)		50			100			200			400	750
Input power supply voltage (V)		Single phase 100 to 120	Single phase 200 to 240	3-phase 200 to 240	Single phase 100 to 120	Single phase 200 to 240	3-phase 200 to 240	Single phase 100 to 120	Single phase 200 to 240	3-phase 200 to 240	3- phase 200 to 240	
Frequency (Hz)		50/60										
Rated input current (A)		1.8	0.9	0.5	2.4	1.2	0.7	4.2	2.1	1.2	2.1	4.0
Voltage tolerance		±10 %										
Control method		Speed control by CS signal, PWM sine wave driving system										
Ambient temperature		0 °C to +50 °C (free from freezing) * Ambient temperature is measured at a distance of 5 cm from the amplifier.										
Ambient humidity		20 % to 85 % RH (free from condensation)										
Location		Indoor (No corrosive gas, A place without garbage, and dust)										
Altitude		Lower than 1000 m										
Vibration		5.9 m/s^2 or less (10 Hz to 60 Hz)										
Protection structure/ Cooling system		Equivalent to IP20/ Self cooling										
Storage temperature		Normal temperature * Temperature which is acceptable for a short time, such as during transportation is –20 °C to 60 °C (free from freezing)										
Storage humidity		Normal humidity										
Rated rotation speed		3000 r/min										
Speed control range		100 r/min to 4000 r/min										
Speed fluctuation factor	With load	±0.5 % or below (at 0 to Rated torque, Rated rotation speed)										
	With voltage	±0.5 % or below (at supply voltage ±10 %, rated rotation speed)										
	With temperature	±0.5 % or below (at 0 °C to 50 °C, rated rotation speed)										
Acceleration/ Deceleration time		0.01 sec to 300 sec (time for changing 1000 r/min)*2										
Stopping procedure		Slowdown stop/ Free-run stop*2										
Speed setting		0 r/min to 4000 r/min (analogue voltage (0 V to 5 V), console A), 0 r/min to 4000 r/min (Setting selection by parameter on Digital key pad)										
Speed setting resolution		Analog: approx. 1/200 of upper speed limit Digital: 1 r/min										
Speed setting precision (at 20 °C)		Analogue: ±3 % or below of upper speed limit (±90 r/min or below at upper speed limit 3000 r/min) [Digital: 1 % or below of upper speed limit]										
Operation mode		8 speed										
Signal input		5 inputs*2 (run/ stop, CW run/ CCW run, multi function 3 bit)										
Signal output		2 outputs (Open collector)*2 (Trip output etc)										
Communication function	RS485	Max 31 units. Setting of parameter, monitoring of control condition. Communication speed: Choose from 2400 bps/ 4800 bps/ 9600 bps										
	RS232	Setting of parameter and monitoring of control condition are enabled with commercial PC.*3										
Digital key pad		Setting of parameter, monitoring of control condition.*4										
Protective function		Warning : Undervoltage*2, Overload warning, setting change warning Protect : Undervoltage*2, Overload, Overcurrent, Overvoltage, Overheat, Overspeed, Sensor error, RS485 communication error, External forced trip error, User parameter error, CPU error										
Regenerating brake		Regenerative braking resistor can be externally connected.*5 Instantaneous braking torque 150 %, Continuous regenerative power 10 W (Regenerative operation with which motor shaft is rotated by load, e.g. load lowering operation, should not be continued.)										
Protection level		Overload protection: 115 %, Time characteristics: 150 % 60 sec										
Amplifier mass (kg)		0.37 (50 W, 100 W) / 1.0 (200 W to 750 W)										

*1 Suffix of "○" in the motor model represents shape of shaft. *2 Can be changed from PANATERM for BL or Digital key pad.
*3 PANATERM for BL (Download from our web site.), PC connection cable (DV0P4140), Digital key pad connection cable (DV0P383*0) is required. If your PC does not have RS232 port, use RS232-USB converter.
*4 Digital key pad connection cable (DV0P383*0) is required. *5 Use optional external regenerative resistor (sold separately).

System configuration (50 W, 100 W)

Power supply	Rated rotation speed (r/min)	output (W)	Motor (Note 1)	Brushless amplifier	Brushless amplifier (supplied with power cable) (Note 2)	Optional parts: External regenerative resistor	Optional parts: Noise filter	Optional parts: Surge absorber	Optional parts: Reactor
					Reference page p. 74	p. 71	p. 67	p. 67	p. 73
Single phase 100 V	3000	50	MBMS5AZBL○	MBEK5A1BCV	MBEK5A1BCVC	for 100 V DV0P2890	for single phase power supply DV0P4170	for single phase power supply DV0P4190	for single phase power supply DV0P227
		100	MBMS011BL○	MBEK011BCV	MBEK011BCVC				
Single/ 3-phase 200 V		50	MBMS5AZBL○	MBEK5A5BCV	MBEK5A5BCVC	for 200 V DV0PM20068	for single phase power supply DV0P4170 for 3-phase power supply DV0PM20042	for single phase power supply DV0P4190 for 3-phase power supply DV0P1450	for single phase power supply DV0P227 for 3-phase power supply DV0P220
		100	MBMS012BL○	MBEK015BCV	MBEK015BCVC				

(Note 1) ○ : Refer to the table below.
(Note 2) Refer to p. 74 for a power supply connecting cable.
This part number is the ordering part number for the amplifier and power cable, not for ordering amplifier only.

		Shaft shape: Round	Keyway, center tap	D-cut
Oil seal	Without	A	S	N
	With	C	U	Q

* When installing the reactor, refer to p. 73.

*** Be sure to use a set of matched components (power source, capacity, output, etc.)**
*** This motor is not provided with a holding brake. If it is used to drive a vertical shaft, the movable section may fall down by its own weight as power is turned off.**

■ Options

Optional parts		Parts number	Reference page
Motor extension cable	1 m	DV0PQ1000310	P.69
	3 m	DV0PQ1000330	
	5 m	DV0PQ1000350	
	10 m	DV0PQ10003A1	
Power supply connector kit		DV0P2870	P.70
Console A*1		DV0P3500	P.68
Console A connection cable	1 m	DV0PM2006910	P.68
	3 m	DV0PM2006930	
	5 m	DV0PM2006950	
Digital key pad*2		DV0P3510	P.68

Optional parts		Parts number	Reference page
Digital key pad connection cable	1 m	DV0P38310	P.68
	3 m	DV0P38330	
	5 m	DV0P38350	
External speed setter		DV0PM20078	P.71
Control signal cable	2 m	DV0PM20076	P.70
I/O connector kit		DV0PM20070	P.71
Panel connector kit		DV0P3610	P.71
PC connection cable*3	1.5 m	DV0P4140	P.70
Noise filter for signal line		DV0P1460	P.67
DIN rail mounting unit		DV0P3811	P.72

* For details of cable, refer to p. 68 to 70.

*1 When using Console A, the Console A connection cable (DV0PM20069*0) is required.
*2 When using Digital key pad, the Digital key pad connection cable (DV0P383*0) is required.
*3 When connecting PC, the PC connection cable (DV0P4140) and the Digital key pad connection cable (DV0P383*0) are required.

■ Wiring equipment

Selection of circuit breaker (MCCB), magnetic contactor and electric wire. (To check conformity with international standards, refer to p. 93 Conformity with international safety standards.)

Voltage	Power capacity	MCCB Rated current	Magnetic contactor Rated Current (Contact composition)	Core of electric wire (mm²): Main circuit, Grounding	Core of electric wire (mm²): Control circuit
Single phase 100 V	50 W, 100 W	5 A	20 A (3P＋1a)	0.5 (AWG20)	0.13 (AWG26)
Single phase 200 V					
3-phase 200 V					

■ Be sure to connect the earth terminal to ground.
In wiring to power supply (outside of equipment) from MCCB, use an electric wire of 1.6 mm diameter (2.0 mm²) or more both for main circuit and grounding. Apply grounding class D (100 Ω or below) for grounding.

● Selection of relay
A relay used in a control circuit, e.g. at the control input terminal should be small signal relay (Min. guaranteed current 1 mA or less) for positive contact.
Example: Panasonic: DS, NK or HC series, OMRON: G2A series

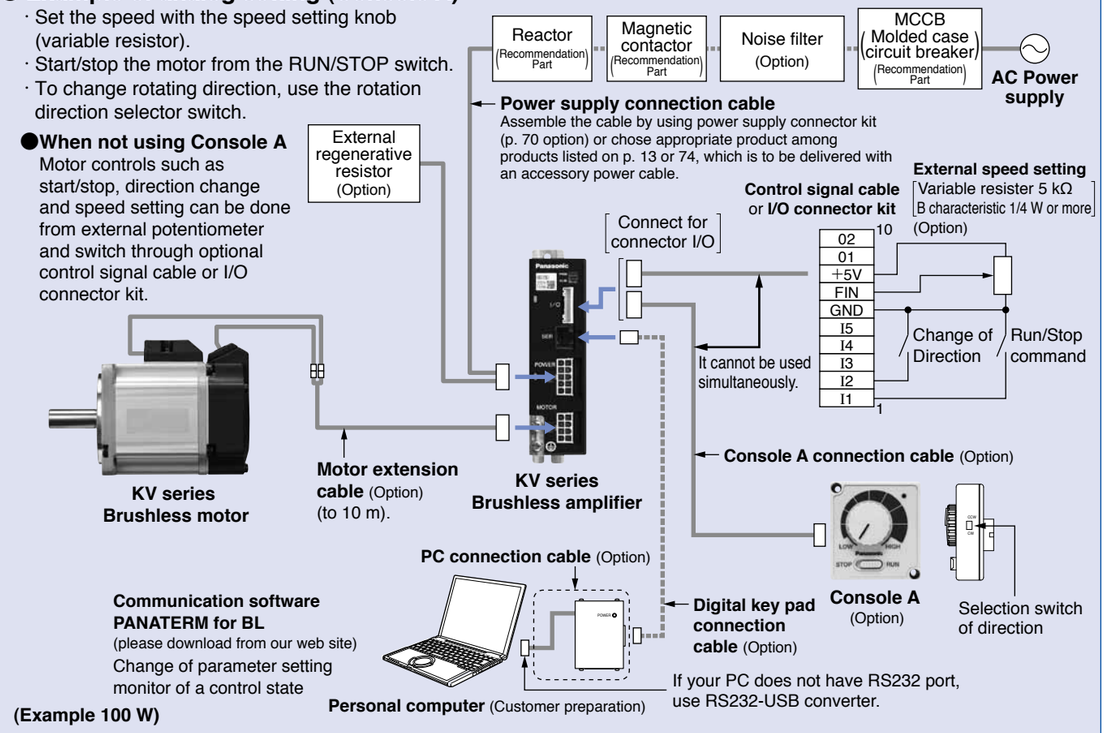
● Selection of control circuit switch
When using a switch in place of relay, select a switch rated at minute electric current, to assure positive contact.
Example: Nihon Kaiheiki Ind.: M-2012J-G

System configuration diagram (50 W, 100 W)

● Example of analog setting (Console A)

- Set the speed with the speed setting knob (variable resistor).
- Start/stop the motor from the RUN/STOP switch.
- To change rotating direction, use the rotation direction selector switch.

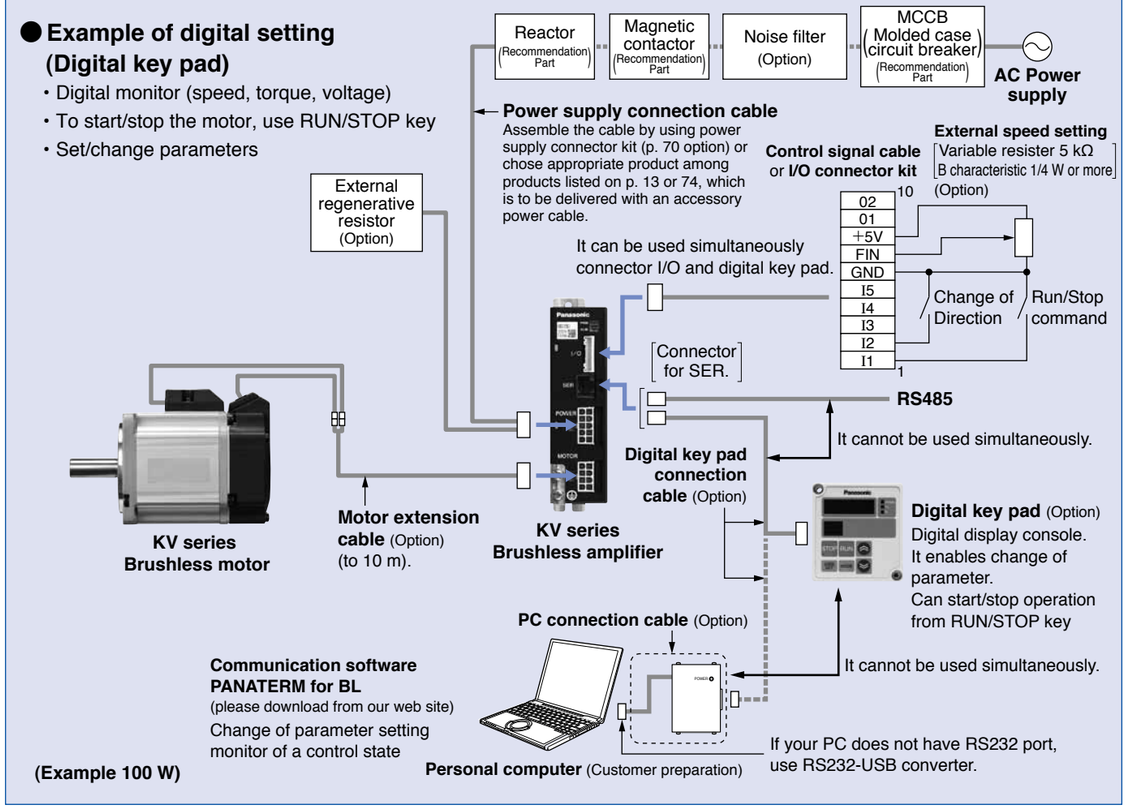
●When not using Console A
Motor controls such as start/stop, direction change and speed setting can be done from external potentiometer and switch through optional control signal cable or I/O connector kit.



(Example 100 W)

● Example of digital setting (Digital key pad)

- Digital monitor (speed, torque, voltage)
- To start/stop the motor, use RUN/STOP key
- Set/change parameters



(Example 100 W)

System configuration (200 W to 750 W)

Power supply	Rated rotation speed (r/min)	output (W)	Motor (Note 1)	Brushless amplifier	Optional parts			
					External regenerative resistor	Noise filter	Surge absorber	Reactor
					Reference page p. 71	p. 67	p. 67	p. 73
Single phase 100 V	3000	200	MBMS021BL○	MBEK021BCV	for 100 V DV0P2890	for single phase power supply DV0P4170	for single phase power supply DV0P4190	for single phase power supply DV0P228
Single/ 3-phase 200 V		200	MBMS022BL○	MBEK025BCV	for 200 V DV0PM20068	for single phase power supply DV0P4170 for 3-phase power supply DV0PM20042	for single phase power supply DV0P4190 for 3-phase power supply DV0P1450	for single phase power supply DV0P227 for 3-phase power supply DV0P220
3-phase 200 V		400	MBMS042BL○	MBEK043BCV		for 3-phase power supply DV0PM20042	for 3-phase power supply DV0P1450	for 3-phase power supply DV0P220
		750	MBMS082BL○	MBEK083BCV				

(Note 1) ○ : Refer to the table below.

		Shaft shape		
		Round	Keyway, center tap	D-cut
Oil seal	Without	A	S	N
	With	C	U	Q

* When installing the reactor, refer to p. 73.

*** Be sure to use a set of matched components (power source, capacity, output, etc.)**
*** This motor is not provided with a holding brake. If it is used to drive a vertical shaft, the movable section may fall down by its own weight as power is turned off.**

■ Options

Optional parts		Parts number	Reference page
Motor extension cable	1 m	DV0PQ1000310	P.69
	3 m	DV0PQ1000330	
	5 m	DV0PQ1000350	
	10 m	DV0PQ10003A1	
Console A*1		DV0P3500	P.68
Console A connection cable	1 m	DV0PM2006910	P.68
	3 m	DV0PM2006930	
	5 m	DV0PM2006950	
Digital key pad*2		DV0P3510	P.68

Optional parts		Parts number	Reference page
Digital key pad connection cable	1 m	DV0P38310	P.68
	3 m	DV0P38330	
	5 m	DV0P38350	
External speed setter		DV0PM20078	P.71
Control signal cable	2 m	DV0PM20076	P.70
I/O connector kit		DV0PM20070	P.71
Panel connector kit		DV0P3610	P.71
PC connection cable*3	1.5 m	DV0P4140	P.70
Noise filter for signal line		DV0P1460	P.67

* For details of cable, refer to p. 68 to 70.

*1 When using Console A, the Console A connection cable (DV0PM20069*0) is required.
*2 When using Digital key pad, the Digital key pad connection cable (DV0P383*0) is required.
*3 When connecting PC, the PC connection cable (DV0P4140) and the Digital key pad connection cable (DV0P383*0) are required.

■ Wiring equipment

Selection of circuit breaker (MCCB), magnetic contactor and electric wire. (To check conformity with international standards, refer to p. 93 Conformity with international safety standards.)

Voltage	Power capacity	MCCB Rated current	Magnetic contactor Rated Current (Contact composition)	Core of electric wire (mm²)	
				Main circuit, Grounding	Control circuit
Single phase 100 V	200 W	5 A	20 A (3P＋1a)	0.75 (AWG18)	0.13 (AWG26)
Single phase 200 V					
3-phase 200 V	400 W, 200 W				
	750 W	10 A			

■ Be sure to connect the earth terminal to ground.
In wiring to power supply (outside of equipment) from MCCB, use an electric wire of 1.6 mm diameter (2.0 mm²) or more both for main circuit and grounding. Apply grounding class D (100 Ω or below) for grounding.

● Selection of relay
A relay used in a control circuit, e.g. at the control input terminal should be small signal relay (Min. guaranteed current 1 mA or less) for positive contact.
Example: Panasonic: DS, NK or HC series, OMRON: G2A series

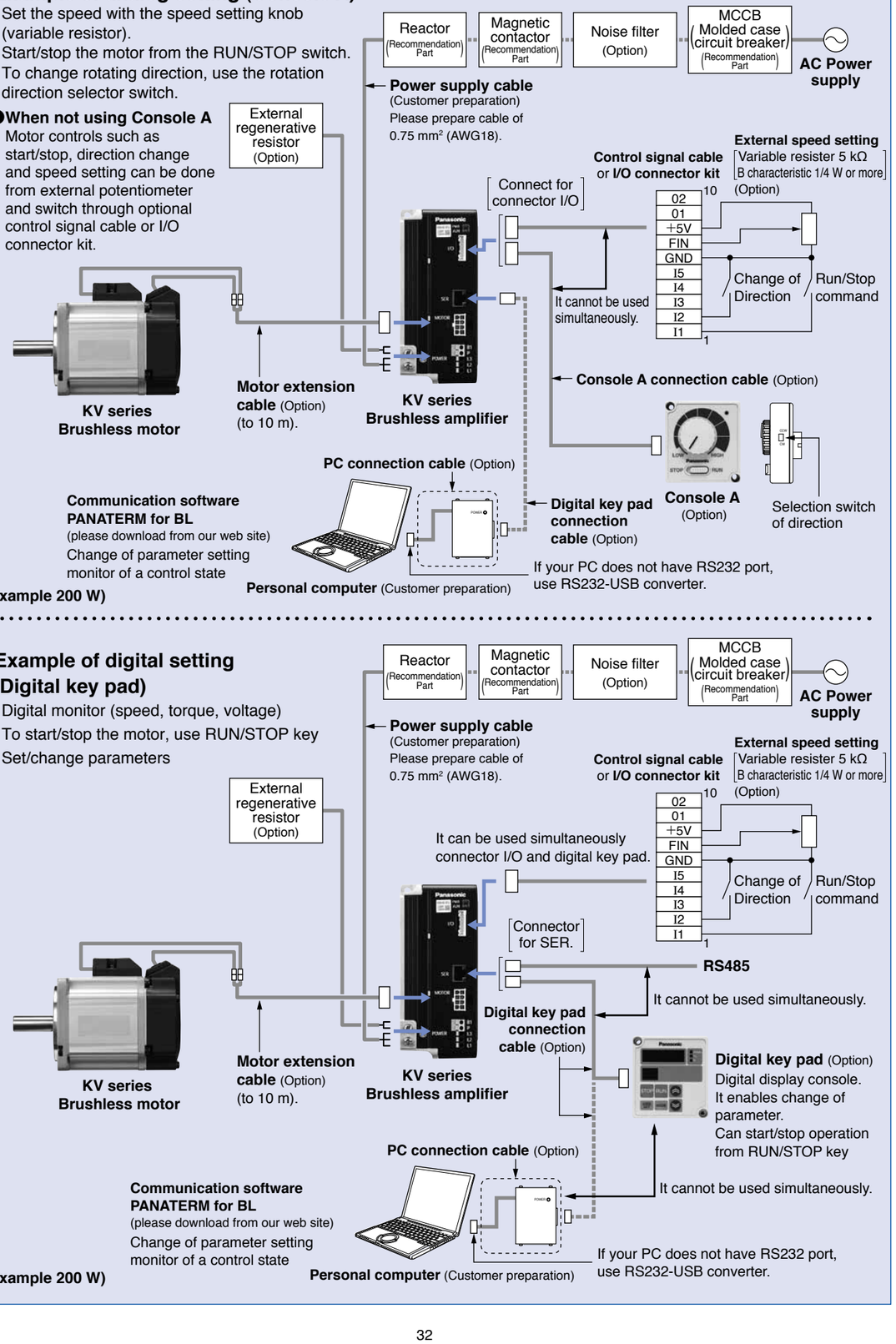
● Selection of control circuit switch
When using a switch in place of relay, select a switch rated at minute electric current, to assure positive contact.
Example: Nihon Kaiheiki Ind.: M-2012J-G

System configuration diagram (200 W to 750 W)

● Example of analog setting (Console A)

- Set the speed with the speed setting knob (variable resistor).
- Start/stop the motor from the RUN/STOP switch.
- To change rotating direction, use the rotation direction selector switch.

●When not using Console A
Motor controls such as start/stop, direction change and speed setting can be done from external potentiometer and switch through optional control signal cable or I/O connector kit.



(Example 200 W)

● Example of digital setting (Digital key pad)

- Digital monitor (speed, torque, voltage)
- To start/stop the motor, use RUN/STOP key
- Set/change parameters

(Example 200 W)

Parameter list of brushless amplifier

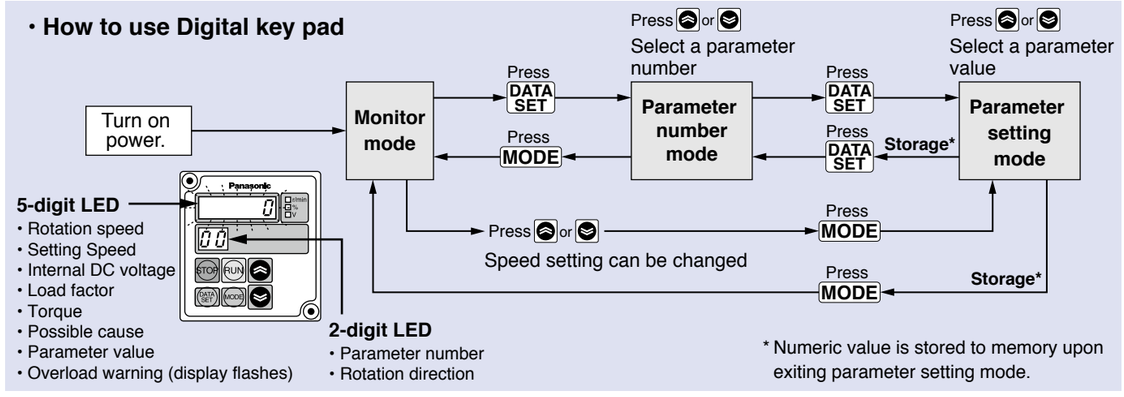
Parameter No.	Parameter name	Explanation	Setting range
00	Internal speed (0-th speed)	Desired running speed can be set with the Digital key pad.	0 r/min to Upper speed limit [Minimum unit 1 r/min]
01 to 07	1st speed to 7th speed	Speed in multi-speed running can be set.	0 r/min to Upper speed limit [Minimum unit 1 r/min]
10 11	1st acceleration time 2nd acceleration time	The change factor of output speed in acceleration can be determined. Set by time for changing 1000 r/min.	0.01 sec to 300 sec to 3 sec: Incremented by 0.01 second 3 sec to 30 sec: Incremented by 0.1 second 30 sec to 300 sec: Incremented by 1 second
12 13	1st deceleration time 2nd deceleration time	The change factor of output speed in deceleration can be determined. Set by time for changing 1000 r/min.	
14 15	Acceleration mode selection Deceleration mode selection	Straight line acceleration/deceleration and curve (S-shape) acceleration and deceleration can be chosen individually for acceleration and deceleration. LINEAR / "S" SHAPE-1 / "S" SHAPE-2 Rotation speed, 0, Time	Select S-shape when "31 Speed command selection" is PnL.
16	Stop mode selection	You can select how to stop the motor when stop command is input: free-run stop or stop after deceleration.	
17	Free-run waiting time	When the stop mode is set to deceleration stop, the zero speed (servo lock time) after deceleration can be adjusted.	0.0 sec to 10.0 sec [Minimum unit 0.1 sec]
1A	Velocity loop proportional gain	Enables setting of proportional gain of velocity amplifier.	0 to 10000 [Minimum unit 0.1]
1b	Velocity loop integration gain	Enables setting of integration gain of velocity amplifier.	0 to 10000 [Minimum unit 0.1]
30	Run command selection	Run command can be applied through: Digital key pad, input terminal "I1", "I2" or RS485 communication, whichever selected.	
31	Speed command selection	You can choose whether to use "00 Internal speed (0-th speed)" or analog input terminal for speed command.	
32	Operation mode selection	Parameter for choosing operation mode	

Setting	Operation made	Function of signal input I3	I4	I5
1	1st speed operation mode	Free-run stop / External forced trip / 2nd Acc./Dec. time / Trip reset		
2	2nd speed operation mode	Speed setting		
4	4th speed operation mode	Speed setting	Speed setting	
8	8th speed operation mode	Speed setting	Speed setting	Speed setting

33 34 35 36	I1/I2 function selection I3 function selection I4 function selection I5 function selection	Signal input functions I1 to I5 can be individually selected.	Free-run stop External forced trip 2nd Acc./Dec. time Trip reset
3A	Lower speed limit	When speed command selection is set to analog, set the motor speed at 0 V input. Speed instruction value / Upper speed limit / Lower speed limit / 0 / 0.5 / 4.5 / 5 V / Input voltage	0 r/min to Upper speed limit [Minimum unit 1 r/min]
3b	Upper speed limit	Upper limit of motor command speed.	0 r/min to 4000 r/min [Minimum unit 1 r/min]
3C	Torque limit	Upper limit of motor output torque is set.	50 % to 150 % [Minimum unit 1 %]

Parameter No.	Parameter name	Explanation	Setting range
40 41	O1 function selection O2 function selection	The type of signals from output terminals "O1" and "O2" can be selected. * Do not use it for position detector and positioning.	Trip: ON, Speed is reached to a command value: ON, Running: ON, Free run: ON, CCW run: ON, CW run: ON, Load exceeds 100 %: ON, Speed pulse signal*
42 43	O1 output polarity selection O2 output polarity selection	This is a function for inverting the polarity of signal output terminal O1 and O2.	
44	Speed matching range	"Matching range" of arriving signal can be adjusted.	20 r/min to Upper speed limit [Minimum unit 1 r/min]
45	Output pulse count selection	Set the number of pulses to be output to output terminals "O1" and "O2". • When you use it in more than 3000 r/min, choose values less than 12. • Do not use "the speed pulse" of the output signal (parameter No.45) for position sensing and a positioning use.	1, 2, 3, 4, 6, 8, 12, 24
46	Monitor mode selection	You can choose description to be displayed on 5-digit LED when turning on power.	Rotation speed, Speed command, Internal DC voltage, Load factor, Torque
47 48	Numerator of display magnification factor Denominator of display magnification factor	By setting the multiplying factor of a value displayed on 5-digit LED, the rotation speed of gear output shaft and conveyor speed can be displayed.	
4A	Trip history clear	Trip history can be cleared.	
4b to 4F	Trip history 1 to Trip history 5	Trip history for 5 times in the past is stored.	
50	Undervoltage trip selection	You can select whether tripping occurs upon detection of undervoltage.	
51	Retrial selection	Automatic reset in trip (trip retrial) can be set here.	
52	Retrial start time	You can set waiting time until retrial operation is performed after tripping is found.	1 sec to 120 sec [Minimum unit 1 r/min]
54	Parameter initializing	Parameters can be initialized to the factory default.	
57	Parameter copy	Parameters can be copied.	
5A	RS485 device number	Set the device number of Amplifier in communication (Amplifier ID)	
5b	RS485 communication speed	Set the communication speed of RS485 communication.	
5C	RS485 communication standard	Set the communication standard of RS485 communication.	
5d	RS485 communication response time	You can set the shortest time necessary to set the RS485 bus to transmission mode to response upon receiving communication data.	
5E	RS485 retry times of communication	Set the retry times of RS485 communication.	
5F	RS485 protocol timeout	You can set the permissible time interval between successively received character codes.	

• How to use Digital key pad



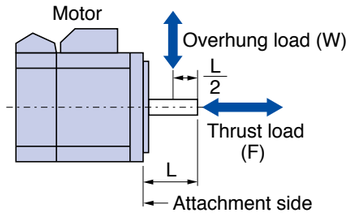
(Under application) 38 mm sq. 50 W

Specification (For Common specification, see p. 27, 28)

Size	Model No. / Amplifier and Motor		Rated output (W)	Input power supply for Amplifier				Rated torque (N·m)	Starting torque (N·m)	Rated speed (r/min)	Maximum rotation speed (r/min)
	Brushless Amplifier	Motor		Voltage AC (V)	Allowed range (%)	Frequency (Hz)	Rated input current (A)				
38 mm sq.	MBEK5A1BCV	MBMS5AZBL○	50	Single phase 100 to 120	±10	50/60	1.8	0.16	0.30	3000	4000
	MBEK5A5BCV			Single phase /3-phase 200 to 240			Single phase 0.8 3-phase 0.5				

* Suffix of "○" in the motor model No. represents shape of shaft.
* Starting torque: Representative value

Permissible shaft load

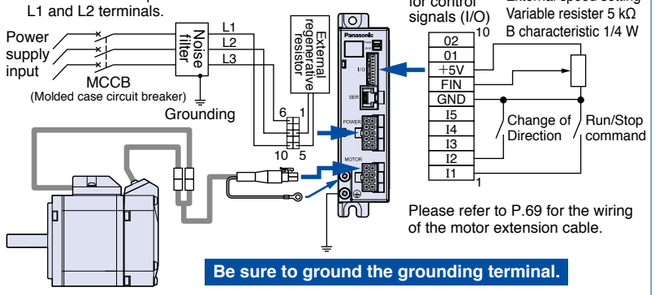


		Overhung load (W)	Thrust load (F)
Motor shaft	Output 50 W	69 N	59 N

Wiring diagram

• In Case of 3-Phase 200 V

*When you use single phase, connect the main power between L1 and L2 terminals.



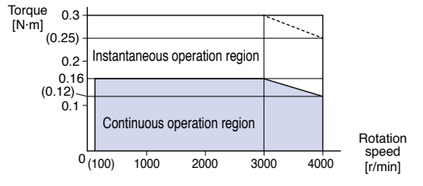
Please refer to P.69 for the wiring of the motor extension cable.

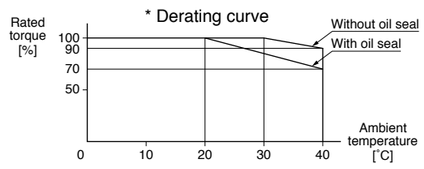
Be sure to ground the grounding terminal.

In wiring to power supply (outside of equipment) from MCCB, use an electric wire of 1.6 mm diameter (2.0 mm²) or more both for main circuit and grounding. Apply grounding class D (100 Ω or below) for grounding. Do not tighten the ground wires together, but connect them individually.

Speed-torque characteristic 〈Dotted line shows a characteristic curve when supply voltage drops by 10 %.〉

50 W 100 V/ 200 V

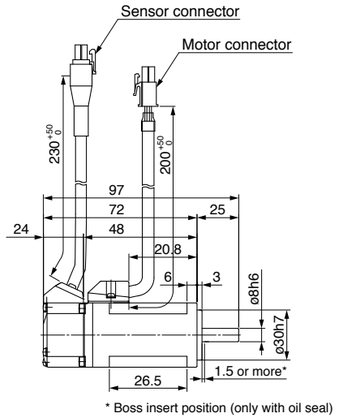




Motor (dimensions)

Unit mm

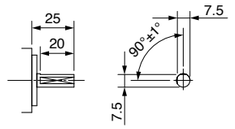
mass 0.32 kg



* Boss insert position (only with oil seal)

<Round shaft type>

<D-cut specification>



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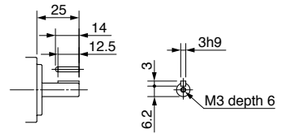
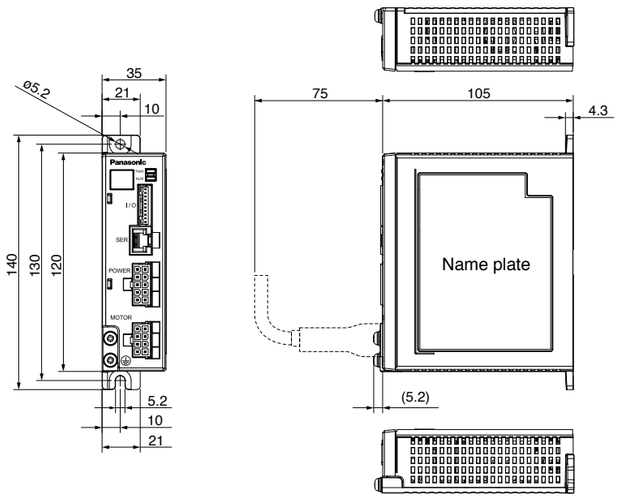


Brushless amplifier (dimensions)

Unit mm

mass 0.37 kg



* Before using, be sure to read "Instruction manual" to check precautions and correct procedure.

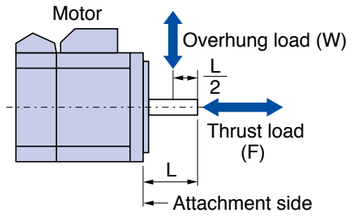
<Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Specification (For Common specification, see p. 27, 28)

Size	Model No. / Amplifier and Motor		Rated output (W)	Input power supply for Amplifier				Rated torque (N·m)	Starting torque (N·m)	Rated speed (r/min)	Maximum rotation speed (r/min)
	Brushless Amplifier	Motor		Voltage AC (V)	Allowed range (%)	Frequency (Hz)	Rated input current (A)				
60 mm sq.	MBEK011BCV	MBMS011BL○	100	Single phase 100 to 120	±10	50/60	2.4	0.32	0.70	3000	4000
	MBEK015BCV	MBMS012BL○		Single phase /3-phase 200 to 240			Single phase 1.2 3-phase 0.7				

* Suffix of "○" in the motor model No. represents shape of shaft.
* Starting torque: Representative value

Permissible shaft load

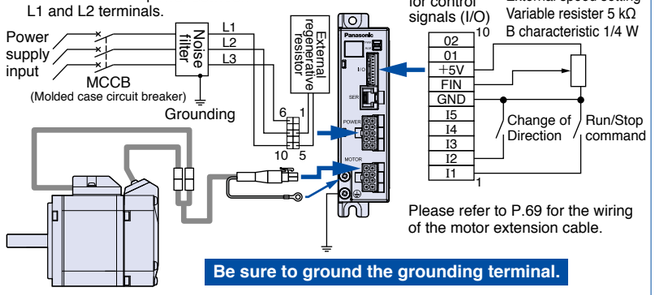


		Overhung load (W)	Thrust load (F)
Motor shaft	Output 100 W	69 N	59 N

Wiring diagram

• In Case of 3-Phase 200 V

*When you use single phase, connect the main power between L1 and L2 terminals.



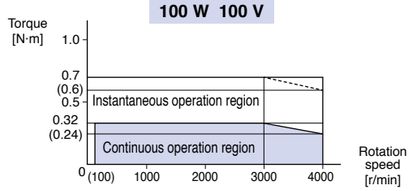
Please refer to P.69 for the wiring of the motor extension cable.

Be sure to ground the grounding terminal.

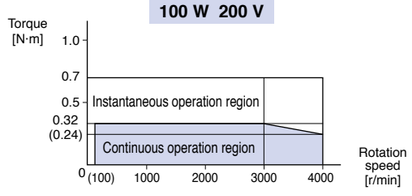
In wiring to power supply (outside of equipment) from MCCB, use an electric wire of 1.6 mm diameter (2.0 mm²) or more both for main circuit and grounding. Apply grounding class D (100 Ω or below) for grounding. Do not tighten the ground wires together, but connect them individually.

Speed-torque characteristic 〈Dotted line shows a characteristic curve when supply voltage drops by 10 %.〉

100 W 100 V



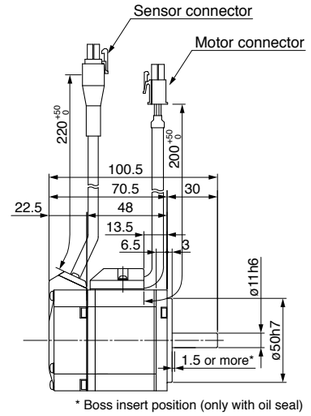
100 W 200 V



Motor (dimensions)

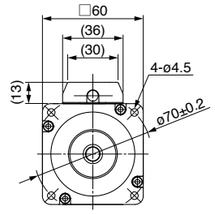
Unit mm

mass 0.63 kg

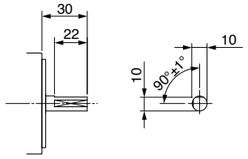


* Boss insert position (only with oil seal)

<Round shaft type>



<D-cut specification>



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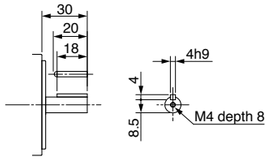
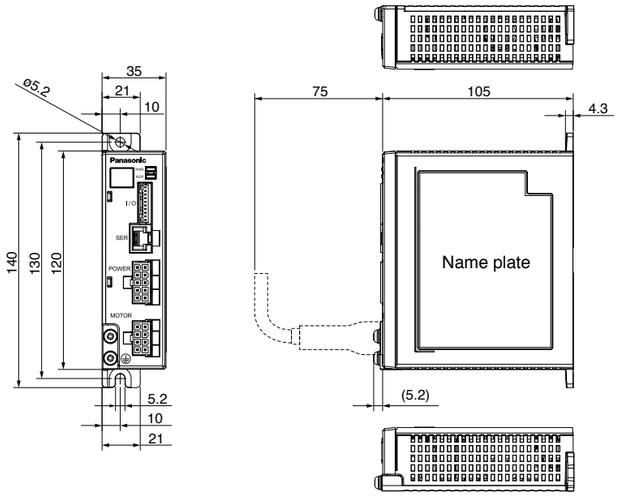


Brushless amplifier (dimensions)

Unit mm

mass 0.37 kg



* Before using, be sure to read "Instruction manual" to check precautions and correct procedure.

<Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

(Under application) c UL us CE KC 60 mm sq. 200 W

Specification (For Common specification, see p. 27, 28)

Size	Model No. / Amplifier and Motor		Rated output (W)	Input power supply for Amplifier				Rated torque (N·m)	Starting torque (N·m)	Rated speed (r/min)	Maximum rotation speed (r/min)
	Brushless Amplifier	Motor		Voltage AC (V)	Allowed range (%)	Frequency (Hz)	Rated input current (A)				
60 mm sq.	MBEK021BCV	MBMS021BL○	200	Single phase 100 to 120	±10	50/60	4.2	0.64	1.4	3000	4000
	MBEK025BCV	MBMS022BL○		Single phase /3-phase 200 to 240			Single phase 2.1 3-phase 1.2				

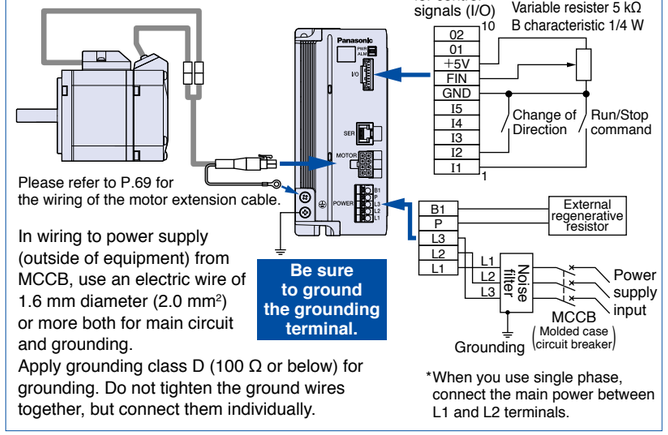
* Suffix of "○" in the motor model No. represents shape of shaft.
* Starting torque: Representative value

Permissible shaft load

		Overhung load (W)	Thrust load (F)
Motor shaft	Output 200 W	245 N	98 N

Wiring diagram

• In Case of 3-Phase 200 V



Please refer to P.69 for the wiring of the motor extension cable.

In wiring to power supply (outside of equipment) from MCCB, use an electric wire of 1.6 mm diameter (2.0 mm²) or more both for main circuit and grounding.

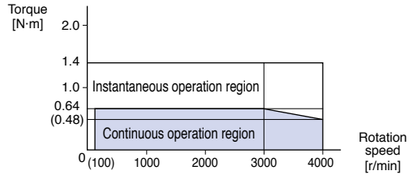
Be sure to ground the grounding terminal.

Apply grounding class D (100 Ω or below) for grounding. Do not tighten the ground wires together, but connect them individually.

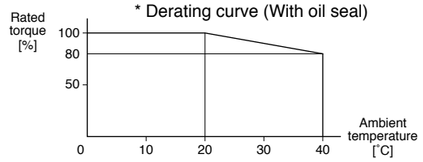
*When you use single phase, connect the main power between L1 and L2 terminals.

Speed-torque characteristic 〈Dotted line shows a characteristic curve when supply voltage drops by 10 %.〉

200 W 100 V/ 200 V



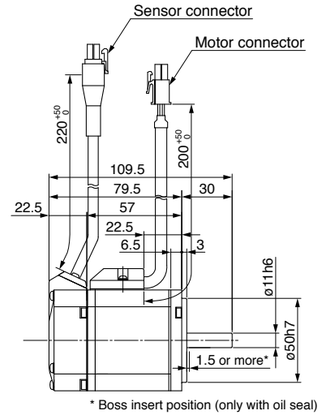
* Derating curve (With oil seal)



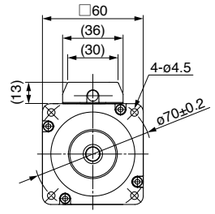
Motor (dimensions)

Unit mm

mass 0.8 kg

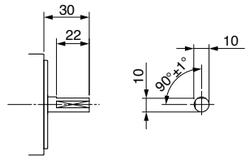


* Boss insert position (only with oil seal)



<Round shaft type>

<D-cut specification>



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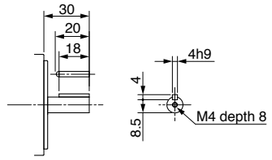
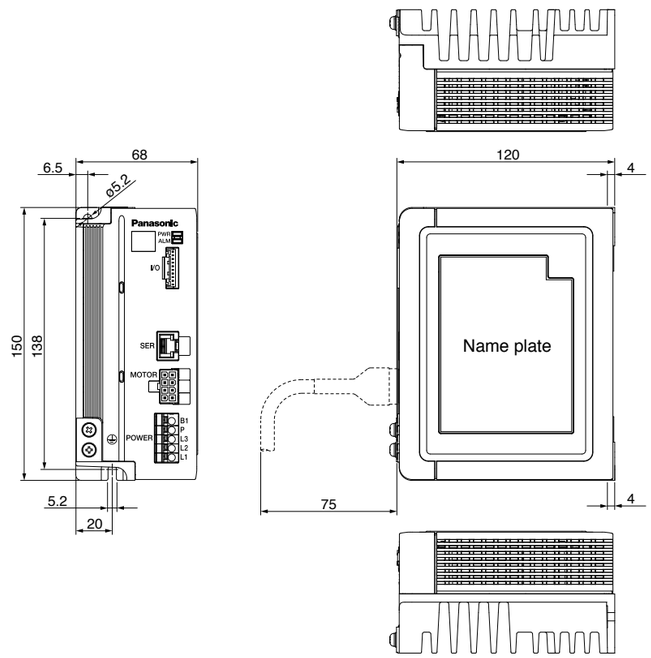


Brushless amplifier (dimensions)

Unit mm

mass 1.0 kg



* Before using, be sure to read "Instruction manual" to check precautions and correct procedure.

<Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

(Under application) c UL us CE KC 60 mm sq. 400 W

Specification (For Common specification, see p. 27, 28)

Size	Model No. / Amplifier and Motor		Rated output (W)	Input power supply for Amplifier				Rated torque (N·m)	Starting torque (N·m)	Rated speed (r/min)	Maximum rotation speed (r/min)
	Brushless Amplifier	Motor		Voltage AC (V)	Allowed range (%)	Frequency (Hz)	Rated input current (A)				
60 mm sq.	MBEK043BCV	MBMS042BL○	400	3-phase 200 to 240	±10	50/60	2.1	1.27	3.0	3000	4000

* Suffix of "○" in the motor model No. represents shape of shaft.

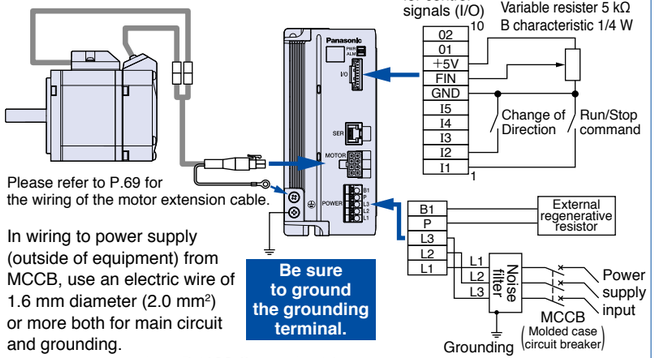
* Starting torque: Representative value

Permissible shaft load

		Overhung load (W)	Thrust load (F)
Motor shaft	Output 400 W	245 N	98 N

Wiring diagram

• In Case of 3-Phase 200 V



Please refer to P.69 for the wiring of the motor extension cable.

In wiring to power supply (outside of equipment) from MCCB, use an electric wire of 1.6 mm diameter (2.0 mm²) or more both for main circuit and grounding.

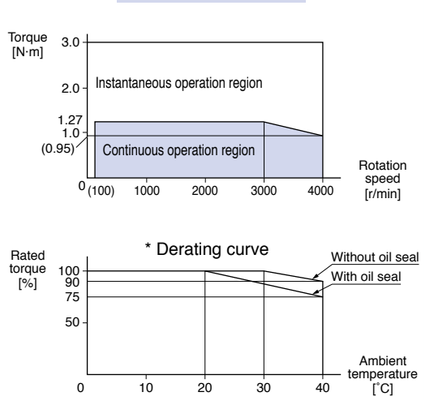
Be sure to ground the grounding terminal.

Apply grounding class D (100 Ω or below) for grounding. Do not tighten the ground wires together, but connect them individually.

*When you use single phase, connect the main power between L1 and L2 terminals.

Speed-torque characteristic

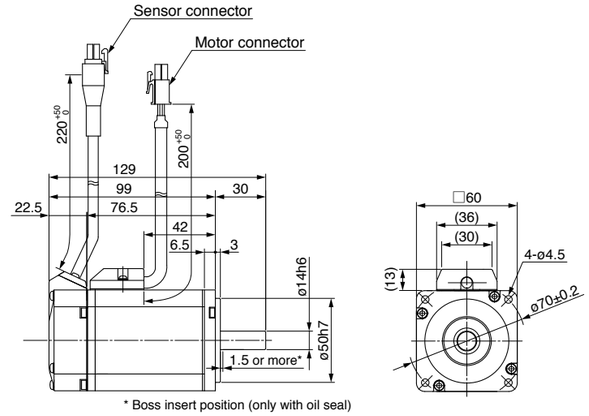
〈Dotted line shows a characteristic curve when supply voltage drops by 10 %.〉



Motor (dimensions)

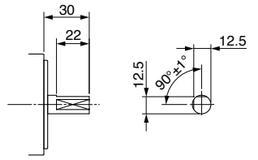
Unit mm

mass 1.2 kg



<Round shaft type>

<D-cut specification>



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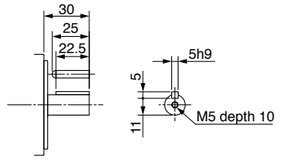
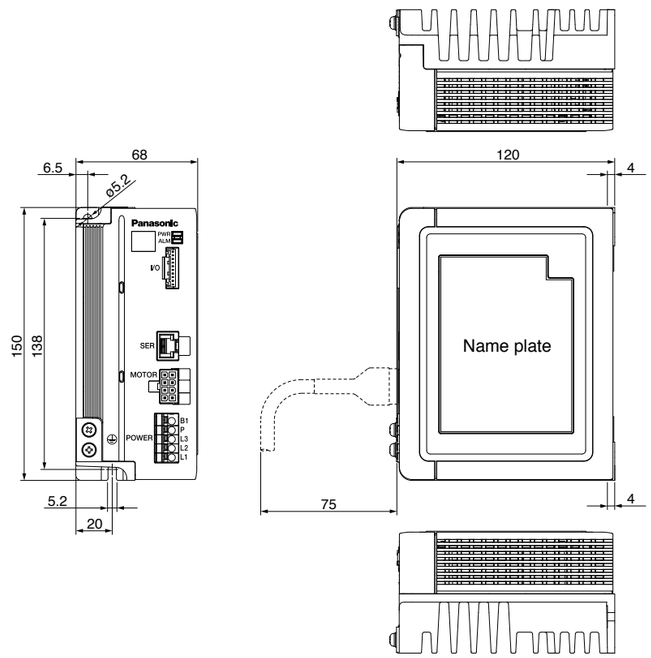


Brushless amplifier (dimensions)

Unit mm

mass 1.0 kg



* Before using, be sure to read "Instruction manual" to check precautions and correct procedure.

<Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Specification (For Common specification, see p. 27, 28)

Size	Model No. / Amplifier and Motor		Rated output (W)	Input power supply for Amplifier				Rated torque (N·m)	Starting torque (N·m)	Rated speed (r/min)	Maximum rotation speed (r/min)
	Brushless Amplifier	Motor		Voltage AC (V)	Allowed range (%)	Frequency (Hz)	Rated input current (A)				
80 mm sq.	MBEK083BCV	MBMS082BL○	750	3-phase 200 to 240	±10	50/60	4.0	2.4	5.5	3000	4000

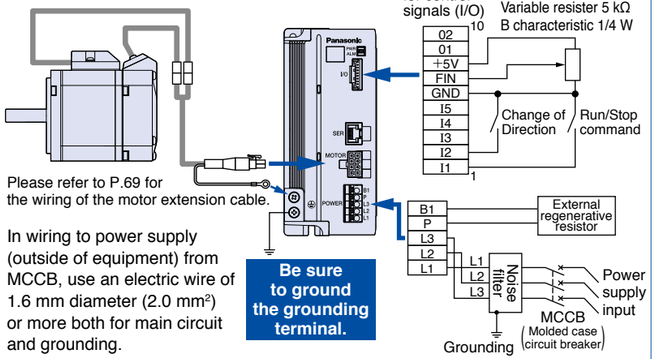
* Suffix of "○" in the motor model No. represents shape of shaft.
* Starting torque: Representative value

Permissible shaft load

		Overhung load (W)	Thrust load (F)
Motor shaft	Output 750 W	392 N	147 N

Wiring diagram

• In Case of 3-Phase 200 V



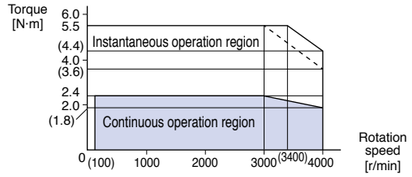
Please refer to P.69 for the wiring of the motor extension cable.

In wiring to power supply (outside of equipment) from MCCB, use an electric wire of 1.6 mm diameter (2.0 mm²) or more both for main circuit and grounding.
Apply grounding class D (100 Ω or below) for grounding. Do not tighten the ground wires together, but connect them individually.

Be sure to ground the grounding terminal.

*When you use single phase, connect the main power between L1 and L2 terminals.

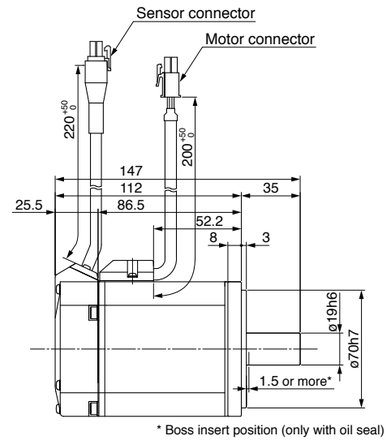
Speed-torque characteristic (Dotted line shows a characteristic curve when supply voltage drops by 10 %.)



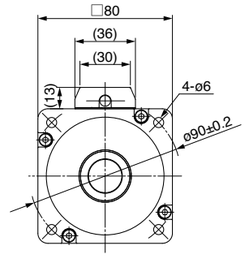
Motor (dimensions)

Unit mm

mass 2.3 kg



* Boss insert position (only with oil seal)



<Round shaft type>

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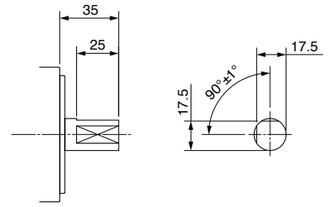

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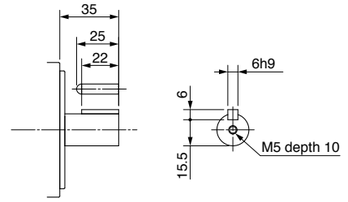
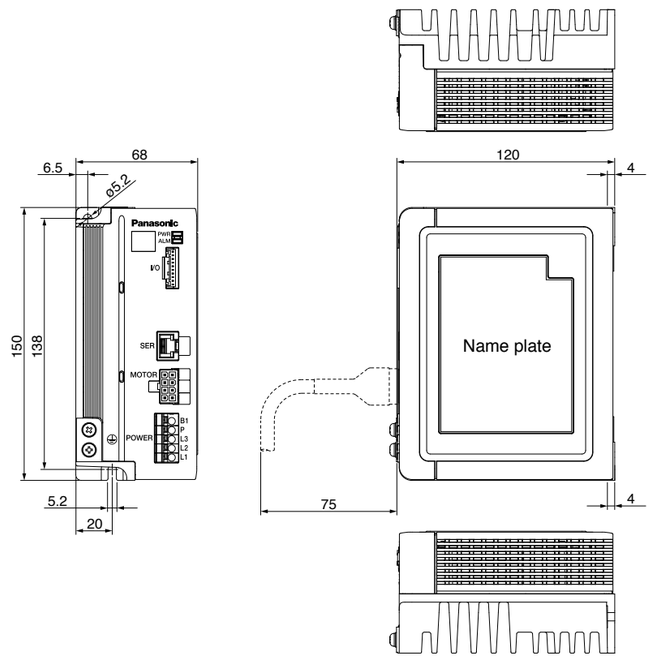


Brushless amplifier (dimensions)

Unit mm

mass 1.0 kg



* Before using, be sure to read "Instruction manual" to check precautions and correct procedure.

<Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information.