



YASKAWA

# AC SERVO DRIVES LARGE-CAPACITY $\Sigma$ -II SERIES

200V CLASS 22kW TO 37kW  
400V CLASS 22kW TO 55kW  
SERVOMOTOR: SGM BH  
SERVOPACK: SGDM,SGDH



## Large-capacity AC Servo Drives

Join the Lineup of  
High-performance  $\Sigma$ -II Series



Certified for  
ISO9001 and  
ISO14001



JQA-0422



JQA-EM0202

JQA-EM0924

# Large-capacity $\Sigma$ -II series widens the range of servo-control applications.



## Applications

- Injection molding machines
- Photoresist spin coaters
- Stacking cranes
- Rotary presses
- Turret punch presses
- Machine tools

YASKAWA's well-known  $\Sigma$ -II series of AC servo drives has been improved to meet the need for smaller, higher performing machines.

Now, large-capacity AC servo drives will join the  $\Sigma$ -II series and continue the tradition of high performance, extended functions, and easy operability.

These large-capacity servo drives can be used with a variety of applications that require servo drives and can also help to attain your machine's optimum performance and productivity.

## Large-capacity $\Sigma$ -II drives for Higher Performance

### ● Shortened tact time

The high-speed CPU operation and the upgraded control algorithm result in a more responsive machine to reduce the tact time.

### ● Higher precision & higher efficiency

The control for the current conversion for the d-q axis controls torque with great precision (repeatability), improved from  $\pm 5\%$  to  $\pm 2\%$ . The high-resolution, 17-bit, serial encoder on the servomotor has greater precision for positioning. A highly efficient magnet used in the large-capacity  $\Sigma$ -II drives reduces the electrical loss to improve efficiency (by 2%) when compared with previous models.



## Large-capacity $\Sigma$ -II drives for Easier Handling

### ● Extended functions

Plug and play modules are available to easily connect to a network.

- For MECHATROLINK: JUSP-NS100
- For DeviceNet: JUSP-NS300
- For PROFIBUS-DP: JUSP-NS500

These new drives can be connected to the MP940 single-axis machine controller for perfect synchronization.

- For MECHATROLINK: JEPMC-MC400
- For DeviceNet: JEPMC-MC410

### ● Setup

Useful functions are available such as the automatic motor discrimination function to automatically set motor parameters.

### ● Maintenance

The power supplies for the main circuit and the control circuit are isolated from each other. If an alarm occurs, only the power for the main circuit needs to be shut off.

By using a personal computer connected to a SERVOPACK, you can easily create, modify, and save user constants, and also adjust the motor with the trace function.

Several monitors are available to help quickly diagnose failures.

# PERIPHERAL DEVICES

**① Molded-case Circuit Breaker (MCCB)**

Protects power supply line.

**② Noise Filter**  
(FN series made by Schaffner EMC Systems)

Mounted to prevent external electrical noise from the power line.

**③ Magnetic Contactor**  
(HI series made by Yaskawa Controls Co., Ltd.)

ON/OFF servo power supply. When applied, make sure to provide a coil surge suppresser.

**④ Brake Power Supply**

Mount when fail safe/holding brake is provided with SGMBH servomotor. LPDE-1H01(100VAC input) LPSE-2H01(200VAC input)

**⑤ Transformer**

Switches 400V power supply to 200V.

**⑥ DB Resistor Unit**

Power Supply  
Three-phase 200VAC  
Three-phase 400VAC

⑦ Wiring without application modules.

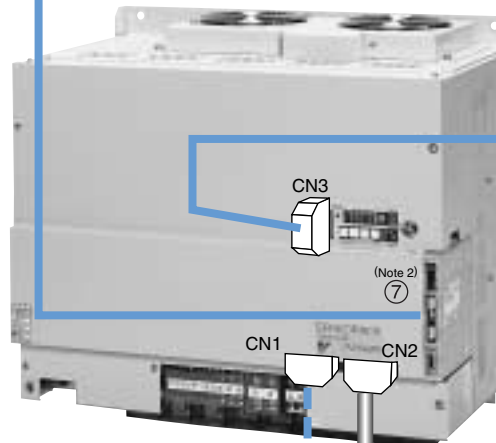
**Host Controller**

SGDM and SGDH SERVOPACKs to a YASKAWA host controller or one made by other vendors.



**MP920** (Analog input, pulse train input available)

**SGDM/SGDH SERVOPACK**



**Digital Operator**

Parameter setting, run command, and status/alarm display are performed.



**Hand-held Type (JUSP-OP02A-2)**  
1m-cable is provided.

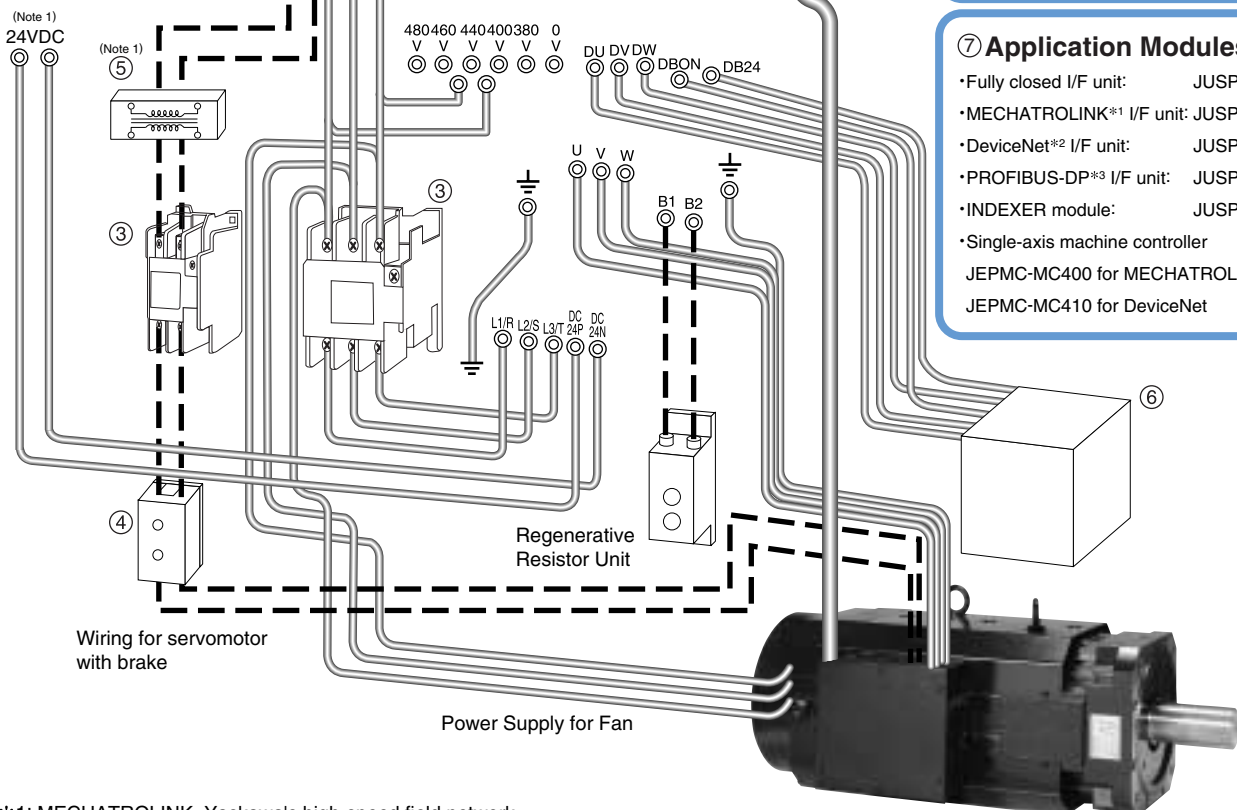
**Personal Computer**

Prepare the connector (D-SUB 9 pins) by yourself. Applicable receptacle is 17JE-23090-02(D8B) (made by DDK).



**⑦ Application Modules**

- Fully closed I/F unit: JUSP-FC100
- MECHATROLINK\*1 I/F unit: JUSP-NS100
- DeviceNet\*2 I/F unit: JUSP-NS300
- PROFIBUS-DP\*3 I/F unit: JUSP-NS500
- INDEXER module: JUSP-NS600
- Single-axis machine controller  
JEPMC-MC400 for MECHATROLINK  
JEPMC-MC410 for DeviceNet



Wiring for servomotor with brake

Power Supply for Fan

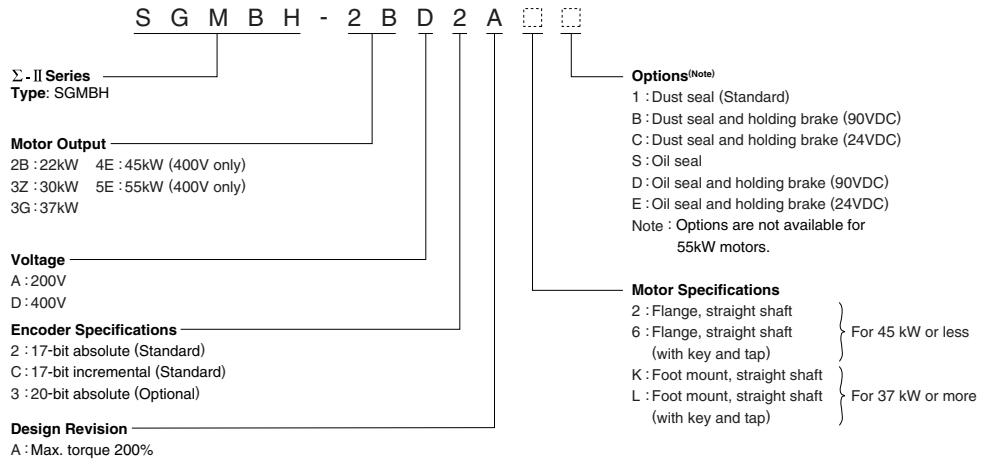
**SGMBH Servomotor**

\*1: MECHATROLINK—Yaskawa's high-speed field network.  
\*2: Registered trademark of the Open DeviceNet Vendor Association (ODVA).  
\*3: I/O networks developed and maintained by PROFIBUS International (PI).  
Notes: 1 Required when using a 400-VAC power supply.  
2 No application modules can be mounted on SGDM SERVOPACKS.

# SPECIFICATIONS

## Servomotor

### Type Designation



### Specifications

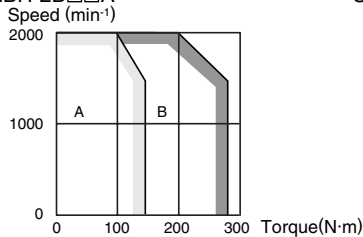
Voltage Class		200V					400V			
Type	SGMBH-□□□□	2BA□□A	3ZA□□A	3GA□□A	2BD□□A	3ZD□□A	3GD□□A	4ED□□A	5ED□□A	
Performance	Rated Output	kW	22	30	37	22	30	37	45	55
	Rated Torque	N·m	140	191	236	140	191	236	286	350
	Stalling Torque	N·m	140	191	236	140	191	236	286	350
	Instantaneous Peak Torque	N·m	280	382	471	280	382	471	572	700
	Rated/Max. Speed	min <sup>-1</sup>	1500/2000					1500/2000		
Rotor Inertia J <sub>M</sub> (GD <sup>2</sup> /4)	kg·m <sup>2</sup>	0.0592	0.0773	0.139	0.0592	0.0773	0.139	0.151	0.197	
	Protective Enclosure	IP44					IP44			
Structure	Mounting Method	Flange			Flange Foot mount*1	Flange		Flange Foot mount*1	Foot mount	
	Encoder	Standard	Incremental, absolute: 17 bits 16384P/R or equivalent*2							
	Optional	Absolute : 20 bits 16384P/R or equivalent*2								
Usage Temperature		0 to 40°C								
Usage Humidity		20 to 80%(non-condensing)								

\*1 : 37kW and 45kW motors with brakes are foot mount type.

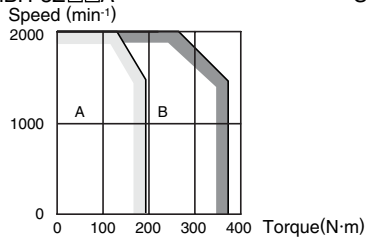
\*2 : The number of output pulses of SERVOPACK is 16384P/R for both 17-bit and 20-bit encoders (no dividing).

### Torque/Speed Characteristics

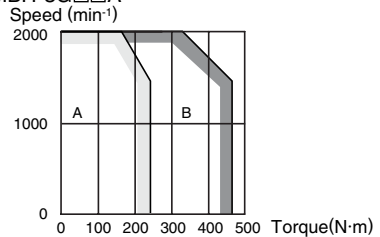
SGMBH-2B□□□A



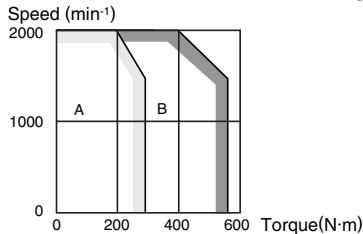
SGMBH-3Z□□□A



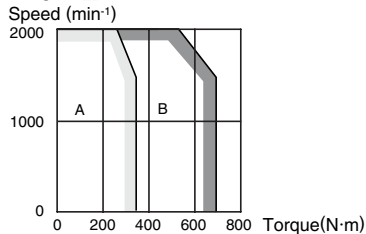
SGMBH-3G□□□A



SGMBH-4ED□□□A



SGMBH-5ED□□□A



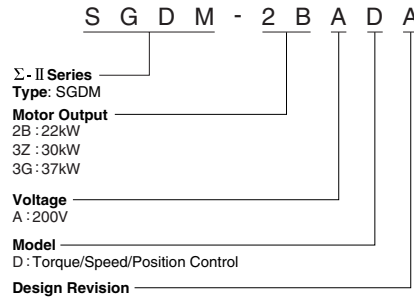
**A** : Continuous duty zone  
**B** : Intermittent duty zone



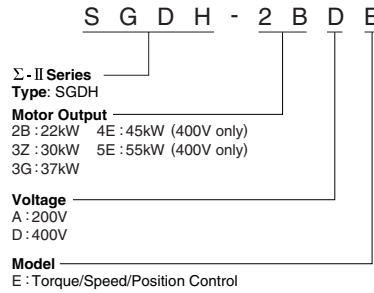
# SERVOPACK

## Type Designation

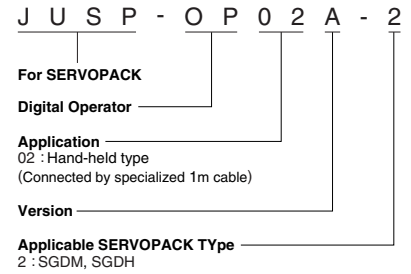
### • SGDM SERVOPACK



### • SGDH SERVOPACK



### • Digital Operator



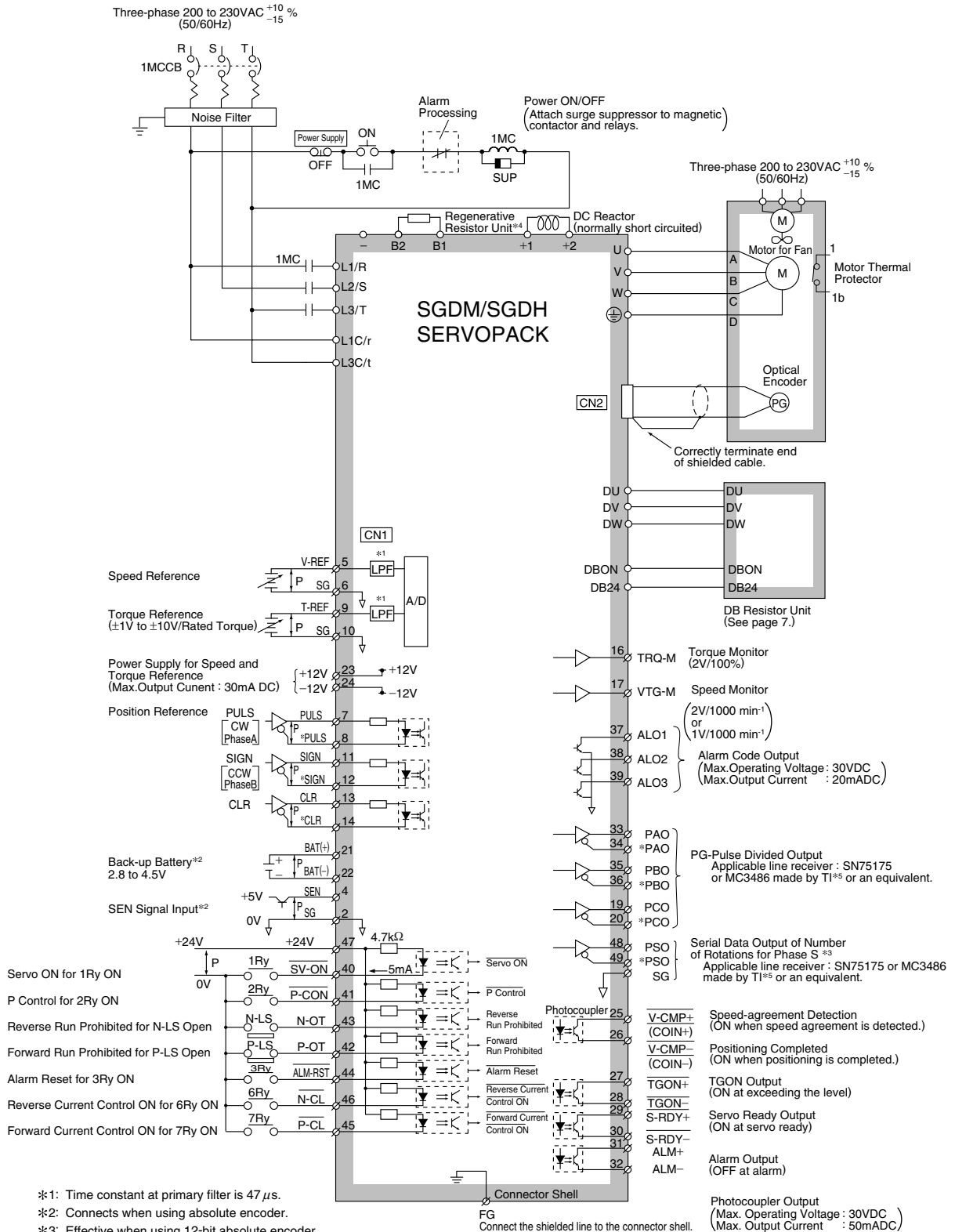
## Specifications

Voltage Class		200V			400V						
Type	SGDM- <input type="text"/>	2BADA	3ZADA	3GADA	-	-	-	-	-		
	SGDH- <input type="text"/>	2BAE	3ZAE	3GAE	2BDE	3ZDE	3GDE	4EDE	5EDE		
Applicable Servomotor Type	SGMBH- <input type="text"/>	2BA <input type="text"/> A	3ZA <input type="text"/> A	3GA <input type="text"/> A	2BD <input type="text"/> A	3ZD <input type="text"/> A	3GD <input type="text"/> A	4ED <input type="text"/> A	5ED <input type="text"/> A		
Continuous Output	kW	22	30	37	22	30	37	45	55		
Allowable Load Inertia J(GD <sup>2</sup> /4)	kg·m <sup>2</sup>	0.296	0.3865	0.695	0.296	0.3865	0.695	0.755	0.985		
Basic Specifications	Power Supply	Main Circuit	Three-phase 200 to 230VAC/+10 to -15%, 50/60Hz			Three-phase 380 to 480VAC/+10 to -15%, 50/60Hz					
		Main Circuit Power Capacity	kVA	36.7	50.1	61.8	36.7	50.1	61.8	75.2	91.9
		Control Circuit	Single-phase 200 to 220VAC/+10 to -15%, 50Hz			24VDC±15%					
		Control Circuit Power Capacity	150VA			150VA					
	Control Method	Three-phase full-wave rectification IGBT (insulated gate bipolar transistor), PWM (Pulse-width modulation), and sine-wave current drive.									
	Feedback	17-bit serial encoder (incremental/absolute)									
	Usage/Storage Temperature	SERVOPACK : 0 to 55°C /-20 to 85°C Digital operator : 0 to 55°C /-20 to 70°C									
	Usage/Storage Humidity	90%RH or less (non-condensing)									
	Control Method	Speed Control	±6 VDC (Changeable setting range: 2 V to ±10 VDC) at rated speed (forward rotation for positive reference) Input voltage: ±12V max.								
		Torque Control	±3 VDC (Changeable setting range: ±1 V to ±10 VDC) at rated torque (forward torque reference for positive reference) Input voltage: ±12V max.								
Position Control		Input form: Sign +pulse train, CW+CCW pulse train, 90° phase difference 2-phase pulse Input frequency: 500/200kpps (line driver/open collector output)									
I/O Signals	Position Control	Output Form	Phase A, phase B, phase C: Line-driver output Phase S: Line-driver output (Only with an absolute encoder)								
		Frequency Dividing Ratio	Arbitrary dividing								
	Sequence Input Signal	Servo ON, forward run prohibit (P-OT), reverse run prohibit (N-OT), forward current limit, reverse current limit, alarm reset, P control									
Sequence Output Signal	Servo alarm, 3-bit alarm code Select three signals from servo ready, current limit detection, TGON, positioning completed (speed agree), brake release, overload warning, overload detected										
Functions/Performance	Frequency Response	100Hz (motor inertia = load inertia)									
	DB*	Built-in (External resistor is required.)	External DB contactor and DB resistor are required.	Built-in (External resistor is required.)	External DB contactor and DB resistor are required.						
	Regeneration	Built-in (External resistor is required.)									
	Protection	Overcurrent, overload, regenerative error, main circuit voltage error, heatsink overheat, power open phase, overspeed, encoder error, encoder disconnected, overrun, CPU error, overflow, parameter error									
	Display	POWER, ALARM, CHARGE display LED 5-digit, 7-segment LED on digital operator									
	Others	Zero-clamp, soft start/stop, reverse rotation connection, brake interlock signal output, JOG run									
	Digital Operator Type	JUSP-OP02A-2									
Mounting Method	Base mounted										
Peripheral Devices	Regenerative-resistor unit	JUSP- <input type="text"/>	RA08	RA09	RA11	RA12	RA13	RA14	RA15	RA16	
	DB resistor unit	JUSP- <input type="text"/>	DB01	DB01	DB02	DB03	DB03	DB04	DB05	DB06	

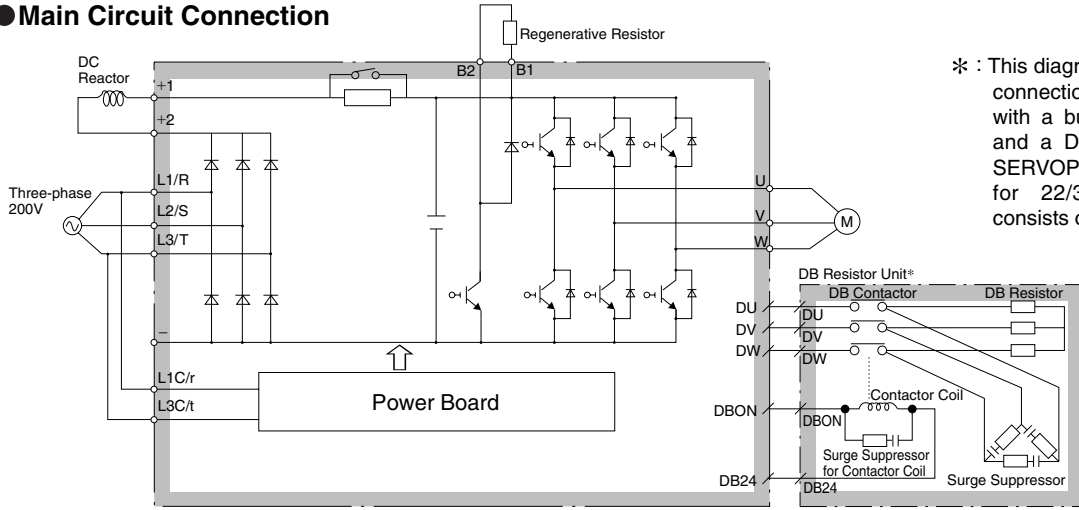
\* : DB means an automatic dynamic brake, which operates at main power OFF, servo alarm, servo OFF, and overtravel.

# CONNECTION EXAMPLE : 200V

## Standard Connections



## ● Main Circuit Connection



\* : This diagram is an example of the connection of a DB resistor unit with a built-in surge suppressor and a DB contactor for 37-kW SERVOPACKs. A DB resistor unit for 22/30-kW SERVOPACKs consists of a resistor only.

## ● Main Circuit Terminal Description

Terminal Symbol	Name	Description	Terminal Symbol	Name	Description
L1/R, L2/S, L3/T	Main Circuit Power Supply Input Terminal	Three-phase 200V to 230VAC/+10 to -15%, 50/60Hz	B1, B2	Regenerative Resistor Connection Terminal	Connects regenerative resistor.
L1C/r, L3C/t	Control Power Supply Input Terminal	Single-phase 200V to 220VAC/+10 to -15%, 50Hz Single-phase 200V to 230VAC/+10 to -15%, 60Hz	-	Main Circuit Negative Side Terminal	(Normally external connection is not necessary.)
U, V, W	Motor Connection Terminal	Connect with motor.	DU, DV, DW,	DB Resistor Unit, DB Contactor Connection Terminal	Connected to a DB resistor unit or a DB contactor.
⏏ (× 2)	Grounding Terminal	Grounded (for grounding power supply and motor).	DBON, DB24	DB Resistor Unit Connection Terminal	For 37kW SERVOPACK, connect to DBON and DB24 terminals of DB resistor unit.
+1, +2	DC Reactor Connection Terminal	Connect DC reactor for suppressing high-harmonic wave. If not necessary, shorten the terminals.			

## ● Control Circuit Terminal Description

Refer to page 10 for more information on CN1 output processing and CN2 connection.

CN1 (Connector I/O) Terminal Layout

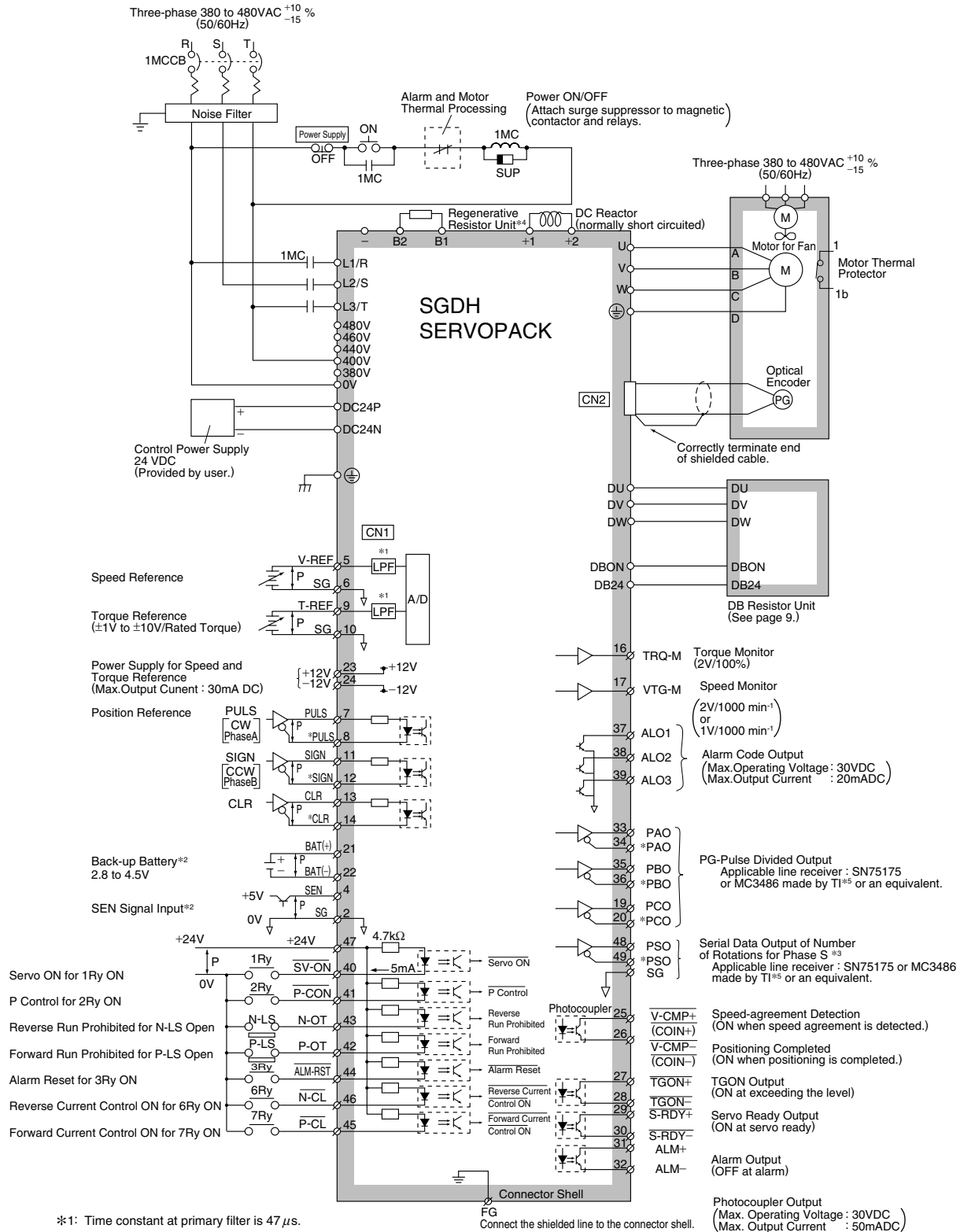
Pin	Symbol	Description	Pin	Symbol	Description
1	SG	GND	26	/V-CMP+ (/COIN+)	Speed agreement signal output
2	SG	GND	27	/TGON+	TGON output signal
3	PL1	Power supply for open collector ref.	28	/TGON-	TGON output signal
4	SEN	SEN signal input	29	/S-RDY+	Servo ready output
5	V-REF	Speed ref. input	30	/S-RDY-	Servo ready output
6	SG	GND	31	ALM+	Servo alarm output
7	PULS	Ref. pulse input	32	ALM-	Servo alarm output
8	/PULS	Ref. pulse input	33	PAO	PG pulse divided output phase A
9	T-REF	Torque ref. input	34	/PAO	PG pulse divided output phase A
10	SG	GND	35	PBO	PG pulse divided output phase B
11	SIGN	Ref. code input	36	/PBO	PG pulse divided output phase B
12	/SIGN	Ref. code input	37	ALO1	Alarm code output
13	PL2	Power Supply for open collector ref.	38	ALO2	Alarm code output
14	/CLR	Clear input	39	ALO3	Alarm code output
15	CLR	Clear input	40	/S-ON	Servo ON input
16	-	-	41	/P-CON	P control input
17	-	-	42	P-OT	Fwd. overtravel input
18	PL3	Power supply for open collector ref.	43	N-OT	Rev. side overtravel input
19	PCO	PG pulse divided output phase C	44	/ALM-RST	Alarm reset input
20	/PCO	PG pulse divided output phase C	45	/P-CL	Fwd. current limit ON input
21	BAT(+)	Battery(+)	46	/N-CL	Rev. current limit ON input
22	BAT(-)	Battery(-)	47	+24V-IN	External input power supply
23	-	-	48	PSO	Phase S signal output
24	-	-	49	/PSO	Phase S signal output
25	/V-CMP+ (/COIN+)	Speed agreement signal output	50	-	-

CN2 (Encoder Connection) Terminal Layout

Pin	Symbol	Description	Pin	Symbol	Description
1	PG5V	PG power supply +5V	2	PG 0V	PG power supply 0V
3	BAT(+)	Battery(+) (absolute encoder only)	4	BAT(-)	Battery(-) (absolute encoder only)
5	PS	PG serial signal input	6	/PS	PG serial signal input

# CONNECTION EXAMPLE : 400V

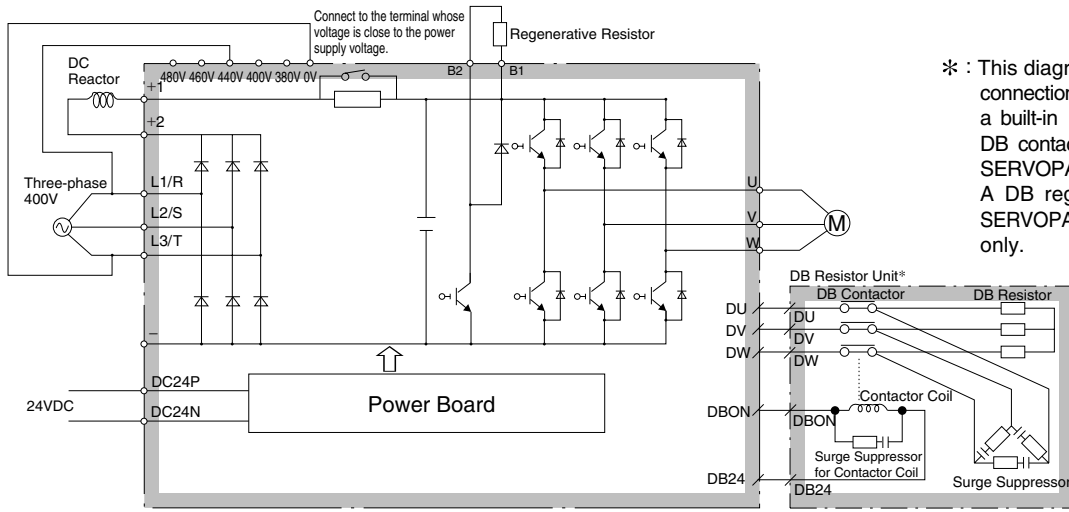
## Standard Connections



\*1: Time constant at primary filter is 47  $\mu$ s.  
 \*2: Connects when using absolute encoder.  
 \*3: Effective when using 12-bit absolute encoder.  
 \*4: Regenerative resistor unit (optional) should be mounted externally.  
 \*5: TI stands for Texas Instruments Inc.  
 Note:  $\overline{P}$  represents twisted pair cable.



## ● Main Circuit Connection



\* : This diagram is an example of the connection of a DB resistor unit with a built-in surge suppressor and a DB contactor for 37-kW to 55-kW SERVOPACKs.  
A DB resistor unit for 22/30-kW SERVOPACKs consists of a resistor only.

## ● Main Circuit Terminal Description

Terminal Symbol	Name	Description	Terminal Symbol	Name	Description
L1/R, L2/S, L3/T	Main Circuit Power Supply Input Terminal	Three-phase 380V to 480VAC/+10 to -15%, 50/60Hz	480V, 460V, 440V, 400V, 380V, 0V	Control Power Supply Input Terminal	Connect to the terminal whose voltage is close to the power supply voltage.
U, V, W	Motor Connection Terminal	Connect with motor.		Main Circuit Negative Side Terminal	(Normally external connection is not necessary.)
DC24P DC24N	Control Power Supply Input Terminal	24VDC±15%		DU, DV, DW	DB Resistor Unit, DB Contactor Connection Terminal
⏏ (× 2)	Grounding Terminal	Grounded (for grounding power supply and motor).		DBON, DB24	DB Resistor Unit Connection Terminal
+1, +2	DC Reactor Connection Terminal	Connect DC reactor for suppressing high-harmonic wave. If not necessary, shorten the terminals.			For 37kW to 55kW SERVOPACKs, connect to DBON and DB24 terminals of DB resistor unit.
B1, B2	Regenerative Resistor Connection Terminal	Connects regenerative resistor.			

## ● Control Circuit Terminal Description

Refer to page 10 for more information on CN1 output processing and CN2 connection.

### CN1 (Connector I/O) Terminal Layout

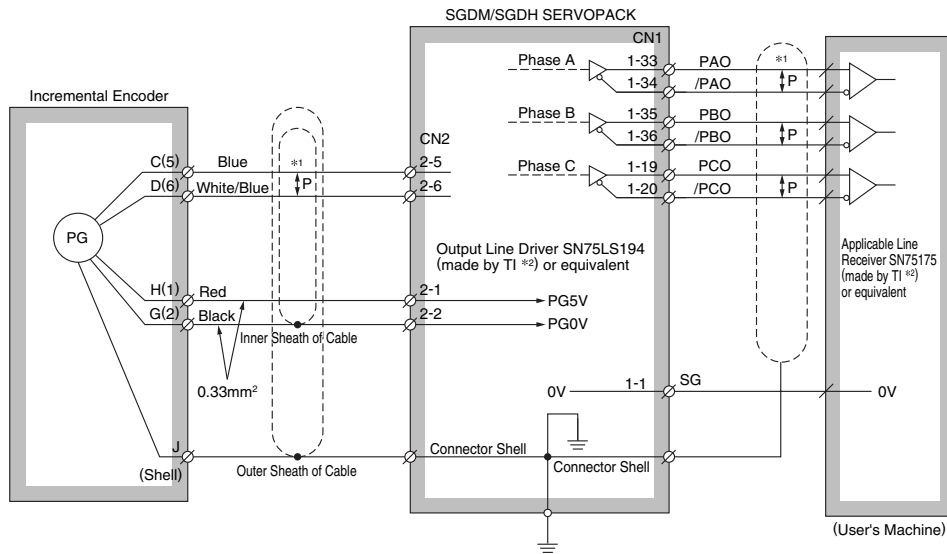
2	SG	GND	1	SG	GND	26	/V-CMP- (/COIN-)	Speed agreement signal output
4	SEN	SEN signal input	3	PL1	Power supply for open collector ref.	27	/TGON+	TGON output signal
6	SG	GND	5	V-REF	Speed ref. input	29	/S-RDY+	Servo ready output
8	/PULS	Ref. pulse input	7	PULS	Ref. pulse input	31	ALM+	Servo alarm output
10	SG	GND	9	T-REF	Torque ref. input	33	PAO	PG pulse divided output phase A
12	/SIGN	Ref. code input	11	SIGN	Ref. code input	35	PBO	PG pulse divided output phase B
14	/CLR	Clear input	13	PL2	Power Supply for open collector ref.	37	ALO1	Alarm code output
16	-	-	15	CLR	Clear input	39	ALO3	Alarm code output
18	PL3	Power supply for open collector ref.	17	-	-	41	/P-CON	P control input
20	/PCO	PG pulse divided output phase C	19	PCO	PG pulse divided output phase C	43	N-OT	Rev. side overtravel input
22	BAT(-)	Battery(-)	21	BAT(+)	Battery(+)	45	/P-CL	Fwd. current limit ON input
24	-	-	23	-	-	47	+24V-IN	External input power supply
			25	/V-CMP+ (/COIN+)	Speed agreement signal output	49	/PSO	Phase S signal output
						50	-	-

### CN2 (Encoder Connection) Terminal Layout

1	PG5V	PG power supply +5V	2	PG 0V	PG power supply 0V
3	BAT(+)	Battery(+) (absolute encoder only)	4	BAT(-)	Battery(-) (absolute encoder only)
5	PS	PG serial signal input	6	/PS	PG serial signal input

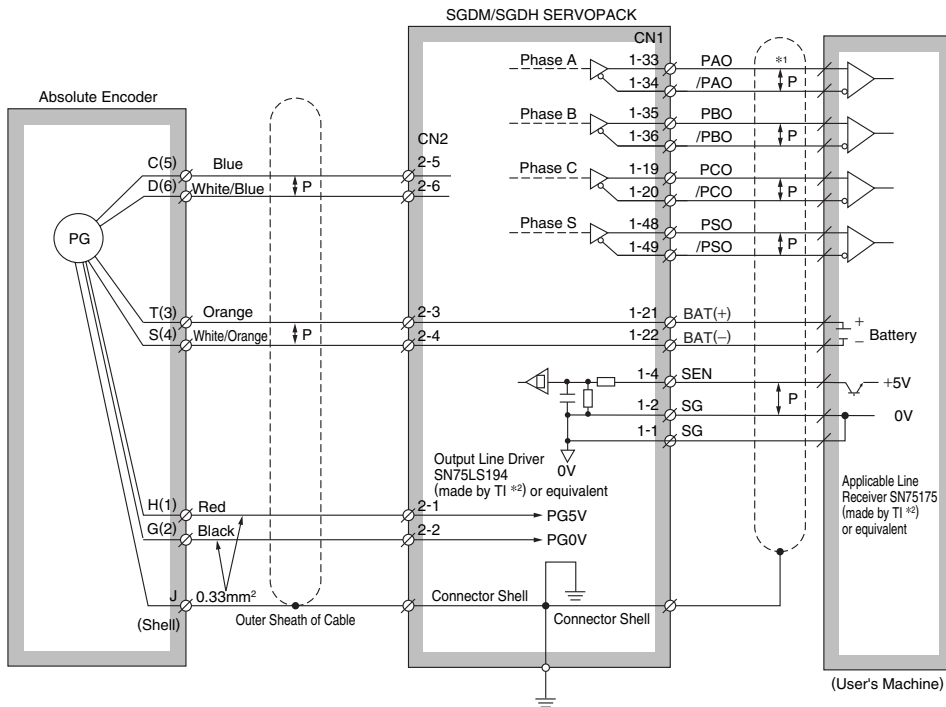
## Encoder Connections

### ● Incremental Encoder



- \*: 1  $\square$  P represents twisted pair cable.
- \*: 2 TI=Texas Instruments Inc.

### ● Absolute Encoder



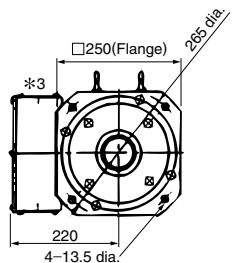
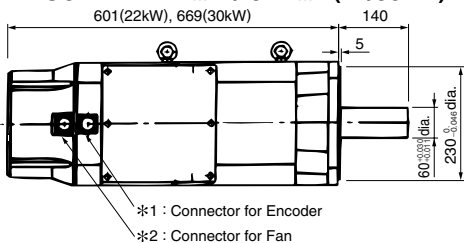
- \*: 1  $\square$  P represents twisted pair cable.
- \*: 2 TI=Texas Instruments Inc.

# DIMENSIONS

Servomotor Units : mm

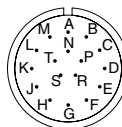
## 200-V Class

### SGMBH-2BA/A /3ZA/A(22/30kW)



Approx. Mass: 120kg(22kW)  
140kg(30kW)

\*1 : Connector for Encoder

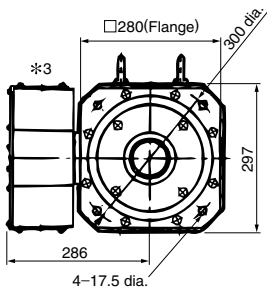
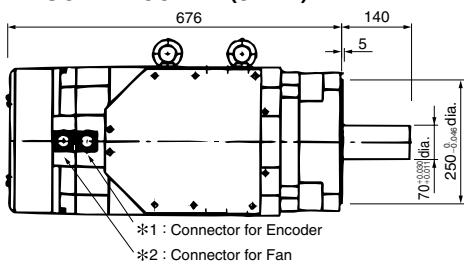


Receptacle : 97F-3102E20-29P

Plug L-shape : JA08A-20-29S-J1-EB(CE conformance) or MS3108B20-29S  
Straight : JA06A-20-29S-J1-EB(CE conformance) or MS3106B20-29S  
Cable Clamp : JL04-2022CKE(\*\*)(CE conformance) or MS3057-12A

Notes:1 \* $\phi$  will be replaced by cable diameter.  
2 Items surrounded by rectangle should be prepared by customer.  
3 A connector conformed to CE marking requires a CE conformed plug and a cable clamp.

### SGMBH-3GA/A(37kW)



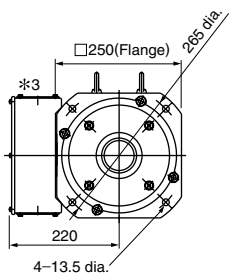
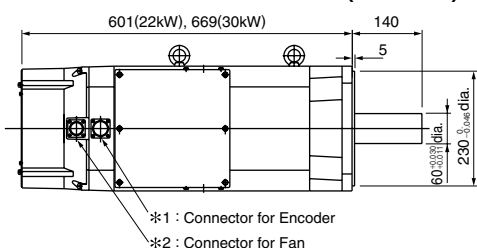
Approx. Mass: 235kg

## Absolute Encoder

A	—	K	—
B	—	L	—
C	DATA+	M	—
D	DATA-	N	—
E	—	P	—
F	—	R	—
G	0V	S	BATT-
H	+5VDC	T	BATT+
J	FG(Frame Ground)		

## 400-V Class

### SGMBH-2BD/A /3ZD/A(22/30kW)

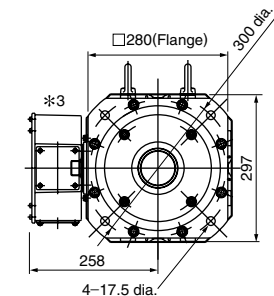
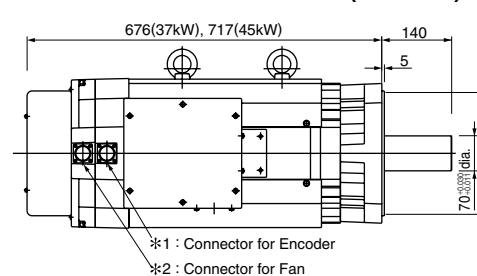


Approx. Mass: 120kg(22kW)  
140kg(30kW)

## Incremental Encoder

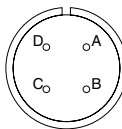
A	—	K	—
B	—	L	—
C	DATA+	M	—
D	DATA-	N	—
E	—	P	—
F	—	R	—
G	0V	S	—
H	+5VDC	T	—
J	FG(Frame Ground)		

### SGMBH-3GD/A /4ED/A(37/45kW)



Approx. Mass: 230kg(37kW)  
250kg(45kW)

\*2 : Connector for Fan



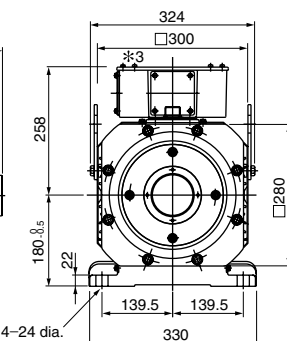
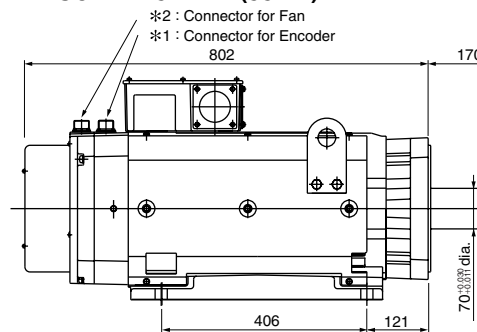
Receptacle : CE05-2A18-10PD-B

Plug L-shape : CE05A-8A18-10SD-B-BAS(CE conformance) or MS3108B18-10S  
Straight : CE05-6A18-10SD-B-BSS(CE conformance) or MS3106B18-10S  
Cable Clamp : CE3057-10A-\*(D265)(CE conformance) or MS3057-10A

Notes:1 \* $\phi$  will be replaced by cable diameter.  
2 Items surrounded by rectangle should be prepared by customer.  
3 A connector conformed to CE marking requires a CE conformed plug and a cable clamp.

A	Fan Terminal (U)
B	Fan Terminal (V)
C	Fan Terminal (W)
D	

### SGMBH-5ED/A(55kW)



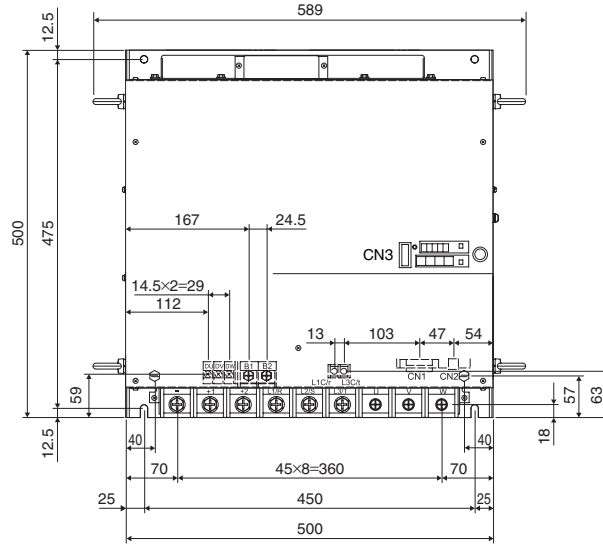
Approx. Mass: 350kg

\*3 : Terminal Box

U, V, W	Motor terminal	M10
$\oplus$	Grounding terminal	M10
1, 1b	Thermostat	M4

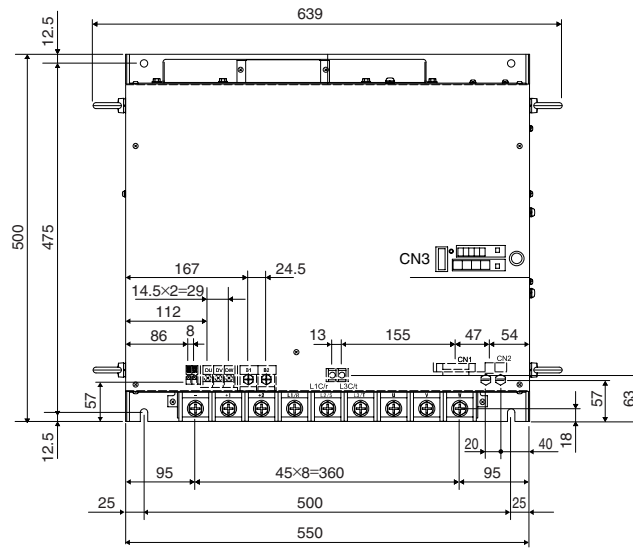
**200-V Class**

**SGDM-2BADA(22kW)  
SGDM-3ZADA(30kW)**



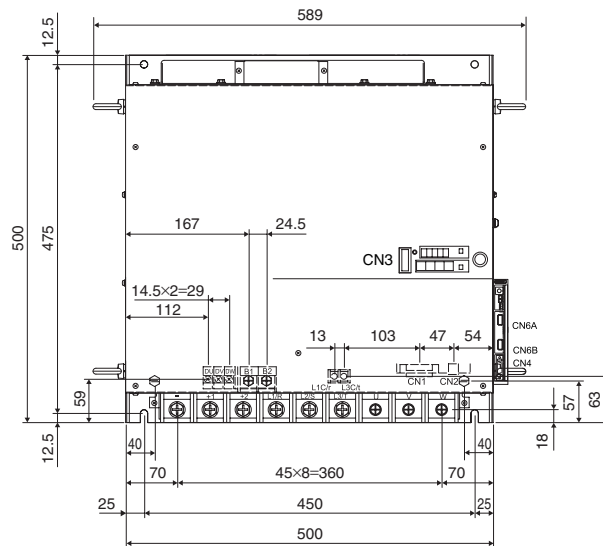
Approx. Mass: 55kg

**SGDM-3GADA(37kW)**



Approx. Mass: 60kg

**SGDH-2BAE(22kW)  
SGDH-3ZAE(30kW)**



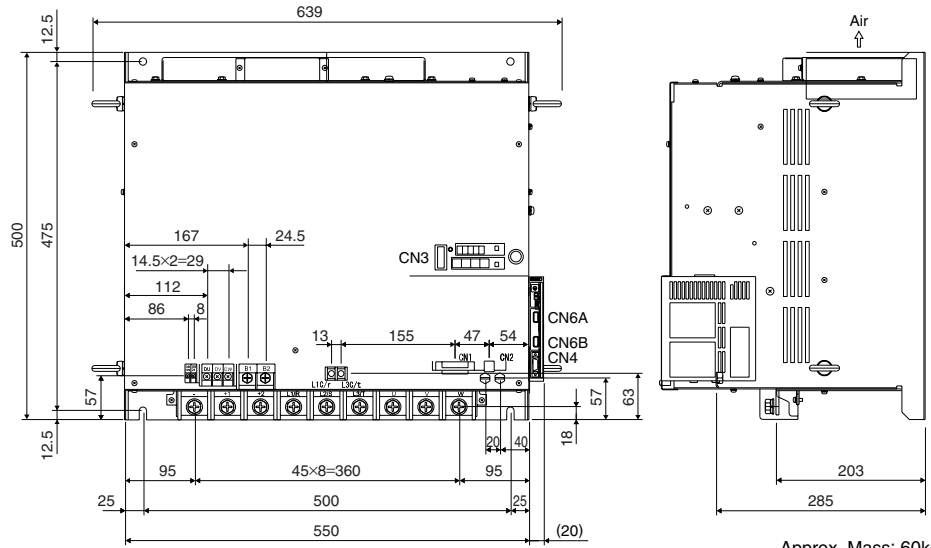
Approx. Mass: 55kg

Common for all types of SERVOPACK

Symbol	Connector for SERVOPACK	Made by
1CN	10250-52AJL	SUMITOMO 3M LTD
2CN	10220-52AJL	
3CN	17JE-13090-37(D2B)	Daiichi Electronic Industries Co., Ltd

Painting color of front cover and case : 5Y 7/1 Munsell notation

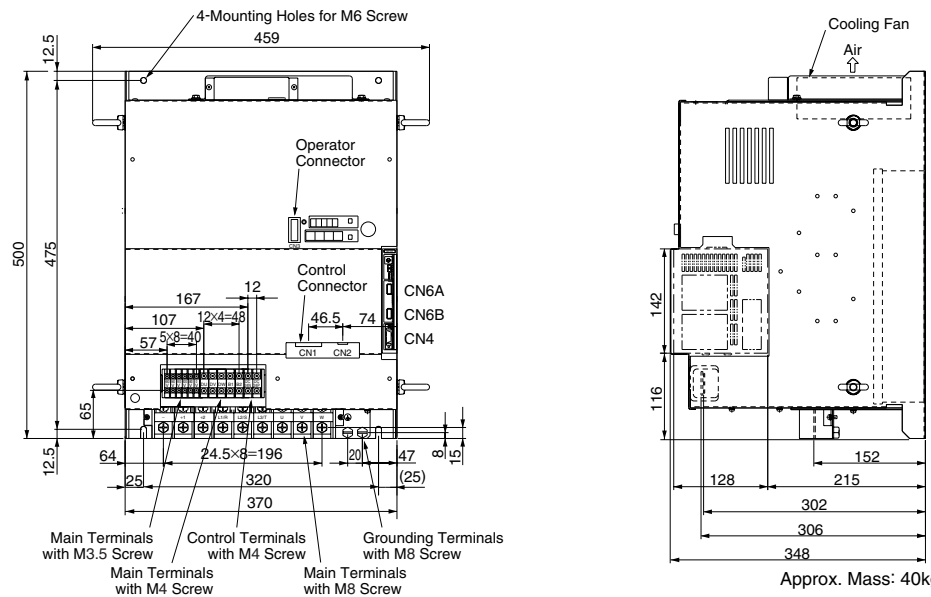
### SGDH-3GAE(37kW)



Approx. Mass: 60kg

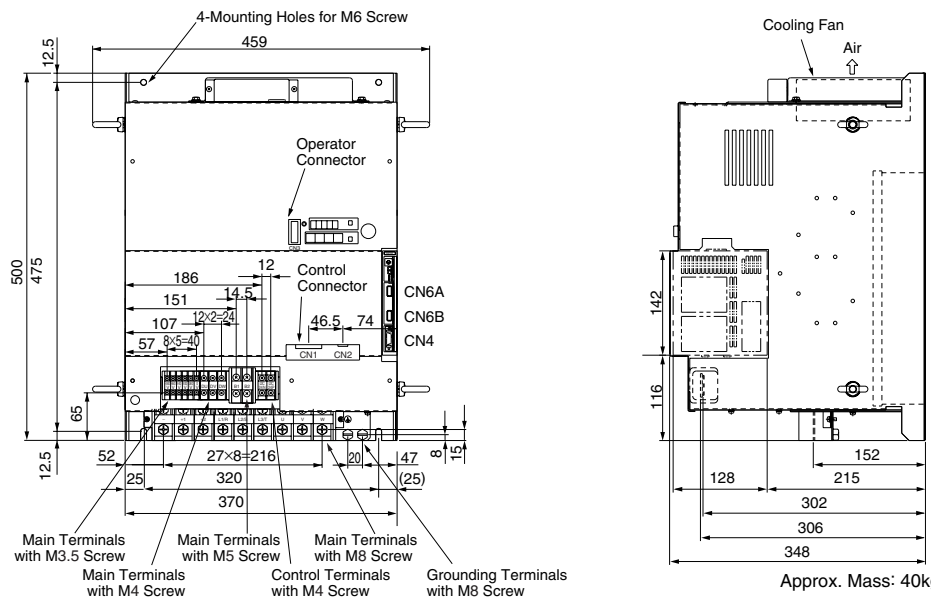
## 400-V Class

### SGDH-2BDE(22kW)



Approx. Mass: 40kg

### SGDH-3ZDE(30kW)

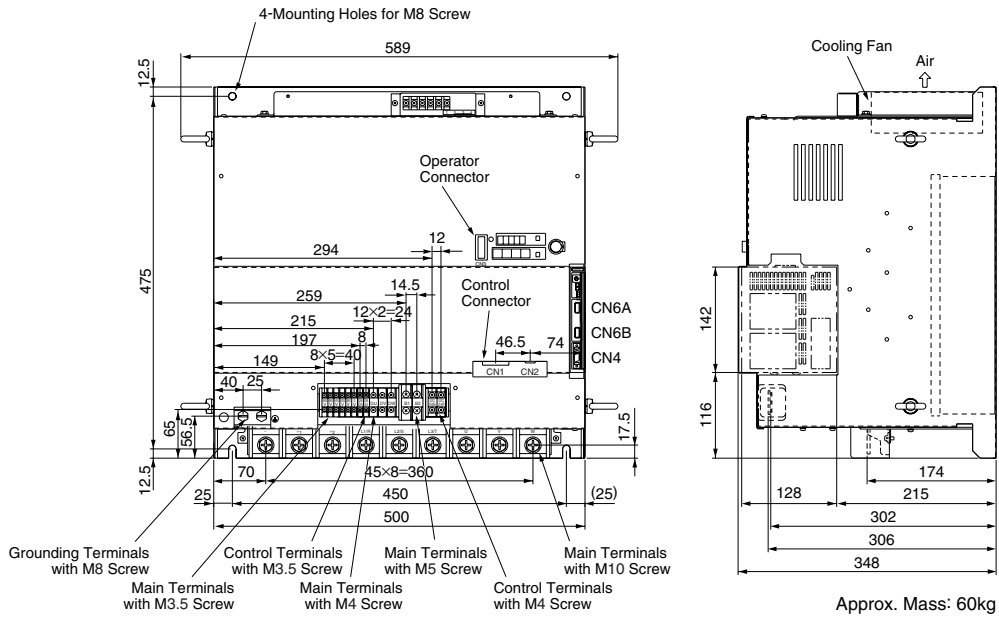


Approx. Mass: 40kg

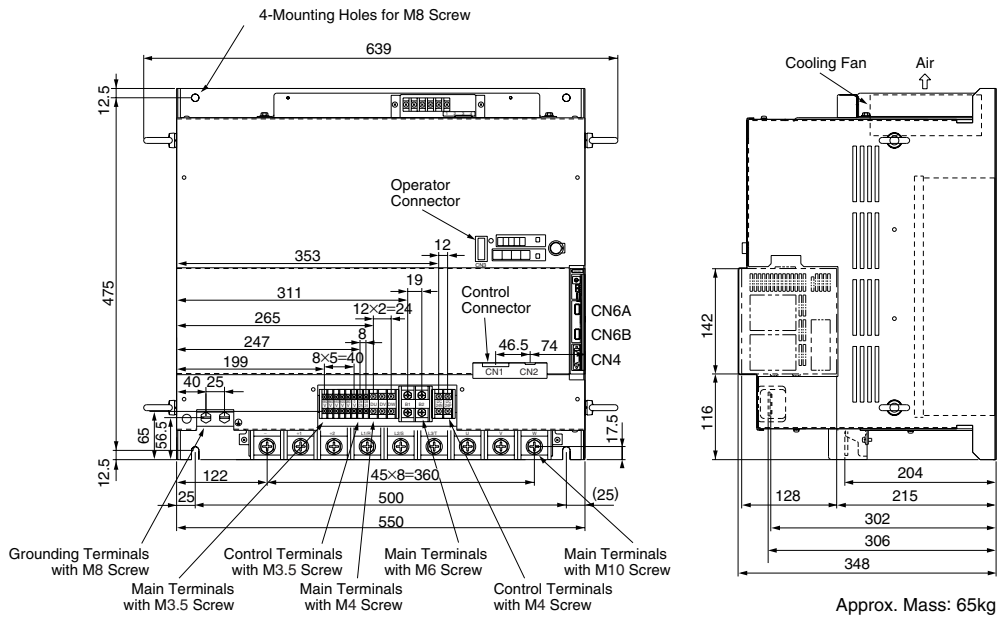


**400-V Class (cont'd)**

**SGDH-3GDE(37kW)**

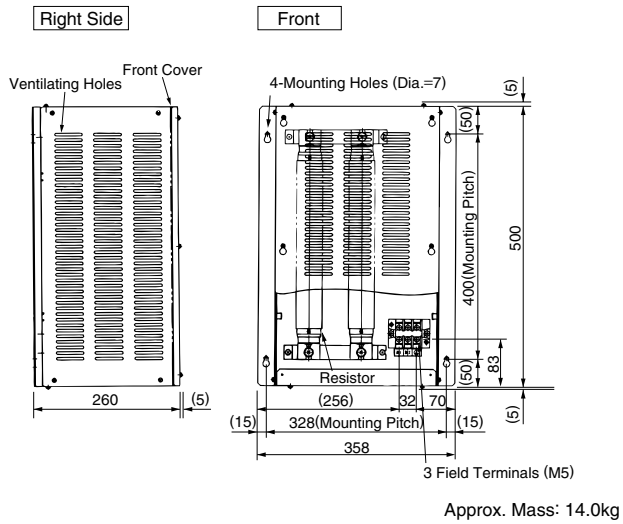


**SGDH-4EDE/-5EDE(45/55kW)**

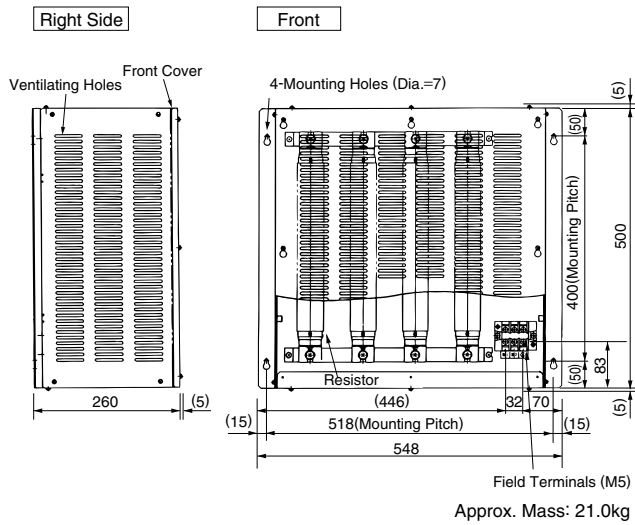


**For 200-V Class**

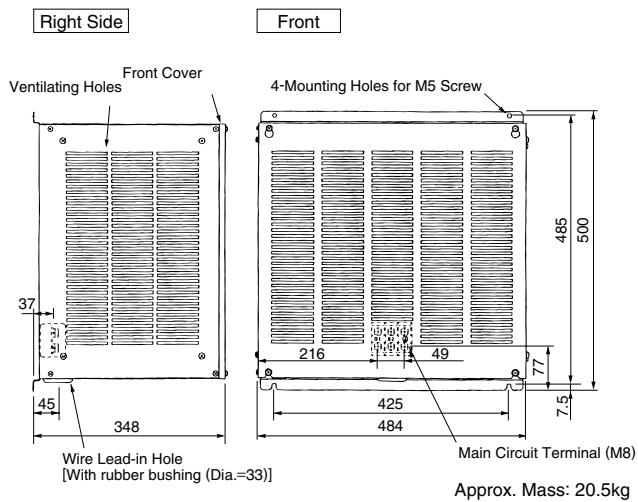
**JUSP-RA08 (For 22kW)**



**JUSP-RA09 (For 30kW)**

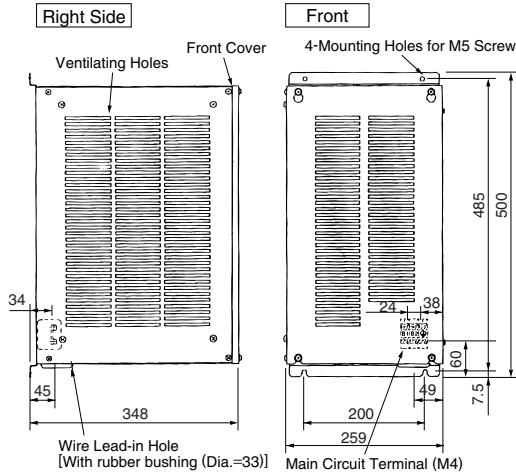


**JUSP-RA11 (For 37kW)**



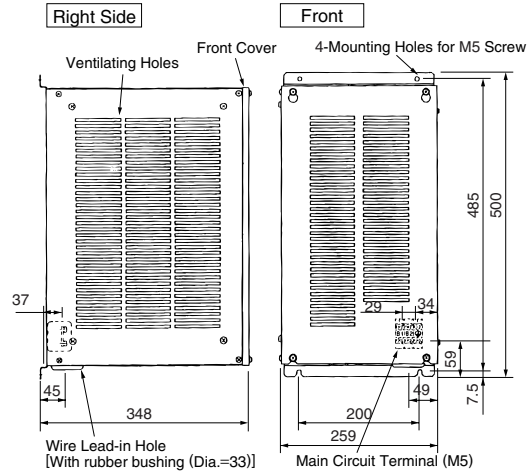
**For 400-V Class**

**JUSP-RA12 (For 22kW)**



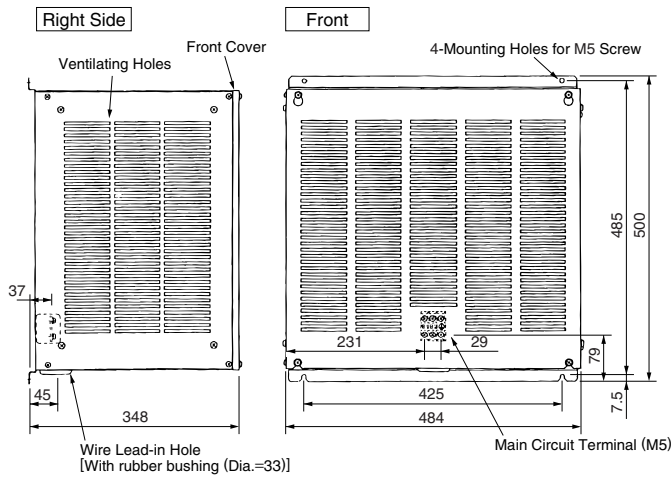
Approx. Mass: 14.0kg

**JUSP-RA13 (For 30kW)**



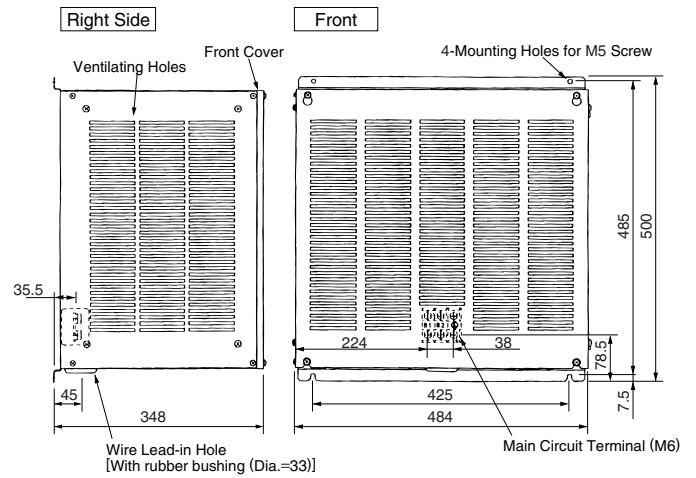
Approx. Mass: 14.0kg

**JUSP-RA14 (For 37kW)**



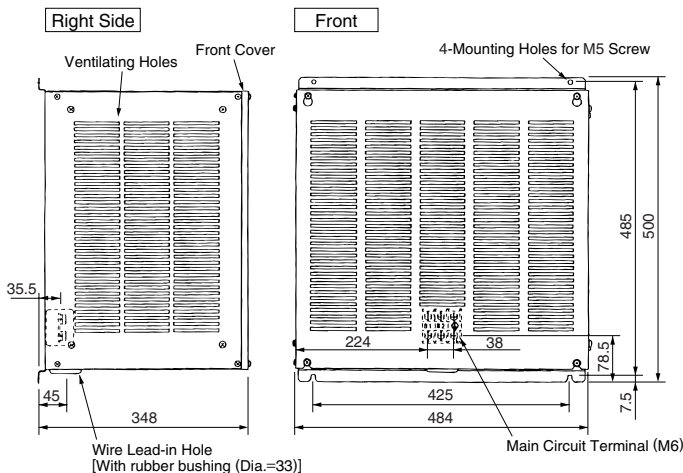
Approx. Mass: 20.0kg

**JUSP-RA15 (For 45kW)**



Approx. Mass: 21.5kg

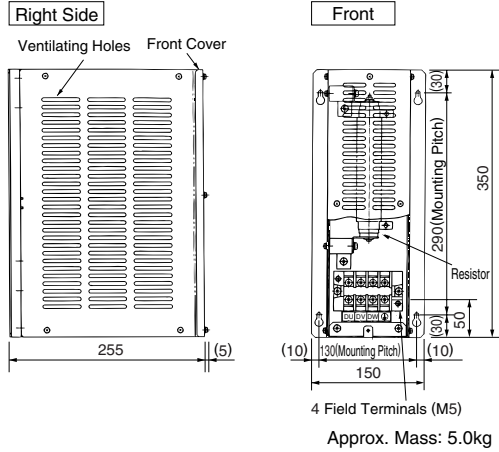
**JUSP-RA16 (For 55kW)**



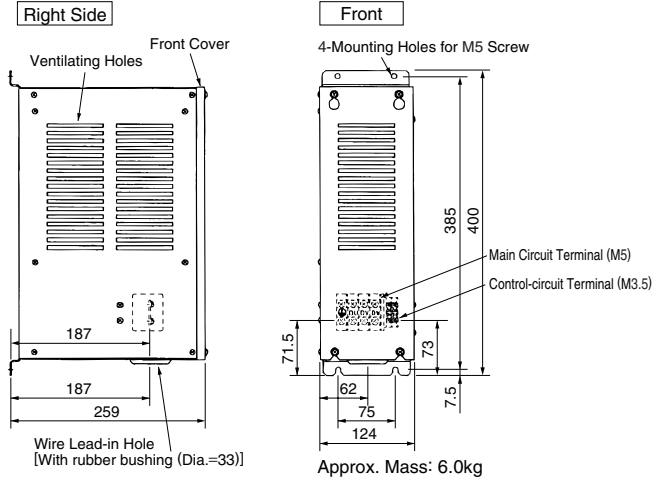
Approx. Mass: 23.5kg

■ **For 200-V Class**

**JUSP-DB01 (For 22/30kW)**

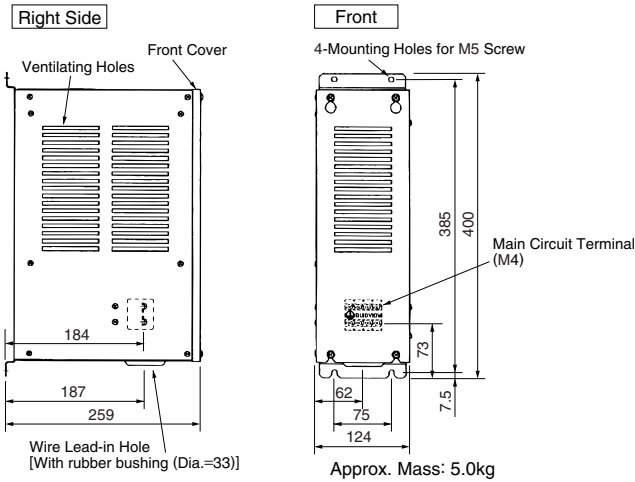


**JUSP-DB02 (For 37kW)**

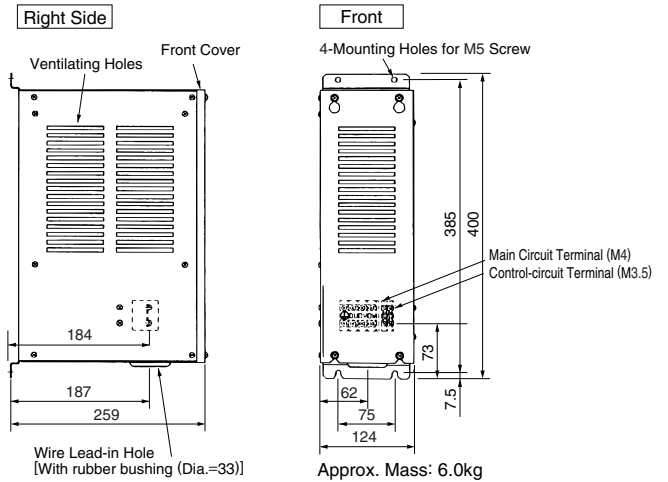


■ **For 400-V Class**

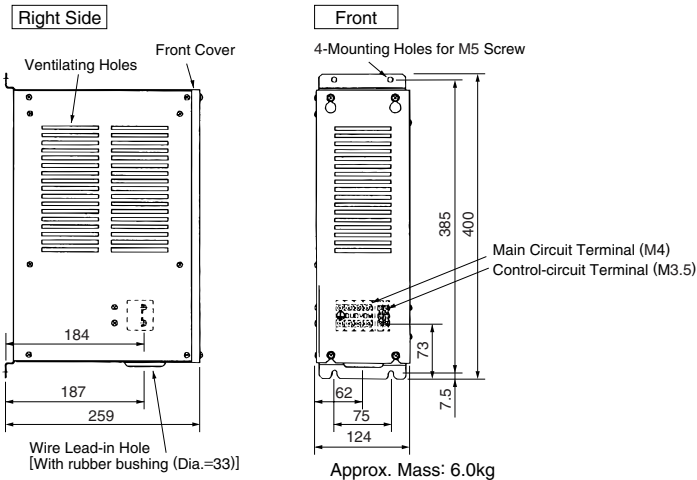
**JUSP-DB03 (For 22/30kW)**



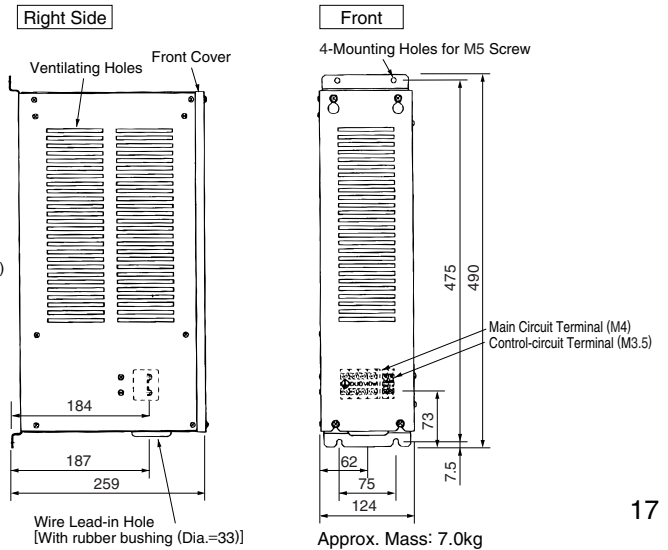
**JUSP-DB04 (For 37kW)**



**JUSP-DB05 (For 45kW)**



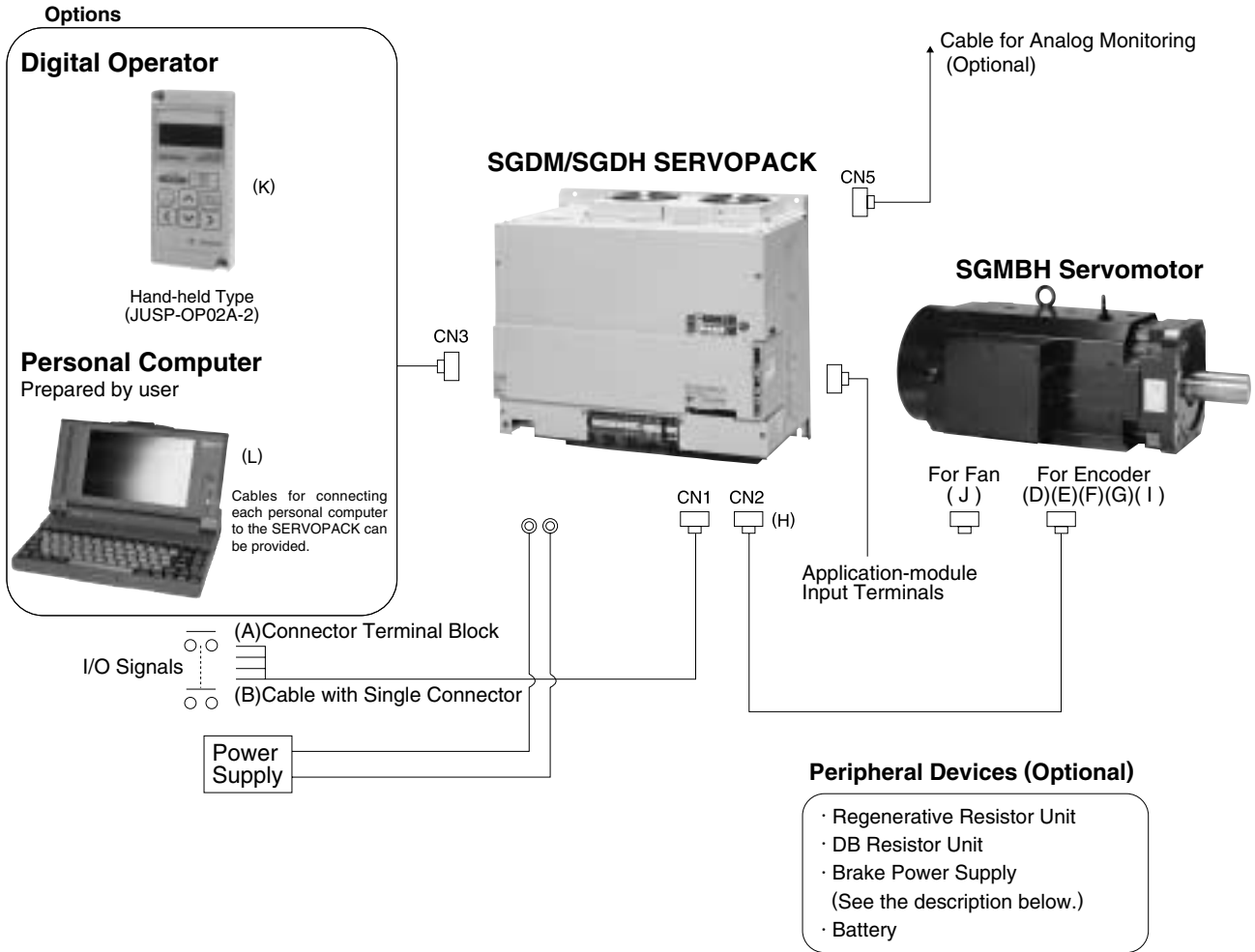
**JUSP-DB06 (For 55kW)**



# ORDERING REFERENCE

## System Configuration Example

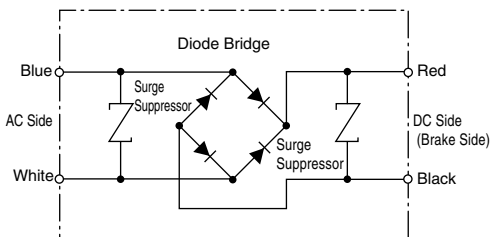
Large-capacity AC servo drive configurations are illustrated below.  
Connectors and operators are not provided with servomotors and SERVOPACKs.  
Order what you need separately.



## Brake Power Supply Internal Circuit Diagram

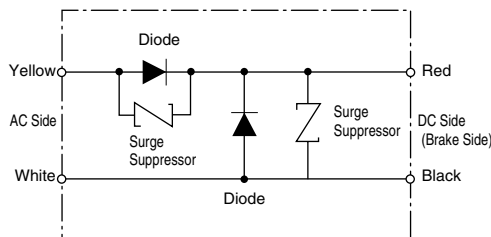
### LPDE-1H01

100VAC input, 90VDC output  
1.0ADC max.



### LPSE-2H01

200VAC input, 90VDC output  
1.0ADC max.



· Lead Length: 500mm each  
· Lead Color

AC Input Side		Brake Side
100V	200V	Red, Black
Blue, White	Yellow, White	Red, Black

· Max. Ambient Temperature: 60°C

Note: Opening and closing braking power supply circuit is safer on the AC side.  
When opening and closing on the DC side, use surge suppressor near the brake coil in case surge suppressor damages brake coil.  
Prepare the brake power supply for 24 VDC output.



## Order Form

●: Required ○: Select one from the list ◇: Optional

Product Name		Type	Q'ty
SGMBH Servomotor		● SGMBH-□□□□A□□	
SGDM SERVOPACK		● SGDM-□□ADA	
SGDH SERVOPACK		● SGDH-□□□□E	
<b>For I/O Signals (CN1)</b>			
CN1	A	Connector Terminal Unit (with CN1 connector and 0.5m cable)	○ JUSP-TA50P
	B	Cable with Single Connector	1m ○ JZSP-CKI01-1
			2m ○ JZSP-CKI01-2
3m JZSP-CKI01-3			
<b>For Encoder Signals (CN2)</b>			
Encoder	D	Cable with Single Connector (SERVOPACK Side: Connector)	3m ○ JZSP-CMP23-03
			5m JZSP-CMP23-05
			10m ○ JZSP-CMP23-10
			15m JZSP-CMP23-15
			20m JZSP-CMP23-20
	E	Cable with Connector on Both Ends (SERVOPACK Side: Connector Encoder Side: Straight plug)	3m ○ JZSP-CMP21-03
			5m JZSP-CMP21-05
			10m ○ JZSP-CMP21-10
			15m JZSP-CMP21-15
			20m JZSP-CMP21-20
	F	Cable with Connectors on Both Ends (SERVOPACK Side: Connector Encoder Side: L-shape plug)	3m ○ JZSP-CMP22-03
			5m JZSP-CMP22-05
10m ○ JZSP-CMP22-10			
15m JZSP-CMP22-15			
20m JZSP-CMP22-20			
G	Encoder Cable without Connector	5m ○ JZSP-CMP29-05	
		10m JZSP-CMP29-10	
		15m JZSP-CMP29-15	
		20m ○ JZSP-CMP29-20	
		30m JZSP-CMP29-30	
		40m JZSP-CMP29-40	
		50m JZSP-CMP29-50	
H	Connector Kit (for CN2)*1	○ JZSP-CMP9-1	
Connector*2	I	Plug for Encoder L-Shape ○ MS3108B20-29S	
		Straight ○ MS3106B20-29S	
	J	Cable Clamp for Encoder MS3057-12A	
		Plug for Fan on Motor Side L-Shape ○ MS3108B18-10S	
Straight ○ MS3106B18-10S			
Cable Clamp for Fan on Motor Side MS3057-10A			
<b>For Setting Devices (CN3, CN5)</b>			
CN3 ⇕ Setting Device	K	Digital Operator (Hand-held Type, with Cable) 1m ◇ JUSP-OP02A-2	
		L	Cable for D-sub 25 Pins 2m JZSP-CMS01
			Connecting PC/AT Compatible D-sub 9 pins 2m ◇ JZSP-CMS02
			PC PC98 Half Pitch 14 pins 2m JZSP-CMS03
CN5	Cable for Analog Monitor (With Single Connector) 1m ◇ DE9404559		
<b>MECHATROLINK-communication Cables</b>			
CN6A CN6B	MECHATROLINK-communication Cable		◇ JEPMC-W6000-A3
	MECHATROLINK-communication Cable Terminator		◇ JEPMC-W6000-A5 JEPMC-W6000-01 JEPMC-W6020
Regenerative Resistor Unit		○ JUSP-RA08/RA09/RA11/RA12/RA13/RA14/RA15/RA16	
DB Resistor Unit		◇ JUSP-DB01/DB02/DB03/DB04/DB05/DB06	
Brake Power Supply For 100VAC		◇ LPDE-1H01	
(Required for servomotor with brake) For 200VAC		◇ LPSE-2H01	
Battery (Required for absolute encoder)		◇ ER6VC3(3.6V)	

\*1 : Made by Molex Japan Co.,Ltd.

\*2 : Made by Japan Aviation Electronics Industry,Ltd. Water-resistance types are also available.

Note : Prepare DC power supply by customer (24V±10% 5A load possible).

# LARGE-CAPACITY $\Sigma$ -II SERIES

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In the event that the end user of this product is to be the military and said product is to be employed in any weapons systems or the manufacture thereof, the export will fall under the relevant regulations as stipulated in the Foreign Exchange and Foreign Trade Regulations. Therefore, be sure to follow all procedures and submit all relevant documentation according to any and all rules, regulations and laws that may apply.

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