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[JZSP-BA01](#)

EN

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the manufacturer

DE

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Hersteller bereitgestellt

FR

Cette fiche technique est
présentée par le fabricant

SGDH-□

Sigma-II servo drive

The ideal servo family for motion control. Fast response, high speed, and high accuracy.

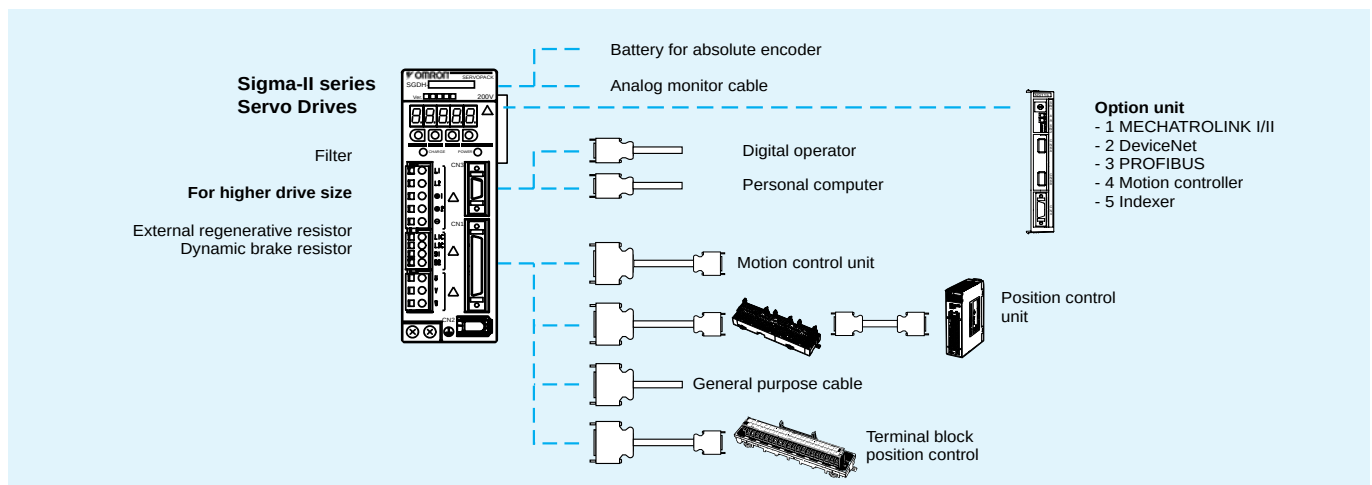
- Online autotuning with 10 levels of rigidity
- Peak torque 300% of nominal during 3 seconds
- Automatic motor recognition
- Analogue control for speed and torque
- Pulse train control for positioning
- Optional units offer network connectivity and flexible system architecture
- Smooth operation
- Oscilloscope available via software tool
- Windows based configuration and commissioning software

Ratings

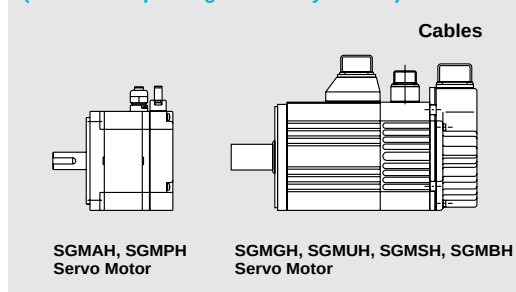
- 230 VAC Single-phase 30 W to 1.5 kW (4.77 Nm)
- 400 VAC Three-phase 450 W to 55 kW (350 Nm)



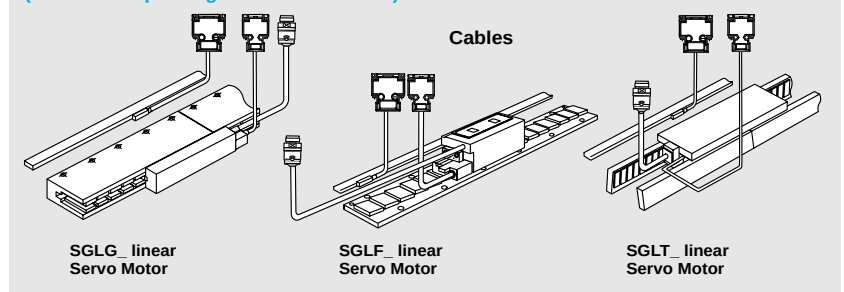
System configuration



(Refer to chapter Sigma-II rotary motors)



(Refer to chapter Sigma-II linear motors)



Servo motor supported

Servo motor			
Family	Voltage	Models rated torque	Remarks
SGMAH (3000 min ⁻¹) 	230 V	0.0955 Nm to 2.39 Nm	Refer to the Sigma-II rotary motors chapter for details
	400 V	0.955 Nm to 2.07 Nm	
SGMPH (3000 min ⁻¹) 	230 V	0.318 Nm to 4.77 Nm	Refer to the Sigma-II rotary motors chapter for details
	400 V	0.637 Nm to 4.77 Nm	
SGMGH (1500 min ⁻¹) 	400 V	2.84 Nm to 95.4 Nm	Refer to the Sigma-II Rotary motors chapter for details
SGMSH (3000 min ⁻¹) 	400 V	3.18 Nm to 15.8 Nm	Refer to the Sigma-II Rotary motors chapter for details
SGMUH (6000 min ⁻¹) 	400 V	1.59 Nm to 6.3 Nm	Refer to the Sigma-II rotary motors chapter for details
SGMBH (1500 min ⁻¹) 	400 V	140 Nm to 350 Nm	Refer to the Sigma-II rotary motors chapter for details
SGLGW Linear motors 	230 V	12.5 N to 325 N	Refer to the Sigma linear motors chapter for details
SGLFW Linear motors 	230 V	25 N to 560 N	Refer to the Sigma linear motors chapter for details
	400 V	80 N to 2250 N	
SGLTW Linear motors 	400 V	300 N to 2000 N	Refer to the Sigma linear motors chapter for details

Type designation

Servo drive

SGDH - 04 A E - S - OY

Sigma-II servo drive

Capacity

A3	30 W	15	1.5 kW	2B	22 kW
A5	50 W	20	2.0 kW	3Z	30 kW
01	100 W	30	3.0 kW	3G	37 kW
02	200 W	50	5.0 kW	4E	45 kW
04	400 W	60	6.0 kW	5E	55 kW
05	500 W	75	7.5 kW		
08	750 W	1A	11 kW		
10	1.0 kW	1E	15 kW		

Phase

Blank	Three-phase (0.5 to 55kW) Single-phase (30 to 400W)
S	Single-phase (750W/1.5kW)

Model

E: speed, torque, position

Source voltage

A: 230 V
D: 400 V

Servo drive specifications

Single-phase, 230 V

Servo drive type		SGDH- □	A3AE-OY	A5AE-OY	01AE-OY	02AE-OY	04AE-OY	08AE-S-OY	15AE-S-OY		
Applicable servo motor		SGMAH-□	A3A□	A5A□	01A□	02A□	04A□	08A□	-		
		SGMPH-□	-	-	01A□	02A□	04A□	08A□	15A□		
Basic specifications	Max. applicable motor capacity		W	30	50	100	200	400	750	1500	
	Continuous output current		Arms	0.44	0.64	0.91	2.1	2.8	5.7	11.6	
	Max. output current		Arms	1.3	2.0	2.8	6.5	8.5	13.9	28	
	Input power		Main circuit	For single-phase, 200 to 230 VAC + 10 to -15%					220 to 230 VAC		
	Supply		Control circuit	For single-phase, 200 to 230 VAC + 10 to -15%					+10 to -15% (50/60 Hz)		
	Control method		Single phase full-wave rectification / IGBT / PWM / sine-wave current drive method								
	Feedback		Serial encoder (incremental/absolute value)								
	Conditions	Usage/storage temperature		0 to +55 °C / -20 to 85 °C							
		Usage/storage humidity		90%RH or less (non-condensing)							
		Altitude		1000m or less above sea level							
		Vibration/shock resistance		4.9 m/s ² / 19.6 m/s ²							
	Configuration		Base mounted								
	Approx. weight		Kg	0.8				1.1	1.7	3.8	

Three-phase, 400 V (up to 15 kW)

Servo drive type		SGDH-□	05DE-OY	10DE-OY	15DE-OY	20DE-OY	30DE-OY	50DE-OY	60DE-OY	75DE-OY	1ADE-OY	1EDE-OY
Applicable servo motor		SGMGH-□	05D□	09D□	13D□	20D□	30D□	44D□	55D□	75D□	1AD□	1ED□
		SGMSH-□	-	10D□	15D□	20D□	30D□	40D□/50D□	-	-	-	-
		SGMUH-□	-	10D□	15D□	-	30D□	40D□	-	-	-	-
Basic specifications	Max. applicable motor capacity	kW	0.45	1.0	1.5	2.0	3.0	5.0	6.0	7.5	11	15
	Continuous output current	Arms	1.9	3.5	5.4	8.4	11.9	16.5	20.8	25.4	28.1	37.2
	Max. output current	Arms	5.5	8.5	14	20	28	40.5	55	65	70	85
	Input power	Main circuit	For three-phase, 380 to 480 VAC + 10 to -15% (50/60Hz)									
	Supply	Control circuit	24 VDC+ 15%									
	Control method		Three phase full-wave rectification / IGBT / PWM / sine-wave current drive method									
	Feedback		Serial encoder (incremental/absolute)									
	Conditions		0 to +55 °C / -20 to +85 °C									
	Usage/storage temperature		90%RH or less (non-condensing)									
	Usage/storage humidity		1000 m or less above sea level									
	Altitude		4.9 m/s ² / 19.6 m/s ²									
	Vibration/shock resistance		Base mounted									
	Configuration											
	Approx. weight	Kg	2.8		3.8		5.5	13.5		22		

Three-phase, 400 V (from 22 kW to 55 kW)

Servo drive type		SGDH-□	2BDE	3ZDE	3GDE	4EDE	5EDE
Applicable servo motor		SGMBH-□	2BD□A	3ZD□A	3GD□A	4ED□A	5ED□A
Basic specifications	Max. applicable motor capacity	kW	22	30	37	45	55
	Continuous output current	Arms	58	80	100	127	150
	Max. output current	Arms	120	170	210	260	310
	Input power	Main circuit	For three-phase, 380 to 480 VAC + 10 to -15% (50/60 Hz)				
	Supply	Control circuit	24 VDC+ 15%				
	Control method		Three phase full-wave rectification / IGBT / PWM / sine-wave current drive method				
	Feedback		Serial encoder (incremental/absolute)				
	Conditions		0 to +55 °C / -20 to +85 °C				
	Usage/storage temperature		90%RH or less (non-condensing)				
	Usage/storage humidity		1000 m or less above sea level				
	Altitude		4.9 m/s ² / 19.6 m/s ²				
	Vibration/shock resistance		Base mounted				
	Configuration						
	Approx. weight	Kg	40		60	65	

General specifications

Speed/torque control mode	Performance	Speed control range	1:5000
		Speed variance	Load variance: During 0 to 100% load ±0.01% max. (at rated speed)
			Voltage variance: Rated voltage ±10%:0% (at rated speed)
			Temperature variance: 25 ±25 °C: ±0.1 % max (at rated speed)
		Frequency characteristics	400 Hz (at J _L = J _M up to 15 kW drives), 100 Hz (at J _L = J _M from 22 kW to 55 kW drives)
	Input signal	Torque control accuracy (reproducibility)	±2%
		Soft start time setting	0 to 10 s (acceleration, deceleration can each be set.)
		Speed reference input	Reference voltage: ±6 VDC (forward motor rotation if positive reference) at rated speed: set at delivery Variable setting range: ±2 to ±10 VDC at rated speed/ max. input voltage: ±12 V
			Input impedance: Approx. 14 kΩ
			Circuit time constant: Approx. 47 μs
	Torque reference input	Reference voltage	±3 VDC (forward rotation if positive reference) at rated speed: set at delivery Variable setting range ±1 to ±10 VDC at rated torque reference
			Input impedance: Approx. 14 KΩ
			Circuit time constant: Approx. 47 μs

Position control mode	performance	Bias setting	0 to 450 min ⁻¹ (setting resolution: 1 min ⁻¹)
		Feed forward compensation	0 to 100% (setting resolution: 1%)
		Position completed width setting	0 to 250 command units (setting resolution: 1 command unit)
Input signal	Command pulse	Input pulse type	Sign + pulse train, 90° phase displacement 2-phase pulse (A-phase+ B-phase) or CCW/CW pulse train
		Input pulse form	Line driver (+5 V level) , open collector (+5 V or +12 level)
		Input pulse frequency	0 to 500 Kpps (200 Kpps max. at open collector)
I/O signal	Control signal	Clear signal	Clear signal (input pulse is same as reference pulse)
		Position signal output	A-phase, B-phase, C-phase, (S-phase): line driver output S-phase is for absolute encoder only.
		Sequence input signal	Servo ON, P control (or control mode switching, zero clamp, command pulse inhibit), forward/reverse run prohibit, alarm reset, forward/reverse current limit (or internal speed switching)
Integrated functions	Communications	Interface	Digital operator (hand- held type), RS-422 port for PCs, etc. (RS-232C ports under some conditions)
		1:N communications	N may equal up to 14 when an RS-422A port is used
		Axis address setting	Set by user setting
		Functions	Status display, user constant setting monitor display, alarm traceback display, JOG run/autotuning operations, and graphing functions for speed/torque command signal, etc
	Automatic load inertia detection	Dynamic brake (DB)	Operates during main power OFF, servo alarm, servo OFF or overtravel
		Regenerative processing	Internal resistor included in models from 500 W to 5 kW. Regenerative resistor externally mounted (option).
		Overtravel (OT) prevention function	DB stop, deceleration stop or coast to stop during P-OT, N-OT operation
		Encoder divider function	Optional division possible
	Electronic gearing	Internal speed setting function	0.01< A/B<100
		Protective functions	Overcurrent, overvoltage, insufficient voltage, overload, main circuit sensor error, heatsink overheat, power phase loss, overflow, overspeed, encoder error, runaway, CPU error, parameter error, etc.
		Analog monitor functions for supervision	Integrates analog monitor connectors for supervision of the speed and torque reference signals, etc.
		Display functions	CHARGE, POWER, 7-segments LEDx5 (integrated digital operator function)
	Others	Reverse connection	Reverse connection, zero search, automatic motor discrimination function, and DC reactor connection terminal for high frequency power suppression function (except: 6 to 15 kW)

I/O specifications

I/O signals (CN1) - input signals

Pin No.	Signal name	Function
40	Common	/S-ON
41		/P-CON
		Proportional control reference
		Direction reference
		Control mode switching
		Zero-clamp reference
		Reference pulse block
42		P-OT
43		N-OT
45		/P-CL
46		/N-CL
		Forward external torque limit ON
		Reverse external torque limit ON
		Internal speed switching
44		/ALM-RST
47		+24VIN
4 (2)		SEN
21		BAT (+)
22		BAT (-)
5 (6)	Speed	V-REF
9 (10)	Torque	T-REF
7	Position	PULS
8		/PULS
11		SIGN
12		/SIGN
15		CLR
14		/CLR
3		PL1
13		PL2
18		PL3

- Note:**
- Pin numbers in parentheses () indicate signal grounds.
 - The functions allocated to /S-ON, /P-CON, P-OT, N-OT, /ALM-RST, /P-CL, and /N-CL input signals can be changed by using the parameters.
 - The voltage input range for speed and torque references is a maximum of ± 12 V.

I/O signals (CN1) - output signals

Pin No.	Signal Name	Function
31	Common	ALM+
32		ALM-
27		/TGON+
28		/TGON-
29		/S-RDY+
30		/S-RDY-
33 (1)		PAO
34		/PAO
35		PBO
36		/PBO
19		PCO
20		/PCO
48		PSO
49		/PSO
37	ALO1	Alarm code output: Outputs 3-bit alarm codes. Open-collector: 30 V and 20 mA rating maximum
38		
39 (1)		
Shell		FG
25	Speed	/V-CMP+
26		/V-CMP-
25	Position	/COIN+
26		/COIN-
-	Reserved	/CLT
		/VLT
		/BK
		/WARN
		/NEAR
16		-
17		Terminals not used Do not connect relays to these terminals.
23		
24		
50		

Note: 1. Pin numbers in parentheses () indicate signal grounds.

2. The functions allocated to /TGON, /S-RDY, and /V-CMP (/COIN) can be changed by using the parameters. /CLT, /VLT, /BK, /WARN, and /NEAR signals can also be changed.

Terminal specifications (all drives)

Symbol	Name	Function
L1, L2 or L1, L2, L3 or L1/R, L2/S, L3/T	Main circuit AC input terminal	AC power input terminals for the main circuit
U	Servo motor connection terminal	Red
V		White
W		Blue
L1C, L2C	Control power input terminal	AC power input terminals for the control circuit.
⓪	Frame ground	Ground terminal. Ground to a maximum of 100 Ω. (class 3)
B1, B2 or B1, B2, B3	Main circuit DC output terminal	Up to 5 kW: Connect an external regenerative resistor if regenerative energy is high. From 5.5 kW to 55 kW: There is no internal regenerative resistor. Be sure to connect an external regenerative resistor unit.
⓪1, ⓪2	DC reactor connection terminal for suppressing power supply harmonic waves	Normally, short ⓪1 and ⓪2. If a countermeasure against power supply harmonic waves is needed, connect a DC reactor between ⓪1 and ⓪2.
⓪	Main circuit DC output terminal (positive)	Normally, not connected. This terminal exists on the servo drives with a capacity of 6.0 kW or higher only.
⓪	Main circuit DC output terminal (negative)	Normally, not connected.

Terminal specifications (from 22 kW to 55 kW)

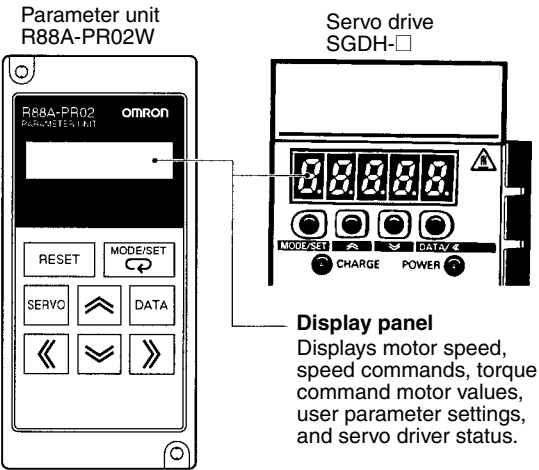
Symbol	Name	Function
DC24P, DC24N	Control power supply input terminal	24 VDC
DU, DV, DW	DB resistor unit, DB contactor connection terminal	Connects DB resistor unit or DB contactor.
DBON, DB24	DB resistor unit connection terminal	For 37 to 55 kW, connects to DBON and DB24 terminals or DB resistor unit.
480 V, 460 V, 440 V, 400 V, 380 V, 0 V	Control power supply input terminal	Connect to the terminal whose voltage is close to the power supply voltage.

Encoder connector (CN2)

Pin No.	Signal Name	Function
1	E5V	Encoder power supply + 5 V
2	E0V	Encoder power supply ground
3	BAT+	Battery + (used only with absolute encoder)
4	BAT-	Battery - (used only with absolute encoder)
5	S+	Encoder serial signal input
6	S-	Encoder serial signal input

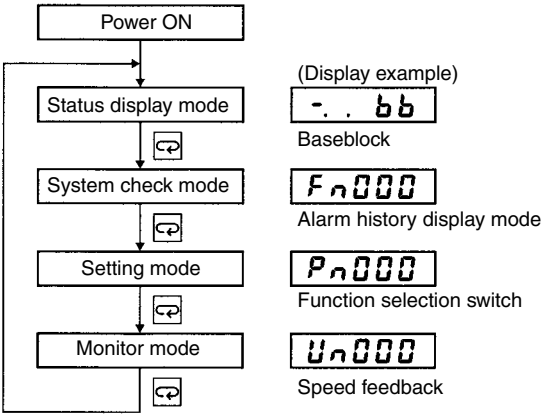
Operation

Operating functions

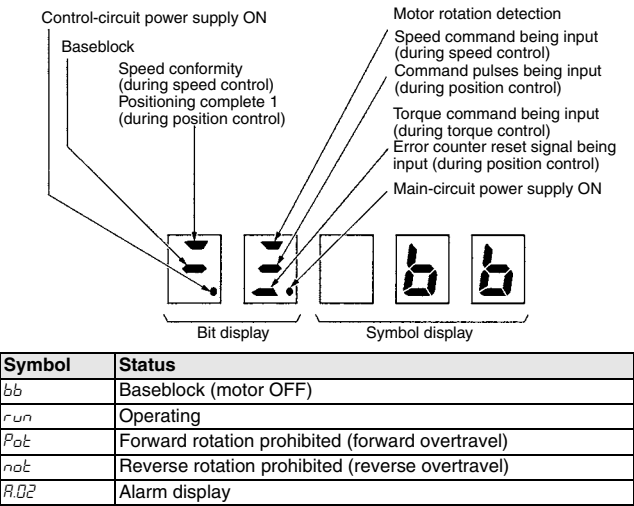


Changing modes

To change modes, press the MODE/SET key.



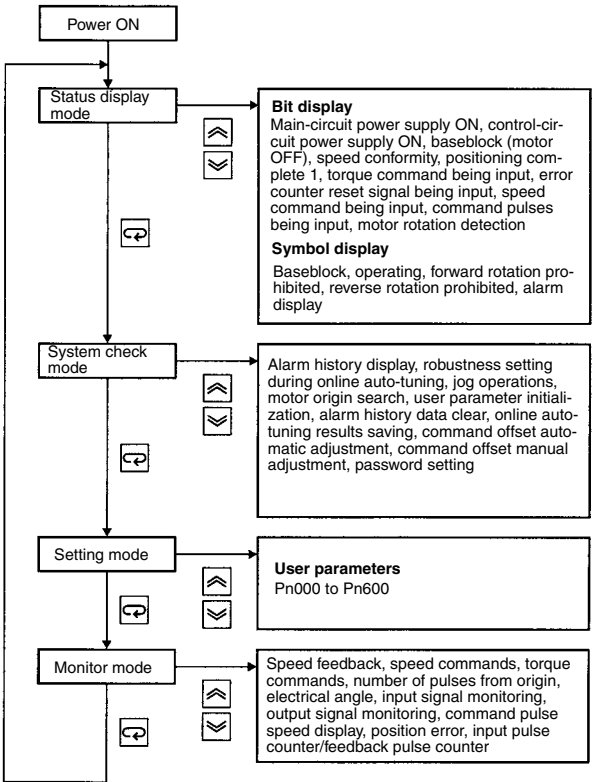
Status display mode



Unit keys

R88A-PR02W	SGDH-□	Function
RESET	+	Resets an alarm.
MODE/SET		Switches between status display mode, system check mode, setting mode, and monitor mode. Used as a data setting key while in setting mode.
SERVO		Turns the servo ON or OFF while jog operations are being performed.
DATA		Switches between parameter display and data display, and records data.
		Increments parameter settings. Used as a forward rotation start key during jog operation.
		Decrements parameter settings. Used as a reverse rotation start key during jog operation.
		Selects the digit whose setting is to be changed. When selected, the digit flashes.

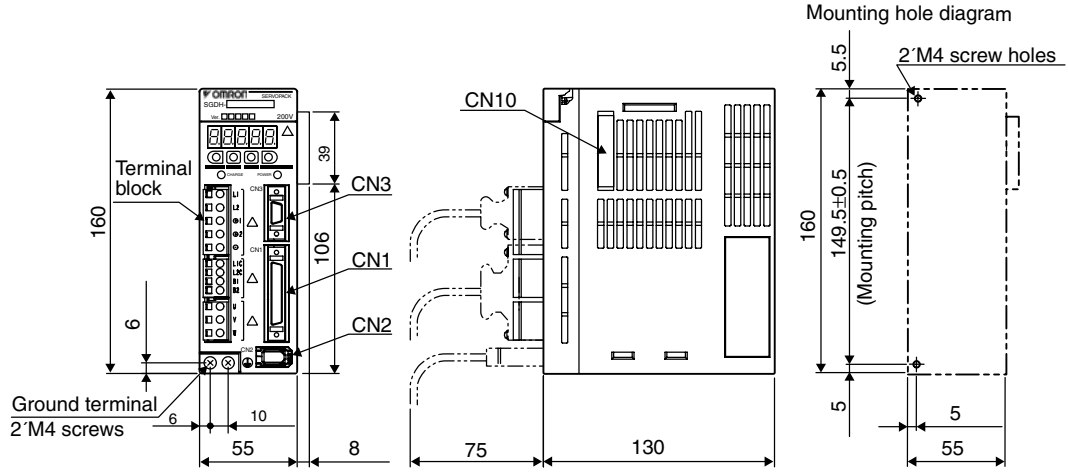
Mode details



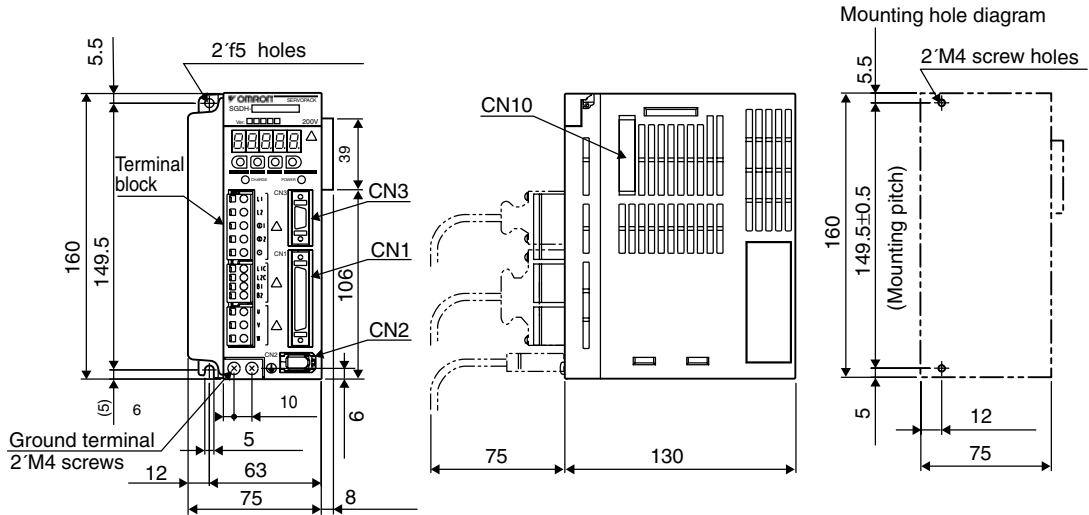
Dimensions

Servo drives

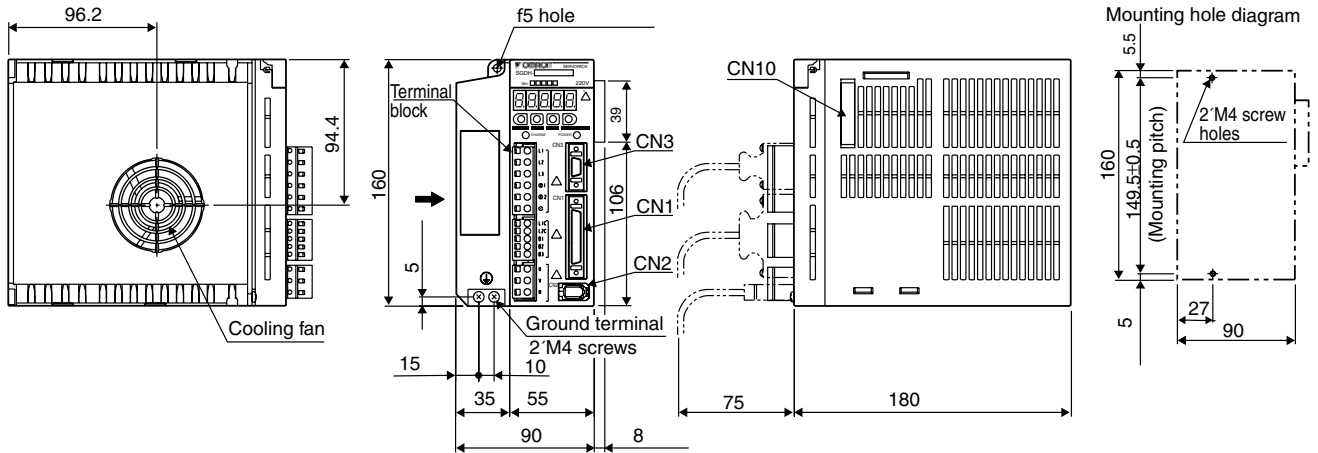
SGDH-A3AE-OY to -02AE-OY (230 V, 30 to 200 W)



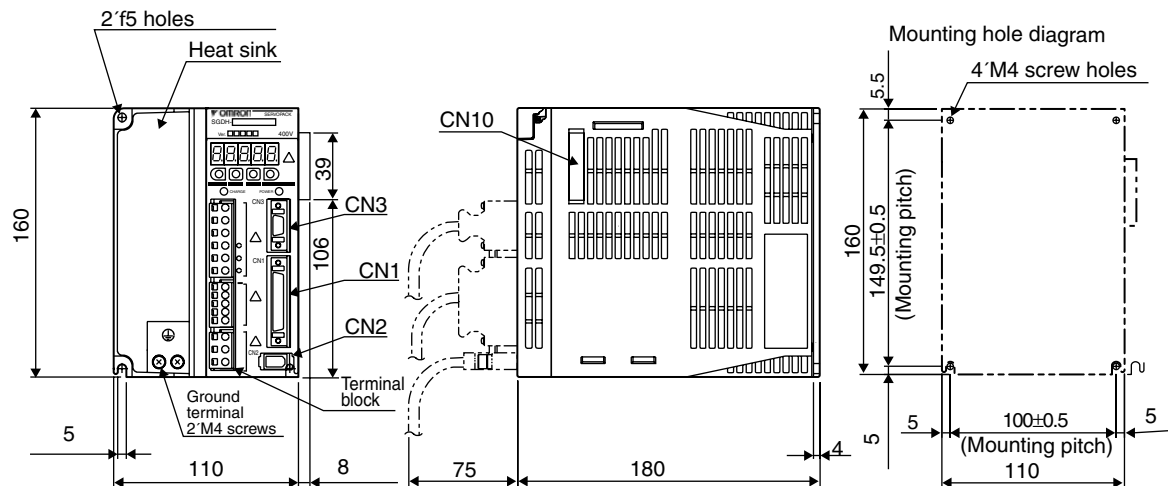
SGDH-04AE-OY (230 V, 400 W)



SGDH-08AE-S-OY (230 V, 750 W)

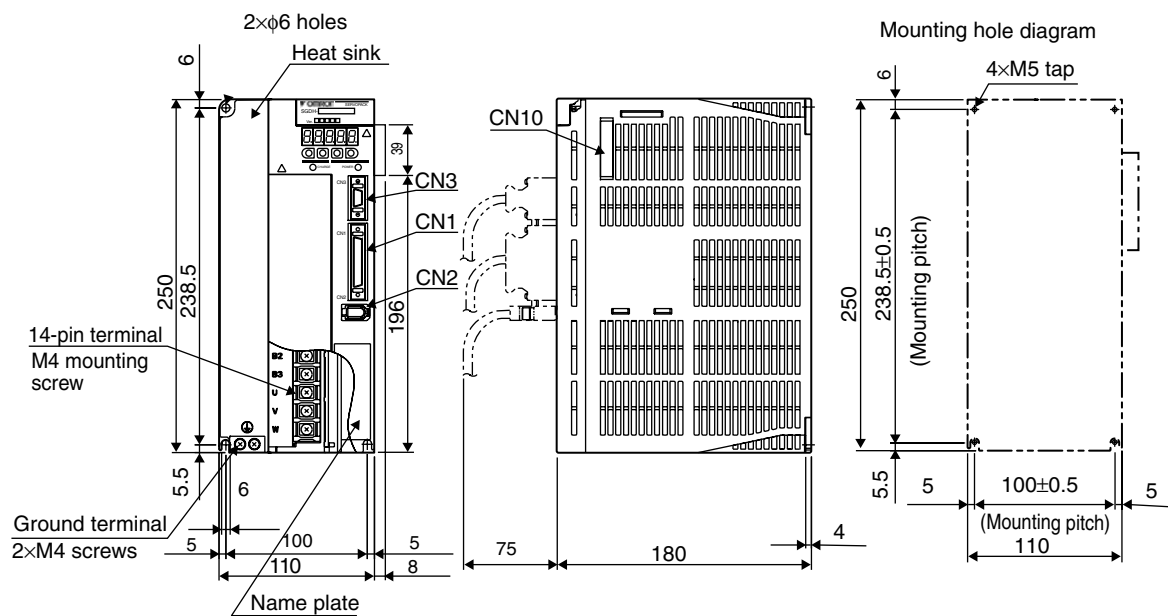


SGDH-05DE-OY to -15DE-OY (400 V, 0.5 to 1.5 kW)

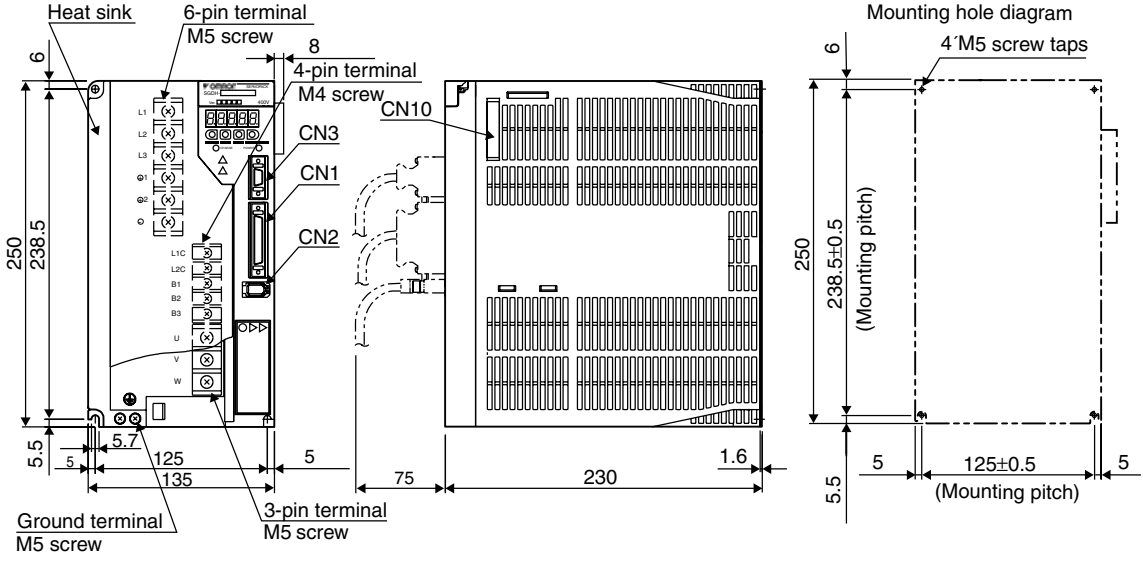


SGDH-15AE-S (230 V, 1.5 kW)

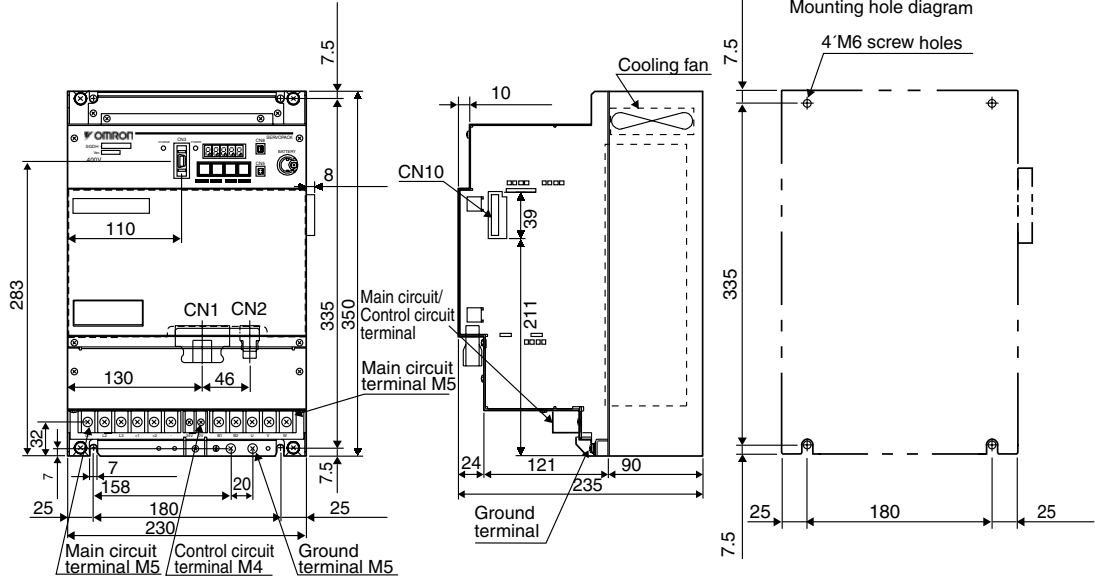
SGDH-20/30DE-OY (400 V, 2/3 kW)



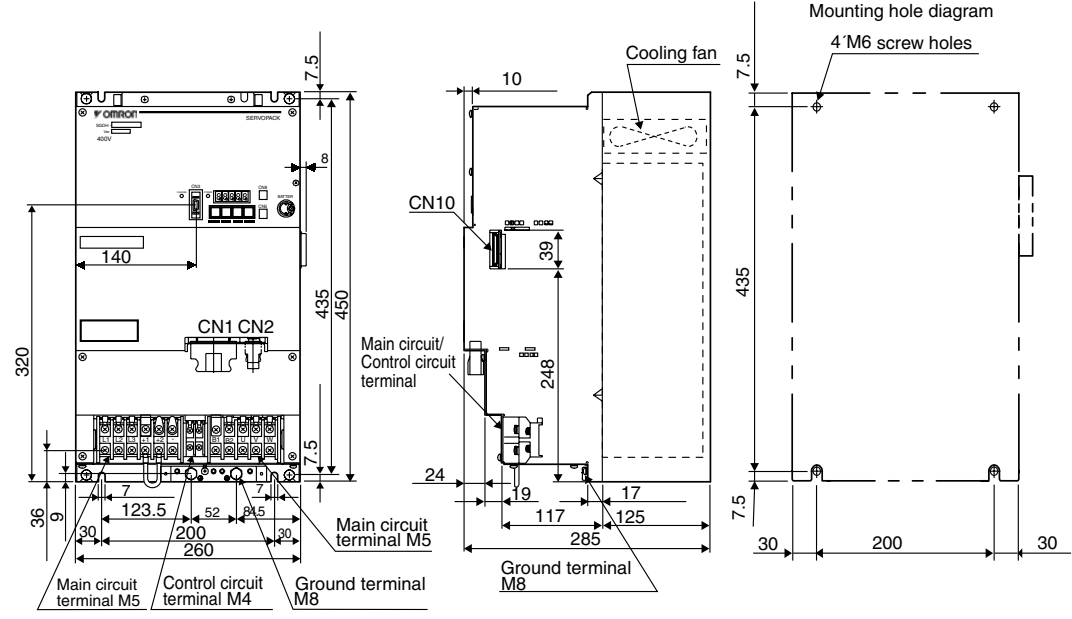
SGDH-50DE-OY (400 V, 5 kW)



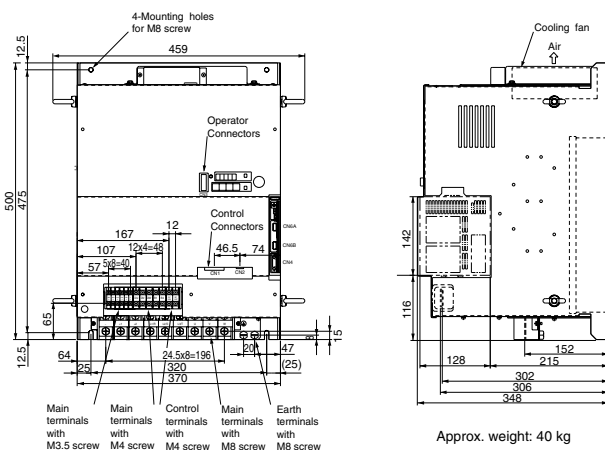
SGDH-60/75DE-OY (400 V, 6/7.5 kW)



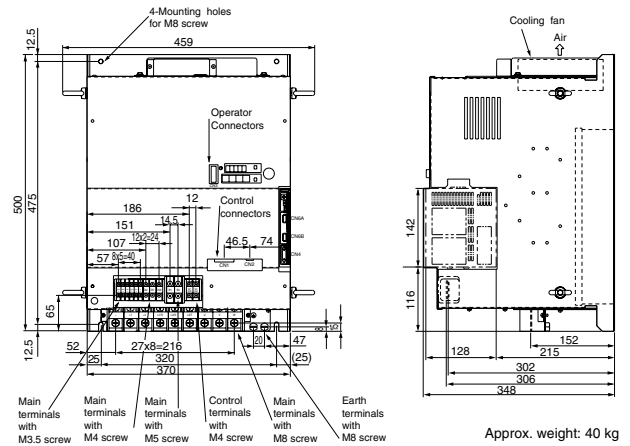
SGDH-1A/1EDE-OY (400 V, 11/15 kW)



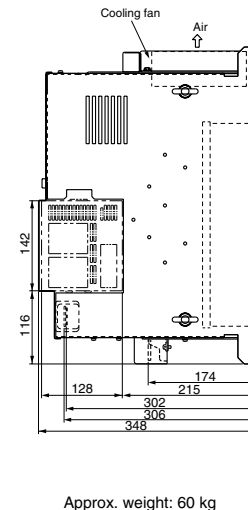
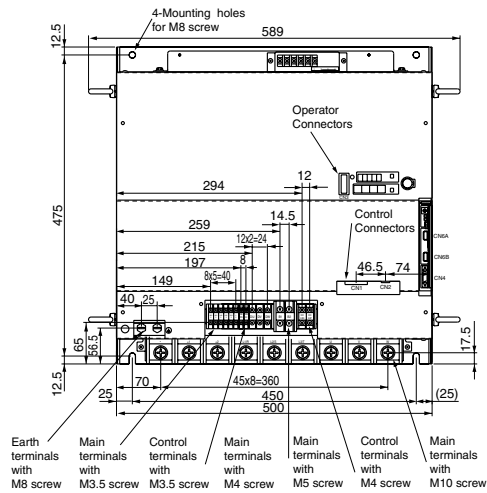
SGDH-2BDE (400 V, 22 kW)



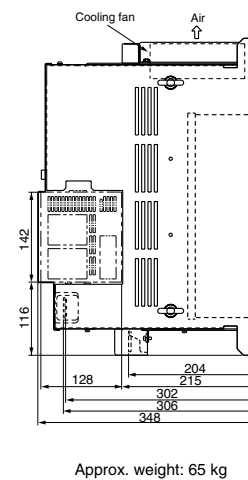
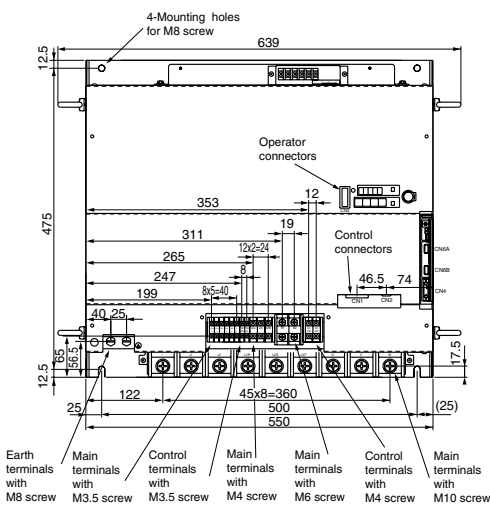
SGDH-3ZDE (400 V, 30 kW)



SGDH-3GDE (400 V, 37 kW)

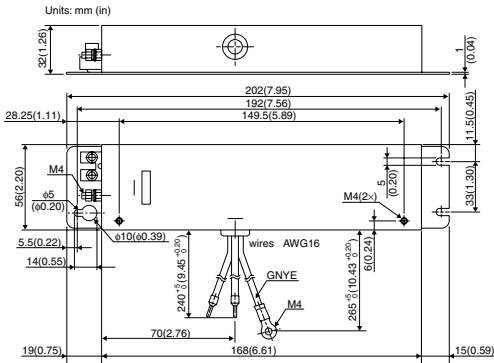


SGDH-4EDE / -5EDE (400 V, 45/55 kW)



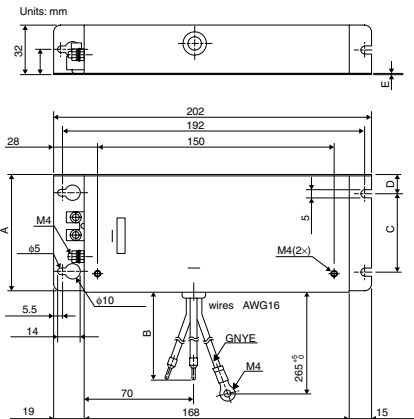
Filters

R88A-FIW104-SE

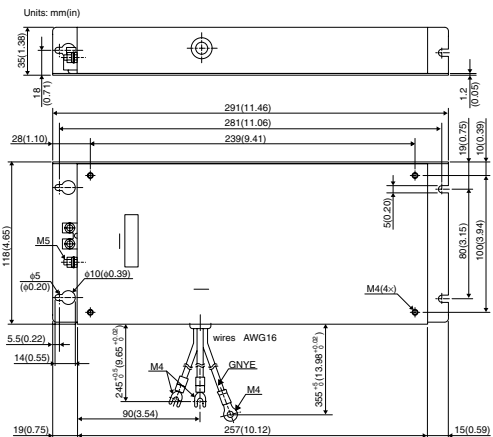


R88A-FIW107-SE, R88A-FIW115-SE

Model		R88A-FIW107-SE	R88A-FIW115-SE
Dimensions in mm	A	75	90
	B	240 ⁺⁵	300 ⁺⁵
	C	50	60
	D	12	15
	E	1	1.2

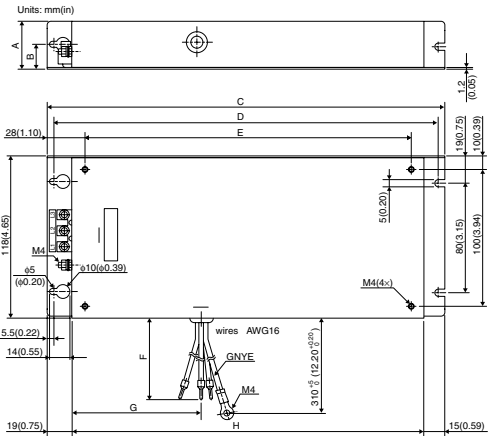


R88A-FIW125-SE

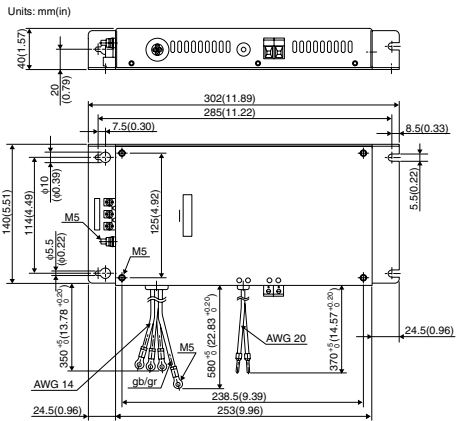


R88A-FIW4006-SE, R88A-FIW4010-SE

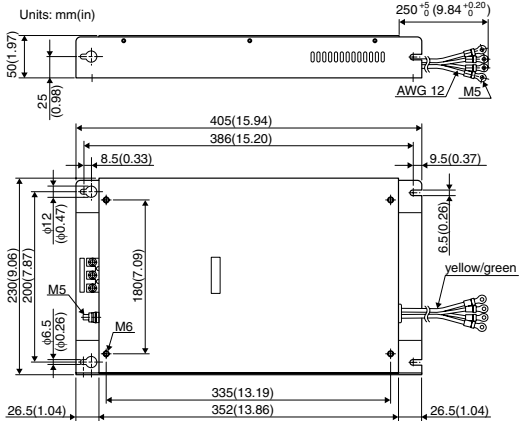
Model		R88A-FIW4006-SE	R88A-FIW4010-SE
Dimensions in mm (in)	A	32 (1.26)	35 (1.38)
	B	16 (0.63)	18 (0.71)
	C	202 (7.95)	291 (11.46)
	D	192 (7.56)	281 (11.06)
	E	150 (5.91)	239 (9.41)
	F	300 (11.81)	270 (10.63)
	G	70 (2.76)	90 (3.54)
	H	168 (6.61)	257 (10.12)



R88A-FIW4020-SE

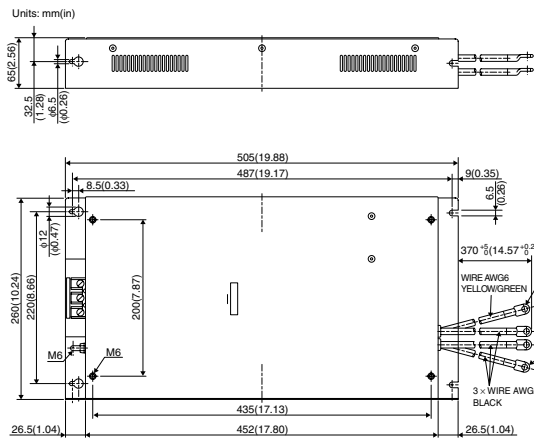


R88A-FIW4030-SE

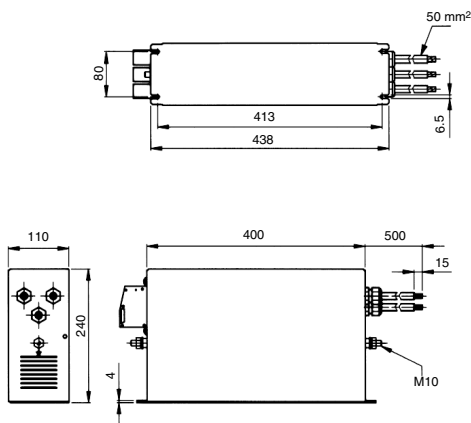


Filters

R88A-FIW4055-SE

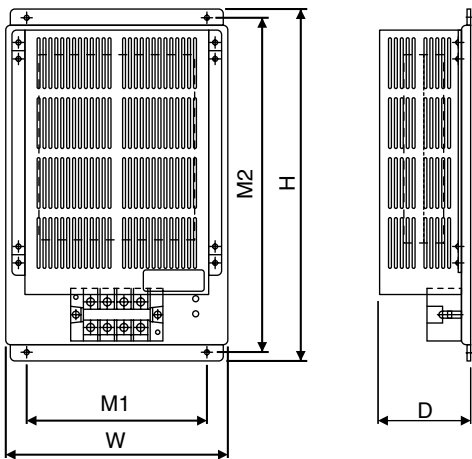


FN258-180-07

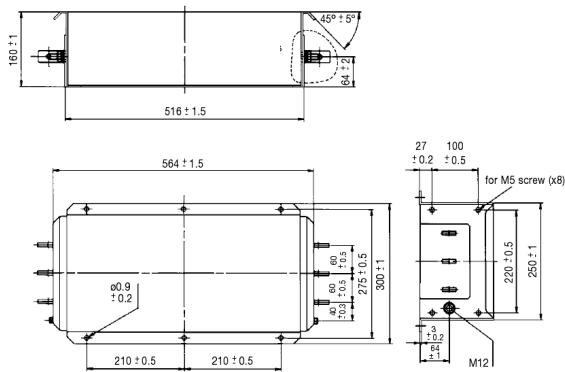


Regenerative resistor units

Model	W	H	D	M1	M2	Approx. weight kg
JUSP-RA18	220	350	92	180	335	4
JUSP-RA19	300	350	95	250	335	7
JUSP-RA12	259	500	348	200	485	14
JUSP-RA13	259	500	348	200	485	14
JUSP-RA14	484	500	348	425	485	20
JUSP-RA15	484	500	348	425	485	21.5
JUSP-RA16	484	500	348	425	485	23.5

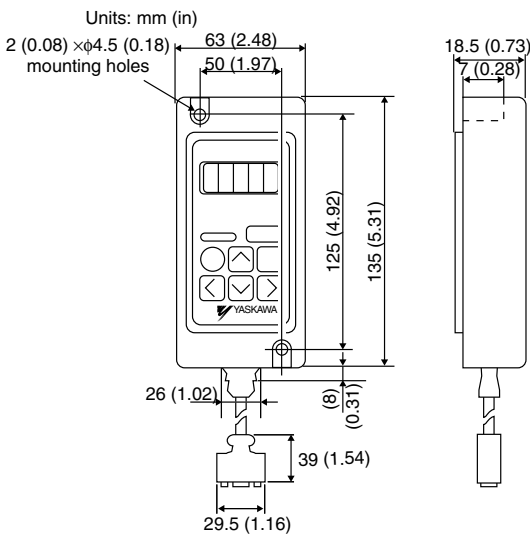


FN359-250-99



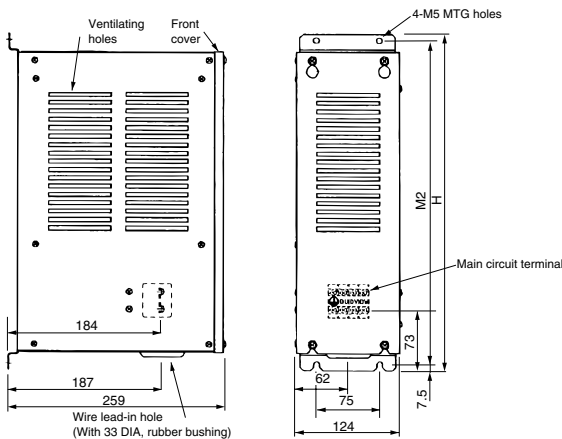
Digital operator

JUSP-OP02A-2



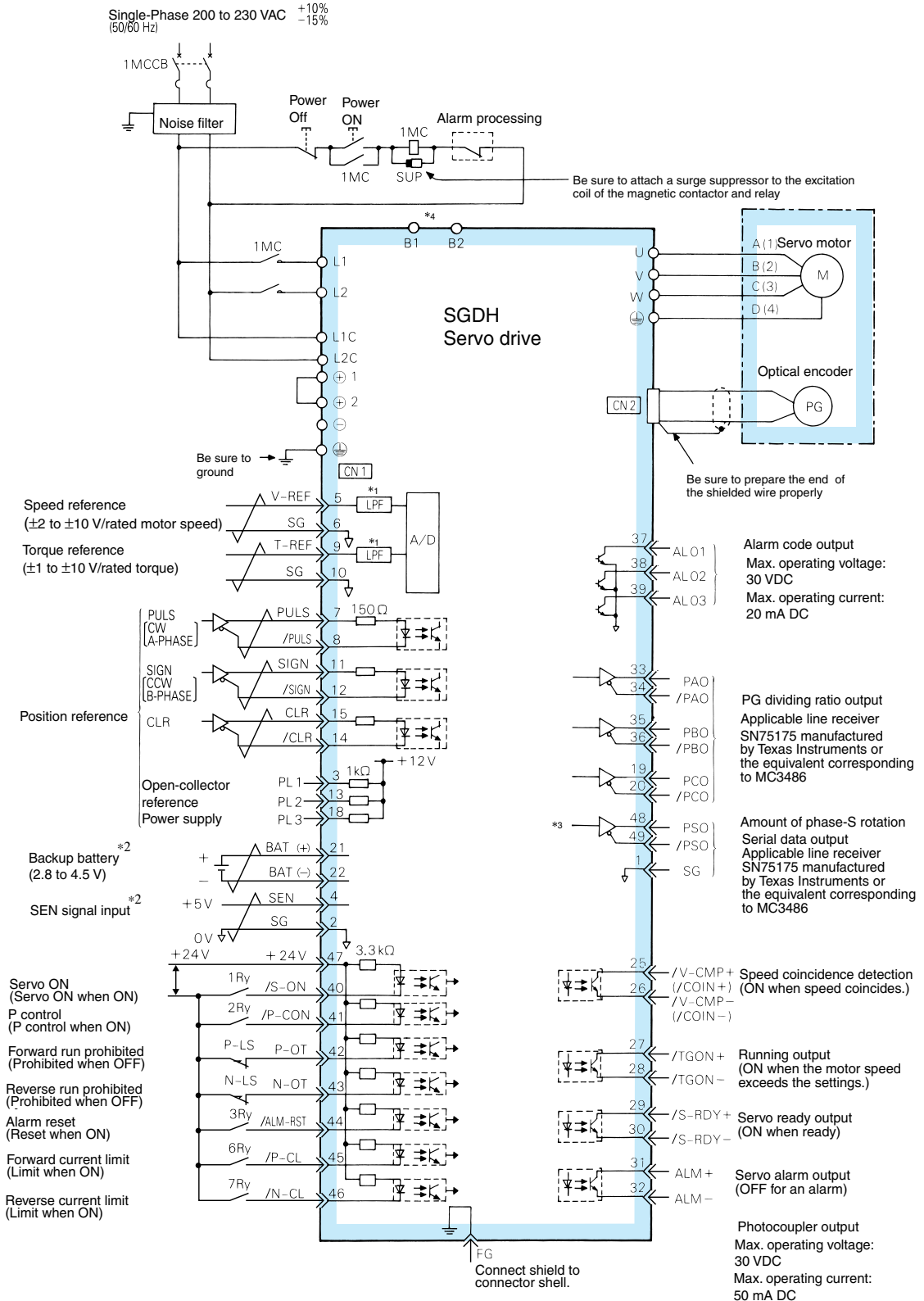
DB resistor units

Model	H	M2	Approx. weight kg
JUSP-DB03	400	385	5
JUSP-DB04	400	385	6
JUSP-DB05	400	385	6
JUSP-DB06	490	475	7



Installation

Single-phase, 230 VAC



*1 The time constant for the primary filter is 47 μ s.

*2 Connect when using an absolute encoder.

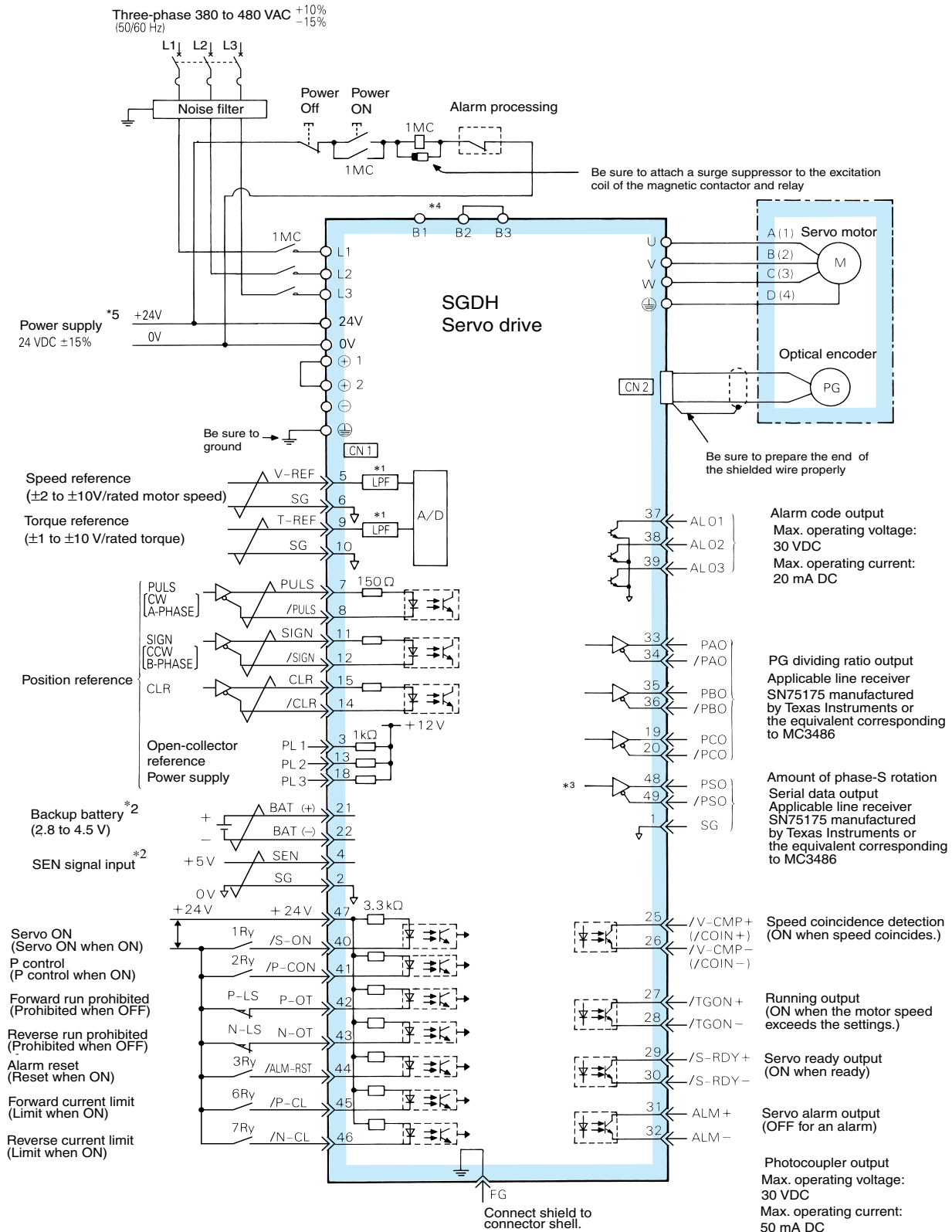
*3 Used only with an absolute encoder.

*4 Regenerative resistor can be connected between B1 and B2.

*5 For types SGD-08AE-S-OY and SGD-15AE-S-OY, voltage is 220 to 230 VAC (+10% -15%).

*6 TI stands for Texas Instruments Inc.

Three-phase, 400 VAC (up to 15 kW)



*1 The time constant for the primary filter is 47 μ s.

*2 Connect when using an absolute encoder.

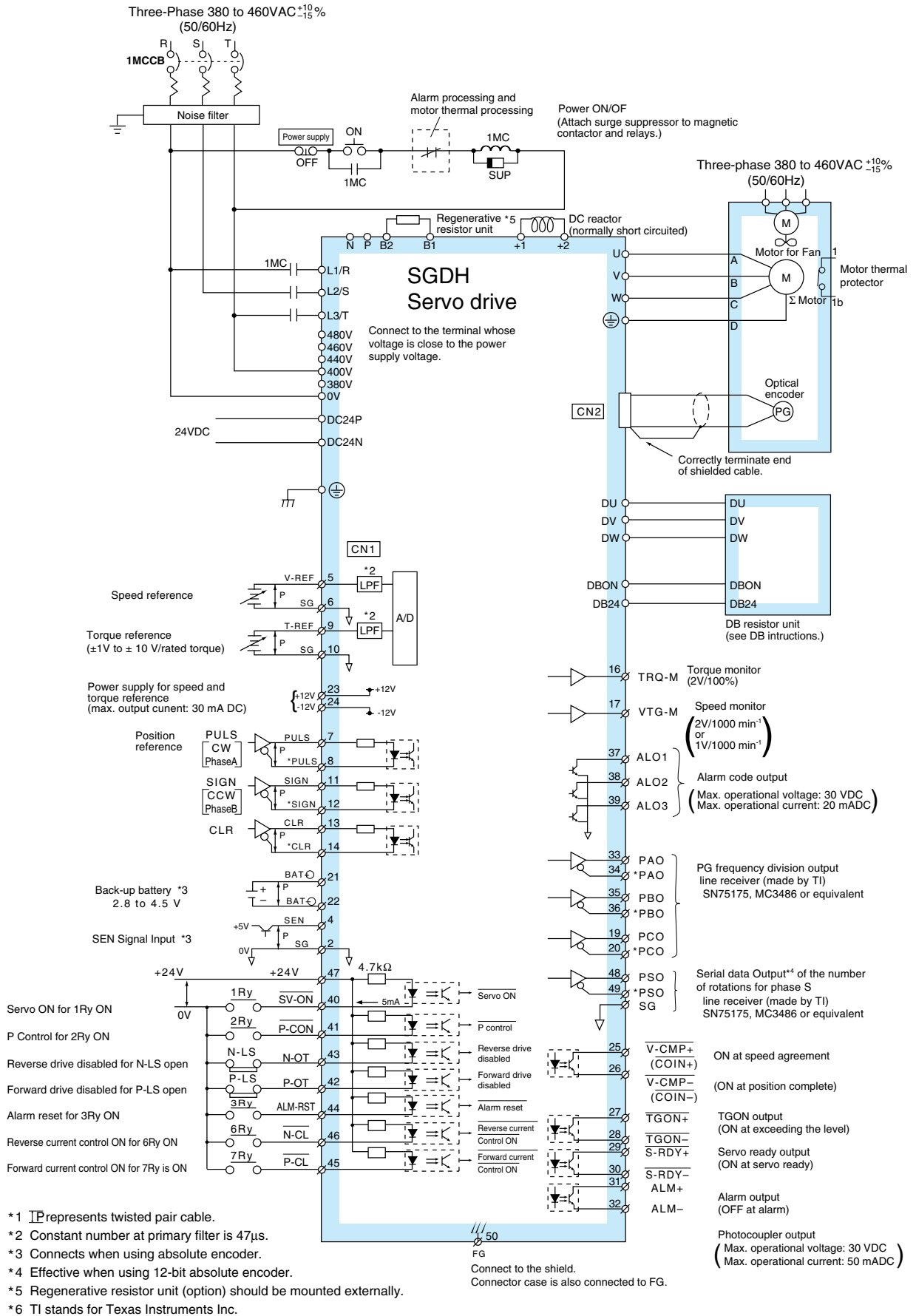
*3 Used only with an absolute encoder.

*4 For using an external regenerative resistor, connect it between B1 and B2.
(Be sure to connect a regenerative resistor unit to Servo Drive of 6/7.5/11/15 kW)

*5 It is the user's responsibility to obtain 24 VDC power supply.

*6 TI stands for Texas Instruments Inc.

Three-phase, 400 VAC (from 22 kW to 55 kW)



*1 $\overline{\text{P}}$ represents twisted pair cable.

*2 Constant number at primary filter is 47 μ s.

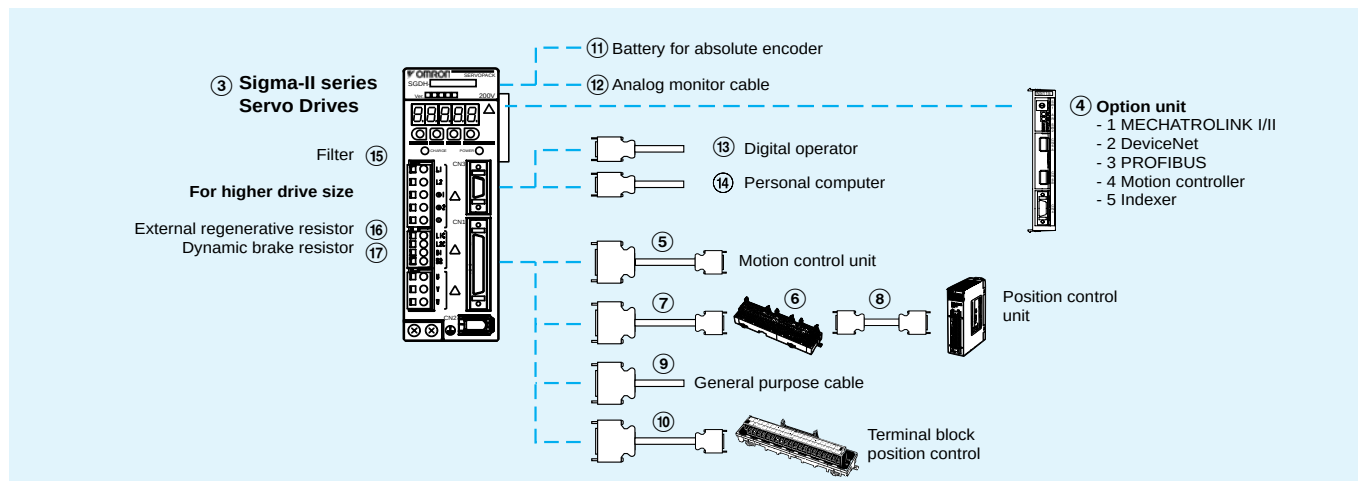
*3 Connects when using absolute encoder.

*4 Effective when using 12-bit absolute encoder.

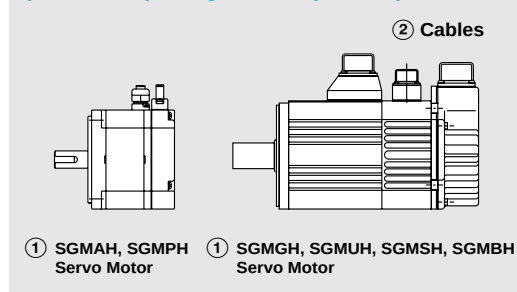
*5 Regenerative resistor unit (option) should be mounted externally.

*6 TI stands for Texas Instruments Inc.

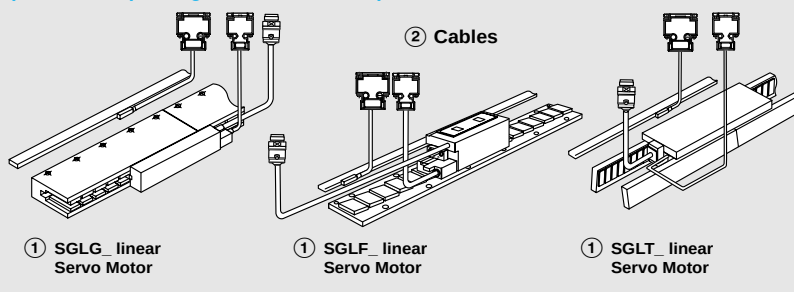
Ordering information



(Refer to chapter Sigma-II rotary motors)



(Refer to chapter Sigma-II linear motors)



Note: The symbols ①②③④⑤... show the recommended sequence to select the components in a Sigma-II servo system

Servo motors, power & encoder cables

Note: ①② Refer to the servo motors chapter for detailed motor specifications and selection

Servo drives

Symbol	Specifications	Model	Compatible rotary servo motors ①	Compatible linear motors ①
③	1 phase 200 VAC	30 W	SGDH-A3AE-OY	SGMAH-A3A□
		50 W	SGDH-A5AE-OY	SGMAH-A5D□
		100 W	SGDH-01AE-OY	SGMAH-01A□, SGMPH-01A□
		200 W	SGDH-02AE-OY	SGMAH-02A□, SGMPH-02A□
		400 W	SGDH-04AE-OY	SGMAH-04A□, SGMPH-04A□
		750 W	SGDH-08AE-S-OY	SGMAH-08A□, SGMPH-08A□
		1500 W	SGDH-15AE-S-OY	SGMPH-15A□
				SGLGW-30A050□
	3 phase 400 VAC	0.5 kW	SGDH-05DE-OY	SGMGH-05D□, SGMAH-03D□, SGMPH-02D□/04D□
		1.0 kW	SGDH-10DE-OY	SGMGH-09D□, SGMSh/UH-10D□, SGMAH-07D□, SGMPH-08D□
		1.5 kW	SGDH-15DE-OY	SGMGH-13D□, SGMSh/UH-15D□, SGMPH-15D□
		2 kW	SGDH-20DE-OY	SGMGH-20D□, SGMSh-20D□
		3 kW	SGDH-30DE-OY	SGMGH-30D□, SGMSh/UH-30D□
		5 kW	SGDH-50DE-OY	SGMGH-44D□, SGMSh/UH-40D□, SGMSh-50D□
		6 kW	SGDH-60DE-OY	SGMGH-55D□
		7.5 kW	SGDH-75DE-OY	SGMGH-75D□
		11 kW	SGDH-1ADE-OY	SGMGH-1AD□
		15 kW	SGDH-1EDE-OY	SGMGH-1ED□
		22 kW	SGDH-2BDE	SGMBH-2BD□
		30 kW	SGDH-3ZDE	SGMBH-3ZD□
		37 kW	SGDH-3GDE	SGMBH-3GD□
		45 kW	SGDH-4EDE	SGMBH-4ED□
		55 kW	SGDH-5EDE	SGMBH-5ED□
				SGLFW-50D200□, SGLTW-35D170□, SGLTW-50D170□
				SGLFW-50D380□, SGLFW-1ZD200□
				SGLFW-1ED380□, SGLTW-35D320□, SGLTW-50D320□
				SGLFW-1ZD380□, SGLFW-1ED560□, SGLTW-40D400□
				SGLTW-40D60□, SGLTW-80D400□
				-
				SGLTW-80D600□
				-
				-
				-
				-
				-
				-

Option units (for CN10)

Symbol	Name	Model
④	1.5 axis advanced motion controller with host link interface	R88A-MCW151-E
	1.5 axis advanced motion controller with DeviceNet interface	R88A-MCW151-DRT-E
	MECHATROLINK-I interface unit	JUSP-NS100
	MECHATROLINK-II interface unit	JUSP-NS115
	DeviceNet interface unit with positioning functionality	JUSP-NS300
	PROFIBUS-DP interface unit with positioning functionality	JUSP-NS500
	Indexer unit. Versatile point-to-point positioning	JUSP-NS600

Note: ④ Refer to the servo drive option unit chapter for detailed specifications and selection

Control cables (for CN1)

Symbol	Description	Connect to		Model
⑤	Control cable (1 axis)	Motion control units CS1W-MC221 CS1W-MC421 C200H-MC221	1 m	R88A-CPW001M1
			2 m	R88A-CPW002M1
			3 m	R88A-CPW003M1
			5 m	R88A-CPW005M1
	Control cable (2 axis)	Motion control units CS1W-MC221 CS1W-MC421 C200H-MC221	1 m	R88A-CPW001M2
			2 m	R88A-CPW002M2
			3 m	R88A-CPW003M2
			5 m	R88A-CPW005M2
	Terminal block (4 axes)	Motion control unit C200HW-MC402-E	-	R88A-TC04-E
	Servo drive connecting cable (1 axis)		1 m	R88A-CMUK001J3-E2
	PLC unit control cables (4 axes)		1 m	R88A-CMX001S-E
⑥	Servo relay unit	CS1W-NC1□3, CJ1W-NC1□3, or C200HW-NC113 Position control unit		XW2B-20J6-1B (1 axis)
		CS1W-NC2□3/4□3, CJ1W-NC2□3/4□3, or C200HW-NC213/413 position control unit		XW2B-40J6-2B (2 axes)
		CQM1H-PLB21 CQM1-CPU43		XW2B-20J6-3B (1 axis)
		CJ1M-CPU22/23		XW2B-20J6-8A (1 axis) XW2B-40J6-9A (2 axes)
⑦	Cable to servo drive	Servo relay units XW2B-□0J6-□B	1 m	XW2Z-100J-B4
			2 m	XW2Z-200J-B4
⑧	Position control unit connecting cable	C200H-NC112	0.5 m	XW2Z-050J-A1
			1 m	XW2Z-100J-A1
		C200H-NC211	0.5 m	XW2Z-050J-A2
			1 m	XW2Z-100J-A2
		CQM1-CPU43-V1 and CQM1H-PLB21	0.5 m	XW2Z-050J-A3
			1 m	XW2Z-100J-A3
		CS1W-NC113 and C200HW-NC113	0.5 m	XW2Z-050J-A6
			1 m	XW2Z-100J-A6
		CS1W-NC213/413 and C200HW-NC213/413	0.5 m	XW2Z-050J-A7
			1 m	XW2Z-100J-A7
		CS1W-NC133	0.5 m	XW2Z-050J-A10
			1 m	XW2Z-100J-A10
		CS1W-NC233/433	0.5 m	XW2Z-050J-A11
			1 m	XW2Z-100J-A11
		CJ1W-NC113	0.5 m	XW2Z-050J-A14
			1 m	XW2Z-100J-A14
		CJ1W-NC213/413	0.5 m	XW2Z-050J-A15
			1 m	XW2Z-100J-A15
		CJ1W-NC133	0.5 m	XW2Z-050J-A18
			1 m	XW2Z-100J-A18
⑨	Control cable	For general purpose controllers	1 m	R88A-CPW001S or JZSP-CKI01-1
			2 m	R88A-CPW002S or JZSP-CKI01-1
⑩	Relay terminal block cable	General purpose controller	1 m	R88A-CTW001N
			2 m	R88A-CTW002N
	Relay terminal block		-	XW2B-50G5

Battery backup for absolute encoder (for CN8)

Symbol	Name	Model
⑪	Battery for 30 W to 5 kW drives	JZSP-BA01
	Battery for 6 kW to 15 kW drives	JZSP-BA01-1

Cable (for CN5)

Symbol	Name	Model
⑫	Analog monitor cable	R88A-CMW001S or DE9404559

Filters

Symbol	Applicable servo drive	Filter model	Rated current	Rated voltage
⑮	SGDH-A3AE-OY, SGDH-A5AE-OY, SGDH-01AE-OY, SGDH-02AE-OY	R88A-FIW104-SE	4 A	250 VAC single-phase
	SGDH-04AE-OY	R88A-FIW107-SE	7A	
	SGDH-08AE-S-OY	R88A-FIW115-SE	15 A	
	SGDH-15AE-S-OY	R88A-FIW125-SE	25 A	
	SGDH-05DE-OY, SGDH-10DE-OY, SGDH-15DE-OY	R88A-FIW4006-SE	6 A	400 VAC three-phase
	SGDH-20DE-OY, SGDH-30DE-OY	R88A-FIW4010-SE	10 A	
	SGDH-50DE-OY	R88A-FIW4020-SE	20 A	
	SGDH-60DE-OY, SGDH-75DE-OY	R88A-FIW4030-SE	30 A	
	SGDH-1ADE-OY, SGDH-1EDE-OY	R88A-FIW4055-SE	55 A	
	SGDH-2BDE, SGDH-3ZDE, SGDH-3GDE	FN258-180-07	180 A	
	SGDH-4EDE, SGDH-5EDE	FN359-250-99	250 A	

External regenerative resistor

Symbol	Applicable servo drive	Regenerative resistor unit model	Specifications
⑯	SGDH-60DE-OY to -75DE-OY	JUSP-RA18	18 Ω , 880 W
	SGDH-1ADE-OY to -1EDE-OY	JUSP-RA19	14.25 Ω , 1760 W
	SGDH-2BDE	JUSP-RA12	9 Ω , 3600 W
	SGDH-3ZDE	JUSP-RA13	6.7 Ω , 3600 W
	SGDH-3GDE	JUSP-RA14	5 Ω , 4800 W
	SGDH-4EDE	JUSP-RA15	4 Ω , 6000 W
	SGDH-5EDE	JUSP-RA16	3.8 Ω , 7200 W

Options (for CN3)

Symbol	Name	Model
⑬	Parameter unit with cable	JUSP-OP02A-2 or R88A-PR02W
⑭	Computer connecting cable	R88A-CCW002P2 or JZSP-CMS02

DB resistor units

Symbol	Servo drive model	Regenerative resistor unit model	Specifications. Star wiring
⑰	SGDH-2BDE, SGDH-3ZDE	JUSP-DB03	180 W, 0.8 Ω
	SGDH-3GDE	JUSP-DB04	180 W, 0.8 Ω
	SGDH-4EDE	JUSP-DB05	180 W, 0.8 Ω
	SGDH-5EDE	JUSP-DB06	300 W, 0.8 Ω

Connectors

Specification	Model
Control I/O connector (for CN1)	R88A-CNU11C or JZSP-CKI9
Sigma-II drive encoder connector (for CN2)	JZSP-CMP9-1
Communications connector (for CN3)	R7A-CNA01R
Hypertac power connector IP67 (for 200 V motors SGMAH/PH-□□A□□□□D-OY)	SPOC-06K-FSDN169
Hypertac power connector IP67 (for 400 V motors SGMAH/PH-□□D□□□□D-OY)	LPRA-06B-FRBN170
Hypertac encoder connector IP67 (for motors SGMAH/PH-□□□□□□□D-OY)	SPOC-17H-FRON169
Military power connector IP67 (for 400 V motors SGMGH-(05/10/13)D□, SGMSh-(10/15/20)D□, SGMUH-(10/15)D□)) (for SGMbH-□ fan)	MS3108E18-10S
Military power connector IP67 (for 400 V motors SGMGH-(20/30/44)D□, SGMSh-(30/40/50)D□, SGMUH-(30/40)D□)	MS3108E22-22S
Military power connector IP67 (for 400 V motors SGMGH-(55/75/1A/1E)D□)	MS3108E32-17S
Military brake connector IP67 (for 400 V servo motors SGMGH-□, SGMSh-□, SGMUH-□)	MS3108E10SL-3S
Military encoder connector IP67 (for motors SGMGH-□, SGMSh-□, SGMUH-□, SGMbH-□)	MS3108E20-29S

Computer software

Specifications	Model
Configuration and monitoring software tool for servo drives and inverters. (CX-drive version 1.11 or higher)	CX-drive
Complete OMRON software package including CX-drive. (CX-One version 1.1 or higher)	CX-One

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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