



GE Fanuc Automation

Computer Numerical Control Products

α Series AC Servo Amplifier

Descriptions Manual

GFZ-65162E/03

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2.2 ORDERING INFORMATION

2.2.1 200-V Input Series

(1) Power Supply Module (PSM)

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	PSM-5.5	A06B-6077-H106	380 × 90 × 307	
	PSM-11	A06B-6077-H111	380 × 90 × 307	(Note)
	PSM-15	A06B-6087-H115	380 × 90 × 307	
	PSM-26	A06B-6087-H126		
	PSM-30	A06B-6087-H130		
	PSM-37	A06B-6087-H137		
	PSM-45	A06B-6087-H145	380 × 300 × 307	(Note)

See Chapter 3 for details of how to select the power supply module.

NOTE

PSM-11 and PSM-45 require forced air cooling from the outside. See (7) in Section 2.2.3 and Chapter 7.

(2) Power Supply Module (PSMR)

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	PSMR-3	A06B-6081-H103	380 × 60 × 172	
	PSMR-5.5	A06B-6081-H106	380 × 60 × 307	

When selecting a PS MR, see Section 3.4.

NOTE

For the PS MR, a regenerative discharge unit is required. See (8) in Section 2.2.3, Section 3.4.5, and Section 8.1.7.

(3) Servo Amplifier Module (SVM)

The ordering drawing number differs depending on the interface with the CNC. Specify an appropriate SVM for the interface between the CNC and SVM.

– 1-axis servo amplifier module

(a) TYPE A and TYPE B interface

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks	
Standard	SVM1-12	A06B-6079-H101	380 × 60 × 172		
	SVM1-20	A06B-6079-H102			
	SVM1-40S	A06B-6079-H103	380 × 60 × 307		
	SVM1-40L	A06B-6079-H104			
	SVM1-80	A06B-6079-H105			
	SVM1-130	A06B-6079-H106	380 × 90 × 307		(Note 1)
	SVM1-240	A06B-6079-H107	380 × 150 × 307		(Note 2)
	SVM1-360	A06B-6079-H108			(Note 2)
	DBM	A06B-6079-H401	380 × 100 × 172		(Note 2)

(b) FSSB interface

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks	
Standard	SVM1-12	A06B-6096-H101	380 × 60 × 172		
	SVM1-20	A06B-6096-H102			
	SVM1-40S	A06B-6096-H103	380 × 60 × 307		
	SVM1-40L	A06B-6096-H104			
	SVM1-80	A06B-6096-H105			
	SVM1-130	A06B-6096-H106	380 × 90 × 307		(Note 1)
	SVM1-240	A06B-6096-H107	380 × 150 × 307		(Note 2)
	SVM1-360	A06B-6096-H108			(note 2)
	DBM	A06B-6079-H401	380 × 100 × 172		(Note 2)

NOTE

- For the SVM1-130, forced air cooling may be required depending on the motor used. See (7) in Section 2.2.3 and Chapter 7.
- A dynamic brake module (DBM) is required whenever the SVM1-240 or SVM1-360 is used. In the event of an emergency stop, for example, the dynamic brake module stops the motor immediately by short-circuiting the power line of the motor without PWM control. SVMs other than SVM1-240 and SVM1-360 have the dynamic brake function built in.

– 2-axis servo amplifier module

(a) TYPE A and TYPE B interface

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	SVM2-12/12	A06B-6079-H201	380 × 60 × 172	
	SVM2-12/20	A06B-6079-H202		
	SVM2-20/20	A06B-6079-H203		
	SVM2-12/40	A06B-6079-H204	380 × 60 × 307	
	SVM2-20/40	A06B-6079-H205		
	SVM2-40/40	A06B-6079-H206		
	SVM2-40/80	A06B-6079-H207	380 × 90 × 307	
	SVM2-80/80	A06B-6079-H208		
	SVM2-40L/40L	A06B-6079-H209		

(b) FSSB interface

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	SVM2-12/12	A06B-6096-H201	380 × 60 × 172	
	SVM2-12/20	A06B-6096-H202		
	SVM2-20/20	A06B-6096-H203		
	SVM2-12/40	A06B-6096-H204	380 × 60 × 307	
	SVM2-20/40	A06B-6096-H205		
	SVM2-40/40	A06B-6096-H206		
	SVM2-40/80	A06B-6096-H207	380 × 90 × 307	
	SVM2-80/80	A06B-6096-H208		
	SVM2-40L/40L	A06B-6096-H209		

– 3-axis servo amplifier module

(a) TYPE A interface

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	SVM3-12/12/12	A06B-6079-H301	380 × 60 × 172	
	SVM3-12/12/20	A06B-6079-H302		
	SVM3-12/20/20	A06B-6079-H303		
	SVM3-20/20/20	A06B-6079-H304		
	SVM3-12/12/40	A06B-6079-H305	380 × 60 × 307	
	SVM3-12/20/40	A06B-6079-H306		
	SVM3-20/20/40	A06B-6079-H307		

(b) TYPE B interface

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	SVM3-12/12/12	A06B-6080-H301	380 × 90 × 172	
	SVM3-12/12/20	A06B-6080-H302		
	SVM3-12/20/20	A06B-6080-H303		
	SVM3-20/20/20	A06B-6080-H304		
	SVM3-12/12/40	A06B-6080-H305	380 × 90 × 307	
	SVM3-12/20/40	A06B-6080-H306		
	SVM3-20/20/40	A06B-6080-H307		

(c) FSSB interface

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	SVM3-12/12/12	A06B-6096-H301	380 × 90 × 172	
	SVM3-12/12/20	A06B-6096-H302		
	SVM3-12/20/20	A06B-6096-H303		
	SVM3-20/20/20	A06B-6096-H304		
	SVM3-12/12/40	A06B-6096-H305	380 × 90 × 307	
	SVM3-12/20/40	A06B-6096-H306		
	SVM3-20/20/40	A06B-6096-H307		

(4) Spindle Amplifier Module (SPM)

Ordering numbers depend on the detectors being used (function).

(a) Type 1 (standard specifications)

Detectors used

1. M sensor, position coder, magnetic sensor (for orientation)
2. MZ sensor, BZ sensor (built-in motor)

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	SPM-2.2	A06B-6078-H202#H500	380 × 60 × 307	
	SPM-5.5	A06B-6078-H206#H500	380 × 90 × 307	
	SPM-11	A06B-6078-H211#H500	380 × 90 × 307	(Note)
	SPM-15	A06B-6088-H215#H500	380 × 150 × 307	
	SPM-22	A06B-6088-H222#H500		
	SPM-26	A06B-6088-H226#H500		
	SPM-30	A06B-6088-H230#H500		
	SPM-45	A06B-6088-H245#H500	380 × 300 × 307	(Note)

(b) Type 2 (specifications for Cs-axis contouring control or BZ (spindle) sensor)

Applicable detectors :

1. M sensor + BZ sensor (using position coder signals only)
2. High-resolution magnetic pulse coder (for motors only)
3. High-resolution magnetic pulse coder (for motors and spindles)
4. High-resolution position coder + high-resolution magnetic pulse coder
(for motors only)

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	SPM-2.2	A06B-6078-H302#H500	380 × 60 × 307	
	SPM-5.5	A06B-6078-H306#H500	380 × 90 × 307	
	SPM-11	A06B-6078-H311#H500	380 × 90 × 307	(Note)
	SPM-15	A06B-6088-H315#H500	380 × 150 × 307	
	SPM-22	A06B-6088-H322#H500		
	SPM-26	A06B-6088-H326#H500		
	SPM-30	A06B-6088-H330#H500		
	SPM-45	A06B-6088-H345#H500	380 × 300 × 307	(Note)

(c) Type 3 (specifications for spindle switching control or differential speed control)

Applicable detectors :

1. Spindle switching control
(switching the speed only, or switching both the speed and position)
2. Differential speed control (input circuit for position coder signals)

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	SPM-11	A06B-6078-H411#H500	380 × 150 × 307	
	SPM-15	A06B-6078-H415#H500		
	SPM-22	A06B-6078-H422#H500		
	SPM-26	A06B-6078-H426#H500		
	SPM-30	A06B-6078-H430#H500		
	SPM-45	A06B-6088-H445#H500	380 × 300 × 307	(Note)

(d) Type 4 (high-resolution internal circuit incorporation specification)

Function used

1. α spindle sensor Cs contour control

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	SPM-2.2	A06B-6078-H102#H500	380 × 60 × 307	
	SPM-5.5	A06B-6078-H106#H500	380 × 90 × 307	
	SPM-11	A06B-6078-H111#H500		(Note)
	SPM-15	A06B-6088-H115#H500	380 × 150 × 307	
	SPM-22	A06B-6088-H122#H500		
	SPM-26	A06B-6088-H126#H500		
	SPM-30	A06B-6088-H130#H500		
	SPM-45	A06B-6088-H145#H500	380 × 300 × 307	(Note)

NOTE

SPM-11 (except type 3) and SPM-45 require forced air cooling from the outside. See (7) in Section 2.2.3 and Chapter 7.

(5) α C series Spindle Amplifier Module (SPMC)

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	SPMC-2.2	A06B-6082-H202#H512	380 × 60 × 307	
	SPMC-5.5	A06B-6082-H206#H512	380 × 90 × 307	
	SPMC-11	A06B-6082-H211#H512		(Note)
	SPMC-15	A06B-6082-H215#H512		380 × 150 × 307
	SPMC-22	A06B-6082-H222#H512		
	SPMC-26	A06B-6082-H226#H512		

NOTE

SPMC-11 requires forced air cooling from the outside. See (7) in Section 2.2.3 and Chapter 7.

2.2.2**400-V Input Series**

(1) Power supply module (PSM-HV)

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	PSM-18HV	A06B-6091-H118	380 × 150 × 307	(Note 1)
	PSM-30HV	A06B-6091-H130		(Note 1)
	PSM-45HV	A06B-6091-H145		(Note 1)
	PSM-75HV	A06B-6091-H175	380 × 300 × 307	(Note 1, 2)

For how to select a PSM, see Section 3.5.

NOTE

- 1 The PSM-HV requires a capacitor module (PSMC-HV). Specify an appropriate capacitor module for the PSM-HV being used, according to (2) in Section 2.2.2.
- 2 The PSM-75HV requires forced air cooling from the outside. See (7) in Section 2.2.3 and Chapter 7.

(2) Capacitor module (PSMC–HV)

When using a PSM–HV, specify a capacitor module (PSMC–HV).

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	PSMC–18HV	A06B–6083–H218	380 × 90 × 172	For PSM–18HV
	PSMC–30HV	A06B–6083–H230		For PSM–30HV
	PSMC–45HV	A06B–6083–H245	380 × 150 × 222	For PSM–45HV and PSM–75HV

(3) Power supply module (PSMV–HV)

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	PSMV–11HV	A06B–6098–H111	380 × 150 × 307	

NOTE

No capacitor module (PSMC–HV) is required.

(4) Servo amplifier module (SVM–HV)

The ordering drawing number differs depending on the interface with the CNC.

Specify an appropriate SVM–HV for the interface between the CNC and SVM–HV.

– Servo amplifier module (one axis)

(a) TYPE A and TYPE B interfaces

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	SVM1–20HV	A06B–6085–H102	380 × 90 × 307	
	SVM1–40HV	A06B–6085–H103		
	SVM1–60HV	A06B–6085–H104		

(b) FSSB interface

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	SVM1–20HV	A06B–6097–H102	380 × 90 × 307	
	SVM1–40HV	A06B–6097–H103		
	SVM1–60HV	A06B–6097–H104		

– Servo amplifier module (two axes)

(a) TYPE A and TYPE B interfaces

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	SVM2-20/20HV	A06B-6085-H201	380 × 90 × 307	
	SVM2-20/40HV	A06B-6085-H202		
	SVM2-20/60HV	A06B-6085-H203		
	SVM2-40/40HV	A06B-6085-H204		
	SVM2-40/60HV	A06B-6085-H205		
	SVM2-60/60HV	A06B-6085-H206		

(b) FSSB interface

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	SVM2-20/20HV	A06B-6097-H201	380 × 90 × 307	
	SVM2-20/40HV	A06B-6097-H202		
	SVM2-20/60HV	A06B-6097-H203		
	SVM2-40/40HV	A06B-6097-H204		
	SVM2-40/60HV	A06B-6097-H205		
	SVM2-60/60HV	A06B-6097-H206		

(5) Spindle amplifier module (SPM-HV)

The ordering drawing number differs depending on the detector (function) being used.

(a) Type 1 (standard specification)

Detectors used

- 1 M sensor, position coder, magnetic sensor (for orientation)
- 2 MZ sensor, BZ sensor (built-in motor)

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	SPM-11HV	A06B-6092-H211#H500	380 × 90 × 307	(Note)
	SPM-15HV	A06B-6092-H215#H500	380 × 150 × 307	
	SPM-26HV	A06B-6092-H226#H500		
	SPM-45HV	A06B-6092-H245#H500		
	SPM-75HV	A06B-6092-H275#H500	380 × 300 × 307	(Note)

(b) Type 2 (Cs contour control/BZ sensor (spindle) specification)

Detectors used

1. M sensor (motor) + BZ sensor (spindle) (using position coder signals only)
2. High-resolution magnetic pulse coder (motor only)
3. High-resolution magnetic pulse coder (motor and spindle)
4. High-resolution position coder (spindle) + high-resolution magnetic pulse coder (motor)

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	SPM-11HV	A06B-6092-H311#H500	380 × 90 × 307	(Note)
	SPM-15HV	A06B-6092-H315#H500	380 × 150 × 307	
	SPM-26HV	A06B-6092-H326#H500		
	SPM-45HV	A06B-6092-H345#H500		
	SPM-75HV	A06B-6092-H375#H500	380 × 300 × 307	(Note)

(c) Type 3 (spindle switch control/differential speed control specification)

Functions used

1. Spindle switch control (switches between speeds only or between speeds and positions)
2. Differential speed control (position coder signal input circuit)

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	SPM-75HV	A06B-6092-H475#H500	380 × 300 × 307	(Note)

(d) Type 4 (high-resolution internal circuit incorporation specification)

Function used

1. α spindle sensor Cs contour control

Category	Name	Ordering number	External dimensions (H x W x D mm)	Remarks
Standard	SPM-11HV	A06B-6092-H111#H500	380 × 90 × 307	(Note)
	SPM-15HV	A06B-6092-H115#H500	380 × 150 × 307	
	SPM-26HV	A06B-6092-H126#H500		
	SPM-45HV	A06B-6092-H145#H500		
	SPM-75HV	A06B-6092-H175#H500	380 × 300 × 307	(Note)

NOTE

SPM-11HV and SPM-75HV require forced air cooling from the outside. See (7) in Section 2.2.3 and Chapter 7.

2.2.3 Others

(1) AC reactor

Category	Name	Ordering number	Remarks
Standard	For PSM-5.5 or PSM-11	A81L-0001-0122	
	For PSM-15	A81L-0001-0123	
	For PSM-26	A81L-0001-0120	
	For PSM-30	A81L-0001-0124	
	PSM-45, 75HV	A81L-0001-0133	
	PSM-18HV, 30HV, 45HV	A81L-0001-0127	

For the dimensions of the AC reactors, see Section 8.1.3.

(2) AC reactor unit

Category	Name	Ordering number	Remarks
Standard	PSMV-11HV	A06B-6098-H001	

For the dimensions of the AC reactor unit, see Section 8.1.2.

(3) AC line filter

Category	Name	Ordering number	Remarks
Standard	For PSMR-3	A81L-0001-0083#3C	
	For PSMR-5.5	A81L-0001-0101#C	

For the dimensions of the AC line filters, see Section 8.1.4.

(4) Connectors

The ordering drawing number of the connectors required for connection of input/output signals of each module, and the configuration of each connector, are shown below. For the connector dimensions, see Appendix D.

– For power supply module (PSM, PSMR)

Category	Name	Ordering number	Remarks
Standard	CX1A, CX3, CX4	A06B-6071-K203	For PSM, PSMR

– Connectors for the power supply module (PSMV)

Category	Name	Ordering number	Remarks
Standard	CX1A, CX3, CX4, CX10	A06B-6098-K200	For PSMV

– For servo amplifier module (SVM)

Category	Name	Ordering number	Remarks	
Standard	Connectors	Between PSM and SVM or between SVMs	A06B-6073-K210	Solder type
			A06B-6073-K211	Crimp type
		Between PSM-SVM, SVM-SVM (for SVM1-240 and SVM1-360)	A06B-6078-K210	Crimp type
			A06B-6078-K211	Solder type
		Between NC to SVM	A06B-6073-K212	Solder type
			A06B-6073-K213	Crimp type
		For pulse coder	A06B-6073-K214	Solder type
		Between SVM-DBM (for SVM1-240 and SVM1-360)	A06B-6073-K216	

– For spindle amplifier module (For SPM)

Category	Name	Ordering number	Remarks	
Standard	Connectors	Between PSM and SPM or between SPMs	A06B-6078-K210	Crimp type
			A06B-6078-K211	Solder type
		For M sensor or MZ sensor or BZ sensor	A06B-6078-K212	Solder type
		Between NC and SPM For load meter or speed meter	A06B-6078-K213	Crimp type
			A06B-6078-K214	Solder type
		For position coder or magnetic sensor	A06B-6078-K215	Solder type

– For spindle amplifier module (For SPMC)

Category	Name	Ordering number	Remarks	
Standard	Connectors	Between PSM and SPMC or between SPM and SPMC	A06B-6073-K210	Solder type
			A06B-6073-K211	Crimp type
		Between PSM-SPMC, SPM-SPMC (for SPMC-15, 22, 26)	A06B-6078-K210	Crimp type
			A06B-6078-K211	Solder type
		For connecting speed meter and thermostat	A06B-6078-K212	Solder type
		Between NC and SPMC	A06B-6078-K213	Crimp type
			A06B-6078-K214	Solder type
		For position coder	A06B-6078-K215	Solder type

NOTE

- 1 Connectors are classified into either the press-mount type or solder type, depending on the method used for attaching a cable to a connector. When a connector is specified, therefore, care is necessary.
- 2 When attaching a cable to a press-mount type connector, use the special tools prepared by the manufacturer of the connector. For the tool specifications, see "Connection tools" described later.

– Connector configuration

Configuration of A06B-6071-K203

Connector name	Manufacturer	Part number	Quantity	Use	Dimensions
CX1A	AMP Japan, Ltd.	1-178128-3 (housing)	1	For control, single-phase 200VAC input	D (1)
		1-175218-2 (contact)	3		D (5)
CX4	AMP Japan, Ltd.	1-178128-3 (housing)	1	For emergency stop signal	D (1)
		1-175218-2 (contact)	2		D (5)
CX3	AMP Japan, Ltd.	2-178128-3 (housing)	1	For ON/OFF control for external MCC	D (2)
		1-175218-2 (contact)	2		D (5)

Configuration of A06B-6073-K210 (solder type)

Connector name	Manufacturer	Part number	Quantity	Use	Dimensions
CX2A	AMP Japan, Ltd.	1-178288-3 (housing)	2	For control, 24VDC input	D (3)
CX2B		1-175218-2 (contact)	6		D (5)
JX1A	Honda Tsushin Kogyo Co., Ltd.	PCR-E20FS (connector)	2	For PSM-SVM and SVM-SVM communication	D (7)
JX1B		PCR-V20LA (case)	2		D (10)

Configuration of A06B-6073-K211 (press-mount type)

Connector name	Manufacturer	Part number	Quantity	Use	Dimensions
CX2A	AMP Japan, Ltd.	1-178288-3 (housing)	2	For control, 24VDC input	D (3)
CX2B		1-175218-2 (contact)	6		D (5)
JX1A	Honda Tsushin Kogyo Co., Ltd.	PCR-E20FA (connector)	2	For PSM-SVM and SVM-SVM communication	D (6)
JX1B		PCR-V20LA (case)	2		D (10)

Configuration of A06B-6073-K212 (solder type)

Connector name	Manufacturer	Part number	Quantity	Use	Dimensions
JV□A (*1)	Honda Tsushin Kogyo Co., Ltd.	PCR-E20FS (connector)	1	For CNC-SVM communication	D (7)
JS□B (*2)		PCR-V20LA (case)	1		D (10)

Configuration of A06B-6073-K213 (press-mount type)

Connector name	Manufacturer	Part number	Quantity	Use	Dimensions
JV□A (*1)	Honda Tsushin Kogyo Co., Ltd.	PCR-E20FA (connector)	1	For CNC-SVM communication	D (6)
JS□B (*2)		PCR-V20LA (case)	1		D (10)

Configuration of A06B-6073-K214 (solder type)

Connector name	Manufacturer	Part number	Quantity	Use	Dimensions
JF□B (*2)	Hirose Electric Co., Ltd.	FI40-2015S (connector)	1	For pulse coder	D (8)
		FI-20-CV (case)	1		D (11)

NOTE

- 1 Type A interface
- 2 Type B interface

Configuration of A06B-6073-K215

Connector name	Manufacturer	Part number	Quantity	Use	Dimensions
CX8	AMP Japan, Ltd.	2-178128-3 (housing)	1	For DB interlock signals	D (2)
		1-175218-2 (contact)	2		D (5)
CX9	AMP Japan, Ltd.	1-178128-3 (housing)	1	For DB driving coil	D (1)
		1-175218-2 (contact)	2		D (5)

Configuration of A06B-6078-K210 (press-mount type)

Connector name	Manufacturer	Part number	Quantity	Use	Dimensions
CX1A	AMP Japan, Ltd.	1-178128-3 (housing)	2	For fan motor, 200VAC input	D (1)
CX1B		1-175218-2 (contact)	4		D (5)
CX2A	AMP Japan, Ltd.	1-178288-3 (housing)	2	For control, 24VDC input	D (3)
CX2B		1-175218-2 (contact)	6		D (5)
JX1A	Honda Tsushin Kogyo Co., Ltd.	PCR-E20FA (connector)	2	For PSM-SPM and SPM-SPM communication	D (6)
JX1B		PCR-V20LA (case)	2		D (10)

Configuration of A06B-6078-K211 (solder type)

Connector name	Manufacturer	Part number	Quantity	Use	Dimensions
CX1A	AMP Japan, Ltd.	1-178128-3 (housing)	2	For fan motor, 200VAC input	D (1)
CX1B		1-175218-2 (contact)	4		D (5)
CX2A	AMP Japan, Ltd.	1-178288-3 (housing)	2	For control, 24VDC input	D (3)
CX2B		1-175218-2 (contact)	6		D (5)
JX1A	Honda Tsushin Kogyo Co., Ltd.	PCR-E20FS (connector)	2	For PSM-SPM and SPM-SPM communication	D (7)
JX1B		PCR-V20LA (case)	2		D (10)

Configuration of A06B-6078-K212 (solder type)

Connector name	Manufacturer	Part number	Quantity	Use	Dimensions
JY2, JY4 JY5, JY6 αC series JY1	Hirose Electric Co., Ltd.	FI40B-20S (connector)	1	See below.	D (9)
		FI-20-CV5 (case)	1		D (12)

Use: For the M sensor, MZ sensor, BZ sensor, high-resolution position coder, or high-resolution magnetic pulse coder
 α C series: For the speed meter, analog override, or motor overheat

Configuration of A06B-6078-K213 (press-mount type)

Connector name	Manufacturer	Part number	Quantity	Use	Dimensions
JA7B	Honda Tsushin Kogyo Co., Ltd.	PCR-E20FA (connector)	1	For CNC-SPM and CNC-SPMC communication	D (6)
		PCR-V20LA (case)	1		D (10)

Configuration of A06B-6078-K214 (solder type)

Connector name	Manufacturer	Part number	Quantity	Use	Dimensions
JA7B	Honda Tsushin Kogyo Co., Ltd.	PCR-E20FS (connector)	1	See below.	D (7)
JY1		PCR-V20LA (case)	1		D (10)

Use JY7B: For CNC-SPM and CNC-SPMC communication
 JY1: For the load meter and speed meter (except SPMC)

Configuration of A06B-6078-K215 (solder type)

Connector name	Manufacturer	Part number	Quantity	Use	Dimensions
JY3	Hirose Electric Co., Ltd.	FI40B-2015S (connector)	1	See below.	D (8)
JY4		FI-20-CV(10) (case)	1		D (11)

Use JY3: For the magnetic sensor and proximity switch
 JY4: For the position coder

Configuration of A06B-6098-K200

Connector name	Manufacturer	Part number	Quantity	Use	Dimensions
CX1A	AMP Japan, Ltd.	1-178128-3 (housing)	1	For control, single-phase 200VAC input	D (1)
		1-175218-2 (contact)	3		D (5)
CX4	AMP Japan, Ltd.	1-178128-3 (housing)	1	For emergency stop signal	D (1)
		1-175218-2 (contact)	2		D (5)
CX3	AMP Japan, Ltd.	2-178128-3 (housing)	1	For ON/OFF control for external MCC	D (2)
		1-175218-2 (contact)	2		D (5)
CX10	AMP Japan, Ltd.	2-178129-6 (housing)	1	For phase detection, 400VAC input	D (4)
		1-175218-2 (contact)	3		D (5)

– Connection tools

Manufacturers of press-mount type connectors provide special tools for attaching the connectors to cables.

(a) Connectors manufactured by AMP Japan, Ltd.

Name	Manufacturer part number
Contact crimping tool	914596-3
Contact extractor	914677-1

(b) Connectors manufactured by Honda Tsushin Kogyo Co., Ltd. (press-mount type connectors only)

Name	Manufacturer part number
Wire placement cassette	JGPS-015-1/1-20
Wire placement cassette mounting base	JGPS-014
Press-mount locator	PCS-K1
Hand press	MFC-K1

(5) Fuses

Fuses are specified as spare parts of the fuses used in modules. The ordering drawing number of the fuses required for each module and the fuse configuration are shown below.

– For power supply module

Category	Name	Ordering number	Remarks
Standard	PSM	A06B-6077-K250	5A/250V, 2A/250V
	PSMR	A06B-6081-K250	5A/250V
	PSMV	A06B-6098-K250	5A/250V, 2A/250V, 100A/600V

– For servo amplifier module

Category	Name	Ordering number	Remarks
Standard	Other than SVM1-240, 360	A06B-6073-K250	3.2A/48V
	SVM1-240, 360	A06B-6073-K252	3.2A/48V,0.5A/250V

– Fuse configuration

Configuration of A06B-6073-K250

Manufacturer	Part number	Specification	Use
Daito Communication Apparatus Co., Ltd.	LM32C	3.2A/48V	For short-circuit protection of 24-VDC control power supply

Configuration of A06B-6073-K252

Manufacturer	Part number	Specification	Use
Daito Communication Apparatus Co., Ltd.	LM32C	3.2A/48V	For short-circuit protection of 24-VDC control power supply
Daito Communication Apparatus Co., Ltd.	HM05	0.5A/250V	For short-circuit protection of 200VAC for cooling fan

Configuration of A06B-6077-K250

Manufacturer	Part number	Specification	Use
Daito Communication Apparatus Co., Ltd.	HM20	2A/250V	For short-circuit protection of 200VAC for cooling fan
Daito Communication Apparatus Co., Ltd.	HM50	5A/250V	For short-circuit protection of 200-VAC control power supply

Configuration of A06B-6081-K250

Manufacturer	Part number	Specification	Use
Daito Communication Apparatus Co., Ltd.	HM50	5A/250V	For short-circuit protection of 200-VAC control power supply

Configuration of A06B-6098-K250

Manufacturer	Part number	Specification	Use
Daito Communication Apparatus Co., Ltd.	HM20	2A/250V	For short-circuit protection of 200VAC for cooling fan
Daito Communication Apparatus Co., Ltd.	HM50	5A/250V	For short-circuit protection of 200-VAC control power supply
Fuji Electric Co., Ltd.	CR6L-100UL	100A/600V	For short-circuit protection of 400-VAC main circuit (Note)

NOTE

For the AC reactor unit

(6) Power transformer

When a power supply module of the 200-V input series is used in an area where the input voltage is not within the range of 200 to 230VAC, a power transformer is required. The ordering drawing numbers and specifications of power transformers manufactured by FANUC are listed below.

When other than a FANUC power transformers is to be prepared by the user, it must satisfy the transformer specifications indicated in (1) of Section 5.2.1.

– Ordering drawing numbers of power transformers manufactured by FANUC

Category	Name	Ordering number	Remarks	
Optional	Power transformer	For PSMR-3 (at 2kw output)	A80L-0024-0006	Primary 380/415/460VAC Secondary 200VAC Primary 380/415/460VAC Secondary 200VAC
	Power transformer	For PSMR-3 (at 3kw output)	A80L-0026-0003	
	Power transformer	For PSM-5.5 For PSMR-5.5 (at 5.5kw output)	A06B-6052-J001	
	Power transformer	For PSM-11 For PSMR-5.5 (at 7.5kw output)	A06B-6044-J006	
	Power transformer	For PSM-15	A06B-6044-J007	
	Power transformer	For PSM-26, 30	A06B-6044-J010	
	Power transformer	For PSM-37, 45	A06B-6044-J015	

– Specifications of power transformers manufactured by FANUC

Power transformers for PSM

Item	Model	PSM-5.5	PSM-11	PSM-15	PSM-26, 30	PSM-37, 45
Ordering drawing number		A06B-6052-J001	A06B-6044-J006	A06B-6044-J007	A06B-6044-J010	A06B-6044-J015
FANUC drawing number		A80L-0001-0496	A80L-0001-0313	A80L-0001-0314	A80L-0001-0352	A80L-0001-0452
Rated capacity		10kVA	20kVA	30kVA	45kVA	64kVA
Rated primary voltage		380/415/460VAC 230VAC (The secondary is used as an autotransformer.) +10% -15%, 50/60 ± 1Hz, 3Φ				
Rated primary current		15A (at 380V) 14A (at 415V) 13A (at 460V)	30A (at 380V) 28A (at 415V) 25A (at 460V)	46A (at 380V) 42A (at 415V) 38A (at 460V)	68A (at 380V) 63A (at 415V) 56A (at 460V)	97A (at 380V) 89A (at 415V) 80A (at 460V)
Rated secondary voltage		AC200V				
Rated secondary current		29A	58A	87A	130A	185A
Voltage regulation at the secondary		5%				
Voltage deviation at the secondary		± 3%				
Connection		Y-Y connection				
Insulation		Class H (maximum allowable temperature: 180°C)				
Ambient temperature		0 to 45°C				
Allowable temperature rise		135deg				
Relative humidity		Max. 95%RH				
Type		Dry type, natural air cooling type				
Dielectric withstand voltage		2000VAC, for 1 minute				
Weight		Max. 61kg	Max. 115kg	Max. 165kg	Max. 260kg	Max. 375kg
Outline drawing		Fig. 8.1.5 (a)	Fig. 8.1.5 (b)	Fig. 8.1.5 (c)	Fig. 8.1.5 (d)	Fig. 8.1.5 (f)
Connection diagram		<p>The diagram illustrates the electrical connections for the transformer. On the left, the primary winding (PRI.) is connected to terminals R3 (460V), R2 (415V), and R1 (380V). The secondary winding (SEC.) is connected to terminals R4 (230V), U (200V), and O (Neutral point). The secondary also has terminals V, S4, W, T4, and G. A central SHIELD is shown between the primary and secondary windings. The primary winding is also connected to terminals T1, T2, T3, S1, S2, S3, and G. The secondary winding is also connected to terminals V, S4, W, T4, and G.</p>				

Power transformer for PSMR

Item	Model	PSMR-3 (at 2 kW output)	PSMR-3 (at 3 kW output)	PSMR-5.5 (at 5 kW output)	PSMR-5.5 (at 7.5 kW output)
Ordering drawing number		A80L-0024-0006	A80L-0026-0003	A06B-6052-J001	A06B-6044-J006
FANUC drawing number		A80L-0024-0006	A80L-0026-0003	A80L-0001-0496	A80L-0001-0313
Rated capacity		3.5kVA	5kVA	10kVA	20kVA
Rated primary voltage		200/220/230/240VAC, Δ connection 380/415/460/480/550VAC, Y connection ± 15%, 50/60Hz ± 2Hz; 3Φ		380/415/460VAC 230VAC (The secondary is used as an auto-transformer.) +10% -15%, 50/60 ± 1Hz, 3Φ	
Rated primary current		5.3A (at 380V)	7.6A (at 380V)	15A (at 380V) 14A (at 415V) 13A (at 460V)	30A (at 380V) 28A (at 415V) 25A (at 460V)
Rated secondary voltage		AC210V		AC200V	
Rated secondary current		9.6A	13.7A	29A	58A
Voltage regulation at the secondary		2%		5% (See Fig. 2.2.3 (1).)	
Voltage deviation at the secondary		± 3%			
Connection		Δ-Δ connection or Y-Δ connection		Y-Y connection	
Insulation		Class B (maximum allowable temperature: 130°C)		Class H (maximum allowable temperature: 180°C)	
Ambient temperature		-20 to 55°C		0 to 45°C	
Allowable temperature rise		135deg			
Thermostat		Normally closed contact (operating temperature: 135°C)		None	
Relative humidity		Max. 95%RH			
Type		Dry type, natural air cooling type			
Dielectric withstanding voltage		2300VAC, for 1 minute		2000VAC, for 1 minute	
Weight		Max. 27kg	Max. 36kg	Max. 61kg	Max. 115kg
Outline drawing		Fig. 8.1.5 (e)	Fig. 8.1.5 (a)	Fig. 8.1.5 (b)	Connection diagram
Connection diagram					

– Connecting a power transformer

Power transformers must be set according to the supply voltage used.

(a) Connection points of power transformers (A80L-0024-0006 and A80L-0026-0003) for PSMR-3

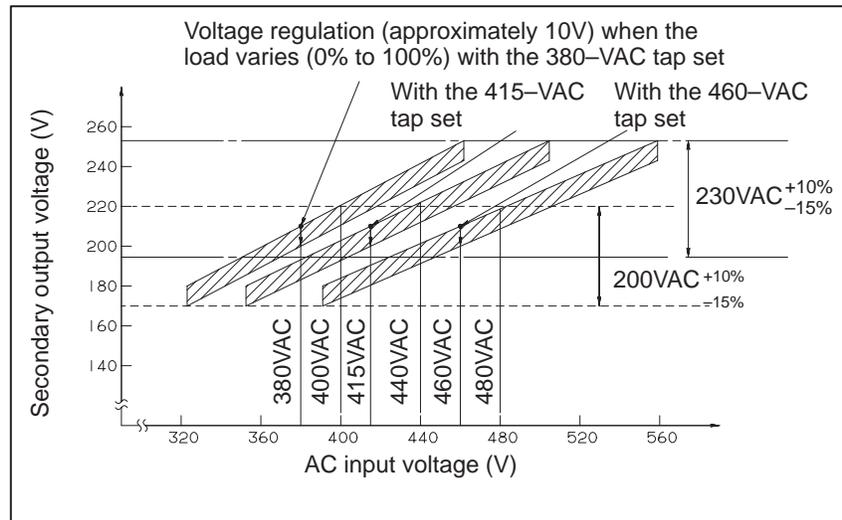
Supply voltage	Connection points at the primary	Other connection points
AC380V	R – 6, S – 14, T – 22	Make 8–16 and 16–24 connections by using supplied cables.
AC400V	R – 4, S – 12, T – 20	
AC415V	R – 4, S – 12, T – 20	
AC440V	R – 3, S – 11, T – 19	
AC460V	R – 3, S – 11, T – 19	
AC480V	R – 2, S – 10, T – 18	

Transformer (A80L-0024-0006 and A80L-0026-0003) accessories

Part name	Drawing number	Quantity
Cable	A660-8001-T532	2
Cable	A660-8004-T926	2
Bolt	A30L-0001-0021	4

(b) Connection points of power transformers for PSMR-5.5, PSM-5.5, PSM-11, PSM-15, PSM-26, PSM-30, PSM-37, and PSM-45

Supply voltage	Connection points at the primary	Remarks
AC380V	R – R1, S – S1, T – T1 (380-V tap)	
AC400V	R – R1, S – S1, T – T1 (380-V tap)	
AC415V	R – R2, S – S2, T – T2 (415-V tap)	
AC440V	R – R2, S – S2, T – T2 (415-V tap)	
AC460V	R – R3, S – S3, T – T3 (460-V tap)	
AC480V	R – R3, S – S3, T – T3 (460-V tap)	



NOTE

- 1 When installing a transformer in a cabinet, be careful to ensure that the transformer does not thermally affect other equipment. For example, separate the transformer from the other equipment.
- 2 When installing a transformer outside the cabinet, make sure that the transformer is not directly exposed to cutting chips or coolant.
- 3 If there is a possibility of the transformer falling, secure the transformer with bolts or similar.

(7) Fan adaptor

When the following modules are used, forced air cooling is required:

PSM-11, SPM-11, SPM-11HV, SVM1-130(*), SPMC-11, PSM-45, SPM-45, PSM-75HV, SPM-75HV
 For the cooling conditions, see Chapter 7.

The use of a fan adaptor allows the desired cooling performance to be obtained. When the fan adaptor is installed, the panel cut-out must be partially modified. For those modifications, see Section 8.2.

Category	Name	Ordering number	Remarks
Optional	For PSM-11 or SPM-11 or SPM-11HV	A06B-6078-K001	
	For SVM1-130 or SPMC-11	A06B-6078-K002	
	PSM-45, SPM-45, PSM-75HV, SPM-75HV	A06B-6078-K003	(Note)

For the dimensions of fan adaptors, see Section 8.1.6.

NOTE

SVM1-130 requires forced air cooling only when it is being used to drive the α22/3000, α30/3000, α40/2000 (with a fan), αL25/3000, αL50/2000, or αM40/3000.

(8) Regenerative discharge unit

Whenever a PSM4 (resistance regeneration type power supply module) is used, a regenerative discharge unit must be specified. For how to select the regenerative discharge unit, see Section 3.4.5.

Category	Name	Ordering number	Remarks	
Standard	Regenerative discharge unit	For PSMR-3	A06B-6081-H050	16Ω/100W (at natural cooling)
		For PSMR-3, 5.5	A06B-6066-H500	16Ω/200W (at natural cooling)
			A06B-6066-H713	16Ω/800W (Forced cooling fan motor is included)
		For PSMR-5.5	A06B-6066-H711	8Ω/800W (Forced cooling fan motor is included)
			A06B-6066-H712	16Ω/1200W (Forced cooling fan motor is included)

See Section 8.1.7, "SELECTING A REGENERATIVE DISCHARGE UNIT" for details of selection.

(9) Cables

– DC link short bar

Category	Name	Between terminals	Ordering number	Applicable terminal-to-terminal distance
Optional	DC link short bar	124mm	A06B-6078-K800	120mm – 128mm
		90mm	A06B-6078-K801	86mm – 94mm
		131mm	A06B-6078-K802	127mm – 135mm
		64mm	A06B-6078-K803	60mm – 68mm
		85mm	A06B-6078-K804	81mm – 89mm
		102mm	A06B-6078-K805	98mm – 106mm
		146mm	A06B-6078-K823	143mm – 151mm
		182mm	A06B-6078-K826	180mm – 185mm
		144mm	A06B-6078-K827	142mm – 146mm
		305mm	A06B-6078-K828	303mm – 308mm
		267mm	A06B-6078-K829	265mm – 269mm
		120mm	A06B-6078-K830	118mm – 123mm

See 9.2.1 (2) for details.

NOTE

K823 to K830 are used for 300-mm-wide modules.

– Cables for connection of modules

Category	Name	Ordering number	Cable length	Remarks
Optional	Cable for connection of modules	A06B-6078-K808	200mm	(Note 1)
		A06B-6078-K809	150mm	
		A06B-6078-K810	100mm	
		A06B-6082-K808	200mm	(Note 2)
		A06B-6082-K809	150mm	
		A06B-6082-K810	100mm	

NOTE

1 The following three cables are supplied together. The ordering drawing number differs depending on the cable length.

K4: For 200-VAC power supply for cooling fan (between CX1B and CX1A)

K5: For 24-VDC control power supply (between CX2B and CX2A)

K8: For interface between modules (between JX1B and JX1A)

2 The following two cables are supplied together. The ordering drawing number differs depending on the cable length.

K5: For 24-VDC control power supply (between CX2B and CX2A)

K8: For interface between modules (between JX1B and JX1A)

– Cables for connection of detectors

Category	Name	Ordering number	Remarks
Optional	For M sensor, MZ sensor or BZ sensor	A06B-6078-K811	
	For magnetic sensor	A06B-6078-K813	
	For position coder	A06B-6078-K814	Canon : Straight
		A06B-6078-K815	Canon : Elbow
	For high resolution magnetic pulse coder	A06B-6078-K816	
	For high resolution position coder	A06B-6078-K817	Canon : Straight
A06B-6078-K818		Canon : Elbow	

NOTE

Each cable is 7 m long.

– FSSB interface cables

Category	Name	Ordering number	Cable length	Remarks
Optional	FSSB inter- face cables	A66L-6001-0023#L150R0	15cm	Internal optical cables (Note 1)
		A66L-6001-0023#L300R0	30cm	
		A66L-6001-0026#L1R003	1m	External optical cables (Note 2)
		A66L-6001-0026#L5R003	5m	
		A66L-6001-0026#L7R003	7m	
		A66L-6001-0026#L10R03	10m	
		A66L-6001-0026#L20R03	20m	
		A66L-6001-0026#L30R03	30m	
		A66L-6001-0026#L50R03	50m	

NOTE

- 1 Optical cables for connecting SVMs.
SVM (COP10A) – SVM(COP10B)
- 2 Optical cables for connecting the CNC and SVM.
CNC (COP10A) – SVM (COP10B)

(10) Breaker, Magnetic contactor, Lightning surge absorber

The circuit breaker and magnetic contactor capacities are determined by the power supply module specifications. The ordering drawing numbers and specifications of the circuit breakers and magnetic contactors are shown below. For dimensions, see Sections 8.1.9 and 8.1.10.

When this equipment is to be prepared by the user, it must satisfy the circuit breaker and magnetic contactor specifications indicated below.

– Circuit breaker and magnetic contactor specifications

For PSM and PSMR

PSM name	Circuit breaker 1	Circuit breaker 2	Magnetic contactor	Remarks
PSM-5.5	30A	5A	30A	
PSM-11	55A		55A	
PSM-15	70A		70A	
PSM-26	120A		120A	
PSM-30	140A		140A	
PSM-37	175A		175A	
PSM-45	220A		220A	
PSMR-3	20A		20A	
PSMR-5.5	30A		30A	(Note 4)
	50A		50A	(Note 5)

NOTE

- 1 For the installation positions of the circuit breakers and magnetic contactor, see Section 2.1.
- 2 Circuit breakers 1 and 2 must have a rated voltage of 200VAC or higher.
- 3 The current and voltage of the operation coil of the magnetic contactor must be within the rating of the internal contact [CX3 (MCC)] of the PSM. For details, see (6) in Section 9.2.1.
- 4 When PSMR-5.5 is used with a rated output capacity of 5.5 kW
- 5 When PSMR-5.5 is used with a rated output capacity of 7.5 kW

For PSM-HV and PSMV-HV

PSM name	Circuit breaker 1	Circuit breaker 2	Circuit breaker 2	Magnetic contactor	Remarks
PSM-18HV	45A	3A	3A	45A	
PSM-30HV	75A			75A	
PSM-45HV	125A			135A	
PSM-75HV	200A			200A	
PSMV-11HV	–	5A	5A	60A	

NOTE

- 1 For the installation positions of the circuit breakers and magnetic contactor, see Section 2.1.
- 2 Circuit breakers 1 and 3 must have a rated voltage of 400VAC or higher.
- 3 Circuit breaker 2 must have a rated voltage of 200VAC or higher.
- 4 The current and voltage of the operation coil of the magnetic contactor must be within the ratings of the internal contact [CX3 (MCC)] of the PSM. For details, see (6) in Section 9.2.1.

– Ordering drawing numbers of circuit breakers

Category	Model	Ordering number	Outline drawing	Circuit breaker specification	Circuit breaker cover specification
Optional	PSMR-3	A06B-6077-K101	8-1-9-(a)	Fuji Electric EA53B/30	Fuji Electric BZ-TB20B-3
	PSMR-5.5, PSM-5.5 PSM-18HV	A06B-6077-K102	8-1-9-(b)	Fuji Electric EA103B/50	Fuji Electric BZ-TB20B-3
	PSM-11	A06B-6077-K103	8-1-9-(c)	Fuji Electric EA103B/60	Fuji Electric BZ-TB20B-3
	PSM-15, PSM-30HV	A06B-6077-K104	8-1-9-(d)	Fuji Electric EA103B/75	Fuji Electric BZ-TB20B-3
	PSM-45HV	A06B-6077-K108	8-1-9-(e)	Fuji Electric EA203B/125	Fuji Electric BZ-TB40B
	PSM-26, PSM-30	A06B-6077-K105	8-1-9-(f)	Fuji Electric EA203B/150	Fuji Electric BZ-TB40B
	PSM-37	A06B-6077-K110	8-1-9-(g)	Fuji Electric EA203B/175	Fuji Electric BZ-TB40B
	PSM-75HV	A06B-6077-K109	8-1-9-(h)	Fuji Electric EA203B/200	Fuji Electric BZ-TB40B
	PSM-45	A06B-6077-K107	8-1-9-(i)	Fuji Electric EA203B/225	Fuji Electric BZ-TB40B
	For control power supply	A06B-6077-K106	8-1-9-(j)	Fuji Electric EA33/5	Fuji Electric BZ-TB10B-503

– Ordering drawing numbers of magnetic contactors

Category	Model	Ordering number	Outline drawing	Magnetic contactor specification	Magnetic contactor cover specification
Optional	PSMR-3	A06B-6077-K121	8-1-10-(a)	Fuji Electric SC-5-1	Fuji Electric SZ-JC4
	PSMR-5.5, PSM-5.5 PSM-18HV	A06B-6077-K122	8-1-10-(b)	Fuji Electric SC-1N	Fuji Electric SZ-1N/T
	PSM-11, PSM-30HV PSMV-11HV	A06B-6077-K123	8-1-10-(b)	Fuji Electric SC-2N	Fuji Electric SZ-1N/T
	PSM-15	A06B-6077-K124	8-1-10-(c)	Fuji Electric SC-2SN	Fuji Electric SZ-2SN/T
	PSM-26, PSM-45HV	A06B-6077-K125	8-1-10-(d)	Fuji Electric SC-4N	Fuji Electric SZ-4N/T
	PSM-30	A06B-6077-K126	8-1-10-(e)	Fuji Electric SC-5N	Fuji Electric SZ-5N/T
	PSM-37, PSM-75HV	A06B-6077-K128	8-1-10-(g)	Fuji Electric SC-7N	Fuji Electric SZ-5N/T
	PSM-45	A06B-6077-K127	8-1-10-(f)	Fuji Electric SC-8N	Fuji Electric SZ-8N/T

NOTE

The coil voltage specification of the magnetic contactor is 200VAC.

– Recommended parts

Parts manufactured by Fuji Electric Co., Ltd.

PSM name	Circuit breaker 1	Circuit breaker 2	Circuit breaker 2	Magnetic contactor	Remarks
PSM-5.5	EA103B/50	EA33/5	-	SC-1N	
PSM-11	EA103B/60			SC-2N	
PSM-15	EA103B/75			SC-2SN	
PSM-26	EA203B/150			SC-4N	
PSM-30	EA203B/150			SC-5N	
PSM-37	EA203B/175			SC-7N	
PSM-45	EA203B/225			SC-8N	
PSMR-3	EA53B/30			SC-5-1	
PSMR-5.5	EA103B/50			SC-1N	
PSM-18HV	EA103B/50	EA33/3	EA33/3	SC-1N	
PSM-30HV	EA103B/75			SC-2SN	
PSM-45HV	EA203B/125			SC-4N	
PSM-75HV	EA203B/200			SC-7N	
PSMV-11HV	-	EA33/5	EA33/5	SC-2N	

NOTE

For details, see the brochures available from Fujitsu Electric Co., Ltd. Note that the specification of the coil voltage of a magnetic contactor may differ depending on the supply voltage and frequency used.

(11) Lightning surge protector

To protect equipment from surge voltages caused by lightning, install a lightning surge protector between lines and between a line and ground. For how to install protectors, see Appendix A. For the outline drawings of lightning surge protectors, see Section 8.1.11.

Category	Ordering number	Specification	Outline drawing	Remarks
Optional	A06B-6077-K142	For line-to-line installation: RAV-781BYZ-2 For line-to-ground installation: RAV-781BXZ-4	Fig. 8.1.11 (a)	AC200V For 200-VAC line (Note 1)
	A06B-6077-K143	For line-to-line installation: RAV-152BYZ-2A For line-to-ground installation: RAV-801BXZ-4	Fig. 8.1.11 (b)	AC400V For 400-VAC line (Note 2)

NOTE

- 1 For the 200-V input series main power supply and control power supply, and the 400-V input series control power supply
- 2 For the 400-V input series main power supply
- 3 Tüv approved products

– Recommended products

Line-to-line	Line-to-ground	Remarks
RAV-781BYZ-2 manufactured by Okaya Electric Industries Co., Ltd.	RAV-781BXZ-4 manufactured by Okaya Electric Industries Co., Ltd.	For 200-VAC line
RAV-152BYZ-2A manufactured by Okaya Electric Industries Co., Ltd.	RAV-801BYZ-4 manufactured by Okaya Electric Industries Co., Ltd.	For 400-VAC line

(12) Noise filter

A noise filter must be installed in the PSM input section to satisfy the requirements of the EMC Directives which are now being enforced in the EU countries. For how to select the current capacity and noise filter installation, see Section 5.3.

Recommended noise filters are listed below.

HF3000C-TMA series manufactured by SOSHIN ELECTRIC CO., LTD.

Part number (SOSHIN ELECTRIC)	Rated current	Rated voltage	Remarks
HF3005C-TMA	5A	AC460V	Leakage current: 5.3 mA max at 460VAC, 60 Hz
HF3010C-TMA	10A		
HF3015C-TMA	15A		
HF3020C-TMA	20A		
HF3030C-TMA	30A		
HF3040C-TMA	40A		
HF3050C-TMA	50A		
HF3060C-TMA	60A		
HF3080C-TMA	80A		
HF3100C-TMA	100A		
HF3150C-TMA	150A		
HF3200C-TMA	200A		
HF3250C-TMA	250A		

For details, refer to the brochures supplied by SOSHIN ELECTRIC CO., LTD.

3SUP-AH series and 3SUP-DH series manufactured by Okaya Electric Industries Co., Ltd.

Part number (Okaya Electric Industries)	Rated current	Rated voltage	Remarks
3SUP-A30H-ER-6	30A	AC250V	Leakage current: 4 mA max at 500VAC, 60 Hz
3SUP-D75H-ER-4	75A	AC500V	
3SUP-D100H-ER-4	100A		
3SUP-D150H-ER-4	150A		
3SUP-D200H-ER-4	200A		

For details, refer to the brochures supplied by Okaya Electric Industries Co., Ltd.

NF3000C-TX series manufactured by SOSHIN ELECTRIC CO., LTD.

Part number (SOSHIN ELECTRIC)	Rated current	Rated voltage	Remarks
NF3020C-TX	20A	AC460V	Leakage current: 250 mA max at 460VAC, 60 Hz (Note)
NF3030C-TX	30A		
NF3050C-TX	50A		
NF3080C-TX	80A		
NF3100C-TX	100A		
NF3150C-TX	150A		
NF3200C-TX	200A		

For details, refer to the brochures supplied by SOSHIN ELECTRIC CO., LTD.

FN258 series manufactured by SCHAFFNER

Part number (SCHAFFNER)	Rated current	Rated voltage	Remarks
FN258-7	7A	AC480V	Leakage current: 150 mA max at 250VAC, 50 Hz (Note)
FN258-16	16A		
FN258-30	30A		
FN258-42	42A		
FN258-55	55A		
FN258-75	75A		
FN258-100	100A		
FN258-130	130A		
FN258-180	180A		

For details, refer to the brochures supplied by SCHAFFNER.
Agency in Japan: UNIDUX INC.

NOTE

The NF3000C-TX series manufactured by SOSHIN ELECTRIC CO., LTD. and the FN258 series manufactured by SCHAFFNER have a large line-to-ground capacitor capacitance, allowing a very high leakage current. Therefore, they can be used only for neutral grounding type power supplies.

(13) Detectors

α position coder

Category	Name	Ordering number	Remarks
Optional	α position coder	A860-0309-T302	<input type="checkbox"/> 68, 10,000min ⁻¹
	Connector kit	A06B-6088-K211	Straight type

High-resolution position coder

Category	Name	Ordering number	Remarks
Optional	High-resolution position coder	A860-0319-T002	<input type="checkbox"/> 68, 8,000min ⁻¹

BZ sensor

Category	Name	Ordering number	Remarks
Optional	BZ sensor 128	A860-0392-T012	128 teeth / 20,000min ⁻¹
	BZ sensor 256	A860-0392-T011	256 teeth / 15,000min ⁻¹
	BZ sensor 256S	A860-0392-T014	256 teeth / 15,000min ⁻¹
	BZ sensor 384	A860-0392-T018	384 teeth / 15,000min ⁻¹
	BZ sensor 512	A860-0392-T013	512 teeth / 10,000min ⁻¹
	BZ sensor 128H	A860-0392-T082	128 teeth / 50,000min ⁻¹
	BZ sensor 256H	A860-0392-T081	256 teeth / 30,000min ⁻¹

High-resolution magnetic pulse coder

Category	Name	Ordering number	Remarks
Optional	High-resolution magnetic pulse coder	A860-0382-T121	Outside diameter of drum: φ 65
		A860-0382-T122	Outside diameter of drum: φ 97.5
		A860-0382-T123	Outside diameter of drum: φ 130
		A860-0382-T124	Outside diameter of drum: φ 195

Magnetic sensor for orientation

Category	Name	Ordering number	Remarks
Optional	Not specified, standard	A57L-0001-0037	Type II, 12,000min ⁻¹
	Magnetic sensor N	A57L-0001-0037#N	Type II, 12,000min ⁻¹
	Magnetic sensor NIP	A57L-0001-0037#NIP	Type II, 12,000min ⁻¹ Water-proof connector specification
	Magnetic sensor P	A57L-0001-0037#P	Type III, 12,000min ⁻¹
	Magnetic sensor PIP	A57L-0001-0037#PIP	Type III, 12,000min ⁻¹ Water-proof connector specification
	Magnetic sensor Q	A57L-0001-0037#Q	Type IV, 20,000min ⁻¹
	Magnetic sensor QIP	A57L-0001-0037#QIP	Type IV, 20,000min ⁻¹ Water-proof connector specification
	Magnetic sensor R	A57L-0001-0037#R	Type V, 20,000min ⁻¹
	Magnetic sensor RIP	A57L-0001-0037#RIP	Type V, 20,000min ⁻¹ Water-proof connector specification
	Magnetic sensor S	A57L-0001-0037#S	Type VI, 15,000min ⁻¹
	Magnetic sensor SIP	A57L-0001-0037#SIP	Type VI, 15,000min ⁻¹ Water-proof connector specification
	Magnetic sensor T	A57L-0001-0037#T	Type VII, 15,000min ⁻¹
	Magnetic sensor TIP	A57L-0001-0037#TIP	Type VII, 15,000min ⁻¹ Water-proof connector specification
	Magnetic sensor U	A57L-0001-0037#U	Type VIII, 20,000min ⁻¹
	Magnetic sensor UIP	A57L-0001-0037#UIP	Type VIII, 20,000min ⁻¹ Water-proof connector specification
	Magnetic sensor U1	A57L-0001-0037#U1	Type IX, 15,000min ⁻¹
	Magnetic sensor U1IP	A57L-0001-0037#U1IP	Type IX, 15,000min ⁻¹ Water-proof connector specification
	Magnetic sensor U2	A57L-0001-0037#U2	Type X, 15,000min ⁻¹
	Magnetic sensor U2IP	A57L-0001-0037#U2IP	Type X, 15,000min ⁻¹ Water-proof connector specification

(14) Others

Category	Name	Ordering number	Remarks
Optional	Battery	A06B-6073-K001	For SVM (Note)
	Battery	A06B-6050-K061	For SVM (Note)
	Battery case	A06B-6050-K060	For SVM (Note)
	Cable for battery connection	A06B-6093-K810	For SVM (Note)
	Connector for battery connection	A06B-6093-K303	For SVM (Note)
	Check pin board	A06B-6071-K290	For SVM
	Spindle check board	A06B-6078-H001	For SPM and SPMC

NOTE

These parts are required when the interface with the CNC is type B or FSSB, and absolute-position detection is performed. The battery for the absolute pulse coder can be connected using one of following two methods:

Connection method 1: A special lithium battery is installed in the α amplifier.

- Use A06B-6073-K001.

Connection method 2: A battery case (A06B-6050-K060) is used.

- Use A06B-6050-K061 or a commercially available size-D battery.
- A cable (A06B-6093-K810) is required.

2.1 CONFIGURATION

The FANUC series consists of the following units and parts:

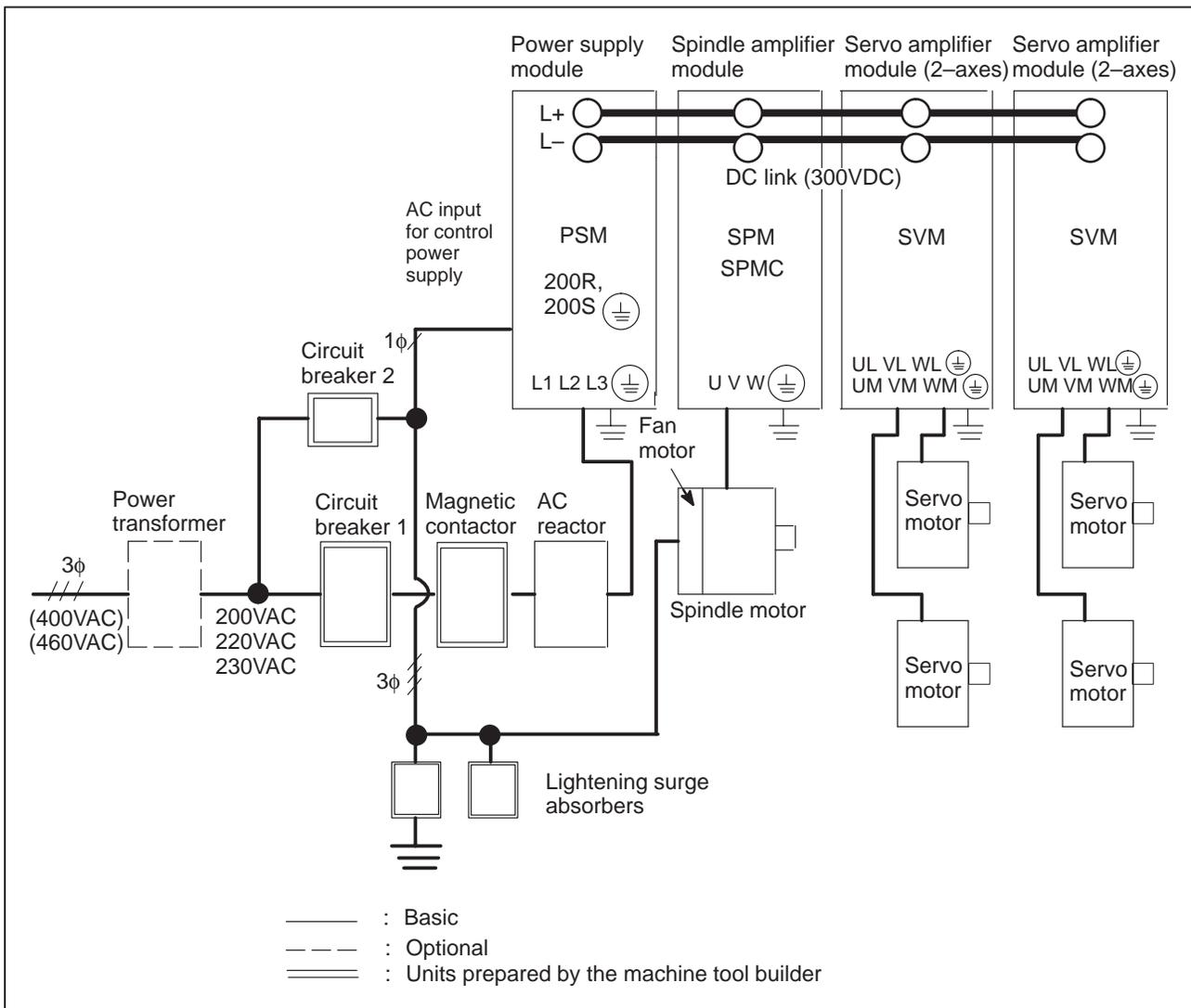
2.1.1 200-V Input Series

- (1) Power supply module (PSM) (Basic)
- (2) Power supply module (register discharge type) (PSMR) (Basic)
- (3) Servo amplifier module (SVM) (Basic)
- (4) Spindle amplifier module (SPM) (Basic)
- (5) Spindle amplifier module (SPMC) (Basic)
- (6) AC reactor (Basic)
- (7) Connectors (for connection cables) (Basic)
- (8) Fuses (Basic)
- (9) Power transformer (Optional)
- (10) Fan adaptor (Optional)
- (11) AC line filter (Basic)
- (12) Regenerative discharge unit (Basic)
- (13) Dynamic brake module (DBM) (Basic)

(a) Basic configuration using PSM

The basic configuration is shown below.

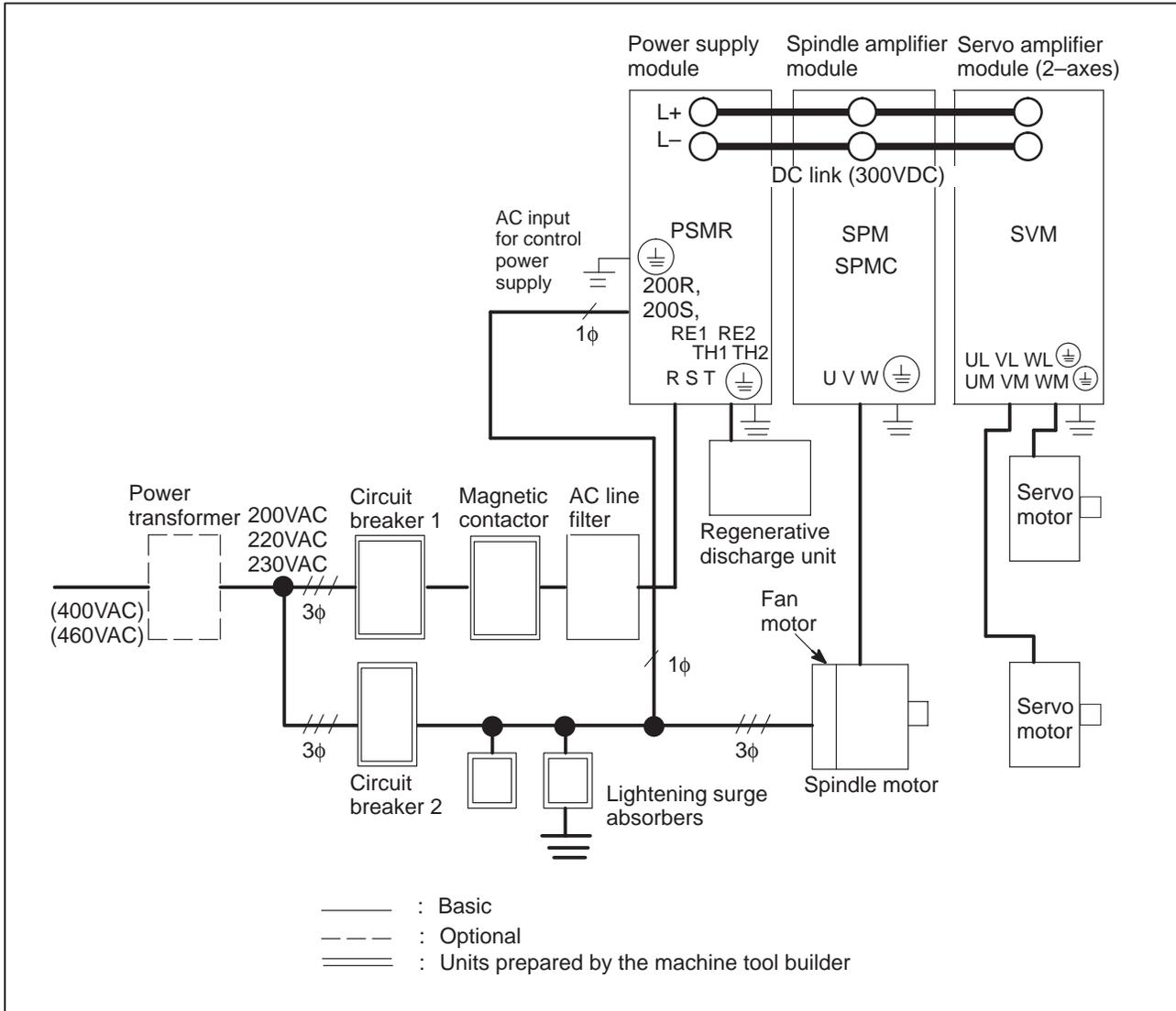
(Example having two 2-axes servo amplifier modules and a spindle amplifier module)

**NOTE**

- 1 See Chapter 3 for details of how to combine the power supply module, servo amplifier modules, and spindle amplifier modules.
- 2 A magnetic contactor, AC reactor, and circuit breakers are always required.
- 3 To protect the unit from surge currents caused by lightning, connect surge absorbers between lines, and between the lines and ground, at the power inlet of the power magnetics cabinet. See APPENDIX A for details.

(b) Basic configuration using PSMR

(Example housing one 2-axes servo amplifier modules and a spindle amplifier module)

**NOTE**

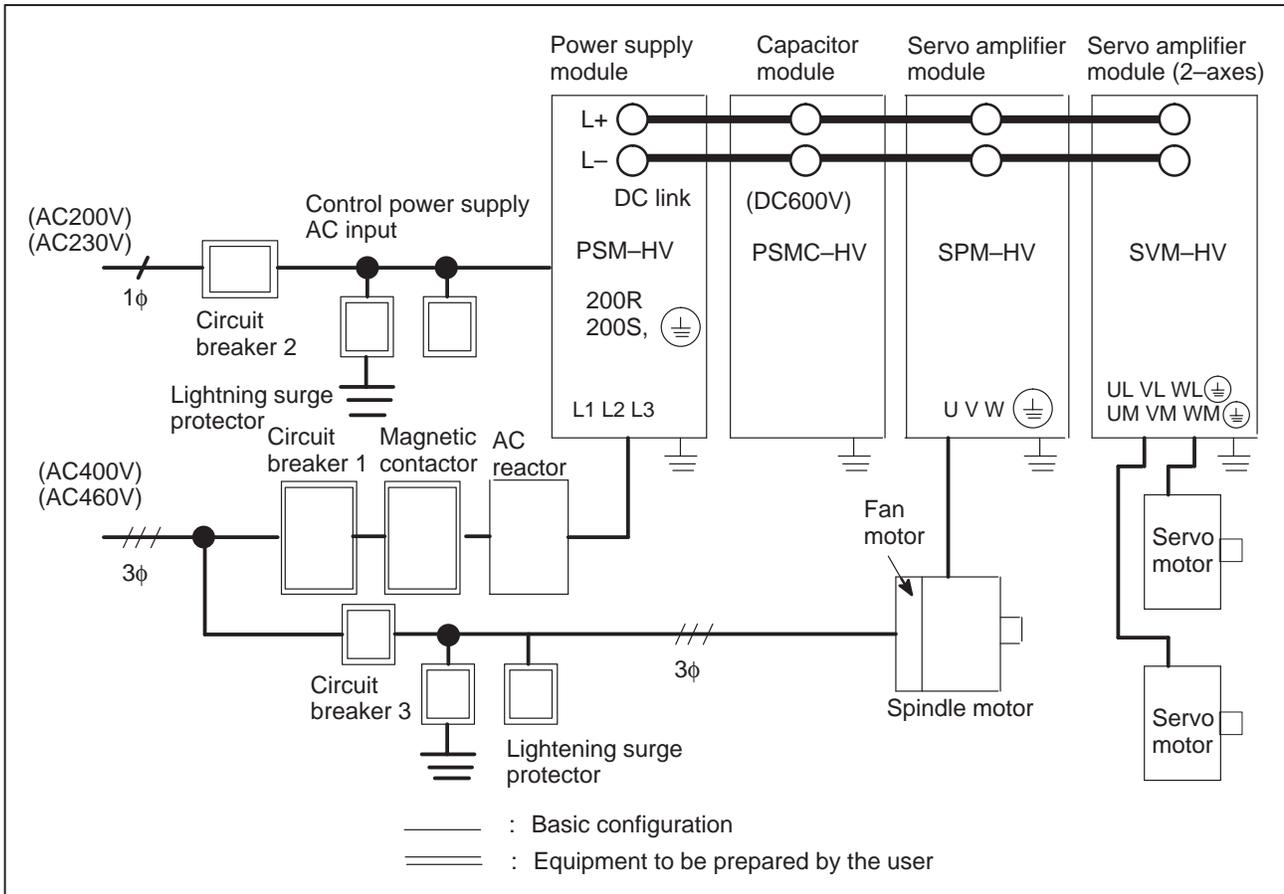
- 1 See Chapter 3 for details of how to combine the power supply module, servo amplifier modules, and spindle amplifier modules.
- 2 A magnetic contactor, AC line filter, regenerative discharge unit, and circuit breakers are always required.
- 3 To protect the unit from surge currents caused by lightning, connect surge absorbers between lines, and between the lines and ground, at the power inlet of the power magnetics cabinet. See APPENDIX A for details.
- 4 When an insulating transformer is installed, high-frequency noise to the power supply is reduced, so the AC line filter is not required. If the insulating transformer is installed outside the power magnetics cabinet, and the cable connecting the amplifier is exposed, the cable must be covered with a grounded metal duct, or an AC line filter must be installed.

2.1.2 400-V Input Series

(a) Basic configuration using a PSM-HV

- (1) Power supply module (PSM-HV) (Basic)
- (2) Capacitor module (PSMC-HV) (Basic)
- (3) Servo amplifier module (SVM-HV) (Basic)
- (4) Spindle amplifier module (SPM-HV) (Basic)
- (5) AC reactor (Basic)
- (6) Connectors (for cables) (Basic)
- (7) Fuses (Basic)
- (8) Fan adaptor (Optional)

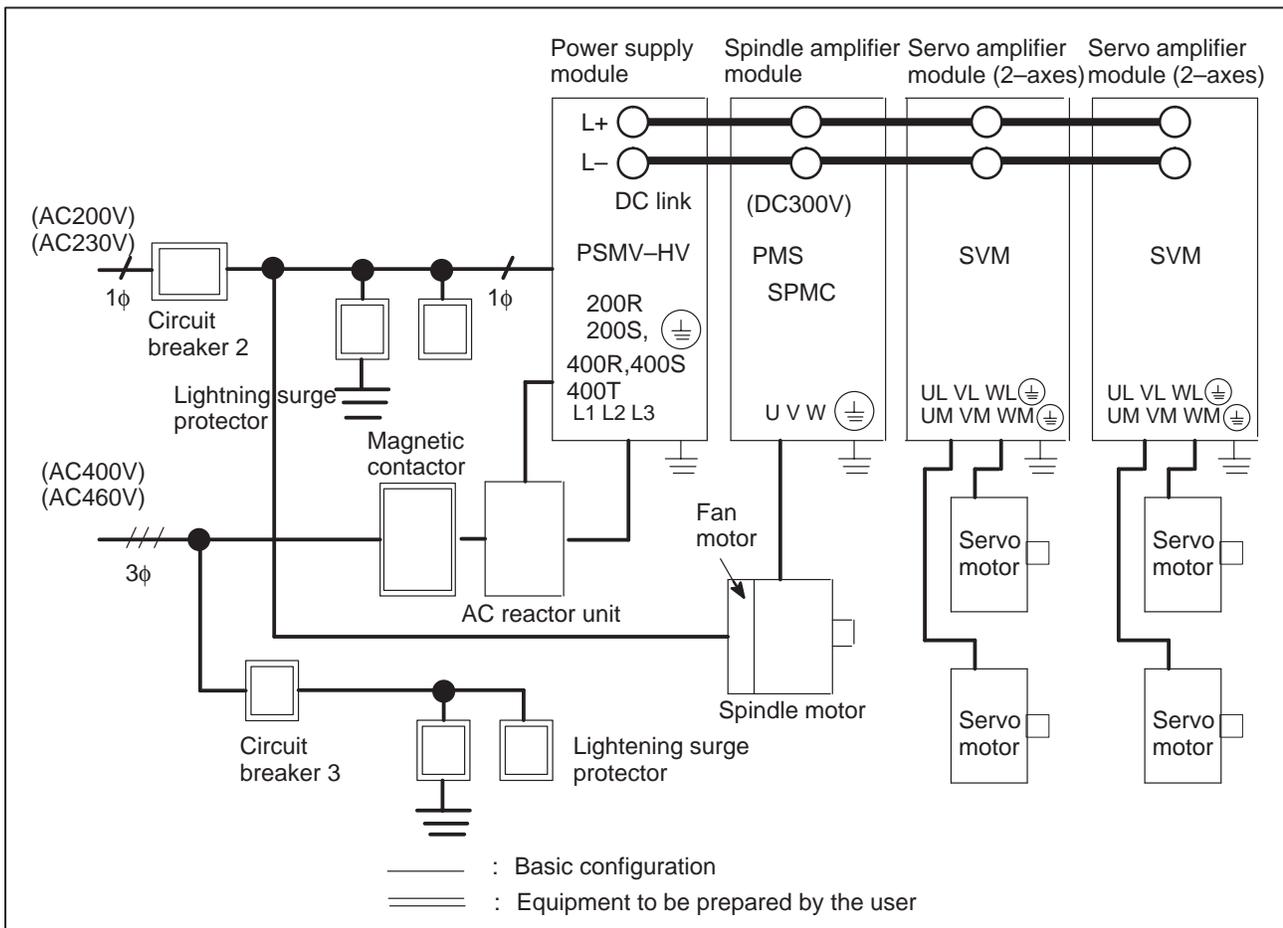
(The following example uses one 2-axis servo amplifier module and one spindle amplifier module.)

**NOTE**

- 1 For the control power supply, single-phase 200VAC is required.
- 2 Install circuit breakers, a magnetic contactor, and AC reactor.
- 3 At the power supply inlet of the power magnetics cabinet, install lightning surge protectors between the lines and between a line and ground to protect the equipment from surge voltages caused by lightning. For details, see Appendix A.
- 4 Note that when PSM-75HV is used, the position of the PSMC-HV differs from the above diagram. For the position of the PSMC-HV, see (5) in Section 5.1.
- 5 Measures must be taken to detect the operation (trip) of circuit breaker 3.

(b) Basic configuration using a PSMV-HV

- (1) Power supply module (PSMV-HV) (Basic)
 - (2) Servo amplifier module (SVM) (Basic)
 - (3) Spindle amplifier module (SPM) (Basic)
 - (4) Spindle amplifier module (SPMC) (Basic)
 - (5) AC reactor unit (Basic)
 - (6) Connectors (for cables) (Basic)
 - (7) Fuses (Basic)
 - (8) Fan adaptor (Optional)
 - (9) Dynamic brake module (DBM) (Basic)
- (The following example uses two 2-axis servo amplifier modules and one spindle amplifier module.)

**NOTE**

- 1 For the control power supply, single-phase 200VAC is required.
- 2 Install a magnetic contactor and AC reactor. Always connect the magnetic contactor closer to the input power supply than the AC reactor unit.
- 3 At the power supply inlet of the power magnetics cabinet, install lightning surge protectors between the lines and between a line and ground to protect the equipment from surge voltages caused by lightning. For details, see Appendix A.
- 4 Measures must be taken to detect the operation (trip) of circuit breaker 3.