

SJDE-□-OY, SJME-□-OY

Junma Servo system

A new concept in drive simplicity
Save space, save wiring, save time

- Ultra compact drive size reduces panel space
- Tuning-less technology, no gain parameters need to be set
- Peak torque 300% of nominal for 3 seconds
- High response, high speed, high torque and high accuracy
- Drive version with MECHATROLINK-II port built-in
- MECHATROLINK-II simplifies wiring and reduces installation time
- MECHATROLINK-II provides access to the system from one point
- Pulse control Drive version available, fully "Parameter-less" just plug and run

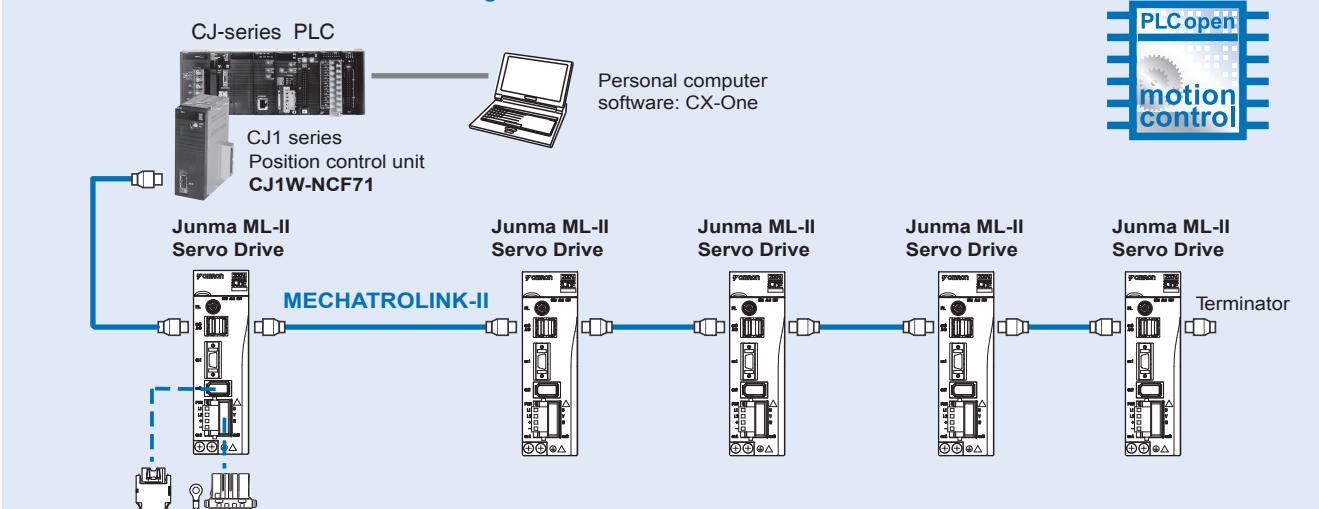
Ratings

- 230 VAC Single-phase 100 W to 750 W (2.39 Nm)

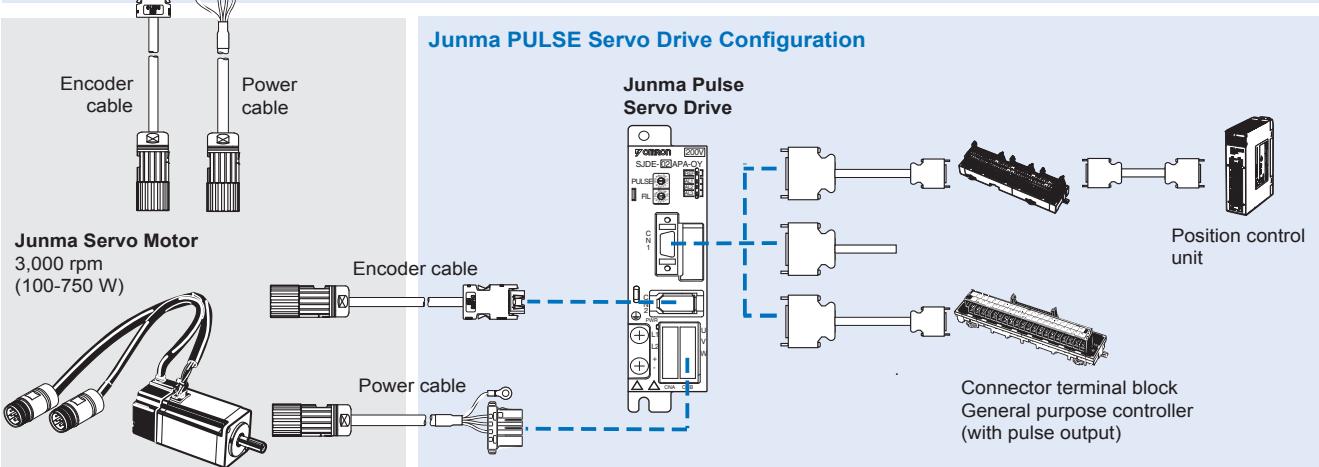


System Configuration

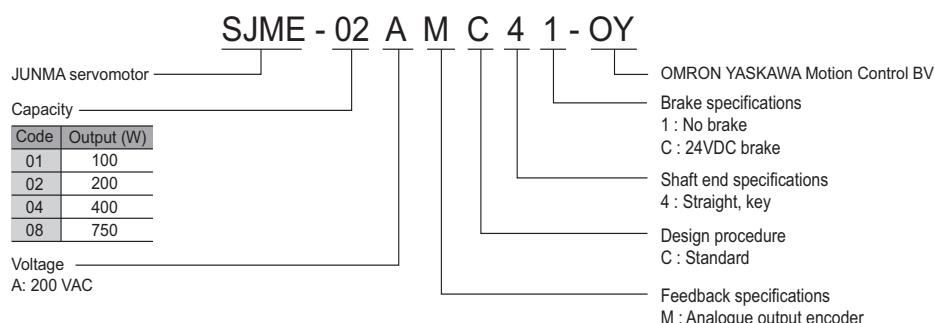
Junma MECHATROLINK-II Servo Drive Configuration



Junma PULSE Servo Drive Configuration



Motor Type Designation



Servomotor Specifications

Voltage		230 V						
Servomotor Model SJME- □		01A□	02A□	04A□	08A□			
Rated Output ¹	W	100	200	400	750			
Rated Torque ^{1, *2}	N·m	0.318	0.637	1.27	2.39			
Instantaneous Peak Torque ^{*1}	N·m	0.955	1.91	3.82	7.16			
Rated Current ^{*1}	Arms	0.84	1.1	2.0	3.7			
Instantaneous Max. Current ^{*1}	Arms	2.5	3.3	6.0	11.1			
Rated Speed ^{*1}	min ⁻¹	3000						
Max. Speed ^{*1}	min ⁻¹	4500						
Torque Constant	N·m/Arms	0.413	0.645	0.682	0.699			
Rotor Moment of Inertia (JM)	kg·m ² ×10 ⁻⁴	0.0634	0.330	0.603	1.50			
Allowable load inertia ^{*3}	kg·m ² ×10 ⁻⁴	0.6	3.0	5.0	10.0			
Rated Power Rate	kW/s	16.0	12.3	26.7	38.1			
Rated Angular Acceleration	rad/s ²	50200	19300	21100	15900			
Encoder	Standard	Analogue output encoder						
Allowable radial load		78	245	245	392			
Allowable thrust load		54	74	74	147			
Approx. mass	kg (without brake)	0.5	0.9	1.3	2.6			
	kg (with brake)	0.8	1.5	1.9	3.5			
Brake specifications	Rated voltage	24 VDC ±10%						
	Holding Brake Moment of Inertia	kg·m ² ×10 ⁻⁴	0.0075	0.064	0.171			
	Power consumption (at 20°C)	W	6	6.9	7.7			
	Current consumption (at 20°C)	A	0.25	0.29	0.32			
	Static friction torque	N·m (minimum)	0.318	1.27	2.39			
	Rise time for holding torque	ms (max)	100					
	Release time	ms (max)	80					
Basic Specifications	Time Rating	Continuous						
	Thermal Class	Class B						
	Vibration Class	15 µm or below						
	Withstand Voltage	1500 VAC for one minute						
	Insulation resistance	500 VDC, 10 MΩ min.						
	Enclosure	Totally-enclosed, self-cooled, IP55 (excluding shaft opening and connectors)						
	Vibration Resistance	Vibration acceleration 49 m/s ²						
	Usage / storage temperature	0 to +40°C / -20 to 60°C without freezing						
	Usage / storage humidity	20 to 80% RH (non-condensing)						
	Altitude	1000 m or less above sea level						
	Mounting	Flange-mounted						

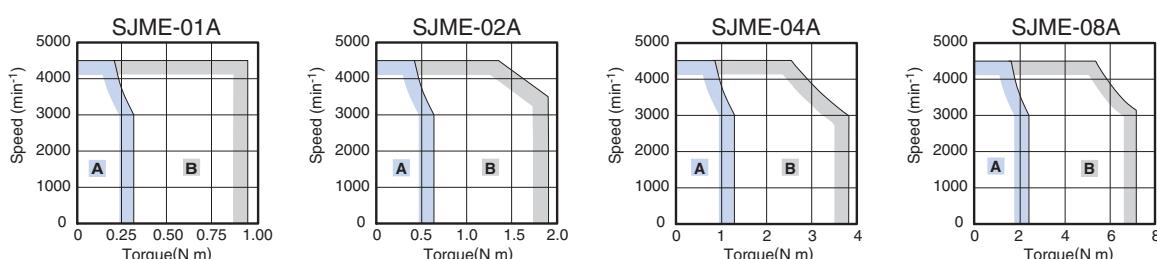
Note: *1. These items and speed/torque characteristics quoted in combination with an SJDE servo drive are at an armature winding temperature of 100°C. Other values quoted at 20°C.

*2: The rated torques listed here are the values for the continuous allowable torque at 40°C with an aluminium heatsink (250 mm x 250 mm x 6 mm) attached.

*3. Value using the appropriate SJDE drive without of external regeneration unit

Torque-Speed Characteristics

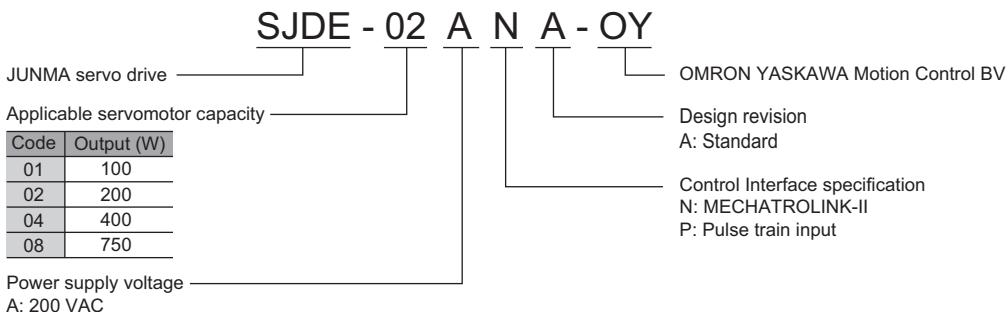
(A : Continuous Duty Zone B : Intermittent Duty Zone)



Servomotor / Servo Drive Combination

Junma Servomotor						Junma servo drive	
	Voltage	Rated Torque	Capacity	Model without brake	Model with brake	MECHATROLINK-II	Pulse Control
SJME- (3000 min ⁻¹)	200 V	0.318 Nm	100 W	SJME-01AMC41-OY	SJME-01AMC4C-OY	SJDE-01ANA-OY	SJDE-01APA-OY
		0.637 Nm	200 W	SJME-02AMC41-OY	SJME-02AMC4C-OY	SJDE-02ANA-OY	SJDE-02APA-OY
		1.27 Nm	400 W	SJME-04AMC41-OY	SJME-04AMC4C-OY	SJDE-04ANA-OY	SJDE-04APA-OY
		2.39 Nm	750 W	SJME-08AMC41-OY	SJME-08AMC4C-OY	SJDE-08ANA-OY	SJDE-08APA-OY

Servo Drive Type Designation



Servo Drive Specifications

Junma MECHATROLINK-II Servo Drive

Servo Drive Type	SJDE- □	01ANA-OY	02ANA-OY	04ANA-OY	08ANA-OY			
Applicable servomotor	SJME- □	01A□	02A□	04A□	08A□			
Max. Applicable Motor capacity	W	100	200	400	750			
Continuous output current	Arms	0.84	1.1	2.0	3.7			
Max. output current	Arms	2.5	3.3	6.0	11.1			
Input power supply (Main circuit and control circuit)	Voltage Capacity KVA	Single-phase, 200 to 230 VAC, + 10 to -15% (50/60 Hz) 0.40	0.75	1.2	2.2			
Control Method	PWM control, sine wave current drive system							
Feedback	Analogue incremental encoder (13 bits incremental equivalent)							
Allowable load inertia [†]	kg·m ²	0.6 × 10 ⁻⁴	3.0 × 10 ⁻⁴	5.0 × 10 ⁻⁴	10.0 × 10 ⁻⁴			
Usage / storage temperature	0 to +55°C / -20 to 70°C							
Usage / storage humidity	90%RH or less (non-condensing)							
Altitude	1000m or less above sea level							
Vibration/shock Resistance	4.9m/s ² (0.5G) / 19.6m/s ² (2G)							
Configuration	Base mounted							
Approx. mass	Kg	1.0			1.4			
Dynamic brake (DB)	Operated at main power OFF, servo alarm, servo OFF.(OFF after motor stops; ON when motor power is off.)							
Regenerative processing	Optional (If the regenerated energy is too large, install a regenerative unit JUSP-RG08D)							
Over-travel (OT) prevention function	P_OT, N_OT							
Emergency stop	Emergency stop (E-STP)							
LED display	4 LEDs (PWR, RDY, COM, ALM)							
MECHATROLINK-II monitor	MECHATROLINK-II under communication : COM LED (Light ON)							
Servo ON/OFF monitor	At Servo OFF : RDY LED (Light OFF), at Servo ON : RDY LED (Light Blinks)							
Power supply status monitor	Control / main-circuit power-supply OFF state: PWR LED (Light OFF) Control / main-circuit power-supply ON state: PWR LED (Light ON)							
Electronic gearing	0,01 < A/B < 100							
Protection	Overcurrent, overvoltage, undervoltage, overload, main circuit sensor error, board temperature error, excessive position error overflow, overspeed, encoder signal error, overrun protection, system error, parameter error							
MECHATROLINK Communication	Comm. protocol	MECHATROLINK-II						
	Transmission rate	10 Mbps						
	Transmission cycle	1ms, 1.5ms, 2ms, 3ms, 4ms						
	Data length	17 byte and 32 byte						
Command input	MECHATROLINK communication	MECHATROLINK-II commands (For sequence, motion, data setting/reference, monitor, adjustment, and other commands)						
Sequence Input signal	Fixed input	5 points (fixed layout: external latch signal, zero return reduced speed signal, forward drive inhibiting signal, reverse run inhibiting signal, emergency stop signal)						
Sequence Output signal	Fixed output	2 points (fixed layout: servo alarm, brake interlock)						

Note: *1. Value without external regeneration unit

Junma Pulse Servo Drives

Servo Drive Type	SJDE-□	01APA-OY	02APA-OY	04APA-OY	08APA-OY			
Applicable servomotor	SJME-□	01A□	02A□	04A□	08A□			
Basic specifications	Max. Applicable Motor capacity	W	100	200	400			
	Continuous output current	Arms	0.84	1.1	2.0			
	Max. output current	Arms	2.5	3.3	6.0			
	Input power supply (Main circuit and control circuit)	Voltage	Single-phase, 200 to 230 VAC, +10 to -15% (50/60 Hz)					
	Capacity KVA		0.40	0.75	1.2			
	Control Method	PWM control, sine wave current drive system						
	Feedback	Analogue incremental encoder (10000 steps per revolution)						
	Allowable load inertia ¹	kg·m ²	0.6 × 10 ⁻⁴	3.0 × 10 ⁻⁴	5.0 × 10 ⁻⁴			
	Usage / storage temperature	0 to +55°C / -20 to 70°C						
	Usage / storage humidity	90%RH or less (non-condensing)						
Built-in functions	Altitude	1000 m or less above sea level						
	Vibration/shock Resistance	4.9m/s ² (0.5G) / 19.6m/s ² (2G)						
	Configuration	Base mounted						
	Cooling method	Forced cooling (built-in fan)						
	Approx. mass	Kg	0.5		1.0			
	Dynamic brake (DB)	Operated at main power OFF, servo alarm, servo OFF.(OFF after motor stops; ON when motor power is off.)						
	Regenerative processing	Optional (If the regenerated energy is too large, install a regenerative unit JUSP-RG08D)						
	LED display	5 (PWE, REF, AL1, AL2, AL3)						
	Reference filter	Select one of eight levels with FIL switch						
	Protection	Speed errors, overload, encoder errors, voltage errors, overcurrents, disablement of the built-in cooling fan, system errors						
I/O Signals	Input signal for reference Designated pulse type and pulse resolution with PULSE switch.	Pulse type	Select one of the following signals: 1. CCW + CW 2. Sign + pulse train 3. CCW + CW (logic reversal) 4. Sign + pulse train (logic reversal)					
		Pulse resolution	Select one of the following signals: 1. 1000 pulses/rev (Open collector/line driver) 75 kpps max. 2. 2500 pulses/rev (Open collector/line driver) 187.5 kpps max. 3. 5000 pulses/rev (Line driver) 375 kpps max. 4. 10000 pulses/rev (Line driver) 750 kpps max.					
	Clear input signal	Clears the positioning error when turned ON						
	Servo ON input signal	Turns the servomotor ON or OFF						
	Alarm output signal	OFF if an alarm occurs. (Note: OFF for 2s when power is turned ON)						
	Brake output signal	External signal to control brakes. Turn ON to release the brake						
	Positioning completed output signal	ON if the current position is equal to the reference position ±10 pulses.External signal to control brakes.						
	Origin output signal	ON if the motor is at the origin. (Width: 1/500 rev) (Note: Use the pulse edge that changes the signal from OFF to ON)						

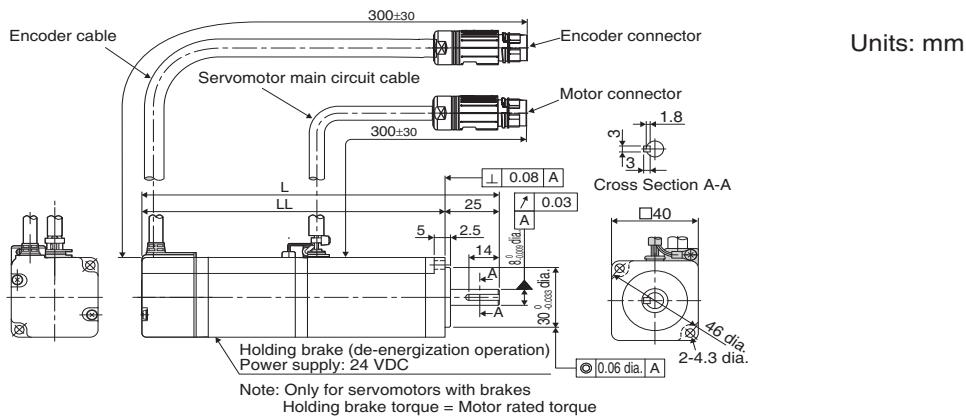
Note: *1. Value without external regeneration unit

Dimensions

Junma servomotors

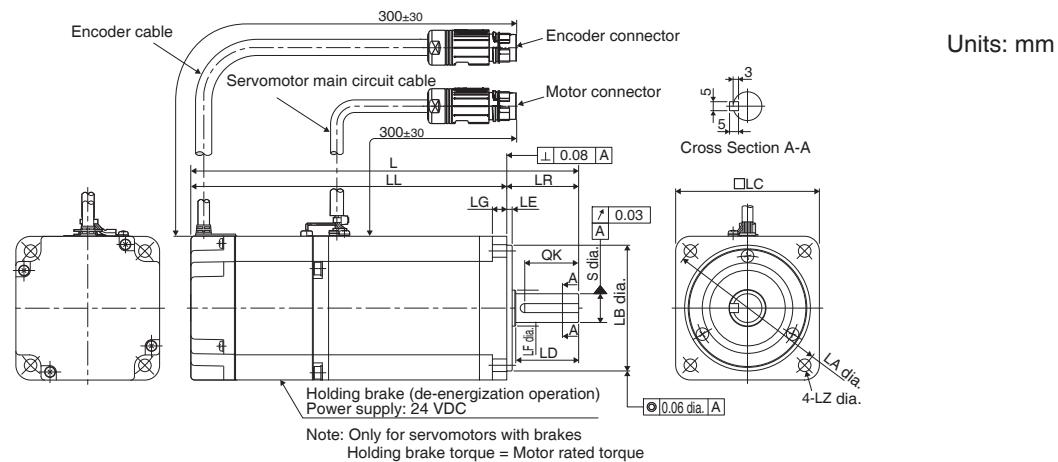
SJME-01 (200V, 100W)

Model	L	LL	Approx. Mass (kg)
SJME-01AMC41-OY	119	94	0.5
SJME-01AMC4C-OY	164	139	0.8



SJME-02, 04, 08 (200V, 200 to 750W)

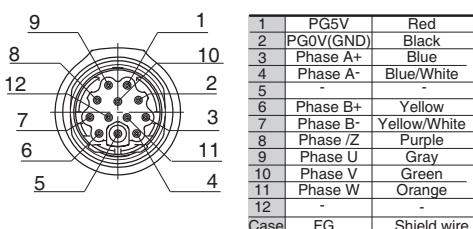
Model	L	LL	LR	LG	LE	S	LB	LC	LD	LF	LA	LZ	QK	Approx. Mass (kg)
SJME-02AMC41-OY	125.5	95.5	30	6	3	14 ⁰ -0.011	50 ⁰ -0.039	60	-	-	70	5.5	20	0.9
SJME-02AMC4C-OY	165.5	135.5												1.5
SJME-04AMC41-OY	148.5	118.5												1.3
SJME-04AMC4C-OY	188.5	158.5												1.9
SJME-08AMC41-OY	173	133	40	8	3	16 ⁰ -0.011	70 ⁰ -0.046	80	35	20	90	7	30	2.6
SJME-08AMC4C-OY	216	176												3.5



Servomotor connectors

Encoder Connector Specifications

Model: AKUA047NN0084151A000
Male Contact (Crimp): 61.004.11
(Manufacturer: INTERCONTEC)



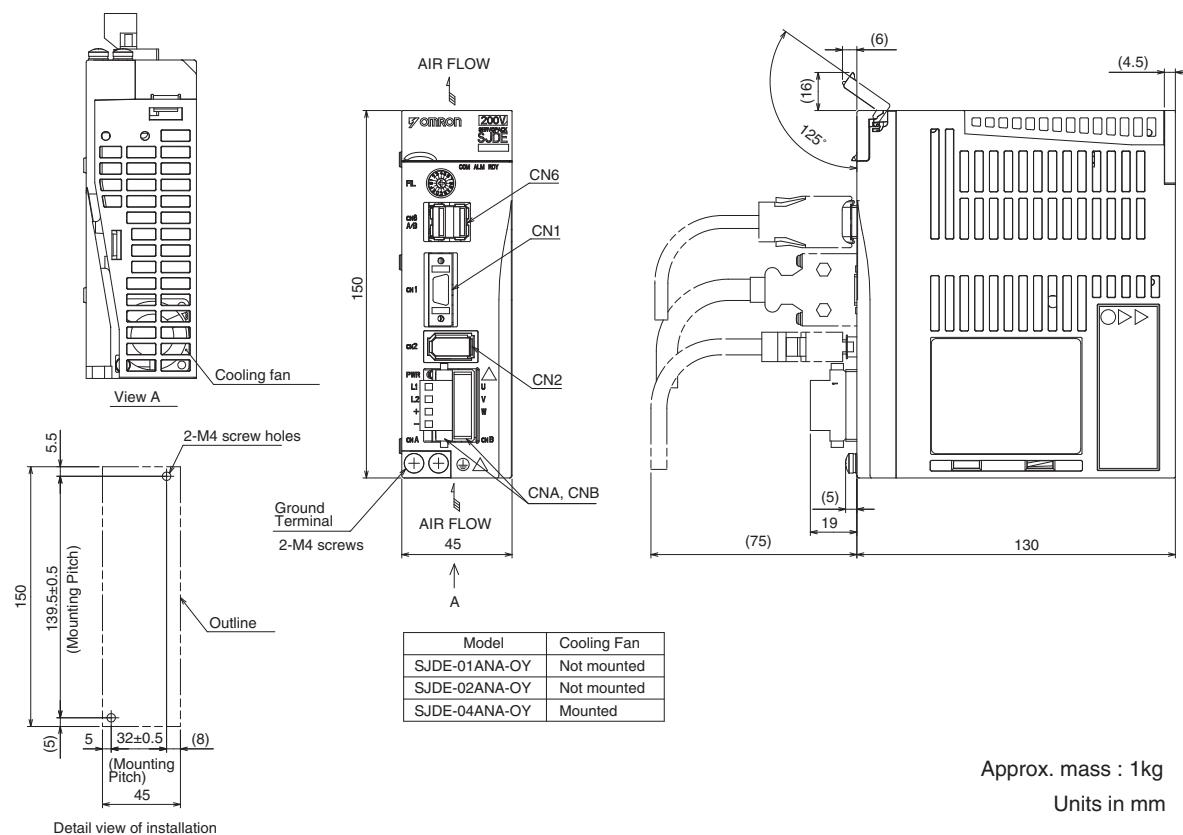
Motor Connector Specifications

Model: BKUA854NN0085155A000
Male Contact (Solder): 61.006.11
(Manufacturer: INTERCONTEC)

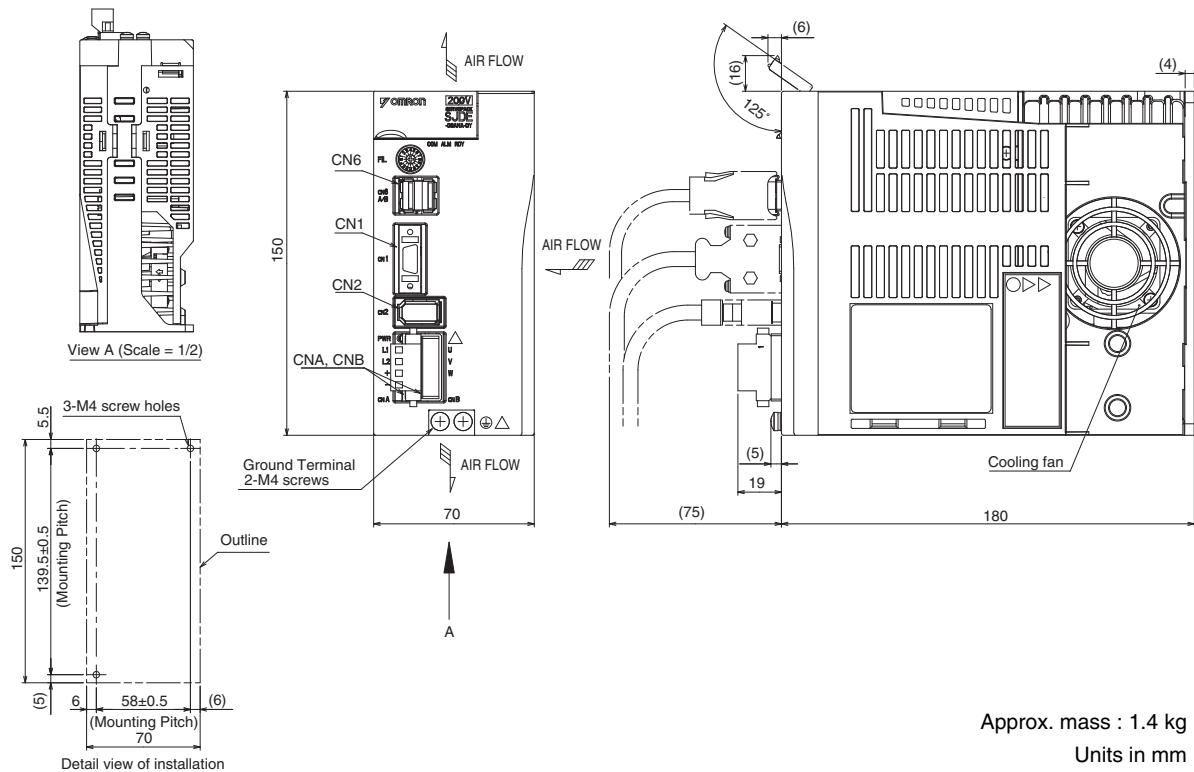


Junma MECHATROLINK-II servo drives

SJDE-01, 02, 04ANA-OY (200V, 100 to 400W)

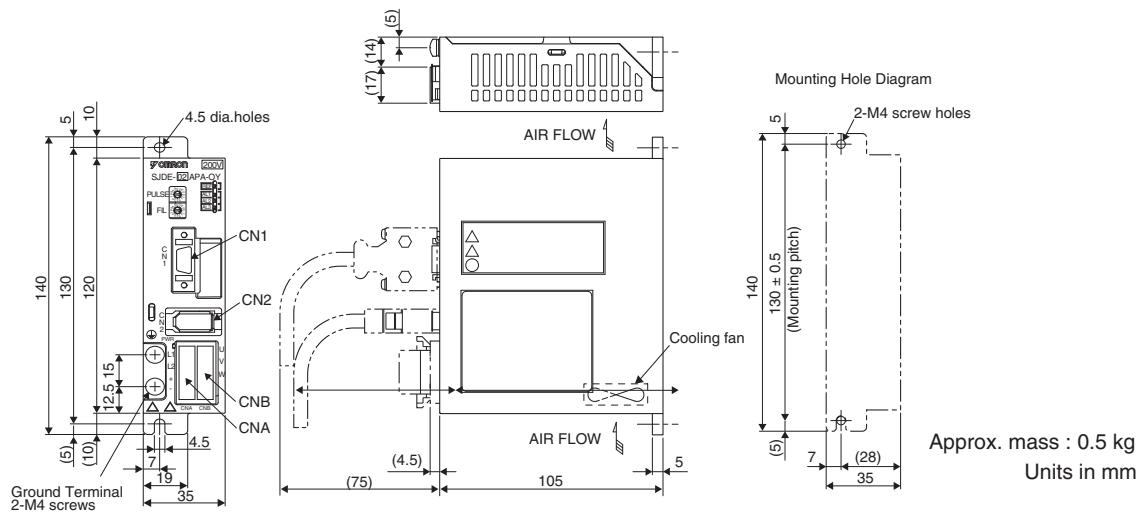


SJDE-08ANA-OY (200V, 750W)

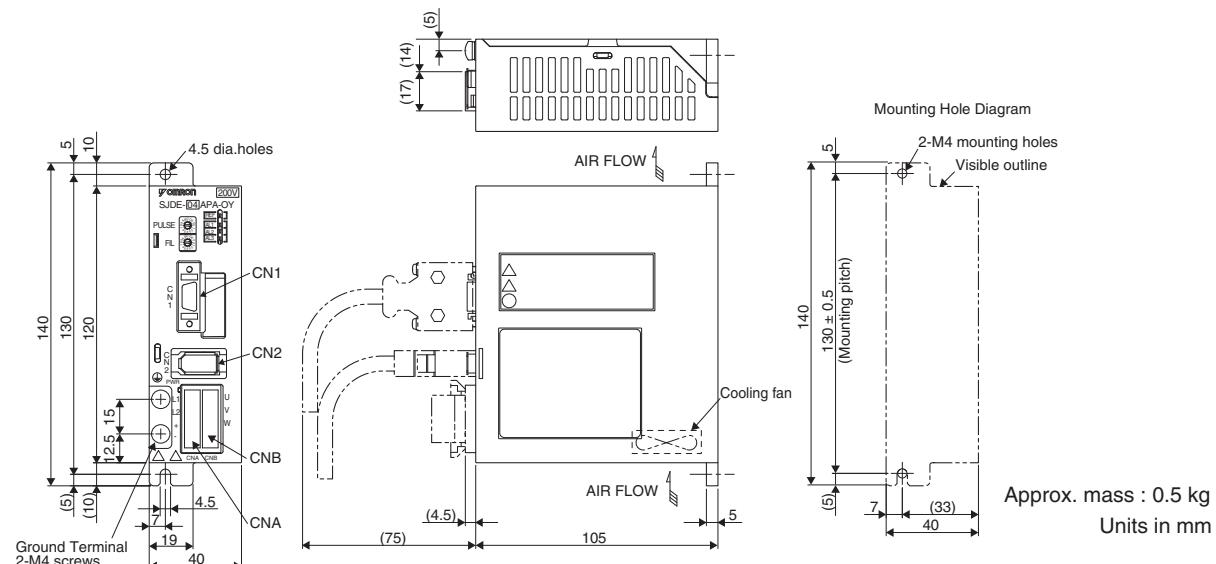


Junma pulse control servo drives

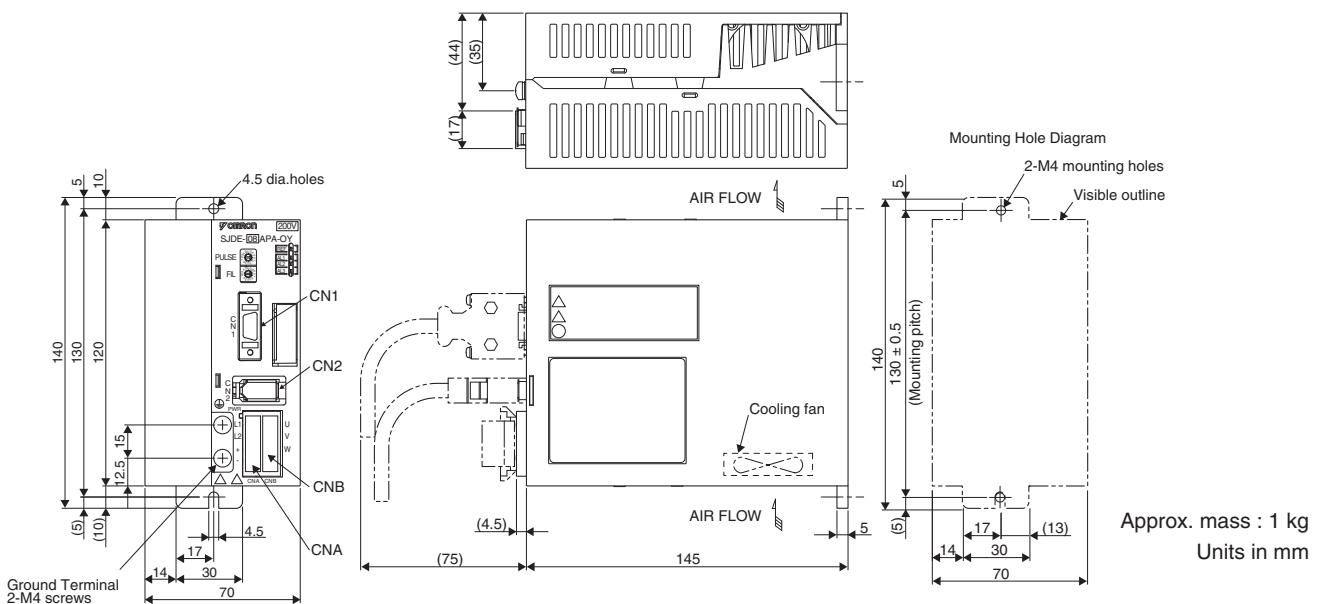
SJDE-01, 02APA-OY (200V, 100 to 200W)



SJDE-04APA-OY (200V, 400W)

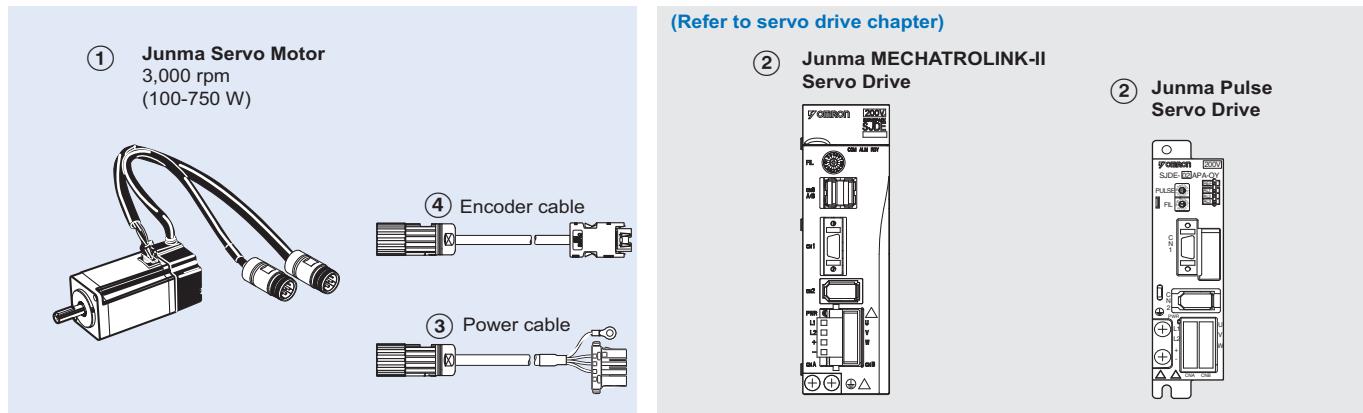


SJDE-08APA-OY (200V, 800W)



Ordering Information

Junma Servo Motor configuration



Servomotors and Servo drives

Symbol	Specifications				① Servomotor model	② Servo drive model	
	Voltage	Encoder and Design		Rated Torque		Mechatrolink-II	Pulse Control
①②	1 Phase 200 VAC	Analogue Incremental Encoder	Without brake	0.318 Nm	100 W	SJME-01AMC41-OY	SJDE-01ANA-OY SJDE-01APA-OY
				0.637 Nm	200 W	SJME-02AMC41-OY	SJDE-02ANA-OY SJDE-02APA-OY
				1.27 Nm	400 W	SJME-04AMC41-OY	SJDE-04ANA-OY SJDE-04APA-OY
				2.39 Nm	750 W	SJME-08AMC41-OY	SJDE-08ANA-OY SJDE-08APA-OY
		Straight shaft with key	With brake	0.318 Nm	100 W	SJME-01AMC4C-OY	SJDE-01ANA-OY SJDE-01APA-OY
				0.637 Nm	200 W	SJME-02AMC4C-OY	SJDE-02ANA-OY SJDE-02APA-OY
				1.27 Nm	400 W	SJME-04AMC4C-OY	SJDE-04ANA-OY SJDE-04APA-OY
	2.39 Nm			2.39 Nm	750 W	SJME-08AMC4C-OY	SJDE-08ANA-OY SJDE-08APA-OY

Power cables

Symbol	Specifications	Model	Appearance	
③	Power cable for Junma servomotors without brake SJME-0□AMC41-OY	Flexible cables (Standard) Shielded Cable Bending radius (Dynamic) > 10xDiameter Bending cycles > 5 Million	1.5 m JZSP-CHM000-01-5ME 3 m JZSP-CHM000-03-ME 5 m JZSP-CHM000-05-ME 10 m JZSP-CHM000-10-ME 15 m JZSP-CHM000-15-ME 20 m JZSP-CHM000-20-ME	
	Power cable for Junma servomotors with brake SJME-0□AMC4C-OY	Flexible cables (Standard) Shielded Cable Bending radius (Dynamic) > 10xDiameter Bending cycles > 5 Million	1.5 m JZSP-CHM030-01-5ME 3 m JZSP-CHM030-03-ME 5 m JZSP-CHM030-05-ME 10 m JZSP-CHM030-10-ME 15 m JZSP-CHM030-15-ME 20 m JZSP-CHM030-20-ME	

Encoder cables

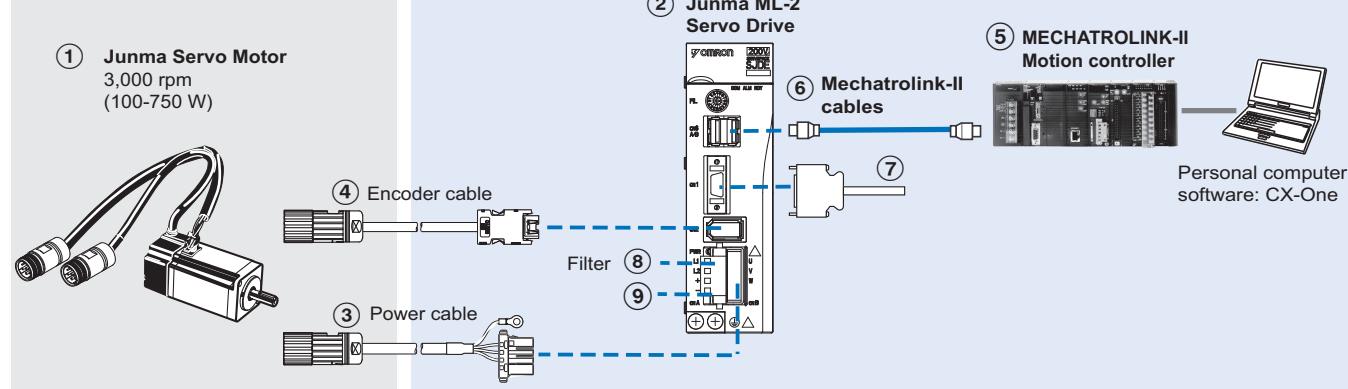
Symbol	Specifications	Model (Flexible)	Appearance	
④	Encoder cable for Junma servomotors SJME-0□AMC4□-OY	Flexible cables (Standard) Shielded Cable Bending radius (Dynamic) > 10xDiameter Bending cycles > 5 Million	1.5 m JZSP-CHP800-01-5ME 3 m JZSP-CHP800-03-ME 5 m JZSP-CHP800-05-ME 10 m JZSP-CHP800-10-ME 15 m JZSP-CHP800-15-ME 20 m JZSP-CHP800-20-ME	

Connectors for power and encoder cables

Specifications	Model (Omron)	
Connectors for making power cables	Drive side (CNB)	Manufacturer: JST (04JFAT-SAYGF-N)
	Motor side	Manufacturer: Intercontec
Connectors for making encoder cables	Drive side (CN2)	Manufacturers 3M and Molex
	Motor side	Manufacturer: Intercontec
Power connector male motor side		Manufacturer: Intercontec
Encoder connector male motor side		Manufacturer: Intercontec

Junma MECHATROLINK-II Servo Drive Configuration

(Refer to servo motor chapter)



Servomotors and Servo drives

Symbol	Specifications				① Servomotor model	② Servo drive model
	Voltage	Encoder and Design		Rated Torque		
①②	1 Phase 200 VAC	Analogue Incremental Encoder	Without brake	0.318 Nm	100 W	SJME-01AMC41-OY
				0.637 Nm	200 W	SJME-02AMC41-OY
				1.27 Nm	400 W	SJME-04AMC41-OY
				2.39 Nm	750 W	SJME-08AMC41-OY
		Straight shaft with key	With brake	0.318 Nm	100 W	SJDE-01ANA-OY
				0.637 Nm	200 W	SJDE-02ANA-OY
				1.27 Nm	400 W	SJDE-04ANA-OY
				2.39 Nm	750 W	SJDE-08ANA-OY

Power and encoder cables

Note: ③④ Refer to the Junma servo motor section for motor cables or connectors selection

Connectors

Specification	Model (Omron)	Model (Yaskawa)
Control I/O connector (for CN1)	R7A-CNA01R	JZSP-CHI9-1
Power input connector (for CNB). (Included in drive the box)	R7A-CNZ01P	JZSP-CHG9-1

Mechatrolink-II Motion controllers

Symbol	Name	Model
⑤	Position Controller Unit for CJ1 PLC	CJ1W-NCF71
	Position Controller Unit for CS1 PLC	CS1W-NCF71
	Trajexia stand-alone motion controller	TJ1-MC16

Computer Software

Specifications	Model
Configuration and monitoring software tool via ML2 (CX-Drive version 1.3 or higher)	CX-DRIVE
Complete Omron software package including CX-Drive (CX-One 2.0 or higher)	CX-ONE

Mechatrolink-II cables

Symbol	Specifications	Model
⑥	Mechatrolink-II Terminator resistor	JEPMC-W6022
	Mechatrolink-II Cables	0.5 m JEPMC-W6003-A5
		1 m JEPMC-W6003-01
		3 m JEPMC-W6003-03
		5 m JEPMC-W6003-05
		10 m JEPMC-W6003-10
		20 m JEPMC-W6003-20
		30 m JEPMC-W6003-30

Cables for I/Os (for CN1)

Symbol	Name	Compatible units	Model
⑦	Control cable	Cable for servo drive I/O signals	1 m R7A-CPZ001S or JZSP-CHI003-01
			2 m R7A-CPZ002S or JZSP-CHI003-02
			3 m JZSP-CHI003-03

Filters

Symbol	Applicable servo drive	Rated current	Leakage current	Rated voltage	Filter model
⑧	SJDE-01ANA-OY	5A	1.7 mA	250 VAC 1-phase	R7A-FIZN105-BE
	SJDE-02ANA-OY				R7A-FIZN109-BE
	SJDE-04ANA-OY				
	SJDE-08ANA-OY	9A	1.7 mA		

Regenerative Unit Model (Option)

Symbol	Specifications	Model (Omron)	Model (Yaskawa)
⑨	External regenerative unit (Optional)	R88A-RG08UA	JUSP-RG08D

