Servos SmartStep

Quick Link K091

Cost-Effective Servo Capability with Stepper Simplicity

Easily migrate from steppers to the higher precision of servos in minutes with Omron's SmartStep servo drivers and ultra-compact 3-phase servo motors. They accept pulse-train input that can be configured quickly via simple DIP switches and have an on-line auto-tuning function. SmartStep offers all the simplicity and cost-effectiveness of a stepper with the added advantages of the servo drive capability.

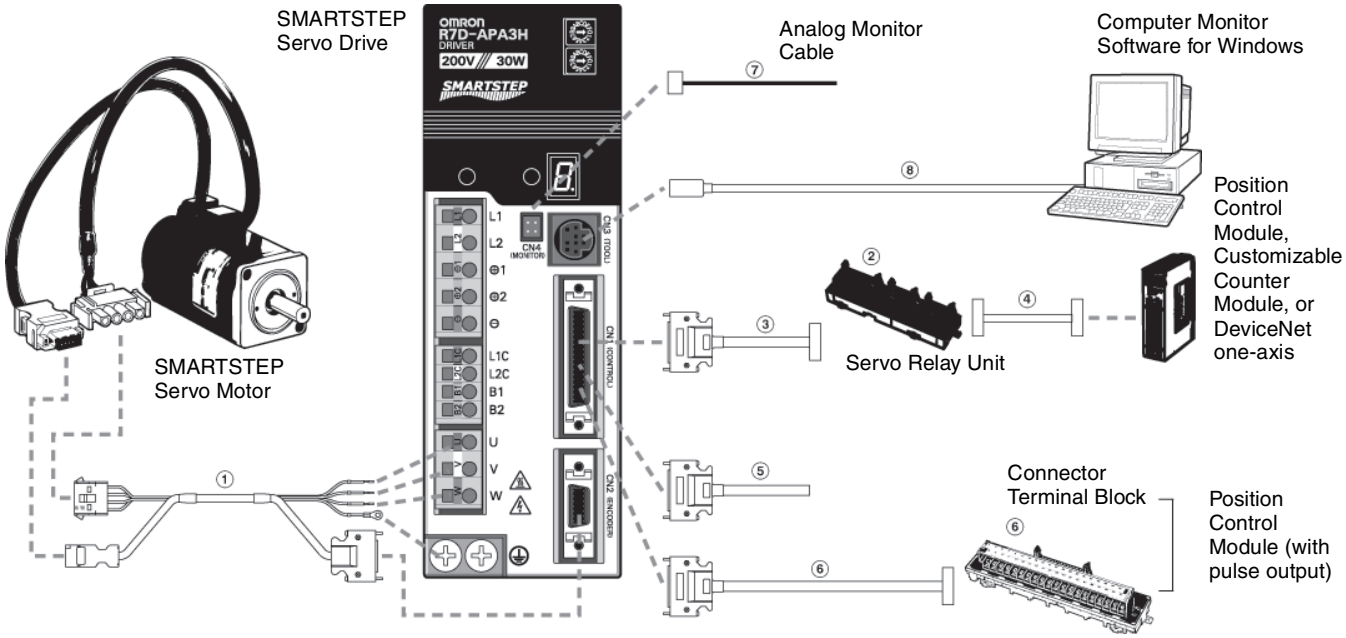
Motor Features

- Sizes 30 W to 750 W, rated speed 3,000 rpm
- Accepts incremental encoder input at 2,000 p/r
- Cylindrical and flat type servo motors available
- Peak torque up to three times continuous torque during 3 seconds
- Easy to install with pre-built cables
- Motors with brake are available

Driver Features

- Output range from 30 W to 750 W
- 300% peak current over nominal
- Control via pulse train (speed and position)
- Four position resolution settings:
  - 500 pulses/rotation (0.72°/step)
  - 1,000 pulses/rotation (0.36°/step)
  - 5,000 pulses/rotation (0.072°/step)
  - 10,000 pulses/rotation (0.036°/step)
- SmartStep does not require the use of PC configuration software, making setup as easy as using a stepper motor for basic capabilities
- To optimize performance, use PC software for on-line auto-tuning of values and monitoring

Ordering Information



Add cable length to the part number in place of □□□: 003 for 3 m cable, 005 for 5 m, 010 for 10 m, 015 for 15 m and 020 for 20 m.

Note: Circled numbers refer to the configuration diagram on page I-8.

SmartStep Servos

Wattage	Servo motor model	Servo drive model	①Power cable/Encoder cable model (Add cable length for □□□)
Cylindrical Servo Motors 100 VAC Without Brake, Shaft Without Keyway			
30 W	**R7M-A03030-S1**	**R7D-APA3L**	**R7A-CEA□□□S**
50 W	**R7M-A05030-S1**	**R7D-APA5L**	**R7A-CEA□□□S**
100 W	**R7M-A10030-S1**	**R7D-AP01L**	**R7A-CEA□□□S**
200 W	**R7M-A20030-S1**	**R7D-AP02L**	**R7A-CEA□□□S**
400 W	**R7M-A40030-S1**	**R7D-AP04L**	**R7A-CEA□□□S**
Cylindrical Servo Motors 100 VAC With Brake, Shaft With Keyway			
30 W	**R7M-A03030-BS1**	**R7D-APA3L**	**R7A-CEA□□□B**
50 W	**R7M-A05030-BS1**	**R7D-APA5L**	**R7A-CEA□□□B**
100 W	**R7M-A10030-BS1**	**R7D-AP01L**	**R7A-CEA□□□B**
200 W	**R7M-A20030-BS1**	**R7D-AP02L**	**R7A-CEA□□□B**
400 W	**R7M-A40030-BS1**	**R7D-AP04L**	**R7A-CEA□□□B**
Cylindrical Servo Motors 200 VAC Without Brake, Shaft With Keyway			
30 W	**R7M-A03030-S1**	**R7D-APA3H**	**R7A-CEA□□□S**
50 W	**R7M-A05030-S1**	**R7D-APA5H**	**R7A-CEA□□□S**
100 W	**R7M-A10030-S1**	**R7D-AP01H**	**R7A-CEA□□□S**
200 W	**R7M-A20030-S1**	**R7D-AP02H**	**R7A-CEA□□□S**
400 W	**R7M-A40030-S1**	**R7D-AP04H**	**R7A-CEA□□□S**
750 W	**R7M-A75030-S1**	**R7D-AP08H**	**R7A-CEA□□□S**
Cylindrical Servo Motors 200 VAC With Brake, Shaft With Keyway			
30 W	**R7M-A03030-BS1**	**R7D-APA3H**	**R7A-CEA□□□B**
50 W	**R7M-A05030-BS1**	**R7D-APA5H**	**R7A-CEA□□□B**
100 W	**R7M-A10030-BS1**	**R7D-AP01H**	**R7A-CEA□□□B**
200 W	**R7M-A20030-BS1**	**R7D-AP02H**	**R7A-CEA□□□B**
400 W	**R7M-A40030-BS1**	**R7D-AP04H**	**R7A-CEA□□□B**
750 W	**R7M-A75030-BS1**	**R7D-AP08H**	**R7A-CEA□□□B**
Flat Servo Motors 100 VAC Without Brake, Shaft With Keyway			
100 W	**R7M-AP10030-S1**	**R7D-AP01L**	**R7A-CEA□□□S**
200 W	**R7M-AP20030-S1**	**R7D-AP02L**	**R7A-CEA□□□S**
400 W	**R7M-AP40030-S1**	**R7D-AP04L**	**R7A-CEA□□□S**
Flat Servo Motors 100 VAC With Brake, Shaft With Keyway			
100 W	**R7M-AP10030-BS1**	**R7D-AP01L**	**R7A-CEA□□□B**
200 W	**R7M-AP20030-BS1**	**R7D-AP02L**	**R7A-CEA□□□B**
400 W	**R7M-AP40030-BS1**	**R7D-AP04L**	**R7A-CEA□□□B**
Flat Servo Motors 200 VAC Without Brake, Shaft With Keyway			
100 W	**R7M-AP10030-S1**	**R7D-AP01H**	**R7A-CEA□□□S**
200 W	**R7M-AP20030-S1**	**R7D-AP02H**	**R7A-CEA□□□S**
400 W	**R7M-AP40030-S1**	**R7D-AP04H**	**R7A-CEA□□□S**
750 W	**R7M-AP75030-S1**	**R7D-AP08H**	**R7A-CEA□□□S**
Flat Servo Motors 200 VAC With Brake, Shaft With Keyway			
100 W	**R7M-AP10030-BS1**	**R7D-AP01H**	**R7A-CEA□□□B**
200 W	**R7M-AP20030-BS1**	**R7D-AP02H**	**R7A-CEA□□□B**
400 W	**R7M-AP40030-BS1**	**R7D-AP04H**	**R7A-CEA□□□B**
750 W	**R7M-AP75030-BS1**	**R7D-AP08H**	**R7A-CEA□□□B**

Cables and Accessories

Description	Devices connected	Specification	Model
② Servo relay units connect cables from PLC position controller and servo drive	CS1W-NC113/133, CJ1W-NC113/133; 1 axis; does not support communications functions	—	**XW2B-20J6-1B**
	CS1W-NC213/233/413/433, CJ1W-NC213/233/413/433; 2 axes; does not support communications functions	—	**XW2B-40J6-2B**
	CQM1H-PLB21 and CQM1-CPU43-V1; 1 axis; does not support communications functions	—	**XW2B-20J6-3B**
	CS1W-NC213/233/413/433, CJ1W-NC213/233/ 413/433; 2 axes; supports communications functions	—	**XW2B-40J6-4A**
	CJ1M-CPU22/23; 1 axis; does not support communications functions	—	**XW2B-20J6-8A**
	CJ1M-CPU22/23; 2 axes; does not support communications functions	—	**XW2B-40J6-9A**
③ Universal terminal block cable to servo drive	Doesn't support communications functions. (For the XW2B-□□J6-□B)	1 m length	**XW2Z-100J-B5**
		2 m length	**XW2Z-200J-B5**
④ Position controller PLC module cable	CQM1H-PLB21 and CQM1-CPU43-V1 to XW2B-20J6-3B servo relay unit	1 m length	**XW2Z-100J-A3**
	CJ1W-NC113 to XW2B-20J6-1B servo relay unit	1 m length	**XW2Z-100J-A16**
	CJ1W-NC213 or CJ1W-NC413 to XW2B-20J6-2B servo relay unit	1 m length	**XW2Z-100J-A17**
	CJ1W-NC133 to XW2B-20J6-1B servo relay unit	1 m length	**XW2Z-100J-A20**
	CJ1W-NC233 or CJ1W-NC433 to XW2B-40J6-2B servo relay unit	1 m length	**XW2Z-100J-A21**
	CJ1M-CPU22 or CJ1M-CPU23 to XW2B-20J6-8A (1 axis) or XW2B-40J6-9A (2 axes) servo relay unit	1 m length	**XW2Z-100J-A26**
	CS1W-NC113 to XW2B-20J6-1B servo relay unit	1 m length	**XW2Z-100J-A8**
	CS1W-NC213 or CS1W-NC413 to XW2B-40J6-2B servo relay unit	1 m length	**XW2Z-100J-A9**
	CS1W-NC133 to XW2B-20J6-B1 servo relay unit	1 m length	**XW2Z-100J-A12**
	CS1W-NC233 or CS1W-NC433 to XW2B-40J6-2B servo relay unit	1 m length	**XW2Z-100J-A13**
⑤ Control cable	For general-purpose Controllers (mating connector for CJ1 on one end, open ended on the other end)	1 m length	**R88A-CPU001S**
		2 m length	**R88A-CPU002S**
⑥ Universal terminal block	For position control modules with pulse output and general-purpose controllers	—	**XW2B-40F5-P**
	Connector cable between terminal block and servo driver	1 m length	**R88A-CTU001N**
		2 m length	**R88A-CTU002N**
⑦ Analog monitor cable (port CN4)	Servo drive to PC	1 m length	**R88A-CMW001S**
⑧ Computer monitor cable (port CN3)	Servo drive to PC	2 m length	**R7A-CCA002P2**
Filters	For servo drive R7D-APA3H, APA5H, AP01H, AP02H; R7D-APA3L, APA5L, AP01L, AP02L	4 A, 250 VAC single phase	**R88A-FIW104-E**
	For servo drive R7D-AP04H, AP04L	7 A, 250 VAC single phase	**R88A-FIW107-E**
	For servo drive R7D-AP08H	15 A, 250 VAC single phase	**R88A-FIW115-E**
Control I/O connector (CN1)	—	—	**R88A-CNU01C**
SmartStep encoder connector (CN2)	—	—	**R7A-CNA01R**
External regeneration resistor	—	200 W, 47 Ω	**R88A-RR22047S**
Parameter copy unit with cable	—	—	**R7A-PR02A**
Configuration and monitoring software	For servo drives and inverters	Version 1.11 or higher	**CX-DRIVE**
Complete OMRON software suite	Includes CX-Drive	—	**CX-ONE**

Specifications

Servo Drives General Specifications

Item	Specification
Operating ambient	0° to 55° C (32° F to 131° F), 90% RH max. (with no condensation)
Storage ambient	-20° to 85° C (-4° F to 185° F), 90% RH max. (with no condensation)
Storage/operating atmosphere	No corrosive gases.
Vibration resistance	10 to 55 Hz in X, Y, and Z directions with 0.1-mm double amplitude or acceleration of 4.9 m/s^2 max., whichever is smaller
Impact resistance	Acceleration 19.6 m/s^2 max., in X, Y, and Z directions, three times
Insulation resistance	Between power line terminals and case: 0.5 MΩ min. (at 500 VDC)
Dielectric strength	Between power line terminals and case: 1,500 VAC for 1 min. at 50/60 Hz between each control signal and case: 500 VAC for 1 min.
Protective structure	Built into panel (IP10).
International standards	Approval obtained for UL, cUL, and EN (EMC directive and low-voltage directive)

Servo Drives Performance Specifications

100 VAC Input Models

Item	Specification				
Model	**R7D-APA3L**	**R7D-APA5L**	**R7D-AP01L**	**R7D-AP02L**	**R7D-AP04L**
Rated output	30 W	50 W	100 W	200 W	400 W
Continuous output current (rms)	0.42	0.6	0.89	2.0	2.6
Momentary maximum output current (rms)	1.3	1.9	2.8	6.0	8.0
Control power supply	Single-phase 100/115 VAC (85 to 127 V) 50/60 Hz				
Main-circuit power supply	Single-phase 100/115 VAC (85 to 127 V) 50/60 Hz (Voltage doubler method)				
Control method	All-digital servo				
Speed feedback	2,000 pulses/revolution Incremental Encoder				
Inverter method	PWM method based on IGBT				
PWM frequency	11.7 kHz				
Weight [kg (lb)]	0.8 (1.76)	0.8 (1.76)	0.8 (1.76)	0.8 (1.76)	1.1 (2.43)
Compatible motor voltage	200 V				
Compatible motor capacity	30 W	50 W	100 W	200 W	400 W
Command pulse response	250 kHz				
Applicable servo motor (R7M-)	A03030_	A05030_	A10030_	A20030_	A40030_
	—	—	AP10030_	AP20030_	AP40030_

200 VAC Input Models

Item	Specification					
Model	**R7D-APA3H**	**R7D-APA5H**	**R7D-AP01H**	**R7D-AP02H**	**R7D-AP04H**	**R7D-AP08H**
Rated output	30 W	50 W	100 W	200 W	400 W	750 W
Continuous output current (rms)	0.42	0.6	0.89	2.0	2.6	4.4
Momentary maximum output current (rms)	1.3	1.9	2.8	6.0	8.0	13.9
Control power supply	Single-phase 200/230 VAC (170 to 253 V) 50/60 Hz					
Main-circuit power supply	Single-phase 200/230 VAC (170 to 253 V) 50/60 Hz (Three-phase 200/230 VAC can be used with the 750 W model)					
Control method	All-digital servo					
Speed feedback	2,000 pulses/revolution incremental encoder					
Inverter method	PWM method based on IGBT					
PWM frequency	11.7 kHz					
Weight [kg (lb)]	0.8 (1.76)	0.8 (1.76)	0.8 (1.76)	0.8 (1.76)	1.1 (2.43)	1.7 (3.75)
Servo motor voltage	200 V					
Servo motor capacity	30 W	50 W	100 W	200 W	400 W	750 W
Command pulse response	250 kHz					
Applicable servo motor (R7M-)	A03030	A05030	A10030	A20030	A40030	A75030
	—	—	AP10030	AP20030	AP40030	AP75030

Servo Motor General Specifications

Item	Specification
Operating ambient	0° C to 40° C (32° F to 104° F), 20% to 80% RH (with no condensation)
Storage ambient	-20° C to 60° C (-4° F to 140° F), 20% to 80% RH (with no condensation)
Storage/operating atmosphere	No corrosive gases
Vibration resistance	10 to 2,500 Hz in X, Y, and Z directions with 0.2 mm double amplitude or acceleration of 24.5 m/s^2 max., whichever is smaller
Impact resistance	Acceleration 98 m/s^2max., in a vertical direction, two times
Insulation resistance	Between power line terminals and FG: 10 MΩ min. (at 500 VDC)
Dielectric strength	Between power line terminals and FG: 1,500 V AC for 1 min at 50/60 Hz
Run position	Any direction
Insulation grade	Type B
Structure	Totally-enclosed self-cooling
Protective structure	IP55 for both the cylindrical and flat servo motors
Vibration grade	V-15
Mounting method	Flange-mounting
International standards	Approval obtained for UL, cUL, and EN (EMC directive and low-voltage directive)

Servo Motor Performance Specifications

Flat Servo Motors without Brakes

Item	R7M-AP10030-S1	R7M-AP20030-S1	R7M-AP40030-S1	R7M-AP75030-S1
Rated output	100 W	200 W	400 W	750 W
Rated torque	0.318 N•m	0.637 N•m	1.27 N•m	2.39 N•m
Rated rotation speed	3,000 r/min.	3,000 r/min.	3,000 r/min.	3,000 r/min.
Momentary maximum rotation speed	4,500 r/min.	4,500 r/min.	4,500 r/min.	4,500 r/min.
Momentary maximum torque	0.96 N•m	1.91 N•m	3.82 N•m	7.1 N•m
Rated current	0.89 A (rms)	2.0 A (rms)	2.6 A (rms)	4.1 A (rms)
Momentary maximum current	2.8 A (rms)	6.0 A (rms)	8.0 A (rms)	13.9 A (rms)
Rotor inertia	6.5 ×10^{-6} kg•m^2	2.09 ×10^{-5} kg•m^2	3.47 ×10^{-5} kg•m^2	2.11 ×10^{-4} kg•m^2
Power rate	15.7 kW/s	19.4 kW/s	46.8 kW/s	26.9 kW/s
Allowable radial load	78 N	245 N	245 N	392 N
Allowable thrust load	49 N	68 N	68 N	147 N
Weight (without brake -S1)	0.7 kg	1.4 kg	2.1 kg	4.2 kg
Applicable servo driver	R7D-AP01H/L	R7D-AP02H/L	R7D-AP04H/L	R7D-AP08H
Encoder resolution	2,000 pulses/revolution for phase-A and phase-B, 1 pulse/revolution for phase-Z			
Radiation shield dimensions	t6 ×250 mm square			t12 ×300 mm square

Flat Servo Motors with Brakes

Item		R7M-AP10030-BS1	R7M-AP20030-BS1	R7M-AP40030-BS1	R7M-AP75030-BS1
Rated output		100 W	200 W	400 W	750 W
Rated torque		0.318 N•m	0.637 N•m	1.27 N•m	2.39 N•m
Rated rotation speed		3,000 r/min.	3,000 r/min.	3,000 r/min.	3,000 r/min.
Momentary maximum rotation speed		4,500 r/min.	4,500 r/min.	4,500 r/min.	4,500 r/min.
Momentary maximum torque		0.96 N•m	1.91 N•m	3.82 N•m	7.1 N•m
Rated current		0.89 A (rms)	2.0 A (rms)	2.6 A (rms)	4.1 A (rms)
Momentary maximum current		2.8 A (rms)	6.0 A (rms)	8.0 A (rms)	13.9 A (rms)
Rotor inertia		6.5 ×10^{-6} kg•m^2	2.09 ×10^{-5} kg•m^2	3.47 ×10^{-5} kg•m^2	2.11 ×10^{-4} kg•m^2
Power rate		15.7 kW/s	19.4 kW/s	46.8 kW/s	26.9 kW/s
Allowable radial load		78 N	245 N	245 N	392 N
Allowable thrust load		49 N	68 N	68 N	147 N
Weight (with brake -BS1)		0.9 kg	1.9 kg	2.6 kg	5.7 kg
Applicable servo driver		R7D-AP01H/L	R7D-AP02H/L	R7D-AP04H/L	R7D-AP08H
Encoder resolution		2,000 pulses/revolution for phase-A and phase-B, 1 pulse/revolution for phase-Z			
Radiation shield dimensions		t6 ×250 mm square			t12 ×300 mm square
Brake specifications	**Brake inertia**	3.1 ×10^{-6} kg•m^2	1.52 ×10^{-5} kg•m^2	1.52 ×10^{-5} kg•m^2	8.75 ×10^{-5} kg•m^2
	Excitation voltage	24 V DC ±10%			
	Power consumption (at 20° C)	6 W	5 W	7.6 W	7.5 W
	Current consumption (at 20° C)	0.25 A	0.21 A	0.32 A	0.31 A
	Static friction torque	0.4 N•m min.	0.9 N•m min.	1.9 N•m min.	3.5 N•m min.
	Attraction time	40 ms max.	40 ms max.	40 ms max.	40 ms max.
	Release time	20 ms max.	20 ms max.	20 ms max.	20 ms max.
	Backlash	1°	1°	1°	1°
	Rating	Continuous	Continuous	Continuous	Continuous
	Insulation grade	Type F	Type F	Type F	Type F

Cylindrical Servo Motors without Brakes

Item	R7M-A03030-S1	R7M-A05030-S1	R7M-A10030-S1	R7M-A20030-S1	R7M-A40030-S1	R7M-A75030-S1
Rated output	30 W	50 W	100 W	200 W	400 W	750 W
Rated torque	0.095 N•m	0.159 N•m	0.318 N•m	0.637 N•m	1.27 N•m	2.39 N•m
Rated rotation speed	3,000 r/min.	3,000 r/min.	3,000 r/min.	3,000 r/min.	3,000 r/min.	3,000 r/min.
Momentary maximum rotation speed	4,500 r/min.	4,500 r/min.	4,500 r/min.	4,500 r/min.	4,500 r/min.	4,500 r/min.
Momentary maximum torque	0.29 N•m	0.48 N•m	0.96 N•m	1.91 N•m	3.82 N•m	7.1 N•m
Rated current (rms)	0.42 A	0.6 A	0.87 A	2.0 A	2.6 A	4.4 A
Momentary maximum current (rms)	1.3 A	1.9 A	2.8 A	6.0 A	8.0 A	13.9 A
Rotor inertia	1.7×10^{-6} kg•m^2	2.2×10^{-6} kg•m^2	3.6×10^{-6} kg•m^2	1.19×10^{-5} kg•m^2	1.87×10^{-5} kg•m^2	6.67×10^{-5} kg•m^2
Power rate	5.31 kW/s	11.5 kW/s	28.1 kW/s	34.1 kW/s	86.3 kW/s	85.6 kW/s
Allowable radial load	68 N	68 N	78 N	245 N	245 N	392 N
Allowable thrust load	54 N	54 N	54 N	74 N	74 N	147 N
Weight without brake	0.3 kg	0.4 kg	0.5 kg	1.1 kg	1.7 kg	3.4 kg
Applicable servo driver	R7D-APA3H	R7D-APA5H	R7D-AP01H	R7D-AP02H	R7D-AP04H	R7D-AP08H
Encoder resolution	2,000 pulses/revolution for phase-A and phase-B, 1 pulse/revolution for phase-Z					
Radiation shield dimensions	t6× 250 mm square					

Cylindrical Servo Motors with Brakes

Item		R7M-A0303-BS1	R7M-A05030-BS1	R7M-A10030-BS1	R7M-A20030-BS1	R7M-A40030-BS1	R7M-A75030-BS1
Rated output		30 W	50 W	100 W	200 W	400 W	750 W
Rated torque		0.095 N•m	0.159 N•m	0.318 N•m	0.637 N•m	1.27 N•m	2.39 N•m
Rated rotation speed		3,000 r/min.	3,000 r/min.	3,000 r/min.	3,000 r/min.	3,000 r/min.	3,000 r/min.
Momentary maximum rotation speed		4,500 r/min.	4,500 r/min.	4,500 r/min.	4,500 r/min.	4,500 r/min.	4,500 r/min.
Momentary maximum torque		0.29 N•m	0.48 N•m	0.96 N•m	1.91 N•m	3.82 N•m	7.1 N•m
Rated current (rms)		0.42 A	0.6 A	0.87 A	2.0 A	2.6 A	4.4 A
Momentary maximum current (rms)		1.3 A	1.9 A	2.8 A	6.0 A	8.0 A	13.9 A
Rotor inertia		1.7×10^{-6} kg•m^2	2.2×10^{-6} kg•m^2	3.6×10^{-6} kg•m^2	1.19×10^{-5} kg•m^2	1.87×10^{-5} kg•m^2	6.67×10^{-5} kg•m^2
Power rate		5.31 kW/s	11.5 kW/s	28.1 kW/s	34.1 kW/s	86.3 kW/s	85.6 kW/s
Allowable radial load		68 N	68 N	78 N	245 N	245 N	392 N
Allowable thrust load		54 N	54 N	54 N	74 N	74 N	147 N
Weight with brake		0.6 kg	0.7 kg	0.8 kg	1.6 kg	2.2 kg	4.3 kg
Applicable servo driver		R7D-APA3H	R7D-APA5H	R7D-AP01H	R7D-AP02H	R7D-AP04H	R7D-AP08H
Encoder resolution		2,000 pulses/revolution for phase-A and phase-B, 1 pulse/revolution for phase-Z					
Radiation shield dimensions		t6× 250 mm square					
Brake specifications	Brake inertia	0.85×10^{-6} kg•m^2	0.85×10^{-6} kg•m^2	0.85×10^{-6} kg•m^2	6.4×10^{-6} kg•m^2	6.4×10^{-6} kg•m^2	1.7×10^{-5} kg•m^2
	Excitation voltage	24 V DC ±10% V					
	Power consumption (at 20° C)	6 W	6 W	6 W	7 W	7 W	7.7 W
	Current consumption (at 20° C)	0.25 A	0.25 A	0.25 A	0.29 A	0.29 A	0.32 A
	Static friction torque	0.2 N•m min.	0.2 N•m min.	0.34 N•m min.	1.47 N•m min.	1.47 N•m min.	2.45 N•m min.
	Attraction time	30 ms max.	30 ms max.	30 ms max.	60 ms max.	60 ms max.	60 ms max.
	Release time	60 ms max.	60 ms max.	60 ms max.	20 ms max.	20 ms max.	20 ms max.
	Backlash	1°	1°	1°	1°	1°	1°
	Rating	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous
	Insulation grade	Type F	Type F	Type F	Type F	Type F	Type F

Dimensions

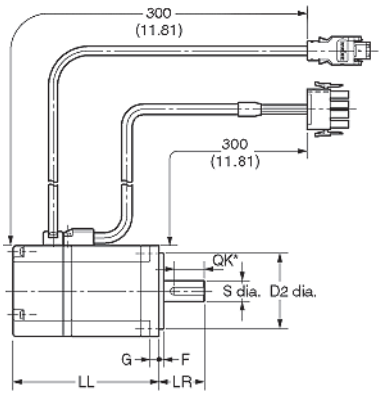
Servo Drives Dimensions (mm)

Input voltage	Rating	Drive model	H	W	D
1-phase, 100 VAC and 200 VAC	30 W	R7D-APA3H/L	160	55	130
	50 W	R7D-APA5H/L	160	55	130
	100 W	R7D-AP01H/L	160	55	130
	200 W	R7D-AP02H/L	160	55	130
	400 W	R7D-AP04H/L	160	75	130
1-phase, 200 VAC	750 W	R7D-AP08H	160	90	180

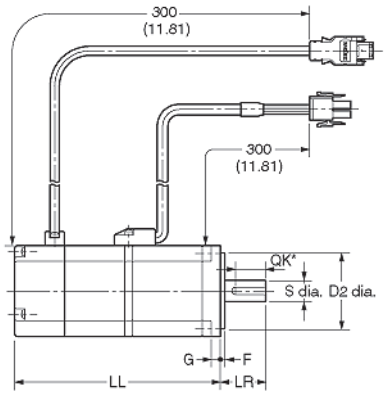
Cylindrical Servo Motors (3,000 r/min) Dimensions (mm)
200 VAC: 30 W/50 W/100 W/200 W/400 W/750 W

Without brake: R7M-A03030-S1-D/A05030-S1-D/A10030-S1-D/A20030-S1-D/A40030-S1-D/A75030-S1-D
With brake: R7M-A03030-BS1-D/A05030-BS1-D/A10030-BS1-D/A20030-BS1-D/A40030-BS1-D/A75030-BS1-D

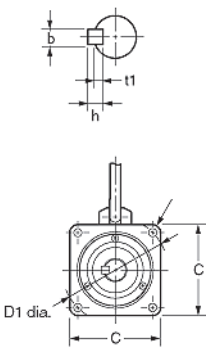
R7M-A□□□30(-S1) (Without Brake)



R7M-A□□□30(-S1) (With Brake)



***Axis End Dimensions**

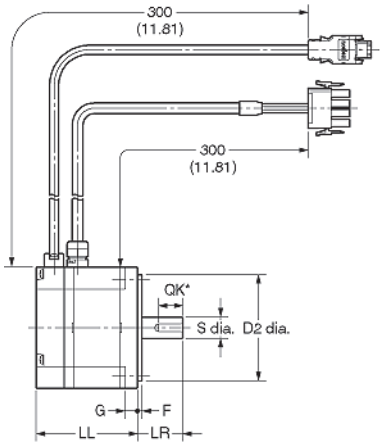


Model	Overall length		Flange surface			Axis end							
	LL	LR	C	D1	D2	F	G	Z	S	QK	b	h	t1
R7M-A03030-S1	69.5	25	40	46	30h7	2.5	5	Two, 4.3 dia.	6h6	14	2	2	1.2
R7M-A03030-BS1	101	25	40	46	30h7	2.5	5	Two, 4.3 dia.	6h6	14	2	2	1.2
R7M-A05030-S1	77	25	40	46	30h7	2.5	5	Two, 4.3 dia.	6h6	14	2	2	1.2
R7M-A05030-BS1	108.5	25	40	46	30h7	2.5	5	Two, 4.3 dia.	6h6	14	2	2	1.2
R7M-A10030-S1	94.5	25	40	46	30h7	2.5	5	Two, 4.3 dia.	8h6	14	3	3	1.8
R7M-A10030-BS1	135	25	40	46	30h7	2.5	5	Two, 4.3 dia.	8h6	14	3	3	1.8
R7M-A20030-S1	96.5	30	60	70	50h7	3	6	Four, 5.5 dia.	14h6	20	5	5	3
R7M-A20030-BS1	136	30	60	70	50h7	3	6	Four, 5.5 dia.	14h6	20	5	5	3
R7M-A40030-S1	124.5	30	60	70	50h7	3	6	Four, 5.5 dia.	14h6	20	5	5	3
R7M-A40030-BS1	164	30	60	70	50h7	3	6	Four, 5.5 dia.	14h6	20	5	5	3
R7M-A75030-S1	145	40	80	90	70h7	3	8	Four, 7 dia.	16h6	30	5	5	3
R7M-A75030-BS1	189.5	40	80	90	70h7	3	8	Four, 7 dia.	16h6	30	5	5	3

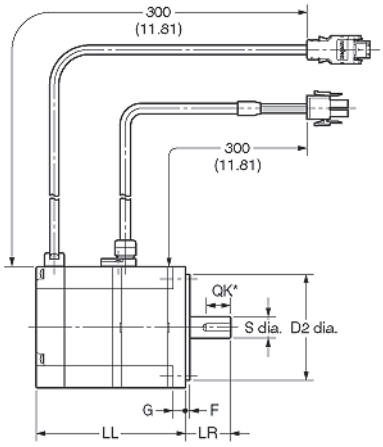
Flat Servo Motors (3,000 r/min) Dimensions (mm)
200 VAC: 100 W/200 W/400 W/750 W

Without brake: R7M-AP10030-S1-D/AP20030-S1-D/AP40030-S1-D/AP75030-S1-D
With brake: R7M-AP10030-BS1-D/AP20030-BS1-D/AP40030-BS1-D/AP75030-BS1-D

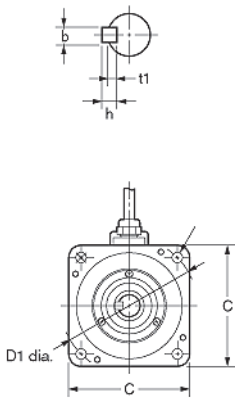
R7M-AP□□□30(-S1) (Without Brake)



R7M-AP□□□30(-S1) (With Brake)



***Axis End Dimensions**



Model	Overall length		Flange surface			Axis end							
	LL	LR	C	D1	D2	F	G	Z	S	QK	b	h	t1
R7M-AP10030-S1	62	25	60	70	50h7	2.5	6	5.5 dia.	8h6	14	3	3	1.8
R7M-AP10030-BS1	91	25	60	70	50h7	2.5	6	5.5 dia.	8h6	14	3	3	1.8
R7M-AP20030-S1	67	30	80	90	70h7	3	8	7 dia.	14h6	16	5	5	3
R7M-AP20030-BS1	98.5	30	80	90	70h7	3	8	7 dia.	14h6	16	5	5	3
R7M-AP40030-S1	87	30	80	90	70h7	3	8	7 dia.	14h6	16	5	5	3
R7M-AP40030-BS1	118.5	30	80	90	70h7	3	8	7 dia.	14h6	16	5	5	3
R7M-AP75030-S1	86.5	40	120	145	110h7	3.5	10	10 dia.	16h6	22	5	5	3
R7M-AP75030-BS1	120	40	120	145	110h7	3.5	10	10 dia.	16h6	22	5	5	3