NEW

Single Axis Robots RSF4 - Straight Width Space-saving type

RS SINGLE AXIS ROBOT

CE Compliant

(?)See notes on CE Marking. P.49

CAD Data Folder Name: 07_Actuator

When placing order, select part numbers and values by proceeding through Selection Steps ❶~❼.

Ordering Example

Part Number (Type, ❶Lead, ❷With or w/o Brake)	❸Controller	❹I/O Module	❺Nose Filter	❻Cable	❼Stroke
RSF420B	C22A	N	F1	3	200

(?)To order actuators with the Recovery Equipment, insert the "-RGT" text after the stroke value.

Controller Specifications P.103~112

■**Components:** Actuator, Controller, Cable, (Battery), (Noise Filter)

■**Accessory**

	Controller I/O Specifications		
A Accessory	NPN,PNP	CC-Link	DeviceNet
	Instruction Manual (CD-ROM), Power Connector, EXT Connector, Dummy Connector		
	-	CC-Link Connector	DeviceNet Connector

■**Robot Material / Surface Treatment**

Components	Base Frame	Guide Rail	Slider	Side Cover
M Material	Aluminum	Steel	Aluminum	Aluminum
S Surface Treatment	Anodize	-	Anodize	Anodize

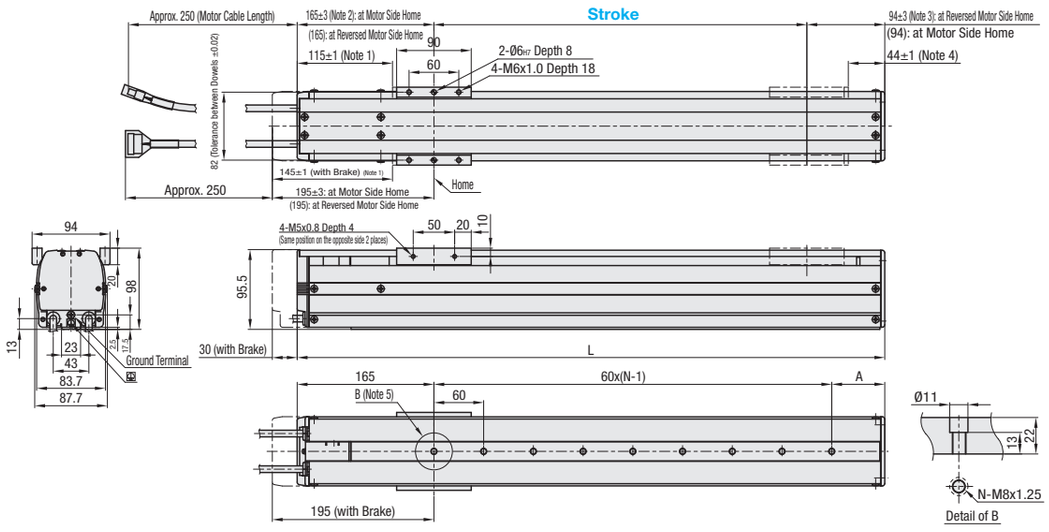
■**General Specifications**

Ball Screw	Motor	Position Detector	Operating Ambient Temperature, Humidity
Ø15 (C7 Rolled)	AC Servo 100W	Resolver	0~40°C, 35~85%RH (No Condensation)

■**Standard Specifications** FAQ P.110

Type	Lead (mm)	Repeatability (mm)	Max. Load Capacity (kg) Horizontal	Max. Load Capacity (kg) Vertical	Rated Force (N)	Max. Velocity (Note) (mm/sec)	Stroke (mm)	Rated Running Life	Controller Input Power Supply	Maximum Positioning Point
RSF4	05	±0.01	80	20	339	~ 300	150~1050 (50 Pitch)	10,000 km or More	Single-phase AC 100~115V 200~230V ±10%	255 points
	10		55	10	169	~ 600				
	20		30	4	84	~1200				
	30		15	-	56	~1800				

(Note) Maximum velocities allowed may vary depending on the stroke length selected. Please refer to the "Max. Velocity" table on the next page.



Note 1. Mechanical stopper position from the ends.
Note 2. For Large Lead Type (Lead 30), 167.5±4.
Note 3. For Large Lead Type (Lead 30), 94±4.
Note 4. For Large Lead Type (Lead 30), 41.5±1.
Note 5. When mounting, washers cannot be used in Ø11 counter bored holes.
Note 6. The minimum bending radius of the motor cable is 50mm.

Part Number Type	Part Number ❶Lead (mm)	Part Number ❷With or w/o Brake (?)1)	Selection ❸Controller (Power Supply / Absolute Encoders (w/ Data Storage Battery) / Incremental Type)	Selection ❹I/O Module	Selection ❺Nose Filter (?)3)	Selection ❻Cable Length (m)	Selection ❼Stroke (mm)	Selection ❽Recovery Equipment
RSF4	05	W/o Brake: Leave blank With Brake: B	AC100~115V: C21A / C21B	NPN: N PNP: P CC-Link: C DeviceNet: D	Not Provided: F0 Provided: F1 Specifications P.115	Standard: 3.5m: 3, 5m: 5, 10m: 10 Flexible: 3.5m: R3, 5m: R5, 10m: R10	150~1050 (50mm Increment)	RGT (?)Always select this option when using 700mm or more strokes in vertical applications.
	10		AC200~230V: C22A / C22B					
	20							
	30							

(?)1) Choose the "With Brake" option for use in vertical applications. (W/ brake type is not available for Lead 30) (?)2) Controllers are shipped with preset parameters for each type. Data storage batteries are outside the scope of RoHS Directive. (?)3) A noise filter is required for this product. When the customer is purchasing the noise filter separately, please select "none". Be sure to install a surge absorber on the primary side of a noise filter. For details, please see the Instruction Manual.

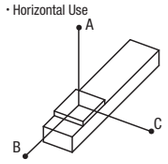
■**Dimensions / Mass**

Type	Dimensions / Mass	Stroke (mm) 150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
RSF4	L (mm)	409	459	509	559	609	659	709	759	809	859	909	959	1009	1059	1109	1159	1209	1259	1309
	A (mm)	64	54	44	94	84	74	64	54	44	94	84	74	64	54	44	94	84	74	64
	N	4	5	6	6	7	8	9	10	11	11	12	13	14	15	16	16	17	18	19
	Mass (kg)	5.5	5.9	6.2	6.6	6.9	7.3	7.6	8.0	8.3	8.7	9.0	9.4	9.7	10.0	10.3	10.7	11.0	11.4	11.7

(?)The brake adds 0.5 kg to the masses.

■**Allowable Overhang Load**

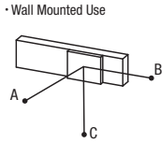
・Horizontal Use



mm

Lead	Mass	A	B	C
05	50kg	722	42	47
	60kg	657	33	37
	80kg	577	23	25
10	20kg	617	119	127
	40kg	422	53	59
	55kg	420	36	40
20	5kg	1292	505	462
	15kg	572	158	151
	30kg	455	73	75
30	5kg	864	501	383
	15kg	491	156	140

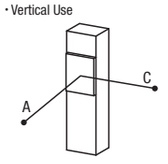
・Wall Mounted Use



mm

Lead	Mass	A	B	C
05	10kg	197	133	2360
	20kg	54	0	985
	30kg	0	0	427
10	10kg	193	132	910
	20kg	53	0	400
	30kg	0	0	109
20	5kg	416	388	1186
	10kg	92	42	386
	30kg	0	0	61
30	5kg	349	384	776
	15kg	87	40	306

・Vertical Use

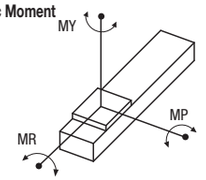


mm

Lead	Mass	A	C
05	10kg	221	221
	15kg	135	135
	20kg	92	92
10	4kg	594	594
	8kg	280	280
	10kg	217	217
20	1kg	600	600
	2kg	1098	1098
	4kg	545	545

■**Allowable Static Moment**

・Moment Diagram



N·m

MY	MP	MR
86	133	117

■**Max. Velocity (mm/sec)** (?)Please confirm the details of the Max. Speeds based on various strokes with web-Cycle Time Simulator.

Type	Lead (mm)	Stroke (mm) 150~700	750	800	850	900	950	1000	1050
RSF4	05	300	240		195		150		135
	10	600	480		390		300		270
	20	1100~1200	960		780		600		540
	30	800~1800	1440		1170		900		810

(?)For stroke ranges 750mm or more, ball screws may resonate in certain operation areas (critical speed). In that case, reduce the operation speed by referring to the Max. Velocity shown in the table above.

(?)When the overhang equals 0, use externally mounted linear guides to support the load mass.

Note

Power interruption circuit is not provided in this controller in order to provide maximum flexibility for customer specific safety scheme. Please be sure to provide an external power interruption circuit and form an emergency stop circuit. For Circuit examples, See P.109.

■**FAQ**

Q1. The actuator does not move.
A1. When activating an actuator using Support Software or Handset Terminal, invalidate Option Parameter (No. 80). (Option Valid = I/O Terminal Valid, Option Invalid = I/O Terminal Invalid). Then turn the servo status "ON" and operate the homing procedure. After the completion of homing, start the operation by turning on "Operation".
Q2. LED light is on. Is there a controller defect?
A2. Blue: PWR (OFF: Control Power Shutoff, Blink: Servo OFF, ON: Servo ON), Red: ERR (OFF: Control Power Shutoff / No Error Alarm, Blink: Error Alarm On (External Factor), ON: Error Alarm On (Internal Factor)
Q3. Teaching cannot be conducted by via I/O.
A3. To conduct teaching via I/O, the status needs to be ON for MANUAL Input and OFF for Interlock Input. Note that it does not function in the state of "Homing Incomplete".
Q4. Is low-speed operation possible?
A4. Possible, however, 10 to 20% of max. velocity is the limit depending on the lead.

Days to Ship: **10** Days

Alterations

Part Number	Controller Type	I/O Type	Noise Filter Presence	Cable Length	Stroke	(G, E···etc.)
RSF420B	C22A	N	F1	3	200	G-E

Alterations	Grease Type Alteration	Change of Home Position	Handset Terminal Standard Specification	Handset Terminal w/ Deadman's Switch	Support Software w/ USB Communication Cable	Support Software w/ D-Sub Communication Cable	I/O Cable	Cable for daisy-chain connection	Instruction Manual
					 Communication Specifications: RS232C	 Communication Specifications: RS232C		 Length: 300mm	ME5: Body KE3:Controller (C1) Details P.114
Code	G	E	H	D	S	R	T	C	ME5/KE3
Spec.	Grease is changed to low particle generation grease. (NSK LG2)	The home position is relocated to the opposite side of the motor.	Handset Terminal is included. Specifications P.109 , 113	Handset Terminal w/ Deadman's Switch is included. Specifications P.109 , 113	Support Software w / USB Communication Cable is included. Specifications P.109 , 113	Support Software w/ D-Sub Communication Cable is included. Specifications P.109 , 113	I/O Cable is included. Required for NPN/PNP configurations. Specifications P.109 , 113	A cable to connect multiple controllers. Up to 16 controllers can be connected. Specifications P.111 , 113	Operation Manual is included.

(?)For optional items, see **P.113**. (?)It is more economical to order the optional items as alterations than purchasing them individually.
(?)Entering point data requires the handy terminal or the support software.
(?)An I/O Cable is required for Parallel Communication I/O Control.