



# Single Axis Robots RSF4 - Linear, Narrow Type



Dedicated Website: <http://www.misumiusa.com/robot/>  
Useful Selection Software and Instruction Manuals can be downloaded.

CE Compliant

See notes on CE Marking. P.456



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

**Accessories**

Controller I/O Specifications			
Accessories	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
Material	Aluminum	Steel	Aluminum	Aluminum
Surface Treatment	Anodize	-	Anodize	Anodize

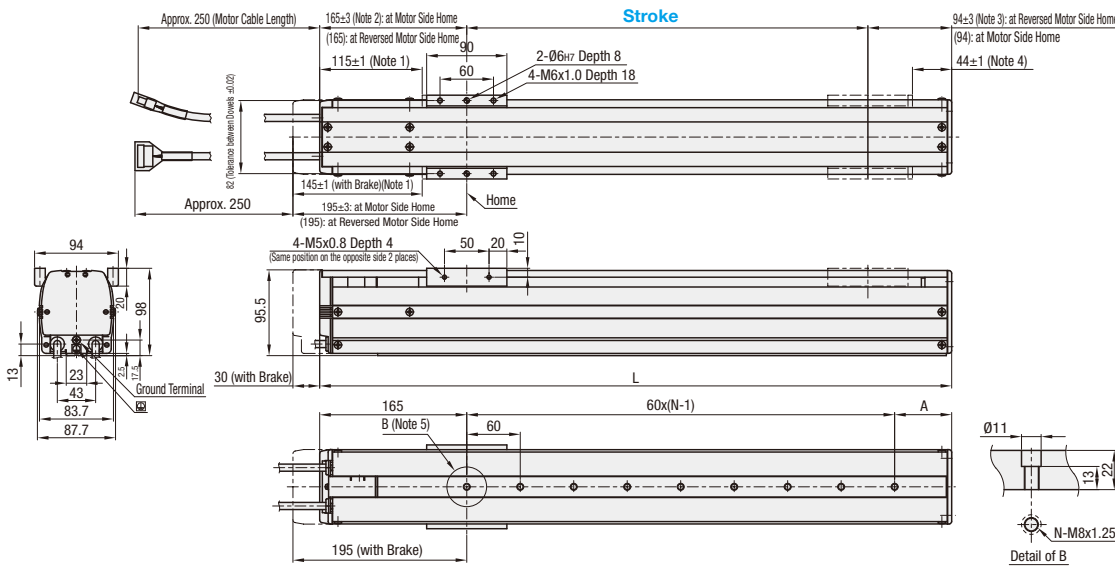
**General Specifications**

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.504

Type	Lead (mm)	Repeatability (mm)	Max Load Capacity (kg)		Rated Force (N)	Max. Velocity (Note) (mm/sec)	Stroke (mm)	Rated Running Life	Controller Input Power Supply	Maximum Positioning Point
			Horizontal	Vertical						
RSF4	05	±0.01	80	20	339	~ 300	150~1050 (50 Pitch)	10,000km 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 "Recommended Maximum Velocities" table.



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.

**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 (mm)	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 0.5kg to the masses.

Part Number	Selection										
	Type	Lead (mm)	With or w/o Brake (1)	Controller			I/O Module	W/ Nose Filter (2)	Cable Length (m)		Stroke (mm)
RSF4	05	None: Leave blank Included: B	Specifications Absolute Encoders (w/ Data Storage Battery) Incremental Type Specifications	NPN: N CC-Link: C DeviceNet: D	None: F0 Included: F1 Specifications P.508	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										
	20										
	30										

(1) Choose the "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.

Ordering Example: RSF420B - C22A - N - F1 - 3 - 200

Days to Ship [Configure Online](#)

**Robot Body Price**

Part Number	Unit Price 1 ~ 5 pc(s).									
	Stroke (mm)									
	150	200/250	300/350	400/450	500/550	600/650	700/750	800/850	900/950	1000/1050
RSF4										
RSF4										

**Controller Price**

I/O Type	Unit Price 1 ~ 5 pc(s).	
	C21A/C22A Absolute Encoders (w/ Data Storage Battery)	C21B/C22B Incremental Type
N		
P		
C		
D		

**Cable Price**

Cable (Standard)	Unit Price 1 ~ 5 pc(s).		Cable (Flexible)	Unit Price 1 ~ 5 pc(s).	
	3	5		R3	R5
10			R10		

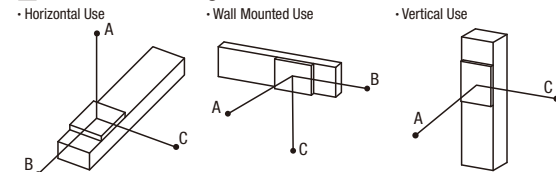
**Noise Filter Price**

W/ or w/o Noise Filter	Unit Price 1 ~ 5 pc(s).
None: F0	
Included: F1	

(Robot Body Price) + (Controller Price) + (Cable Price) + (Noise Filter) = Total Price  
 <Ex.> For RSF420-C22A-N-F1-3-200,

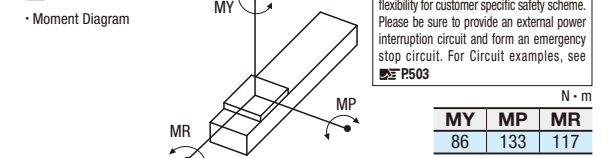
[Configure Online](#)

**Allowable Overhang Load**



Lead	Mass	mm			Lead	Mass	mm			Lead	Mass	mm		
		A	B	C			A	B	C			A	B	C
05	50kg	722	42	47	05	10kg	197	133	2360	05	10kg	221	221	
	60kg	657	33	37		20kg	54	0	985		15kg	135	135	
	80kg	577	23	25		30kg	0	0	427		20kg	92	92	
10	40kg	617	119	127	10	10kg	193	132	910	10	4kg	594	594	
	55kg	420	36	40		20kg	53	0	400		8kg	280	280	
	5kg	1292	505	462		30kg	0	0	109		10kg	217	217	
20	15kg	572	158	151	20	10kg	92	42	386	20	1kg	600	600	
	30kg	455	73	75		30kg	0	0	61		2kg	1098	1098	
	5kg	864	501	383		30kg	349	384	776		4kg	545	545	
30	15kg	491	156	140	30	15kg	87	40	306					

**Allowable Static Moment**



**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.503

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 MISUMI Web 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 650mm 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.

Alterations: RSF420B - C22A - N - F1 - 3 - 200 - G-E-etc.

<Price Example> The prices are for the part numbers on the left.  
 (Actuator) + (Controller) + (Cable) + (Noise Filter) + (Grease Type Alteration) + (Change of Home Position) = Total Price

Code	G	E	H	D	S	R	T	C	MJ5/KJ3
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
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.503, 507	Handset Terminal w/ Deadman's Switch is included. Specifications P.503, 507	Support Software w/ USB Communication Cable is included. Specifications P.503, 507	Support Software w/ D-Sub Communication Cable is included. Specifications P.507	I/O Cable is included. Required for NPN/PNP configurations. Specifications P.507	A cable to connect multiple controllers. Up to 16 controllers max. can be connected. Specifications P.507	Operation Manual is included. For Actuator MJ5: Body KJ3: Controller (C21/C22)

For optional items, see P.507 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.  
 For details on daisy-chain, see P.505