EC-RR3

Coupled Motor | Body width 35 mm | 24v Stepper motor

■ Model Specification Items

EC	—	RR3		—		—		—	
Series	—	Type	Lead	—	Stroke	—	Cable Length	—	Options

Lead	
H	6mm
M	4mm
L	2mm

Stroke	
50	50mm
≀	≀
300	300mm (per 50mm)

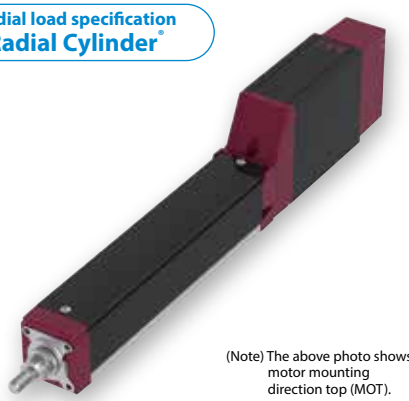
Cable Length	
0	Terminal type with connector
1	1m
≀	≀
10	10m

Options
Refer to the option price list below

CE RoHS

Horizontal | Vertical | Side | Ceiling

Radial load specification
Radial Cylinder®



(Note) The above photo shows motor mounting direction top (MOT).

POINT Selection Notes

(1) The actuator specifications display the payload's maximum value, but it will vary depending on the acceleration and speed. Please refer to "Table of Payload by Speed/Acceleration" for more details.
(2) The Radial Cylinder is equipped with a guide. Please refer to P111 for details of the radial loads applied to the rod.
(3) The value of the horizontal payload assumes the use of an external guide.
(4) When performing a push-motion operation, please refer to the "Correlation between push force and current limit value." Push force is only a guide.
(5) Special attention needs to be paid to the mounting orientation. Please refer to P33 for details.

Options

Name	Option code	Reference page
Brake	**B**	See P.101
Tip adapter (flange)	**FFA**	See P.101
Frange (front)	**FL**	See P.102
Foot bracket (front)	**FT**	See P.103
Motor mounting direction change (bottom) (Note 1)	**MOB**	See P.105
Motor mounting direction change (left) (Note 1)	**MOL**	See P.105
Motor mounting direction change (right) (Note 1)	**MOR**	See P.105
Motor mounting direction change (top) (Note 1)	**MOT**	See P.105
Tip adapter (female screw)	**NFA**	See P.106
Non-motor end specification	**NM**	See P.108
PNP specification	**PN**	See P.108
Split motor and controller power supply specification	**TMD2**	See P.109
Battery-less absolute encoder	**WA**	See P.109
Wireless communication specification	**WA**	See P.109
Wireless axis-operation specification	**WL2**	See P.109

(Note 1) Please make sure to enter a code in the option column of the model spec item.

Stroke

Stroke (mm)	EC-RR3	Stroke (mm)	EC-RR3
50	○	**200**	○
100	○	**250**	○
150	○	**300**	○

Cable length

Cable code	Cable length
0	No cable (with connector)
1 ~ 3	1 ~ 3m
4 ~ 5	4 ~ 5m
6 ~ 10	6 ~ 10m

(Note) Robot cables

Stroke and maximum speed

Lead (mm)	50-150 (per 50mm)	200 (mm)	250 (mm)	300 (mm)
6	420	300	210	150
4	280	200	140	100
2	140	100	70	50

(unit is mm/s)

Main specifications

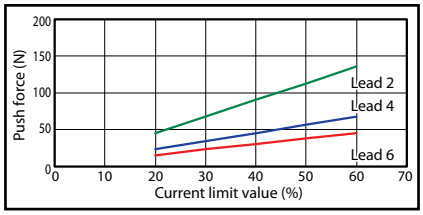
Item			Description		
Lead		Ball screw lead (mm)	6	4	2
Horizontal	Payload	Max. payload (kg)	9	14	18
	Speed/ acceleration/ deceleration	Max. speed (mm/s)	420	280	140
		Min. speed (mm/s)	8	5	3
		Rated acceleration/deceleration (G)	0.3	0.3	0.3
		Max. acceleration/deceleration (G)	0.5	0.3	0.3
Vertical	Payload	Max. payload (kg)	1.5	2.5	3.5
	Speed/ acceleration/ deceleration	Max. speed (mm/s)	420	280	140
		Min. speed (mm/s)	8	5	3
		Rated acceleration/deceleration (G)	0.3	0.3	0.3
		Max. acceleration/deceleration (G)	0.3	0.3	0.3
Push force		Max. thrust force when pushing (N)*	45	68	136
		Max. speed when pushing (mm/s)	20	20	20
Brake		Brake specification	Non-excitation actuating solenoid brake		
		Brake holding force (kgf)	1.5	2.5	3.5
Stroke		Min. stroke (mm)	50	50	50
		Max. stroke (mm)	300	300	300
		Stroke pitch (mm)	50	50	50

Item	Description
Driving system	Ball screw φ6mm, Rolling C10
Positioning repeatability	±0.05mm
Lost motion	-
Linear guide	Linear motion infinite circulating type
Rod	Φ16mm, Material: aluminum, Hard alumite treatment
Rod no-rotation precision (Note 2)	0 degree
Ambient operation temperature/humidity	0 to 40°C, RH 85% or less (Non-condensing)
Degree of protection	IP20
Vibration & shock resistance	4.9m/s², 100Hz or less
Overseas standards	CE Marking, RoHS (Restriction of Hazardous Substances)
Motor type	Stepper motor
Encoder type	Incremental / battery-less absolute
Number of encoder pulses	800 pulse /rev.

(Note 2) The rod tip displacement angle when no load is applied.

* Speed limitation applies to push motion. See the manual or contact IAI.

Correlation between push force and current limit value



Rod deflection value (reference value)

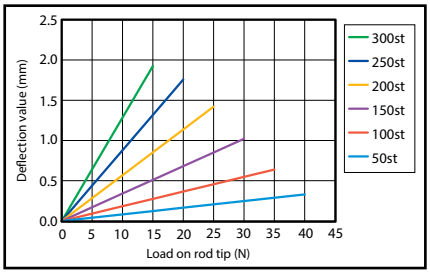


Table of Payload by Speed/Acceleration

Unit of payload is kg.

Lead 6

Orientation	Horizontal		Vertical
Speed	Acceleration (G)		
(mm/s)	0.3	0.5	0.3
0	9	7	1.5
120	9	7	1.5
210	9	7	1.5
255	9	7	1.5
315	9	7	1
360	8	6	1
420	6	5	1

Lead 4

Orientation	Horizontal	Vertical
Speed	Acceleration (G)	
(mm/s)	0.3	0.3
0	14	2.5
80	14	2.5
140	14	2.5
170	14	2.5
210	14	2.5
240	13	2.5
280	12	2

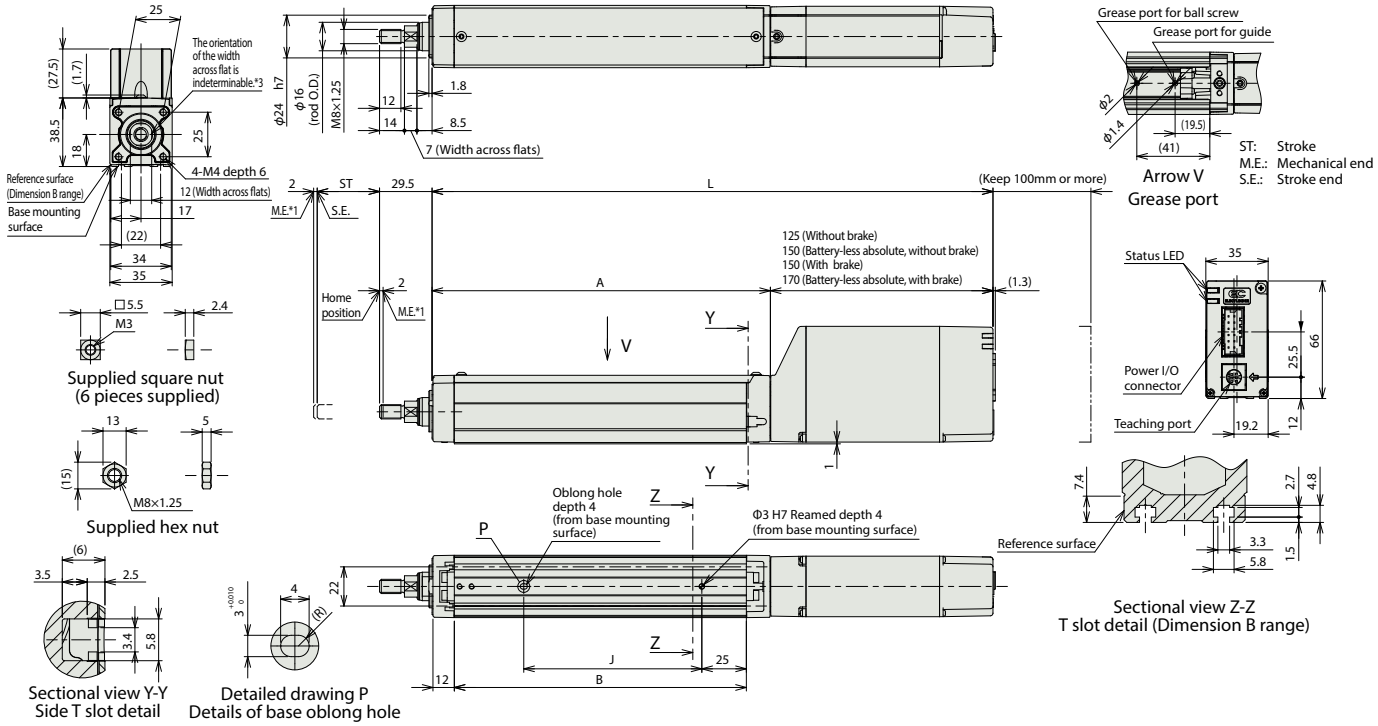
Lead 2

Orientation	Horizontal	Vertical
Speed	Acceleration (G)	
(mm/s)	0.3	0.3
0	18	3.5
40	18	3.5
70	18	3.5
85	18	3.5
105	18	3.5
120	18	3
140	17	2.5

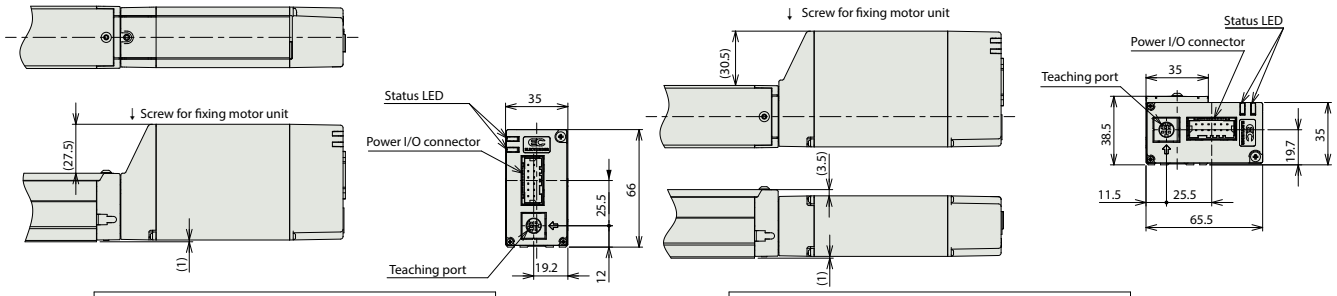
Dimensions

*1 When the rod is returning to its home position, please be careful of interference from surrounding objects, as it will travel until it reaches the M.E.
*2 The drawing below represents motor mounting direction top (MOT).
*3 The direction of width across flats various depending on the product. This flat cannot be used for reference plane.

CAD drawings can be downloaded from our website.
www.intelligentactuator.com

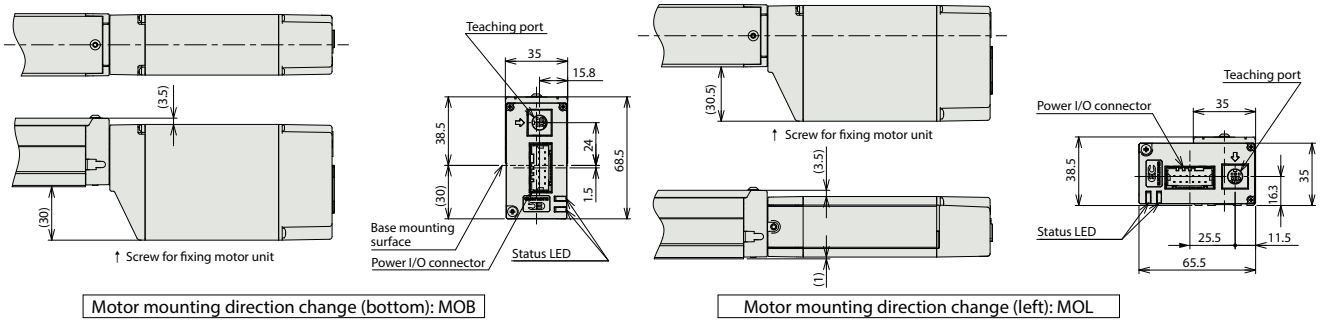


■ Motor mounting direction change (optional)



Motor mounting direction change (top): MOT

Motor mounting direction change (right): MOR



Motor mounting direction change (bottom): MOB

Motor mounting direction change (left): MOL

■ Dimensions by stroke

Stroke			50	100	150	200	250	300
L	Incremental	Without brake	265	315	365	415	465	515
		With brake	290	340	390	440	490	540
	Battery-less absolute	Without brake	290	340	390	440	490	540
		With brake	310	360	410	460	510	560
A			140	190	240	290	340	390
B			114	164	214	264	314	364
J			50	100	150	200	250	300

■ Mass by stroke

Stroke		50	100	150	200	250	300
Weight (kg)	Without brake	0.8	0.9	1	1.1	1.2	1.3
	With brake	0.9	1	1.1	1.2	1.3	1.4

Applicable controller

(Note) The EC series is equipped with a built-in controller. Please refer to P116 for details.