EC-RR4

Coupled Motor | Body width 44 mm | 24v Stepper motor

■ Model Specification Items

EC	—	RR4		—		—		—	
Series	—	Type	Lead	—	Stroke	—	Cable Length	—	Options

Lead	
S	16mm
H	10mm
M	5mm
L	2.5mm

Stroke	
50	50mm
~	~
300	300mm (per 50mm)

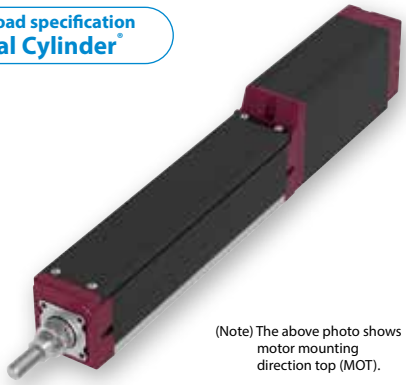
Cable Length	
0	Terminal type with connector
1	1m
~	~
10	10m

Options: Refer to the option price list below

CE RoHS

Radial load specification
Radial Cylinder®

Horizontal | Vertical | Side | Ceiling



(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
Flange (front)	**FL**	See P.102
Foot bracket	**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	**WL**	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-RR4	Stroke (mm)	EC-RR4
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

Main specifications

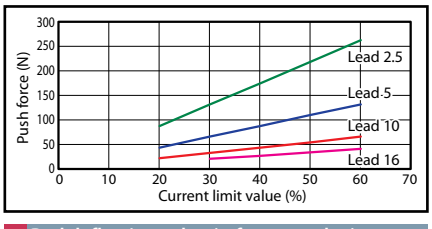
Item		Description				
Lead		Ball screw lead (mm)	16	10	5	2.5
Horizontal	Payload	Max. payload (kg) (energy-saving disabled)	7	16	25	35
		Max. payload (kg) (energy-saving enabled)	5	10	22	35
	Speed/ acceleration/ deceleration	Max. speed (mm/s)	800	700	350	175
		Min. speed (mm/s)	40	30	7	4
		Rated acceleration/deceleration (G)	0.3	0.3	0.3	0.3
		Max. acceleration/deceleration (G)	1	1	0.5	0.3
Vertical	Payload	Max. payload (kg) (energy-saving disabled)	1.5	2.5	5	6.5
		Max. payload (kg) (energy-saving enabled)	1	2	4.5	6.5
	Speed/ acceleration/ deceleration	Max. speed (mm/s)	800	700	350	150
		Min. speed (mm/s)	40	30	7	4
		Rated acceleration/deceleration (G)	0.3	0.3	0.3	0.3
		Max. acceleration/deceleration (G)	0.5	0.5	0.5	0.3
Push force		Max. thrust force when pushing (N)*	41	66	132	263
		Max. speed when pushing (mm/s)	40	30	20	20
Brake		Brake specification	Non-excitation actuating solenoid brake			
		Brake holding force (kgf)	1.5	2.5	5	6.5
Stroke		Min. stroke (mm)	50	50	50	50
		Max. stroke (mm)	300	300	300	300
		Stroke pitch (mm)	50	50	50	50

Item	Description
Driving system	Ball screw φ8mm, Rolling C10
Positioning repeatability	±0.05mm
Lost motion	-
Linear guide	Linear motion infinite circulating type
Rod	Φ20mm, 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)

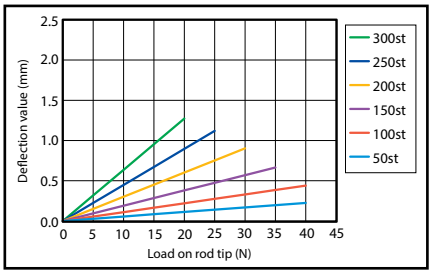


Table of Payload by Speed and Acceleration/Deceleration

■ Energy-saving disabled

The unit for payload is kg. Operations in the blank locations are not possible

Lead 16

Orientation	Horizontal				Vertical	
Speed	Acceleration (G)					
(mm/s)	0.3	0.5	0.7	1	0.3	0.5
0	7	6	5	3.5	1.5	1.25
140	7	6	5	3.5	1.5	1.25
280	7	6	4.5	3.5	1.5	1.25
420	7	6	3.5	2.5	1.5	1.25
560	6.5	5.5	3.5	2.5	1.5	1.25
700	5.5	3.5	2.5	1.5	1	1
800		1	1	1		1

Lead 10

Orientation	Horizontal						Vertical	
Speed	Acceleration (G)							
(mm/s)	0.3	0.5	0.7	1	0.3	0.5	0.3	0.5
0	16	15	13	11	2.5	2	1	1
175	16	15	13	11	2.5	2	1	1
350	16	11	11	7.5	2.5	2	1	1
435	15	9	8	6.5	2.5	2	1	1
525	11	7	5.5	4.5	2.5	2	1	1
600	7	4.5	3.5	2.5	2	2	1	1
700		2.5	1.5			1		

Lead 5

Orientation	Horizontal		Vertical	
Speed	Acceleration (G)			
(mm/s)	0.3	0.5	0.3	0.5
0	25	22	5	4.5
85	25	22	5	4.5
130	25	22	5	4.5
215	25	22	5	4.5
260	25	22	5	4.5
300	22	18	5	4
350	18	11	3	3

Lead 2.5

Orientation	Horizontal	Vertical
Speed	Acceleration (G)	
(mm/s)	0.3	0.3
0	35	6.5
40	35	6.5
85	35	6.5
105	35	6.5
135	32	6
150	30	6
175	28	

■ Energy-saving enabled

The unit for payload is kg. Operations in the blank locations are not possible

Lead 16

Orientation	Horizontal		Vertical
Speed	Acceleration (G)		
(mm/s)	0.3	0.7	0.3
0	5	3	1
140	5	3	1
280	5	3	1
420	4	3	1
560	3	1.5	1

Lead 10

Orientation	Horizontal		Vertical
Speed	Acceleration (G)		
(mm/s)	0.3	0.7	0.3
0	10	6.5	2
175	10	6.5	2
350	9	6.5	2
435	5	2.5	1.5
525	1		1

Lead 5

Orientation	Horizontal	Vertical
Speed	Acceleration (G)	
(mm/s)	0.3	0.3
0	22	4.5
85	22	4.5
130	22	4.5
215	18	3
260	12	2

Lead 2.5

Orientation	Horizontal	Vertical
Speed	Acceleration (G)	
(mm/s)	0.3	0.3
0	35	6.5
40	35	6.5
85	35	6.5
105	30	6
135	25	3.5

Stroke and maximum speed

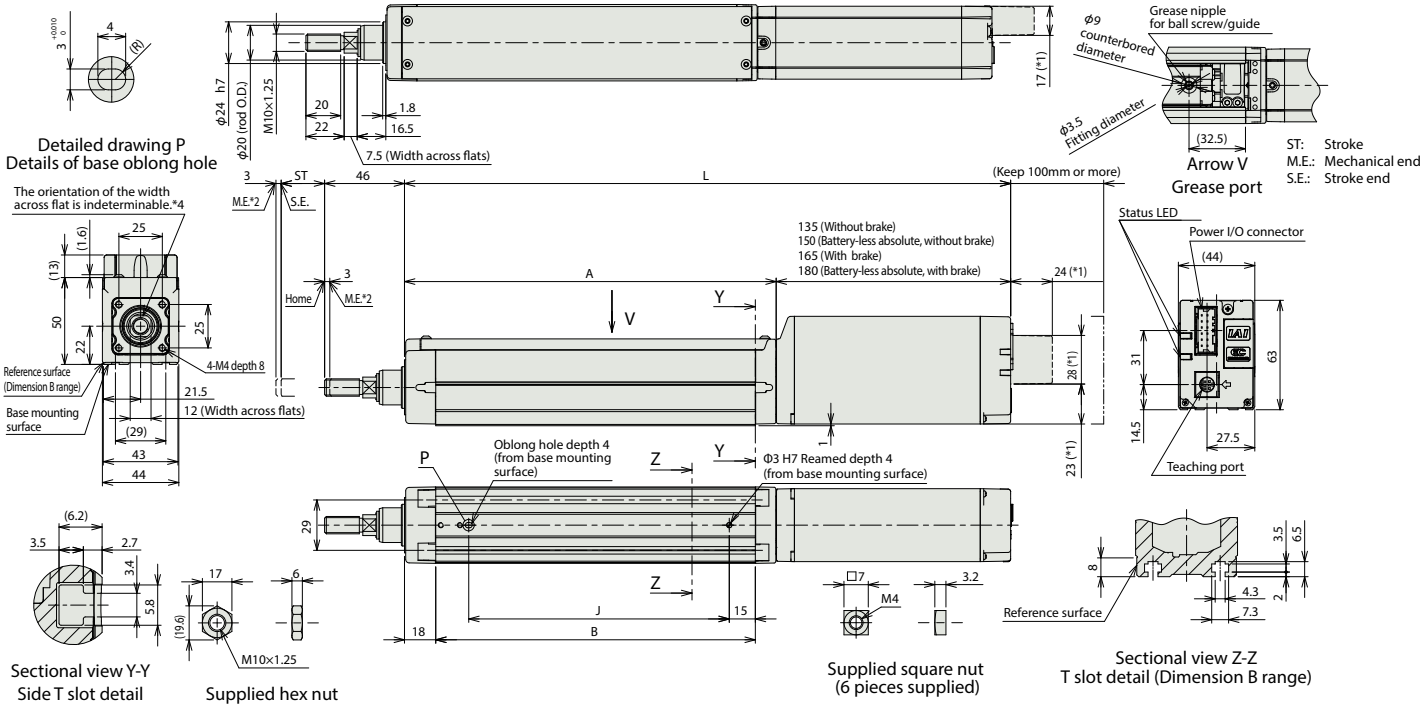
Lead (mm)	Energy-saving	50-150 (per 50mm)	200 (mm)	250 (mm)	300 (mm)
16	disabled	800		600	440
	enabled	560			440
10	disabled	700	570	390	290
	enabled	525		390	290
5	disabled	350	280	190	140
	enabled	260		190	140
2.5	disabled	175 <150>	135	90	70
	enabled	135		90	70

Figures in < > represent vertical operations. (Unit is mm/s)

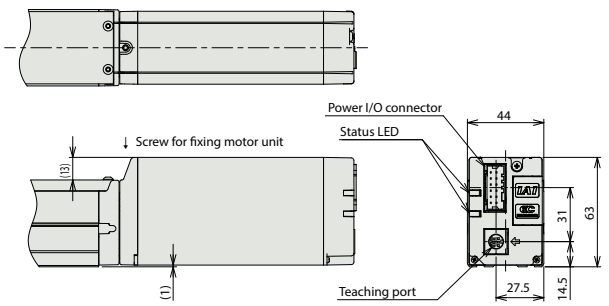
Dimensions

*1 The dimensions represent for wireless communication specification (optional) or wireless axis- operation specification (optional).
*2 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.
*3 The drawing below represents motor mounting direction top (MOT).
*4 The direction of width across flats various depending on the product. This flat cannot be used for reference plane.

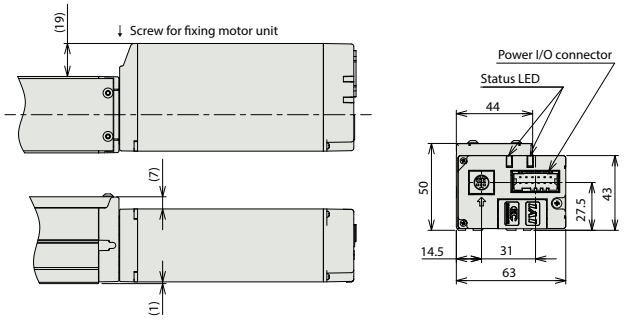
CAD drawings can be downloaded from our website.
www.intelligentactuator.com



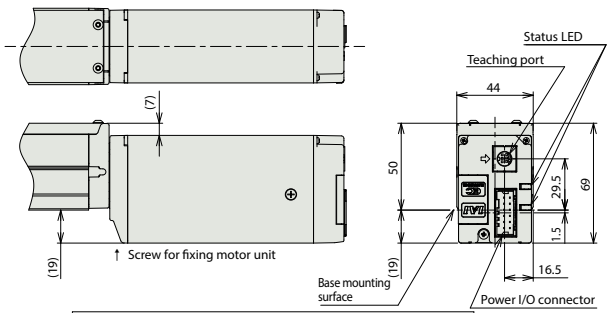
■ Motor mounting direction change (optional)



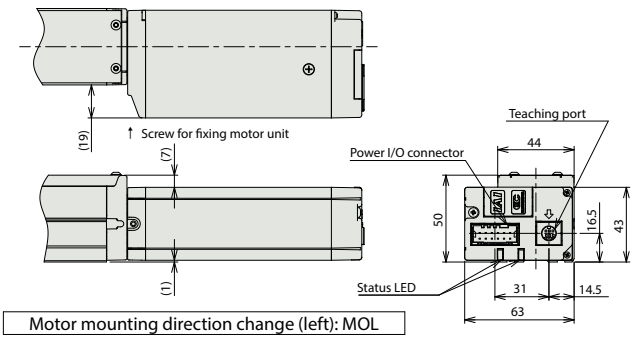
Motor mounting direction change (top): MOT



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	299	349	399	449	499	549
		With brake	329	379	429	479	529	579
	Battery-less absolute	Without brake	314	364	414	464	514	564
		With brake	344	394	444	494	544	594
A			164	214	264	314	364	414
B			134	184	234	284	334	384
J			100	150	200	250	300	350

■ Mass by stroke

Stroke		50	100	150	200	250	300
Weight (kg)	Without brake	1.3	1.5	1.7	1.9	2.1	2.3
	With brake	1.5	1.7	1.9	2.1	2.2	2.4

Applicable controller

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