EC-R7

Coupled Motor | Body width 73 mm | 24v Stepper motor

■ Model Specification Items

EC — R7 — [ ] — [ ] — [ ] — [ ]

Series	Type	Lead		Stroke		Cable Length		Options
		S	24mm	50	50mm	0	With terminal block type connector	Refer to Options below.
		H	16mm	≀	≀	1	1m	
		M	8mm	300	300mm (per 50mm)	≀	≀	
		L	4mm			10	10m	

CE RoHS

Horizontal | Vertical | Side | Ceiling

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 value of the horizontal payload assumes that there is an external guide. Please be aware that the anti-rotation stopper can be damaged when an external force is applied to the rod from any direction other than the moving direction.
(3) When performing a push-motion operation, please refer to the "Correlation between push force and current limit value." Push force is only a guide. Please refer to P115 for details.
(4) Depending on the ambient operating temperature, duty control is necessary. Please refer to P109 for details.
(5) Special attention needs to be paid to the mounting orientation. Please refer to P33 for details.

Stroke

Stroke (mm)	EC-R7	Stroke (mm)	EC-R7
50	○	**200**	○
100	○	**250**	○
150	○	**300**	○

Cable length

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

(Note) Robot cables.

Options

Type	Option code	Reference page
Brake	**B**	See P.101
Flange (front)	**FL**	See P.102
Foot bracket	**FT**	See P.103
Tip adapter (Internal thread)	**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 specification	**WA**	See P.109
Wireless communication specification	**WL**	See P.109
Wireless axis-operation specification	**WL2**	See P.109

Main specifications

Item			Description			
Lead		Ball screw lead (mm)	24	16	8	4
Horizontal	Payload	Max. payload (kg) (energy-saving disabled)	20	50	60	80
		Max. payload (kg) (energy-saving enabled)	18	40	50	55
	Speed/ acceleration/ deceleration	Max. speed (mm/s)	860	700	350	175
		Min. speed (mm/s)	30	20	10	5
		Rated acceleration/deceleration (G)	0.3	0.3	0.3	0.3
		Max. accleration/deceleration (G)	1	1	1	1
Vertical	Payload	Max. payload (kg) (energy-saving disabled)	3	8	18	19
		Max. payload (kg) (energy-saving enabled)	3	5	17.5	19
	Speed/ acceleration/ deceleration	Max. speed (mm/s)	640	560	350	175
		Min. speed (mm/s)	30	20	10	5
		Rated acceleration/deceleration (G)	0.3	0.3	0.3	0.3
		Max. accleration/deceleration (G)	0.5	0.5	0.5	0.5
Push force		Pushing max. thrust force (N)*	182	273	547	1094
		Pushing max. speed (mm/s)	20	20	20	20
Brake		Brake holding specification	Non-excitation actuating solenoid brake			
		Brake holding force (kgf)	3	8	18	19
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 φ12mm, Rolling C10
Positioning repeatability	±0.05mm
Lost motion	-
Rod	φ30mm Material: Aluminum Hard alumite treatment
Rod non-rotation accuracy (Note 1)	±1.5 degree
Allowable load and torque on the rod tip.	0.5N·m
Ambient operation temperature/humidity	0~40°C, 85%RH 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 1) The rod tip displacement angle (initial Reference value) when allowable static torque is applied on rod tip when most of the rod is in the body.

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

Table of Payload by Speed and Acceleration

■ **Setting for energy-saving disabled** Unit for payload is kg. Operations on the blank locations are not possible.

Lead 24

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	20	18	15	12	3	3
200	20	18	15	12	3	3
400	20	14	12	8	3	3
420	17	12	10	6	3	3
600	14	6	5	4	3	2
640	5	3	2	1.5	2	1
800	5	1	1			
860	2	0.5				

Lead 16

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	50	40	35	30	8	8
140	50	40	35	30	8	8
280	50	35	25	20	7	7
420	25	18	14	10	4.5	4
560	10	5	3	2	2	1
700	2					

Lead 8

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	60	50	45	40	18	18
70	60	50	45	40	18	18
140	60	50	45	40	16	12
210	60	40	31	26	10	9
280	34	20	15	11	5	4
350	12	4	1		2	1

Lead 4

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	80	70	65	60	19	19
35	80	70	65	60	19	19
70	80	70	65	60	19	19
105	80	60	50	40	18	18
140	50	30	20	15	12	10
175	15				2	

■ Setting for energy-saving enabled Unit for payload is kg. Operations on the blank locations are not possible

Lead 24

Orientation	Horizontal		Vertical
Speed (mm/s)	Acceleration (G)		
	0.3	0.7	0.3
0	18	9.5	3
200	18	9.5	3
400	11	6	1.5
420	10	5	
600	1		

Lead 16

Orientation	Horizontal		Vertical
Speed (mm/s)	Acceleration (G)		
	0.3	0.7	0.3
0	40	25	5
140	40	25	5
280	18	12	2
420	1.5	1	

Lead 8

Orientation	Horizontal		Vertical
Speed (mm/s)	Acceleration (G)		
	0.3	0.7	0.3
0	50	30	17.5
70	50	30	17.5
140	50	30	7
210	14	7	2

Lead 4

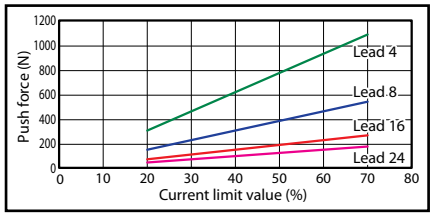
Orientation	Horizontal		Vertical
Speed (mm/s)	Acceleration (G)		
	0.3	0.7	0.3
0	55	50	19
35	55	50	19
70	55	50	13
105	30	15	2

Stroke and maximum speed

Lead (mm)	Energy-saving mode	50-300 (per 50mm)
24	Disabled	860<640>
	Enabled	600<400>
16	Disabled	700<560>
	Enabled	420<280>
8	Disabled	350
	Enabled	210
4	Disabled	175
	Enabled	105

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

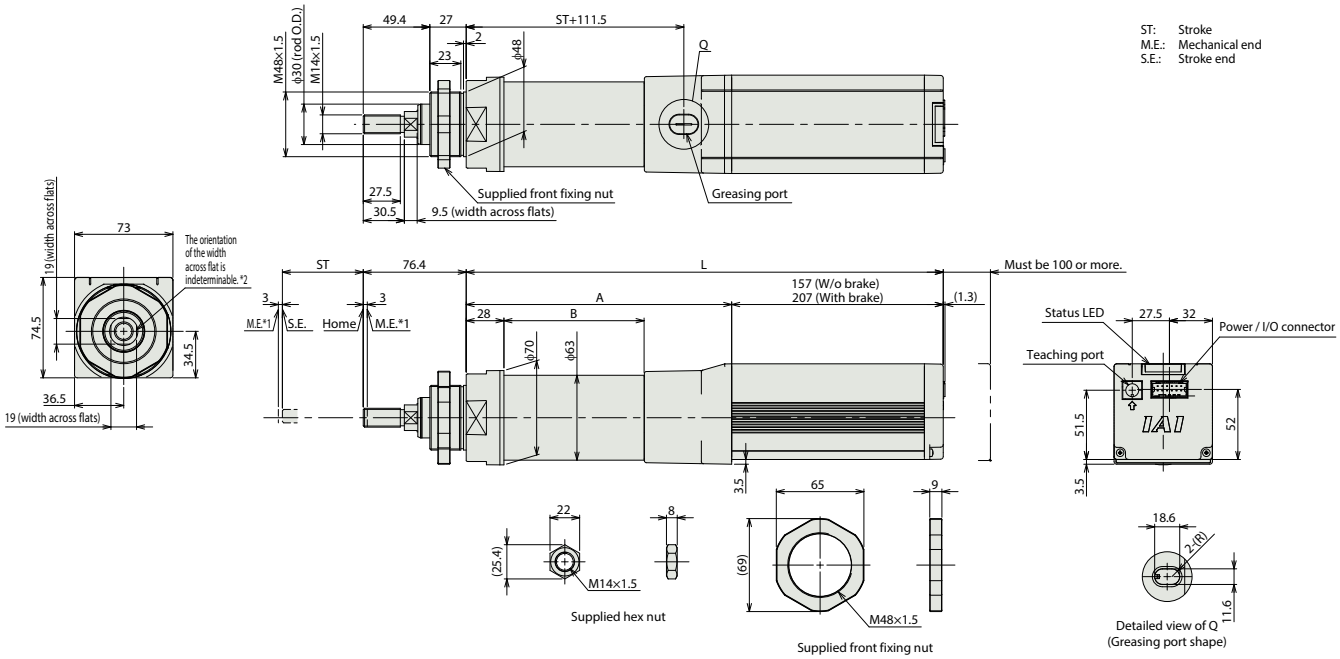
Correlation between push force and current limit value



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 direction of width across flats varies depending on the product. Those flats cannot be used for reference plane.

CAD drawings can be downloaded from our website.
www.intelligentactuator.com
2D CAD 3D CAD



■ Dimensions by stroke

Stroke		50	100	150	200	250	300
L	W/o Brake	354	404	454	504	554	604
	With Brake	404	454	504	554	604	654
A		197	247	297	347	397	447
B		104	154	204	254	304	354

■ Mass by stroke

Stroke		50	100	150	200	250	300
Weight (kg)	W/o Brake	3.3	3.5	3.7	3.9	4.1	4.3
	With Brake	3.5	3.7	3.9	4.1	4.3	4.5

Applicable controller

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