EC-S7□AHR

High Rigidity | High Rigidity | Simple dust-proof | Side-mounted Motor | Body width 75 mm | 24v Stepper motor

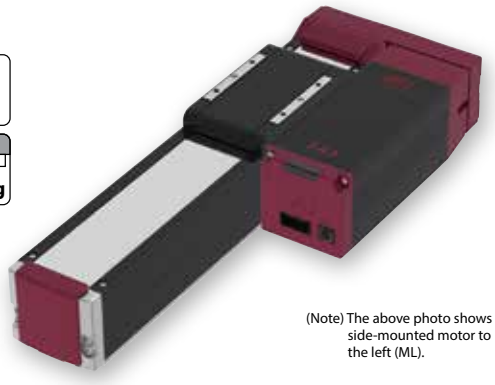
■ Model Specification Items

EC — S7 [ ] AHR — [ ] — [ ] — [ ]

Series	Type	Lead		Specification		Stroke		Cable Length		Options
EC	S7	S	24mm	AHR	High rigidity with Side-mounted motor	50	50mm	0	Terminal type with connector	Refer to the option price list below
		H	16mm			≀	≀	1	1m	
		M	8mm			800	800mm (per 50mm)	≀	≀	
		L	4mm					10	10m	

CE RoHS

Horizontal | Vertical | Side | Ceiling



(Note) The above photo shows side-mounted motor to the left (ML).

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) 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 P109 for cautions.
(3) Depending on the ambient operating temperature, duty control is necessary. Please refer to P115 for cautions.
(4) Special attention needs to be paid to the mounting orientation. Please refer to P33 for details.
(5) Reference value of the overhang load length is under 300mm in the Ma, Mb and Mc directions. Please refer to the illustration on P35 for the overhang load length.
(6) The center of gravity of the attached object should be less than 1/2 of the overhang distance. Even when the overhang distance and load moment are within the allowable range, the operating conditions should be moderated if some abnormal vibration or noise is observed.

Stroke

Stroke (mm)	EC-S7□AHR	Stroke (mm)	EC-S7□AHR
50	○	**450**	○
100	○	**500**	○
150	○	**550**	○
200	○	**600**	○
250	○	**650**	○
300	○	**700**	○
350	○	**750**	○
400	○	**800**	○

Options

Name	Option code	Reference page
Brake	**B**	See P.101
Foot bracket	**FT**	See P.103
Side-mounted motor to the left (Note 1)	**ML**	See P.105
Side-mounted motor to the right (Note 1)	**MR**	See P.105
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.

Cable length

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

(Note) Robot cables.

Main specifications

Item			Description			
Lead		Ball screw lead (mm)	24	16	8	4
Horizontal	Payload	Max. payload (kg) (energy-saving disabled)	37	46	51	51
		Max. payload (kg) (energy-saving enabled)	18	35	40	40
	Speed/acceleration/deceleration	Max. speed (mm/s)	1080	840	420	190
		Min. speed (mm/s)	30	20	10	5
		Rated acceleration/deceleration (G)	0.3	0.3	0.3	0.3
		Max. acceleration/deceleration (G)	1	1	1	1
Vertical	Payload	Max. payload (kg) (energy-saving disabled)	3	8	16	25
		Max. payload (kg) (energy-saving enabled)	2	5	10	15
	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. acceleration/deceleration (G)	0.5	0.5	0.5	0.5
Push force		Max. thrust force when pushing (N)*	139	209	418	836
		Max. speed when pushing (mm/s)	20	20	20	20
Brake		Brake specification	Non-excitation actuating solenoid brake			
		Brake holding force (kgf)	3	8	16	25
Stroke		Min. stroke (mm)	50	50	50	50
		Max. stroke (mm)	800	800	800	800
		Stroke pitch (mm)	50	50	50	50

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

Item	Description
Driving system	Ball screw φ12mm, Rolling C10
Positioning repeatability	±0.05mm
Lost motion	-
Base	Dedicated aluminum extruded material(A6063SS-T5 or equivalent) Black alumite treatment
Linear guide	Linear motion infinite circulating type
Static allowable moment	Ma: 115N・m
	Mb: 115N・m
	Mc: 229N・m
Dynamic allowable moment (Note 2)	Ma: 75N・m
	Mb: 90N・m
	Mc: 134N・m
Ambient operation temperature/humidity	0~40°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) Based on the standard rated operation life of 5,000 km. Operation life varies depending on operating and mounting conditions. Confirm the operation life on P36.

Table of Payload by Speed and Acceleration

■ **Energy-saving disabled** The unit for payload is kg. Operations in 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	37	22	16	14	3	3
200	37	22	16	14	3	3
420	34	20	16	11	3	3
640	15	10	8	6.5	3	2
860	9	6	4	3	1.5	1
1080	3	2				
1230	3	1.5	1	0.5	0.5	

Lead 16

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	46	35	28	27	8	8
140	46	35	28	27	8	8
280	46	35	25	24	8	8
420	30	25	15	10	5	4.5
560	15	12	7	5	3	2.5
700	10	5	3	1	1.5	1
840	3					
980	4					

Lead 8

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	51	45	40	40	16	16
70	51	45	40	40	16	16
140	51	40	38	35	16	16
210	51	35	30	24	9	8
280	35	20	15	12.5	6	5
350	20	5	4		3	2
420	2					

Lead 4

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	51	45	40	40	25	25
35	51	45	40	40	25	25
70	51	45	40	40	25	25
105	51	45	40	35	20	19
140	45	35	30	25	12.5	10
175	20	15			4	3
190	5					

■ Energy-saving enabled The unit for payload is kg. Operations in the blank locations are not possible.

Lead 24

Orientation	Horizontal		Vertical
Speed (mm/s)	Acceleration (G)		
	0.3	0.7	0.3
0	18	10	2
200	18	10	2
420	18	10	2
640	10	2	1
800	1		

Lead 16

Orientation	Horizontal		Vertical
Speed (mm/s)	Acceleration (G)		
	0.3	0.7	0.3
0	35	20	5
140	35	20	5
280	25	12	3
420	15	6	1.5
500	7.5	1.5	0.5
560	2		

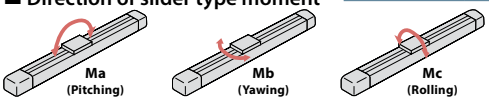
Lead 8

Orientation	Horizontal		Vertical
Speed (mm/s)	Acceleration (G)		
	0.3	0.7	0.3
0	40	25	10
70	40	25	10
140	40	25	7
210	25	14	4
280	5		0.5

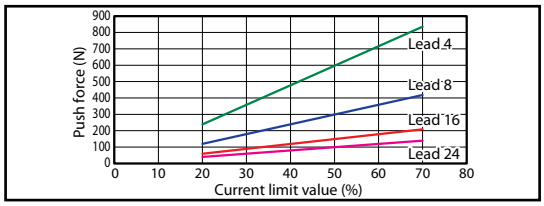
Lead 4

Orientation	Horizontal		Vertical
Speed (mm/s)	Acceleration (G)		
	0.3	0.7	0.3
0	40	30	15
35	40	30	15
70	40	30	15
105	40	30	8
120	15	6	2

■ Direction of slider type moment



Correlation between push force and current limit value



Stroke and maximum speed

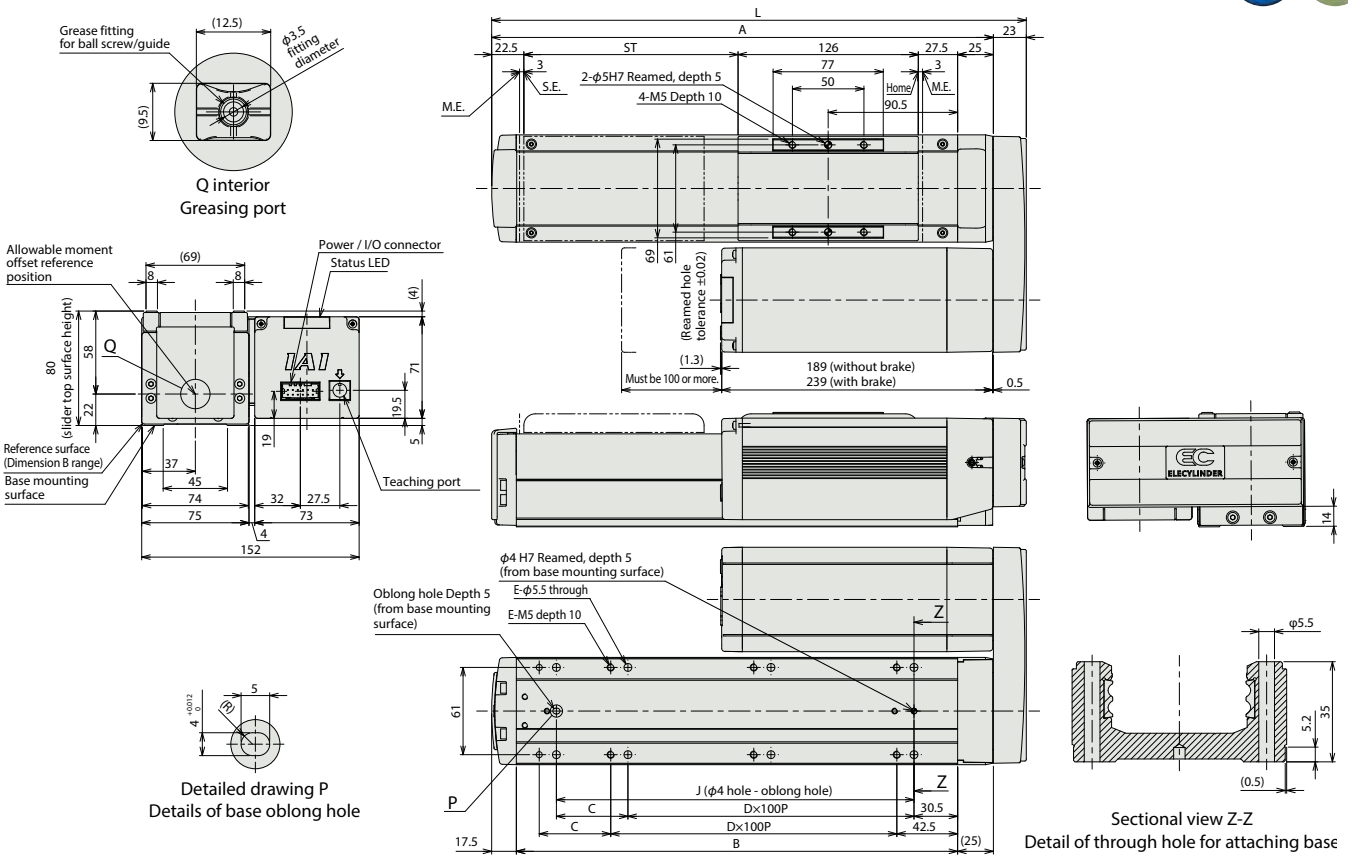
Lead (mm)	Energy-saving mode	50-500 (per 50mm)	550 (mm)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
24	Disabled	1080 <860>				950	840	750
	Enabled	800 <640>						750 <640>
16	Disabled	840 <700>		820 <700>	715 <700>	625	555	495
	Enabled	560 <500>					555 <500>	495
8	Disabled	420 <350>		405 <350>	350	310	275	245
	Enabled	280					275	245
4	Disabled	190 <175>			175	150	135	120
	Enabled	120						

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

Dimensions

(Note) When the slider is returning to its home position, please be careful of interference from surrounding objects, as it will travel until it reaches the M.E.
(Note) The drawing below represents side-mounted motor to the left (ML).

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	350	400	450	500	550	600	650	700	750	800
L	274	324	374	424	474	524	574	624	674	724	774	824	874	924	974	1024
A	251	301	351	401	451	501	551	601	651	701	751	801	851	901	951	1001
B	208.5	258.5	308.5	358.5	408.5	458.5	508.5	558.5	608.5	658.5	708.5	758.5	808.5	858.5	908.5	958.5
C	50	0	50	0	50	0	50	0	50	0	50	0	50	0	50	0
D	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9
E	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
J	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900

■ Mass by stroke

Stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Weight (kg)	without brake	4.5	4.7	5	5.3	5.5	5.8	6.1	6.3	6.6	6.9	7.1	7.4	7.7	7.9	8.2	8.5
	with brake	5.0	5.2	5.5	5.8	6.0	6.3	6.6	6.8	7.1	7.4	7.6	7.9	8.2	8.4	8.7	9.0

Applicable controller

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