

# EC-S7□AH

High Rigidity

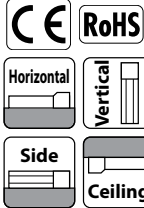
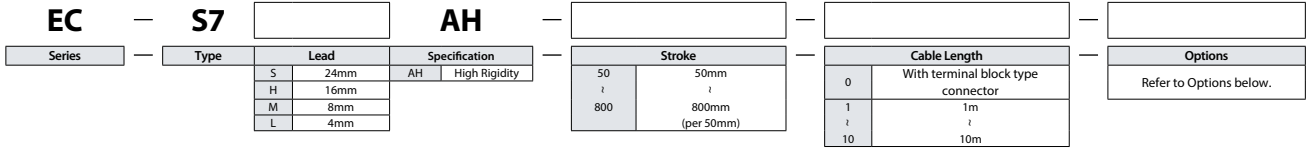
Simple dust-proof

Coupled Motor

Body width 75 mm

24V Stepper motor

■ Model Specification Items



- (1) The actuator specifications display the payload's maximum value, but when energy-saving is activated, the specifications will change. 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 details.
- (3) Depending on the ambient operating temperature, duty control is necessary. Please refer to P115 for details.
- (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□AH	Stroke (mm)	EC-S7□AH
50	○	450	○
100	○	500	○
150	○	550	○
200	○	600	○
250	○	650	○
300	○	700	○
350	○	750	○
400	○	800	○

Options		
Name	Option code	Reference page
Brake	<b>B</b>	See P.101
Non-motor end specification	<b>NM</b>	See P.108
PNP specification	<b>PN</b>	See P.108
Split motor and controller power supply specification	<b>TMD2</b>	See P.109
Battery-less Absolute Encoder specification	<b>WA</b>	See P.109
Wireless communication specification	<b>WL</b>	See P.109
Wireless axis-operation specification	<b>WL2</b>	See P.109

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	Payload	Ball screw lead (mm)	24	16	8	4
		Max. payload (kg) (energy-saving disabled)	37	46	51	51
	Max. payload (kg) (energy-saving enabled)	18	35	40	40	
	Horizontal	Speed/acceleration/deceleration	Max. speed (mm/s)	1230	980	420
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)	1230	840	420	175
		Min. speed (mm/s)	30	20	10	5
Push force	Rated acceleration/deceleration (G)	0.3	0.3	0.3	0.3	
	Max. acceleration/deceleration (G)	0.5	0.5	0.5	0.5	
Brake	Pushing max. thrust force (N)*	139	209	418	836	
	Pushing max. speed (mm/s)	20	20	20	20	
Stroke	Brake holding specification	Brake holding force (kgf)	Non-excitation actuating solenoid brake			
		Brake holding force (kgf)	3	8	16	25
	Min. stroke (mm)	Min. stroke (mm)	50	50	50	50
		Max. stroke (mm)	800	800	800	800
Stroke pitch (mm)	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 (A6063S5-T6 Equivalent) Black alumite treatment
Linear guide	Linear motion infinite circulating type Ma: 115N·m Mb: 115N·m Mc: 229N·m Ma: 75N·m Mb: 90N·m Mc: 134N·m
Static allowable moment	
Dynamic allowable moment (Note 1)	
Ambient operation temperature/humidity	0~40°C, 85%RH or less (Non-condensing)
Degree of protection	IP20
Vibration & shock resistance	4.9m/s <sup>2</sup> 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) Based on the standard rated operation life of 5,000 km. Operation life varies according to operating and mounting conditions. Confirm the operation life on P36.

■ Table of Payload by Speed/Acceleration

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

**Lead 24**

Orientation	Acceleration (G)					
	Horizontal			Vertical		
Speed (mm/s)	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	14	3	3
640	20	15	10	9	3	3
860	12	10	7	4	3	2.5
1080	8	4.5	3	1.5	1	0.5
1230	3	1.5	1	0.5	0.5	

**Lead 16**

Orientation	Acceleration (G)					
	Horizontal			Vertical		
Speed (mm/s)	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	34	25	15	10	5	4.5
560	20	15	10	6	4	3
700	15	10	5	3	3	2
840	7	4	2		0.5	
980	4					

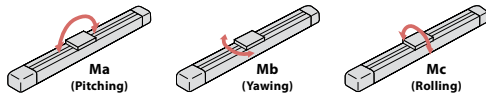
**Lead 8**

Orientation	Acceleration (G)					
	Horizontal			Vertical		
Speed (mm/s)	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	10	9.5
280	40	28	20	15	8	7
350	30	9	4		5	4
420	7				2	

**Lead 4**

Orientation	Acceleration (G)					
	Horizontal			Vertical		
Speed (mm/s)	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	14	12
175	30	18			9	7.5
210	6					

Direction of slider type moment

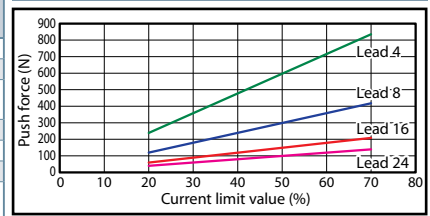


Stroke and maximum speed

Lead (mm)	Energy-saving mode	50-500 (per 50mm)	550 (mm)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
24	Disabled	1230		1080	950	840	750	
	Enabled	750						
16	Disabled	980 <840>	955 <840>	820	715	625	555	495
	Enabled	560						555
8	Disabled	420		405	350	310	275	245
	Enabled	280						275
4	Disabled	210 <175>	195 <175>	175	150	135	120	
	Enabled	140						

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

Correlation between push force and current limit value



Setting for energy-saving enabled Unit for payload is kg.

Lead 24

Orientation	Speed (mm/s)	Acceleration (G)		
		0.3	0.7	0.3
0	18	10	2	2
200	18	10	2	2
420	18	10	2	2
640	10	2	1	1
800	5	0.5	0.5	0.5

Lead 16

Orientation	Speed (mm/s)	Acceleration (G)		
		0.3	0.7	0.3
0	35	20	5	5
140	35	20	5	5
280	25	12	3	3
420	15	6	1.5	1.5
560	7	0.5	0.5	0.5

Lead 8

Orientation	Speed (mm/s)	Acceleration (G)		
		0.3	0.7	0.3
0	40	25	10	10
70	40	25	10	10
140	40	25	7	7
210	25	14	4	4
280	10	1	1.5	1.5

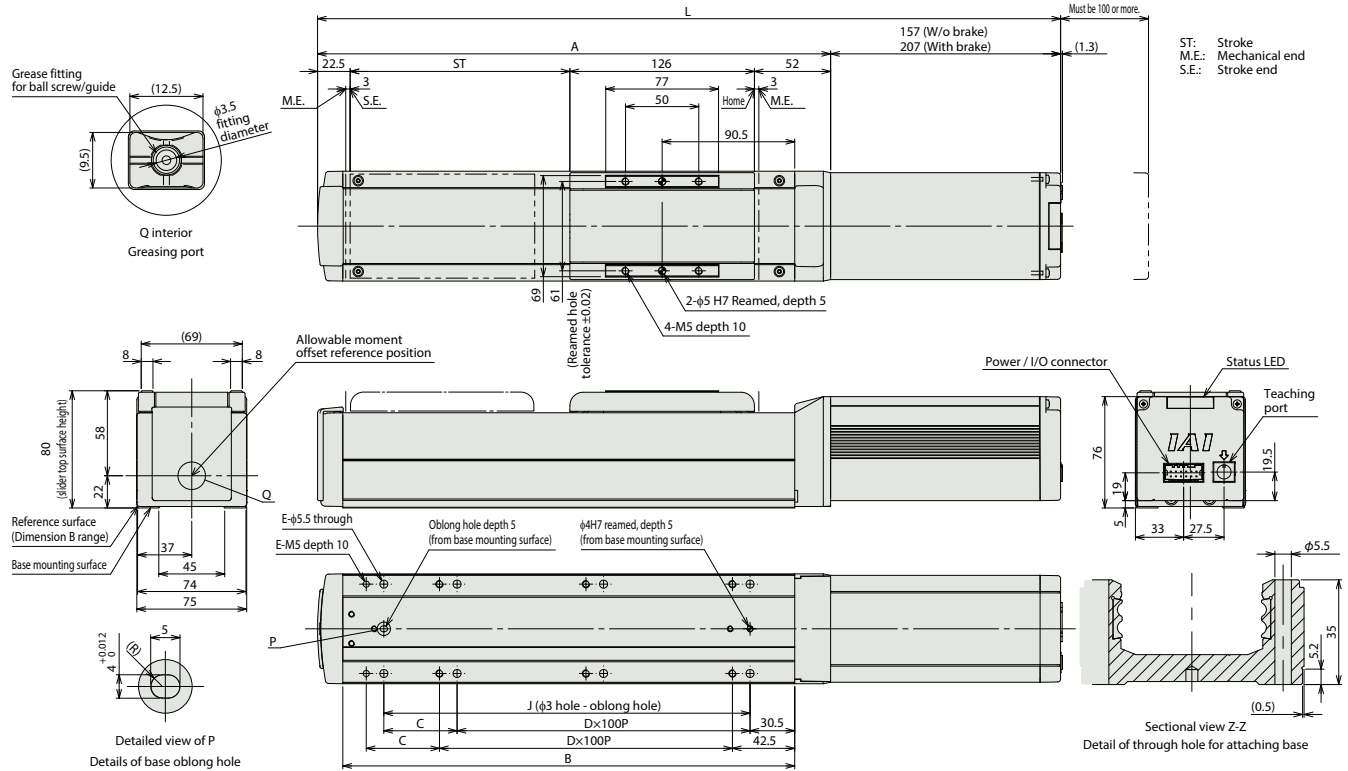
Lead 4

Orientation	Speed (mm/s)	Acceleration (G)		
		0.3	0.7	0.3
0	40	30	15	15
35	40	30	15	15
70	40	30	15	15
105	40	30	8	8
140	15	6	2	2

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.

CAD drawings can be downloaded from our website. [www.intelligentactuator.com](http://www.intelligentactuator.com)



Dimensions by stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
L	W/o Brake	407.5	457.5	507.5	557.5	607.5	657.5	707.5	757.5	807.5	857.5	907.5	957.5	1007.5	1057.5	1107.5	1157.5
	With Brake	457.5	507.5	557.5	607.5	657.5	707.5	757.5	807.5	857.5	907.5	957.5	1007.5	1057.5	1107.5	1157.5	1207.5
A	250.5	300.5	350.5	400.5	450.5	500.5	550.5	600.5	650.5	700.5	750.5	800.5	850.5	900.5	950.5	1000.5	
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)	W/o Brake	3.9	4.1	4.4	4.7	4.9	5.2	5.5	5.7	6	6.3	6.5	6.8	7.1	7.3	7.6	7.9
	With Brake	4.4	4.6	4.9	5.2	5.4	5.7	6	6.2	6.5	6.8	7	7.3	7.6	7.8	8.1	8.4

Applicable controller

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