EC-S6□AHR

High Rigidity | Simple dust-proof | Side-mounted Motor | Body width 63 mm | 24v Stepper motor

■ Model Specification Items

EC — S6 [ ] AHR — [ ] — [ ] — [ ]

Series	Type	Lead		Specification	
EC	S6	S	20mm	AHR	High rigidity with Side-mounted motor
		H	12mm		
		M	6mm		
		L	3mm		

Stroke	
50	50mm
≀	≀
800	800mm (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

(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-S6□AHR	Stroke (mm)	EC-S6□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)	20	12	6	3
Horizontal	Payload	Max. payload (kg) (energy-saving disabled)	15	26	32	40
		Max. payload (kg) (energy-saving enabled)	8	14	20	25
	Speed/ acceleration/ deceleration	Max. speed (mm/s)	1120	900	450	225
		Min. speed (mm/s)	25	15	8	4
		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)	1	2.5	6	16
		Max. payload (kg) (energy-saving enabled)	0.75	2	5	10
	Speed/ acceleration/ deceleration	Max. speed (mm/s)	1120	800	400	225
		Min. speed (mm/s)	25	15	8	4
		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)*	67	112	224	449
		Max. speed when pushing (mm/s)	20	20	20	20
Brake		Brake specification	Non-excitation actuating solenoid brake			
		Brake holding force (kgf)	1	2.5	6	16
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 φ10mm, 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: 48N・m
	Mb: 69N・m
	Mc: 103N・m
Dynamic allowable moment (Note 2)	Ma: 33N・m
	Mb: 40N・m
	Mc: 50N・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 20

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	15	10	8	7	1	1
160	15	10	8	7	1	1
320	12	10	8	6	1	1
480	12	9	8	6	1	1
640	12	6.5	6	5	1	1
800	9	5	4	3	1	1
960	7	4	3	1.5	0.75	0.5
1120	5	2.5	1.5		0.5	

Lead 12

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	26	18	16	14	2.5	2.5
80	26	18	16	14	2.5	2.5
200	26	18	16	14	2.5	2.5
320	26	18	14	12	2.5	2.5
440	26	18	12	9	2.5	2.5
560	17.5	12	7	5	2.5	2.5
700	10	5	3.5	2	1	0.5
800	6	3	1		0.5	
900	3					

Lead 6

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	32	26	24	20	6	6
40	32	26	24	20	6	6
100	32	26	24	20	6	6
160	32	26	24	20	6	6
220	32	26	24	20	6	6
280	32	26	18	15	6	5.5
340	25	14	12	9	4	3.5
400	15	8	8	5	2	2
450	10	5				

Lead 3

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	40	35	35	35	16	16
50	40	35	35	35	16	16
80	40	35	35	30	16	16
110	40	35	35	30	16	16
140	40	35	35	28	15	15
170	40	32	25	20	9	8
200	28	20	15	8	6	4
225	18	5			2	

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

Lead 20

Orientation	Horizontal		Vertical
Speed (mm/s)	Acceleration (G)		
	0.3	0.7	0.3
0	8	5	0.75
160	8	5	0.75
320	8	5	0.75
480	8	4	0.75
640	6	3	0.75
800	4	1.5	0.5

Lead 12

Orientation	Horizontal		Vertical
Speed (mm/s)	Acceleration (G)		
	0.3	0.7	0.3
0	14	10	2
80	14	10	2
200	14	10	2
320	14	10	2
440	11	7	1.5
560	7	2.5	1
680	2		

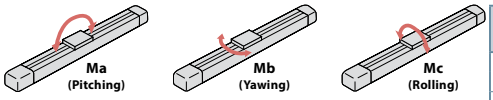
Lead 6

Orientation	Horizontal		Vertical
Speed (mm/s)	Acceleration (G)		
	0.3	0.7	0.3
0	20	14	5
40	20	14	5
100	20	14	5
160	20	14	5
220	16	14	4
280	13	7	2.5
340	8	1	1

Lead 3

Orientation	Horizontal		Vertical
Speed (mm/s)	Acceleration (G)		
	0.3	0.7	0.3
0	25	22	10
20	25	22	10
50	25	22	10
80	25	22	10
110	20	14	8
140	15	11	5
170	11	5	2

■ Direction of slider type moment

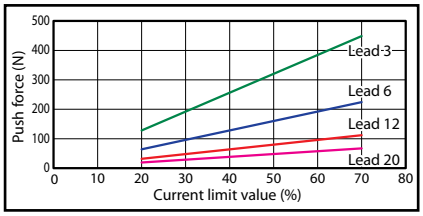


Stroke and maximum speed

Lead (mm)	Energy-saving mode	50-400 (per 50mm)	450 (mm)	500 (mm)	550 (mm)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
20	Disabled	1120			1090	940	815	715	630	560
	Enabled	800						715	630	560
12	Disabled	900 <800>	845 <800>	705	585	515	445	390	345	315
	Enabled	680 <560>			585 <560>	515	445	390	345	315
6	Disabled	450 <400>	415 <400>	350	295	255	220	190	170	140
	Enabled	340			295	255	220	190	170	140
3	Disabled	225	205	170	145	125	110	95	85	70
	Enabled	170			145	125	110	95	85	70

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

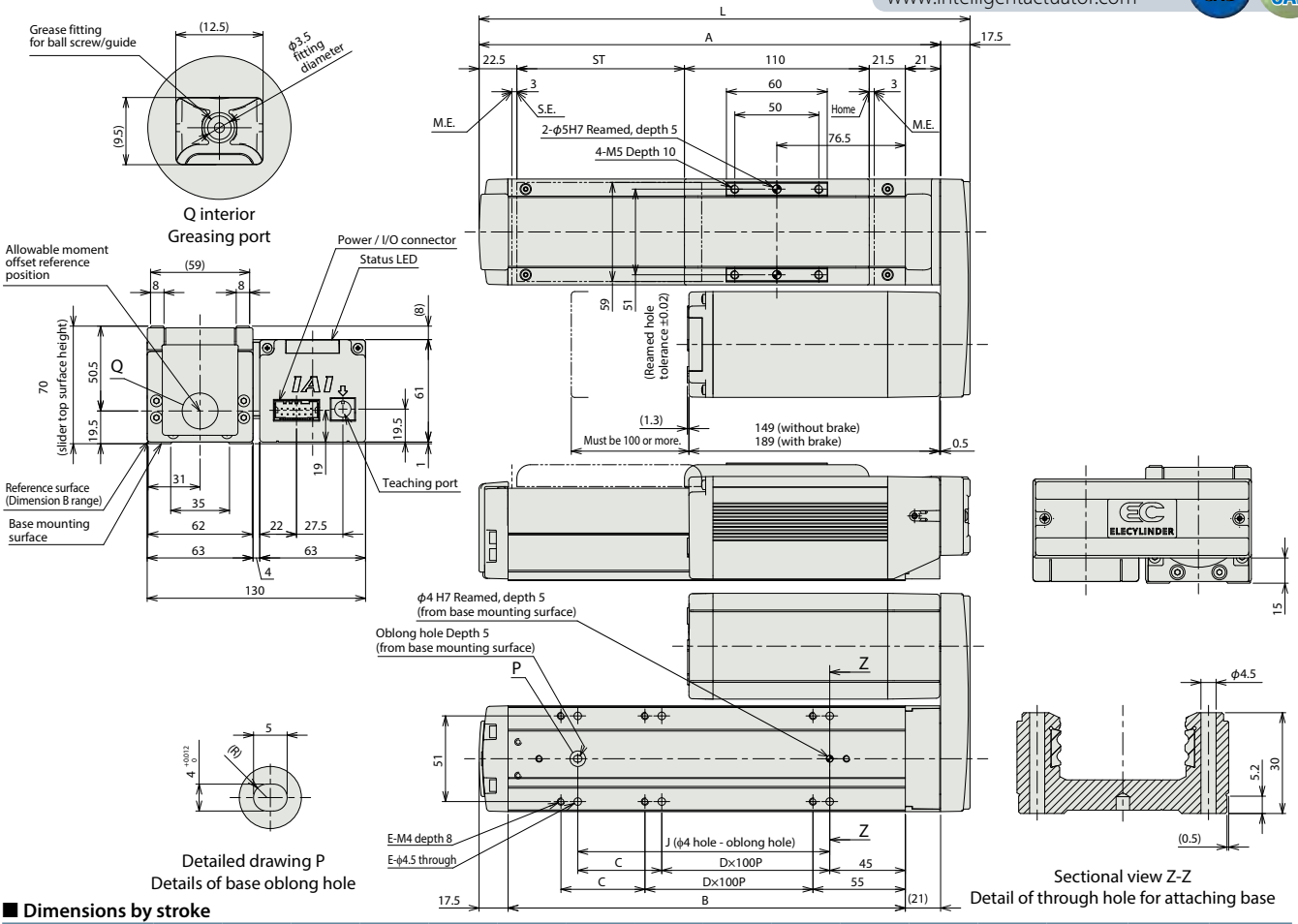
Correlation between push force and current limit value



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	242.5	292.5	342.5	392.5	442.5	492.5	542.5	592.5	642.5	692.5	742.5	792.5	842.5	892.5	942.5	992.5
A	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
B	186.5	236.5	286.5	336.5	386.5	436.5	486.5	536.5	586.5	636.5	686.5	736.5	786.5	836.5	886.5	936.5
C	0	50	0	50	0	50	0	50	0	50	0	50	0	50	0	50
D	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
E	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
J	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850

■ Mass by stroke

Stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Weight (kg)	without brake	2.3	2.5	2.7	2.9	3.2	3.4	3.6	3.8	4.1	4.3	4.5	4.7	5	5.2	5.4	5.6
	with brake	2.6	2.8	3	3.2	3.5	3.7	3.9	4.1	4.4	4.6	4.8	5	5.3	5.5	5.7	5.9

Applicable controller

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