

EC-S8 A

Simple dust-proof

Coupled Motor

Body width
90 mm

24v
Stepper motor

Model specification items

EC	S8		A			
Series	Type	Lead	Specification	Stroke	Power · I/O cable length	Option
		S 30mm H 20mm M 10mm L 5mm	A For long stroke	350 1100	350mm 1100mm (every 50mm)	Refer to the Power · I/O cable length table below
					Refer to the Power · I/O cable length table below	Refer to the Option table below



Horizontal

Vertical

Side

Ceiling

Table of strokes

Stroke (mm)	Stroke (mm)
350	750
400	800
450	850
500	900
550	950
600	1000
650	1050
700	1100

Table of Options

Name	Option code
RCON-EC connection specification (Note 1)	ACR
Brake	B
Grease Specification (Note 2)	G1/G5
Non-motor end homing specification	NM
PNP specification	PN
Slider part roller specification (Note 3)	SR
Twin power specification	TMD2
Double slider specification (Note 2) (Note 3) (Note 4)	W
Battery-less absolute encoder specification	WA
Wireless communication specification	WL
Wireless axis operation specification	WL2

(Note 1) When selecting RCON-EC connection specification (ACR), PNP specification (PN) and Twin power specification (TMD2) cannot be selected.
 (Note 2) Double slider specification (W) and Grease Specification (G1/G5) cannot be used together.
 (Note 3) When Slider part roller specification (SR) and Double slider specification (W) are used together, Slider part roller specification (SR)'s price will be doubled.
 (Note 4) Some leads cannot be selected. Refer to P.175 for details.

Selection Notes

- (1) Longer strokes may decrease the maximum speed due to the resonance of the ball screw. Check the stroke maximum speed required in the "Stroke and Max. Speed" table.
- (2) "Main Specifications" displays the payload's maximum value. Refer to the "Table of Payload by Speed and Acceleration" for details.
- (3) If performing push-motion operations, refer to the "Correlation between Push force and Current Limit" diagram. The push force is only for a reference value. Contact IAI for precautions.
- (4) Depending on the ambient operating temperature, the duty ratio may be limited. Contact IAI for details.
- (5) Pay close attention to the installation orientation. Contact IAI for the overhang load length.
- (6) Reference value of the overhang load length is under 400mm (800mm for the double slider specification) in the Ma, Mb, and Mc directions. Contact IAI for the overhang load length.
- (7) 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.
- (8) For the ordering model number and notes for the double slider specification, please contact IAI.
- (9) There are limitations on connections when RCON-EC connection specification (ACR) is connected to EC connection unit (RCON-EC-4). Please contact IAI for details.

Power · I/O cable length

Standard connector cable

Cable code	Cable length	User wiring specification (flying leads)	RCON-EC connection specification (Note 6) (With connectors on both end)
		CB-EC-PWBIO□□□-RB supplied	CB-REC-PWBIO□□□-RB supplied
0	No cable	✓ (Note 5)	✓
1 ~ 3	1 ~ 3m	✓	✓
4 ~ 5	4 ~ 5m	✓	✓
6 ~ 7	6 ~ 7m	✓	✓
8 ~ 10	8 ~ 10m	✓	✓

(Note 5) Only a terminal connector is supplied. Contact IAI for details.
 (Note 6) In case an optional RCON-EC connection specification (ACR) is selected.
 (Note) Robot cable

4-directional connector cable

Cable code	Cable length	User wiring specification (flying leads)	RCON-EC connection specification (Note 7) (With connectors on both end)
		CB-EC2-PWBIO□□□-RB supplied	CB-REC2-PWBIO□□□-RB supplied
S1 ~ S3	1 ~ 3m	✓	✓
S4 ~ S5	4 ~ 5m	✓	✓
S6 ~ S7	6 ~ 7m	✓	✓
S8 ~ S10	8 ~ 10m	✓	✓

(Note 7) In case an optional RCON-EC connection specification (ACR) is selected.
 (Note) Robot cable

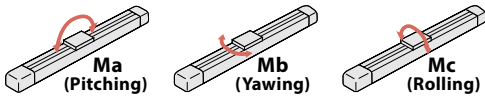
Main specifications

Item		Description				
Lead	Ball screw lead (mm)	30	20	10	5	
Horizontal	Payload	Max. payload (kg)	23	35	70	80
		Max. speed (mm/s)	1200	975	450	225
	Speed/acceleration/deceleration	Min. speed (mm/s)	38	25	13	7
		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)	2	4	25	55
		Max. speed (mm/s)	850	650	450	225
	Speed/acceleration/deceleration	Min. speed (mm/s)	38	25	13	7
		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	Max. push force (N)	78	103	235	470	
	Max. push speed (mm/s)	38	25	20	20	
Brake	Brake specification	Non-excitation actuating solenoid brake				
	Brake holding force (kgf)	2	4	25	55	
	Min. stroke (mm)	350	350	350	350	
Stroke	Max. stroke (mm)	1100	1100	1100	1100	
	Stroke pitch (mm)	50	50	50	50	

Item	Description
Driving system	Ball screw, ϕ 16mm, rolled C10
Positioning repeatability	\pm 0.05mm
Lost motion	(two-point positioning function; cannot be represented)
Base	Dedicated aluminum extruded material (A6063S5-T6 equivalent), black alumite treatment
Linear guide	Linear motion infinite circulating type
Static allowable moment	Ma: 173 N·m
	Mb: 173 N·m
	Mc: 271 N·m
Dynamic allowable moment (Note 8)	Ma: 61 N·m
	Mb: 61 N·m
	Mc: 116 N·m
Ambient operating temperature, humidity	0 - 40°C, 85%RH or less (Non-condensing)
Degree of protection	IP20
Vibration/shock resistance	4.9m/s ²
Overseas standards	CE marking, RoHS directive
Motor type	Stepper motor (\square 56SP) (Power capacity: max. 6A)
Encoder type	Incremental/battery-less absolute
Number of encoder pulses	800 pulse/rev

(Note 8) Based on the standard rated operation life of 5,000km. Operation life varies according to operating and mounting conditions. Contact IAI to confirm operational life span.

Slider type moment direction



Payload by speed and acceleration

The unit for payload is kg. If blank, operation is not possible.

Lead 30

Orientation	Horizontal						Vertical					
	Acceleration (G)						Acceleration (G)					
Speed (mm/s)	0.3	0.5	0.7	1	0.3	0.5	0.3	0.5	0.7	1	0.3	0.5
0	23	16	13	12	2	1						
200	23	16	13	12	2	1						
450	20	16	13	11	1	1						
650	18	15	12	8	1	1						
850	14	10	7	5	1	1						
1000	8	6	3	2								
1200	4	2	1									

Lead 20

Orientation	Horizontal						Vertical					
	Acceleration (G)						Acceleration (G)					
Speed (mm/s)	0.3	0.5	0.7	1	0.3	0.5	0.3	0.5	0.7	1	0.3	0.5
0	35	30	25	25	4	4						
200	35	30	25	25	4	4						
300	35	30	25	23	4	4						
400	35	30	23	20	1	1						
650	18	15	8	6	1	1						
800	10	6	2	1								
900	7	3										
975	4	1										

Lead 10

Orientation	Horizontal				Vertical			
	Acceleration (G)				Acceleration (G)			
Speed (mm/s)	0.3	0.5	0.3	0.5	0.3	0.5	0.3	0.5
0	70	70	25	25	25	25		
100	70	70	25	25	25	25		
200	65	50	20	20	20	20		
300	60	30	9	9	9	9		
400	25	15	3	2	3	2		
450	25	15	3		3			

Lead 5

Orientation	Horizontal		Vertical	
	Acceleration (G)		Acceleration (G)	
Speed (mm/s)	0.3	0.5	0.3	0.5
0	80	55	55	55
50	80	55	55	55
75	80	30	30	30
135	80	18	18	18
175	70	12	12	12
200	50	6	6	6
225	20	1	1	1

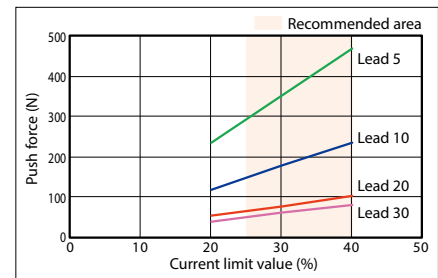
Stroke and maximum speed

Lead (mm)	350~700 (every 50mm)	750 (mm)	800 (mm)	850 (mm)	900 (mm)	950 (mm)	1000 (mm)	1050 (mm)	1100 (mm)
30	1200<850>	1160<850>	1160<850>	1040<850>	940<850>	860<850>	780	720	660
20	975<650>	880<650>	780<650>	700<650>	640	580	530	480	440
10	450	430	380	340	310	280	260	240	220
5	225	215	190	170	150	140	130	115	110

(Unit: mm/s)

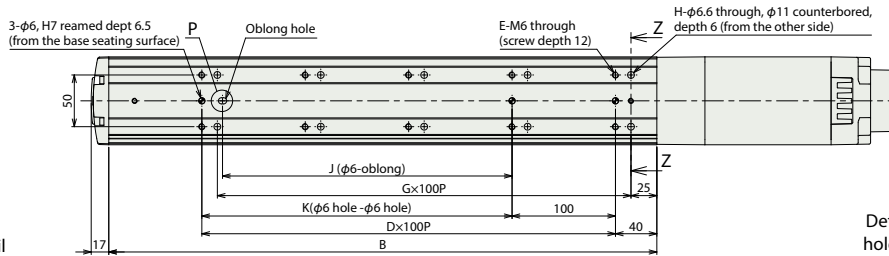
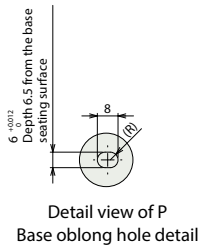
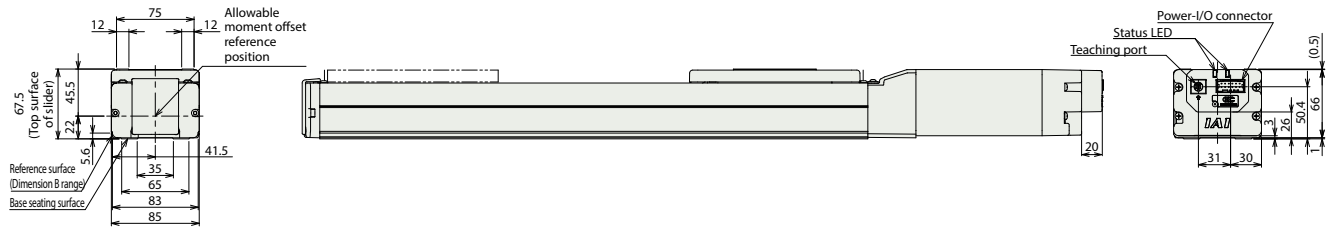
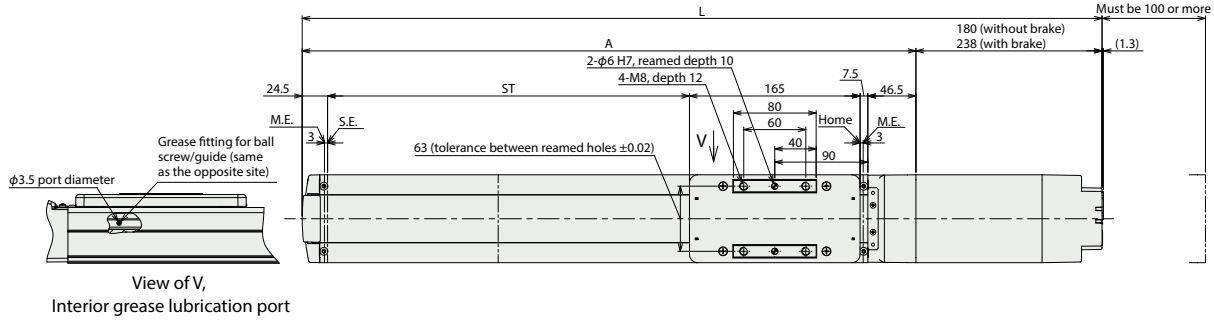
(Note) Values in brackets <> are for vertical use.

Correlation between Push force and Current Limit



(Note) When the slider is returning to its home position, be careful of interference from surrounding objects, as it will travel until it reaches the M.E.
 (Note) To mount the actuator using the through holes on the base, it is necessary to remove the side cover and stainless sheet.

ST: Stroke
 M.E.: Mechanical end
 S.E.: Stroke end



■ Dimensions by stroke

Stroke	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	
L	Without brake	773.5	823.5	873.5	923.5	973.5	1023.5	1073.5	1123.5	1173.5	1223.5	1273.5	1323.5	1373.5	1423.5	1473.5	1523.5
	With brake	831.5	881.5	931.5	981.5	1031.5	1081.5	1131.5	1181.5	1231.5	1281.5	1331.5	1381.5	1431.5	1481.5	1531.5	1581.5
A	593.5	643.5	693.5	743.5	793.5	843.5	893.5	943.5	993.5	1043.5	1093.5	1143.5	1193.5	1243.5	1293.5	1343.5	
B	530	580	630	680	730	780	830	880	930	980	1030	1080	1130	1180	1230	1280	
D	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	
E	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	
G	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	
H	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	
J	280	380	380	480	480	580	580	680	680	780	780	880	880	980	980	1080	
K	300	400	400	500	500	600	600	700	700	800	800	900	900	1000	1000	1100	

■ Mass by stroke

Stroke	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Mass (kg)	Without brake	6.4	6.7	7.0	7.3	7.6	7.9	8.2	8.5	8.8	9.1	9.4	9.7	10.0	10.3	10.6
	With brake	6.7	7.0	7.3	7.6	7.9	8.2	8.5	8.8	9.1	9.4	9.7	10.0	10.3	10.6	10.9

Main specifications (Double slider)

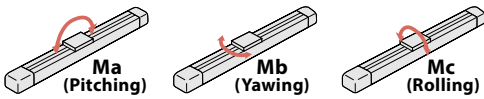
		Item	Description		
Lead	Horizontal	Ball screw lead (mm)	20	10	5
		Max. payload (kg)	35	63	73
Speed/ acceleration/ deceleration	Horizontal	Max. speed (mm/s)	800	450	225
		Min. speed (mm/s)	25	13	7
		Rated acceleration/deceleration (G)	0.3	0.3	0.3
		Max. acceleration/deceleration (G)	0.5	0.5	0.3
Vertical	Vertical	Max. payload (kg)	—	18	48
		Max. speed (mm/s)	—	300	175
		Min. speed (mm/s)	—	13	7
		Rated acceleration/deceleration (G)	—	0.3	0.3
Push	Horizontal	Max. push force (N)	103	235	470
		Max. push speed (mm/s)	25	20	20
Brake	Horizontal	Brake specification	Non-excitation actuating solenoid brake		
		Brake holding force (kgf)	4	25	55
Stroke	Horizontal	Minimum nominal stroke (mm)	350	350	350
		Minimum effective stroke (mm)	150	150	150
		Maximum nominal stroke (mm)	1100	1100	1100
		Maximum effective stroke (mm)	900	900	900
		Stroke pitch (mm)	50	50	50

(Note) Nominal stroke: Stroke specified as the model code
 Effective stroke: Actually operable stroke
 (Note) Lead 20 cannot be installed vertically.

Item	Description
Driving system	Ball screw, ϕ 16mm, rolled C10
Positioning repeatability	± 0.05 mm
Lost motion	(two-point positioning function; cannot be represented)
Base	Dedicated aluminum extruded material (A6063S5-T6 equivalent), black alumite treatment
Linear guide	Linear motion infinite circulating type
Static allowable moment	Ma: 1560 N·m
	Mb: 1560 N·m Mc: 542 N·m
Dynamic allowable moment (Note 9)	Ma: 449 N·m
	Mb: 449 N·m Mc: 188 N·m
Ambient operating temperature, humidity	0 - 40°C, 85%RH or less (Non-condensing)
Degree of protection	IP20
Vibration/shock resistance	4.9m/s ²
Overseas standards	CE marking, RoHS directive
Motor type	Stepper motor (\square 56SP) (Power capacity: max. 6A)
Encoder type	Incremental/battery-less absolute
Number of encoder pulses	800 pulse/rev

(Note 9) Based on the standard rated operation life of 5,000km. Operation life varies according to operating and mounting conditions. Contact IAI to confirm operational life span.

Slider type moment direction



Payload by speed and acceleration (double slider specification)

The unit for payload is kg. If blank, operation is not possible.

Lead 20

Orientation	Horizontal		Vertical	
	Acceleration (G)			
Speed (mm/s)	0.3	0.5	0.3	0.5
0	35	30		
200	35	30		
300	35	30		
400	28	23		
650	13	8		
800	3			

Lead 10

Orientation	Horizontal				Vertical
	Acceleration (G)				
Speed (mm/s)	0.3	0.5	0.3	0.5	
0	63	63	18	18	
100	63	63	18	18	
200	58	42	13	13	
300	53	23	2	2	
400	18	8			
450	18				

Lead 5

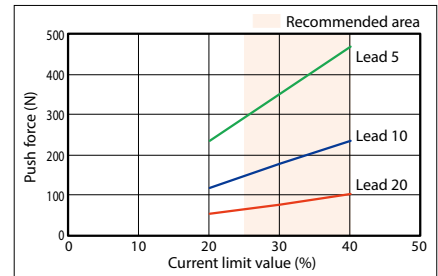
Orientation	Horizontal		Vertical
	Acceleration (G)		
Speed (mm/s)	0.3	0.3	
0	73	48	
50	73	48	
75	73	23	
135	73	11	
175	63	5	
200	43		
225	13		

Stroke and maximum speed (double slider specification)

Lead (mm)	Nominal stroke	350~700	750	800	850	900	950	1000	1050	1100
		Effective stroke (every 50mm)	550	600	650	700	750	800	850	900
20		800	780	700	640	580	530	480	440	
10		450<300>	430<300>	380<300>	340<300>	310<300>	280	260	240	220
5		225<175>	215<175>	190<175>	170	150	140	130	115	110

(Note) Values in brackets < > are for vertical use.
 (Note) Nominal stroke: Stroke specified as the model code
 Effective stroke: Actually operable stroke

Correlation between Push force and Current Limit (double slider specification)



(Note) Same values as those for the single slider specification.

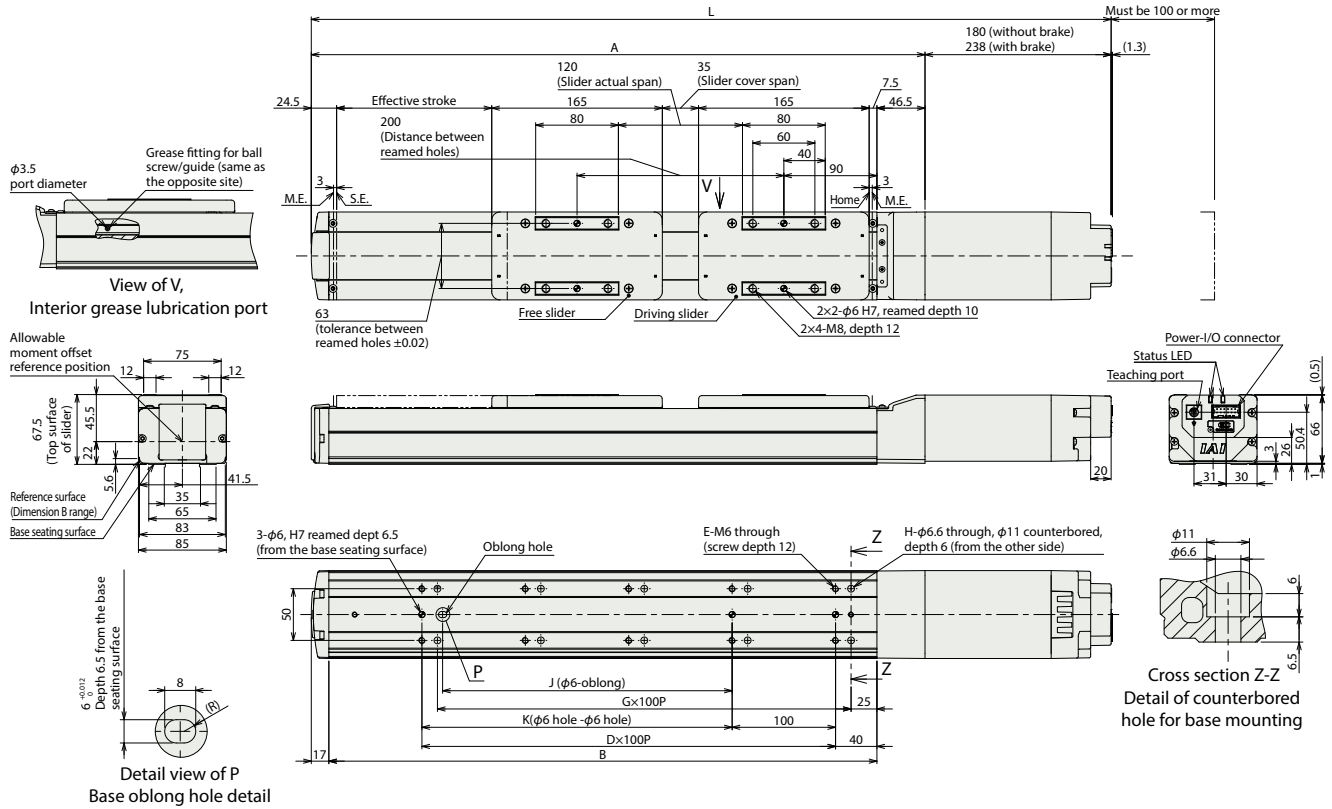
Dimensions (double slider specification)

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



(Note) When the slider is returning to its home position, be careful of interference from surrounding objects, as it will travel until it reaches the M.E.
(Note) Connect the slider at the slider cover span or distance between reamed holes as specified in the drawing.
(Note) To mount the actuator using the through holes on the base, it is necessary to remove the side cover and stainless sheet.

ST: Stroke
M.E.: Mechanical end
S.E.: Stroke end



Dimensions by stroke

Nominal stroke	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	
Effective stroke	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	
L	Without brake	773.5	823.5	873.5	923.5	973.5	1023.5	1073.5	1123.5	1173.5	1223.5	1273.5	1323.5	1373.5	1423.5	1473.5	1523.5
	With brake	831.5	881.5	931.5	981.5	1031.5	1081.5	1131.5	1181.5	1231.5	1281.5	1331.5	1381.5	1431.5	1481.5	1531.5	1581.5
A	593.5	643.5	693.5	743.5	793.5	843.5	893.5	943.5	993.5	1043.5	1093.5	1143.5	1193.5	1243.5	1293.5	1343.5	
B	530	580	630	680	730	780	830	880	930	980	1030	1080	1130	1180	1230	1280	
D	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	
E	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	
G	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	
H	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	
J	280	380	380	480	480	580	580	680	680	780	780	880	880	980	980	1080	
K	300	400	400	500	500	600	600	700	700	800	800	900	900	1000	1000	1100	

(Note) Nominal stroke: Stroke specified as the model code
Effective stroke: Actually operable stroke

Mass by stroke

Nominal stroke	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	
Effective stroke	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	
Mass (kg)	Without brake	7.19	7.49	7.79	8.09	8.39	8.69	8.99	9.29	9.59	9.89	10.19	10.49	10.79	11.09	11.39	11.69
	With brake	7.49	7.79	8.09	8.39	8.69	8.99	9.29	9.59	9.89	10.19	10.49	10.79	11.09	11.39	11.69	11.99

(Note) The mass is added by 0.79 kg of the free slider to the single slider specification.

Applicable controller

(Note) The EC series is equipped with a built-in controller. Contact IAI for more details about the built-in controller.