IAI
Quality and Innovation

EC-S18
EC-S18X

ELECYLINDER®
Ultra Large Slider Type

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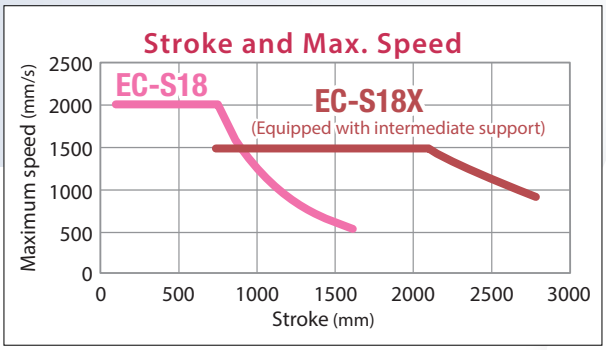
2-point positioning | Built-in controller

ELECYLINDER®EC-S18 / S18X
Ultra Large Slider Type

1 Long
Maximum stroke 2800mm

It can now move farther than before.



2 Fast
Maximum speed 2000mm/s

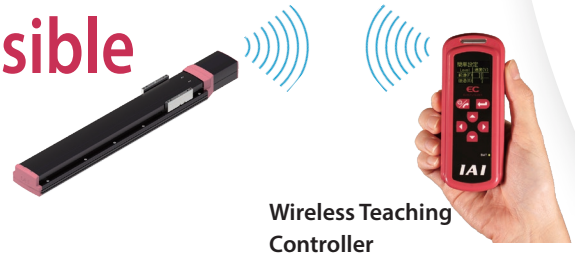
Models with intermediate support are also available, enabling high-speed operation even with long strokes.

3 High payload
Max. payload (Horizontal) 400kg (Vertical) 80kg

The increased payload capacity allows for even heavier workloads to be carried.

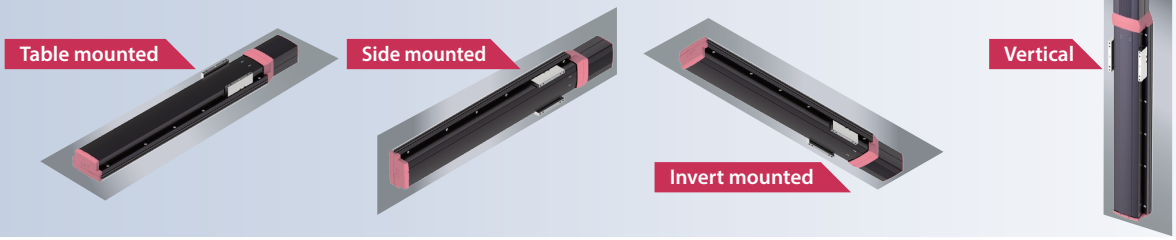
4 Wireless operation possible
Wireless teaching support

Easy setup even if the actuator is out of reach.



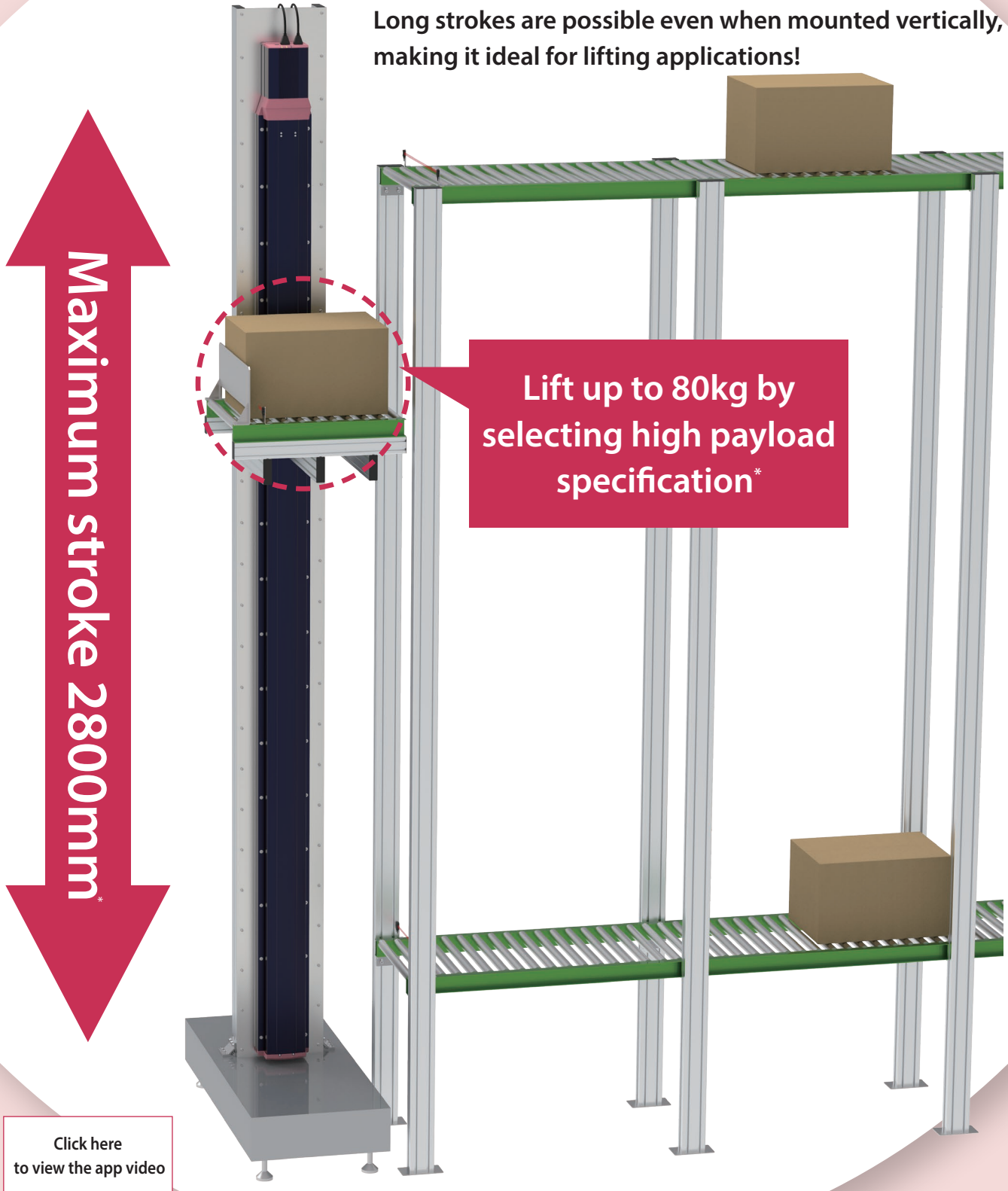
Wireless Teaching Controller

5 Vertical mounting possible
Ball screw support mechanism for any installation position



Powerful with long strokes!

Long strokes are possible even when mounted vertically, making it ideal for lifting applications!



Click here to view the app video

*The maximum stroke with the high payload specification is 2200mm. The maximum payload for the standard specification is 60kg.

Model Specification Items

ELECYLINDER®

EC – [Type] [Lead] ([Specification]) – [Stroke*] – [Power · I/O cable length] – [Motor power cable length] – ([Options])

Series

Type

S18	Ultra Large slider Base width 188mm wide
S18X	Ultra Large slider Base width 188mm wide (with intermediate support)

Lead

<S18 / S18X>

L	Lead 10mm
M	Lead 20mm
H	Lead 40mm

<S18 / S18X High payload specification>

L	Lead 10mm

Specification

Left blank	Standard specification
P	High payload specification

Stroke*

100	100mm
≀	≀
2800	2800mm

(every 50mm)

Power · I/O cable length

0	Without cable Power · I/O connector included (Note)
1	1m
≀	≀
10	10m

(Note) When the ACR option (RCON-EC connection specification) is selected, the connector is not included.

Motor power cable length

0	Without cable
1	1m
≀	≀
10	10m

Options

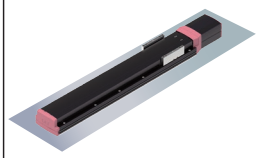
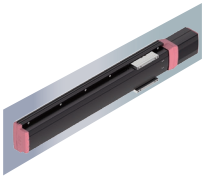
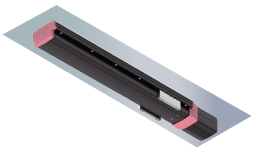
Left blank	NPN specification, no options
ACR	RCON-EC connection specification *1
B	Brake
EB	Suspension bracket
G5	Designated grease specification
NM	Non-motor end specification
PN	PNP specification *1
TMD2	Power supply 2 system specification *1
W	Double slider specification
WL	Wireless communication specification
WL2	Wireless axis operation specification

*1 "PN" and "TMD2" cannot be selected when "ACR" is selected.

*The stroke range varies depending on the individual actuator. Please refer to the specific actuator specs sheets for details.

Mounting Precautions

○: Can be mounted ×: Cannot be mounted

		Mounting Orientation			
					
Series	Type	Table mounted	Side mounted	Invert mounted	Vertical mounted
EC	S18	○	○*1	○	○*2 *3
	S18X				

*1 If the actuator is side mounted, oil that has separated from the grease may drip out from the openings on the side of the actuator. Additionally, parts or debris may fall into the actuator. Please install protective parts if necessary.

*2 When mounting vertically, make sure to install the motor on the top. If the motor is installed on the bottom, and the actuator is stopped for a long period of time, the grease may separate, and the oil may flow from the base into the motor section, causing the controller, motor, or encoder to fail.

*3 When the motor is installed on top, make sure to put a cover over the teaching port, or else dust or other foreign matter may clog the port, causing malfunctions.

● Keep the body installation surface and workpiece mounting surface flatness within 0.05mm/m.
An uneven surface will increase the sliding resistance of the slider and may cause operation failure.

Specification Tables

Variety	Type	Lead		Stroke (mm) and max speed (mm/s)																			Max. payload (kg)		Reference page
		Model	mm	*Length of band = Stroke; *Numbers in band = Maximum speed by stroke																			Horizontal	Vertical	
				100~750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600				
Ultra large slider type	S18	H-	40	2000	1811	1640	1492	1364	1251	1152	1064	986	916	853	797	746	699	657	619	584	551		60	14	P.5
		M-	20	1000	905	820	746	682	626	576	532	493	458	427	398	373	350	329	309	292	276		120	29	
		L-	10	500	453	410	373	341	313	288	266	246	229	213	199	186	175	164	155	146	138		150	60	
	S18 (High payload specification)	LP-	10	500	453	410	373	341	313	288	266	246	229	213	199	186	175	164	155	146	138		400	80	P.9
				750~1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800			
Ultra large slider type (with intermediate support)	S18X	H-	40	1500								1446	1393	1343	1295	1250	1207	1167	1128	1091	1056	1023	991	961	932	60	14	P.13
		M-	20	1000	960	920	882	846	813	781	751	723	697	671	648	625	604	583	564	546	528	512	496	480	466	120	29	
		L-	10	500	480	460	441	423	406	391	376	362	348	336	324	313	302	292	282	273	264	256	248	240	233	150	60	
	S18X (High payload specification)	LP-	10	500	480	460	441	423	406	391	376	362	348													400	80	P.17

EC-S18

±10μm Standard | Battery-less Absolute | Coupled Motor | Body Width 190 mm | 200V AC Servo Motor

Model Specification Items

EC	-	S18		-		-		-		-	
Series	-	Type	Lead	-	Stroke	-	Power · I/O cable length	-	Motor power cable length	-	Options
			H 40mm M 20mm L 10mm		100 100mm ≀ ≀ 1600 1600mm (every 50mm)		See cable length below		0 Without cable 1 1m ≀ ≀ 10 10m		Refer to options below

CE RoHS 10

Horizontal | Vertical | Side | Ceiling

Stroke

Stroke (mm)	EC-S18	Stroke (mm)	EC-S18
100	○	**900**	○
150	○	**950**	○
200	○	**1000**	○
250	○	**1050**	○
300	○	**1100**	○
350	○	**1150**	○
400	○	**1200**	○
450	○	**1250**	○
500	○	**1300**	○
550	○	**1350**	○
600	○	**1400**	○
650	○	**1450**	○
700	○	**1500**	○
750	○	**1550**	○
800	○	**1600**	○
850	○		

Selection Notes

(1) Longer strokes may cause the maximum speed to decrease due to the critical resonance speed of the ball screw. Be sure to check the maximum speed of the desired stroke in "Stroke and Max. Speed".

(2) "Main Specifications" displays the payload's maximum value. For details, please see "Table of Payload by Speed/Acceleration".

(3) Push-motion operations cannot be performed.

(4) A "PSA-200" DC power supply is required for motor drive operation. One "PSA-200" can connect up to 6 axes. See page 28 for details.

(5) The standard usable duty ratio varies depending on the operating conditions (payload, acceleration/deceleration speed). Please refer to P. 22 for details.

(6) Pay close attention to the mounting orientation. Please refer to P. 4 for details.

(7) The standard overhang load length is 900mm or less in the Ma / Mb / Mc directions (1290mm or less when double sliders are used). For overhang load lengths, please refer to the description in the 2022 General Catalog.

Options * Please check the Options reference pages to confirm each option.

Name	Option code	Reference page
RCON-EC connection specification (Note 1)	**ACR**	21
Brake	**B**	21
Suspension bracket	**EB**	21
Designated grease specification	**G5**	21
Non-motor end specification	**NM**	21
PNP specification (Note 1)	**PN**	21
Split motor and controller power (Note 1)	**TMD2**	21
Double Slider specification (Note 2)	**W**	21
Wireless communication specification	**WL**	21
Wireless axis operation specification	**WL2**	21

(Note 1) If the RCON-EC connection specification (ACR) is selected, the PNP specification (PN) and split motor and controller power supply specification (TMD2) cannot be selected.

(Note 2) When the double slider specification (W) is selected, payload, dimensions, and main unit weight will change. See pages 6 and 8 for details.

Power · I/O Cable Length

Cable code	Cable length	User wiring specification (flying leads)	RCON-EC connection specification (Note 4) (with connectors on both ends)
		CB-EC-PWBIO□□□-RB supplied	CB-REC-PWBIO□□□-RB supplied
0	Without cable	○(Note 3)	○
1~3	1~3m	○	○
4~5	4~5m	○	○
6~7	6~7m	○	○
8~10	8~10m	○	○

(Note 3) Only terminal block connector is included. Please refer to P. 27 for details.

(Note 4) If RCON-EC connection specification (ACR) is selected as an option.

(Note) The robot cable is standard.

Motor Power Cable Length

Cable code	Cable length	Standard price
		CB-EC-PW□□□-RB included
0	Without cable	○
1~3	1~3m	○
4~5	4~5m	○
6~10	6~10m	○

(Note) The robot cable is standard.

Main Specifications

Item			Description		
Lead		Ball screw lead (mm)	40	20	10
Horizontal	Payload	Max. payload (kg) (Note 5)	60	120	150
	Speed / acceleration/ deceleration	Max. speed (mm/s)	2000	1000	500
		Rated acceleration/deceleration (G)	0.3	0.3	0.3
		Max. acceleration/deceleration (G)	1	1	0.7
Vertical	Payload	Max. payload (kg) (Note 5)	14	29	60
	Speed / acceleration/ deceleration	Max. speed (mm/s)	2000	1000	500
		Rated acceleration/deceleration (G)	0.3	0.3	0.3
		Max. acceleration/deceleration (G)	0.7	0.7	0.5
Thrust		Rated thrust (N)	255	510	1020
Brake		Brake specification	Non-excitation actuating solenoid brake		
		Brake holding force (kgf)	14	29	60
Stroke		Min. stroke (mm)	100	100	100
		Max. stroke (mm)	1600	1600	1600
		Stroke pitch (mm)	50	50	50

(Note 5) When double slider specification (W) is selected, the maximum payload capacity is reduced. See the table below for details.

Item	Description
Drive system	Ball screw ϕ20mm rolled C10 equivalent
Positioning repeatability	±0.01mm
Lost motion	- (notation not available due to 2-point positioning function)
Base	Exclusive aluminum extrusion material (A6063SS-T6 equivalent) Black alumite treated
Linear guide	Linear motion infinite circulating type
Allowable static moment (Note 6)	Ma: 1030 N·m [5730 N·m]
	Mb: 1030 N·m [5730 N·m]
	Mc: 2510 N·m [5030 N·m]
Allowable dynamic moment (Note 6) (Note 7)	Ma: 214 N·m [962 N·m]
	Mb: 214 N·m [962 N·m]
	Mc: 520 N·m [845 N·m]
Ambient operating temperature, humidity	0~40°C, 85% RH or less (no condensation)
Ingress protection	-
Vibration & shock resistance	4.9m/s^2
Overseas standards	CE marking, RoHS directive
Motor type	AC servo motor (200V)
Motor wattage	600W
Encoder type	Battery-less absolute
Number of encoder pulses	16384 pulse/rev

(Note 6) Values in [ ] are the values when the double slider specification (W) is selected.
(Note 7) Based on the standard rated operation life of 10,000km. Operation life varies according to operating and mounting conditions. Please refer to the 2022 General Catalog (P.1-236) for details on operation life.

Slider Type Moment Direction

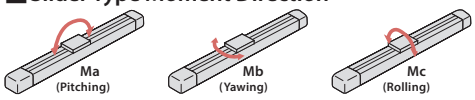


Table of Payload by Speed/Acceleration

Payload is in kg.

Lead 40

Orientation	Horizontal				Vertical		
Speed	Acceleration (G)						
(mm/s)	0.3	0.5	0.7	1.0	0.3	0.5	0.7
0	60	36	26	18	14	10	6.7
2000	60	36	26	18	14	10	6.7

Lead 20

Orientation	Horizontal				Vertical		
Speed	Acceleration (G)						
(mm/s)	0.3	0.5	0.7	1.0	0.3	0.5	0.7
0	120	72	52	31	29	23	17.5
1000	120	72	52	31	29	23	17.5

Lead 10

Orientation	Horizontal			Vertical	
Speed	Acceleration (G)				
(mm/s)	0.3	0.5	0.7	0.3	0.5
0	150	90	45	60	40
500	150	90	45	60	40

Table of Payload by Speed/Acceleration (Double Slider Specification)

Payload is in kg.

Lead 40

Orientation	Horizontal				Vertical		
Speed	Acceleration (G)						
(mm/s)	0.3	0.5	0.7	1.0	0.3	0.5	0.7
0	56	32	22	14	10	6	2.7
2000	56	32	22	14	10	6	2.7

Lead 20

Orientation	Horizontal				Vertical		
Speed	Acceleration (G)						
(mm/s)	0.3	0.5	0.7	1.0	0.3	0.5	0.7
0	116	68	48	27	25	19	13.5
1000	116	68	48	27	25	19	13.5

Lead 10

Orientation	Horizontal			Vertical	
Speed	Acceleration (G)				
(mm/s)	0.3	0.5	0.7	0.3	0.5
0	146	86	41	56	36
500	146	86	41	56	36

Stroke and Max. Speed

Stroke / Lead (mm)	100 to 750 (every 50mm)	800 (mm)	850 (mm)	900 (mm)	950 (mm)	1000 (mm)	1050 (mm)	1100 (mm)	1150 (mm)	1200 (mm)	1250 (mm)	1300 (mm)	1350 (mm)	1400 (mm)	1450 (mm)	1500 (mm)	1550 (mm)	1600 (mm)
40	2000	1811	1640	1492	1364	1251	1152	1064	986	916	853	797	746	699	657	619	584	551
20	1000	905	820	746	682	626	576	532	493	458	427	398	373	350	329	309	292	276
10	500	453	410	373	341	313	288	266	246	229	213	199	186	175	164	155	146	138

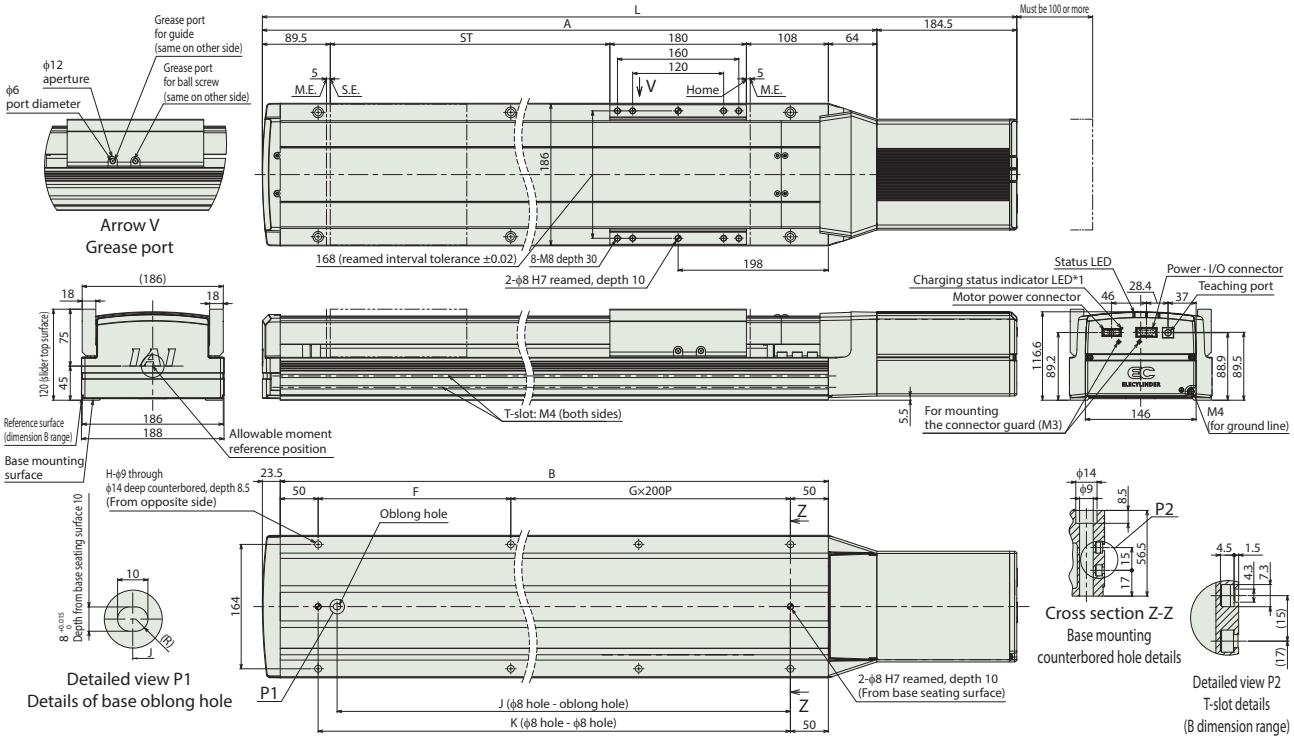
(Unit: mm/s)

Dimensions

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

*1 While the charge status indicator LED is on, the inside of the controller is charged. To prevent electric shock, wiring and inspection work should be performed after the power is shut off and after confirming that the LEDs are turned off.
(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.

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



Dimensions by Stroke

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850
L	726	776	826	876	926	976	1026	1076	1126	1176	1226	1276	1326	1376	1426	1476
A	541.5	591.5	641.5	691.5	741.5	791.5	841.5	891.5	941.5	991.5	1041.5	1091.5	1141.5	1191.5	1241.5	1291.5
B	454	504	554	604	654	704	754	804	854	904	954	1004	1054	1104	1154	1204
F	354	204	254	104	154	204	254	104	154	204	254	104	154	204	254	104
G	0	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5
H	4	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14
J	329	379	429	479	529	579	629	679	729	779	829	879	929	979	1029	1079
K	354	404	454	504	554	604	654	704	754	804	854	904	954	1004	1054	1104

Stroke	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600
L	1526	1576	1626	1676	1726	1776	1826	1876	1926	1976	2026	2076	2126	2176	2226
A	1341.5	1391.5	1441.5	1491.5	1541.5	1591.5	1641.5	1691.5	1741.5	1791.5	1841.5	1891.5	1941.5	1991.5	2041.5
B	1254	1304	1354	1404	1454	1504	1554	1604	1654	1704	1754	1804	1854	1904	1954
F	154	204	254	104	154	204	254	104	154	204	254	104	154	204	254
G	5	5	5	6	6	6	6	7	7	7	7	8	8	8	8
H	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20
J	1129	1179	1229	1279	1329	1379	1429	1479	1529	1579	1629	1679	1729	1779	1829
K	1154	1204	1254	1304	1354	1404	1454	1504	1554	1604	1654	1704	1754	1804	1854

Mass by Stroke

Stroke		100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850
Mass (kg)	Without brake	18.3	19.0	19.8	20.6	21.3	22.1	22.9	23.7	24.4	25.2	26.0	26.7	27.5	28.3	29.0	29.8
	With brake	18.9	19.6	20.4	21.2	21.9	22.7	23.5	24.2	25.0	25.8	26.5	27.3	28.1	28.8	29.6	30.4

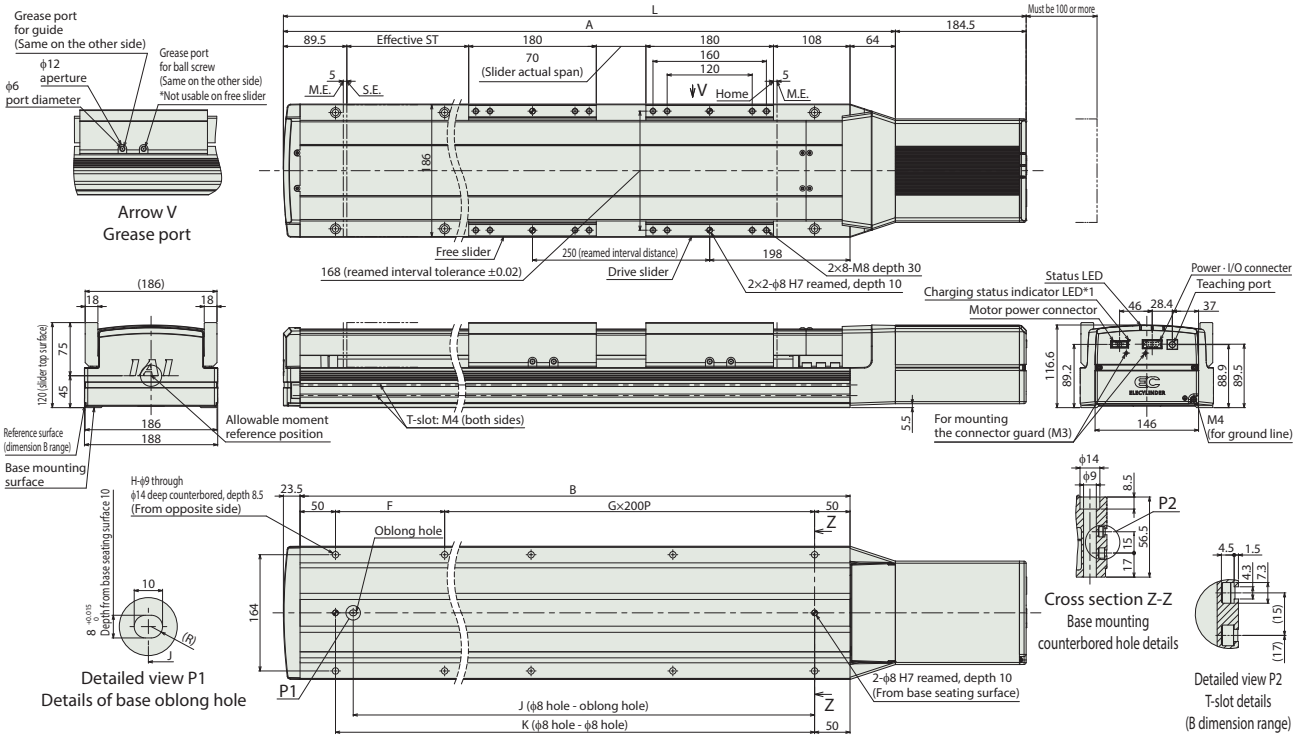
Stroke		900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600
Mass (kg)	Without brake	30.6	31.3	32.1	32.9	33.6	34.4	35.2	35.9	36.7	37.5	38.2	39.0	39.8	40.6	41.3
	With brake	31.1	31.9	32.7	33.4	34.2	35.0	35.8	36.5	37.3	38.1	38.8	39.6	40.4	41.1	41.9

Dimensions (double slider specification)

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

*1 While the charge status indicator LED is on, the inside of the controller is charged. To prevent electric shock, wiring and inspection work should be performed after the power is shut off and after confirming that the LEDs are turned off.
(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.

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



Dimensions by Stroke

Nominal stroke	400	450	500	550	600	650	700	750	800	850	900	950	1000
Effective stroke	150	200	250	300	350	400	450	500	550	600	650	700	750
L	1026	1076	1126	1176	1226	1276	1326	1376	1426	1476	1526	1576	1626
A	841.5	891.5	941.5	991.5	1041.5	1091.5	1141.5	1191.5	1241.5	1291.5	1341.5	1391.5	1441.5
B	754	804	854	904	954	1004	1054	1104	1154	1204	1254	1304	1354
F	254	104	154	204	254	104	154	204	254	104	154	204	254
G	2	3	3	3	3	4	4	4	4	5	5	5	5
H	8	10	10	10	10	12	12	12	12	14	14	14	14
J	629	679	729	779	829	879	929	979	1029	1079	1129	1179	1229
K	654	704	754	804	854	904	954	1004	1054	1104	1154	1204	1254

Nominal stroke	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600
Effective stroke	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350
L	1676	1726	1776	1826	1876	1926	1976	2026	2076	2126	2176	2226
A	1491.5	1541.5	1591.5	1641.5	1691.5	1741.5	1791.5	1841.5	1891.5	1941.5	1991.5	2041.5
B	1404	1454	1504	1554	1604	1654	1704	1754	1804	1854	1904	1954
F	104	154	204	254	104	154	204	254	104	154	204	254
G	6	6	6	6	7	7	7	7	8	8	8	8
H	16	16	16	16	18	18	18	18	20	20	20	20
J	1279	1329	1379	1429	1479	1529	1579	1629	1679	1729	1779	1829
K	1304	1354	1404	1454	1504	1554	1604	1654	1704	1754	1804	1854

(Note) Nominal stroke: Stroke listed in the model number (actuator frame/body size)
Effective stroke: Actual available traveling distance.

Mass by Stroke

Nominal stroke		400	450	500	550	600	650	700	750	800	850	900	950	1000
Effective stroke		150	200	250	300	350	400	450	500	550	600	650	700	750
Mass (kg)	Without brake	26.9	27.7	28.4	29.2	30.0	30.7	31.5	32.3	33.0	33.8	34.6	35.3	36.1
	With brake	27.5	28.2	29.0	29.8	30.5	31.3	32.1	32.8	33.6	34.4	35.1	35.9	36.7

Nominal stroke		1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600
Effective stroke		800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350
Mass (kg)	Without brake	36.9	37.6	38.4	39.2	39.9	40.7	41.5	42.2	43.0	43.8	44.6	45.3
	With brake	37.4	38.2	39.0	39.8	40.5	41.3	42.1	42.8	43.6	44.4	45.1	45.9

(Note) Mass of single slider specification plus 4kg free slider.

Applicable Controllers

(Note) EC Series products are equipped with a built-in controller. Please refer to P. 26 for details on built-in controllers.
For ELECYLINDERs driven by 200V, a dedicated DC power supply "PSA-200" for the motor drive is required. See page 28 for details on the "PSA-200".

EC-S18LP

<High payload specification>

±10μm Standard | Battery-less Absolute | Coupled Motor | Body Width 190 mm | 200V AC Servo Motor

Model Specification Items

EC - S18 L P - [ ] - [ ] - [ ] - [ ]

Series	Type	Lead	Specification	Stroke	Power · I/O cable length	Motor power cable length	Options
EC	S18	L: 10mm	P: High payload specification	100: 100mm ~ 1600: 1600mm (every 50mm)	See cable length below	0: Without cable 1: 1m ~ 10: 10m	Refer to options below

CE RoHS 10

Horizontal | Vertical | Side | Ceiling

Stroke

Stroke (mm)	EC-S18LP	Stroke (mm)	EC-S18LP
100	○	**900**	○
150	○	**950**	○
200	○	**1000**	○
250	○	**1050**	○
300	○	**1100**	○
350	○	**1150**	○
400	○	**1200**	○
450	○	**1250**	○
500	○	**1300**	○
550	○	**1350**	○
600	○	**1400**	○
650	○	**1450**	○
700	○	**1500**	○
750	○	**1550**	○
800	○	**1600**	○
850	○		

Selection Notes

(1) Longer strokes may cause the maximum speed to decrease due to the critical resonance speed of the ball screw. Be sure to check the maximum speed of the desired stroke in "Stroke and Max. Speed".

(2) "Main Specifications" displays the payload's maximum value. For details, please see "Table of Payload by Speed/Acceleration".

(3) Push-motion operations cannot be performed.

(4) A "PSA-200" DC power supply is required for motor drive operation. One "PSA-200" can connect up to 6 axes. See page 28 for details.

(5) The standard usable duty ratio varies depending on the operating conditions (payload, acceleration/deceleration speed). Please refer to P. 22 for details.

(6) Pay close attention to the mounting orientation. Please refer to P. 4 for details.

(7) The standard overhang load length is 900mm or less in the Ma / Mb / Mc directions (1290mm or less when double sliders are used). For overhang load lengths, please refer to the description in the General 2022 General Catalog.

Options * Please check the Options reference pages to confirm each option.

Name	Option code	Reference page
RCON-EC connection specification (Note 1)	**ACR**	21
Brake	**B**	21
Suspension bracket	**EB**	21
Designated grease specification	**G5**	21
Non-motor end specification	**NM**	21
PNP specification (Note 1)	**PN**	21
Split motor and controller power (Note 1)	**TMD2**	21
Double Slider specification (Note 2)	**W**	21
Wireless communication specification	**WL**	21
Wireless axis operation specification	**WL2**	21

(Note 1) If the RCON-EC connection specification (ACR) is selected, the PNP specification (PN) and split motor and controller power supply specification (TMD2) cannot be selected.

(Note 2) When the double slider specification (W) is selected, payload, dimensions, and the main unit weight will change. See pages 10 and 12 for details.

Power · I/O Cable Length

Cable code	Cable length	User wiring specification (flying leads)	RCON-EC connection specification (Note 4) (with connectors on both ends)
		CB-EC-PWBIO□□□-RB supplied	CB-REC-PWBIO□□□-RB supplied
0	Without cable	○(Note 3)	○
1~3	1~3m	○	○
4~5	4~5m	○	○
6~7	6~7m	○	○
8~10	8~10m	○	○

(Note 3) Only terminal block connector is included. Please refer to P. 27 for details.

(Note 4) If RCON-EC connection specification (ACR) is selected as an option.

(Note) The robot cable is standard.

Motor Power Cable Length

Cable code	Cable length	Standard price
		CB-EC-PW□□□-RB included
0	Without cable	○
1~3	1~3m	○
4~5	4~5m	○
6~10	6~10m	○

(Note) The robot cable is standard.

Main Specifications

Item			Description
Lead		Ball screw lead (mm)	10
Horizontal	Payload	Max. payload (kg) (Note 5)	400
	Speed / acceleration/ deceleration	Max. speed (mm/s)	500
		Rated acceleration/deceleration (G)	0.3
		Max. acceleration/deceleration (G)	0.7
Vertical	Payload	Max. payload (kg) (Note 5)	80
	Speed / acceleration/ deceleration	Max. speed (mm/s)	500
		Rated acceleration/deceleration (G)	0.3
		Max. acceleration/deceleration (G)	0.5
Thrust		Rated thrust (N)	1276
Brake		Brake specification	Non-excitation actuating solenoid brake
		Brake holding force (kgf)	80
Stroke		Min. stroke (mm)	100
		Max. stroke (mm)	1600
		Stroke pitch (mm)	50

(Note 5) When double slider specification (W) is selected, the maximum payload capacity is reduced. See the table below for details.

Item	Description
Drive system	Ball screw ϕ20mm rolled C5 equivalent
Positioning repeatability	±0.01mm
Lost motion	- (notation not available due to 2-point positioning function)
Base	Exclusive aluminum extrusion material (A6063SS-T6 equivalent) Black alumite treated
Linear guide	Linear motion infinite circulating type
Allowable static moment (Note 6)	Ma: 1030 N·m [5730 N·m]
	Mb: 1030 N·m [5730 N·m]
	Mc: 2510 N·m [5030 N·m]
Allowable dynamic moment (Note 6) (Note 7)	Ma: 214 N·m [962 N·m]
	Mb: 214 N·m [962 N·m]
	Mc: 520 N·m [845 N·m]
Ambient operating temperature, humidity	0~40°C, 85% RH or less (no condensation)
Ingress protection	-
Vibration & shock resistance	4.9m/s^2
Overseas standards	CE marking, RoHS directive
Motor type	AC servo motor (200V)
Motor wattage	750W
Encoder type	Battery-less absolute
Number of encoder pulses	16384 pulse/rev

(Note 6) Values in [ ] are the values when the double slider specification (W) is selected.
(Note 7) Based on the standard rated operation life of 10,000km. Operation life varies according to operating and mounting conditions. Please refer to the 2022 General Catalog (P.1-236) for details on operation life.

Slider Type Moment Direction

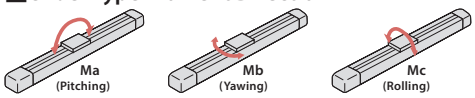


Table of Payload by Speed/Acceleration

Payload is in kg.

Lead 10

Orientation	Horizontal				Vertical		
Speed	Acceleration (G)						
(mm/s)	0.2	0.3	0.5	0.7	0.2	0.3	0.5
0	400	265	160	95	80	80	64
500	400	265	160	95	80	80	64

Table of Payload by Speed/Acceleration (Double Slider Specification)

Payload is in kg.

Lead 10

Orientation	Horizontal				Vertical		
Speed	Acceleration (G)						
(mm/s)	0.2	0.3	0.5	0.7	0.2	0.3	0.5
0	396	261	156	91	76	76	60
500	396	261	156	91	76	76	60

Stroke and Max. Speed

Stroke / Lead (mm)	100 to 750 (every 50mm)	800 (mm)	850 (mm)	900 (mm)	950 (mm)	1000 (mm)	1050 (mm)	1100 (mm)	1150 (mm)	1200 (mm)	1250 (mm)	1300 (mm)	1350 (mm)	1400 (mm)	1450 (mm)	1500 (mm)	1550 (mm)	1600 (mm)
10	500	453	410	373	341	313	288	266	246	229	213	199	186	175	164	155	146	138

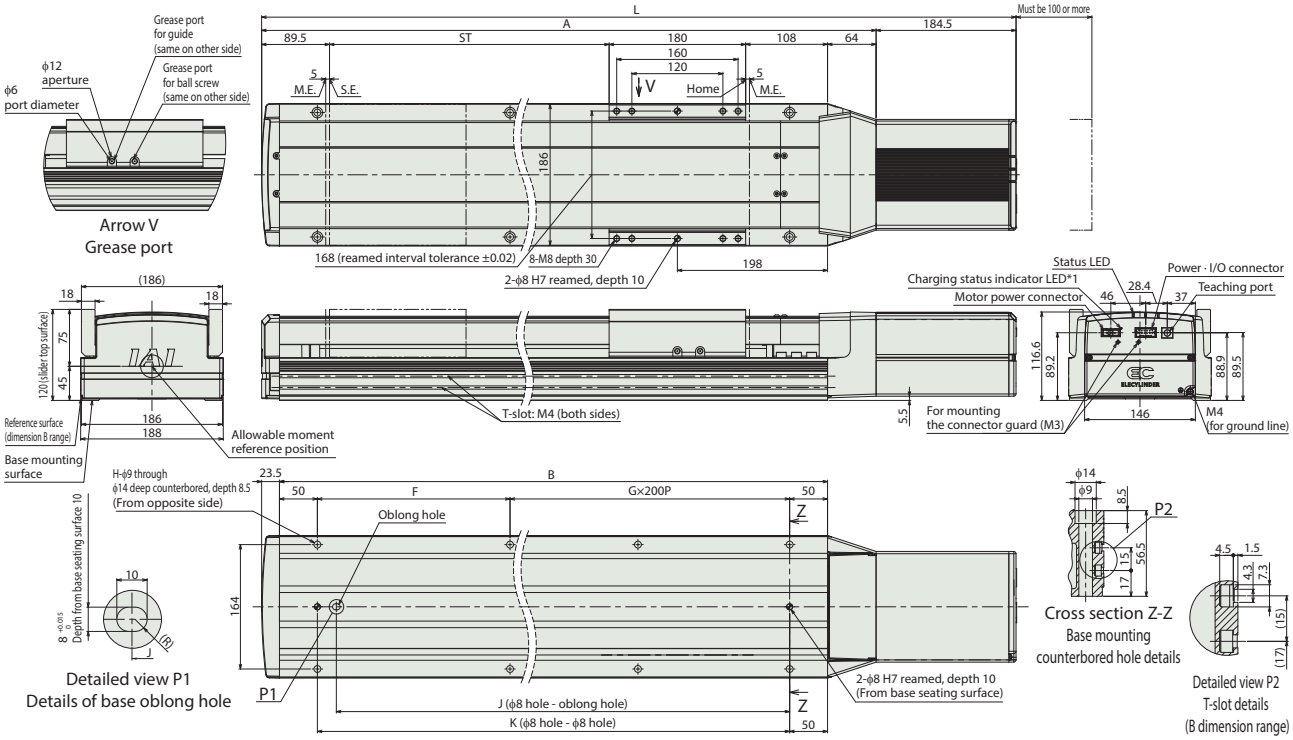
(Unit: mm/s)

Dimensions

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

*1 While the charge status indicator LED is on, the inside of the controller is charged. To prevent electric shock, wiring and inspection work should be performed after the power is shut off and after confirming that the LEDs are turned off.
(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.

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



Dimensions by Stroke

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850
L	726	776	826	876	926	976	1026	1076	1126	1176	1226	1276	1326	1376	1426	1476
A	541.5	591.5	641.5	691.5	741.5	791.5	841.5	891.5	941.5	991.5	1041.5	1091.5	1141.5	1191.5	1241.5	1291.5
B	454	504	554	604	654	704	754	804	854	904	954	1004	1054	1104	1154	1204
F	354	204	254	104	154	204	254	104	154	204	254	104	154	204	254	104
G	0	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5
H	4	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14
J	329	379	429	479	529	579	629	679	729	779	829	879	929	979	1029	1079
K	354	404	454	504	554	604	654	704	754	804	854	904	954	1004	1054	1104

Stroke	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600
L	1526	1576	1626	1676	1726	1776	1826	1876	1926	1976	2026	2076	2126	2176	2226
A	1341.5	1391.5	1441.5	1491.5	1541.5	1591.5	1641.5	1691.5	1741.5	1791.5	1841.5	1891.5	1941.5	1991.5	2041.5
B	1254	1304	1354	1404	1454	1504	1554	1604	1654	1704	1754	1804	1854	1904	1954
F	154	204	254	104	154	204	254	104	154	204	254	104	154	204	254
G	5	5	5	6	6	6	6	7	7	7	7	8	8	8	8
H	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20
J	1129	1179	1229	1279	1329	1379	1429	1479	1529	1579	1629	1679	1729	1779	1829
K	1154	1204	1254	1304	1354	1404	1454	1504	1554	1604	1654	1704	1754	1804	1854

Mass by Stroke

Stroke		100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850
Mass (kg)	Without brake	18.6	19.3	20.1	20.9	21.6	22.4	23.2	24.0	24.7	25.5	26.3	27.0	27.8	28.6	29.3	30.1
	With brake	19.2	19.9	20.7	21.5	22.2	23.0	23.8	24.5	25.3	26.1	26.8	27.6	28.4	29.1	29.9	30.7

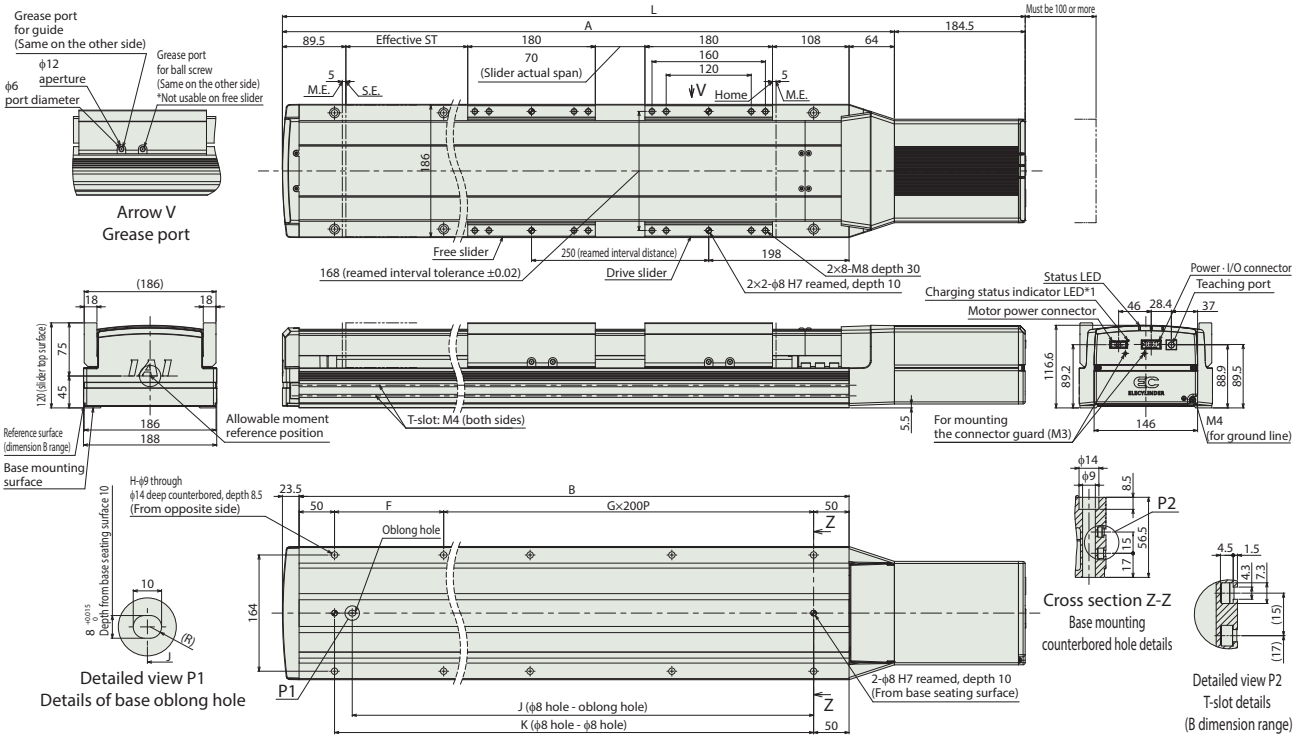
Stroke		900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600
Mass (kg)	Without brake	30.9	31.6	32.4	33.2	33.9	34.7	35.5	36.2	37.0	37.8	38.5	39.3	40.1	40.9	41.6
	With brake	31.4	32.2	33.0	33.7	34.5	35.3	36.1	36.8	37.6	38.4	39.1	39.9	40.7	41.4	42.2

Dimensions (double slider specification)

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

*1 While the charge status indicator LED is on, the inside of the controller is charged. To prevent electric shock, wiring and inspection work should be performed after the power is shut off and after confirming that the LEDs are turned off.
(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.

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



Dimensions by Stroke

Nominal stroke	400	450	500	550	600	650	700	750	800	850	900	950	1000
Effective stroke	150	200	250	300	350	400	450	500	550	600	650	700	750
L	1026	1076	1126	1176	1226	1276	1326	1376	1426	1476	1526	1576	1626
A	841.5	891.5	941.5	991.5	1041.5	1091.5	1141.5	1191.5	1241.5	1291.5	1341.5	1391.5	1441.5
B	754	804	854	904	954	1004	1054	1104	1154	1204	1254	1304	1354
F	254	104	154	204	254	104	154	204	254	104	154	204	254
G	2	3	3	3	3	4	4	4	4	5	5	5	5
H	8	10	10	10	10	12	12	12	12	14	14	14	14
J	629	679	729	779	829	879	929	979	1029	1079	1129	1179	1229
K	654	704	754	804	854	904	954	1004	1054	1104	1154	1204	1254

Nominal stroke	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600
Effective stroke	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350
L	1726	1776	1826	1876	1926	1976	2026	2076	2126	2176	2226
A	1541.5	1591.5	1641.5	1691.5	1741.5	1791.5	1841.5	1891.5	1941.5	1991.5	2041.5
B	1454	1504	1554	1604	1654	1704	1754	1804	1854	1904	1954
F	154	204	254	104	154	204	254	104	154	204	254
G	6	6	6	7	7	7	7	8	8	8	8
H	16	16	16	18	18	18	18	20	20	20	20
J	1329	1379	1429	1479	1529	1579	1629	1679	1729	1779	1829
K	1354	1404	1454	1504	1554	1604	1654	1704	1754	1804	1854

(Note) Nominal stroke: Stroke listed in the model number (actuator frame/body size)
Effective stroke: Actual available traveling distance

Mass by Stroke

Nominal stroke		400	450	500	550	600	650	700	750	800	850	900	950	1000
Effective stroke		150	200	250	300	350	400	450	500	550	600	650	700	750
Mass (kg)	Without brake	27.2	28.0	28.7	29.5	30.3	31.0	31.8	32.6	33.3	34.1	34.9	35.6	36.4
	With brake	27.8	28.5	29.3	30.1	30.8	31.6	32.4	33.1	33.9	34.7	35.4	36.2	37.0

Nominal stroke		1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600
Effective stroke		800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350
Mass (kg)	Without brake	37.2	37.9	38.7	39.5	40.2	41.0	41.8	42.5	43.3	44.1	44.9	45.6
	With brake	37.7	38.5	39.3	40.1	40.8	41.6	42.4	43.1	43.9	44.7	45.4	46.2

(Note) Mass of single slider specification plus 4kg free slider.

Applicable Controllers

(Note) EC Series products are equipped with a built-in controller. Please refer to P. 26 for details on built-in controllers.
For ELECYLINDERs driven by 200V, a dedicated DC power supply "PSA-200" for the motor drive is required. See page 28 for details on the "PSA-200".

EC-S18X

±10μm | Battery-less Absolute | Mid-support | Coupled Motor | Body Width 190 mm | 200V AC Servo Motor

Model Specification Items

EC	-	S18X		-		-		-		-	
Series	-	Type	Lead	-	Stroke	-	Power · I/O cable length	-	Motor power cable length	-	Options
			H 40mm M 20mm L 10mm		750 750mm 〃 〃 2800 2800mm (every 50mm)		See cable length below		0 Without cable 1 1m 〃 〃 10 10m		Refer to options below

CE RoHS 10

Horizontal | Vertical | Side | Ceiling

Stroke

Stroke (mm)	EC-S18X	Stroke (mm)	EC-S18X	Stroke (mm)	EC-S18X	Stroke (mm)	EC-S18X
750	○	**1300**	○	**1850**	○	**2350**	○
800	○	**1350**	○	**1900**	○	**2400**	○
850	○	**1400**	○	**1950**	○	**2450**	○
900	○	**1450**	○	**2000**	○	**2500**	○
950	○	**1500**	○	**2050**	○	**2550**	○
1000	○	**1550**	○	**2100**	○	**2600**	○
1050	○	**1600**	○	**2150**	○	**2650**	○
1100	○	**1650**	○	**2200**	○	**2700**	○
1150	○	**1700**	○	**2250**	○	**2750**	○
1200	○	**1750**	○	**2300**	○	**2800**	○
1250	○	**1800**	○				

Options * Please check the Options reference pages to confirm each option.

Name	Option code	Reference page
RCON-EC connection specification (Note 1)	**ACR**	21
Brake	**B**	21
Suspension bracket	**EB**	21
Designated grease specification	**G5**	21
Non-motor end specification	**NM**	21
PNP specification (Note 1)	**PN**	21
Split motor and controller power (Note 1)	**TMD2**	21
Double Slider specification (Note 2)	**W**	21
Wireless communication specification	**WL**	21
Wireless axis operation specification	**WL2**	21

(Note 1) If the RCON-EC connection specification (ACR) is selected, the PNP specification (PN) and split motor and controller power supply specification (TMD2) cannot be selected.
(Note 2) When the double slider specification (W) is selected, payload, dimensions, and main unit weight will change. See pages 14 and 16 for details.

Selection Notes

(1) Longer strokes may cause the maximum speed to decrease due to the critical resonance speed of the ball screw. Be sure to check the maximum speed of the desired stroke in "Stroke and Max. Speed".
(2) "Main Specifications" displays the payload's maximum value. For details, please see "Table of Payload by Speed/Acceleration".
(3) Push-motion operations cannot be performed.
(4) A "PSA-200" DC power supply is required for motor drive operation. One "PSA-200" can connect up to 6 axes. See page 28 for details.
(5) The standard usable duty ratio varies depending on the operating conditions (payload, acceleration/deceleration speed). Please refer to P. 22 for details.
(6) Pay close attention to the mounting orientation. Please refer to P. 4 for details.
(7) The standard overhang load length is 900mm or less in the Ma / Mb / Mc directions (1260mm or less when double sliders are used). For overhang load lengths, please refer to the description in the 2022 General Catalog.
(8) Due to the structure of the internal mechanism, the intermediate support type generates collision noises during operation. This does not indicate a problem with the specs.

Power · I/O Cable Length

Cable code	Cable length	User wiring specification (flying leads)	RCON-EC connection specification (Note 4) (with connectors on both ends)
		CB-EC-PWBIO□□□-RB supplied	CB-REC-PWBIO□□□-RB supplied
0	Without cable	○ (Note 3)	○
1~3	1~3m	○	○
4~5	4~5m	○	○
6~7	6~7m	○	○
8~10	8~10m	○	○

(Note 3) Only terminal block connector is included. Please refer to P. 27 for details.
(Note 4) If RCON-EC connection specification (ACR) is selected as an option.
(Note) The robot cable is standard.

Motor Power Cable Length

Cable code	Cable length	Standard price
		CB-EC-PW□□□-RB included
0	Without cable	○
1~3	1~3m	○
4~5	4~5m	○
6~10	6~10m	○

(Note) The robot cable is standard.

Main Specifications

Item			Description		
Lead		Ball screw lead (mm)	40	20	10
Horizontal	Payload	Max. payload (kg) (Note 5)	60	120	150
	Speed / acceleration/ deceleration	Max. speed (mm/s)	1500	1000	500
		Rated acceleration/deceleration (G)	0.3	0.3	0.3
		Max. acceleration/deceleration (G)	1	1	0.7
Vertical	Payload	Max. payload (kg) (Note 5)	14	29	60
	Speed / acceleration/ deceleration	Max. speed (mm/s)	1500	1000	500
		Rated acceleration/deceleration (G)	0.3	0.3	0.3
		Max. acceleration/deceleration (G)	0.7	0.7	0.5
Thrust		Rated thrust (N)	255	510	1020
Brake		Brake specification	Non-excitation actuating solenoid brake		
		Brake holding force (kgf)	14	29	60
Stroke		Min. stroke (mm)	750	750	750
		Max. stroke (mm)	2800	2800	2800
		Stroke pitch (mm)	50	50	50

(Note 5) When double slider specification (W) is selected, the maximum payload capacity is reduced. See the table below for details.

Item	Description
Drive system	Ball screw ϕ20mm rolled C10 equivalent
Positioning repeatability	±0.01mm
Lost motion	- (notation not available due to 2-point positioning function)
Base	Exclusive aluminum extrusion material (A6063SS-T6 equivalent) Black alumite treated
Linear guide	Linear motion infinite circulating type
Allowable static moment (Note 6)	Ma: 1030 N·m [5470 N·m]
	Mb: 1030 N·m [5470 N·m]
	Mc: 2510 N·m [5030 N·m]
Allowable dynamic moment (Note 6) (Note 7)	Ma: 214 N·m [919 N·m]
	Mb: 214 N·m [919 N·m]
	Mc: 520 N·m [845 N·m]
Ambient operating temperature, humidity	0~40°C, 85% RH or less (no condensation)
Ingress protection	-
Vibration & shock resistance	4.9m/s^2
Overseas standards	CE marking, RoHS directive
Motor type	AC servo motor (200V)
Motor wattage	600W
Encoder type	Battery-less absolute
Number of encoder pulses	16384 pulse/rev

(Note 6) Values in [ ] are the values when the double slider specification (W) is selected.
(Note 7) Based on the standard rated operation life of 10,000km. Operation life varies according to operating and mounting conditions. Please refer to the 2022 General Catalog (P.1-236) for details on operation life.

Slider Type Moment Direction

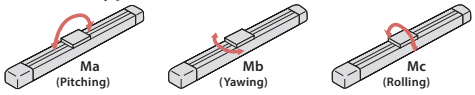


Table of Payload by Speed/Acceleration

Payload is in kg.

Lead 40

Orientation	Horizontal				Vertical		
Speed	Acceleration (G)						
(mm/s)	0.3	0.5	0.7	1.0	0.3	0.5	0.7
0	60	36	26	18	14	10	6.7
1500	60	36	26	18	14	10	6.7

Lead 20

Orientation	Horizontal				Vertical		
Speed	Acceleration (G)						
(mm/s)	0.3	0.5	0.7	1.0	0.3	0.5	0.7
0	120	72	52	31	29	23	17.5
1000	120	72	52	31	29	23	17.5

Lead 10

Orientation	Horizontal			Vertical	
Speed	Acceleration (G)				
(mm/s)	0.3	0.5	0.7	0.3	0.5
0	150	90	45	60	40
500	150	90	45	60	40

Table of Payload by Speed/Acceleration (Double Slider Specification)

Payload is in kg.

Lead 40

Orientation	Horizontal				Vertical		
Speed	Acceleration (G)						
(mm/s)	0.3	0.5	0.7	1.0	0.3	0.5	0.7
0	56	32	22	14	10	6	2.7
1500	56	32	22	14	10	6	2.7

Lead 20

Orientation	Horizontal				Vertical		
Speed	Acceleration (G)						
(mm/s)	0.3	0.5	0.7	1.0	0.3	0.5	0.7
0	116	68	48	27	25	19	13.5
1000	116	68	48	27	25	19	13.5

Lead 10

Orientation	Horizontal			Vertical	
Speed	Acceleration (G)				
(mm/s)	0.3	0.5	0.7	0.3	0.5
0	146	86	41	56	36
500	146	86	41	56	36

Stroke and Max. Speed

Stroke / Lead (mm)	750 to 1750 (every 50mm)	1800 (mm)	1850 (mm)	1900 (mm)	1950 (mm)	2000 (mm)	2050 (mm)	2100 (mm)	2150 (mm)	2200 (mm)	2250 (mm)	2300 (mm)	2350 (mm)	2400 (mm)	2450 (mm)	2500 (mm)	2550 (mm)	2600 (mm)	2650 (mm)	2700 (mm)	2750 (mm)	2800 (mm)
40	1500								1446	1393	1343	1295	1250	1207	1167	1128	1091	1056	1023	991	961	932
20	1000	960	920	882	846	813	781	751	723	697	671	648	625	604	583	564	546	528	512	496	480	466
10	500	480	460	441	423	406	391	376	362	348	336	324	313	302	292	282	273	264	256	248	240	233

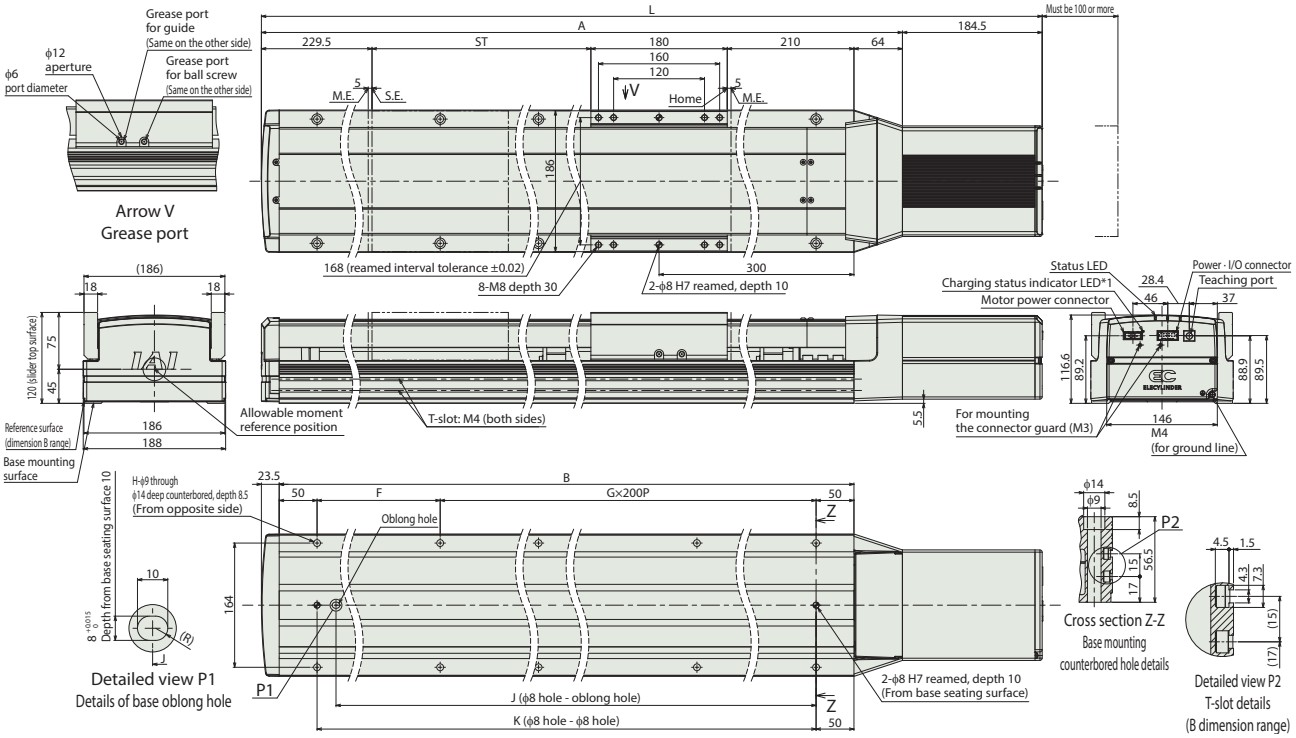
(Unit: mm/s)

Dimensions

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

*1 While the charge status indicator LED is on, the inside of the controller is charged. To prevent electric shock, wiring and inspection work should be performed after the power is shut off and after confirming that the LEDs are turned off.
(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.

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



Dimensions by Stroke

Stroke	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750
L	1618	1668	1718	1768	1818	1868	1918	1968	2018	2068	2118	2168	2218	2268	2318	2368	2418	2468	2518	2568	2618
A	1433.5	1483.5	1533.5	1583.5	1633.5	1683.5	1733.5	1783.5	1833.5	1883.5	1933.5	1983.5	2033.5	2083.5	2133.5	2183.5	2233.5	2283.5	2333.5	2383.5	2433.5
B	1346	1396	1446	1496	1546	1596	1646	1696	1746	1796	1846	1896	1946	1996	2046	2096	2146	2196	2246	2296	2346
F	246	296	146	196	246	296	146	196	246	296	146	196	246	296	146	196	246	296	146	196	246
G	5	5	6	6	6	6	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10
H	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24
J	1221	1271	1321	1371	1421	1471	1521	1571	1621	1671	1721	1771	1821	1871	1921	1971	2021	2071	2121	2171	2221
K	1246	1296	1346	1396	1446	1496	1546	1596	1646	1696	1746	1796	1846	1896	1946	1996	2046	2096	2146	2196	2246

Stroke	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800
L	2668	2718	2768	2818	2868	2918	2968	3018	3068	3118	3168	3218	3268	3318	3368	3418	3468	3518	3568	3618	3668
A	2483.5	2533.5	2583.5	2633.5	2683.5	2733.5	2783.5	2833.5	2883.5	2933.5	2983.5	3033.5	3083.5	3133.5	3183.5	3233.5	3283.5	3333.5	3383.5	3433.5	3483.5
B	2396	2446	2496	2546	2596	2646	2696	2746	2796	2846	2896	2946	2996	3046	3096	3146	3196	3246	3296	3346	3396
F	296	146	196	246	296	146	196	246	296	146	196	246	296	146	196	246	296	146	196	246	296
G	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15
H	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
J	2271	2321	2371	2421	2471	2521	2571	2621	2671	2721	2771	2821	2871	2921	2971	3021	3071	3121	3171	3221	3271
K	2296	2346	2396	2446	2496	2546	2596	2646	2696	2746	2796	2846	2896	2946	2996	3046	3096	3146	3196	3246	3296

Mass by Stroke

Stroke		750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750
Mass (kg)	Without brake	31.8	32.6	33.4	34.2	35.1	35.9	36.7	37.5	38.3	39.1	39.9	40.8	41.6	43.1	43.9	44.8	45.6	46.4	47.2	48.1	48.9
	With brake	32.4	33.2	34.0	34.8	35.6	36.5	37.3	38.1	38.9	39.7	40.5	41.3	42.2	43.7	44.5	45.3	46.2	47.0	47.8	48.6	49.5

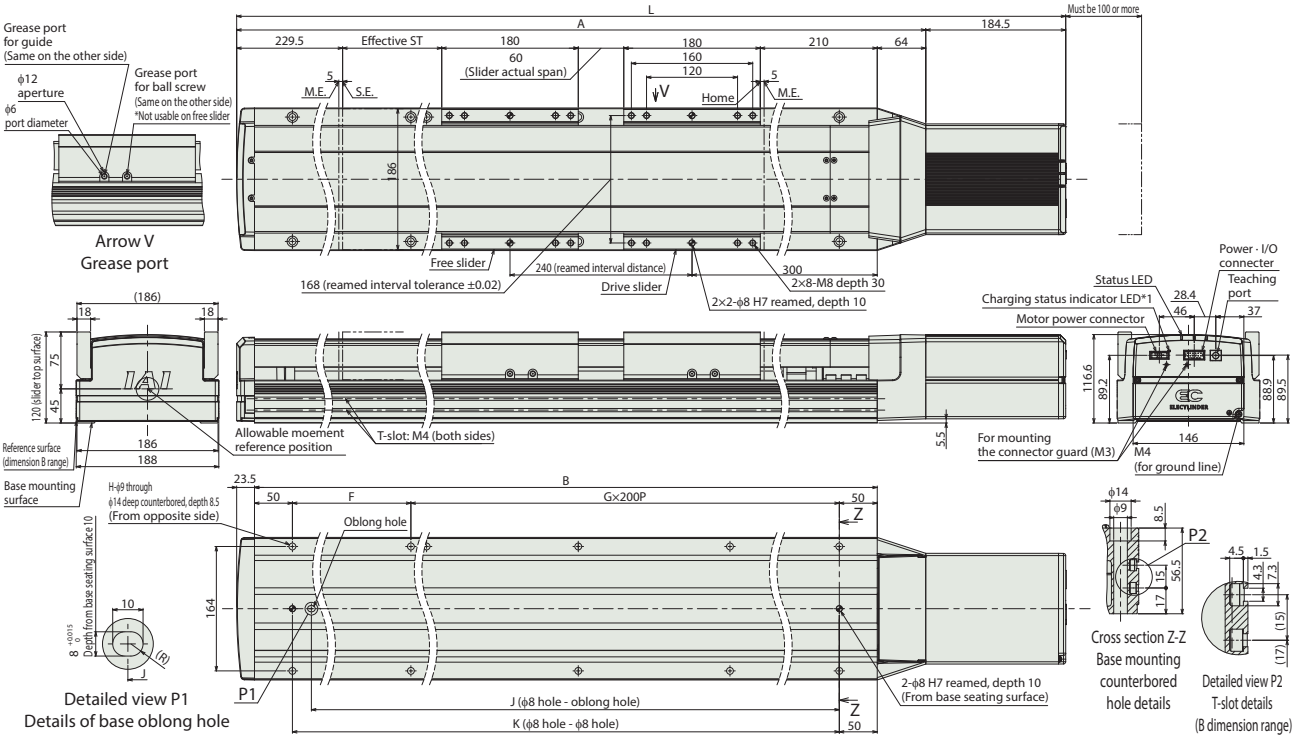
Stroke		1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800
Mass (kg)	Without brake	49.7	50.5	51.4	52.2	53.0	53.8	54.7	55.5	56.3	57.1	58.0	58.8	59.6	60.4	61.3	62.1	62.9	63.7	64.6	65.4	66.2
	With brake	50.3	51.1	51.9	52.8	53.6	54.4	55.2	56.1	56.9	57.7	58.5	59.4	60.2	61.0	61.8	62.7	63.5	64.3	65.1	66.0	66.8

Dimensions (double slider specification)

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

*1 While the charge status indicator LED is on, the inside of the controller is charged. To prevent electric shock, wiring and inspection work should be performed after the power is shut off and after confirming that the LEDs are turned off.
(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.

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



Dimensions by Stroke

Nominal stroke	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750
Effective stroke	510	560	610	660	710	760	810	860	910	960	1010	1060	1110	1160	1210	1260	1310	1360	1410	1460	1510
L	1618	1668	1718	1768	1818	1868	1918	1968	2018	2068	2118	2168	2218	2268	2318	2368	2418	2468	2518	2568	2618
A	1433.5	1483.5	1533.5	1583.5	1633.5	1683.5	1733.5	1783.5	1833.5	1883.5	1933.5	1983.5	2033.5	2083.5	2133.5	2183.5	2233.5	2283.5	2333.5	2383.5	2433.5
B	1346	1396	1446	1496	1546	1596	1646	1696	1746	1796	1846	1896	1946	1996	2046	2096	2146	2196	2246	2296	2346
F	246	296	146	196	246	296	146	196	246	296	146	196	246	296	146	196	246	296	146	196	246
G	5	5	6	6	6	6	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10
H	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24
J	1221	1271	1321	1371	1421	1471	1521	1571	1621	1671	1721	1771	1821	1871	1921	1971	2021	2071	2121	2171	2221
K	1246	1296	1346	1396	1446	1496	1546	1596	1646	1696	1746	1796	1846	1896	1946	1996	2046	2096	2146	2196	2246

Nominal stroke	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800
Effective stroke	1560	1610	1660	1710	1760	1810	1860	1910	1960	2010	2060	2110	2160	2210	2260	2310	2360	2410	2460	2510	2560
L	2668	2718	2768	2818	2868	2918	2968	3018	3068	3118	3168	3218	3268	3318	3368	3418	3468	3518	3568	3618	3668
A	2483.5	2533.5	2583.5	2633.5	2683.5	2733.5	2783.5	2833.5	2883.5	2933.5	2983.5	3033.5	3083.5	3133.5	3183.5	3233.5	3283.5	3333.5	3383.5	3433.5	3483.5
B	2396	2446	2496	2546	2596	2646	2696	2746	2796	2846	2896	2946	2996	3046	3096	3146	3196	3246	3296	3346	3396
F	296	146	196	246	296	146	196	246	296	146	196	246	296	146	196	246	296	146	196	246	296
G	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15
H	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
J	2271	2321	2371	2421	2471	2521	2571	2621	2671	2721	2771	2821	2871	2921	2971	3021	3071	3121	3171	3221	3271
K	2296	2346	2396	2446	2496	2546	2596	2646	2696	2746	2796	2846	2896	2946	2996	3046	3096	3146	3196	3246	3296

(Note) Nominal stroke: Stroke listed in the model number (actuator frame/body size)
Effective stroke: Actual available traveling distance

Mass by Stroke

Nominal stroke		750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750
Effective stroke		510	560	610	660	710	760	810	860	910	960	1010	1060	1110	1160	1210	1260	1310	1360	1410	1460	1510
Mass (kg)	Without brake	35.8	36.6	37.4	38.2	39.1	39.9	40.7	41.5	42.3	43.1	43.9	44.8	45.6	47.1	47.9	48.8	49.6	50.4	51.2	52.1	52.9
	With brake	36.4	37.2	38.0	38.8	39.6	40.5	41.3	42.1	42.9	43.7	44.5	45.3	46.2	47.7	48.5	49.3	50.2	51.0	51.8	52.6	53.5

Nominal stroke		1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800
Effective stroke		1560	1610	1660	1710	1760	1810	1860	1910	1960	2010	2060	2110	2160	2210	2260	2310	2360	2410	2460	2510	2560
Mass (kg)	Without brake	53.7	54.5	55.4	56.2	57.0	57.8	58.7	59.5	60.3	61.1	62.0	62.8	63.6	64.4	65.3	66.1	66.9	67.7	68.6	69.4	70.2
	With brake	54.3	55.1	55.9	56.8	57.6	58.4	59.2	60.1	60.9	61.7	62.5	63.4	64.2	65.0	65.8	66.7	67.5	68.3	69.1	70.0	70.8

(Note) Mass of single slider specification plus 4kg free slider.

Applicable Controllers

(Note) EC Series products are equipped with a built-in controller. Please refer to P. 26 for details on built-in controllers.
For ELECYLINDERs driven by 200V, a dedicated DC power supply "PSA-200" for the motor drive is required. See page 28 for details on the "PSA-200".

EC-S18XLP

<High payload specification>

±10μm Standard | Battery-less Absolute | Mid-support | Coupled Motor | Body Width 190 mm | 200V AC Servo Motor

Model Specification Items

EC - S18X - L - P - [ ] - [ ] - [ ] - [ ]

Series	Type	Lead	Specification
		L: 10mm	P: High payload specification

Stroke	
750	750mm
≀	≀
2200	2200mm (every 50mm)

Power · I/O cable length: See cable length below

Motor power cable length	
0	Without cable
1	1m
≀	≀
10	10m

Options: Refer to options below

CE RoHS 10

Horizontal | Vertical | Side | Ceiling

Stroke

Stroke (mm)	EC-S18XLP	Stroke (mm)	EC-S18XLP
750	○	**1500**	○
800	○	**1550**	○
850	○	**1600**	○
900	○	**1650**	○
950	○	**1700**	○
1000	○	**1750**	○
1050	○	**1800**	○
1100	○	**1850**	○
1150	○	**1900**	○
1200	○	**1950**	○
1250	○	**2000**	○
1300	○	**2050**	○
1350	○	**2100**	○
1400	○	**2150**	○
1450	○	**2200**	○

Selection Notes

(1) Longer strokes may cause the maximum speed to decrease due to the critical resonance speed of the ball screw. Be sure to check the maximum speed of the desired stroke in "Stroke and Max. Speed".

(2) "Main Specifications" displays the payload's maximum value. For details, please see "Table of Payload by Speed/Acceleration".

(3) Push-motion operations cannot be performed.

(4) A "PSA-200" DC power supply is required for motor drive operation. One "PSA-200" can connect up to 6 axes. See page 28 for details.

(5) The standard usable duty ratio varies depending on the operating conditions (payload, acceleration/deceleration speed). Please refer to P. 22 for details.

(6) Pay close attention to the mounting orientation. Please refer to P. 4 for details.

(7) The standard overhang load length is 900mm or less in the Ma / Mb / Mc directions (1260mm or less when double sliders are used). For overhang load lengths, please refer to the description in the 2022 General Catalog.

(8) Due to the structure of the internal mechanism, the intermediate support type generates collision noises during operation. This does not indicate a problem with the specs.

Options * Please check the Options reference pages to confirm each option.

Name	Option code	Reference page
RCON-EC connection specification (Note 1)	**ACR**	21
Brake	**B**	21
Suspension bracket	**EB**	21
Designated grease specification	**G5**	21
Non-motor end specification	**NM**	21
PNP specification (Note 1)	**PN**	21
Split motor and controller power (Note 1)	**TMD2**	21
Double Slider specification (Note 2)	**W**	21
Wireless communication specification	**WL**	21
Wireless axis operation specification	**WL2**	21

(Note 1) If the RCON-EC connection specification (ACR) is selected, the PNP specification (PN) and split motor and controller power supply specification (TMD2) cannot be selected.

(Note 2) When the double slider specification (W) is selected, payload, dimensions, and main unit weight will change. See pages 18 and 20 for details.

Power · I/O Cable Length

Cable code	Cable length	User wiring specification (flying leads)	RCON-EC connection specification (Note 4) (with connectors on both ends)
		CB-EC-PWBIO□□□-RB supplied	CB-REC-PWBIO□□□-RB supplied
0	Without cable	○(Note 3)	○
1~3	1~3m	○	○
4~5	4~5m	○	○
6~7	6~7m	○	○
8~10	8~10m	○	○

(Note 3) Only terminal block connector is included. Please refer to P. 27 for details.

(Note 4) If RCON-EC connection specification (ACR) is selected as an option.

(Note) The robot cable is standard.

Motor Power Cable Length

Cable code	Cable length	Standard price
		CB-EC-PW□□□-RB included
0	Without cable	○
1~3	1~3m	○
4~5	4~5m	○
6~10	6~10m	○

(Note) The robot cable is standard.

Main Specifications

Item			Description
Lead		Ball screw lead (mm)	10
Horizontal	Payload	Max. payload (kg) (Note 5)	400
	Speed / acceleration/ deceleration	Max. speed (mm/s)	500
		Rated acceleration/deceleration (G)	0.3
		Max. acceleration/deceleration (G)	0.7
Vertical	Payload	Max. payload (kg) (Note 5)	80
	Speed / acceleration/ deceleration	Max. speed (mm/s)	500
		Rated acceleration/deceleration (G)	0.3
		Max. acceleration/deceleration (G)	0.5
Thrust		Rated thrust (N)	1276
Brake		Brake specification	Non-excitation actuating solenoid brake
		Brake holding force (kgf)	80
Stroke		Min. stroke (mm)	750
		Max. stroke (mm)	2200
		Stroke pitch (mm)	50

(Note 5) When double slider specification (W) is selected, the maximum payload capacity is reduced. See the table below for details.

Item	Description
Drive system	Ball screw ϕ20mm rolled C5 equivalent
Positioning repeatability	±0.01mm
Lost motion	- (notation not available due to 2-point positioning function)
Base	Exclusive aluminum extrusion material (A6063SS-T6 equivalent) Black alumite treated
Linear guide	Linear motion infinite circulating type
Allowable static moment (Note 6)	Ma: 1030 N·m [5470 N·m]
	Mb: 1030 N·m [5470 N·m]
	Mc: 2510 N·m [5030 N·m]
Allowable dynamic moment (Note 6) (Note 7)	Ma: 214 N·m [919 N·m]
	Mb: 214 N·m [919 N·m]
	Mc: 520 N·m [845 N·m]
Ambient operating temperature, humidity	0~40°C, 85% RH or less (no condensation)
Ingress protection	-
Vibration & shock resistance	4.9m/s^2
Overseas standards	CE marking, RoHS directive
Motor type	AC servo motor (200V)
Motor wattage	750W
Encoder type	Battery-less absolute
Number of encoder pulses	16384 pulse/rev

(Note 6) Values in [ ] are the values when the double slider specification (W) is selected.
(Note 7) Based on the standard rated operation life of 10,000km. Operation life varies according to operating and mounting conditions. Please refer to the 2022 General Catalog (P.1-236) for details on operation life.

Slider Type Moment Direction

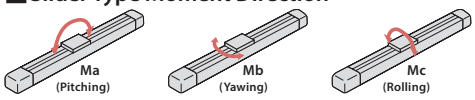


Table of Payload by Speed/Acceleration

Payload is in kg.

Lead 10

Orientation	Horizontal				Vertical		
Speed	Acceleration (G)						
(mm/s)	0.2	0.3	0.5	0.7	0.2	0.3	0.5
0	400	265	160	95	80	80	64
500	400	265	160	95	80	80	64

Table of Payload by Speed/Acceleration (Double Slider Specification)

Payload is in kg.

Lead 10

Orientation	Horizontal				Vertical		
Speed	Acceleration (G)						
(mm/s)	0.2	0.3	0.5	0.7	0.2	0.3	0.5
0	396	261	156	91	76	76	60
500	396	261	156	91	76	76	60

Stroke and Max. Speed

Stroke / Lead (mm)	750 to 1750 (every 50mm)	1800 (mm)	1850 (mm)	1900 (mm)	1950 (mm)	2000 (mm)	2050 (mm)	2100 (mm)	2150 (mm)	2200 (mm)
10	500	480	460	441	423	406	391	376	362	348

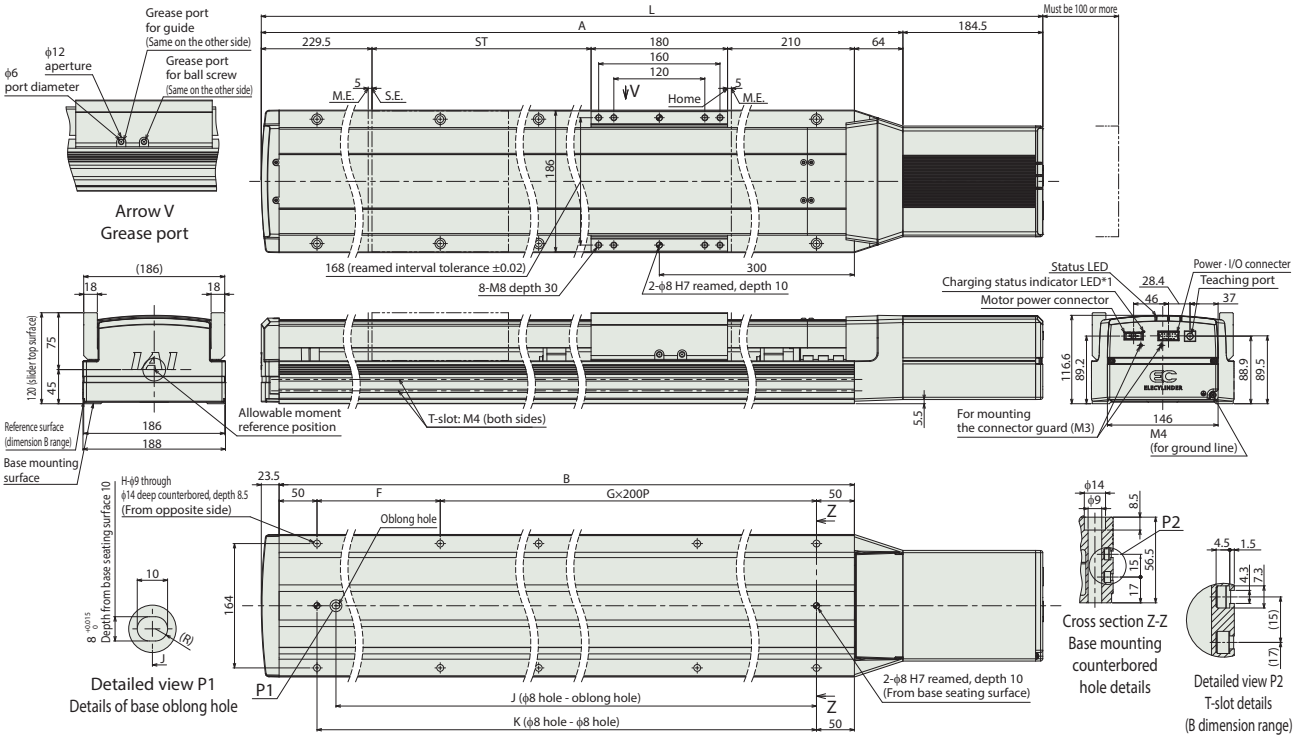
(Unit: mm/s)

Dimensions

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

*1 While the charge status indicator LED is on, the inside of the controller is charged. To prevent electric shock, wiring and inspection work should be performed after the power is shut off and after confirming that the LEDs are turned off.
(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.

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



Dimensions by Stroke

Stroke	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450
L	1618	1668	1718	1768	1818	1868	1918	1968	2018	2068	2118	2168	2218	2268	2318
A	1433.5	1483.5	1533.5	1583.5	1633.5	1683.5	1733.5	1783.5	1833.5	1883.5	1933.5	1983.5	2033.5	2083.5	2133.5
B	1346	1396	1446	1496	1546	1596	1646	1696	1746	1796	1846	1896	1946	1996	2046
F	246	296	146	196	246	296	146	196	246	296	146	196	246	296	146
G	5	5	6	6	6	6	7	7	7	7	8	8	8	8	9
H	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22
J	1221	1271	1321	1371	1421	1471	1521	1571	1621	1671	1721	1771	1821	1871	1921
K	1246	1296	1346	1396	1446	1496	1546	1596	1646	1696	1746	1796	1846	1896	1946

Stroke	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200
L	2368	2418	2468	2518	2568	2618	2668	2718	2768	2818	2868	2918	2968	3018	3068
A	2183.5	2233.5	2283.5	2333.5	2383.5	2433.5	2483.5	2533.5	2583.5	2633.5	2683.5	2733.5	2783.5	2833.5	2883.5
B	2096	2146	2196	2246	2296	2346	2396	2446	2496	2546	2596	2646	2696	2746	2796
F	196	246	296	146	196	246	296	146	196	246	296	146	196	246	296
G	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12
H	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28
J	1971	2021	2071	2121	2171	2221	2271	2321	2371	2421	2471	2521	2571	2621	2671
K	1996	2046	2096	2146	2196	2246	2296	2346	2396	2446	2496	2546	2596	2646	2696

Mass by Stroke

Stroke		750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450
Mass (kg)	Without brake	32.1	32.9	33.7	34.5	35.4	36.2	37.0	37.8	38.6	39.4	40.2	41.1	41.9	43.4	44.2
	With brake	32.7	33.5	34.3	35.1	35.9	36.8	37.6	38.4	39.2	40.0	40.8	41.6	42.5	44.0	44.8

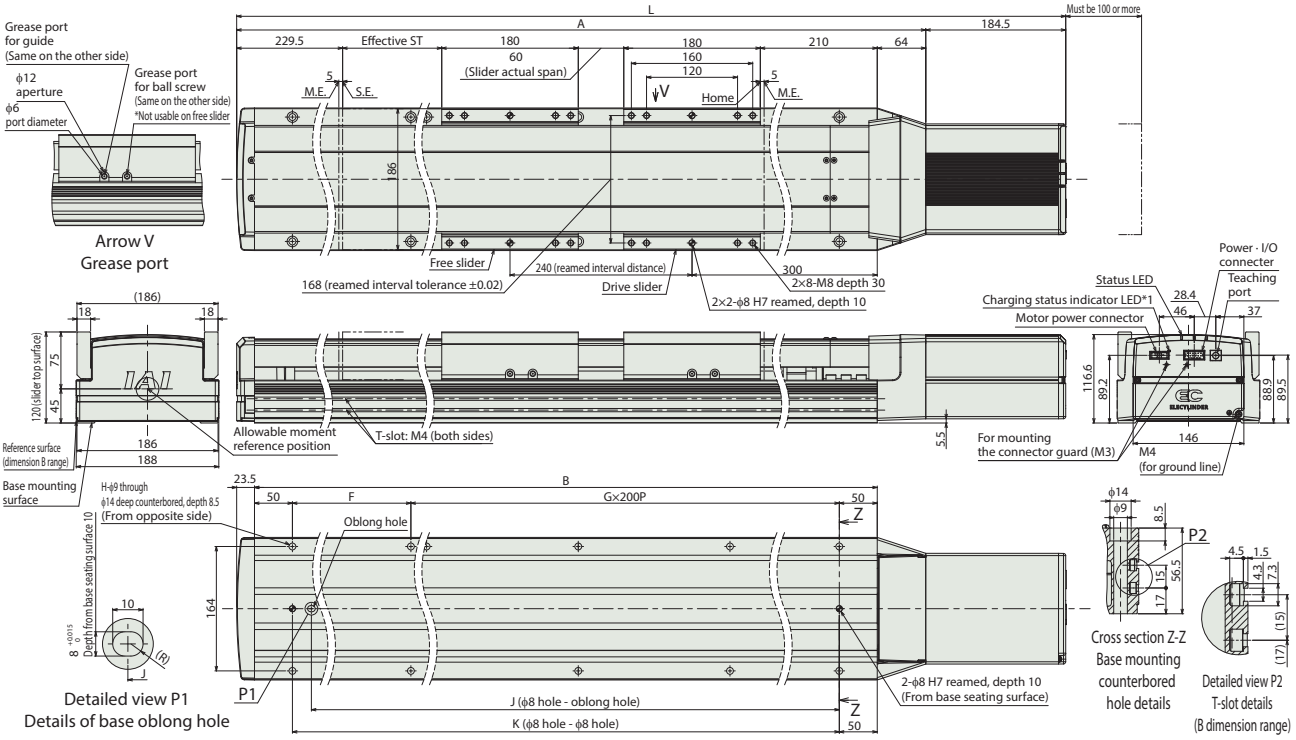
Stroke		1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200
Mass (kg)	Without brake	45.1	45.9	46.7	47.5	48.4	49.2	50.0	50.8	51.7	52.5	53.3	54.1	55.0	55.8	56.6
	With brake	45.6	46.5	47.3	48.1	48.9	49.8	50.6	51.4	52.2	53.1	53.9	54.7	55.5	56.4	57.2

Dimensions (double slider specification)

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

*1 While the charge status indicator LED is on, the inside of the controller is charged. To prevent electric shock, wiring and inspection work should be performed after the power is shut off and after confirming that the LEDs are turned off.
(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.

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



Dimensions by Stroke

Nominal stroke	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450
Effective stroke	510	560	610	660	710	760	810	860	910	960	1010	1060	1110	1160	1210
L	1618	1668	1718	1768	1818	1868	1918	1968	2018	2068	2118	2168	2218	2268	2318
A	1433.5	1483.5	1533.5	1583.5	1633.5	1683.5	1733.5	1783.5	1833.5	1883.5	1933.5	1983.5	2033.5	2083.5	2133.5
B	1346	1396	1446	1496	1546	1596	1646	1696	1746	1796	1846	1896	1946	1996	2046
F	246	296	146	196	246	296	146	196	246	296	146	196	246	296	146
G	5	5	6	6	6	6	7	7	7	7	8	8	8	8	9
H	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22
J	1221	1271	1321	1371	1421	1471	1521	1571	1621	1671	1721	1771	1821	1871	1921
K	1246	1296	1346	1396	1446	1496	1546	1596	1646	1696	1746	1796	1846	1896	1946

Nominal stroke	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200
Effective stroke	1260	1310	1360	1410	1460	1510	1560	1610	1660	1710	1760	1810	1860	1910	1960
L	2368	2418	2468	2518	2568	2618	2668	2718	2768	2818	2868	2918	2968	3018	3068
A	2183.5	2233.5	2283.5	2333.5	2383.5	2433.5	2483.5	2533.5	2583.5	2633.5	2683.5	2733.5	2783.5	2833.5	2883.5
B	2096	2146	2196	2246	2296	2346	2396	2446	2496	2546	2596	2646	2696	2746	2796
F	196	246	296	146	196	246	296	146	196	246	296	146	196	246	296
G	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12
H	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28
J	1971	2021	2071	2121	2171	2221	2271	2321	2371	2421	2471	2521	2571	2621	2671
K	1996	2046	2096	2146	2196	2246	2296	2346	2396	2446	2496	2546	2596	2646	2696

(Note) Nominal stroke: Stroke listed in the model number (actuator frame/body size)
Effective stroke: Actual available traveling distance

Mass by Stroke

Nominal stroke		750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450
Effective stroke		510	560	610	660	710	760	810	860	910	960	1010	1060	1110	1160	1210
Mass (kg)	Without brake	36.1	36.9	37.7	38.5	39.4	40.2	41.0	41.8	42.6	43.4	44.2	45.1	45.9	47.4	48.2
	With brake	36.7	37.5	38.3	39.1	39.9	40.8	41.6	42.4	43.2	44.0	44.8	45.6	46.5	48.0	48.8

Nominal stroke		1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200
Effective stroke		1260	1310	1360	1410	1460	1510	1560	1610	1660	1710	1760	1810	1860	1910	1960
Mass (kg)	Without brake	49.1	49.9	50.7	51.5	52.4	53.2	54.0	54.8	55.7	56.5	57.3	58.1	59.0	59.8	60.6
	With brake	49.6	50.5	51.3	52.1	52.9	53.8	54.6	55.4	56.2	57.1	57.9	58.7	59.5	60.4	61.2

(Note) Mass of single slider specification plus 4kg free slider.

Applicable Controllers

(Note) EC Series products are equipped with a built-in controller. Please refer to P. 26 for details on built-in controllers.
For ELECYLINDERs driven by 200V, a dedicated DC power supply "PSA-200" for the motor drive is required. See page 28 for details on the "PSA-200".

ELECYLINDER Series Options

RCON-EC connection specification
*Cannot be selected with the TMD2 and PN options (the ACR option includes the split power specification as standard)

Model: **ACR**

Description: This option should be selected to connect over an R-unit to a field network.

Brake

Model: **B**

Description: This mechanism stops the slider from moving when the power or servo is turned off. This option is required when installing the actuator vertically.

Suspension bracket

Model: **EB**

Description: When installing the actuator, eye bolts, mounting brackets, hexagon socket head bolts, and hexagon nuts used to lift the actuator are supplied with the actuator. The plate nuts used to secure the mounting hardware are shipped assembled in the T-slot on the side of the main unit.
*Please see the instruction manual for details.

Designated grease specification

Model: **G5**

Description: Changes the grease applied to the actuator ball screw, linear guide, and intermediate support section to food grade grease (white Alcom grease).

Non-motor end specification

Model: **NM**

Description: The home position is normally set to the motor side. This option sets the home position on the non-motor side in order to accommodate variations in equipment layout, etc.

PNP specification
*ACR is an NPN specification and cannot be selected at the same time.

Model: **PN**

Description: EC Series products normally provide NPN specification input/output for connecting to external devices as standard.
Specifying this option changes the input/output to PNP specification.

Split motor and controller power supply specification
*Cannot be selected at the same time as the ACR option (RCON-EC connection specification already has 2 power supplies).

Model: **TMD2**

Description: This option provides a separate motor power supply and control power supply. Select to allow shutting down the actuator drive power only. Please refer to P. 27 for more information on wiring.

Double slider specification

Model: **W**

Description: Option to add a free slider not connected to the ball screw. The allowable moment and overhang load length can be increased by making the slider double. The drive slider and free slider are not connected at the time of shipment. Please connect the sliders at the customer end. When connecting the sliders, make sure that the actual span of the sliders is the distance indicated in the drawing.

Wireless communication specification

Model: **WL**

Description: This option enables support for wireless communication. Specifying this option enables wireless connection between the teaching pendant TB-03 and Wireless teaching controller.
The start point, end point, and AVD can be adjusted via wireless communication.

Wireless axis operation specification

Model: **WL2**

Description: By specifying this option, in addition to operations possible with WL communication (start point, end point, and AVD adjustment), axis movement operation tests (forward and backward end movement, jogging, inching) can be performed. However, this function is not meant to perform automatic operation. For precautions related to axis operation with wireless connection, see the 2022 General Catalog (P. 2-550). (Note) Customers cannot change WL to WL2, or WL2 to WL. Please contact IAI for this.

About Duty Ratio

Operate with a duty ratio below the allowable value.

The duty ratio is the operating rate expressed as a percentage of the time the actuator is running in one cycle.

⚠ Caution: If an overload error occurs, increase the resting time to reduce the duty ratio or reduce the acceleration/deceleration rate.

How to Calculate Duty Ratio

Calculate the load factor and acceleration/deceleration time ratio, and read the allowable duty ratio from the graph.

When the load factor is less than 50%, a duty ratio of 100% (continuous operation) is possible.

1 Load factor LF

Please see the product specifications page for the allowable acceleration vs. payload and rated acceleration/deceleration.

When the command acceleration/deceleration is less than the rated acceleration/deceleration

$$\text{Load factor: LF} = \frac{M \times \alpha}{M_r \times \alpha_r} (\%)$$

Max. payload for rated acceleration: M_r (kg)

Rated acceleration/deceleration speed: α_r (G)

Payload during operation: M (kg)

Acceleration/deceleration speed during operation: α (G)

When the command acceleration/deceleration exceeds the rated acceleration/deceleration

$$\text{Load factor: LF} = \frac{M \times \alpha}{M_d \times \alpha} = \frac{M}{M_d} (\%)$$

Command acceleration payload: M_d (kg)

Payload during operation: M (kg)

Acceleration/deceleration speed during operation: α (G)

2 Acceleration/deceleration time ratio t_{od}

$$\text{Acceleration/deceleration time ratio } t_{od} = \frac{\text{acceleration time during operation + deceleration time during operation}}{\text{Operation runtime}} (\%)$$

$$\text{Acceleration time} = \frac{\text{speed during operation (mm/s)}}{\text{Acceleration during operation (mm/s}^2\text{)}} (\text{s})$$

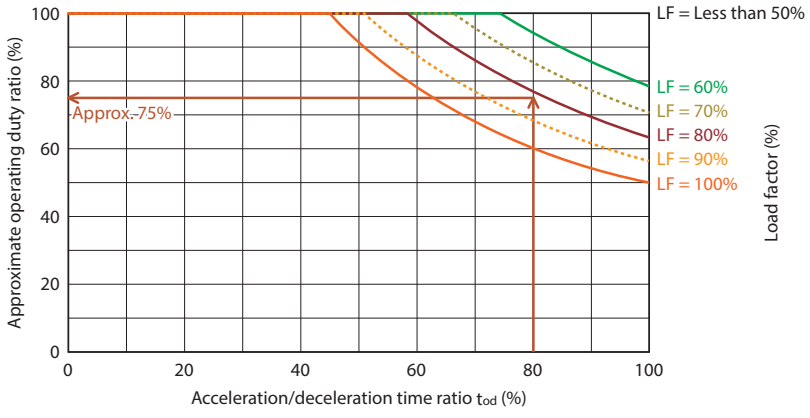
$$\text{Deceleration time} = \frac{\text{speed during operation (mm/s)}}{\text{Deceleration during operation (mm/s}^2\text{)}} (\text{s})$$

Acceleration (mm/s²) = Acceleration (G) × 9,800mm/s²

Deceleration (mm/s²) = Deceleration (G) × 9,800mm/s²

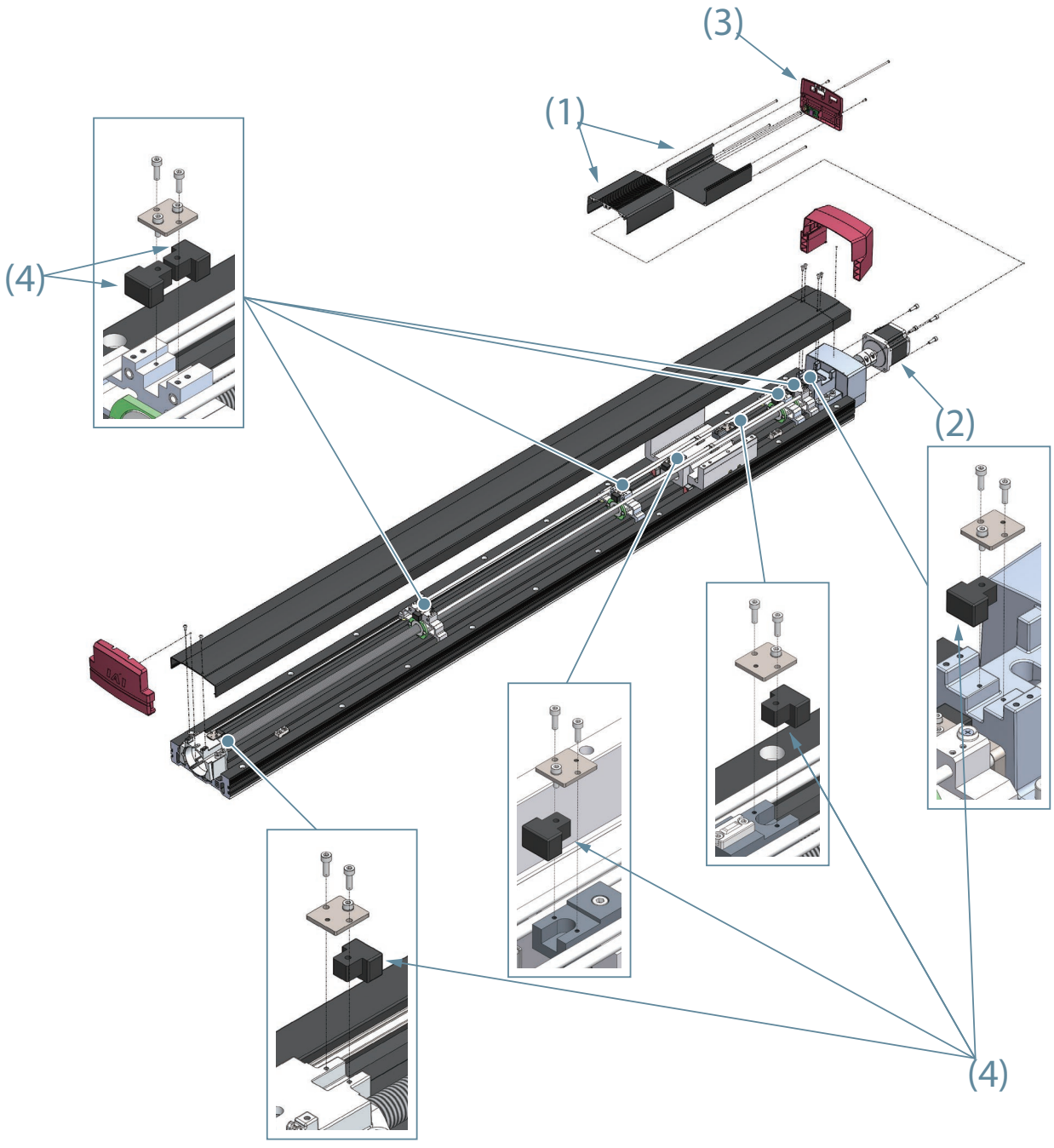
3 Read the duty ratio from the calculated load factor LF and the acceleration/deceleration time ratio t_{od}.

Example) If the load factor is LF: 80% and the acceleration/deceleration time ratio t_{od}: 80%, the allowable duty ratio is approximately 75%.



Maintenance Part Schematics

S18/S18X Type



(1) Motor housing Assy (including controller circuit board)
(2) Motor unit
(3) End cap Assy (with wireless communication circuit board cable (WL/WL2 options only))
(4) Intermediate support cushion

Maintenance Parts Model List

The numbers in the table correspond to the numbers in the maintenance parts schematic on the previous page.

(Note) Mounting screws are not included with maintenance parts. Please contact our sales department before making any modifications.

S18/S18X Type

(1)-1 Motor housing Assy for WL and non-wireless actuators*

Type	I/O	Model
S18 S18X	NPN	MWB-EC-S18
	PNP	MWB-EC-S18-P

(1)-2 Motor housing Assy wireless axis operation specification (WL2)*

Type	I/O	Model
S18 S18X	NPN	MWB-EC-S18-WL2
	PNP	MWB-EC-S18-P-WL2

(1)-3 Motor housing Assy for 2 power supply systems WL specifications are also common*

Type	I/O	Model
S18 S18X	NPN	MWB-EC-S18-TMD2
	PNP	MWB-EC-S18-P-TMD2

(1)-4 Motor housing Assy for 2 power supply systems wireless axis operation specification (WL2)*

Type	I/O	Model
S18 S18X	NPN	MWB-EC-S18-TMD2-WL2
	PNP	MWB-EC-S18-P-TMD2-WL2

(1)-5 Motor housing Assy for 2 power supply systems RCON-EC connection specifications (Option model: ACR) for WL and non-wireless actuators*

Type	Model
S18 S18X	MWB-EC-S18-ACR

(1)-6 Motor housing Assy for 2 power supply systems RCON-EC connection specifications (Option model: ACR) wireless axis operation specification (WL2)*

Type	Model
S18 S18X	MWB-EC-S18-ACR-WL2

*Wireless communication circuit board is not included.

(2)Motor unit

Type	Payload specifications	Model
S18 S18X	Standard	EC-MUS18
	High payload	EC-MUS18P

(3)End cap Assy (with wireless communication circuit board cable)

Type	Model
S18 S18X	EWB-EC-S18

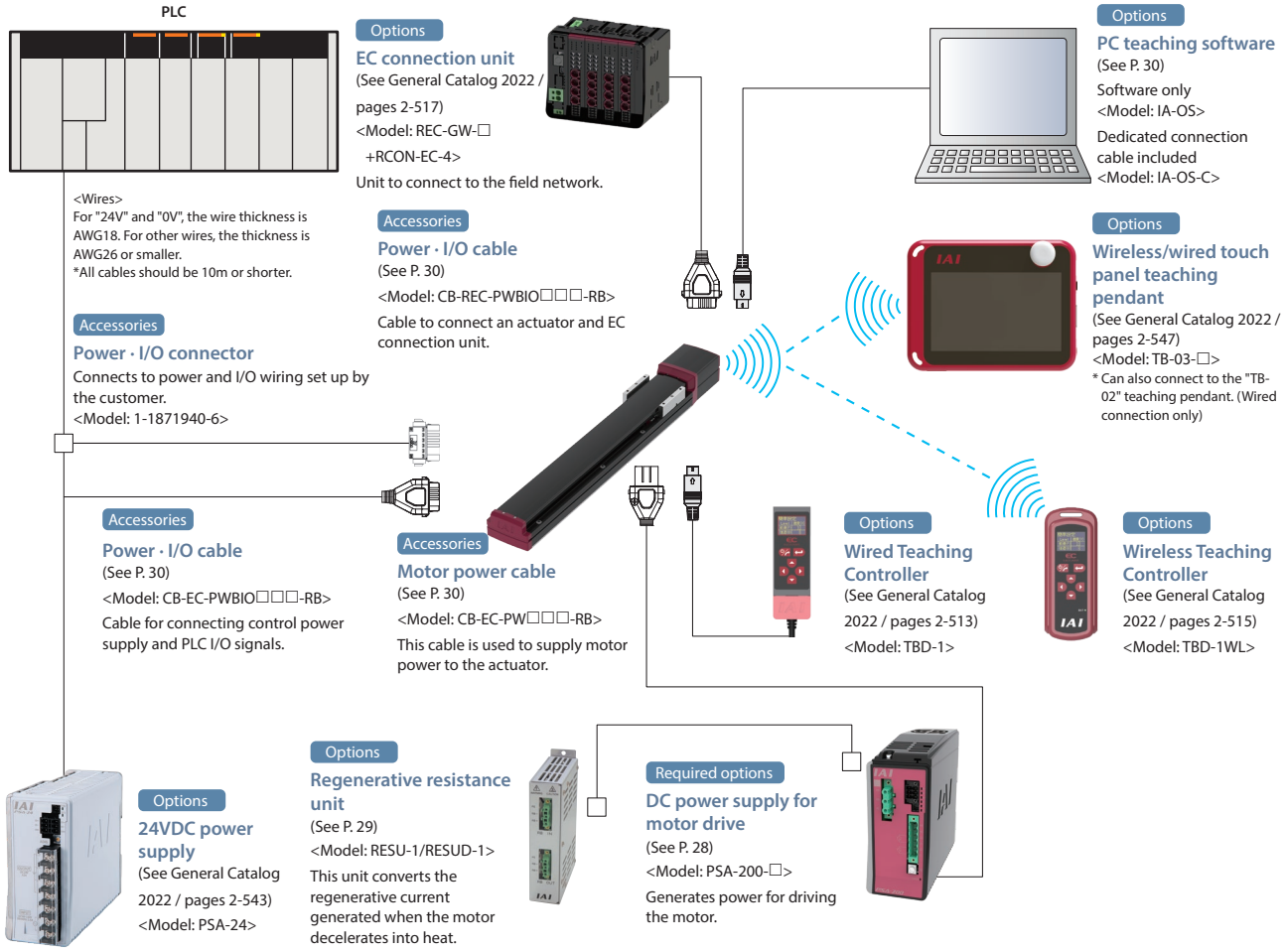
(Note) For non-wireless specifications, please contact IAI.

(4)Intermediate support cushion

Type	Model	Required quantity
S18 S18X	IMSC-EC-S13S15	8 pcs (750~1350mm stroke) 12 pcs (1400~2800mm stroke)

* The above model includes 12 pieces.
Extra parts should be disposed or stored by the customer.

System Configuration



List of Accessories

■ Power supply I/O cable

Product category		Accessories
Power · I/O cable length (selected with actuator model)	RCON-EC connection specifications (ACR) selection	
0	No	Power supply and I/O connector (1-1871940-6)
	Yes	—
1 to 10	No	Power · I/O cable (CB-EC-PWBIO□□□-RB)
	Yes	Power · I/O cable (CB-REC-PWBIO□□□-RB)

■ Motor power cable

Product category		Accessories
Motor power cable length (selected with actuator model)	RCON-EC connection specifications (ACR) selection	
0	No	—
	Yes	
1 to 10	No	Motor power cable (CB-EC-PW□□□-RB)
	Yes	

Basic Controller Specifications

Specification item			Specification content
Number of controlled axes			1 axis
Motor power input voltage			Supplied from PSA-200 (280VCD)
Control power supply input voltage			24VDC ±10%
Control power supply current	Control		320mA
	Teaching (Note 1)		150mA
	Brake (Note 2)	EC-S10 (X)	220mA (No over-excitation)
		EC-S13 (X), S15 (X)	Over-excitation: 875mA, Constant: 85mA
		EC-S18 (X)	433mA (No over-excitation)
Control power supply capacity	Control		7.6W
	Teaching (Note 1)		3.6W
	Brake (Note 2)	EC-S10 (X)	5.3W (No over-excitation)
		EC-S13 (X), S15 (X)	Over-excitation: 21.0W, Constant: 2.0W
		EC-S18 (X)	11.4W (No over-excitation)
Inrush current			-
Momentary power failure resistance			Max 500μs
Supported motor wattage (W)			100W/200W/400W/600W/750W
Motor control system			Sinusoidal PWM vector current control
Supported encoders			Battery-less absolute encoder (16384pulse/rev)
SIO			RS-485 1ch (Modbus protocol compliant)
PIO	Input specification	Number of inputs	3 points (forward, backward, alarm clear)
		Input voltage	24VDC ±10%
		Input current	5mA per circuit
		Leakage current	Max. 1mA/1 point
		Isolation method	Non-isolated
	Output specification	Number of outputs	3 points (forward complete, backward complete, alarm)
		Output voltage	24VDC ±10%
		Output current	50mA/1 point
		Residual voltage	2V or less
		Isolation method	Non-isolated
Data setting, input method			PC dedicated teaching software, touch panel teaching pendant, Wireless teaching controller, Wired teaching controller
Data retention memory			Position and parameters are saved in non-volatile memory (no limit to number of rewrites)
LED display	Controller status display (right)		Servo ON (green light ON) / Alarm (red light ON) / Initializing when power comes ON (orange light ON) / Minor failure alarm (blinking green) / Operation from teaching: Stop from teaching (red light ON) / Servo OFF (light OFF)
	Motor power status indicator (middle)		Motor power ON (green light ON) / Motor power OFF (blinking green)
	Wireless status display (left)		Wireless hardware initialization in progress or wireless not connected or connected from TP port (light off) Wireless connection in progress (blinking green) / Wireless hardware error (flashing red) / Power-on initialization in progress (lit orange)
	Charging status indicator (next to I/O connector)		Internal circuit charging state (lit red) / Internal circuit not charging state (unlit) (Note 3)
Predictive maintenance/preventative maintenance			When the number of movements or operation distance has exceeded a preset value or an overload warning occurs, the LED (right side) blinks green. *Only when configured by the customer in advance.
Ambient operating temperature			0~40°C
Ambient operating humidity			5~85%RH or less (no condensation or freezing)
Operating ambiance			No corrosive gas or excessive dust
Insulation resistance			500VDC 10MΩ
Electric shock protection mechanism			Class 1 basic insulation
Cooling method			Natural air cooling

(Note 1) Add when connecting to a teaching pendant.

(Note 2) Add when actuator with brake is used.

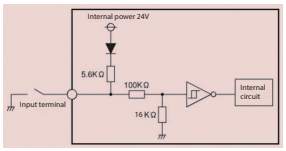
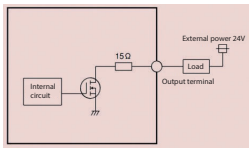
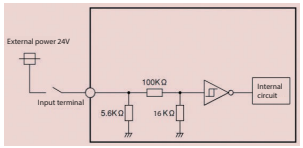
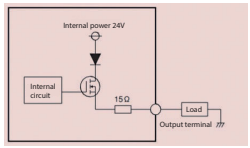
(Note 3) When the charge status indicator LED is lit, the controller is charged inside. To prevent electric shock, wiring and inspection work should be performed after the power is shut off and after confirming that the LEDs are turned off.

Solenoid Valve Method

ELECYLINDER products normally use a double solenoid method.
Change parameter No. 9 ("solenoid valve type selection") to use the single solenoid method.

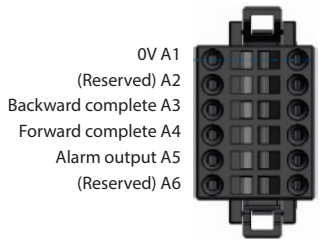
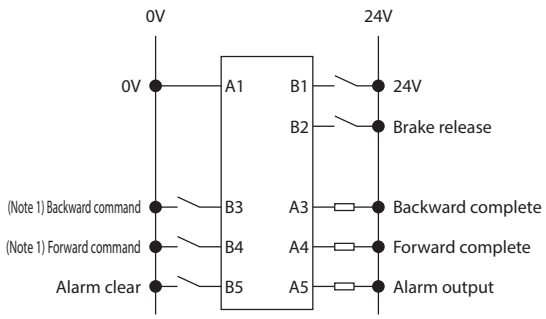
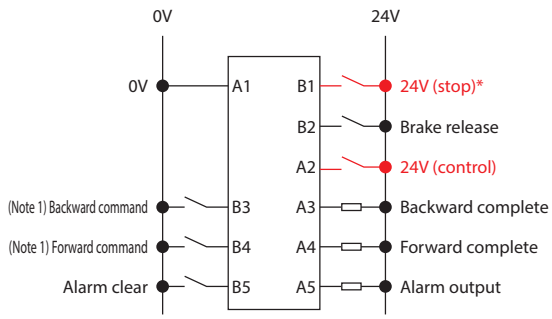
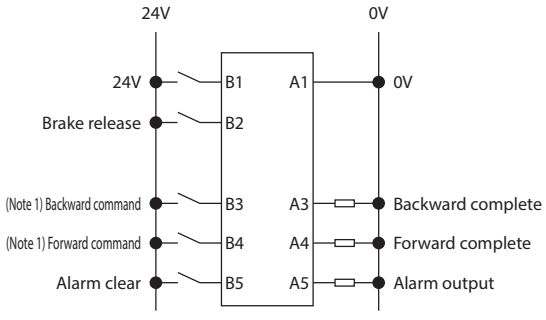
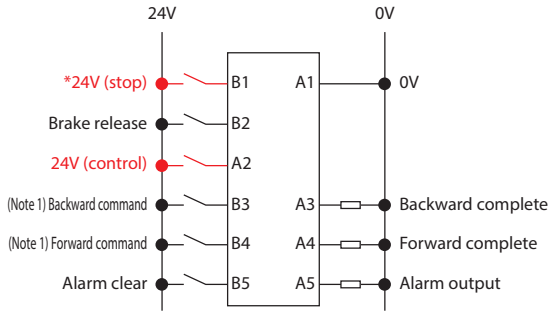
<Caution>
Single solenoid operation is not available when connected to RCON-EC.

I/O (Input/Output) Specifications

I/O		Input		Output	
Specifications		Input voltage	24VDC ±10%	Load voltage	24VDC ±10%
		Input current	5mA per circuit	Maximum load current	50mA/1 point
		ON/OFF voltage	ON voltage: MIN. 18VDC OFF voltage: MAX. 6VDC	Residual voltage	2V or less
		Leakage current	Max. 1mA/1 point	Leakage current	Max. 0.1mA/1 point
Isolation method		Non-isolated from external circuit		Non-isolated from external circuit	
I/O logic	NPN				
	PNP				

(Note) Isolation method is non-isolated. When grounding an external device (such as a PLC) connected to ELECYLINDER, use the same ground as ELECYLINDER.

I/O Signal Wiring Diagram

I/O		Standard specification	Split motor and controller power supply specification (option model: TMD2)
Power I/O connector			*TMD2 specification has an input to stop actuator operation, but does not shut off the drive source. When shutting off the drive source, it is necessary to separately shut off the AC power (L1, L2) of the PSA-200. 
I/O logic	NPN		
	PNP		

(Note 1) Switching to the single solenoid operation will change B3 to "forward/backward command" and B4 to "unused".

I/O Signal Table

Power · I/O connector pin assignment			
Pin Number	Connector nameplate label	Signal abbreviation	Function overview
B3 (Note 1)	Backward	ST0	Backward command
B4 (Note 2)	Forward	ST1	Forward command
B5	Alarm clear	RES	Alarm clear
A3	Backward complete	LS0	Backward complete
A4	Forward complete	LS1	Forward complete
A5	Alarm	*ALM	Alarm detection (b-contact)
B2	Brake release	BKRLS	Brake forced release (for brake equipped specification)
B1 (Note 2)	24V	24V	24V input
A1	0V	0V	0V input
A2 (Note 2)	(24V)	(24V)	24V input

(Note 1) Switching to single solenoid operation will change B3 to "forward/backward" and B4 to "unused". However, the power · I/O connector nameplate will still read "B3: Backward" and "B4: Forward".
(Note 2) In the case of 2 power supply system specification (TMD2), B1 is 24V (stop) and A2 is 24V (control).

Required Options

DC power supply for motor drive

■ **Features:** **This unit supplies DC power the actuator motors. Used with EC-S10 (X) / S13 (X) / S15 (X) / S18 (X). 1 unit can supply power for up to 6 axes. (within the allowable max. wattage)**

■ **Model**

PSA-200-1
(Input voltage: 100VAC single-phase maximum wattage: 800W)

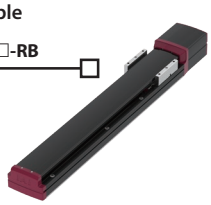
PSA-200-2
(Input voltage: 200VAC single-phase maximum wattage: 1600W))

■ **Configuration connected by motor power cable**

Main power supply
Single-phase AC100V
Single-phase AC200V

*Be sure to use a noise filter when connecting to the power supply.

CB-EC-PW□□□-RB



Actuator motor wattage (W)

EC-S10/S10X	100W
EC-S13/S13X	200W
EC-S15/S15X	400W
EC-S18/S18X	600W
EC-S18/S18X (high payload)	750W

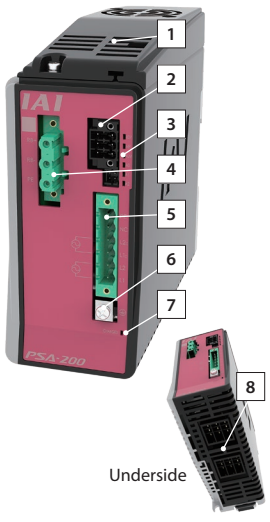
<Recommended models>
NF2010A-UP (Manufacturer: Soshin Electric)
NAC-10-472 (Manufacturer: COSEL)

■ **Specifications**

Power input voltage range		100VAC single-phase specification: 100~115VAC ±10% 200AC single-phase specification: 200~230VAC ±10%
Input frequency range		50/60Hz ±5%
Inrush current (Note 1)	55°C	Control power supply: 60A Motor power supply: 70A
Output voltage		280VDC
Max motor connections W qty.		100VAC single-phase specification: 800W 200VAC single-phase specification: 1600W
Max. number of connectible axes		6 axis
Momentary power failure capability		50Hz: 20ms, 60Hz: 16ms
Dielectric withstanding voltage		Between Primary and FG 1500VAC 1 min
Insulation resistance		Between Secondary and FG 500VDC 10MΩ or more
Leakage current		3.1mA total (with recommended noise filter, 6-axis connected)
Electric shock protection mechanism		Class 1 basic insulation

(Note 1) Inrush current flows for approximately 20ms after power-on. Note that the inrush current value varies depending on the impedance of the power supply line and the internal element temperature (thermistor).

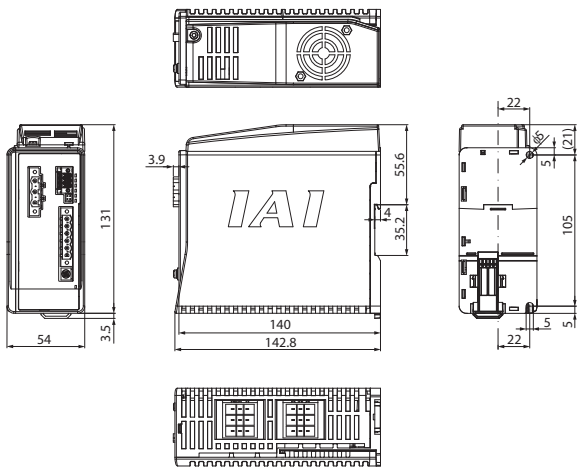
■ **Names of each part**



1. Fan unit
2. Status output connector
3. Status indicator LED
4. Regenerative unit cable connector
5. Power connector
6. Grounding terminal
7. Charging status indicator LED *1
8. Motor power connector

*1 When the charge status indicator LED is lit, the battery is charged inside the PSA-200. To prevent electric shock, wiring and inspection work should be performed after the power is shut off and after confirming that the LEDs are turned off.

■ **External dimensions**



Options

Regenerative resistance unit

■ **Features** This unit converts the regenerative current generated when the motor decelerates into heat.
Calculate the total wattage of the connected actuators and refer to the "Required Quantity Guideline" on the right. Prepare regenerative resistors if necessary.

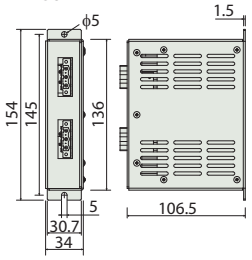
■ **Model** **RESU-1** (standard specifications) **/**
RESUD-1 (DIN rail mounting specifications)

■ **Specifications**

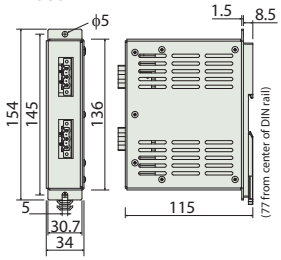
Model	RESU-1	RESUD-1
Main unit weight	Approx. 0.4kg	
Built-in regenerative resistance value	235Ω 80W	
Main unit installation method	Screw fixing	DIN rail mount
Attached cable	CB-ST-REU010	

■ **External dimensions**

<RESU-1>



<RESUD-1>

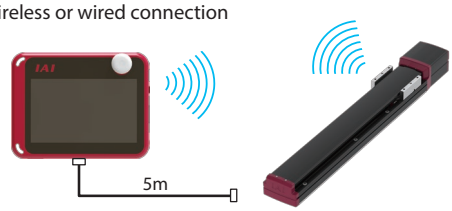


Wireless/wired touch panel teaching pendant

■ **Features** This teaching device supports wireless connections.
Start point/end point/AVD input and axis operation can be performed wirelessly (WL or WL2 option required).

■ **Model** **TB-03-□** Please check the HP for supported versions.

■ **Configuration** Wireless or wired connection



Wireless Teaching Controller

■ **Features** Easily perform starting point / end point / AVD input and jogging operations from a remote location. (WL or WL2 option required)

■ **Model** **TBD-1WL-□**

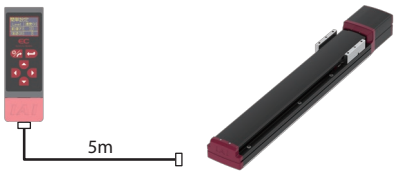
■ **Configuration** Wireless connection

Wired Teaching Controller

■ **Features** Easily perform start point / end point / AVD input and jogging operations. The wired connection allows for use with all ELECYLINDER models.

■ **Model** **TBD-1**

■ **Configuration** Wired connection



■ **Required Quantity Guideline**

Actuator-mounted motor wattage (W)

EC-S10/S10X	100W
EC-S13/S13X	200W
EC-S15/S15X	400W
EC-S18/S18X	600W
EC-S18/S18X (high payload)	750W

Watts (total)		Horizontal								
		0	200	400	600	800	1000	1200	1400	1600
Vertical	0	0	0	0	0 (1)	0 (1)	0 (1)	1	1 (2)	1 (2)
	200	0	1	1	1	1	1	1 (2)	1 (2)	-
	400	1	1	1	1	2	2	2	-	-
	600	1 (2)	1 (2)	2	2	2	2	-	-	-
	800	1 (2)	2	2	2 (3)	2 (3)	-	-	-	-
	1000	2	2	2	2 (3)	-	-	-	-	-
	1200	2 (3)	2 (3)	3	-	-	-	-	-	-
	1400	2 (3)	3	-	-	-	-	-	-	-
	1600	3 (4)	-	-	-	-	-	-	-	-

<Caution>

1. The above table is criteria for a round-trip operation at the rated acceleration/deceleration speed, rated load, and 1000mm stroke at the actuator's operating duty ratio of 50%.
*The numbers in parentheses indicate the number of units connected when S18/S18X is included.
2. Regenerative energy is also absorbed in the controller, but if it exceeds the allowed amount, an excessive estimated regenerative discharge power alarm occurs, so connect an additional external regenerative resistance unit.
If the operating duty is higher than 50% or the vertical payload is heavy, you may need more regenerative resistance units than specified in the table above.
The maximum number of regenerative resistance units that can be connected is 5.
Never connect more than 5 units as it may cause malfunction.
3. To find the optimum number of regen units for your operating conditions, please use a calculator software.

■ **Specifications**

Rated voltage	24V DC
Power consumption	3.6W or less (150mA or less)
Ambient operating temperature	0~40°C
Ambient operating humidity	20~85%RH (must be no condensation)
Ingress protection	IPX0
Mass	Approx. 485g (main unit) + approx. 175g (battery)
Charging method	Wired connection with dedicated adapter / controller
Wireless connection	Bluetooth4.2 class2

■ **Specifications**

Power input voltage range	5.9VDC (5.7~6.3V) [supplied by dedicated AC adapter]
Ambient operating temperature	0~40°C (no condensation or freezing)
Ambient operating humidity	5~85%RH or less (no condensation or freezing)
Ingress protection	IPX0
Mass	Approx. 115g (including 55g battery mass)
Charging method	Dedicated adapter
Wireless connection	Bluetooth4.2 class2

■ **Specifications**

Rated voltage	24VDC ±10% "supplied from controller"
Power consumption	1.44W or less (60mA or less)
Ambient operating temperature	0~40°C (no condensation or freezing)
Ambient operating humidity	5~85%RH or less (no condensation or freezing)
Ingress protection	IP20
Mass	21g (main unit) + 184g (main unit integrated cable 5m)

PC teaching software (Windows only)

Supported Windows: 7/10

■ **Features** This start-up support software provides functions such as position teaching, trial operation, and monitoring. It provides a complete range of functions required to make adjustments, to help reduce start-up time.

■ **Model** **IA-OS** (software only, for customers who already own a dedicated connection cable)
* Please purchase through your distributor and a download link will be sent to your valid email address.

■ **Configuration**

PC software (CD)
(Download Only)

Please check the HP for supported versions.

(Your dedicated connection cable)

■ **Model** **IA-OS-C** (with a communication cable + USB conversion adapter + USB cable)
* Please purchase through your distributor and a download link will be sent to your valid email address.

■ **Configuration**

PC software (CD)
(Download Only)

Please check the HP for supported versions.

USB conversion adapter
RCB-CV-USB

3m

USB cable
CB-SEL-USB030

5m

communication cable
CB-RCA-SIO050

Maintenance Parts

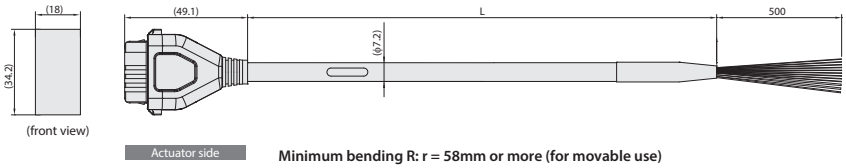
To purchase replacement or spare cables, please refer to the following models.

■ **Table of Compatible Cables**

Cable type	Cable model
Power · I/O cable (user-wired specification)	CB-EC-PWBIO□□□-RB
Power · I/O cable (RCON-EC connection specification)	CB-REC-PWBIO□□□-RB
Motor power cable	CB-EC-PW□□□-RB

Model CB-EC-PWBIO□□□-RB

*□□□ indicates cable length (L), up to 10m.
(Example) 030=3m



Minimum bending R: r = 58mm or more (for movable use)
***Only the robot cable is available for this model.**

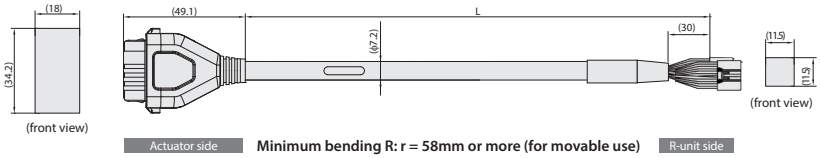
3-1871946-6

Color	Signal name	Pin No.
Black (AWG18)	0V	A1
Red (AWG18)	24V	B1
Light blue (AWG22)	(Reserved) (Note 1)	A2
Orange (AWG26)	IN0	B3
Yellow (AWG26)	IN1	B4
Green (AWG26)	IN2	B5
Pink (AWG26)	(Reserved)	B6
Blue (AWG26)	OUT0	A3
Purple (AWG26)	OUT1	A4
Gray (AWG26)	OUT2	A5
White (AWG26)	(Reserved)	A6
Brown (AWG26)	BKRLS	B2

(Note 1) 24V (control) when split motor and controller power supply specification (TMD2) is selected.

Model CB-REC-PWBIO□□□-RB

*□□□ indicates cable length (L), up to 10m.
Example) 030=3m



Minimum bending R: r = 58mm or more (for movable use)
***Only the robot cable is available for this model.**

3-1871946-6

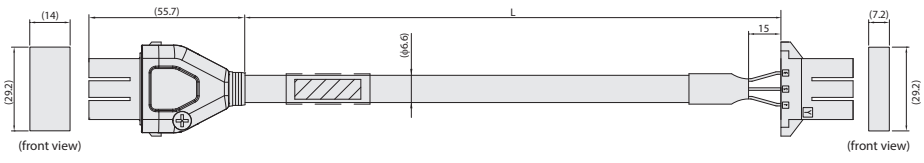
Color	Signal name	Pin No.
Black (AWG18)	0V	A1
Red (AWG18)	24V (MP)	B1
Light blue (AWG22)	24V (CP)	A2
Orange (AWG26)	IN0	B3
Yellow (AWG26)	IN1	B4
Green (AWG26)	IN2	B5
Yellow (AWG26)	SD+	B6
Light gray (AWG26)	SD-	A6
Blue (AWG26)	OUT0	A3
Purple (AWG26)	OUT1	A4
Gray (AWG26)	OUT2	A5
Brown (AWG26)	BKRLS	B2

DF62C-13S-2.2C (18)

Pin No.	Signal name	Color
2	0V	Black (AWG18)
1	24V (MP)	Red (AWG18)
12	24V (CP)	Light blue (AWG22)
7	OUT0	Orange (AWG26)
8	OUT1	Yellow (AWG26)
9	OUT2	Green (AWG26)
6	SD+	Yellow (AWG26)
10	SD-	Light gray (AWG26)
3	INO	Blue (AWG26)
4	IN1	Purple (AWG26)
5	IN2	Gray (AWG26)
11	BKRLS	Brown (AWG26)
13	FG	Green (AWG26)

Model CB-EC-PW□□□-RB

*□□□ indicates cable length (L), up to 10m.
Example) 030=3m



Minimum bending R: r = 40mm or more (for movable use)
***Only the robot cable is available for this model.**

Color	Signal name	Pin No.
Red (AWG18)	MP	1
Black (AWG18)	MN	2
Green / Yellow (AWG18)	PE	3

Pin No.	Signal name	Color
1	MP	Red (AWG18)
2	MN	Black (AWG18)
3	PE	Green / Yellow (AWG18)

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