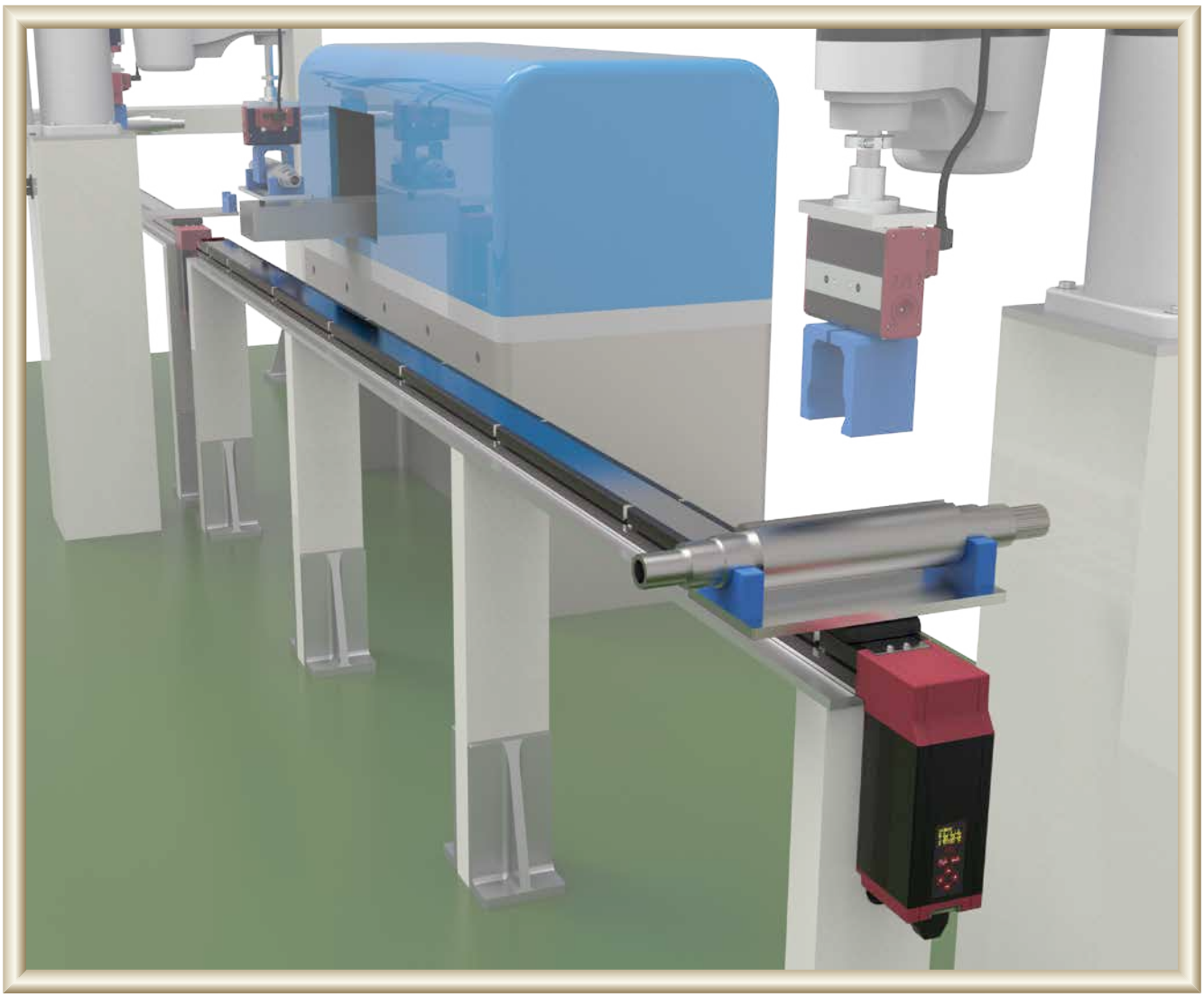
IAI
Quality and Innovation

ELECYLINDER®
Belt Driven Type

EC- (D)B6S / (D)B7S
B8S / B8SS



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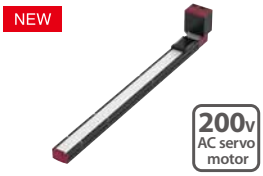
ELECYLINDER

Long stroke | High speed | High payload | Low cost | Easy to operate

ELECYLINDER®
Belt Driven Type

High thrust types are now available!

Type	(D)B6S	(D)B7S	B8S	B8SS
External appearance				
Maximum stroke	2600mm	2600mm	2600mm	2600mm
Maximum payload	11kg	20kg	25kg	15kg
Maximum speed	1500mm/s	1600mm/s	1800mm/s	2000mm/s

Payload and speed

Point

24v stepper motor

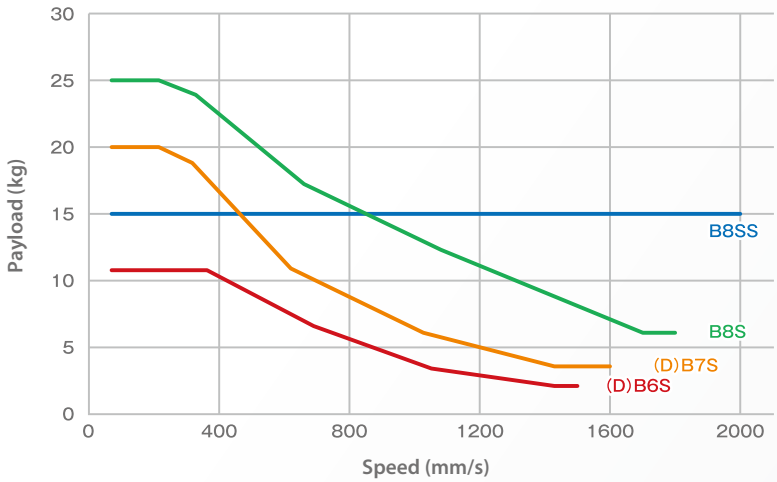
For high payloads at lower speeds

Choose models equipped with a stepper motor (B6S, B7S, B8S)

200v AC servo motor

For high payloads at higher speeds

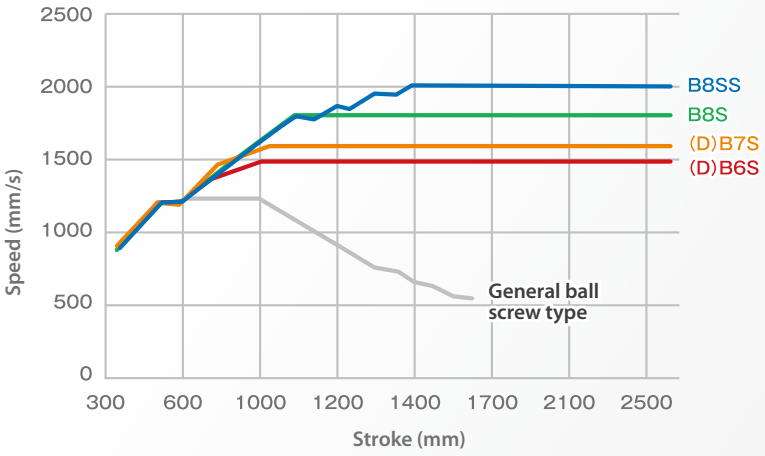
Choose models equipped with a servo motor (B8SS)



Best suited for long-distance transfers between processes

There are no slowdowns due to stroke lengths.

Stroke and speed



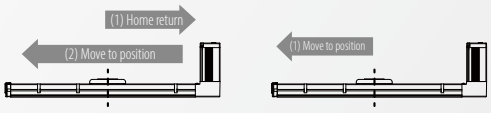
Further more…

Shortened startup time

By selecting a battery-less absolute encoder, the home return becomes unnecessary. (Equipped standard in B8SS)

» **In case of incremental:**
Position motion can only begin after returning to the mechanical end at a low speed.

» **In case of battery-less absolute:**
Position motion begins immediately from wherever the actuator stopped.



Thanks to the built-in mechanical position detecting device, using a battery to backup the position data is also unnecessary.

Point
Operating time and cycle time can be shortened.

Transferring motor shafts between processes

The side-mounted EC-B8SS is used to transfer parts between machine tools.

High speed transfer at 2000mm/s is possible.

Watch an application video from here.

intelligentactuator.com/ec-belt/

Easy yet accurate adjustments are possible.

Once setting is complete, it continues to operate in the same parameters.

Feedback control
Position: 1,000 times/s
Speed: up to 20,000 times/s

Units for setting parameters
Position: 0.01mm
Speed: 0.01mm/s

Point
Has a built-in controller and encoder.

Easy teaching with a wireless controller

Wireless teaching controller

With a wireless connection, operations from remote locations are possible (guideline: 5m)

Functions of the wireless teaching controller

- Basic setting (position, acceleration, speed, deceleration)
- Retrieving current location data
- Cycle time checking
- Alarm reset
- Error Display

Available specifically with the **WL2 option**:
* Trial operation
* Jog motion
* Motor power ON/OFF
* Brake Release

Model Specification Item

ELECYLINDER® Belt Driven Type [Models equipped with a stepper motor]

EC – [ ] [ ] S [ ] – [ ] – [ ] – [ ]

Series | Digital speed controller | Type | Lead | Motor coupling method | Stroke | Power • I/O cable length | Option

Digital speed controller

Blank	Without digital speed controller
D	With digital speed controller

* The digital speed controller cannot be selected for the B8.

Type

B6	Base width: 63mm
B7	Base width: 73mm
B8	Base width: 89mm

S	<(D)B6/(D)B7> Equivalent to lead 48mm
	<B8> Equivalent to lead 54mm

Motor coupling method

Blank	Motor top-mounted
U	Motor bottom-mounted

Stroke

300	300mm
≀	≀
2600	2600mm

(100mm increment)

Power • I/O cable length

0	No cable Power • I/O cable connector included *1
(S)1	1m
≀	≀
(S)10	10m

(1m increment)

(S): 4-way connector cable
*1 When RCON-EC connection specification (ACR) is selected, the power • I/O connector is not included.

Option

Blank	Incremental encoder specification NPN specification without option
ACR	RCON-EC connection specification *1
B	Brake *2
G5	Specified grease applied specification
NM	Non-motor end homing
PN	PNP specification *1
TMD2	Split motor and controller power
WA	Battery-less absolute encoder specification
WL	Wireless communication specification
WL2	Wireless axis operation specification

*1 When ACR is selected, PN and TMD2 cannot be selected.
*2 B8 cannot be selected.

ELECYLINDER® Belt Driven Type [Models equipped with an 200VAC servo motor]

EC – B8 S S [ ] – [ ] – [ ] – [ ] – [ ]

Series | Type | Lead | Motor type | Motor coupling method | Stroke | Power • I/O cable length | Motor power cable length | Option

Type

B8	Base width: 89mm

Lead

S	Lead equivalent to 54mm

Motor type

S	200VAC servo

Motor coupling method

Blank	Motor top-mounted
U	Motor bottom-mounted

Stroke

300	300mm
≀	≀
2600	2600mm

(100mm increment)

Power • I/O cable length

0	No cable Power • I/O cable connector included *1
1	1m
≀	≀
10	10m

(1m increment)

* Power • I/O connector is not included when RCON-EC connection specification (ACR) is selected.

Motor power cable length

0	No cable
1	1m
≀	≀
10	10m

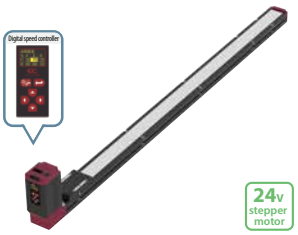
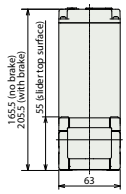
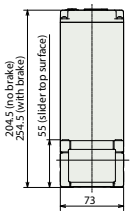
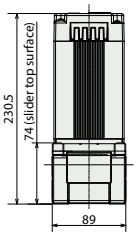
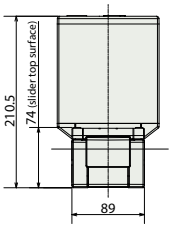
(1m increment)

Option

Blank	NPN specification, without option
ACR	RCON-EC connection specification *1
G5	Specified grease applied specification
NM	Non-motor end homing
PN	PNP specification *1
TMD2	Split motor and controller power *1
WL	Wireless communication specification
WL2	Wireless axis operation specification

*1 When ACR is selected, PN and TMD2 cannot be selected.

Table of specifications

EC-(D)B6S	EC-(D)B7S	EC-B8S	EC-B8SS
			
			

Motor type	Type	Lead		Stroke (mm) and maximum speed (mm/s) * Band length = stroke * number in the band = maximum speed by stroke											Maximum payload (kg)	Reference page
		Model	mm	300	400	500	600	700	800	900	1000	1100	1200	1300	1400~2600	Horizontal
24V stepper motor	(D)B6	S	Equivalent to 48	890	1070	1220	1340	1400	1440	1500						11	P7
	(D)B7	S	Equivalent to 48	890	1070	1220	1340	1450	1520	1550	1600					20	P11
	NEW B8	S	Equivalent to 54	1040	1270	1440	1560	1640	1690	1730	1750	1770	1780	1790	1800	25	P15
200V AC servo motor (200W)	NEW B8	S	Equivalent to 54	1210	1460	1670	1800	1890	1930	1960	1980	1990	2000			15	P19

Energy-saving setting

EC-(D)B6/(D)B7 can select Enable/Disabled of the "Energy-saving setting" at parameter (No. 8). * The B8 is not compatible with energy saving mode.

Enabling this setting reduces power capacity by about 40% compared when the setting is disabled. The max. speed, max. acceleration/deceleration and payload decrease compared to when the setting is disabled. Disabling the setting increases max. speed, max. acceleration/deceleration and payload compared to when the setting is enabled. Refer to the "Payload Table by Speed and Acceleration" and "Stroke and max. Speed" tables on each product's specification page. The product is set to disabled by default.

Setting for shipment

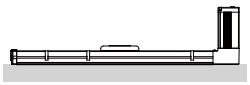
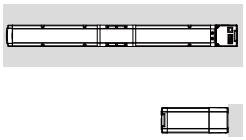
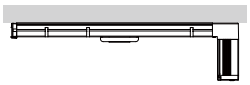
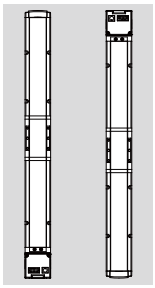
Mode	Parameter name / display	Features
Power mode	Energy-saving setting disabled	High specification
Energy-saving mode	Energy-saving setting enabled	High energy-saving effect

Automatic servo OFF function

The "Automatic Servo OFF Function" can be set using the PC-compatible teaching software (IA-OS) or the teaching pendant (TB-02/03).
When the automatic servo OFF function is set, the servo will automatically be turned OFF after a certain time upon completion of a position or when the actuator is stopped.
When the next move command is input, servo will be turned ON automatically and execute a positioning motion.
When stopped, there is no holding current, which reduces power consumption.

Mounting orientation

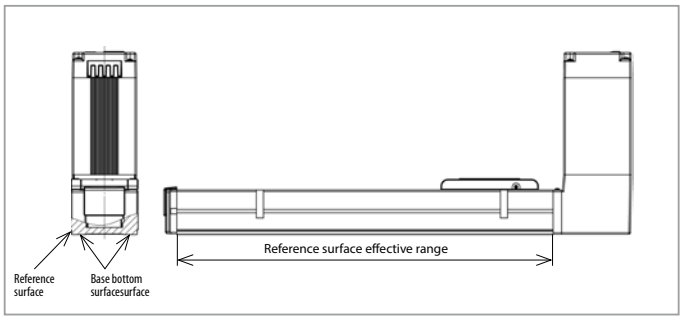
○: Mounting possible ×: Mounting impossible

Mounting orientation			
			
Horizontal mounting on flat surface	Horizontal side mount	Horizontal ceiling mount	Vertical mount
○	○*1	○*1	×

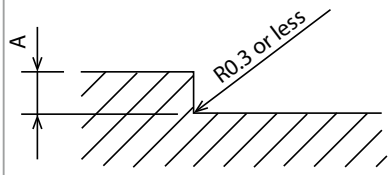
*1: Installing the product horizontal side mount or horizontal ceiling mount may cause slack or misalignment in the stainless steel sheet.
Continued use in these orientations can cause the stainless steel sheet to break.
Check it daily and adjust the sheet if any slack or misalignment is found.

Precautions on Installation

- Flatness of the main body mounting surface and workpiece mounting surface should be 0.05mm/m or smaller. Inadequate flatness increases sliding friction, causing malfunction.
- The base bottom and left surfaces (seen from the opposite side of the motor) of the main body are the reference surface for the slider's travel accuracy.
  If travel accuracy is needed, install the product based on the respective surface as the reference.



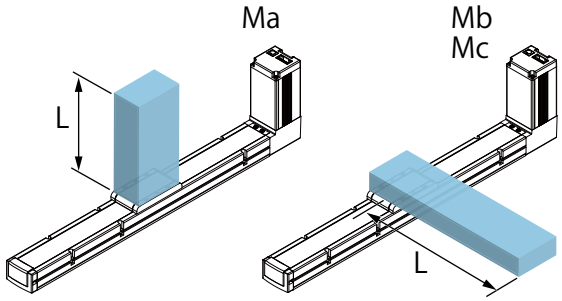
When mounting using the side surfaces as a reference, the machining of the mounting surfaces should be done according to the drawing below.



Type	A dimension (mm)
(D)B6/(D)B7/B8	2~5

Overhang load length

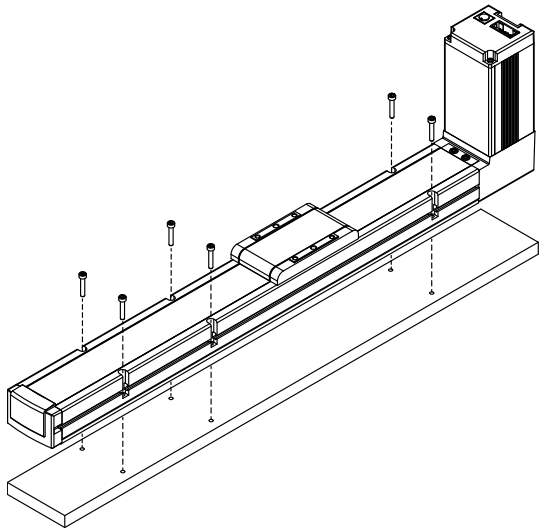
This is the allowable offset length of the payload when the payload is not centered on the slider. If the overhang length exceeds the allowable offset length in any direction, excessive vibration or other mechanical failures can occur. To ensure smooth operation, please use the products within their allowable overhang values.

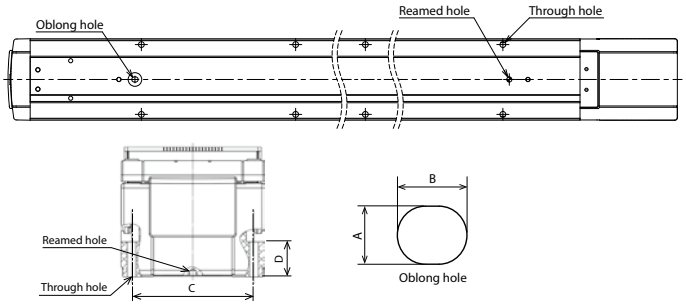


Mounting method

■Mounting the actuator base

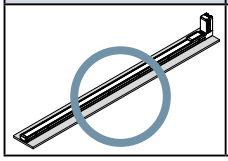
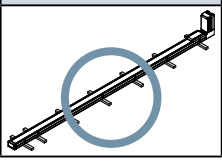
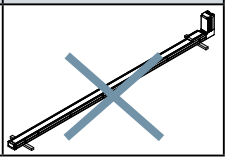
The actuator has through holes for mounting from the top.





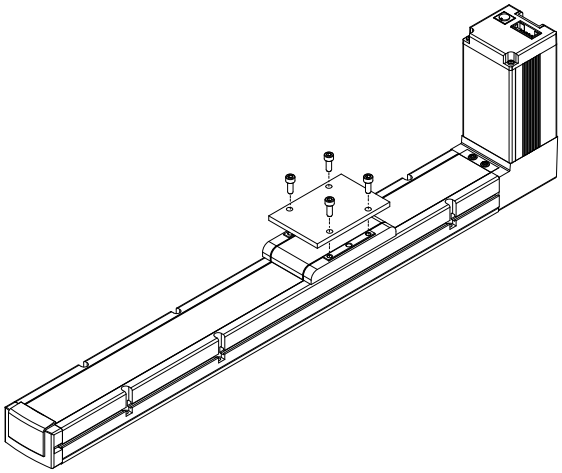
Type	Through hole diameter [mm]	Through hole width C[mm]	Through hole depth D[mm]	Reamed hole [mm]	Oblong hole [mm]
(D)B6	ϕ4.5	54	13	ϕ4H7 Depth 4	A : 4 $^{+0.012}_{0}$ B : 5 Depth 4
(D)B7	ϕ5.5	63	12		
B8	ϕ5.5	76	22		

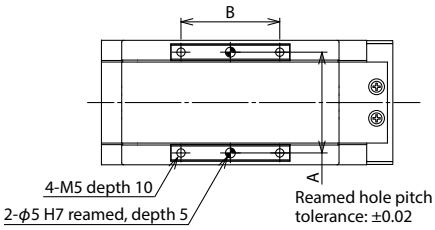
<Precautions>
* Basically, use all the through holes to support the entire surface.
* If travel accuracy is not needed, securing the base using only foot brackets is also possible. In these cases, all through holes still must be used to provide proper support.
* Do not mount the base only at the ends.
  The base may warp and sliding resistance increases at both ends.

Entire surface to be fixed All the through holes to be used	To be fixed with foot brackets, etc. All the through holes to be used	Fixed only at the both ends
		

■Mounting to the slider

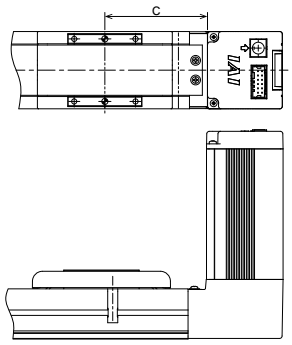
Mount the payload using the screw holes on the slider top surface.





Type	A [mm]	B [mm]
(D)B6	51	50
(D)B7	61	50
B8	76	50

<Precautions>
In case of the motor top-mounted specification, the motor (motor cover) extrudes from the top surface.
Make sure the payload will not collide with the motor.



Distance between the slider center and the motor cover at the mechanical end: C

Type	C [mm]
(D)B6	78.7
(D)B7	87.7
B8	89

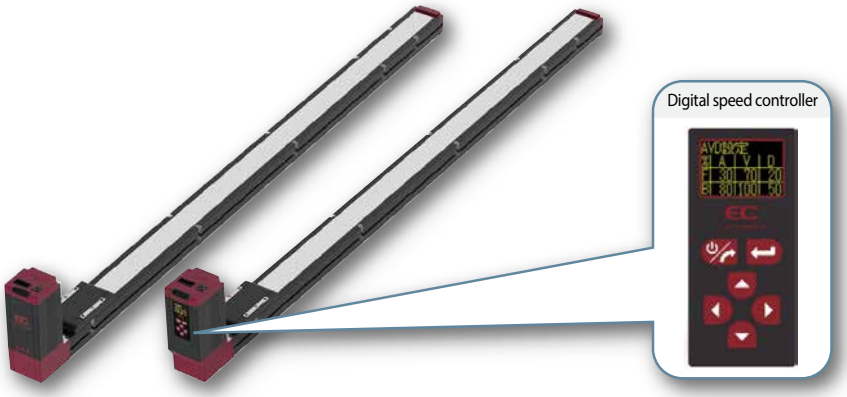
EC-B6S/B6SU
EC-DB6S/DB6SU

Simple dust-proof | Coupled Motor | Body width 60 mm | 24V Stepper motor | Belt type

Model Specification Items

EC – [ ] S [ ] – [ ] – [ ] – [ ]

Series	Type		Lead		Specification		Stroke		Power • I/O cable length	Option
	B6	Standard	S	48mm	Blank	Motor top-mounted	300 ~ 2600	300mm ~ 2600mm (100mm increments)	Refer to the Power • I/O cable length below	Refer to option below
	DB6	Digital speed controller			U	Motor bottom-mounted				



CE RoHS

Horizontal | Side | Ceiling | Vertical

(Note) The above picture shows the motor mounted at top.

Stroke

Stroke (mm)	B6	DB6	Stroke (mm)	B6	DB6
300	✓	✓	**1500**	✓	✓
400	✓	✓	**1600**	✓	✓
500	✓	✓	**1700**	✓	✓
600	✓	✓	**1800**	✓	✓
700	✓	✓	**1900**	✓	✓
800	✓	✓	**2000**	✓	✓
900	✓	✓	**2100**	✓	✓
1000	✓	✓	**2200**	✓	✓
1100	✓	✓	**2300**	✓	✓
1200	✓	✓	**2400**	✓	✓
1300	✓	✓	**2500**	✓	✓
1400	✓	✓	**2600**	✓	✓

Option

Name	Option code	Reference page
RCON-EC connection specification (Note 1)	**ACR**	23
Brake	**B**	23
Specified grease applied specification*	**G5**	23
Non-motor homing specification	**NM**	23
PNP specification	**PN**	23
Split motor and controller power	**TMD2**	23
Battery-less absolute encoder specification	**WA**	23
Wireless communication specification	**WL**	23
Wireless axis operation specification	**WL2**	23

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

Selection Notes

(1) Excessive vibration or noise will occur during low-speed operations. Do not operate the belt type below 100mm/s.
(2) The actuator specifications display the payload's maximum value. Please refer to "Table of Payload by Speed and Acceleration/Deceleration" for more details.
(3) Push-motion operation cannot be performed.
(4) Special attention needs to be paid to the mounting orientation. Refer to P5 for details.
(5) Reference value of the overhang load length is under 220mm in the Ma, Mb and Mc directions. Refer to P5 for the overhang load length.
(6) The center of gravity of the payloads 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 modified if abnormal vibration or noise is observed.

Power • I/O cable length

Standard connector cable

Cable code	Cable length	User wiring specification (Flying leads)	RCON-EC connection specification (Note 3) (with connectors on both ends)
		CB-EC-PWBIO□□□-RB	CB-REC-PWBIO□□□-RB
0	No cable	✓ (Note 2)	✓
1 ~ 3	1 ~ 3m	✓	✓
4 ~ 5	4 ~ 5m	✓	✓
6 ~ 7	6 ~ 7m	✓	✓
8 ~ 10	8 ~ 10m	✓	✓

(Note 2) Only the terminal connector is included. Refer to P32 for details.
(Note 3) In order to connect to the RCON-EC, the ACR option must be selected.
(Note) Robot cable is standard.

4-way connector cable

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

(Note 4) In order to connect to the RCON-EC, the ACR option must be selected.
(Note) Robot cable is standard.

Main Specification

Item			Description
Horizontal	Payload	Maximum payload (energy-saving disabled) (kg)	11
		Maximum payload (energy-saving enabled) (kg)	3
	Speed/ acceleration/ deceleration	Max. speed (mm/s)	1500
		Min. speed (mm/s)	100
		Rated acceleration/ deceleration (G)	0.3
		Max. acceleration/ deceleration (G)	1.0
Brake		Brake holding specification	Non-excitation actuating solenoid brake
		Brake holding force (N)	1.3
Stroke		Min. stroke (mm)	300
		Max. stroke (mm)	2600
		Stroke pitch (mm)	100

Item	Description
Driving system	Timing belt 9mm width 3mm pitch 48mm lead
Positioning repeatability	±0.08mm
Lost motion	- (Cannot be shown due to positioning function between 2 points)
Base	Dedicated aluminum extruded material (A6063SS-T5 Equivalent) Black alumite treatment
Linear guide	Linear motion infinite circulating type
Static allowable moment	Ma: 48.5 N·m
	Mb: 69.3 N·m
	Mc: 97.1 N·m
Dynamic allowable moment (Note 5)	Ma: 11.6 N·m
	Mb: 16.6 N·m
	Mc: 23.3 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 (Restriction of Hazardous Substances)
Motor type	Stepper motor (□42) (Power capacity: Max. 4.2A)
Encoder type	Incremental / battery-less absolute
Encoder resolution	800 pulse/rev

(Note 5) Based on the standard rated operation life of 5,000 km. Operation life varies according to operating and mounting conditions. Please contact IAI for operational life.

■ Direction of moment for the Slider type

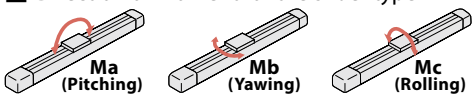


Table of Payload by Speed and Acceleration/Deceleration *Default factory setting is Disabled. Refer to P4 for details.

■ Energy-saving disabled (Power mode) The unit for payload is kg.

Orientation	Horizontal			
Speed (mm/s)	Acceleration (G)			
	0.3	0.5	0.7	1
0	11	10	8	7
200	11	10	8	7
300	11	8.5	7	6
600	7	5	4	3
1000	4	3	2	1
1200	3	2	1	0.5
1400	2	1	1	0.5
1500	2	1	1	0.5

■ Energy-saving enabled (Energy-saving mode) The unit for payload is kg.

Orientation	Horizontal	
Speed (mm/s)	Acceleration (G)	
	0.3	0.7
0	3	2
800	3	2
1400	0.5	0.5

Stroke and maximum speed

Energy saving	300 (mm)	400 (mm)	500 (mm)	600 (mm)	700 (mm)	800 (mm)	900~2600 (per 100mm)
disabled	890	1070	1220	1340	1400	1440	1500
enabled	890	1070	1220	1300	1350	1400	

(Unit is mm/s)

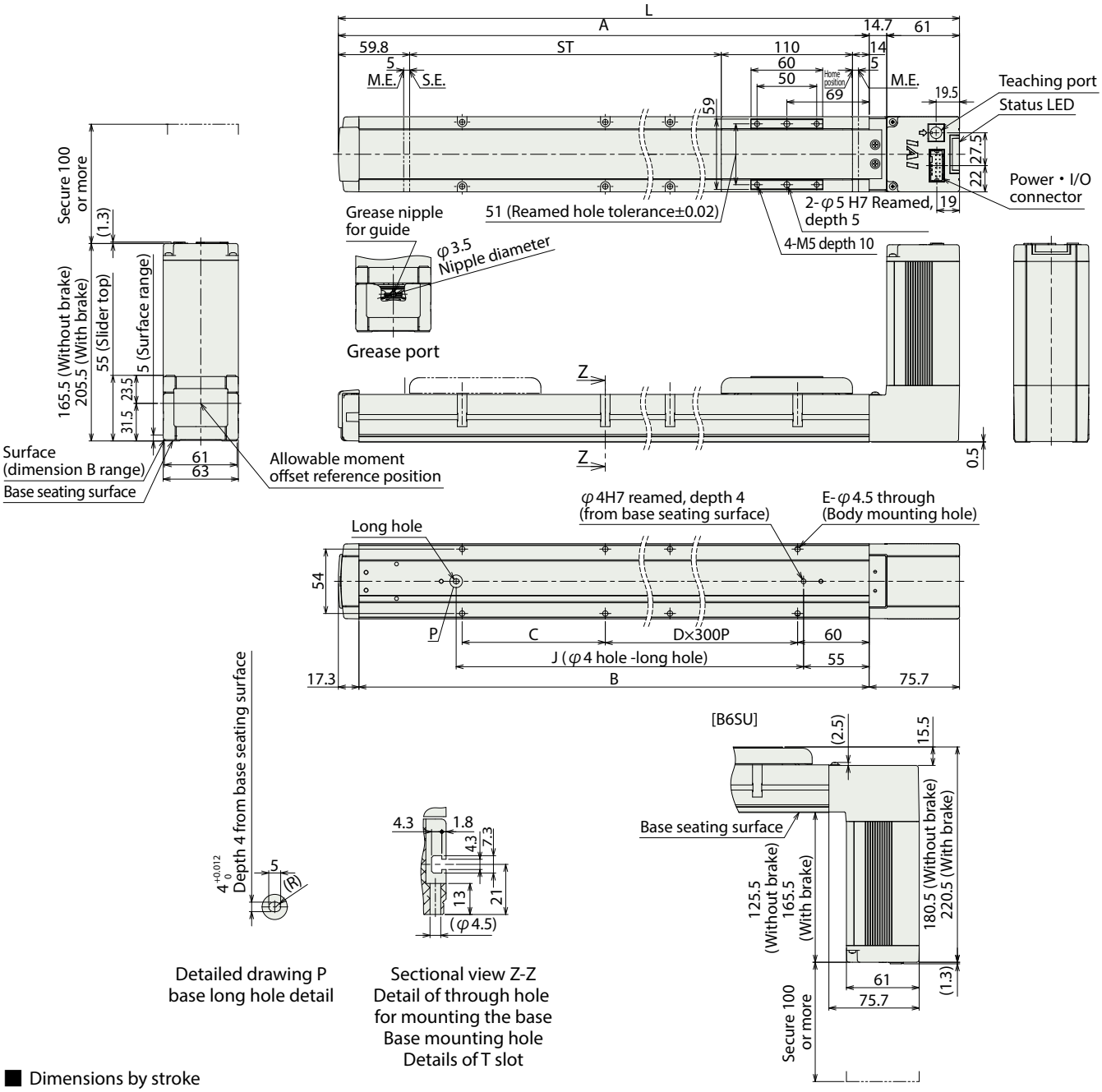
Dimensions

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

EC-B6S/B6SU

(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



Detailed drawing P
base long hole detail

Sectional view Z-Z
Detail of through hole
for mounting the base
Base mounting hole
Details of T slot

Dimensions by stroke

Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600
L	559.5	659.5	759.5	859.5	959.5	1059.5	1159.5	1259.5	1359.5	1459.5	1559.5	1659.5	1759.5	1859.5	1959.5	2059.5	2159.5	2259.5	2359.5	2459.5	2559.5	2659.5	2759.5	2859.5
A	483.8	583.8	683.8	783.8	883.8	983.8	1083.8	1183.8	1283.8	1383.8	1483.8	1583.8	1683.8	1783.8	1883.8	1983.8	2083.8	2183.8	2283.8	2383.8	2483.8	2583.8	2683.8	2783.8
B	466.5	566.5	666.5	766.5	866.5	966.5	1066.5	1166.5	1266.5	1366.5	1466.5	1566.5	1666.5	1766.5	1866.5	1966.5	2066.5	2166.5	2266.5	2366.5	2466.5	2566.5	2666.5	2766.5
C	320	120	220	320	120	220	320	120	220	320	120	220	320	120	220	320	120	220	320	120	220	320	120	220
D	0	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5	6	6	6	7	7	7	8	8
E	4	6	6	6	8	8	8	10	10	10	12	12	12	14	14	14	16	16	16	18	18	18	20	20
J	330	430	530	630	730	830	930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	2430	2530	2630

Mass by stroke

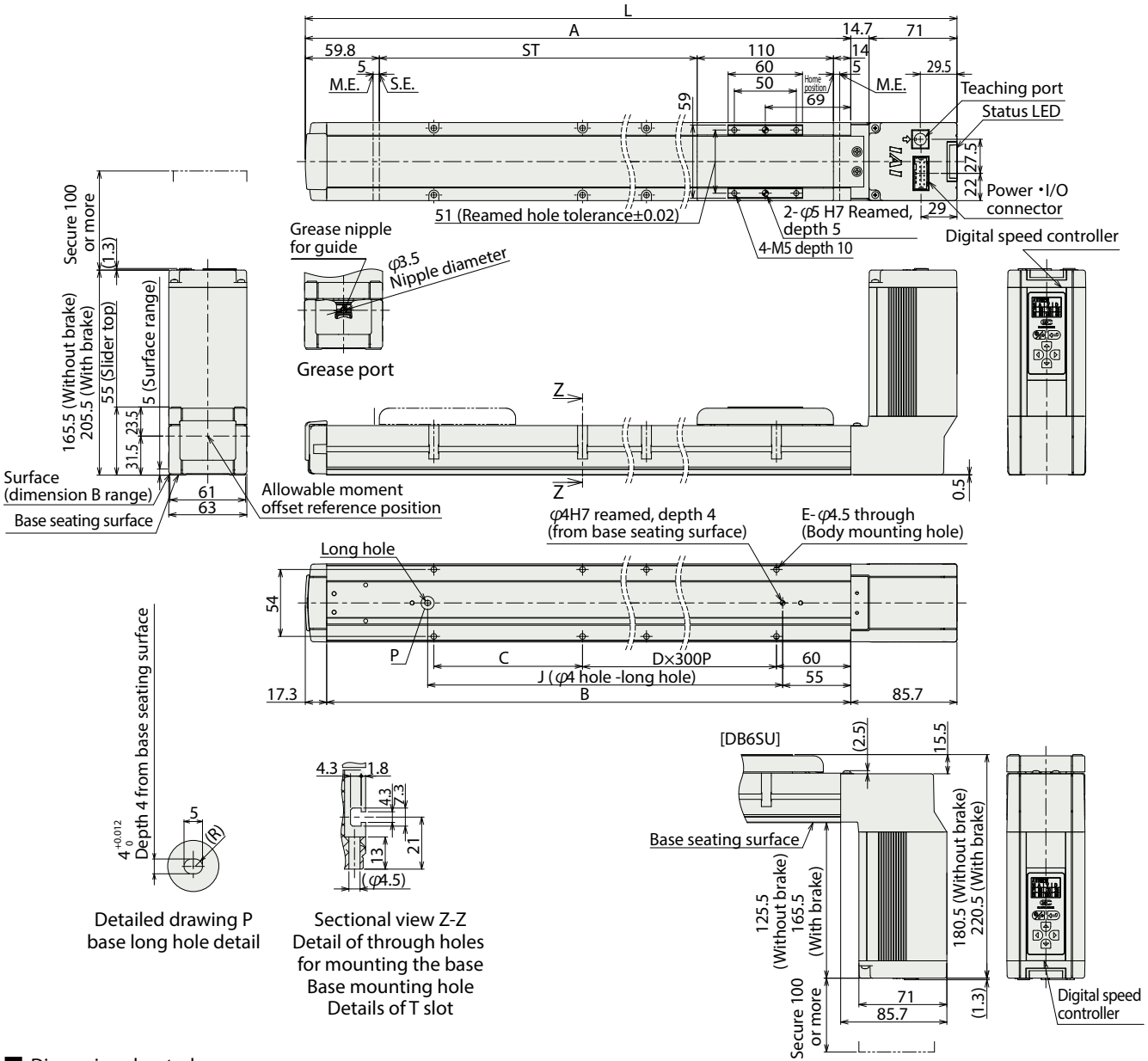
Stroke		300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600
Weight (kg)	W/o Brake	2.7	3.0	3.4	3.7	4.0	4.3	4.7	5.0	5.3	5.6	5.9	6.3	6.6	6.9	7.2	7.5	7.8	8.2	8.5	8.8	9.2	9.5	9.8	10.2
	With Brake	3.0	3.3	3.7	4.0	4.3	4.6	5.0	5.3	5.6	5.9	6.2	6.6	6.9	7.2	7.5	7.8	8.1	8.5	8.8	9.1	9.5	9.8	10.1	10.5

Note: B6SU also has the same mass.

■ EC-DB6S/DB6SU <with digital speed controller>

(Note) When the slider is returning to its home position, please be careful of interference from surrounding objects, as it will travel until it reaches the M.E.
(Note) It is not possible to change the direction of the digital speed controller to any direction other than the one shown below.

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



Detailed drawing P
base long hole detail

Sectional view Z-Z
Detail of through holes
for mounting the base
Base mounting hole
Details of T slot

■ Dimensions by stroke

Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600
L	569.5	669.5	769.5	869.5	969.5	1069.5	1169.5	1269.5	1369.5	1469.5	1569.5	1669.5	1769.5	1869.5	1969.5	2069.5	2169.5	2269.5	2369.5	2469.5	2569.5	2669.5	2769.5	2869.5
A	483.8	583.8	683.8	783.8	883.8	983.8	1083.8	1183.8	1283.8	1383.8	1483.8	1583.8	1683.8	1783.8	1883.8	1983.8	2083.8	2183.8	2283.8	2383.8	2483.8	2583.8	2683.8	2783.8
B	466.5	566.5	666.5	766.5	866.5	966.5	1066.5	1166.5	1266.5	1366.5	1466.5	1566.5	1666.5	1766.5	1866.5	1966.5	2066.5	2166.5	2266.5	2366.5	2466.5	2566.5	2666.5	2766.5
C	320	120	220	320	120	220	320	120	220	320	120	220	320	120	220	320	120	220	320	120	220	320	120	220
D	0	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5	6	6	6	7	7	7	8	8
E	4	6	6	6	8	8	8	10	10	10	12	12	12	14	14	14	16	16	16	18	18	18	20	20
J	330	430	530	630	730	830	930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	2430	2530	2630

■ Mass by stroke

Stroke		300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600
Weight (kg)	W/o Brake	2.7	3.0	3.4	3.7	4.0	4.3	4.7	5.0	5.3	5.6	5.9	6.3	6.6	6.9	7.2	7.5	7.8	8.2	8.5	8.8	9.2	9.5	9.8	10.2
	With Brake	3.0	3.3	3.7	4.0	4.3	4.6	5.0	5.3	5.6	5.9	6.2	6.6	6.9	7.2	7.5	7.8	8.1	8.5	8.8	9.1	9.5	9.8	10.1	10.5

Note: DB6SU also has the same mass.

Applicable controller

(Note) The EC series is equipped with a built-in controller. Refer to P28 for the detail of the built-in controller.

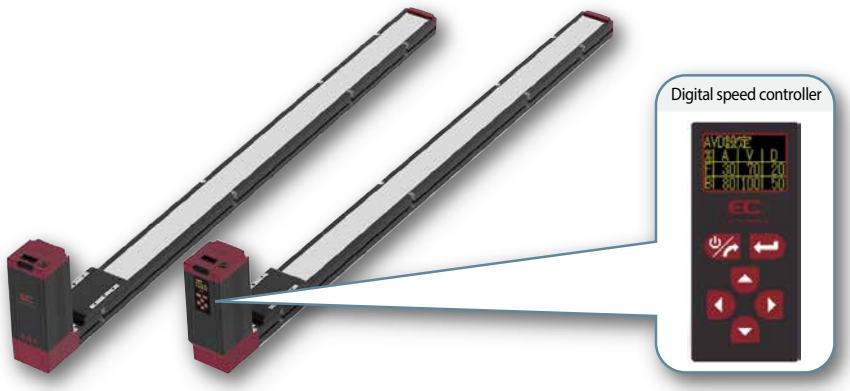
EC-B7S/B7SU
DB7S/DB7SU

Simple dust-proof | Coupled Motor | Body width 70 mm | 24V Stepper motor | Belt type

Model Specification Items

EC – [ ] S [ ] – [ ] – [ ] – [ ]

Series	Type		Lead		Specification		Stroke		Power • I/O cable length	Option
	B7	Standard	S	48mm	Blank	Motor top-mounted	300 ~ 2600	300mm ~ 2600mm (100mm increments)	Refer to the Power • I/O cable length below	Refer to option below
	DB7	Digital speed controller			U	Motor bottom-mounted				



Horizontal | Side | Ceiling | Vertical

(Note) The above picture shows the motor mounted at top.

Stroke

Stroke (mm)	B7	DB7	Stroke (mm)	B7	DB7
300	✓	✓	**1500**	✓	✓
400	✓	✓	**1600**	✓	✓
500	✓	✓	**1700**	✓	✓
600	✓	✓	**1800**	✓	✓
700	✓	✓	**1900**	✓	✓
800	✓	✓	**2000**	✓	✓
900	✓	✓	**2100**	✓	✓
1000	✓	✓	**2200**	✓	✓
1100	✓	✓	**2300**	✓	✓
1200	✓	✓	**2400**	✓	✓
1300	✓	✓	**2500**	✓	✓
1400	✓	✓	**2600**	✓	✓

Option

Name	Option code	Reference page
RCON-EC connection specification (Note 1)	**ACR**	23
Brake	**B**	23
Specified grease applied specification*	**G5**	23
Non-motor end homing specification	**NM**	23
PNP specification	**PN**	23
Split motor and controller power	**TMD2**	23
Battery-less absolute encoder specification	**WA**	23
Wireless communication specification	**WL**	23
Wireless axis operation specification	**WL2**	23

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

Selection Notes

(1) Excessive vibration or noise will occur during low-speed operations. Do not operate the belt type below 100mm/s.
(2) The actuator specifications display the payload's maximum value. Please refer to "Table of Payload by Speed and Acceleration/Deceleration" for more details.
(3) Push-motion operation cannot be performed.
(4) Special attention needs to be paid to the mounting orientation. Refer to P5 for details.
(5) Reference value of the overhang load length is under 280mm in the Ma, Mb and Mc directions. Refer to P5 for the overhang load length.
(6) The center of gravity of the payload 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 modified if abnormal vibration or noise is observed vibration or noise is observed.

Power · I/O cable length

Standard connector cable

Cable code	Cable length	User wiring specification (Flying leads)	RCON-EC connection specification (Note 3) (with connectors on both ends)
		CB-EC-PWBIO□□□-RB	CB-REC-PWBIO□□□-RB
0	No cable	✓ (Note 2)	✓
1 ~ 3	1 ~ 3m	✓	✓
4 ~ 5	4 ~ 5m	✓	✓
6 ~ 7	6 ~ 7m	✓	✓
8 ~ 10	8 ~ 10m	✓	✓

(Note 2) Only the terminal connector is included. Refer to P32 for details.
(Note 3) In order to connect to the RCON-EC, the ACR option must be selected.
(Note) Robot cable is standard.

4-way connector cable

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

(Note 4) In order to connect to the RCON-EC, the ACR option must be selected.
(Note) Robot cable is standard.

Main Specification

Item			Description
Horizontal	Payload	Maximum payload (energy-saving disabled) (kg)	20
		Maximum payload (energy-saving enabled) (kg)	14
	Speed/ acceleration/ deceleration	Max. speed (mm/s)	1600
		Min. speed (mm/s)	100
		Rated acceleration/ deceleration (G)	0.3
		Max. acceleration/ deceleration (G)	1.0
Brake		Brake holding specification	Non-excitation actuating solenoid brake
		Brake holding force (N)	2.5
Stroke		Min. stroke (mm)	300
		Max. stroke (mm)	2600
		Stroke pitch (mm)	100

Item	Description
Driving system	Timing belt 9mm width 3mm pitch 48mm lead
Positioning repeatability	±0.08mm
Lost motion	- (Cannot be shown due to positioning function between 2 points)
Base	Dedicated aluminum extruded material (A6063SS-T5 Equivalent) Black alumite treatment
Linear guide	Linear motion infinite circulating type
Static allowable moment	Ma: 79.7 N·m
	Mb: 114 N·m
	Mc: 157 N·m
Dynamic allowable moment (Note 5)	Ma: 17.7 N·m
	Mb: 25.3 N·m
	Mc: 34.9 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 (Restriction of Hazardous Substances)
Motor type	Stepper motor (□56) (Power capacity: Max. 4.2A)
Encoder type	Incremental / battery-less absolute
Encoder resolution	800 pulse/rev

(Note 5) Based on the standard rated operation life of 5,000 km. Operation life varies according to operating and mounting conditions. Please contact IAI for operational life.

■ Direction of moment for the Slider type

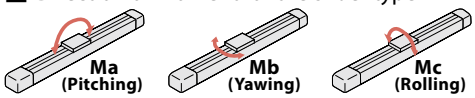


Table of Payload by Speed and Acceleration/Deceleration *Default factory setting is Disabled. Refer to P4 for details.

■ Energy-saving disabled (Power mode) The unit for payload is kg.

Orientation	Horizontal			
Speed (mm/s)	Acceleration (G)			
	0.3	0.5	0.7	1
0	20	20	18	16
100	20	20	18	16
200	20	20	17	15
300	19	17	15	13
600	11	9	8	7
1000	6	5	4	3
1400	3	2	1	0.5
1600	3	2	1	0.5

■ Energy-saving enabled (Energy-saving mode) The unit for payload is kg.

Orientation	Horizontal	
Speed (mm/s)	Acceleration (G)	
	0.3	0.7
0	14	12
100	14	12
400	10	8
800	5	3
1200	1	0.5

Stroke and maximum speed

Energy saving	300 (mm)	400 (mm)	500 (mm)	600 (mm)	700 (mm)	800 (mm)	900 (mm)	1000~2600 (per 100mm)
disabled	890	1070	1220	1340	1450	1520	1550	1600
enabled	890	1070	1120	1200				

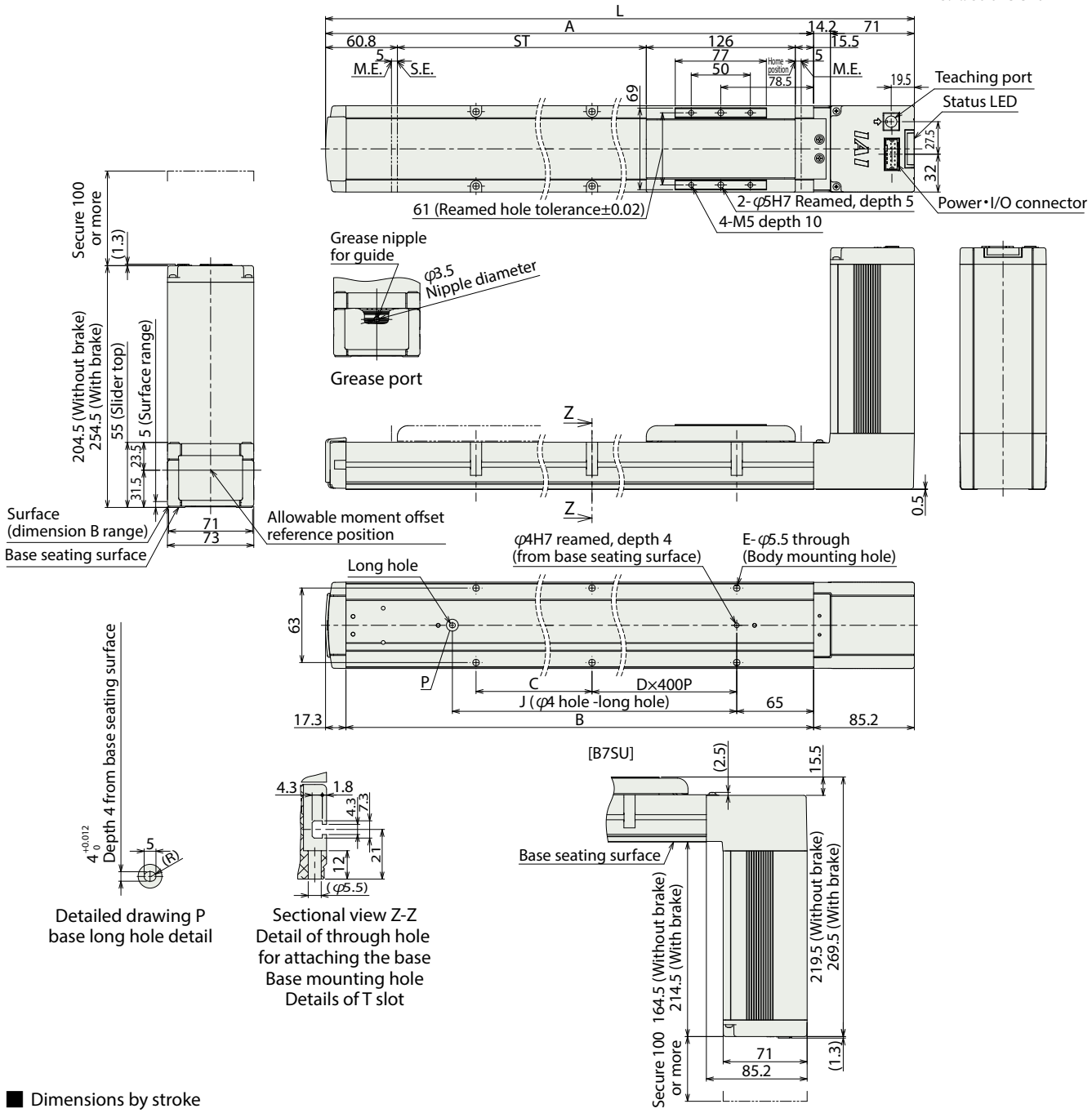
(Unit is mm/s)

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

EC-B7S/B7SU

(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



Detailed drawing P
base long hole detail

Sectional view Z-Z
Detail of through hole
for attaching the base
Base mounting hole
Details of T slot

Dimensions by stroke

Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600
L	587.5	687.5	787.5	887.5	987.5	1087.5	1187.5	1287.5	1387.5	1487.5	1587.5	1687.5	1787.5	1887.5	1987.5	2087.5	2187.5	2287.5	2387.5	2487.5	2587.5	2687.5	2787.5	2887.5
A	502.3	602.3	702.3	802.3	902.3	1002.3	1102.3	1202.3	1302.3	1402.3	1502.3	1602.3	1702.3	1802.3	1902.3	2002.3	2102.3	2202.3	2302.3	2402.3	2502.3	2602.3	2702.3	2802.3
B	485	585	685	785	885	985	1085	1185	1285	1385	1485	1585	1685	1785	1885	1985	2085	2185	2285	2385	2485	2585	2685	2785
C	310	410	110	210	310	410	110	210	310	410	110	210	310	410	110	210	310	410	110	210	310	410	110	210
D	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6
E	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16
J	330	430	530	630	730	830	930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	2430	2530	2630

Mass by stroke

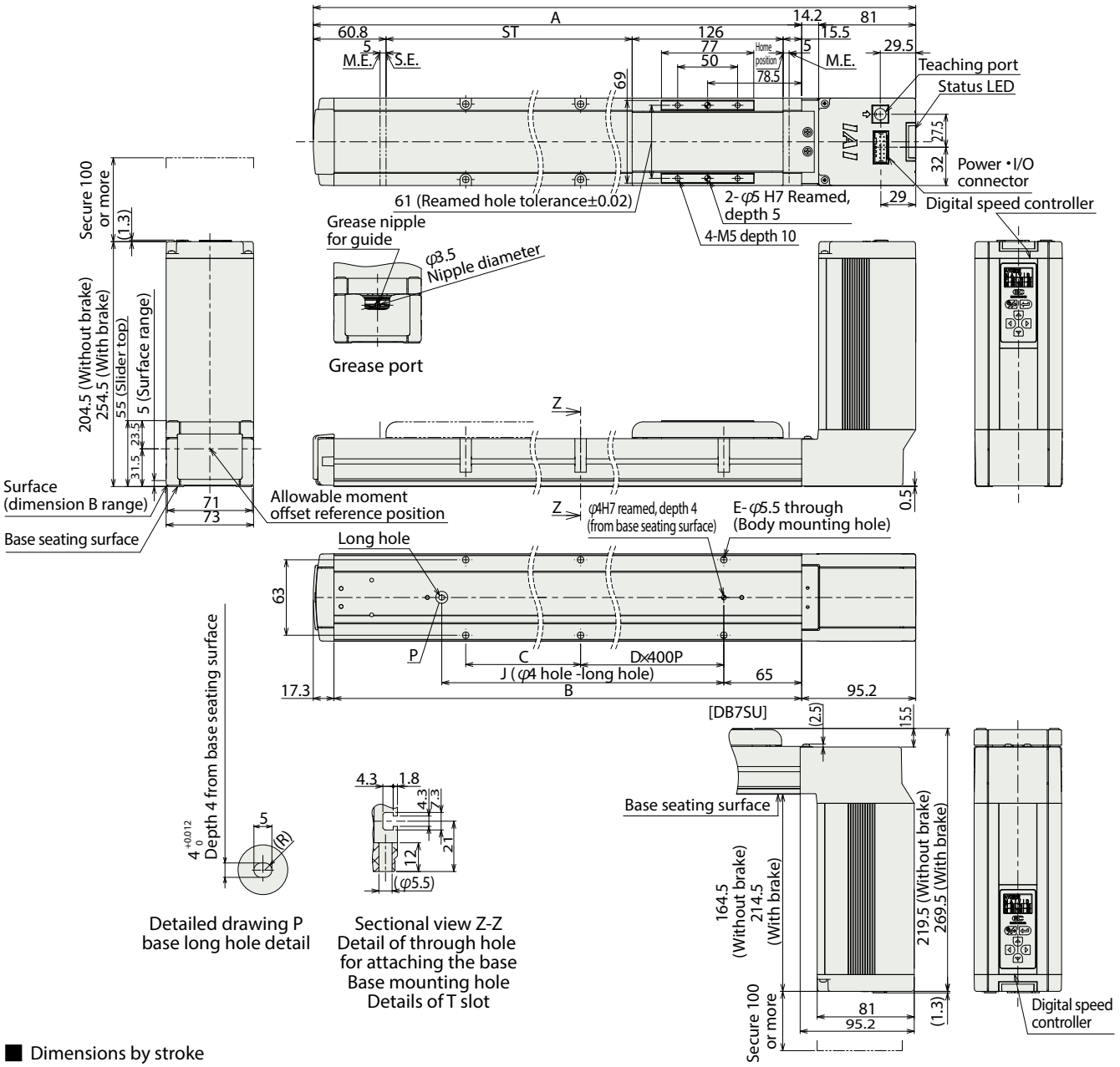
Stroke		300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600
Weight (kg)	W/o Brake	4.6	4.9	5.2	5.6	5.9	6.2	6.5	6.8	7.1	7.5	7.8	8.1	8.4	8.7	9.1	9.4	9.7	10.0	10.3	10.7	11.0	11.3	11.6	12.0
	With Brake	5.1	5.4	5.7	6.1	6.4	6.7	7.0	7.3	7.6	8.0	8.3	8.6	8.9	9.2	9.6	9.9	10.2	10.5	10.8	11.2	11.5	11.8	12.1	12.5

Note: B7SU also has the same mass.

■ EC-DB7S/DB7SU <with digital speed controller>

(Note) When the slider is returning to its home position, please be careful of interference from surrounding objects, as it will travel until it reaches the M.E.
(Note) It is not possible to change the direction of the digital speed controller to any direction other than the one shown below.

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



■ Dimensions by stroke

Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600
L	597.5	697.5	797.5	897.5	997.5	1097.5	1197.5	1297.5	1397.5	1497.5	1597.5	1697.5	1797.5	1897.5	1997.5	2097.5	2197.5	2297.5	2397.5	2497.5	2597.5	2697.5	2797.5	2897.5
A	502.3	602.3	702.3	802.3	902.3	1002.3	1102.3	1202.3	1302.3	1402.3	1502.3	1602.3	1702.3	1802.3	1902.3	2002.3	2102.3	2202.3	2302.3	2402.3	2502.3	2602.3	2702.3	2802.3
B	485	585	685	785	885	985	1085	1185	1285	1385	1485	1585	1685	1785	1885	1985	2085	2185	2285	2385	2485	2585	2685	2785
C	310	410	110	210	310	410	110	210	310	410	110	210	310	410	110	210	310	410	110	210	310	410	110	210
D	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6
E	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16
J	330	430	530	630	730	830	930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	2430	2530	2630

■ Mass by stroke

Stroke		300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600
Weight (kg)	W/o Brake	4.7	5.0	5.3	5.7	6.0	6.3	6.6	6.9	7.2	7.6	7.9	8.2	8.5	8.8	9.2	9.5	9.8	10.1	10.4	10.8	11.1	11.4	11.7	12.1
	With Brake	5.2	5.5	5.8	6.2	6.5	6.8	7.1	7.4	7.7	8.1	8.4	8.7	9.0	9.3	9.7	10.0	10.3	10.6	10.9	11.3	11.6	11.9	12.2	12.6

Note: DB7SU also has the same mass.

Applicable controller

(Note) The EC series is equipped with a built-in controller. Refer to P28 for the detail of the built-in controller.

EC-B8S/B8SU

Simple dust-proof | Coupled Motor | Body width 90 mm | 24V Stepper motor | Belt type

Model Specification Items

EC – B8 S [ ] – [ ] – [ ] – [ ]

Series	Type	Lead	Specification	Stroke	Power • I/O cable length	Option
		S 54mm	Blank Motor top-mounted U Motor bottom-mounted	300 ~ 2600: 300mm ~ 2600mm (100mm increments)	Refer to the Power • I/O cable length below	Refer to option below

CE RoHS

Horizontal | Side | Ceiling | Vertical

(Note) The above picture shows the motor mounted at top.

Stroke

Stroke (mm)		Stroke (mm)	
300	✓	**1500**	✓
400	✓	**1600**	✓
500	✓	**1700**	✓
600	✓	**1800**	✓
700	✓	**1900**	✓
800	✓	**2000**	✓
900	✓	**2100**	✓
1000	✓	**2200**	✓
1100	✓	**2300**	✓
1200	✓	**2400**	✓
1300	✓	**2500**	✓
1400	✓	**2600**	✓

Option

Name	Option code	Reference page
RCON-EC connection specification (Note 1)	**ACR**	23
Specified grease applied specification*	**G5**	23
Non-motor end homing specification	**NM**	23
PNP specification	**PN**	23
Split motor and controller power	**TMD2**	23
Battery-less absolute encoder specification	**WA**	23
Wireless communication specification	**WL**	23
Wireless axis operation specification	**WL2**	23

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

Selection Notes

(1) Excessive vibration or noise will occur during low-speed operations. Do not operate the belt type below 100mm/s.
(2) The actuator specifications display the payload's maximum value. Please refer to "Table of Payload by Speed and Acceleration/ Deceleration" for more details.
(3) Push-motion operation cannot be performed.
(4) Special attention needs to be paid to the mounting orientation. Refer to P5 for details.
(5) Reference value of the overhang load length is under 320mm in the Ma, Mb and Mc directions. Refer to P5 for the overhang load length.
(6) The center of gravity of the payload 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 modified if abnormal vibration or noise is observed vibration or noise is observed.
(7) When connecting to the RCON-EC, there is a limit to the number of connectable axes. 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 3) (with connectors on both ends)
		CB-EC-PWBIO□□□-RB	CB-REC-PWBIO□□□-RB
0	No cable	✓ (Note 2)	✓
1 ~ 3	1 ~ 3m	✓	✓
4 ~ 5	4 ~ 5m	✓	✓
6 ~ 7	6 ~ 7m	✓	✓
8 ~ 10	8 ~ 10m	✓	✓

(Note 2) Only the terminal connector is included. Refer to P32 for details.
(Note 3) In order to connect to the RCON-EC, the ACR option must be selected.
(Note) Robot cable is standard.

4-way connector cable

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

(Note 4) In order to connect to the RCON-EC, the ACR option must be selected.
(Note) Robot cable is standard.

Main Specification

Item			Description
Horizontal	Payload	Maximum payload (kg)	25
	Speed/ acceleration/ deceleration	Max. speed (mm/s)	1800
		Min. speed (mm/s)	100
		Rated acceleration/ deceleration (G)	0.3
		Max. acceleration/ deceleration (G)	1.0
Brake		Brake holding specification	-
		Brake holding force (N)	-
Stroke		Min. stroke (mm)	300
		Max. stroke (mm)	2600
		Stroke pitch (mm)	100

Item	Description
Driving system	Timing belt 15mm width 3mm pitch 54mm lead
Positioning repeatability	±0.08mm
Lost motion	- (Cannot be shown due to positioning function between 2 points)
Base	Dedicated aluminum extruded material (A6063SS-T6 Equivalent) Black alumite treatment
Linear guide	Linear motion infinite circulating type
Static allowable moment	Ma: 191 N·m
	Mb: 191 N·m
	Mc: 397 N·m
Dynamic allowable moment (Note 5)	Ma: 38.6 N·m
	Mb: 38.6 N·m
	Mc: 80.2 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 (Restriction of Hazardous Substances)
Motor type	Stepper motor (□56SP) (Power capacity: Max. 6A)
Encoder type	Incremental / battery-less absolute
Encoder resolution	800 pulse/rev

(Note 5) Based on the standard rated operation life of 5,000 km. Operation life varies according to operating and mounting conditions. Please contact IAI for operational life.

■ Direction of moment for the Slider type

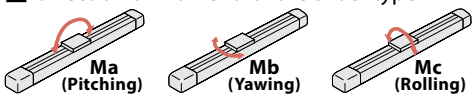


Table of Payload by Speed and Acceleration/Deceleration

The unit for payload is kg.

Orientation	Horizontal			
Speed (mm/s)	Acceleration (G)			
	0.3	0.5	0.7	1
0	25	25	23	20
100	25	25	23	20
200	25	25	22	19
300	24	22	19	17
600	18	12	10	9
1000	12	7	5	4
1400	8	4	2	1
1600	6	3	2	1
1800	6	3	2	1

Stroke and maximum speed

Stroke (mm)	300 (mm)	400 (mm)	500 (mm)	600 (mm)	700 (mm)	800 (mm)	900 (mm)	1000 (mm)	1100 (mm)	1200 (mm)	1300 (mm)	1400~2600 (per 100mm)
Speed	1040	1270	1440	1560	1640	1690	1730	1750	1770	1780	1790	1800

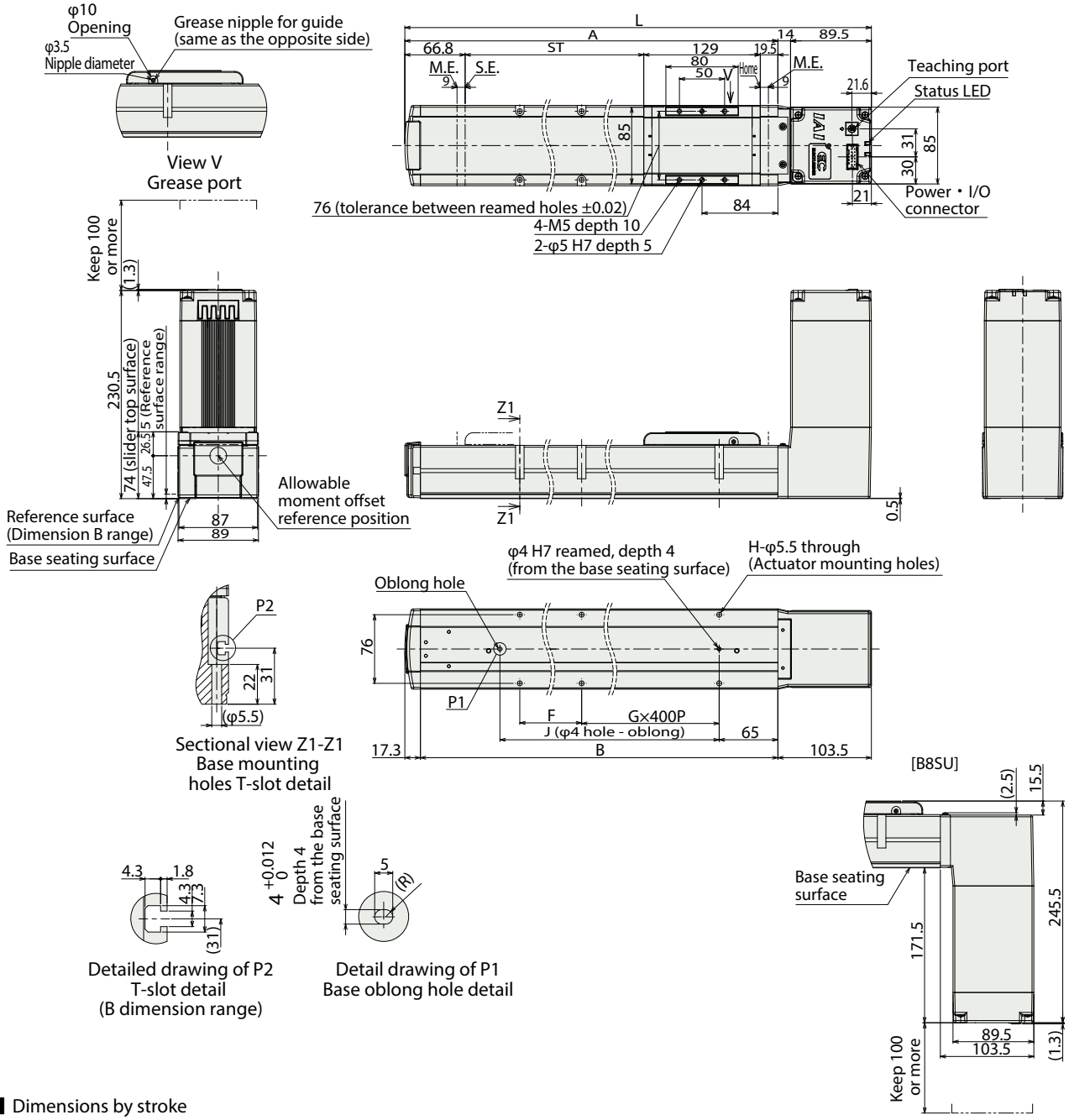
(Unit is mm/s)

Dimensions

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

(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	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600
L	618.8	718.8	818.8	918.8	1018.8	1118.8	1218.8	1318.8	1418.8	1518.8	1618.8	1718.8	1818.8	1918.8	2018.8	2118.8	2218.8	2318.8	2418.8	2518.8	2618.8	2718.8	2818.8	2918.8
A	515.3	615.3	715.3	815.3	915.3	1015.3	1115.3	1215.3	1315.3	1415.3	1515.3	1615.3	1715.3	1815.3	1915.3	2015.3	2115.3	2215.3	2315.3	2415.3	2515.3	2615.3	2715.3	2815.3
B	498	598	698	798	898	998	1098	1198	1298	1398	1498	1598	1698	1798	1898	1998	2098	2198	2298	2398	2498	2598	2698	2798
F	323	423	123	223	323	423	123	223	323	423	123	223	323	423	123	223	323	423	123	223	323	423	123	223
G	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6
H	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16
J	345	445	545	645	745	845	945	1045	1145	1245	1345	1445	1545	1645	1745	1845	1945	2045	2145	2245	2345	2445	2545	2645

Mass by stroke

Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600
Weight (kg)	7.4	8.2	9.0	9.7	10.4	11.2	11.9	12.7	13.4	14.2	14.9	15.7	16.4	17.2	17.9	18.7	19.4	20.3	21.0	21.8	22.5	23.3	24.0	24.8

Note: B8SU also has the same mass.

Applicable controller

(Note) The EC series is equipped with a built-in controller. Refer to P28 for the detail of the built-in controller.

EC-B8SS/B8SSU

Simple dust-proof | Battery-less absolute | Coupled Motor | Body width 90 mm | 200V AC servo motor | Belt type

Model Specification Items

EC – B8 S S [ ] – [ ] – [ ] – [ ] – [ ]

Series	Type	Lead	Motor type	Specification	Stroke	Power • I/O cable length	Motor power cable length	Option
		S 54mm	S AC servo	Blank Motor top-mounted U Motor bottom-mounted	300 ~ 2600: 300mm ~ 2600mm (100mm increments)	Refer to the Power • I/O cable length below	0 No cable 1 ~ 10: 1mm ~ 10mm	Refer to option below

CE RoHS

Horizontal | Side | Ceiling | Vertical

(Note) The above picture shows the motor mounted at top.

Stroke

Stroke (mm)		Stroke (mm)	
300	✓	**1500**	✓
400	✓	**1600**	✓
500	✓	**1700**	✓
600	✓	**1800**	✓
700	✓	**1900**	✓
800	✓	**2000**	✓
900	✓	**2100**	✓
1000	✓	**2200**	✓
1100	✓	**2300**	✓
1200	✓	**2400**	✓
1300	✓	**2500**	✓
1400	✓	**2600**	✓

Option

Name	Option code	Reference page
RCON-EC connection specification (Note 1)	**ACR**	23
Specified grease applied specification	**G5**	23
Non-motor end homing specification	**NM**	23
PNP specification	**PN**	23
Split motor and controller power	**TMD2**	23
Battery-less absolute encoder specification	**WA**	23
Wireless axis operation specification	**WL2**	23

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

Selection Notes

(1) The actuator specifications display the payload's maximum value. Refer to "Table of Payload by Speed and Acceleration/ Deceleration" for more details.
(2) Push-motion operation cannot be performed.
(3) The PSA-200 power unit is required to supply motor power. The PSA-200 can supply power for up to 6 axes. Refer to P33 for details.
(4) Special attention needs to be paid to the mounting orientation. Refer to P5 for details.
(5) Reference value of the overhang load length is under 320mm in the Ma, Mb and Mc directions. Refer to P5 for the overhang load length.
(6) The center of gravity of the payload 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 modified if abnormal vibration or noise is observed vibration or noise is observed.

Power · I/O cable length

Standard connector cable

Cable code	Cable length	User wiring specification (Flying leads)	RCON-EC connection specification (Note 3) (with connectors on both ends)
		CB-EC-PWBIO□□□-RB	CB-REC-PWBIO□□□-RB
0	No cable	✓ (Note 2)	✓
1 ~ 3	1 ~ 3m	✓	✓
4 ~ 5	4 ~ 5m	✓	✓
6 ~ 7	6 ~ 7m	✓	✓
8 ~ 10	8 ~ 10m	✓	✓

(Note 2) Only the terminal connector is included. Refer to P32 for details.
(Note 3) In order to connect to the RCON-EC, the ACR option must be selected.
(Note) Robot cable is standard.

4-way connector cable

Cable code	Cable length	
		CB-EC2-PWBIO□□□-RB
0	No cable	✓
1 ~ 3	1 ~ 3m	✓
4 ~ 5	4 ~ 5m	✓
6 ~ 10	6 ~ 10m	✓

(Note) Robot cable is standard.

Main Specification

Item			Description
Horizontal	Payload	Maximum payload (kg)	25
	Speed/ acceleration/ deceleration	Max. speed (mm/s)	1800
		Min. speed (mm/s)	100
		Rated acceleration/ deceleration (G)	0.3
		Max. acceleration/ deceleration (G)	1.0
Brake		Brake holding specification	-
		Brake holding force (N)	-
Stroke		Min. stroke (mm)	300
		Max. stroke (mm)	2600
		Stroke pitch (mm)	100

Item	Description
Driving system	Timing belt 15mm width 3mm pitch 54mm lead
Positioning repeatability	±0.08mm
Lost motion	- (Cannot be shown due to positioning function between 2 points)
Base	Dedicated aluminum extruded material (A6063SS-T6 Equivalent) Black alumite treatment
Linear guide	Linear motion infinite circulating type
Static allowable moment	Ma: 191 N·m
	Mb: 191 N·m
	Mc: 397 N·m
Dynamic allowable moment (Note 5)	Ma: 38.6 N·m
	Mb: 38.6 N·m
	Mc: 80.2 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 (Restriction of Hazardous Substances)
Motor type	AC servo motor (200V)
Encoder type	Battery-less absolute
Encoder resolution	16384 pulse/rev

(Note 5) Based on the standard rated operation life of 5,000 km. Operation life varies according to operating and mounting conditions. Please contact IAI for operational life.

Direction of moment for the Slider type

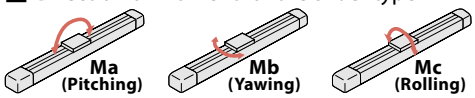


Table of Payload by Speed and Acceleration/Deceleration

The unit for payload is kg.

Orientation	Horizontal			
Speed (mm/s)	Acceleration (G)			
	0.3	0.5	0.7	1
2000	15	9	6	4

Stroke and maximum speed

Stroke (mm)	300 (mm)	400 (mm)	500 (mm)	600 (mm)	700 (mm)	800 (mm)	900 (mm)	1000 (mm)	1100 (mm)	1200~2600 (per 100mm)
Speed	1210	1460	1670	1800	1890	1930	1960	1980	1990	2000

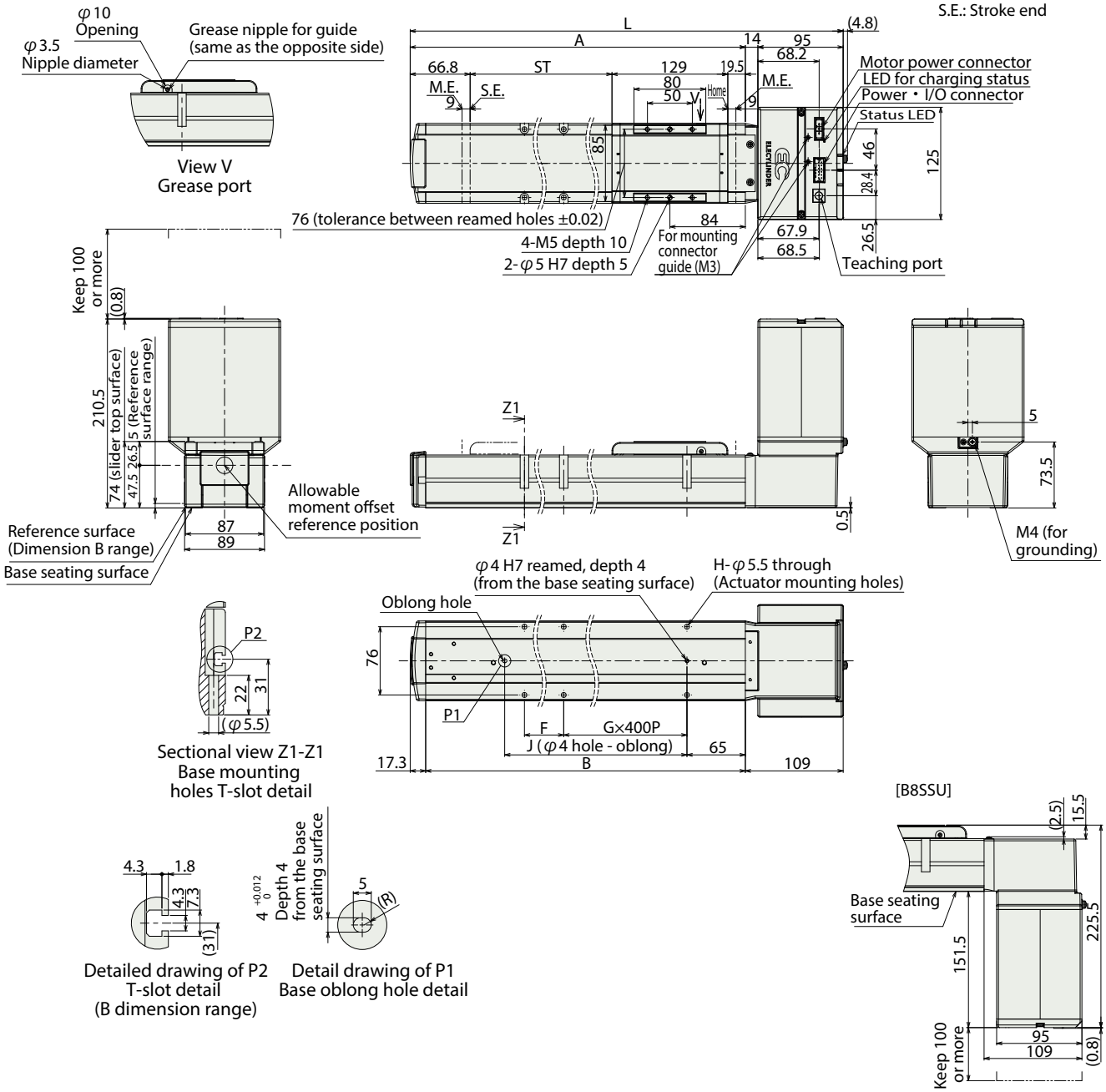
(Unit is mm/s)

Dimensions

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

(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	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600
L	618.8	718.8	818.8	918.8	1018.8	1118.8	1218.8	1318.8	1418.8	1518.8	1618.8	1718.8	1818.8	1918.8	2018.8	2118.8	2218.8	2318.8	2418.8	2518.8	2618.8	2718.8	2818.8	2918.8
A	515.3	615.3	715.3	815.3	915.3	1015.3	1115.3	1215.3	1315.3	1415.3	1515.3	1615.3	1715.3	1815.3	1915.3	2015.3	2115.3	2215.3	2315.3	2415.3	2515.3	2615.3	2715.3	2815.3
B	498	598	698	798	898	998	1098	1198	1298	1398	1498	1598	1698	1798	1898	1998	2098	2198	2298	2398	2498	2598	2698	2798
F	323	423	123	223	323	423	123	223	323	423	123	223	323	423	123	223	323	423	123	223	323	423	123	223
G	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6
H	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16
J	345	445	545	645	745	845	945	1045	1145	1245	1345	1445	1545	1645	1745	1845	1945	2045	2145	2245	2345	2445	2545	2645

Mass by stroke

Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600
Weight (kg)	7.3	8.1	8.8	9.6	10.3	11.1	11.8	12.6	13.3	14.1	14.8	15.6	16.3	17.1	17.8	18.6	19.3	20.1	20.9	21.6	22.4	23.1	23.9	24.6

Note: B8SSU also has the same mass.

Applicable controller

(Note) The EC series is equipped with a built-in controller. Refer to P30 for the detail of the built-in controller.
ELECYLINDER driven by 200V power source needs the dedicated DC power unit "PSA-200.". Refer to P33 for the detail of the "PSA-200."

Options

RCON-EC connection specification * The TMD2 and PN option cannot be selected together (The ACR option includes twin power supply specification)

Model **ACR** Applicable models **All models**

Description This option is to be selected when connecting a field network via RCON-EC.
* This option automatically splits the motor and controller power. Because the input/output specification is fixed to NPN, the TMD2 and PN options cannot be selected together.

Brake

Model **B** Applicable models **EC-(D)B6S / (D)B7S**

Description This works as a holding mechanism that prevents the slider moving when the power or servo is turned off.

Specified grease applied specification

Model **G5** Applicable models **All models**

Description The grease put on the ball screw, linear guide and rod, is changed to food grade grease (White Alcom).

Non-motor end homing specification

Model **NM** Applicable models **All models**

Description The home position is normally set to the motor side. This option is for setting the home position on the other side in order to accommodate variations in equipment layout, etc.

PNP specification * The ACR option cannot be selected together due to NPN specification

Model **PN** Applicable models **All models**

Description The EC series uses NPN specification input/output for connecting external devices as standard.
Specifying this option changes input/output to PNP specification.

Split motor and controller power supply specification * The ACR option cannot be selected together due to NPN specification

Model **TMD2** Applicable models **All models**

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 P32 for wiring details.

Battery-less Absolute Encoder specification

Model **WA** Applicable models **EC-(D)B6S / (D)B7S / B8S**

Description EC-(D)B6/(D)B7/B8S use incremental encoders by default. This option installs a battery-less absolute encoder.
* B8SS is automatically equipped with a battery-less absolute encoder.

Wireless communication specification

Model **WL** Applicable models **All models**

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

Wireless axis-operation specification

Model **WL2** Applicable models **All models**

Description Specifying WL2 allows for the product to operate wirelessly as with WL (start point, end point, and AVD adjustment), and to also perform operational test moves (forward end/backward end movement, jog, and inching). However, this function is not meant to perform automatic operations. Please contact IAI for precautions on axis operations using a wireless connection. (Note) Customers cannot change WL to WL2, or WL2 to WL.

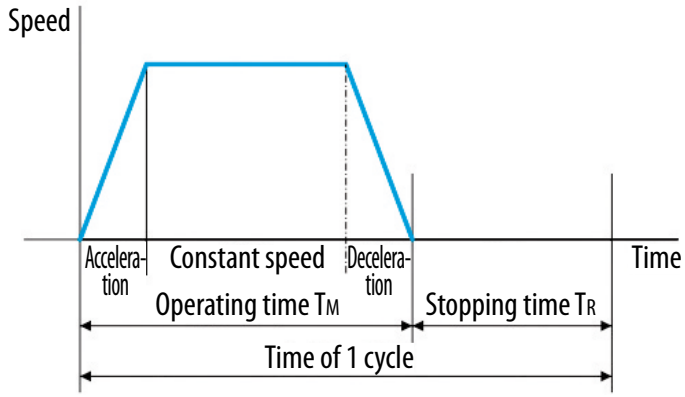
Duty ratio

The duty ratio is the percentage (%) of the actuator's active operation time in each cycle.

ELECYLINDER belt driven type can operate at 100% duty rate.

$$D = \frac{T_M}{T_M + T_R} \times 100(\%)$$

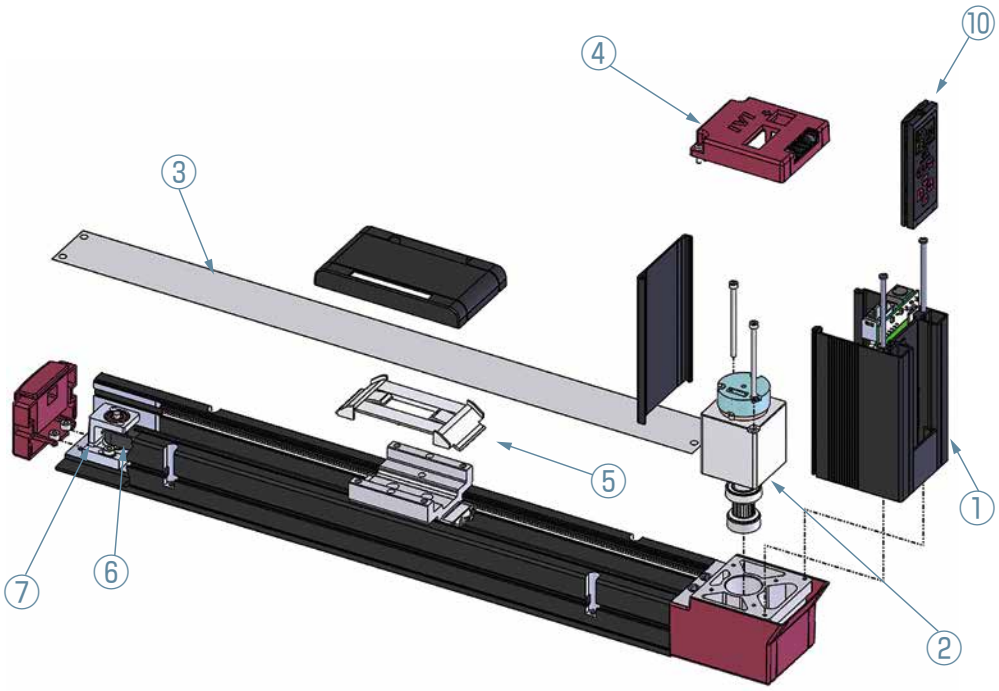
D : Duty ratio
T_M : Operating time
T_R : Stopping time



Maintenance parts (Actuator)

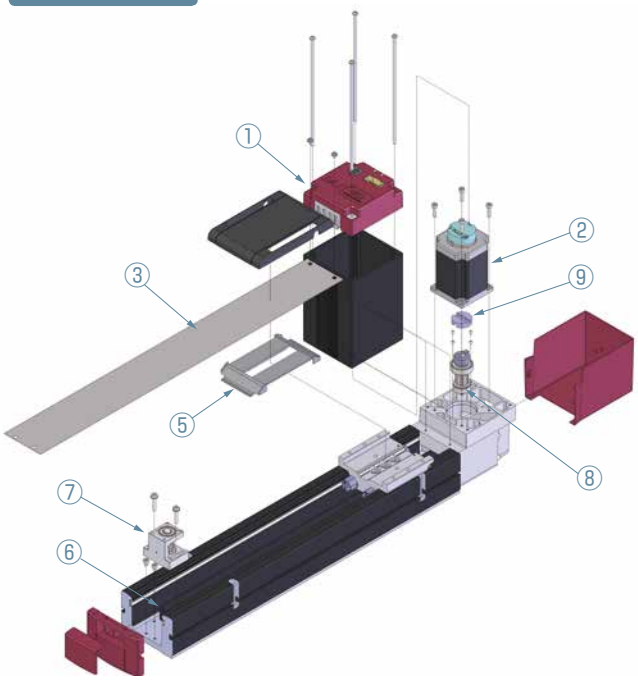
EC-(D)B6S(U) (D)B7S(U)

* The drawings below are actuators equipped with a digital speed controller.
The actuators not equipped with the digital speed controller has a different external appearance at the motor cover part.
(The mounting surface for the digital speed controller is not machined)



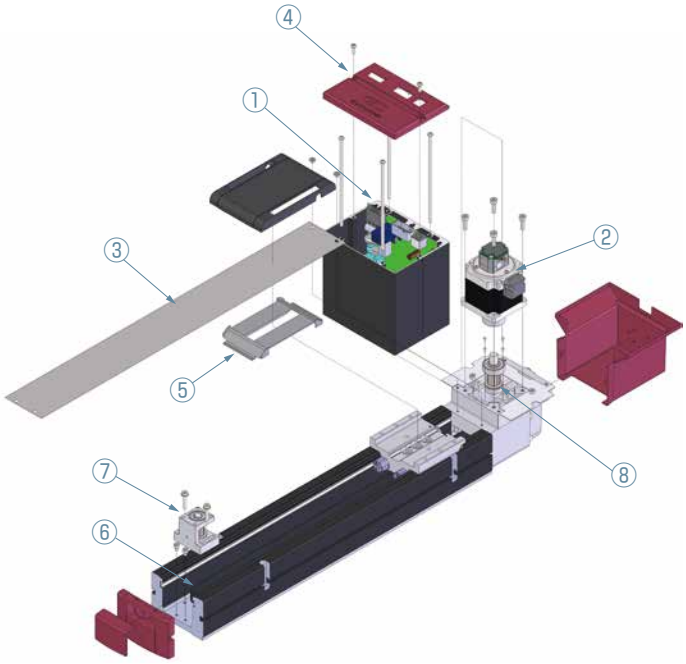
①Motor cover Assy
(Including controller board)
②Motor unit
③Stainless sheet
④End cover Assy
(With wireless board cable)
⑤Sheet slider
⑥Driving belt
⑦Driven pulley Assy
⑩Digital speed controller

EC-B8S(U)



①Motor cover Assy
(Including controller board)
②Motor unit
③Stainless sheet
⑤Sheet slider
⑥Driving belt
⑦Driven pulley Assy
⑧Driving pulley Assy
⑨Coupling spacer

EC-B8SS(U)



①Motor cover Assy
(Including controller board)
②Motor unit
③Stainless sheet
④End cover Assy
(With wireless board cable)
⑤Sheet slider
⑥Driving belt
⑦Driven pulley Assy
⑧Driving pulley Assy

Numbers in the table correspond to those in the schematic diagram.
(Note) The maintenance parts do not come with replacement screws. Contact one of our representatives for more details.

①-1 Motor cover Assy

[Model configuration] Basic model - (ACR selection) - (TMD2 is selection) - (WL2 is selection)

(Ex.) For the digital speed controller specification with TMD2 and WL2
MWB-EC-DSR6-TMD2-WL2

Type	Brake	I/O	Basic model Specify "D" for the digital speed controller specification	RCON-EC connection specification * Model: ACR	Split motor and controller power * Model: TMD2	Wireless axis operation specification Model: WL2
(D)B6S	No	NPN	MWB-EC-(D)SR6	ACR (I/O is NPN only)	TMD2	WL2
		PNP	MWB-EC-(D)SR6-P			
	Yes	NPN	MWB-EC-(D)SR6-B			
		PNP	MWB-EC-(D)SR6-B-P			
(D)B7S	No	NPN	MWB-EC-(D)SR7			
		PNP	MWB-EC-(D)SR7-P			
	Yes	NPN	MWB-EC-(D)SR7-B			
		PNP	MWB-EC-(D)SR7-B-P			
B8SS	No	NPN	MWB-EC-B8S			
		PNP	MWB-EC-B8S-P			

* Some parts for the wireless communication specification (Model: WL).
(Note) Wireless communication board is not included.

①-2 Controller cover Assy

Type	I/O	Wireless	Model		
			Standard	When TMD2 is selected	When ACR is selected
B8S	NPN	No	CCA-EC-RRB8	CCA-EC-RRB8-TMD2	CCA-EC-RRB8-ACR
		WL	CCA-EC-RRB8-WL	CCA-EC-RRB8-TMD2-WL	CCA-EC-RRB8-ACR-WL
		WL2	CCA-EC-RRB8-WL2	CCA-EC-RRB8-TMD2-WL2	CCA-EC-RRB8-ACR-WL2
	PNP	No	CCA-EC-RRB8-P	CCA-EC-RRB8-P-TMD2	
		WL	CCA-EC-RRB8-P-WL	CCA-EC-RRB8-P-TMD2-WL	
		WL2	CCA-EC-RRB8-P-WL2	CCA-EC-RRB8-P-TMD2-WL2	

② Motor unit

Type	Encoder	Brake	Model
(D)B6S	Incremental	No	EC-MUB6
		Yes	EC-MUB6-B
	Battery-less absolute	No	EC-MUB6-WA
		Yes	EC-MUB6-WA-B
(D)B7S	Incremental	No	EC-MUB7
		Yes	EC-MUB7-B
	Battery-less absolute	No	EC-MUB7-WA
		Yes	EC-MUB7-WA-B
B8S	Incremental	No	EC-MUSB8
	Battery-less absolute		EC-MUSB8-WA
B8SS	Battery-less absolute	No	EC-MUS13

③ Stainless sheet

Type	Model
(D)B6S	ST-EC-B6-○○○
(D)B7S	ST-EC-B7-○○○
B8S/B8SS	ST-EC-B8-○○○

* ○○○ indicates stroke

④ End cover Assy

Type	Model Specify "D" for the digital speed controller specification
(D)B6S	EWB-EC-(D)SR6
(D)B7S	EWB-EC-(D)SR7
B8SS	EWB-EC-B8S

(Note) Includes a wireless communication board.
Contact one of our representatives for a non-wireless specification.

⑤ Sheet slider

Type	Model
(D)B6	SHS-EC-B6
(D)B7	SHS-EC-B7
B8S/B8SS	SHS-EC-B8

⑥ Driving belt

Type	Model
(D)B6	LB-EC-B6-○○○
(D)B7	LB-EC-B7-○○○
B8S/B8SS	LB-EC-B8-○○○

* ○○○ indicates stroke

⑦ Driven pulley Assy

Type	Model
(D)B6	PLY-EC-B6
(D)B7	PLY-EC-B7
B8S/B8SS	PLY-EC-B8

⑧ Driving pulley Assy

Type	Model
B8S	DPLY-EC-B8
B8SS	DPLY-EC-B8S

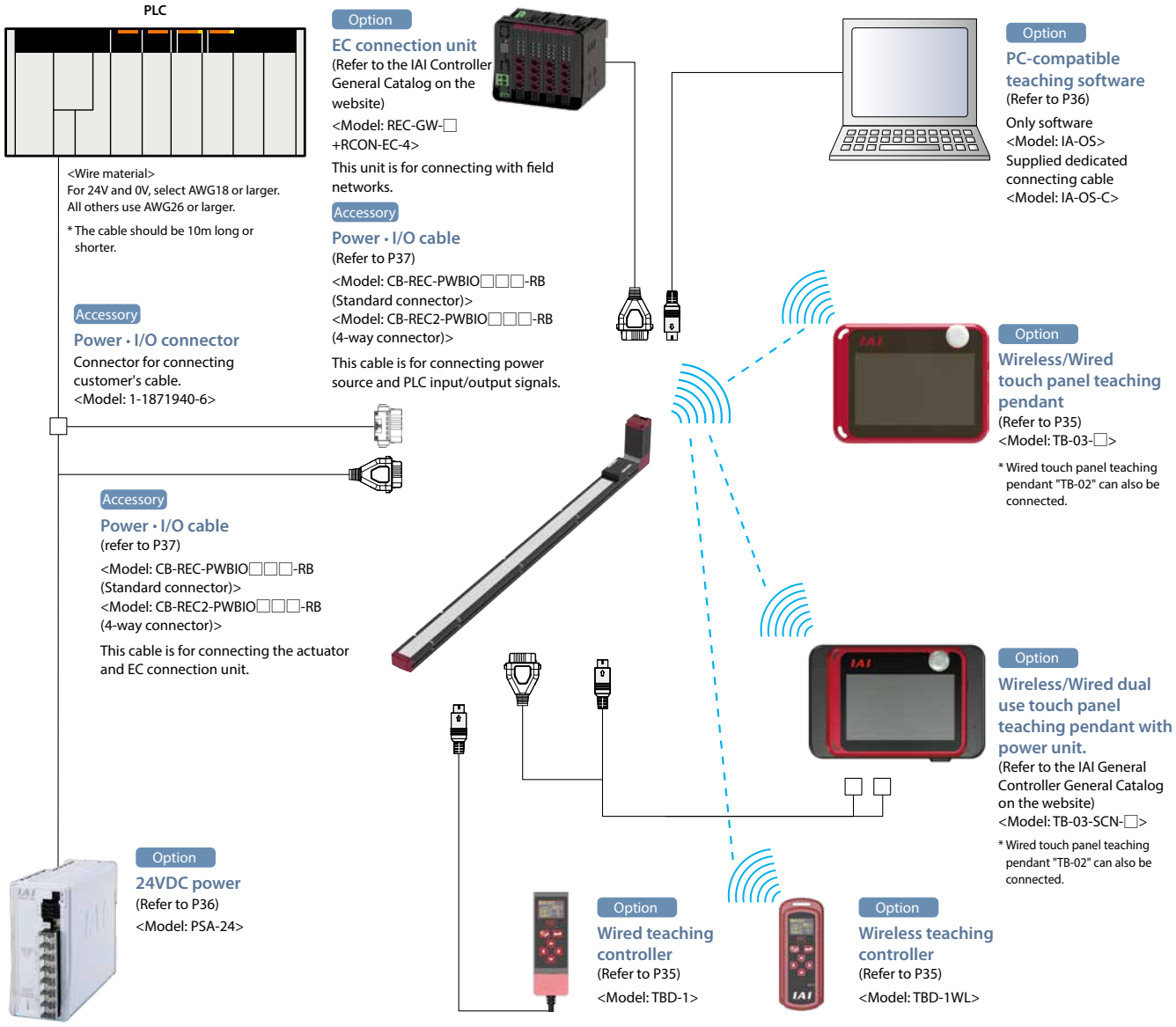
⑨ Coupling spacer

Type	Model
B8S	CPG-EC-SR7

⑩ Digital speed controller

Type	Model
DB6/DB7	DSC-01

System configuration [24VDC stepper motor models]



List of accessories [24VDC stepper motor models]

■ Power • I/O cable, connector

[Standard connector]

Product category		Accessory
(Selected at actuator model) Power • I/O cable length	Selection of RCON-EC connection specification (ACR)	
0	No	Power • I/O connector (1-1871940-6)
	Yes	-
1 ~ 10	No	Power • I/O connector (CB-EC-PWBIO□□□-RB)
	Yes	Power • I/O connector (CB-REC-PWBIO□□□-RB)

[4-way connector]

Product category		Accessory
(Selected at actuator model) Power • I/O cable length	Selection of RCON-EC connection specification (ACR)	
S1 ~ S10	No	Power • I/O connector (CB-EC2-PWBIO□□□-RB)
	Yes	Power • I/O connector (CB-REC2-PWBIO□□□-RB)

Basic Controller Specifications [24VDC stepper motor models]

Specification item			Specification content
Number of controlled axes			1 axis
Power supply voltage			24VDC ±10%
Power capacity (Including 0.3A Control power) (Note 1)		(D)B6S/(D)B7S	With energy-saving setting disabled: Rated 3.5A, Max. 4.2A With energy-saving setting enabled: Max. 2.2A
		B8S	Max. 6A (Only for energy-saving disabled)
Brake release power supply			24VDC ±10%, 200mA (only for external brake release)
Generated heat (at duty ratio 100%)		(D)B6S/(D)B7S	8W
		B8S	19.2W
Inrush current (Note 2)		(D)B6S/(D)B7S	8.3A (with inrush current limiting circuit)
		B8S	10A
Momentary power failure resistance			Max. 500μs
Motor size			□42, □56, □56SP
Motor rated current		(D)B6S/(D)B7S	1.2A
		B8S	4A
Motor control system			Weak field-magnet vector control
Supported encoders			Incremental (800 pulse/rev), battery-less absolute encoder (800 pulse/rev)
SIO			RS485 1ch (Modbus protocol compliant)
PIO	Input specification	No. of input	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	No. of output	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 and input methods			PC-compatible teaching software, touch panel teaching pendant, digital speed controller, wireless teaching controller, wired teaching controller
Data retention memory			Position and parameters are saved in non-volatile memory. (No limit to rewrite)
LED display	Controller status display		Servo ON (green light ON) / Alarm (red light ON) / Initializing when power comes ON (orange light ON) / Minor failure alarm (green/red alternately blinking) / Operation from teaching: Stop from teaching (red light ON) / Servo OFF (light OFF) / Automatic servo OFF (green light flashing)
	Wireless status display		Initializing wireless hardware, without wireless connection, or connecting from TP board (light OFF) Connecting through wireless (green blinking) / Wireless hardware error (red blinking) / Initializing when power comes ON (orange light ON)
Predictive maintenance/Preventative maintenance			When the number of movements or operation distance has exceeded the set value and when the LED (right side) blinks alternately green and red at overload warning * Only when configured in advance
Ambient operating temperature			0 to 40°C
Ambient operating humidity			5% RH ~ 85% RH or less (no condensation or freezing)
Operating ambience			Avoid corrosive gas and excessive dust
Insulation resistance			500VDC 10MΩ
Electric shock protection mechanism			Class 1 basic insulation
Cooling method			Natural air cooling

(Note 1) When connecting RCON-EC, the value is subtracted by 0.3A from the control power supply.
(Note 2) Inrush current flows for approximately 5ms after the power is input (At 40°C). Inrush current value differs depending on the impedance on the power supply line.

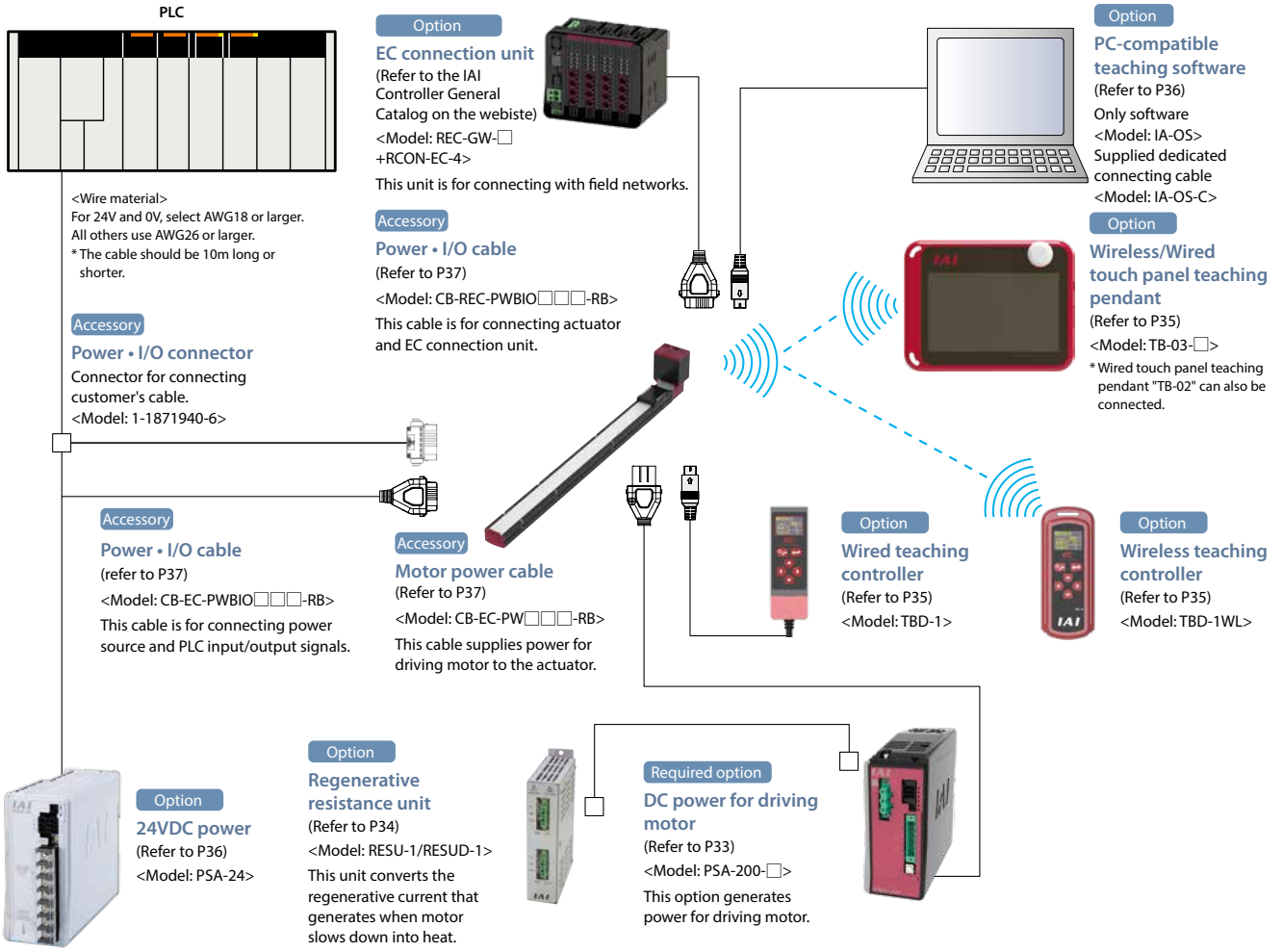
Solenoid valve method

ELECYLINDER employs the double solenoid valve system normally.

When using a single solenoid system, change Parameter No. 9 "Solenoid valve system selection."

(Note) When connecting to RCON-EC, the single solenoid valve does not operate.

System configuration [200VAC servo motor models]



List of accessories [200VAC servo motor models]

■ Power • I/O cable, connector

Product category		Accessory
(Selected at actuator model) Power • I/O cable length	Selection of RCON-EC connection specification (ACR)	
0	No	Power • I/O connector (1-1871940-6)
	Yes	-
1~10	No	Power • I/O connector (CB-EC-PWBIO□□□-RB)
	Yes	Power • I/O connector (CB-REC-PWBIO□□□-RB)

■ Moto power cable

Product category		Accessory
(Selected at actuator model) Power • I/O cable length	Selection of RCON-EC connection specification (ACR)	
0	No	-
	Yes	
1~10	No	Power • I/O connector (CB-EC-PW□□□-RB)
	Yes	

Controller basic specifications [200VAC servo motor models]

Specification item			Description
Number of controlled axes			1 axis
Motor power input voltage			Supplied by PSA-200 (280VDC type)
Control power input voltage			24VDC ±10%
Control power current	Control		320mA
	Teaching (Note 1)		150mA
Control power capacity	Control		7.6W
	Teaching (Note 1)		3.6W
Inrush current			-
Momentary power failure resistance			max 500μs
Applicable motor wattage			200W
Motor control method			Sine wave PWM vector current control
Compatible encoder			Battery-less absolute encoder (16384pulse/rev)
SIO			RS-485 1 ch (conforms to Modbus protocol)
PIO	Input specification	Number of inputs	3 points (forward, backward, alarm reset)
		Input voltage	24VDC ±10%
		Input current	5mA/ circuit
		Leak current	Max. 1mA/ point
		Insulation method	Non-insulation
	Output specification	Number of outputs	3 points (forward, backward, alarm reset)
		Output voltage	24VDC ±10%
		Output current	50mA/ point
		Residual voltage	2V or less
		Insulation method	Non-insulation
Data setting, input method			PC-compatible teaching software, touch panel teaching pendant, wireless teaching controller, wired teaching controller
Data retention memory			Retains position data and parameters to non-volatile memory (no limit for the number of writings)
LED display	Controller status display (right)		Servo ON (green light on) / Alarm (red light on) / Initialization at power ON (orange light on) / Alarm for minor failure (green light flashing) / Operations from teaching: Stops from at teaching (red light on) / Servo OFF (light turns OFF) / Automatic servo OFF (green light flashing)
	Motor power status display (center)		Motor power ON (green light on) / Motor power OFF (green light flashing)
	Wireless status display (left)		Initializing wireless hardware or wireless not connected, or connected from the teaching pendant (light turned off) Wireless connected (green flashing) / Wireless hardware abnormal (red light flashing) / Initializing after power on (orange light on)
	Charging status display (I/O connector side)		Internal circuit charging status (red light on) / Internal circuit not charged (light off) (Note 2)
Predictive and preventive maintenance			When the number of travels and travel distance exceed the preset values or when an overload warning is activated, LED (right side) lamp will flash. * Only when the value exceeds the preset one.
Operating ambient temperature			0-40°C
Operating ambient humidity			5-85%RH or less (non-condensing, no frost)
Operating ambient atmosphere			No corrosive gases, not excessive dust
Insulation resistance			500VDC 10MΩ
Electric shock protection mechanism			Class 1 basic insulation
Cooling system			Natural air cooling

(Note 1) Add when connecting the teaching pendant.

(Note 2) While the charge status LED is lit on, inside the controller has been recharged. To prevent electric shock, wiring and inspection works must be performed after the LED is turned off.

Solenoid valve method

ELECYLINDER employs the double solenoid valve system normally.

When using a single solenoid system, change Parameter No. 9 "Solenoid valve system selection."

(Note) When connecting to RCON-EC, the single solenoid valve does not operate.

Table of connectability between ELECYLINDER and teaching pendants

For ELECYLINDER single unit

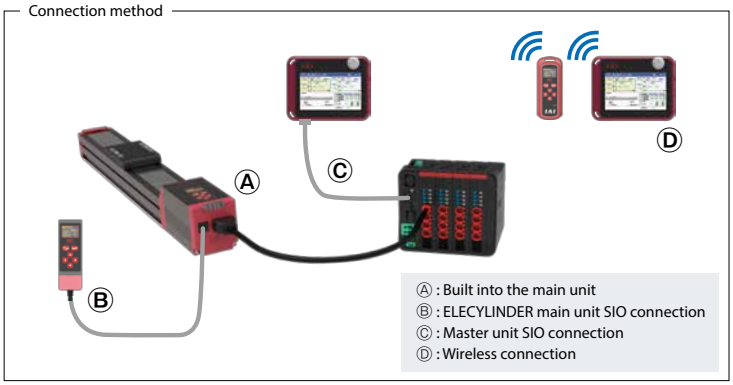
○: Connection/Operation possible

Teaching tool			Connection/ Operation possibility	Priority order (when connected at the same time)
Digital speed controller (built-in on the main body)			○	3
Wired connection	TB-02/03		○	1
	Wired teaching controller (TBD-1)		○	1
Wireless connection	TB-03		○ *1 *2	2
	Wireless teaching controller (TBD-1WL)		○ *1 *2	2

*1 Connectable only when the ELECYLINDER has the wireless connection specification ("WL" or "WL2" is selected as an option).
*2 Trial operations are not possible when connecting the WL specification, but are possible when connecting the WL2 specification.

In the case that REC/RCON/RSEL are connected to ELECYLINDER (RCON-EC-4 connection).

Connection method

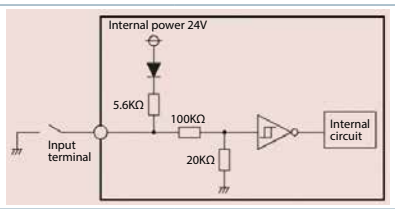
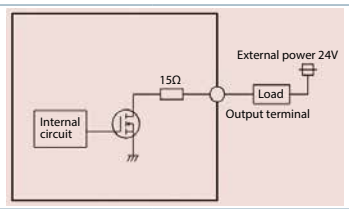
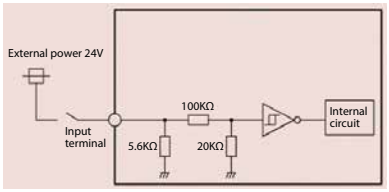
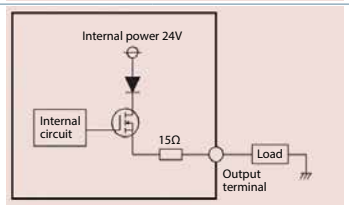


○: Connection/Operation possible, △: Connection possible/Some operation impossible, ×: Connection impossible

Teaching tool			Connection method	AUTO (automatic operating)		MANUAL	
				Connection/ Operation possibility	Priority order (when connected at the same time)	Connection/ Operation possibility	Priority order (when connected at the same time)
Digital speed controller (bulit-in on the main body)			Ⓐ	△ *3	3	○	3
Wired connection	TB-02/03		Ⓑ	×		×	
			Ⓒ	△ *4	1	○	1
	Wired teaching controller (TBD-1)		Ⓑ	×		×	
			Ⓒ	×		×	
Wireless connection	TB-03		Ⓓ	△ *1 *4	2	○ *1 *2	2
	Wireless teaching controller (TBD-1WL)		Ⓓ	△ *1 *3	2	○ *1 *2	2

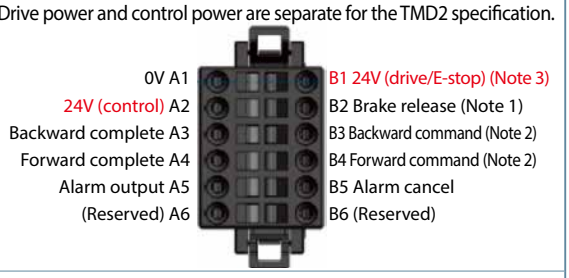
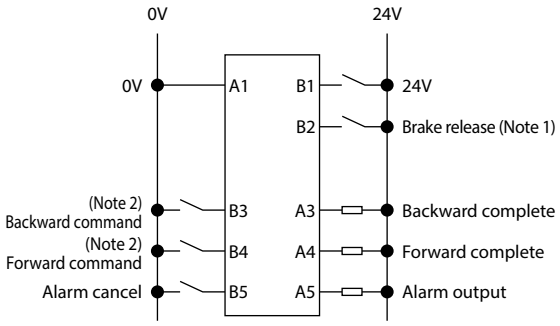
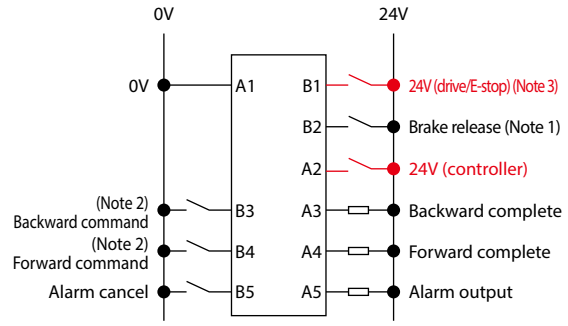
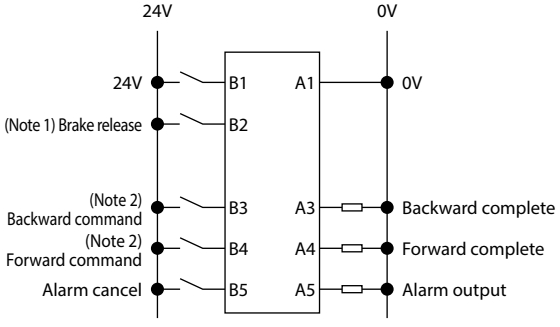
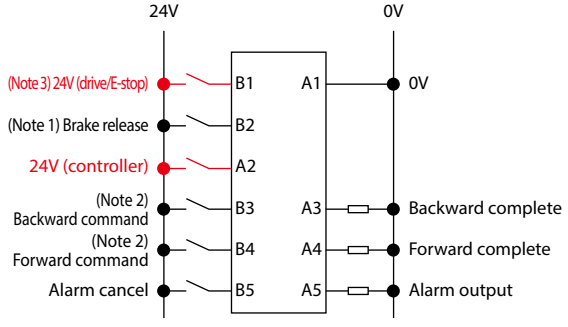
*1 Connectable only when the ELECYLINDER has the wireless connection specification ("WL" or "WL2" is selected as an option).
*2 Trial operations are not possible when connecting the WL specification, but are possible when connecting the WL2 specification.
*3 It is possible to change the speed and acceleration/deceleration. It is not possible to make position changes or perform trial operations.
*4 Only monitoring is possible (changing any data and performing trial operations are not possible).

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 connecting an external device (such as a PLC) to ELECYLINDER, use the same ground as ELECYLINDER.

I/O Signal Wiring Diagram

I/O		Standard specification	Split motor/controller power specification (option model: TMD2)
Power • I/O connector			Drive power and control power are separate for the TMD2 specification. 
I/O logic	NPN		
	PNP		

(Note 1) The B8S and B8SS do not use this signal.
(Note 2) When single solenoid system is selected, B3 is "Forward/Backward command" and B4 is not used.
(Note 3) The name for (D)B6/(D)B7/B8S is "Drive". The name for B8SS is "E-Stop."
To shut off the servo power on a B8SS, it is also necessary to shut off the AC power (L1 and L2) of the PSA-200.

I/O Signal Table

Power • I/O connector pin assignment			
Pin No.	Connector nameplate name	Signal abbreviation	Function overview
B3 (Note 1)	Backward	ST0	Backward command
B4 (Note 2)	Forward	ST1	Forward command
B5	Alarm cancel	RES	Alarm cancel
A3	Backward complete	LS0	Backward complete/push complete
A4	Forward complete	LS1	Forward complete/push 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) When single solenoid system is selected, B3 is "Forward/Backward command" and B4 is not used. However, the power · I/O connector display is unchanged, i.e. B3: backward and B4: forward.
(Note 2) For the split motor/controller power specification (TMD2), B1 is 24V (Drive/E-Stop) and A2 is 24V (controller).

Required accessories [200VAC servo motor models]

DC power source for driving motors

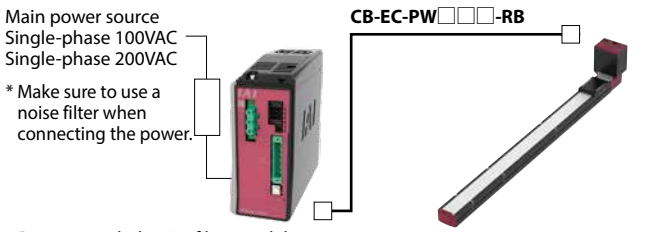
Features **This unit supplies DC power source for driving actuator motors. One unit can supply power for up to 6 axes. (within the maximum connectable wattage)**
Regenerative resistance units may be needed depending on the number of connected axes and the mounting orientation. Refer to the next page for details.

Models

PSA-200-1
(Input voltage: Single phase 100VAC, 800W limit)

PSA-200-2
(Input voltage: Single phase 200VAC, 1600W limit)

Configuration **Connection by motor power cable**



<Recommended noise filter models>
* Can be purchased from IAI.
NF2010A-UP (Make: Soshin Electric)
NAC-10-472 (Make: COSEL)

Actuator motor wattage

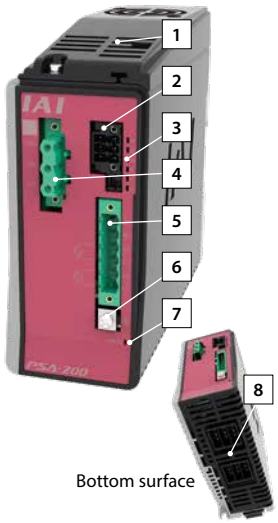
EC-B8SS	200W

Specifications

Power input voltage range		Single phase 100VAC specification: 100-115VAC ±10% Single phase 200VAC specification: 200-230VAC ±10%
Input frequency range		50/60Hz ±5°C
Inrush current (Note 1)	55°C	Control power: 60A Motor power: 70A
Output voltage		280VDC type
Maximum allowable wattage		Single phase 100VAC, 800W limit Single phase 200VAC, 1600W limit
Maximum number of connectable actuators		6 axes
Momentary power failure resistance		50Hz:20ms, 60Hz:16ms
Dielectric strength voltage		One minute at AC1500V between primary and FG
Insulation resistance		500VDC, 10Ω or more between secondary and FG
Leak current		Total 3.1mA (Use a recommended noise filter, when connected 6 axes)
Electric shock protection mechanism		Class 1 basic insulation

(Note 1) The inrush current flows for approx. 20ms after the power is turned on. Beware that the inrush current value varies depending on the impedance of the power line and internal element temperature (thermistor).

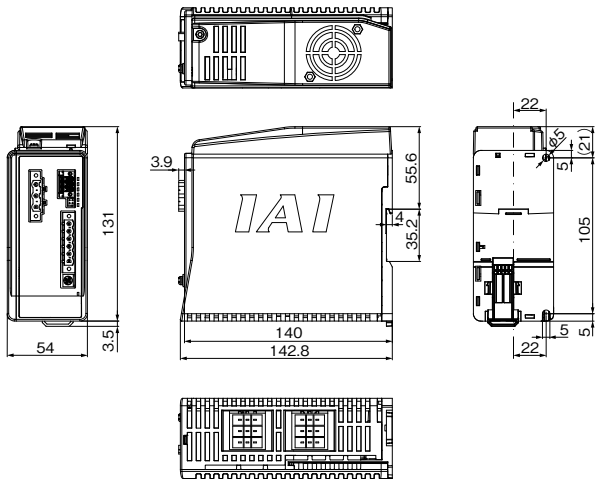
Name of each part



1. Fan unit
2. Status output connector
3. Status display LED
4. Regenerative unit connector
5. Power source connector
6. Terminal for grounding
7. Charge status LED *1
8. Motor power connector

*1 While the charge status LED is lit, the controller has been recharged. To prevent electric shock, wiring and inspection processes must be performed after the LED is turned off.

External dimensions



Other accessories [200VAC servo motor models]

Regenerative resistance unit

Features This unit converts the regenerative current that generates when motor slows down into heat. After calculating the total wattage of the operating actuators, refer to the "Guideline for Required number of units" in the table to determine the required quantity of regenerative resistance units if necessary.

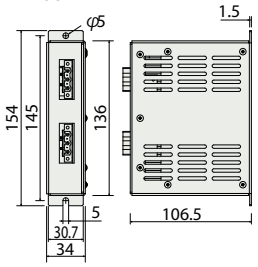
Model **RESU-1** (Standard specification) **/**
RESUD-1 (DIN rail mount specification)

Specifications

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

External dimensions

<RESU-1>



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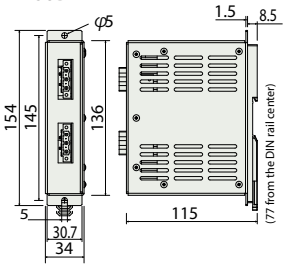


Guideline for required number of units

Actuator motor wattage

EC-B8SS	200W

Wattage (total)		Horizontal								
		0	200	400	600	800	1000	1200	1400	1600
Vertical	0	0	0	0	0	0	0	1	1	1
	200	0	1	1	1	1	1	1	1	—
	400	1	1	1	1	2	2	2	—	—
	600	1	1	2	2	2	2	—	—	—
	800	1	2	2	2	2	—	—	—	—
	1000	2	2	2	2	—	—	—	—	—
	1200	2	2	3	—	—	—	—	—	—
	1400	2	3	—	—	—	—	—	—	—
	1600	3	—	—	—	—	—	—	—	—

(Precautions)

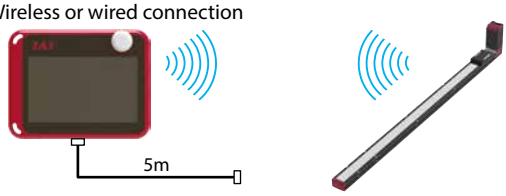
1. The above table shows the guideline for a full cycle (extend/retract) application at the rated acceleration/deceleration, rated load and 1000mm stroke at 50% duty ratio.
2. Although regenerative energy is also absorbed inside the controller, if the allowable amount is exceeded, an estimated regenerative discharge power excess alarm is activated. Connect an external regenerative resistance unit.
   When the duty ratio is higher than 50%, a higher number of regenerative resistance units is required than the amount shown in the table. The maximum number of connectable regenerative resistance units is 5.
   Do not connect more than 5 units, as it will cause a failure.
3. To determine the optional number of units based on the application conditions, use the IAI calculator.

Wireless/Wired touch panel teaching devices

Features Wireless teaching device
Input of starting/ending points and ADV (Acceleration, Velocity, Deceleration) as well as axis operations can be performed wirelessly.

Model **TB-03-□** Confirm the supported versions at our website.

Configuration Wireless or wired connection



Specifications

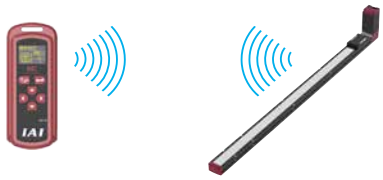
Rated voltage	24V DC
Power consumption	3.6W or less (150mA or less)
Operating ambient temperature	0 - 40°C
Operating ambient humidity	5-85%RH or less (non-condensing)
Degree of protection	IPX0
Mass	Approx. 485g (main unit) + approx. 175g (battery)
Charging method	Dedicated adaptor / wired connection
Wireless connection	Bluetooth4.2 class2

Wireless teaching controller

Features Start point/end point/AVD (Acceleration, Velocity, Deceleration) input and jog motions can be performed without a wired connection. (for ELECYLINDER with wireless option)

Model **TBD-1WL-□**

Configuration Wireless connection



Specifications

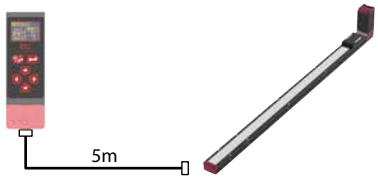
Power source input voltage range	DC5.9V (5.7 - 6.3V) [Supplied by dedicated AC adapter]
Operating ambient temperature	0 - 40°C (non-condensing, no frost)
Operating ambient humidity	5 - 85%RH (non-condensing, no frost)
Degree of protection	IPX0
Mass	Approx. 115g (including 55g battery mass)
Charging method	Dedicated adapter
Wireless connection	Bluetooth4.2 class2

Wired teaching controller

Features Start point/end point/AVD (Acceleration, Velocity, Deceleration) input and jog motions can be performed easily.
Can be used by any ELECYLINDER due to the direct wired connection.

Model **TBD-1**

Configuration Wired connection



Specifications

Rated voltage	24VDC ±10% [supplied by the controller]
Power consumption	1.44W or less (60mA or less)
Operating ambient temperature	0 - 40°C (non-condensing, no frost)
Operating ambient humidity	5-85%RH or less (non-condensing)
Degree of protection	IP20
Mass	21g (main unit) + approx. 184g (main unit integrated cable 5m)

Teaching software for PC (Windows only)

Features

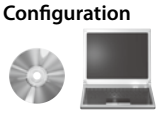
The start-up support software comes equipped with functions such as position teaching, trial operation, and monitoring.
A complete range of functions needed for making adjustments contributes to a decreased start-up time.

Model

IA-OS (Software only, for those who already have the dedicated connection cable)

Confirm the supported versions at our website.

Configuration



PC software (CD)

Dedicated cable in customer's possession
[CB-SEL-USB030/RCB-CV-USB/
CB-RCA-SIO050]

Model

IA-OS-C (with external device communication cable + USB conversion adapter + USB cable)

Confirm the supported versions at our website.

Configuration

PC software (CD)

USB conversion adapter
RCB-CV-USB

3m

USB cable
CB-SEL-USB030

5m

External device communication cable
CB-RCA-SIO050

24V power source

Model **PSA-24** (without fan)

Model **PSA-24L** (with fan)

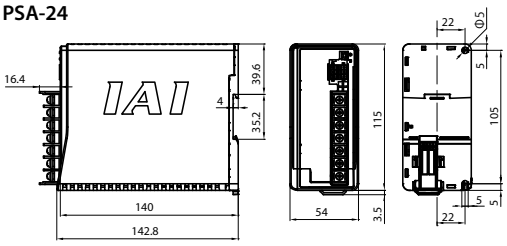
Specifications

Item	Specification	
	100VAC input	200VAC input
Power source input voltage range	100VAC~230VAC±10%	
Input power current	3.9A or less	1.9A or less
Power capacity	No fan: 250VA With fan: 390VA	No fan: 280VA With fan: 380VA
Inrush current *1	No fan: 17A (typ) With fan: 27.4A (typ)	No fan: 34A (typ) With fan: 54.8A (typ)
Heat quantity	33W (204W continuous rated) 54W (300V continuous rated)	23W (204W continuous rated) 37W (330W continuous rated)
Output voltage range *2	24V±10%	
Continuous rated output	No fan: 8.5A (204W) With fan: 13.8A (330W)	
Peak output	17A (408W)	
Efficiency	86% or higher	90% or higher
Parallel connection *3	Up to 5 units	

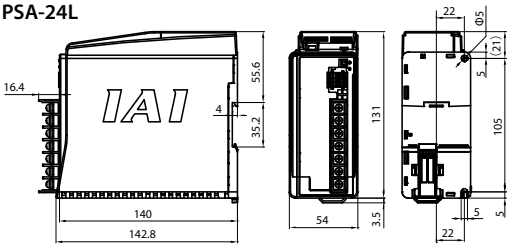
*1 The pulse width of the inrush current flow is 5ms or less.
*2 This power unit can change the output voltage according to load so that it can perform parallel operations. Therefore, this power unit can only be used with IAI controllers.
*3 Parallel connection is not possible under the conditions below.
* Parallel connection between PSA-24 units with and without fans.
* Parallel connection with power units other than this one.
* Parallel connection with PS-24

External dimensions

PSA-24



PSA-24L



Maintenance parts (cables)

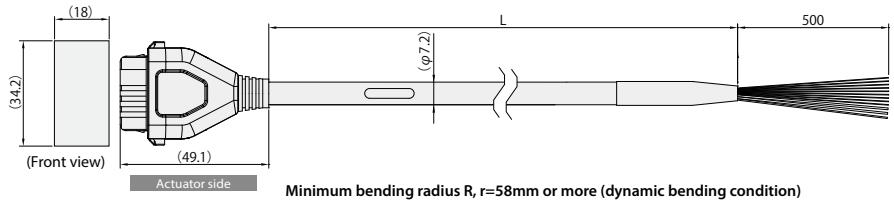
When ordering cables for replacement, etc. after purchase, indicate the model codes below.

■ Cable types

Cable type	Cable model number	Applicable models
Power • I/O cable (flying leads)	CB-EC-PWBIO□□□-RB	All models
Power • I/O cable (flying leads, 4-way connector)	CB-EC2-PWBIO□□□-RB	Stepper motor only
Power • I/O cable (RCON-EC connection specification)	CB-REC-PWBIO□□□-RB	All models
Power • I/O cable (RCON-EC connection specification, 4-way connector)	CB-REC2-PWBIO□□□-RB	Stepper motor only
Motor power cable	CB-EC-PW□□□-RB	200VAC Servo motor only

Model CB-EC-PWBIO□□□-RB

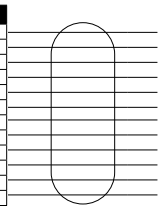
* Indicate the cable length (L) in □□□ . Up to 8m, (e.g.) 030=3m



Minimum bending radius R, r=58mm or more (dynamic bending condition)
*** Only the robot cable is available for this model.**

1-1871940-6

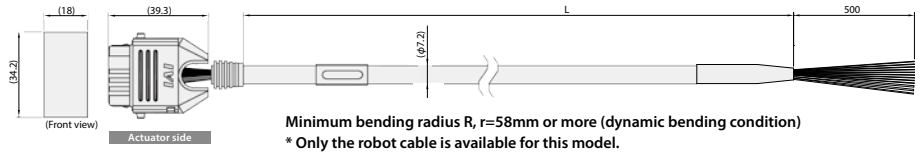
Color	Signal name	Pin No.
Black(AWG18)	0V	A1
Red(AWG18)	24V	B1
Light blue(AWG22)	(Reserved) (Note 1)	A2
Orange(AWG26)	IN0	B3
Yellow(AWG26)	IN1	B4
Green(AWG26)	IN2	B5
Pink(AWG26)	(Reserved)	B6
Blue(AWG26)	OUT0	A3
Purple(AWG26)	OUT1	A4
Gray(AWG26)	OUT2	A5
White(AWG26)	(Reserved)	A6
Brown(AWG26)	BKRLS	B2



(Note 1) 24V (control) when Split motor and controller power (TMD2) is selected.
(Note) Yellow-green and light gray wires are not used (already cut inside the shrink tube).

Model CB-EC2-PWBIO□□□-RB

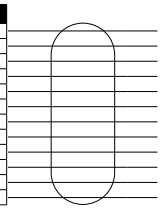
* Indicate the cable length (L) in □□□ . Up to 8m, (e.g.) 030=3m



Minimum bending radius R, r=58mm or more (dynamic bending condition)
*** Only the robot cable is available for this model.**

1-1871940-6

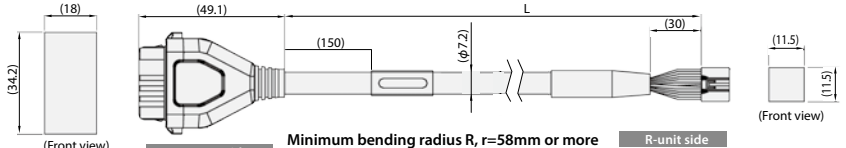
Color	Signal name	Pin No.
Black(AWG18)	0V	A1
Red(AWG18)	24V	B1
Light blue(AWG22)	(Reserved) (Note 1)	A2
Orange(AWG26)	IN0	B3
Yellow(AWG26)	IN1	B4
Green(AWG26)	IN2	B5
Pink(AWG26)	(Reserved)	B6
Blue(AWG26)	OUT0	A3
Purple(AWG26)	OUT1	A4
Gray(AWG26)	OUT2	A5
White(AWG26)	(Reserved)	A6
Brown(AWG26)	BKRLS	B2



(Note 1) 24V (control) when Split motor and controller power (TMD2) is selected.
(Note) Yellow-green and light gray wires are not used (already cut inside the shrink tube).

Model CB-REC-PWBIO□□□-RB

* Indicate the cable length (L) in □□□ . Up to 8m, (e.g.) 030=3m



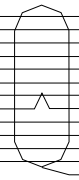
Minimum bending radius R, r=58mm or more (dynamic bending condition)
*** Only the robot cable is available for this model.**

1-1871940-6

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
YellowGreen(AWG26)	SD+	B6
Light gray(AWG26)	SD-	A6
Blue(AWG26)	OUT0	A3
Purple(AWG26)	OUT1	A4
Gray(AWG26)	OUT2	A5
Brown(AWG26)	BKRLS	B2

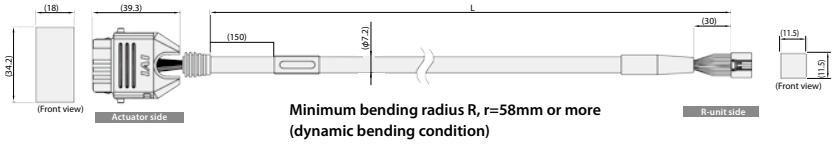
DF62E-13S-2.2C(18)

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 green(AWG26)
10	SD-	Light gray(AWG26)
3	IN0	Blue(AWG26)
4	IN1	Purple(AWG26)
5	IN2	Gray(AWG26)
11	BKRLS	Brown(AWG26)
13	FG	Green(AWG26)



Model CB-REC2-PWBIO□□□-RB

* Indicate the cable length (L) in □□□ . Up to 8m, (e.g.) 030=3m



Minimum bending radius R, r=58mm or more (dynamic bending condition)
*** Only the robot cable is available for this model.**

1-1871940-6

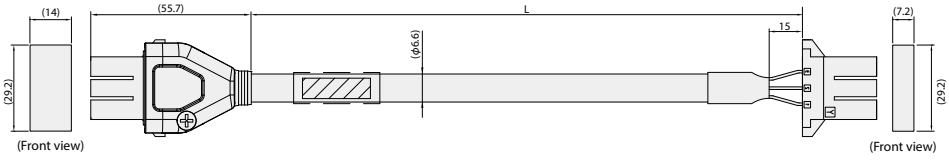
Color	Signal name	Pin No.
Black(AWG18)	0V	A1
Red(AWG18)	24V(MP)	B1
Light blue(AWG22)	24V(CP)	A2
Orange(AWG26)	IN0	B3
Yellow(AWG26)	IN1	B4
Green(AWG26)	IN2	B5
Yellow green(AWG26)	SD+	B6
Light gray(AWG26)	SD-	A6
Blue(AWG26)	OUT0	A3
Purple(AWG26)	OUT1	A4
Gray(AWG26)	OUT2	A5
Brown(AWG26)	BKRLS	B2

DF62E-13S-2C(18)

Pin No.	Signal name	Color
2	0V	Black(AWG22)
1	24V(MP)	Red(AWG22)
12	24V(CP)	Light blue(AWG22)
7	OUT0	Orange(AWG26)
8	OUT1	Yellow(AWG26)
9	OUT2	Green(AWG26)
6	SD+	YellowGreen(AWG26)
10	SD-	Light gray(AWG26)
3	IN0	Blue(AWG26)
4	IN1	Purple(AWG26)
5	IN2	Gray(AWG26)
11	BKRLS	Brown(AWG26)
13	FG	Green(AWG26)

Model CB-EC-PW□□□-RB

* Indicate the cable length (L) in □□□ . Up to 8m, (e.g.) 030=3m



Minimum bending radius R, r=40mm or more (dynamic bending condition)
*** 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)

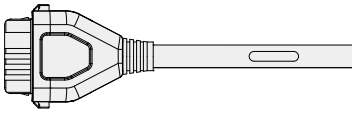
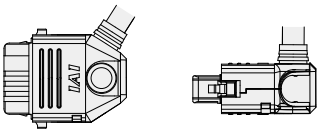
Maintenance parts (Cables)

4-way connector cable

* Models equipped with a stepper motor

This cable enables the ELECYLINDER cable connector to change its exit direction to 4 ways.
The wiring of the connector cable and Power · I/O cable is same as that of CB-EC-PWBIO □□□ -RB / CB-REC-PWBIO □□□ -RB.

* Indicate the cable length (L) in □□□.
(e.g.) 050=5m

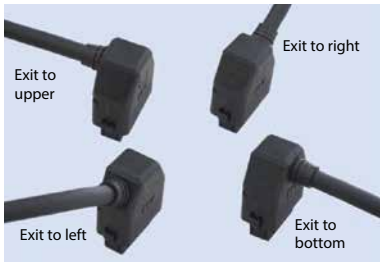
	Standard connector (actuator side)	4-way connector (actuator side)
External view		
Flying Leads	CB-EC-PWBIO□□□-RB	CB-EC**2**-PWBIO□□□-RB
RCON-EC connection specification	CB-REC-PWBIO□□□-RB	CB-REC**2**-PWBIO□□□-RB

■ How to place an order

The minimum cable length is 1m and maximum is 10m.
The cable length can be indicated in 1m increments.

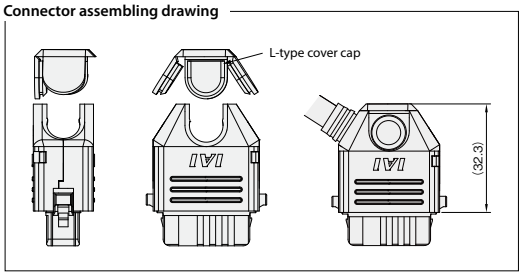
(Ex.) when a 4-way connector 3m/10m is ordered.
Cable length 3m : CB-EC2-PWBIO030-RB
Cable length 10m : CB-EC2-PWBIO100-RB

■ How to assemble it



Exit orientations can be selected from four directions freely.

Connector assembling drawing



(1) Insert the connector to the desired direction while sliding from the semi-circle curved part along the groove.

(2) Make sure that the cable has been inserted securely, then insert the two cap sides along the groove.

(3) Lastly, push the last side of the cap.

Catalog No. CE0267-3A (2023DEC)

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