

EC-S7

Simple dust-proof

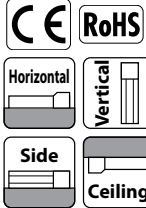
Coupled Motor

Body width 73 mm

24v Stepper motor

Model Specification Items

| | | | | | | | | | | | |
|--------|---|------|------------------------------------|---|----------------|---|-------------------------------|---|---|---|--------------------------------------|
| EC | — | S7 | | — | | — | | — | | — | |
| Series | — | Type | Lead | — | Stroke | — | Cable Length | — | Options | — | |
| | | | S 24mm H 16mm M 8mm L 4mm | | 50 ↓ 500 | | 50mm ↓ 500mm (per 50mm) | | 0 With terminal block type connector 1 1m ↓ 10 10m | | Refer to the option price list below |



- POINT Selection Notes**
- (1) The actuator specifications display the payload's maximum value, but it will vary depending on the acceleration and speed. Please refer to "Table of Payload by Speed/Acceleration" for more details.
 - (2) When performing a push-motion operation, please refer to the "Correlation between push force and current limit value." Push force is only a guide. Please refer to P115 for details.
 - (3) Depending on the ambient operating temperature, duty control is necessary. Please refer to P109 for details.
 - (4) Special attention needs to be paid to the mounting orientation. Please refer to P33 for details.
 - (5) Reference value of the overhang load length is under 280mm in the Ma, Mb and Mc directions. Please refer to the illustration on P35 for the overhang load length.

Options

| Type | Option code | Reference page |
|---|-------------|----------------|
| Brake | B | See P.101 |
| Foot bracket | FT | See P.103 |
| Non-motor end specification | NM | See P.108 |
| PNP specification | PN | See P.108 |
| Split motor and controller power supply specification | TMD2 | See P.109 |
| Battery-less Absolute Encoder specification | WA | See P.109 |
| Wireless communication specification | WL | See P.109 |
| Wireless axis-operation specification | WL2 | See P.109 |

Stroke

| Stroke (mm) | EC-S7 | Stroke (mm) | EC-S7 |
|-------------|-------|-------------|-------|
| 50 | ○ | 300 | ○ |
| 100 | ○ | 350 | ○ |
| 150 | ○ | 400 | ○ |
| 200 | ○ | 450 | ○ |
| 250 | ○ | 500 | ○ |

Cable Length

| Cable code | Cable length |
|------------|---------------------------|
| 0 | No cable (with connector) |
| 1 ~ 3 | 1 ~ 3m |
| 4 ~ 5 | 4 ~ 5m |
| 6 ~ 10 | 6 ~ 10m |

(Note) Robot cables.

Main specifications

| Item | | Description | | | | |
|------------|--|--|-----|-----|-----|-----|
| Lead | Ball screw lead (mm) | 24 | 16 | 8 | 4 | |
| Horizontal | Payload | Max. payload (kg) (energy-saving disabled) | 37 | 46 | 51 | 51 |
| | | Max. payload (kg) (energy-saving enabled) | 18 | 35 | 40 | 40 |
| | Speed/acceleration/deceleration | Max. speed (mm/s) | 860 | 700 | 420 | 210 |
| | | Min. speed (mm/s) | 30 | 20 | 10 | 5 |
| Vertical | Payload | Max. payload (kg) (energy-saving disabled) | 3 | 8 | 16 | 19 |
| | | Max. payload (kg) (energy-saving enabled) | 2 | 5 | 10 | 15 |
| | Speed/acceleration/deceleration | Max. speed (mm/s) | 860 | 700 | 420 | 175 |
| | | Min. speed (mm/s) | 30 | 20 | 10 | 5 |
| Push force | Rated acceleration/deceleration (G) | 0.3 | 0.3 | 0.3 | 0.3 | |
| | | Max. acceleration/deceleration (G) | 1 | 1 | 1 | 1 |
| | Max. payload (kg) (energy-saving disabled) | 3 | 8 | 16 | 19 | |
| | | Max. payload (kg) (energy-saving enabled) | 2 | 5 | 10 | 15 |
| Brake | Brake holding specification | Non-excitation actuating solenoid brake | | | | |
| | | Brake holding force (kgf) | 3 | 8 | 16 | 19 |
| Stroke | Min. stroke (mm) | 50 | 50 | 50 | 50 | |
| | Max. stroke (mm) | 500 | 500 | 500 | 500 | |
| | Stroke pitch (mm) | 50 | 50 | 50 | 50 | |

* Speed limitation applies to push motion. See the manual or contact IAI.

| Item | Description |
|--|---|
| Driving system | Ball screw \varnothing 12mm, Rolling C10 |
| Positioning repeatability | \pm 0.05mm |
| Lost motion | - |
| Base | Dedicated aluminum extruded material (A6063S5-T5 Equivalent) Black alumite treatment |
| Linear guide | Linear motion infinite circulating type |
| Static allowable moment | Ma: 79N·m |
| | Mb: 114N·m |
| | Mc: 157N·m |
| Dynamic allowable moment (Note 1) | Ma: 17N·m |
| | Mb: 25N·m |
| | Mc: 34N·m |
| Ambient operation temperature/humidity | 0~40°C, 85%RH or less (Non-condensing) |
| Degree of protection | IP20 |
| Vibration & shock resistance | 4.9m/s ² 100Hz or less |
| Overseas standards | CE marking, RoHS (Restriction of Hazardous Substances) |
| Motor type | Stepper motor |
| Encoder type | Incremental / battery-less absolute |
| Number of encoder pulses | 800 pulse/rev |

(Note 1) Based on the standard rated operation life of 5,000 km. Operation life varies according to operating and mounting conditions. Confirm the operation life on P36.

Table of Payload by Speed/Acceleration

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

Lead 24

| Orientation | Acceleration (G) | | | | | |
|--------------|------------------|-----|----------|----|-----|-----|
| | Horizontal | | Vertical | | | |
| Speed (mm/s) | 0.3 | 0.5 | 0.7 | 1 | 0.3 | 0.5 |
| 0 | 37 | 22 | 16 | 14 | 3 | 3 |
| 200 | 37 | 22 | 16 | 14 | 3 | 3 |
| 420 | 34 | 20 | 16 | 14 | 3 | 3 |
| 640 | 20 | 15 | 10 | 9 | 3 | 3 |
| 860 | 12 | 10 | 7 | 4 | 3 | 2.5 |

Lead 16

| Orientation | Acceleration (G) | | | | | |
|--------------|------------------|-----|----------|----|-----|-----|
| | Horizontal | | Vertical | | | |
| Speed (mm/s) | 0.3 | 0.5 | 0.7 | 1 | 0.3 | 0.5 |
| 0 | 46 | 35 | 28 | 27 | 8 | 8 |
| 140 | 46 | 35 | 28 | 27 | 8 | 8 |
| 280 | 46 | 35 | 25 | 24 | 8 | 8 |
| 420 | 34 | 25 | 15 | 10 | 5 | 4.5 |
| 560 | 20 | 15 | 10 | 6 | 4 | 3 |
| 700 | 15 | 10 | 5 | 3 | 3 | 2 |

Lead 8

| Posture | Acceleration (G) | | | | | |
|--------------|------------------|-----|-----|----------|-----|-----|
| | Horizontal | | | Vertical | | |
| Speed (mm/s) | 0.3 | 0.5 | 0.7 | 1 | 0.3 | 0.5 |
| 0 | 51 | 45 | 40 | 40 | 16 | 16 |
| 70 | 51 | 45 | 40 | 40 | 16 | 16 |
| 140 | 51 | 40 | 38 | 35 | 16 | 16 |
| 210 | 51 | 35 | 30 | 24 | 10 | 9.5 |
| 280 | 40 | 28 | 20 | 15 | 8 | 7 |
| 350 | 30 | 9 | 4 | | 5 | 4 |
| 420 | 7 | | | | 2 | |

Lead 4

| Orientation | Acceleration (G) | | | | | |
|--------------|------------------|-----|----------|----|-----|-----|
| | Horizontal | | Vertical | | | |
| Speed (mm/s) | 0.3 | 0.5 | 0.7 | 1 | 0.3 | 0.5 |
| 0 | 51 | 45 | 40 | 40 | 19 | 19 |
| 35 | 51 | 45 | 40 | 40 | 19 | 19 |
| 70 | 51 | 45 | 40 | 40 | 19 | 19 |
| 105 | 51 | 45 | 40 | 35 | 19 | 19 |
| 140 | 45 | 35 | 30 | 25 | 14 | 12 |
| 175 | 30 | 18 | | | 9 | 7.5 |
| 210 | 6 | | | | | |

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

Lead 24

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

Lead 16

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

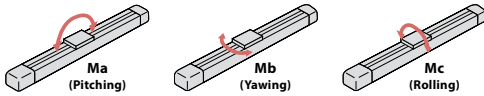
Lead 8

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

Lead 4

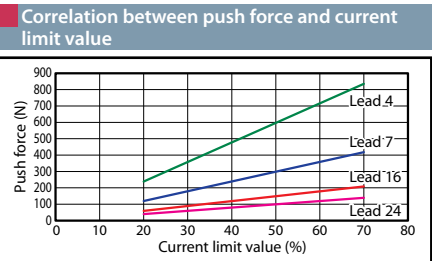
| Orientation | Acceleration (G) | | |
|--------------|------------------|----------|----------|
| | Horizontal | Vertical | Vertical |
| Speed (mm/s) | 0.3 | 0.7 | 0.3 |
| 0 | 40 | 30 | 15 |
| 35 | 40 | 30 | 15 |
| 70 | 40 | 30 | 15 |
| 105 | 40 | 30 | 8 |
| 140 | 15 | 6 | 2 |

■ Direction of slider type moment



| Stroke and maximum speed | | | | | | |
|--------------------------|--------------------|------------------------|----------|----------|----------|----------|
| Lead (mm) | Energy-saving mode | 50-300 (mm) (per 50mm) | 350 (mm) | 400 (mm) | 450 (mm) | 500 (mm) |
| 24 | Disabled | 860 | 774 | 619 | 506 | |
| | Enabled | 800 | 774 | 619 | 506 | |
| 16 | Disabled | 700 | 631 | 492 | 395 | 323 |
| | Enabled | 560 | 492 | 395 | 323 | |
| 8 | Disabled | 420 | 322 | 251 | 200 | 164 |
| | Enabled | 280 | 251 | 200 | 164 | |
| 4 | Disabled | 210<175> | 163 | 126 | 101 | 83 |
| | Enabled | 140 | 126 | 101 | 83 | |

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

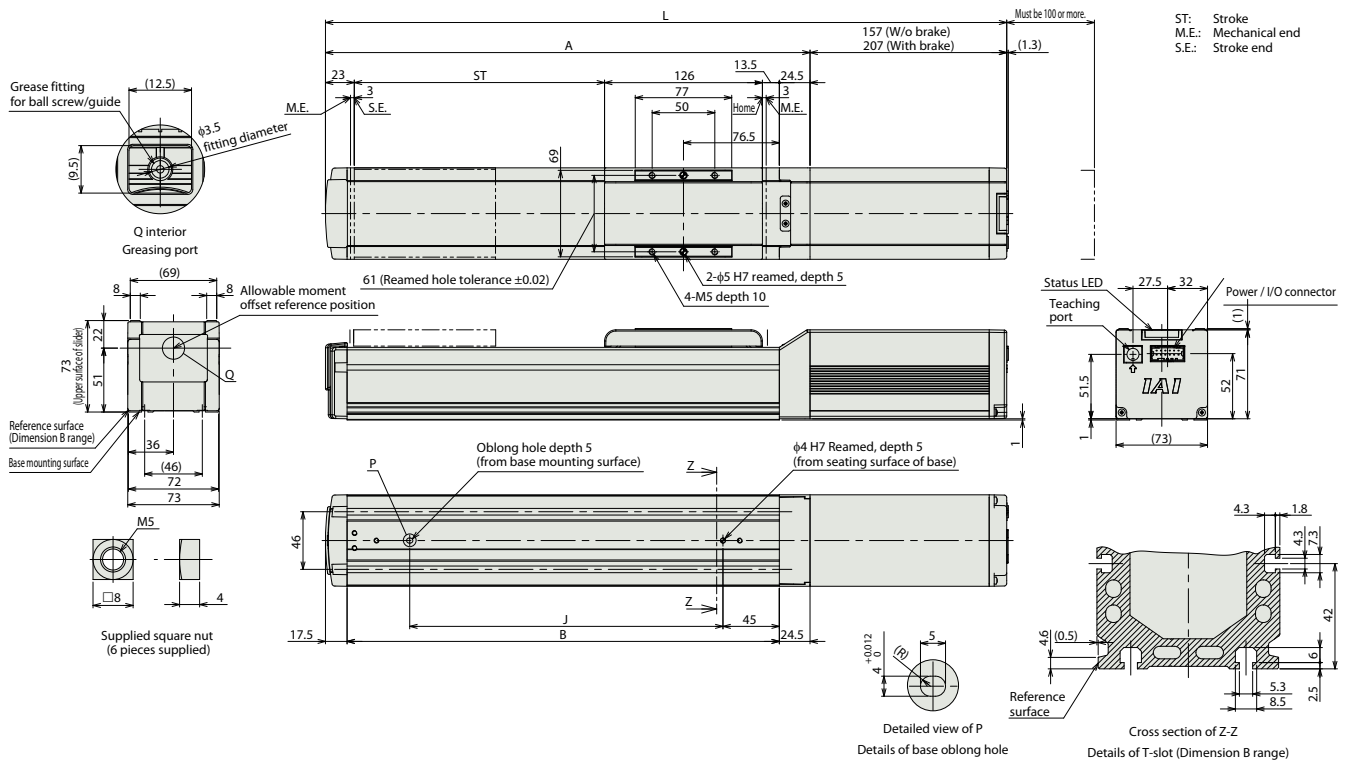


Dimensions

(Note) When the slider is returning to its home position, please be careful of interference from surrounding objects, as it will travel until it reaches the M.E.

CAD drawings can be downloaded from our website.

www.intelligentactuator.com



■ Dimensions by stroke

| Stroke | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | L | 394 | 444 | 494 | 544 | 594 | 644 | 694 | 744 | 794 |
| W/o Brake | 444 | 494 | 544 | 594 | 644 | 694 | 744 | 794 | 844 | 894 |
| With Brake | 237 | 287 | 337 | 387 | 437 | 487 | 537 | 587 | 637 | 687 |
| A | 195 | 245 | 295 | 345 | 395 | 445 | 495 | 545 | 595 | 645 |
| B | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 |
| J | | | | | | | | | | |

■ Mass by stroke

| Stroke | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|------------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | Weight (kg) | 3.4 | 3.6 | 3.9 | 4.2 | 4.4 | 4.7 | 5.0 | 5.2 | 5.5 |
| W/o Brake | 3.8 | 4.1 | 4.4 | 4.6 | 4.9 | 5.2 | 5.4 | 5.7 | 6.0 | 6.2 |
| With Brake | | | | | | | | | | |

Applicable controller

(Note) The EC series is equipped with a built-in controller. Please refer to P111 for details.