

# **Rod Type**

# RCP3 ERC2 RCA RCP2 RCA2 RCS2



| DCD2             | Mini Rod Type     | Coupling Type           | 22mm Width  | RCP3-RA2AC  | 131 |
|------------------|-------------------|-------------------------|-------------|-------------|-----|
| RCP3             |                   |                         | 28mm Width  | RCP3-RA2BC  | 133 |
| series           |                   | Side-Mounted Motor Type | 22mm Width  | RCP3-RA2AR  | 135 |
| Pulse Motor Type |                   |                         | 28mm Width  | RCP3-RA2BR  | 137 |
|                  |                   |                         |             |             |     |
|                  | Standard Type     | Coupling Type           | 25mm Width  | RCP2-RA2C   | 139 |
|                  |                   |                         | 35mm Width  | RCP2-RA3C   | 141 |
|                  |                   |                         | 45mm Width  | RCP2-RA4C   | 143 |
| DCDO             |                   |                         | 64mm Width  | RCP2-RA6C   | 145 |
| RCP2             |                   |                         | 100mm Width | RCP2-RA10C  | 147 |
| series           | Short-Length      | Side-Mounted Motor Type | 45mm Width  | RCP2-SRA4R  | 149 |
|                  | Single-Guide Type | Coupling Type           | 45mm Width  | RCP2-RGS4C  | 151 |
| Pulse            |                   |                         | 64mm Width  | RCP2-RGS6C  | 153 |
| Motor            | Short-Length      | Side-Mounted Motor Type | 45mm Width  | RCP2-SRGS4R | 155 |
| Туре             | Double-Guide Type | Coupling Type           | 35mm Width  | RCP2-RGD3C  | 157 |
|                  |                   |                         | 45mm Width  | RCP2-RGD4C  | 159 |
|                  |                   |                         | 64mm Width  | RCP2-RGD6C  | 161 |
|                  | Short-Length      | Side-Mounted Motor Type | 45mm Width  | RCP2-SRGD4R | 163 |

129 Rod type

|                | Rod Type           | Standard Type                | 58mm Width          | ERC2-RA6C                  | 165        |
|----------------|--------------------|------------------------------|---------------------|----------------------------|------------|
|                |                    |                              | 68mm Width          | ERC2-RA7C                  | 167        |
| ERC2           |                    | Single-Guide Type            | 58mm Width          | ERC2-RGS6C                 | 169        |
| series         |                    |                              | 68mm Width          | ERC2-RGS7C                 | 171        |
| 30,703         |                    | Double-Guide Type            | 58mm Width          | ERC2-RGD6C                 | 173        |
|                |                    |                              | 68mm Width          | ERC2-RGD7C                 | 175        |
|                |                    |                              |                     |                            |            |
|                | Mini Rod Type      | Nut-Mount Type               | 28mm Width          | RCA2-RN3N                  | 177        |
| DCAS           |                    |                              | 34mm Width          | RCA2-RN4N                  | 179        |
| RCA2           |                    | Tapped Hole Type             | 28mm Width          | RCA2-RP3N                  | 181        |
| series         |                    |                              | 34mm Width          | RCA2-RP4N                  | 183        |
|                |                    | Single-Guide Free Mount Type |                     | RCA2-GS3N                  | 185        |
| 24V            |                    |                              | 34mm Width          | RCA2-GS4N                  | 187        |
| Servo          |                    | Double-Guide Free Mount Type |                     | RCA2-GD3N                  | 189        |
| Motor<br>Type  |                    |                              | 34mm Width          | RCA2-GD4N                  | 191        |
| Type           |                    | Double-Guide Slide Unit Type |                     | RCA2-SD3N                  | 193        |
|                |                    |                              | 72mm Width          | RCA2-SD4N                  | 195        |
|                | Standard Tires     | Counting Tires               | ~20mm               | DCA DAGO                   | 107        |
|                | Standard Type      | Coupling Type                | ø32mm<br>ø37mm      | RCA-RA3C<br>RCA-RA4C       | 197<br>199 |
|                |                    | Duilt In Type                | ø32mm               |                            | 201        |
|                |                    | Built-In Type                | ø37mm               | RCA-RA3D<br>RCA-RA4D       | 201        |
|                |                    | Side-Mounted Motor Type      | ø32mm               | RCA-RA3R                   | 205        |
|                |                    | Side-Modified Motor Type     | ø37mm               | RCA-RA4R                   | 207        |
| DCA            | Short-I en         | gth Side-Mounted Motor Type  |                     | RCA-SRA4R                  | 209        |
| RCA            | Single-Guide Type  | Coupling Type                | ø32mm               | RCA-RGS3C                  | 211        |
| series         | Cingle Galac Type  | coup.ing type                | ø37mm               | RCA-RGS4C                  | 213        |
|                |                    | Built-In Type                | ø32mm               | RCA-RGS3D                  | 215        |
| 24V            |                    |                              | ø37mm               | RCA-RGS4D                  | 217        |
| Servo<br>Motor | Short-Ler          | ngth Side-Mounted Motor Type | 45mm Width          | RCA-SRGS4R                 | 219        |
| Туре           | Double-Guide Type  | Coupling Type                | ø32mm               | RCA-RGD3C                  | 221        |
| .,,,,,         |                    |                              | ø37mm               | RCA-RGD4C                  | 223        |
|                |                    | Built-In Type                | ø32mm               | RCA-RGD3D                  | 225        |
|                |                    |                              | ø37mm               | RCA-RGD4D                  | 227        |
|                |                    | Side-Mounted Motor Type      | ø32mm               | RCA-RGD3R                  | 229        |
|                |                    |                              | ø37mm               | RCA-RGD4R                  | 231        |
|                | Short-Ler          | ngth Side-Mounted Motor Type | 45mm Width          | RCA-SRGD4R                 | 233        |
|                |                    |                              |                     |                            |            |
|                | Standard Type      | Coupling Type                | ø37mm               | RCS2-RA4C                  | 235        |
|                |                    |                              | 55mm Width          | RCS2-RA5C                  | 237        |
|                |                    | Built-In Type                | ø37mm               | RCS2-RA4D                  | 239        |
|                | Short-Ler          | igth Side-Mounted Motor Type |                     | RCS2-SRA7BD                | 241        |
| RCS2           |                    | Side-Mounted Motor Type      | ø37mm               | RCS2-RA4R                  | 243        |
|                |                    |                              | 55mm Width          | RCS2-RA5R                  | 245        |
| series         | Cinale Cuide Tores | Counting Tive                | 130mm Width         | RCS2-RA13R                 | 247        |
| 2001/          | Single-Guide Type  | Coupling Type                | ø37mm               | RCS2-RGS4C                 | 249        |
| 200V<br>Servo  |                    | Built-In Type                | 55mm Width<br>ø37mm | RCS2-RGS5C<br>RCS2-RGS4D   | 251        |
| Servo<br>Motor | Short Lor          | gth Side-Mounted Motor Type  |                     | RCS2-RGS4D<br>RCS2-SRGS7BD | 253<br>255 |
| Туре           | Double-Guide Type  | Coupling Type                | ø37mm               | RCS2-SRGS7BD<br>RCS2-RGD4C | 257        |
|                | Pouble-Guide Type  | Couping type                 | 55mm Width          | RCS2-RGD4C                 | 259        |
|                |                    | Built-In Type                | ø37mm               | RCS2-RGD5C                 | 261        |
|                | Short-I er         | gth Side-Mounted Motor Type  |                     | RCS2-SRGD7BD               | 263        |
|                | OHOIT-LEI          | Side-Mounted Motor Type      |                     | RCS2-RGD4R                 | 265        |
|                | 1                  | Side Modified Motor Type     | 20111111            | 11002 1100411              |            |

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Mini andard trollers egrated

Ro Typ

Standar ontroller

> Table/Arm /Flat Type

Standard

Linear Serv

Cleanroon Typ

Splash Proo

controller

ROB0

PCON

PSEL

SSEL

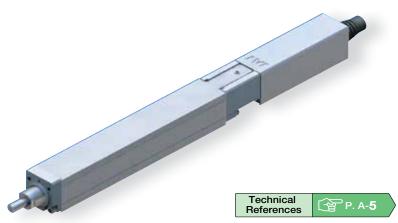
Pulse Motor

Servo Motor (24V)

Servo Motor (200V)

> Linear ervo Motor

#### CP3-RA2AC ROBO Cylinder Mini Rod Type Motor Unit Coupling Type 22mm Width Pulse Motor Lead Screw $\blacksquare$ Configuration: RCP3 - RA2AC -**20P** Encoder Stroke Compatible Controll Cable Length Option N : None P : 1m S : 3m M : 5m I: Incremental \* The Simple 20P: Pulse motor 4S: 4mm lead screw 25: 25mm P1: PCON B : Brake 20 🗌 size 2S: 2mm lead screw **RPCON** NM: Reversed-home absolute encoder **PSEL** 1S:1mm lead screw 100: 100mm is also considered (25mm pitch P3: PMEC X .: Custom Length increments) PSEP \* See page Pre-35 for an explanation of the naming convention.

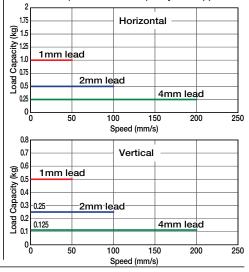


Notes on Selection

- (1) The load capacity is based on operation at an acceleration of 0.2G. This is the upper limit of the acceleration.
- (2) The horizontal load capacity is based on the use of an external guide. If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become damaged.
- (3) The maximum pushing force is exerted at 5mm/s.
- (4) If the actuator is used in a dusty environment, its service life will become significantly shorter.
- (5) This model uses a lead screw. Please ensure that your usage is appropriate for its characteristics. (See page Pre-42 for more information.)

#### ■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP3 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



| Actuator Specifications       |               |              |                              |               |                           |                              |                   |
|-------------------------------|---------------|--------------|------------------------------|---------------|---------------------------|------------------------------|-------------------|
| ■ Lead and Load Capacity      |               |              |                              |               |                           |                              |                   |
| Model                         | Feed<br>Screw | Lead<br>(mm) | Max. Load<br>Horizontal (kg) |               | Maximum<br>Push Force (N) | Positioning<br>Repeatability | Stroke<br>(mm)    |
|                               | Ociew         | (11111)      | nonzoniai (kg)               | vertical (kg) |                           | (mm)                         | (11111)           |
| RCP3-RA2AC-I-20P-4S-1-2-3-3-4 |               | 4            | 0.25                         | 0.125         |                           |                              |                   |
| RCP3-RA2AC-I-20P-2S-①-②-③-④   | Lead          | 2            | 0.5                          | 0.25          | See page<br>A-68.         | ±0.05                        | 25 ~ 100<br>(25mm |
|                               | Screw         |              |                              |               | A-00.                     |                              | increments)       |
| RCP3-RA2AC-I-20P-1S-①-②-③-④   |               | 1            | 1                            | 0.5           |                           |                              |                   |

| ① Stroke Lis | st             |
|--------------|----------------|
|              | Standard Price |
| Stroke (mm)  | Feed Screw     |
|              | Lead Screw     |
| 25           | -              |
| 50           | -              |
| 75           | -              |
| 100          | -              |

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

|  | ③ Cable Lis     | t                                  |                |
|--|-----------------|------------------------------------|----------------|
|  | Туре            | Cable Symbol                       | Standard Price |
|  | Standard        | P (1m)                             | =              |
|  |                 | <b>S</b> (3m)                      | -              |
|  | (Robot Cables)  | <b>M</b> (5m)                      | -              |
|  |                 | <b>X06</b> (6m) ~ <b>X10</b> (10m) | _              |
|  | Special Lengths | X11 (11m) ~ X15 (15m)              | =              |
|  |                 | X16 (16m) ~ X20 (20m)              | -              |

- \* The RCP3 comes standard with a robot cable.
- \* See page A-39 for cables for maintenance.

| Option List   |             |               |                |
|---------------|-------------|---------------|----------------|
| Name          | Option Code | See Page      | Standard Price |
| Brake         | В           | → A-25        | -              |
| Reversed-home | NM          | → <b>A-33</b> | -              |

| Actuator Specifications          |  |  |  |  |  |
|----------------------------------|--|--|--|--|--|
| Item Description                 |  |  |  |  |  |
| Drive System                     | Lead screw Ø4mm C10 grade                                |  |  |  |  |
| Lost Motion                      | 0.3mm or less (initial value)                            |  |  |  |  |
| Base                             | Material: Aluminum (white alumite treated)               |  |  |  |  |
| Guide                            | Sliding guide  |  |  |  |  |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing)                |  |  |  |  |
| Service Life                     | Horizontal: 10 million cycles Vertical: 5 million cycles |  |  |  |  |



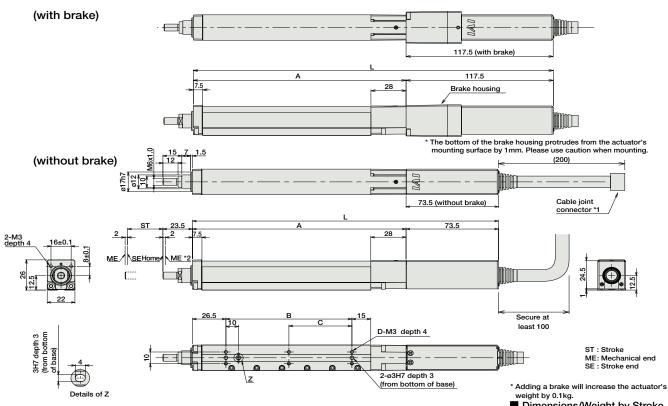
For Special Orders







- \*1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- \*2 When homing, the slider moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.



#### ■ Dimensions/Weight by Stroke

|   | Differisions/ Weight by Otroke |      |       |       |       |  |  |  |
|---|--------------------------------|------|-------|-------|-------|--|--|--|
|   | Stroke                         | 25   | 50    | 75    | 100   |  |  |  |
|   | , No Brake                     |      | 193   | 218   | 243   |  |  |  |
| - | Brake-equipped                 | 212  | 237   | 262   | 287   |  |  |  |
|   | Α                              | 94.5 | 119.5 | 144.5 | 169.5 |  |  |  |
|   | В                              | 25   | 50    | 75    | 100   |  |  |  |
|   | С                              | 0    | 0     | 0     | 50    |  |  |  |
|   | D                              | 4    | 4     | 4     | 6     |  |  |  |
| 1 | Weight (kg)                    | 0.27 | 0.29  | 0.31  | 0.33  |  |  |  |
|   |                                |      |       |       |       |  |  |  |

#### ② Compatible Controllers

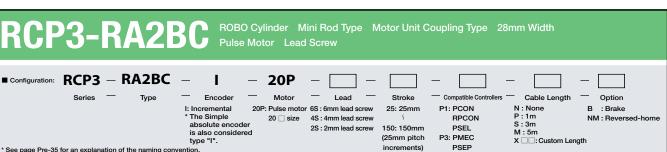
The RCP3 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View | Model                | Description  | Max. Positioning Points | Input Voltage    | Power Supply Capacity | Standard Price | See Page   |        |  |   |  |
|--|---------------|----------------------|--|-------------------------|------------------|-----------------------|----------------|------------|--------|--|---|--|
| Solenoid Valve Type                                  | 1100          | PMEC-C-20PI-NP-2-①   | Easy-to-use controller, even for beginners   |                         | AC100V<br>AC200V | See P481              | -              | → P477     |        |  |   |  |
| Sciencia valve Type                                  |               | PSEP-C-20PI-NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |                  |                       |                | -          | → P487 |  |   |  |
| Splash-Proof<br>Solenoid Valve Type                  |               | PSEP-CW-20PI-NP-2-0  | No homing necessary with simple absolute type.   |                         |                  |                       | i              | 71407      |        |  |   |  |
| Positioner Type                                      | l l           | PCON-C-20PI-NP-2-0   | Positioning is possible for up to 512 points   | 510 points              | 512 points       | E10 points            | 510 points     | E10 points |        |  | - |  |
| Safety-Compliant<br>Positioner Type                  |               | PCON-CG-20PI-NP-2-0  | Positioning is possible for up to 312 points   | 312 points              |                  |                       | -              |            |        |  |   |  |
| Pulse Train Input Type<br>(Differential Line Driver) | Ó             | PCON-PL-20PI-NP-2-0  | Pulse train input type with differential line driver support                                 | ()                      | DC24V            | 2A max.               | 2A max.        | -          | → P525 |  |   |  |
| Pulse Train Input Type<br>(Open Collector)           |               | PCON-PO-20PI-NP-2-0  | Pulse train input type with open collector support   | (-)<br>64 points        | (-)              | -                     |                |            | -      |  |   |  |
| Serial<br>Communication Type                         |               | PCON-SE-20PI-N-0-0   | Dedicated to serial communication  |                         |                  |                       | -              |            |        |  |   |  |
| Field Network Type                                   |               | RPCON-20P            | Dedicated to field network   | 768 points              |                  |                       | -              | → P503     |        |  |   |  |
| Program Control<br>Type                              |               | PSEL-C-1-20PI-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |                  |                       | -              | → P557     |        |  |   |  |

\* This is for the single-axis PSEL. \* ① is a placeholder for the power supply voltage (1: 100V, or 2: 100 $\sim$ 240V).

RCP3-RA2AC

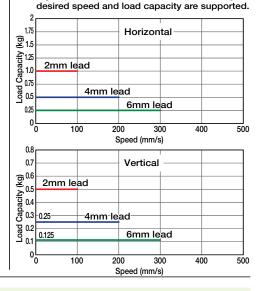
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Technical [音 P. A-5 References

- (1) The load capacity is based on operation at an acceleration of 0.2G. This is the upper limit of the acceleration.
- (2) The horizontal load capacity is based on the use of an external guide. If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become damaged.
- (3) The maximum pushing force is exerted at 5mm/s.
- (4) If the actuator is used in a dusty environment, its service life will become significantly shorter.
- (5) This model uses a lead screw. Please ensure that your usage is appropriate for its characteristics. (See page Pre-42 for more information.)

Speed vs. Load Capacity Due to the characteristics of the pulse motor, the RCP3 series' load capacity decreases at high speeds. In the table below, check if your



75~150

300

(Unit: mm/s)

| Actuator Specifications  |               |              |                              |       |                           |                                      |                                  |         |           |            |            |    |
|--|---------------|--------------|------------------------------|-------|---------------------------|--------------------------------------|----------------------------------|---------|-----------|------------|------------|----|
| ■ Lead and Load Capacity   |               |              |                              |       |                           |                                      |                                  | ■ 9     | troke and | d Maximu   | ım Speed   | k  |
| Model  | Feed<br>Screw | Lead<br>(mm) | Max. Load<br>Horizontal (kg) |       | Maximum<br>Push Force (N) | Positioning<br>Repeatability<br>(mm) | Stroke<br>(mm)                   | Lead    | Stroke    | 25<br>(mm) | 50<br>(mm) | 7  |
| RCP3-RA2BC-I-20P-6S-1 -2 -3 -4   |               | 6            | 0.25                         | 0.125 |                           |                                      |                                  | crew    | 6         | 180        | 280        |    |
| RCP3-RA2BC-I-20P-4S-①-②-③-④  | Lead<br>Screw | 4            | 0.5                          | 0.25  | See page<br>A-68.         | ±0.05                                | 25 ~ 150<br>(25mm<br>increments) | ead Scr | 4         | 180        | 20         | 00 |
| RCP3-RA2BC-I-20P-2S-1 -2 -3 -4   |               | 2            | 1                            | 0.5   |                           |                                      | morements)                       | Leg     | 2         |            | 100        |    |
| Legend ( Stroke ( Compatible controller ( Cable length ( A) Options (U |               |              |                              |       |                           |                                      |                                  |         |           |            |            |    |

| ① Stroke List |                |  |  |  |  |
|---------------|----------------|--|--|--|--|
|               | Standard Price |  |  |  |  |
| Stroke (mm)   | Feed Screw     |  |  |  |  |
|               | Lead Screw     |  |  |  |  |
| 25            | -              |  |  |  |  |
| 50            | -              |  |  |  |  |
| 75            | -              |  |  |  |  |
| 100           | -              |  |  |  |  |
| 125           | -              |  |  |  |  |
| 150           | -              |  |  |  |  |

| 3 Cable List       |                       |                |  |  |  |  |
|--------------------|-----------------------|----------------|--|--|--|--|
| Туре               | Cable Symbol          | Standard Price |  |  |  |  |
| Standard (Patrick) | P (1m)                | _              |  |  |  |  |
|                    | <b>S</b> (3m)         | -              |  |  |  |  |
| (Robot Cables)     | <b>M</b> (5m)         | -              |  |  |  |  |
|                    | X06 (6m) ~ X10 (10m)  | _              |  |  |  |  |
| Special Lengths    | X11 (11m) ~ X15 (15m) | -              |  |  |  |  |
|                    | X16 (16m) ~ X20 (20m) | -              |  |  |  |  |

- \* The RCP3 comes standard with a robot cable.
- \* See page A-39 for cables for maintenance.

| 4 Option List |             |               |                |
|---------------|-------------|---------------|----------------|
| Name          | Option Code | See Page      | Standard Price |
| Brake         | В           | → A-25        | -              |
| Reversed-home | NM          | → <b>A-33</b> | 1              |

| Actuator Specifications          |  |  |  |  |  |  |  |
|----------------------------------|--|--|--|--|--|--|--|
| Item                             | Description  |  |  |  |  |  |  |
| Drive System                     | Lead screw ø6mm C10 grade                                |  |  |  |  |  |  |
| Lost Motion                      | 0.3mm or less (initial value)                            |  |  |  |  |  |  |
| Base                             | Material: Aluminum (white alumite treated)               |  |  |  |  |  |  |
| Guide                            | Sliding guide  |  |  |  |  |  |  |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing)                |  |  |  |  |  |  |
| Service Life                     | Horizontal: 5 million cycles Vertical: 10 million cycles |  |  |  |  |  |  |



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

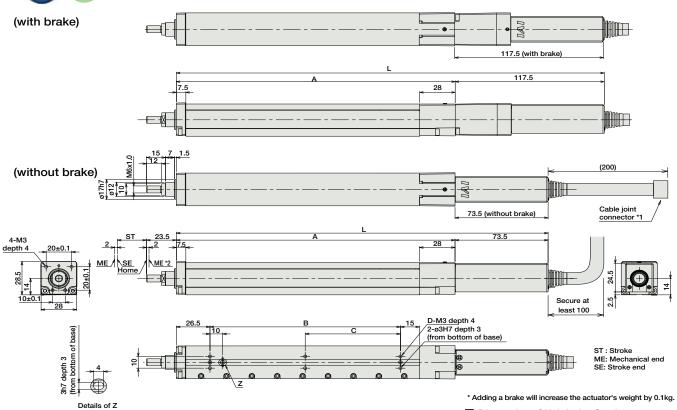
For Special Orders







- \*1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- \*2 When homing, the slider moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.



#### ■ Dimensions/Weight by Stroke

| Billions Weight by Groke |                |      |       |       |       |       |       |  |  |  |
|--------------------------|----------------|------|-------|-------|-------|-------|-------|--|--|--|
|                          | Stroke         | 25   | 50    | 75    | 100   | 125   | 150   |  |  |  |
|                          | No Brake       | 168  | 193   | 218   | 243   | 268   | 293   |  |  |  |
| ٦                        | Brake-equipped | 212  | 237   | 262   | 287   | 312   | 337   |  |  |  |
|                          | Α              | 94.5 | 119.5 | 144.5 | 169.5 | 194.5 | 219.5 |  |  |  |
|                          | В              | 25   | 50    | 75    | 100   | 125   | 150   |  |  |  |
|                          | С              | 0    | 0     | 0     | 50    | 62.5  | 75    |  |  |  |
|                          | D              | 4    | 4     | 4     | 6     | 6     | 6     |  |  |  |
| Weight (kg)              |                | 0.3  | 0.34  | 0.38  | 0.41  | 0.44  | 0.47  |  |  |  |
|                          |                |      |       |       |       |       |       |  |  |  |

#### ② Compatible Controllers

The RCP3 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View   | Model                | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity | Standard Price | See Page |   |
|--|---|----------------------|--|-------------------------|---------------|-----------------------|----------------|----------|---|
| Solenoid Valve Type                                  | PMEC-C-20PI-NP-2-① Easy-to-use controller, even for beginners |                      |  | AC100V<br>AC200V        | See P481      | -                     |                |          |   |
| Solenoid valve type                                  | 1   | PSEP-C-20PI-NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |               |                       | -              | → P487   |   |
| Splash-Proof<br>Solenoid Valve Type                  | 1   | PSEP-CW-20PI-NP-2-0  | No homing necessary with simple absolute type.   |                         |               |                       | -              | → P487   |   |
| Positioner Type                                      | Ĭ.  | PCON-C-20PI-NP-2-0   | Positioning is possible for up to 512  | 512 points              | 512 points    |                       |                | -        |   |
| Safety-Compliant<br>Positioner Type                  |   | PCON-CG-20PI-NP-2-0  | points   |                         |               |                       |                | -        |   |
| Pulse Train Input Type<br>(Differential Line Driver) | O   | PCON-PL-20PI-NP-2-0  | Pulse train input type with differential line driver support                                 |                         | DC24V         | 2A max.               | -              | → P525   |   |
| Pulse Train Input Type<br>(Open Collector)           |   | PCON-PO-20PI-NP-2-0  | Pulse train input type with<br>open collector support  |                         | (-)           | (-)                   |                |          | - |
| Serial Communication<br>Type                         | Í   | PCON-SE-20PI-N-0-0   | Dedicated to serial communication  | 64 points               |               |                       | -              |          |   |
| Field Network Type                                   |   | RPCON-20P            | Dedicated to field network   | 768 points              |               |                       | -              | → P503   |   |
| Program Control Type                                 | Í   | PSEL-C-1-20PI-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |               |                       | -              | → P557   |   |

\* This is for the single-axis PSEL. 
\* ① is a placeholder for the power supply voltage (1: 100V, or 2: 100 $\sim$ 240V).

3-RA2AR ROBO Cylinder Mini Rod Type Side-Mounted Motor 22mm Width Pulse Motor Lead Screw lacktriangle Configuration: RCP3 - RA2AR -— 20P Encoder Stroke Compatible Controller Cable Length Option N : None P : 1m S : 3m M : 5m I: Incremental \* The Simple 20P: Pulse motor 4S: 4mm lead screw 25: 25mm P1: PCON See Options below 20 Size 2S: 2mm lead screw **RPCON** \* Be sure to specify which absolute encoder PSEL 1S:1mm lead screw 100: 100mm is also considered (25mm pitch P3: PMEC mounted (ML/MR). increments) PSEP \* See page Pre-35 for an explanation of the naming convention.

Pictured: Left-mounted motor model (ML).

Technical References [音 P. A-5

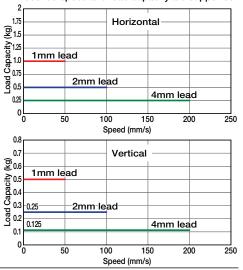
(1) The load capacity is based on operation at an acceleration of 0.2G. This is the upper limit of the acceleration.

- (2) The horizontal load capacity is based on the use of an external guide.

  If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become damaged.
- (3) The maximum pushing force is exerted at 5mm/s.
- (4) If the actuator is used in a dusty environment, its service life will become significantly shorter.
- (5) This model uses a lead screw. Please ensure that your usage is appropriate for its characteristics. (See page Pre-42 for more information.)

## Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP3 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



## ■ Lead and Load Capacity

Actuator Specifications

| Model                       |               | Lead<br>(mm) | Max. Load Capacity Horizontal (kg) Vertical (kg) |       | Apacity Maximum Vertical (kg) Push Force (N) |       | Stroke<br>(mm)                   |
|-----------------------------|---------------|--------------|--|-------|--|-------|----------------------------------|
| RCP3-RA2AR-I-20P-4S-1-2-3-4 |               | 4            | 0.25   | 0.125 |  | , ,   |                                  |
| RCP3-RA2AR-I-20P-2S-①-②-③-④ | Lead<br>Screw | 2            | 0.5  | 0.25  | See page A-68.                               | ±0.05 | 25 ~ 100<br>(25mm<br>increments) |
| RCP3-RA2AR-I-20P-1S-①-②-③-④ |               | 1            | 1  | 0.5   |  |       | morements)                       |
|                             | 1             |              | <u> </u>   |       |  |       |                                  |

| <b>■</b> S | ■ Stroke and Maximum Speed |            |                  |  |  |  |  |  |  |  |
|------------|----------------------------|------------|------------------|--|--|--|--|--|--|--|
| Lead       | Stroke                     | 25<br>(mm) | 50 ~ 100<br>(mm) |  |  |  |  |  |  |  |
| we         | 4                          | 180        | 200              |  |  |  |  |  |  |  |
| ld Scr     | Lead Screw                 | 10         | 00               |  |  |  |  |  |  |  |
| Les        | 1                          | 5          | 0                |  |  |  |  |  |  |  |
|            |                            |            | (Unit: mm/s)     |  |  |  |  |  |  |  |

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

## ① Stroke List

|             | Standard Price |
|-------------|----------------|
|             |                |
| Stroke (mm) | Feed Screw     |
|             | Lead Screw     |
|             | Lead Screw     |
| 25          | _              |
| 20          |                |
| 50          | _              |
|             |                |
| 75          | -              |
| 100         |                |
| 100         | =              |
|             |                |

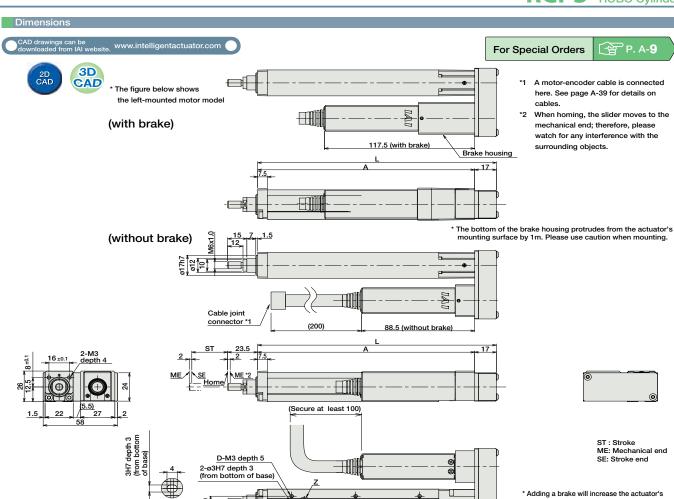
#### ③ Cable List

|   | Туре            | Cable Symbol                       | Standard Price |
|---|-----------------|------------------------------------|----------------|
| Γ | Standard        | P (1m)                             | -              |
| 1 | (Robot Cables)  | <b>S</b> (3m)                      | -              |
| 1 |                 | <b>M</b> (5m)                      | -              |
| Γ | Special Lengths | <b>X06</b> (6m) ~ <b>X10</b> (10m) | -              |
| 1 |                 | X11 (11m) ~ X15 (15m)              | -              |
| L |                 | X16 (16m) ~ X20 (20m)              | -              |

- \* The RCP3 comes standard with a robot cable.
- \* See page A-39 for cables for maintenance.

| ④ Option List                 |             |          |                |  |  |  |  |  |  |  |
|-------------------------------|-------------|----------|----------------|--|--|--|--|--|--|--|
| Name                          | Option Code | See Page | Standard Price |  |  |  |  |  |  |  |
| Brake                         | В           | → A-25   | 1              |  |  |  |  |  |  |  |
| Left-Mounted Motor (Standard) | ML          | → A-33   | -              |  |  |  |  |  |  |  |
| Right-Mounted Motor           | MR          | → A-33   | -              |  |  |  |  |  |  |  |
| Reversed-home                 | NM          | → A-33   | -              |  |  |  |  |  |  |  |

| Actuator Specifications          |  |  |  |  |  |  |
|----------------------------------|--|--|--|--|--|--|
| Item                             | Description  |  |  |  |  |  |
| Drive System                     | Lead screw Ø4mm C10 grade                                |  |  |  |  |  |
| Lost Motion                      | 0.3mm or less (initial value)                            |  |  |  |  |  |
| Base                             | Material: Aluminum (white alumite treated)               |  |  |  |  |  |
| Guide                            | Sliding guide  |  |  |  |  |  |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing)                |  |  |  |  |  |
| Service Life                     | Horizontal: 10 million cycles Vertical: 5 million cycles |  |  |  |  |  |



weight by 0.1kg.

| ■ Dimensions/Weight by Stroke |       |       |       |       |  |  |  |  |  |
|-------------------------------|-------|-------|-------|-------|--|--|--|--|--|
| Stroke                        | 25    | 50    | 75    | 100   |  |  |  |  |  |
| L                             | 111.5 | 136.5 | 161.5 | 186.5 |  |  |  |  |  |
| Α                             | 94.5  | 119.5 | 144.5 | 169.5 |  |  |  |  |  |
| В                             | 25    | 50    | 75    | 100   |  |  |  |  |  |
| С                             | 0     | 0     | 0     | 50    |  |  |  |  |  |
| D                             | 4     | 4     | 4     | 6     |  |  |  |  |  |
| Weight (kg)                   | 0.29  | 0.32  | 0.34  | 0.36  |  |  |  |  |  |

#### The RCP3 series actuators can operate with the controllers below. Select the controller according to your usage. AC100V AC200V PMEC-C-20PI-NP-2-① Easy-to-use controller, even for beginners See P481 → P477 Solenoid Valve Type 1 PSEP-C-20PI-NP-2-0 3 points Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type. → P487 1 PSEP-CW-20PI-NP-2-0 Positioner Type PCON-C-20PI-NP-2-0 Positioning is possible for up to 512 points 512 points Safety-Compliant Positioner Type PCON-CG-20PI-NP-2-0 Pulse Train Input Type (Differential Line Driver) Pulse train input type with differential line driver support PCON-PL-20PI-NP-2-0 DC24V → P525 2A max. (-) Pulse Train Input Type (Open Collector) Pulse train input type with open collector support PCON-PO-20PI-NP-2-0 Serial Communication Type PCON-SE-20PI-N-0-0 Dedicated to serial communication 64 points Field Network Type RPCON-20P Dedicated to field network 768 points → P503 Programmed operation is possible Operation is possible on up to 2 axes

10 26.5

Details of Z

PSEL-C-1-20PI-NP-2-0

② Compatible Controllers

Program Control Type

IAI

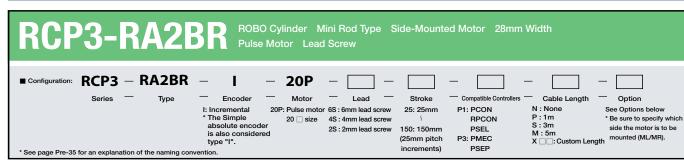
1500 points

\* This is for the single-axis PSEL.

 $^{\star}$  ① is a placeholder for the power supply voltage (1: 100V, or 2: 100 $\sim$ 240V).

RCP3-RA2AR

→ P557

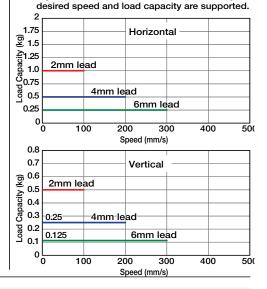


Pictured: Left-mounted motor model (ML). Technical [音 P. A-5 References

- (1) The load capacity is based on operation at an acceleration of 0.2G. This is the upper limit of the acceleration.
- (2) The horizontal load capacity is based on the use of an external guide.

  If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become damaged.
- (3) The maximum pushing force is exerted at 5mm/s.
- (4) If the actuator is used in a dusty environment, its service life will become significantly shorter.
- (5) This model uses a lead screw. Please ensure that your usage is appropriate for its characteristics. (See page Pre-42 for more information.)

Speed vs. Load Capacity Due to the characteristics of the pulse motor, the RCP3 series' load capacity decreases at high speeds. In the table below, check if your



| Actuator Specifications   |               |              |                                |       |                           |                                      |                                  |        |        |            |            |                  |
|---|---------------|--------------|--------------------------------|-------|---------------------------|--------------------------------------|----------------------------------|--------|--------|------------|------------|------------------|
| ■ Lead and Load Capacity ■ Stroke and Maximum Speed                       |               |              |                                |       |                           |                                      |                                  |        |        | d          |            |                  |
| Model   | Feed<br>Screw | Lead<br>(mm) | Max. Load C<br>Horizontal (kg) |       | Maximum<br>Push Force (N) | Positioning<br>Repeatability<br>(mm) | Stroke<br>(mm)                   | Lead   | Stroke | 25<br>(mm) | 50<br>(mm) | 75 ~ 150<br>(mm) |
| RCP3-RA2BR-I-20P-6S-①-②-③-④   |               | 6            | 0.25                           | 0.125 |                           |                                      |                                  | rew    | 6      | 180        | 280        | 300              |
| RCP3-RA2BR-I-20P-4S-①-②-③-④   | Lead<br>Screw | 4            | 0.5                            | 0.25  | See page<br>A-68.         | ±0.05                                | 25 ~ 150<br>(25mm<br>increments) | ad Scr | 4      | 180        | 20         | 00               |
| RCP3-RA2BR-I-20P-2S-①-②-③-④   |               | 2            | 1                              | 0.5   |                           |                                      | increments)                      | Les    | 2      |            | 100        |                  |
| Legend ①Stroke ②Compatible controller ③Cable length ④Options (Unit: mm/s) |               |              |                                |       |                           |                                      |                                  |        |        |            |            |                  |

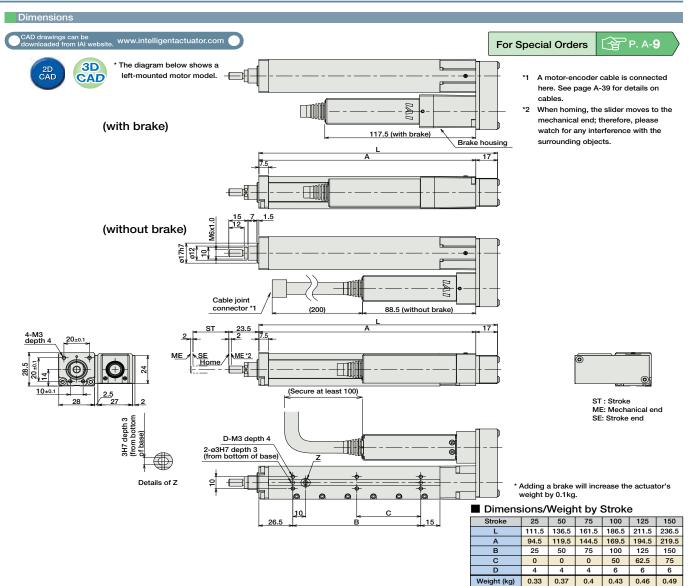
| ① Stroke List |                |  |  |  |
|---------------|----------------|--|--|--|
|               | Standard Price |  |  |  |
| Stroke (mm)   | Feed Screw     |  |  |  |
|               | Lead Screw     |  |  |  |
| 25            | -              |  |  |  |
| 50            | -              |  |  |  |
| 75            | -              |  |  |  |
| 100           | -              |  |  |  |
| 125           | -              |  |  |  |
| 150           | -              |  |  |  |

| 3 Cable List       |                       |                |  |  |  |
|--------------------|-----------------------|----------------|--|--|--|
| Туре               | Cable Symbol          | Standard Price |  |  |  |
| Standard (Patrice) | P (1m)                | _              |  |  |  |
|                    | <b>S</b> (3m)         | -              |  |  |  |
| (Robot Cables)     | <b>M</b> (5m)         | -              |  |  |  |
|                    | X06 (6m) ~ X10 (10m)  | _              |  |  |  |
| Special Lengths    | X11 (11m) ~ X15 (15m) | -              |  |  |  |
|                    | X16 (16m) ~ X20 (20m) | -              |  |  |  |

- \* The RCP3 comes standard with a robot cable.
- \* See page A-39 for cables for maintenance.

| Option Code | See Page      | Standard Price  |
|-------------|---------------|---|
| В           | → A-25        | -   |
| ML          | → A-33        | -   |
| MR          | → A-33        | -   |
| NM          | → A-33        | -   |
|             | B<br>ML<br>MR | $\begin{array}{ccc} \textbf{B} & \rightarrow \textbf{A-25} \\ \hline \textbf{ML} & \rightarrow \textbf{A-33} \\ \hline \textbf{MR} & \rightarrow \textbf{A-33} \end{array}$ |

| Actuator Specifications          |  |  |  |  |  |
|----------------------------------|--|--|--|--|--|
| Item Description                 |  |  |  |  |  |
| Drive System                     | Lead screw ø6mm C10 grade                                |  |  |  |  |
| Lost Motion                      | 0.3mm or less (initial value)                            |  |  |  |  |
| Base                             | Material: Aluminum (white alumite treated)               |  |  |  |  |
| Guide                            | Sliding guide  |  |  |  |  |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing)                |  |  |  |  |
| Service Life                     | Horizontal: 10 million cycles Vertical: 5 million cycles |  |  |  |  |



| (2) | Compatible | Controllers |
|-----|------------|-------------|

The RCP3 series actuators can operate with the controllers below. Select the controller according to your usage

| Name   | External View | Model                | Description   | Max. Positioning Points                     | Input Voltage | Power Supply Capacity | Standard Price | See Page |   |  |
|--|---------------|----------------------|---|---|---------------|-----------------------|----------------|----------|---|--|
| Solenoid Valve Type                                  | 100           | PMEC-C-20PI-NP-2-①   | Easy-to-use controller,even for beginners   | AC100V<br>AC200V                            |               | See P481              | -              | → P477   |   |  |
| Solenoid valve Type                                  |               | PSEP-C-20PI-NP-2-0   | Operable with same signal as solenoid valve.  | 3 points                                    | 3 points      | _                     |                |          | - |  |
| Splash-Proof<br>Solenoid Valve Type                  |               | PSEP-CW-20PI-NP-2-0  | Supports both single and double solenoid types.<br>No homing necessary with simple absolute type. |   |               |                       | -              | → P487   |   |  |
| Positioner Type                                      | E             | PCON-C-20PI-NP-2-0   |   |   |               |                       | -              |          |   |  |
| Safety-Compliant<br>Positioner Type                  |               | PCON-CG-20PI-NP-2-0  | Positioning is possible for up to 512 points  | 512 points                                  | DC24V         | 2A max.               | -              |          |   |  |
| Pulse Train Input Type<br>(Differential Line Driver) |               | PCON-PL-20PI-NP-2-0  | Pulse train input type with differential line driver support                                      | (-)   |               |                       | -              | → P525   |   |  |
| Pulse Train Input Type<br>(Open Collector)           |               | PCON-PO-20PI-NP-2-0  | Pulse train input type with open collector support  |   |               |                       | -              |          |   |  |
| Serial<br>Communication Type                         | Í             | PCON-SE-20PI-N-0-0   | Dedicated to serial communication   | Dedicated to serial communication 64 points |               |                       | -              |          |   |  |
| Field Network Type                                   |               | RPCON-20P            | Dedicated to field network 768 points   |   |               | -                     | → P503         |          |   |  |
| Program Control Type                                 |               | PSEL-C-1-20PI-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                         | 1500 points                                 |               |                       | -              | → P557   |   |  |

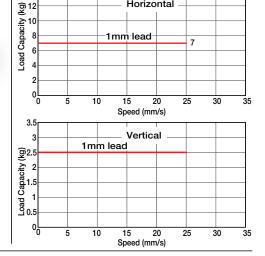
\* This is for the single-axis PSEL. \*  $\odot$  is a placeholder for the power supply voltage (1: 100V, or 2: 100 $\sim$ 240V).

CP2-RA2C  $\blacksquare$  Configuration: RCP2 - RA2C **20P** Encoder Cable Length Option N: None FP: 1m FS: 3m FS: 3m X Custom Length R Custom Length I: Incremental \* The Simple 20P: Pulse motor 1:1mm 25: 25mm P1: PCON FL:Flange 20 🗌 size **RPCON** FT:Foot bracket absolute encoder PSEL 100: 100mm is also considered (25mm pitch P3: PMEC increments) PSEP \* See page Pre-35 for an explanation of the naming convention.

Technical **P. A-5** References

■ Speed vs. Load Capacity Due to the characteristics of the pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.

Horizontal



- (1) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported. The load capacity is based on operation at an acceleration of 0.05G.
  - 0.05G is the upper limit of the acceleration.

In addition, the horizontal load capacity is based on the use of an external guide. If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become

| Actuator Specifications                                |              |            |                           |                                   |                                  |                |                                 |
|--|--------------|------------|---------------------------|-----------------------------------|----------------------------------|----------------|---------------------------------|
| ■ Lead and Load Capacity                               |              |            |                           |                                   |                                  | ■ Stroke and   | d Maximum Speed                 |
| Model  | Lead<br>(mm) |            | Capacity<br>Vertical (kg) | Maximum Push<br>Force (N)(Note 1) | Stroke<br>(mm)                   | Stroke<br>Lead | $25 \sim 100$ (25mm increments) |
| RCP2-RA2C-I-20P-1-①-②-③-④                              | 1            | 7          | 2.5                       | 100                               | 25 ~ 100<br>(25mm<br>increments) | 1              | 25                              |
| Legend: ①Stroke ②Compatible controller ③Cable length ④ | Options      | (Note 1) S | ee page A-69              | for the pushing                   | force graphs.                    |                | (Unit: mm/s)                    |

| ① Stroke Lis | st             |
|--------------|----------------|
| Stroke (mm)  | Standard Price |
| 25           | -              |
| 50           | -              |
| 75           | -              |
| 100          | -              |

| ③ Cable List    |                       |                |  |  |  |
|-----------------|-----------------------|----------------|--|--|--|
| Туре            | Cable Symbol          | Standard Price |  |  |  |
|                 | P (1m)                | -              |  |  |  |
| Standard        | <b>S</b> (3m)         | -              |  |  |  |
|                 | <b>M</b> (5m)         | -              |  |  |  |
|                 | X06 (6m) ~ X10 (10m)  | -              |  |  |  |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |  |  |  |
|                 | X16 (16m) ~ X20 (20m) | -              |  |  |  |
|                 | R01 (1m) ~ R03 (3m)   | -              |  |  |  |
|                 | R04 (4m) ~ R05 (5m)   | -              |  |  |  |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |  |  |  |
|                 | R11 (11m) ~ R15 (15m) | -              |  |  |  |
|                 | R16 (16m) ~ R20 (20m) | -              |  |  |  |

<sup>\*</sup> See page A-39 for cables for maintenance.

| 4 Option List |             |          |                |
|---------------|-------------|----------|----------------|
| Name          | Option Code | See Page | Standard Price |
| Flange        | FL          | → A-27   | -              |
| Foot bracket  | FT          | → A-29   | -              |

| Actuator Specifications          |   |
|----------------------------------|---|
| Item                             | Description                             |
| Drive System                     | Ball screw ø6mm C10 grade               |
| Positioning Repeatability        | ±0.02mm                                 |
| Lost Motion                      | 0.1mm or less                           |
| Rod Diameter                     | ø12mm                                   |
| Non-rotating accuracy of rod     | ±2.1 deg                                |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non-condensing) |
|                                  |   |

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

For Special Orders

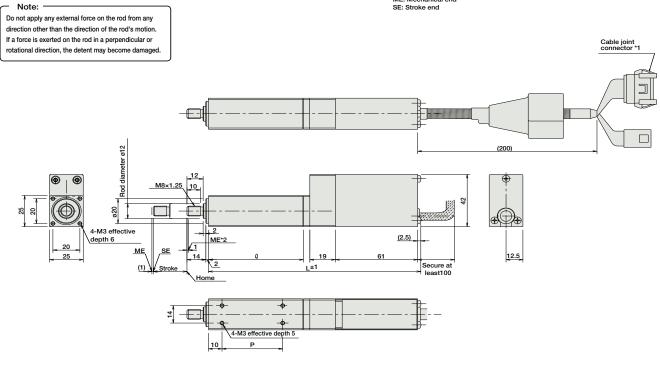






\* The RA2C is not available in reversed-home configuration, due to its construction.

- \*1. The motor-encoder cable is connected here. See page A-39 for details on cables
- When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
  ME: Mechanical end
  SE: Stroke end



#### ■ Dimensions/Weight by Stroke

| Stroke      | 25    | 50    | 75    | 100   |  |  |  |
|-------------|-------|-------|-------|-------|--|--|--|
| R           | 70    | 95    | 120   | 145   |  |  |  |
| L           | 157.5 | 182.5 | 207.5 | 232.5 |  |  |  |
| P           | 45    | 70    | 95    | 120   |  |  |  |
| Weight (kg) | 0.4   | 0.5   | 0.6   | 0.7   |  |  |  |

## ②Compatible Controllers

| External View | Model  PMEC-C-20PI-NP-2-①  PSEP-C-20PI-NP-2-0  PSEP-CW-20PI-NP-2-0 | Description  Easy-to-use controller, even for beginners  Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type. | Max. Positioning Points  3 points  | AC100V<br>AC200V  | Power Supply Capacity See P481  | Standard Price   | > P477 → P487   |
|---------------|--|--|--|---|---|--|---|
|               | PSEP-C-20PI-NP-2-0   | beginners  Operable with same signal as solenoid valve. Supports both single and double solenoid types.  | 3 points   |   | See P481  | -  |   |
|               |  | Supports both single and double solenoid types.  | 3 points   |   |   | -  | → D407  |
|               | PSEP-CW-20PI-NP-2-0  |  |  |   |   |  |   |
|               |  |  |  |   |   | -  | 17407   |
|               | PCON-C-20PI-NP-2-0   | Positioning is possible for up to 512 points   | 512 points   |   |   | -  |   |
|               | PCON-CG-20PI-NP-2-0  | 1 ostaorining to possible for up to 512 points   | O12 points   |   |   | -  |   |
| Ó             | PCON-PL-20PI-NP-2-0  | Pulse train input type with differential line driver support   | ()   | DC24V   | 2A max.   | -  | → P525  |
|               | PCON-PO-20PI-NP-2-0  | Pulse train input type with<br>open collector support  | (-)  |   |   | -  |   |
|               | PCON-SE-20PI-N-0-0   | Dedicated to serial communication  | 64 points  |   |   | -  |   |
|               | RPCON-20P  | Dedicated to field network   | 768 points   |   |   | -  | → P503  |
|               | PSEL-C-1-20PI-NP-2-0   | Programmed operation is possible<br>Operation is possible on up to 2 axes  | 1500 points  |   |   | -  | → P557  |
|               |  | PCON-PL-20PI-NP-2-0 PCON-PO-20PI-NP-2-0 PCON-SE-20PI-N-0-0 RPCON-20P   | PCON-PL-20PI-NP-2-0  Pulse train input type with differential line driver support  PCON-PO-20PI-NP-2-0  Pulse train input type with open collector support  PCON-SE-20PI-N-0-0  Dedicated to serial communication  RPCON-20P  Dedicated to field network  PCON-20P  Programmed operation is possible | PCON-CG-20PI-NP-2-0  PCON-PL-20PI-NP-2-0  Pulse train input type with differential line driver support  PCON-PO-20PI-NP-2-0  Pulse train input type with open collector support  PCON-SE-20PI-N-0-0  Dedicated to serial communication  RPCON-20P  Dedicated to field network  768 points  PCON-20P  Programmed operation is possible | PCON-CG-20PI-NP-2-0  PCON-PL-20PI-NP-2-0  Pulse train input type with differential line driver support  PCON-PO-20PI-NP-2-0  Pulse train input type with open collector support  PCON-SE-20PI-N-0-0  Dedicated to serial communication  RPCON-20P  Dedicated to field network  768 points  PSEL C 1 20PI NP 2 0  Programmed operation is possible | PCON-CG-20PI-NP-2-0  PCON-PL-20PI-NP-2-0  Pulse train input type with differential line driver support  PCON-PO-20PI-NP-2-0  Pulse train input type with open collector support  PCON-SE-20PI-NO-0  Dedicated to serial communication  RPCON-20P  Dedicated to field network  768 points  PSEL C 1 20PI NP 2 0  Programmed operation is possible | PCON-CG-20PI-NP-2-0 Pcon-Pc-20PI-NP-2-0 Pulse train input type with differential line driver support Pcon-Pc-20PI-NP-2-0 Pulse train input type with open collector support Pcon-Pc-20PI-NP-2-0 Pulse train input type with open collector support Pcon-SE-20PI-N-0-0 Dedicated to serial communication FPCON-SE-20PI-N-0-0 Dedicated to field network Pcon-SE-20PI-N-0-0 Programmed operation is possible Programmed operation is possible |

\* This is for the single-axis PSEL. \*  $\odot$  is a placeholder for the power supply voltage (1: 100V, or 2: 100 $\sim$ 240V).

RCP2-RA2C

IAI

140

\* See page Pre-35 for an explanation of the naming convention.

CP2-RA3C  $\blacksquare$  Configuration: RCP2 - RA3C **28P** Encoder Cable Length Option N : None P : 1m S : 3m M : 5m FL : Flange FT : Foot bracket NM: Reversed-home I: Incremental \* The Simple 28P: Pulse motor 5 : 5mm 50: 50mm P1: PCON 28 🗌 size 2.5 : 2.5mm **RPCON** absolute encoder PSEL 200: 200mm is also considered type "I". P3: PMEC

(50mm pitch

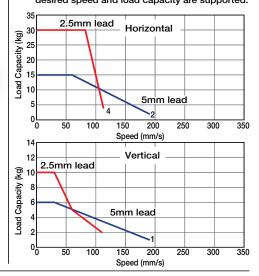
increments)

PSEP

Technical **P. A-5** References

Speed vs. Load Capacity Due to the characteristics of the pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.

X : Custom
R : Robot cable



- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
- Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit of the acceleration. In addition, the horizontal load capacity is based on the use of an external guide. If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become damaged.

| Actuator Specifications                           |                 |                                  |               |                                   |                   |             |                                 |
|---|-----------------|----------------------------------|---------------|-----------------------------------|-------------------|-------------|---------------------------------|
| ■ Lead and Load Capacity (Note 1) Please          | note that the n | naximum load o                   | apacity decre | eases as the sp                   | eed increases.    | ■ Stroke an | d Maximum Speed                 |
| Model   | Lead<br>(mm)    | Max. Load Car<br>Horizontal (kg) | vertical (kg) | Maximum Push<br>Force (N)(Note 2) | 000               | Stroke      | $50 \sim 200$ (50mm increments) |
| RCP2-RA3C-I-28P-5-①-②-③-④                         | 5               | ~ 15                             | ~ 6           | 73.5                              | 50 ~ 200<br>(50mm | 5           | 187                             |
| RCP2-RA3C-I-28P-2.5-①-②-③-④                       | 2.5             | ~ 30                             | ~ 10          | 156.8                             | increments)       | 2.5         | 114                             |
| Legend: Stroke Compatible controller Cable length | Options         | (Note 2) S                       | ee page A-69  | for the pushing                   | force graphs.     |             | (Ur                             |

| Le | Stroke | $50 \sim 200$ (50mm increments) |
|----|--------|---------------------------------|
|    | 5      | 187                             |
|    | 2.5    | 114                             |
|    |        | (Unit: mm/s)                    |

| ① Stroke Lis | st             |
|--------------|----------------|
| Stroke (mm)  | Standard Price |
| 50           | -              |
| 100          | -              |
| 150          | -              |
| 200          | -              |

Legend: Tstroke Compatible controller Cable length Options

| 3 Cable Lis       | T.                        |                |
|-------------------|---------------------------|----------------|
| Туре              | Cable Symbol              | Standard Price |
|                   | P (1m)                    | -              |
| Standard          | <b>S</b> (3m)             | -              |
|                   | <b>M</b> (5m)             | -              |
|                   | X06 (6m) ~ X10 (10m)      | -              |
| Special Lengths   | X11 (11m) ~ X15 (15m)     | -              |
|                   | X16 (16m) ~ X20 (20m)     | -              |
|                   | R01 (1m) ~ R03 (3m)       | -              |
|                   | R04 (4m) ~ R05 (5m)       | -              |
| Robot Cable       | R06 (6m) ~ R10 (10m)      | -              |
|                   | R11 (11m) ~ R15 (15m)     | -              |
|                   | R16 (16m) ~ R20 (20m)     | -              |
| * Soo page A-30 f | or cables for maintenance |                |

See page A-39 for cables for maintenance.

| 4 Option List |             |               |                |
|---------------|-------------|---------------|----------------|
| Name          | Option Code | See Page      | Standard Price |
| Flange        | FL          | → A-27        | -              |
| Foot bracket  | FT          | → A-29        | -              |
| Reversed-home | NM          | → <b>A-33</b> | -              |

| Actuator Specifications          |   |
|----------------------------------|---|
| Item                             | Description                               |
| Drive System                     | Ball screw ø8mm C10 grade                 |
| Positioning Repeatability        | ±0.02mm                                   |
| Lost Motion                      | 0.1mm or less                             |
| Rod Diameter                     | ø22mm                                     |
| Non-rotating accuracy of rod     | ±1.5 deg                                  |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing) |

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

For Special Orders





Note:

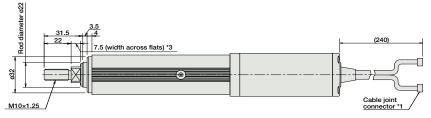


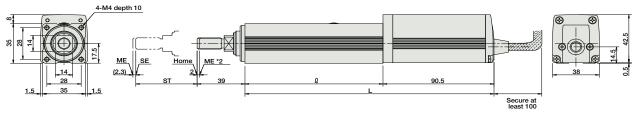
\*1. The motor-encoder cable is connected here. See page A-39 for details on cables.

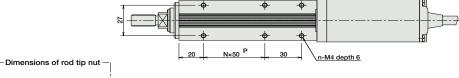
\*2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects. ME: Mechanical end

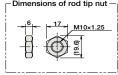
\*3. The orientation of the bolt will vary depending on the product.

Do not apply any external force on the rod from any direction other than the direction of the rod's motion. If a force is exerted on the rod in a perpendicular or rotational direction, the detent may become damaged.









#### ■ Dimensions/Weight by Stroke

|             | J. 10, 11 | oigiic i | o, o  | 0.10  |
|-------------|-----------|----------|-------|-------|
| Stroke      | 50        | 100      | 150   | 200   |
| R           | 112.5     | 162.5    | 212.5 | 262.5 |
| L           | 203       | 253      | 303   | 353   |
| N           | 1         | 2        | 3     | 4     |
| n           | 6         | 8        | 10    | 12    |
| Weight (kg) | 0.8       | 0.95     | 1.1   | 1.25  |
|             |           |          |       |       |

## ②Compatible Controllers

The RCP2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name`  | External View | Model                 | Description  | Max. Positioning Points | Input Voltage    | Power Supply Capacity | Standard Price | See Page |
|--|---------------|-----------------------|--|-------------------------|------------------|-----------------------|----------------|----------|
| Solenoid Valve Type                                  |               | PMEC-C-28SPI-NP-2-①   | Easy-to-use controller, even for beginners   |                         | AC100V<br>AC200V | See P481              | -              | → P477   |
| Soleriold valve Type                                 |               | PSEP-C-28SPI-NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |                  |                       | -              | → P487   |
| Splash-Proof Solenoid<br>Valve Type                  |               | PSEP-CW-28SPI-NP-2-0  | No homing necessary with simple absolute type.   |                         |                  |                       | -              | → P407   |
| Positioner Type                                      | Ĭ.            | PCON-C-28SPI-NP-2-0   | Positioning is possible for up to 512  | 512 points              |                  |                       | -              |          |
| Safety-Compliant<br>Positioner Type                  |               | PCON-CG-28SPI-NP-2-0  | points   | OTZ points              |                  |                       | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) |               | PCON-PL-28SPI-NP-2-0  | Pulse train input type with differential line driver support                                 | (-)                     | DC24V            | 2A max.               | -              | → P525   |
| Pulse Train Input Type<br>(Open Collector)           |               | PCON-PO-28SPI-NP-2-0  | Pulse train input type with<br>open collector support  | (-)                     |                  |                       | -              |          |
| Serial Communication<br>Type                         |               | PCON-SE-28SPI-N-0-0   | Dedicated to serial communication  | 64 points               |                  |                       | -              |          |
| Field Network Type                                   |               | RPCON-28SP            | Dedicated to field network   | 768 points              |                  |                       | -              | → P503   |
| Program Control Type                                 |               | PSEL-C-1-28SPI-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |                  |                       | -              | → P557   |

\* This is for the single-axis PSEL.

\* ① is a placeholder for the power supply voltage (1: 100V, or 2:  $100\sim240V$ ).

Гуре

Mini

Controllers

Rod Type

Mini

Standard

Table/Arm

/Flat Type

Standard

Gripper/ Rotary Type

inear Serv Type

Туре

Splash Pro

Controllers

PMEC /AMEC

ROBO NET

ACON

SCON

PSEL

ASEL

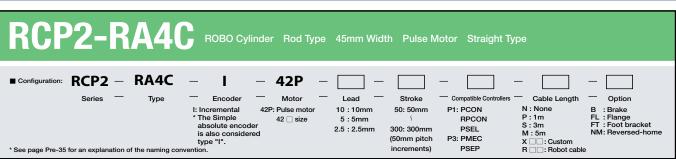
XSEL

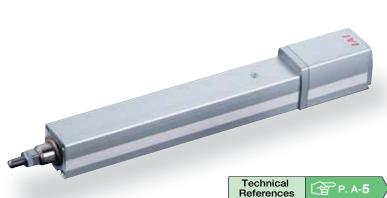
Pulse Moto

Servo Moto

Servo Mot

Linear





(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire. Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds.

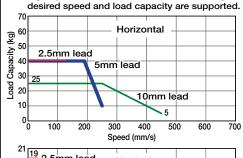
Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

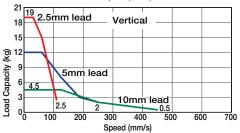
The load capacity is based on operation at an acceleration of 0.2G.

O.2G is the upper limit of the acceleration.

In addition, the horizontal load capacity is based on the use of an external guide. If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become damaged.

#### Speed vs. Load Capacity Due to the characteristics of the pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your





#### Actuator Specifications ■ Lead and Load Capacity (Note 1) Please note that the maximum load capacity decreases as the speed increases. Max. Load Capacity (Note 1) Maximum Push Lead Horizontal (kg) Vertical (kg) Force (N)(Note 2 RCP2-RA4C-I-42P-10-10-20-30-4 10 150 $\sim 25$ $\sim$ 4.5 50 RCP2-RA4C-I-42P-5- 1 - 2 - 3 - 4 5 $\sim 40$ $\sim$ 12 284 inc RCP2-RA4C-I-42P-2.5-①-②-③-④ 2.5 40 $\sim$ 19 358 (Note 2) See page A-69 for the pushing force Legend: 1 Stroke 2 Compatible controller 3 Cable length 4 Options

| ① Stroke Lis | st             |
|--------------|----------------|
| Stroke (mm)  | Standard Price |
| 50           | -              |
| 100          | -              |
| 150          | -              |
| 200          | -              |
| 250          | -              |
| 300          | -              |

| (mm)                          |   | Lead                | (50mm increments) | (mm)              | (mm)             |
|-------------------------------|---|---------------------|-------------------|-------------------|------------------|
|                               |   | 10                  | 458               | 458               | 350              |
| ) ~ 300<br>(50mm<br>crements) |   | 5                   | 250               | 237               | 175              |
| orements)                     |   | 2.5                 | 125<br><114>      | 118<br><114>      | 87               |
| ce graphs.                    |   | * The values enclos | sed in < > apply  | for vertical usag | ge. (Unit: mm/s) |
| ② O-1-                        | ÷ |                     |                   |                   |                  |

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
|                 | P (1m)                | -              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | -              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
|                 | R04 (4m) ~ R05 (5m)   | -              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |
|                 | R11 (11m) ~ R15 (15m) | -              |
|                 | R16 (16m) ~ R20 (20m) | -              |

See page A-39 for cables for maintenance.

| Option Code | See Page      | Standard Price  |
|-------------|---------------|---|
| В           | → A-25        | -   |
| FL          | → A-27        | -   |
| FT          | → A-29        | -   |
| NM          | → A-33        | -   |
|             | B<br>FL<br>FT | $\begin{array}{ccc} \textbf{B} & \rightarrow \textbf{A-25} \\ \textbf{FL} & \rightarrow \textbf{A-27} \\ \textbf{FT} & \rightarrow \textbf{A-29} \end{array}$ |

| Actuator Specifications          |   |
|----------------------------------|---|
| Item                             | Description                               |
| Drive System                     | Ball screw ø8mm C10 grade                 |
| Positioning Repeatability        | ±0.02mm                                   |
| Lost Motion                      | 0.1mm or less                             |
| Rod Diameter                     | ø22mm                                     |
| Non-rotating accuracy of rod     | ±1.5 deg                                  |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing) |

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

For Special Orders





Note:



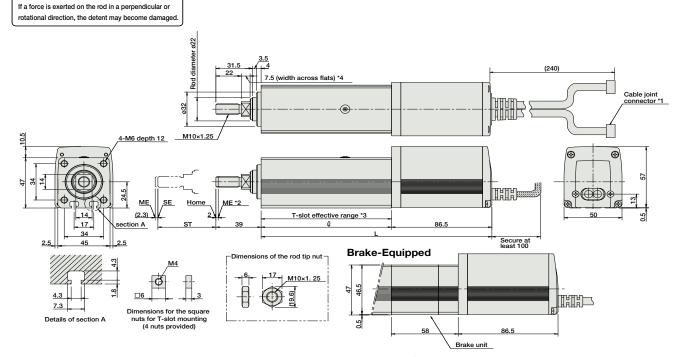
Do not apply any external force on the rod from any direction other than the direction of the rod's motion. \*1. The motor-encoder cable is connected here. See page A-39 for details on cables

When homing, the rod moves to the M.E.; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end

SE: Stroke end
The values enclosed in "( )" are reference dimensions.

\*3. Please note that there is no T-slot on the base of the brake unit.

\*4. The orientation of the bolt will vary depending on the product.



\* Compared to the standard model, the brake-equipped model is longer by 58mm and heavier by 0.4kg.

#### ■ Dimensions/Weight by Stroke

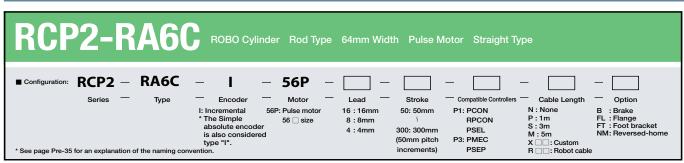
| - Billionolollo, Weight by Guone |       |       |       |       |       |       |  |  |  |
|----------------------------------|-------|-------|-------|-------|-------|-------|--|--|--|
| Stroke                           | 50    | 100   | 150   | 200   | 250   | 300   |  |  |  |
| R                                | 112.5 | 162.5 | 212.5 | 262.5 | 312.5 | 362.5 |  |  |  |
| L                                | 199   | 249   | 299   | 349   | 399   | 449   |  |  |  |
| Weight (kg)                      | 1.35  | 1.6   | 1.85  | 2.1   | 2.35  | 2.6   |  |  |  |

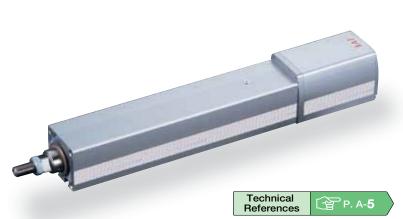
#### ②Compatible Controllers

| The HCP2 series actuators can operate with the controllers below. Select the controller according to your usage. |               |  |  |                         |                  |                       |                |          |  |
|--|---------------|--|--|-------------------------|------------------|-----------------------|----------------|----------|--|
| Name   | External View | Model  | Description  | Max. Positioning Points | Input Voltage    | Power Supply Capacity | Standard Price | See Page |  |
| Solenoid Valve Type  | 110           | PMEC-C-42PI-NP-2-①   | Easy-to-use controller, even for beginners   |                         | AC100V<br>AC200V | See P481              | -              | → P477   |  |
| Soleliolu valve Type   | 1             | PSEP-C-42PI-NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |                  |                       | -              | → P487   |  |
| Splash-Proof<br>Solenoid Valve Type  |               | PSEP-CW-42PI-NP-2-0  | No homing necessary with simple absolute type.   |                         |                  |                       | -              | → P487   |  |
| Positioner Type  | E             | PCON-C-42PI-NP-2-0   | Positioning is possible for up to 512 points   | 512 points              |                  |                       | -              |          |  |
| Safety-Compliant<br>Positioner Type  |               | PCON-CG-42PI-NP-2-0  | r controlling to possible for up to 512 points   | 512 points              |                  |                       | -              |          |  |
| Pulse Train Input Type<br>(Differential Line Driver)   |               | PCON-PL-42PI-NP-2-0 Pulse train input type with differential line driver support | (-)  | DC24V                   | 2A max.          | -                     | → P525         |          |  |
| Pulse Train Input Type<br>(Open Collector)   |               | PCON-PO-42PI-NP-2-0  | Pulse train input type with<br>open collector support  | (-)                     |                  |                       | -              |          |  |
| Serial Communication<br>Type   |               | PCON-SE-42PI-N-0-0   | Dedicated to serial communication  | 64 points               |                  |                       | -              |          |  |
| Field Network Type   |               | RPCON-42P  | Dedicated to field network   | 768 points              |                  |                       | -              | → P503   |  |
| Program Control Type   |               | PSEL-C-1-42PI-NP-2-0   | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |                  |                       | -              | → P557   |  |

\* This is for the single-axis PSEL.

\* ① is a placeholder for the power supply voltage (1: 100V, or 2: 100 $\sim$ 240V).





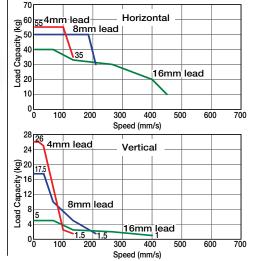
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit of the acceleration. In addition, the horizontal load capacity is based on the use of an external guide. If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become damaged.

#### Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



| Actuator Specifications                                   |                |                                  |               |                                   |                                  |                       |   |
|---|----------------|----------------------------------|---------------|-----------------------------------|----------------------------------|-----------------------|---|
| ■ Lead and Load Capacity (Note 1) Please n                | ote that the m | naximum load c                   | apacity decre | ases as the spe                   | eed increases.                   | ■ Stroke and          | d Maximum Speed                             |
| Model   | Lead<br>(mm)   | Max. Load Cap<br>Horizontal (kg) | , , ,         | Maximum Push<br>Force (N)(Note 2) | 00                               | Stroke<br>Lead        | $50 \sim 300$ (50mm increments)             |
| RCP2-RA6C-I-56P-16-①-②-③-④                                | 16             | ~ 40                             | ~ 5           | 240                               |                                  | 16                    | 450 <400>                                   |
| RCP2-RA6C-I-56P-8-①-②-③-④                                 | 8              | ~ 50                             | ∼ 17.5        | 470                               | 50 ~ 300<br>(50mm<br>increments) | 8                     | 210   |
| RCP2-RA6C-I-56P-4-①-②-③-④                                 | 4              | ~ 55                             | ~ 26          | 800                               | morements)                       | 4                     | 130   |
| Legend: ① Stroke ② Compatible controller ③ Cable length ④ | Options        | (Note 2) S                       | ee page A-69  | for the pushing                   | force graphs.                    | * The values enclosed | in < > apply for vertical usage. (Unit: mm/ |

| ① Stroke List |                |  |  |  |  |  |  |
|---------------|----------------|--|--|--|--|--|--|
| Stroke (mm)   | Standard Price |  |  |  |  |  |  |
| 50            | -              |  |  |  |  |  |  |
| 100           | -              |  |  |  |  |  |  |
| 150           | -              |  |  |  |  |  |  |
| 200           | -              |  |  |  |  |  |  |
| 250           | -              |  |  |  |  |  |  |
| 300           | -              |  |  |  |  |  |  |

| ③ Cable List    |                       |                |  |  |  |  |
|-----------------|-----------------------|----------------|--|--|--|--|
| Туре            | Cable Symbol          | Standard Price |  |  |  |  |
|                 | P (1m)                | -              |  |  |  |  |
| Standard        | <b>S</b> (3m)         | -              |  |  |  |  |
|                 | <b>M</b> (5m)         | -              |  |  |  |  |
|                 | X06 (6m) ~ X10 (10m)  | -              |  |  |  |  |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |  |  |  |  |
|                 | X16 (16m) ~ X20 (20m) | -              |  |  |  |  |
|                 | R01 (1m) ~ R03 (3m)   | -              |  |  |  |  |
|                 | R04 (4m) ~ R05 (5m)   | -              |  |  |  |  |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |  |  |  |  |
|                 | R11 (11m) ~ R15 (15m) | -              |  |  |  |  |
|                 | R16 (16m) ~ R20 (20m) | -              |  |  |  |  |

<sup>\*</sup> See page A-39 for cables for maintenance.

| Option Code | See Page      | Standard Price                 |
|-------------|---------------|--------------------------------|
| В           | → A-25        | -                              |
| FL          | → A-27        | -                              |
| FT          | → A-29        | -                              |
| NM          | → A-33        | -                              |
|             | B<br>FL<br>FT | B → A-25  FL → A-27  FT → A-29 |

| Actuator Specifications          |   |
|----------------------------------|---|
| Item                             | Description                               |
| Drive System                     | Ball screw ø12mm C10 grade                |
| Positioning Repeatability        | ±0.02mm                                   |
| Lost Motion                      | 0.1mm or less                             |
| Rod Diameter                     | ø30mm                                     |
| Non-rotating accuracy of rod     | ±1.0 deg                                  |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing) |

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

For Special Orders





Note:

6.5

10.5

Details of section A



Do not apply any external force on the rod from any

\*1. The motor-encoder cable is connected here. See page A-39 for details on cables

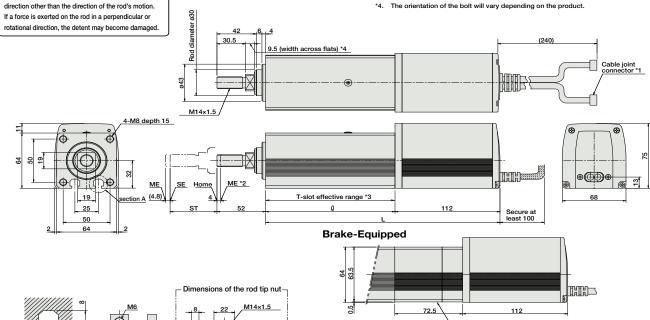
When homing, the rod moves to the M.E.; therefore, please watch for any interference with the surrounding objects. ME: Mechanical end

SE: Stroke end
The values enclosed in "( )" are reference dimensions.

- \*3. Please note that there is no T-slot on the base of the brake unit.
- \*4. The orientation of the bolt will vary depending on the product.

Brake unit

\* Compared to the standard model, the brake-equipped model is longer by 72.5mm and heavier by 0.9kg.



#### ■ Dimensions/Weight by Stroke

| = Billionologo, Wolght by Guono |       |     |     |     |     |     |  |  |  |  |
|---------------------------------|-------|-----|-----|-----|-----|-----|--|--|--|--|
| Stroke                          | 50    | 100 | 150 | 200 | 250 | 300 |  |  |  |  |
| l                               | l 138 |     |     | 288 | 338 | 388 |  |  |  |  |
| ٦                               | L 250 |     | 350 | 400 | 450 | 500 |  |  |  |  |
| Weight (kg)                     | 3.1   | 3.6 | 4.1 | 4.6 | 5.1 | 5.6 |  |  |  |  |

## ②Compatible Controllers

Dimensions for the square

nuts for T-slot mounting (4 nuts provided)

The RCP2 series actuators can operate with the controllers below. Select the controller according to your usage.

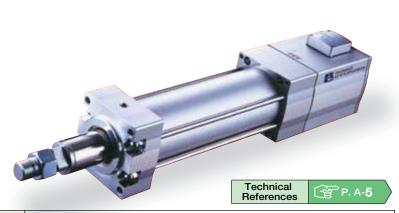
| Name   | External View | Model                | Description  | Max. Positioning Points | Input Voltage    | Power Supply Capacity | Standard Price | See Page |
|--|---------------|----------------------|--|-------------------------|------------------|-----------------------|----------------|----------|
| Solenoid Valve Type                                  |               | PMEC-C-56PI-NP-2-①   | Easy-to-use controller, even for beginners   |                         | AC100V<br>AC200V | See P481              | -              | → P477   |
| Solellold valve Type                                 | 1             | PSEP-C-56PI-NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |                  | 2A max.               | -              |          |
| Splash-Proof Solenoid<br>Valve Type                  | 1             | PSEP-CW-56PI-NP-2-0  | No homing necessary with simple absolute type.   |                         |                  |                       | -              | - → P487 |
| Positioner Type                                      | E             | PCON-C-56PI-NP-2-0   | Positioning is possible for up to 512 points   | 512 points              |                  |                       | -              |          |
| Safety-Compliant<br>Positioner Type                  |               | PCON-CG-56PI-NP-2-0  | r contouring to possible for up to 612 points  | o 12 pointo             |                  |                       | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) |               | PCON-PL-56PI-NP-2-0  | Pulse train input type with differential line driver support                                 | (-)                     | DC24V            |                       | -              | → P525   |
| Pulse Train Input Type<br>(Open Collector)           |               | PCON-PO-56PI-NP-2-0  | Pulse train input type with<br>open collector support  |                         | (-)              |                       | -              |          |
| Serial Communication<br>Type                         |               | PCON-SE-56PI-N-0-0   | Dedicated to serial communication  | 64 points               |                  |                       | -              |          |
| Field Network Type                                   |               | RPCON-56P            | Dedicated to field network   | 768 points              |                  |                       | -              | → P503   |
| Program Control Type                                 |               | PSEL-C-1-56PI-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |                  |                       | -              | → P557   |

\* This is for the single-axis PSEL. \* ① is a placeholder for the power supply voltage (1: 100V, or 2: 100 $\sim$ 240V).

RCP2-RA6C

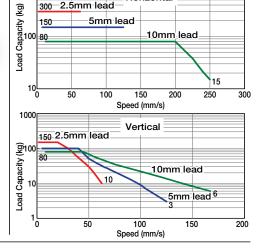
RCP2-RA10C ■ Configuration: RCP2 - RA10C**P2** – 86P Encoder Compatible Controllers N: None P:1m S:3m M:5m A1-A3 : Connector cable exit direction

B : Brake I: Incremental 86P: Pulse motor 10:10mm 50: 50mm P2: PCON-CF 86 🗌 size 5:5mm 2.5 : 2.5mm 300: 300mm FL FT : Flange : Foot bracket (50mm pitch X : Custom
R : Robot cable \* See page Pre-35 for an explanation of the naming convention.



■ Speed vs. Load Capacity Due to the characteristics of the pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.

Horizontal



- Minimum speed is set per each lead. (10mm-lead: 10mm/s, 5mm-lead: 5mm/s, 2.5-lead: 1mm/s) Please note that if the actuator is operated below the minimum speed, vibration may occur.
- Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.
- The load capacity is based on operation at an acceleration of 0.3G for 10mm-lead, 0.02G for 5mm-lead, and 0.01 for 2.5-lead.

  This is the upper limit of the acceleration.

  In addition, the horizontal load capacity is based on the use of an external guide. If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become damaged.

| Actuator Specifications   |                 |                                 |              |                                   |                                  |                |                               |  |
|---|-----------------|---------------------------------|--------------|-----------------------------------|----------------------------------|----------------|-------------------------------|--|
| ■ Lead and Load Capacity (Note 1) Please r  | d Maximum Speed |                                 |              |                                   |                                  |                |                               |  |
| Model   | Lead<br>(mm)    | Max. Load Ca<br>Horizontal (kg) |              | Maximum Push<br>Force (N)(Note 2) | 01.0110                          | Stroke<br>Lead | $50\sim300$ (50mm increments) |  |
| RCP2-RA10C-I-86P-10-①-P2-②-③  | 10              | ~ 80                            | ~ 80         | 1500                              |                                  | 10             | 250 <167>                     |  |
| RCP2-RA10C-I-86P-5-①-P2-②-③   | 5               | 150                             | ~ 100        | 3000                              | 50 ~ 300<br>(50mm<br>increments) | 5              | 125                           |  |
| RCP2-RA10C-I-86P-2.5-①-P2-②-③   | 2.5             | 300                             | ∼ <b>150</b> | 6000                              | o.centa)                         | 2.5            | 63                            |  |
| Legend (Stroke (2) Cable length (3) Options (Note 2) See page A-70 for the pushing force graphs. *The values enclosed in < > apply for vertical usage. (Unit: mm/s) |                 |                                 |              |                                   |                                  |                |                               |  |

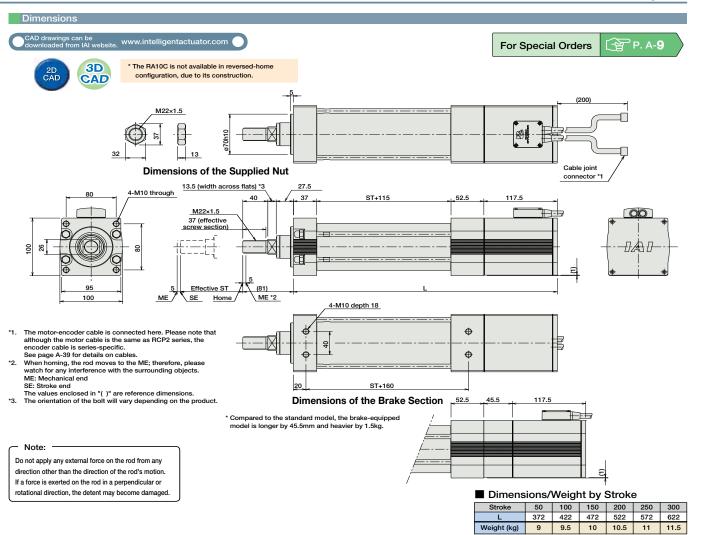
| ① Stroke List |                |  |  |  |  |  |
|---------------|----------------|--|--|--|--|--|
| Stroke (mm)   | Standard Price |  |  |  |  |  |
| 50            | -              |  |  |  |  |  |
| 100           | -              |  |  |  |  |  |
| 150           | -              |  |  |  |  |  |
| 200           | -              |  |  |  |  |  |
| 250           | -              |  |  |  |  |  |
| 300           | -              |  |  |  |  |  |

| (2) Cable List    |                           |                |  |  |  |  |  |
|-------------------|---------------------------|----------------|--|--|--|--|--|
| Туре              | Cable Symbol              | Standard Price |  |  |  |  |  |
|                   | P (1m)                    | -              |  |  |  |  |  |
| Standard          | <b>S</b> (3m)             | -              |  |  |  |  |  |
|                   | <b>M</b> (5m)             | -              |  |  |  |  |  |
|                   | X06 (6m) ~ X10 (10m)      | -              |  |  |  |  |  |
| Special Lengths   | X11 (11m) ~ X15 (15m)     | -              |  |  |  |  |  |
|                   | X16 (16m) ~ X20 (20m)     | -              |  |  |  |  |  |
|                   | R01 (1m) ~ R03 (3m)       | -              |  |  |  |  |  |
|                   | R04 (4m) ~ R05 (5m)       | -              |  |  |  |  |  |
| Robot Cable       | R06 (6m) ~ R10 (10m)      | -              |  |  |  |  |  |
|                   | R11 (11m) ~ R15 (15m)     | -              |  |  |  |  |  |
|                   | R16 (16m) ~ R20 (20m)     | -              |  |  |  |  |  |
| * Soo page A-30 f | or cables for maintenance |                |  |  |  |  |  |

See page A-39 for cables for maintenance.

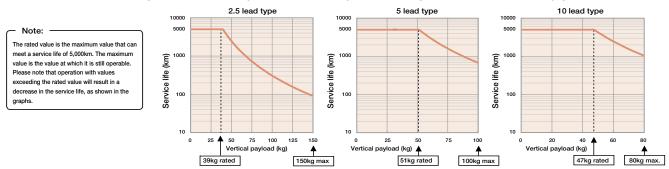
| ③ Option List                  |              |               |                |
|--------------------------------|--------------|---------------|----------------|
| Name                           | Option Code  | See Page      | Standard Price |
| Connector cable exit direction | A1 $\sim$ A3 | → <b>A-25</b> | -              |
| Brake                          | В            | → A-25        | -              |
| Flange                         | FL           | → A-27        | -              |
| Foot bracket                   | FT           | → <b>A-29</b> | -              |

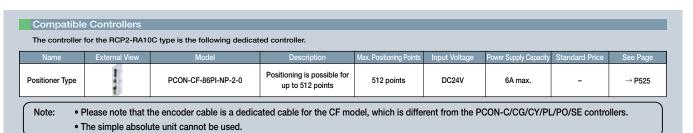
| Actuator Specifications          |   |
|----------------------------------|---|
| Item                             | Description   |
| Drive System                     | Ball screw C10 grade  |
| Positioning Repeatability        | ±0.02mm   |
| Lost Motion                      | 0.1mm or less   |
| Rod Diameter                     | ø40mm   |
| Non-rotating accuracy of rod     | ±1.0 deg  |
| Ambient Operating Temp./Humidity | $0\sim40^{\circ}\text{C}$ , 85% RH or less (non-condensing) |



#### Vertical Payload and Service Life

The service life of a rod-type ROBO Cylinder is 5,000km. However, since the RCP2-RA10C has a larger maximum thrust compared to other types, its service life will largely depend on the load capacity and pushing force used. Therefore, when selecting your product using the Speed vs. Load Capacity, or Pushing Force vs. Current Limit graphs, check the service life using the Load Capacity vs. Load Capacity, and Pushing Force vs. Load Capacity graphs.







Foot bracket 1 (base mounting)

Foot bracket 2 (right/left side mounting)

The brake is available for strokes of 70mm or more.

4 Option List Name

Flange bracket (front)

Flange bracket (back)

Reversed-home

CP2-SRA4R ROBO Cylinder Short-Length Rod Type 45mm Width Pulse Motor Side-Mounted Motor  $\blacksquare$  Configuration: RCP2 — SRA4R 35P Cable Length Encoder Lead Compatible Contro Option I: Incremental \* The Simple 35P: Pulse motor 5 : 5mm 20: 20mm P1: PCON N: None See Options below P:1m S:3m M:5m 35 ☐ size 2.5 : 2.5mm **RPCON** absolute encoder 200: 200mm **PSEL** is also considered (10mm pitch increments) P3: PMEC X 🗆 🗆 : Custom \* 50mm increments PSEP \* See page Pre-35 for an explanation of the naming convention. over 100 mm



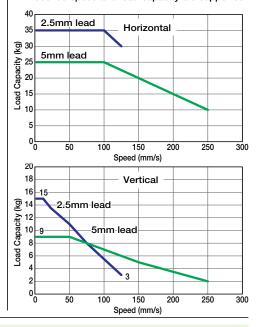
(1) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2.5mm-lead model, or when used vertically).
This is the upper limit of the acceleration. (3) The horizontal load capacity is based on the use of an external guide. If an external force is exerted

on the rod from a direction other than the motion of the rod, the detent may become damaged.

#### Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



#### Actuator Specifications Lead and Load Capacity Max. Load Capacity (Note 1) Maximum Push Lead Stroke Model Horizontal (kg) Vertical (kg) Force (N) (Note 2) RCP2-SRA4R-I-35P-5-1-2-3-4 $20 \sim 200$ 5 ~ 25 $\sim 9$ 90 (10mm RCP2-SRA4R-I-35P-2.5-1-2-3-4 170 (Note 3) (Note 2) See page A-69 for the pushing force graphs. (Note 3) 50mm increments over 100mm.

See Page

→ A-25

→ A-27

→ A-28

→ A-29

→ A-31

→ A-33

Standard Price

Stroke  $20 \sim 200$ (10mm increments) 5 250 125 (Unit: mm/s)

■ Stroke and Maximum Speed

| ① Stroke Li | st             |
|-------------|----------------|
| Stroke (mm) | Standard Price |
| 20~50       | -              |
| 60∼100      | -              |
| 150         | -              |
| 200         | -              |

**Option Code** 

В

FL

**FLR** 

FT

FT2/FT4

NM

Legend: Troke Compatible controller Cable length Options

| ③ Cable List    |                       |                |  |  |  |  |  |
|-----------------|-----------------------|----------------|--|--|--|--|--|
| Туре            | Cable Symbol          | Standard Price |  |  |  |  |  |
| Standard        | P (1m)                | -              |  |  |  |  |  |
|                 | <b>S</b> (3m)         | -              |  |  |  |  |  |
| (Robot Cables)  | <b>M</b> (5m)         | -              |  |  |  |  |  |
|                 | X06 (6m) ~ X10 (10m)  | -              |  |  |  |  |  |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |  |  |  |  |  |
|                 | X16 (16m) ~ X20 (20m) | -              |  |  |  |  |  |

- \* The cable is a motor-encoder integrated cable, and is provided as a robot cable.
- \* See page A-39 for cables for maintenance.

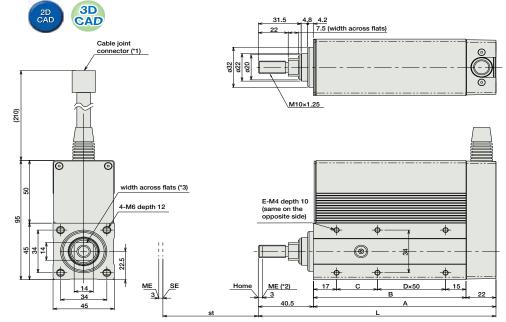
| Actuator Specifications          |   |  |  |  |  |  |
|----------------------------------|---|--|--|--|--|--|
| Item                             | Description                               |  |  |  |  |  |
| Drive System                     | Ball screw ø8mm C10 grade                 |  |  |  |  |  |
| Positioning Repeatability        | ±0.02mm                                   |  |  |  |  |  |
| Lost Motion                      | 0.1mm or less                             |  |  |  |  |  |
| Rod Diameter                     | ø22mm                                     |  |  |  |  |  |
| Non-rotating accuracy of rod     | -   |  |  |  |  |  |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing) |  |  |  |  |  |

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

Dimensions

For Special Orders



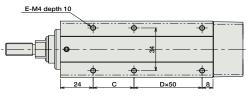


Secure at least 100 0 0 4-M6 depth 12 **® (**  $\oplus$  )  $\Theta$ <u>@@</u>

\* The exterior dimensions for the brake-equipped model is no different than the standard model.

However, 70mm is the minimum stroke of the brake-equipped

(i.e. The brake is not compatible at 60mm strokes and under.)



M10×1.25

ST: Stroke SE : Stroke end ME: Mechanical end

- (\*1) The motor-encoder cable is connected here. See page A-39 for details on
- (\*2) When homing, the rod moves to the mechanical end position; therefore, please watch for any interference with the surrounding objects.
- (\*3) The orientation of the bolt will vary depending on the product.

#### ■ Dimensions/Weight by Stroke (Add 0.2kg for brake equipped)

| Stroke      | 20    | 30    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 150   | 200   |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L           | 124.5 | 134.5 | 144.5 | 154.5 | 164.5 | 174.5 | 184.5 | 194.5 | 204.5 | 254.5 | 304.5 |
| Α           | 84    | 94    | 104   | 114   | 124   | 134   | 144   | 154   | 164   | 214   | 264   |
| В           | 62    | 72    | 82    | 92    | 102   | 112   | 122   | 132   | 142   | 192   | 242   |
| С           | 30    | 40    | 50    | 60    | 70    | 30    | 40    | 50    | 60    | 60    | 60    |
| D           | 0     | 0     | 0     | 0     | 0     | 1     | 1     | 1     | 1     | 2     | 3     |
| E           | 4     | 4     | 4     | 4     | 4     | 6     | 6     | 6     | 6     | 8     | 10    |
| Weight (kg) | 0.83  | 0.89  | 0.96  | 1.02  | 1.08  | 1.14  | 1.21  | 1.27  | 1.33  | 1.64  | 1.95  |

## ② Compatible Controllers

The RCP2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View | Model                | Description  | Max. Positioning Points | Input Voltage    | Power Supply Capacity | Standard Price | See Page |  |
|--|---------------|----------------------|--|-------------------------|------------------|-----------------------|----------------|----------|--|
| Solenoid Valve Type                                  | 1152          | PMEC-C-35PI-NP-2-①   | Easy-to-use controller, even for beginners   |                         | AC100V<br>AC200V | See P481              | -              | → P477   |  |
| Solenoid valve Type                                  |               | PSEP-C-35PI-NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |                  |                       | -              | → P487   |  |
| Splash-Proof Sole-<br>noid Valve Type                | 1             | PSEP-CW-35PI-NP-2-0  | No homing necessary with simple absolute type.   |                         |                  |                       | -              | 7 [40]   |  |
| Positioner Type                                      | f             | PCON-C-35PI-NP-2-0   | Positioning is possible for up to 512 points   | 512 points              |                  |                       | -              |          |  |
| Safety-Compliant<br>Positioner Type                  |               | PCON-CG-35PI-NP-2-0  | , couldning to possible for up to 012 points   | o i z pomico            |                  |                       | -              |          |  |
| Pulse Train Input Type<br>(Differential Line Driver) | Ó             | PCON-PL-35PI-NP-2-0  | Pulse train input type with differential line driver support                                 | (-)                     | DC24V            | 2A max.               | -              | → P525   |  |
| Pulse Train Input Type<br>(Open Collector)           |               | PCON-PO-35PI-NP-2-0  | Pulse train input type with<br>open collector support  | (-)                     |                  |                       |                | -        |  |
| Serial Communication<br>Type                         | Í             | PCON-SE-35PI-N-0-0   | Dedicated to serial communication  | 64 points               |                  |                       | -              |          |  |
| Field Network Type                                   |               | RPCON-35P            | Dedicated to field network   | 768 points              |                  |                       | -              | → P503   |  |
| Program Control Type                                 |               | PSEL-C-1-35PI-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |                  |                       | <u>-</u>       | → P557   |  |

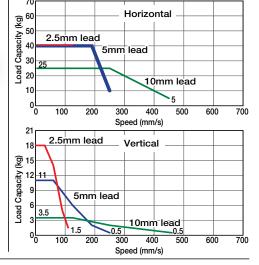
\* This is for the single-axis PSEL. \* ① is a placeholder for the power supply voltage (1: 100V, or 2: 100  $\sim$  240V).

RCP2-SRA4R

CP2-RGS4C ROBO Cylinder Rod Type with Single Guide 45mm Width Pulse Motor Straight Type  $\blacksquare$  Configuration: RCP2 - RGS4C **42P** Encoder Motor Compatible Controlle Cable Length Option N : None P : 1m S : 3m M : 5m B : Brake FT : Foot bracket NM: Reversed-home I: Incremental \* The Simple 42P: Pulse motor 10:10mm 50: 50mm P1: PCON 42 🗌 size 5:5mm **RPCON** absolute encoder PSEL 2.5 : 2.5mm 300: 300mm is also considered (50mm pitch P3: PMEC X : Custom
R : Robot cable increments) PSEP \* See page Pre-35 for an explanation of the naming convention.



Speed vs. Load Capacity Due to the characteristics of the pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
- Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds.
  Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.
- The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit of the acceleration. In addition, the horizontal load capacity is based on the use of an external guide. See the technical resources (page A-82) for the allowable weight using the supplied guide alone.

| Actuator Specifications  |              |      |                                  |                                   |                                  |                |                                  |              |             |
|--|--------------|------|----------------------------------|-----------------------------------|----------------------------------|----------------|----------------------------------|--------------|-------------|
| ■ Lead and Load Capacity (Note 1) Please note that the maximum load capacity decreases as the speed increases. ■ Stroke and Maximum Speed  |              |      |                                  |                                   |                                  |                |                                  |              |             |
| Model  | Lead<br>(mm) |      | pacity (Note 1)<br>Vertical (kg) | Maximum Push<br>Force (N)(Note 2) | Stroke<br>(mm)                   | Stroke<br>Lead | 50 ~ 200<br>(50mm<br>increments) | 250<br>(mm)  | 300<br>(mm) |
| RCP2-RGS4C-I-42P-10-①-②-③-④  | 10           | ~ 25 | ~ 3.5                            | 150                               |                                  | 10             | 458                              | 458          | 350         |
| RCP2-RGS4C-I-42P-5-①-②-③-④   | 5            | ~ 40 | ~ 11                             | 284                               | 50 ~ 300<br>(50mm<br>increments) | 5              | 250                              | 237          | 175         |
| RCP2-RGS4C-I-42P-2.5-①-②-③-④   | 2.5          | 40   | ~ 18                             | 358                               | morements)                       | 2.5            | 125<br><114>                     | 118<br><114> | 87          |
| Legend: Tstroke Compatible controller Contro |              |      |                                  |                                   |                                  |                |                                  |              |             |

| ① Stroke List |                |  |  |  |  |  |
|---------------|----------------|--|--|--|--|--|
| Stroke (mm)   | Standard Price |  |  |  |  |  |
| 50            | -              |  |  |  |  |  |
| 100           | -              |  |  |  |  |  |
| 150           | -              |  |  |  |  |  |
| 200           | -              |  |  |  |  |  |
| 250           | -              |  |  |  |  |  |
| 300           | -              |  |  |  |  |  |

| ③ Cable List      |                           |                |  |  |  |  |
|-------------------|---------------------------|----------------|--|--|--|--|
| Туре              | Cable Symbol              | Standard Price |  |  |  |  |
|                   | P (1m)                    | _              |  |  |  |  |
| Standard          | <b>S</b> (3m)             | -              |  |  |  |  |
|                   | <b>M</b> (5m)             | _              |  |  |  |  |
|                   | X06 (6m) ~ X10 (10m)      | -              |  |  |  |  |
| Special Lengths   | X11 (11m) ~ X15 (15m)     | -              |  |  |  |  |
|                   | X16 (16m) ~ X20 (20m)     | -              |  |  |  |  |
|                   | R01 (1m) ~ R03 (3m)       | _              |  |  |  |  |
|                   | R04 (4m) ~ R05 (5m)       | -              |  |  |  |  |
| Robot Cable       | R06 (6m) ~ R10 (10m)      | _              |  |  |  |  |
|                   | R11 (11m) ~ R15 (15m)     | -              |  |  |  |  |
|                   | R16 (16m) ~ R20 (20m)     | -              |  |  |  |  |
| * Soo page A-30 f | or cables for maintenance |                |  |  |  |  |

See page A-39 for cables for maintenance.

| 4 Option List |             |               |                |
|---------------|-------------|---------------|----------------|
| Name          | Option Code | See Page      | Standard Price |
| Brake         | В           | → A-25        | -              |
| Foot bracket  | FT          | → A-29        | -              |
| Reversed-home | NM          | → <b>A-33</b> | _              |

| Item                             | Description  |
|----------------------------------|--|
| Drive System                     | Ball screw ø8mm C10 grade                            |
| Positioning Repeatability        | ±0.02mm  |
| Lost Motion                      | 0.1mm or less  |
| Guide                            | Single guide Guide rod diameter ø10mm Ball bush type |
| Rod Diameter                     | ø22mm  |
| Non-rotating accuracy of rod     | ±0.05 deg  |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing)            |

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

For Special Orders

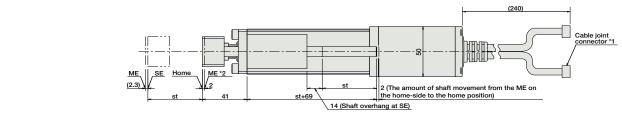


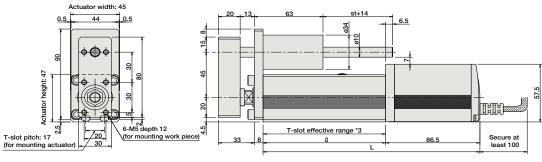


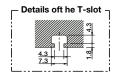


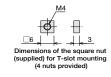
- \*1. The motor-encoder cable is connected here. See page A-39 for details on cables
- When homing, the rod moves to the M.E.; therefore, please watch for any interference with the surrounding objects. ME: Mechanical end SE: Stroke end
  The values enclosed in "( )" are reference dimensions.

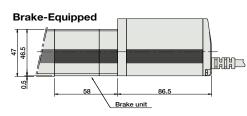
\*3. Please note that there is no T-slot on the bottom of the brake unit.











\* Compared to the standard model, the brake-equipped model is longer by 58mm and heavier by 0.4kg.

#### ■ Dimensions/Weight by Stroke

| Stroke      | 50                | 100 | 100 150 |       | 250   | 300 |  |  |  |  |  |
|-------------|-------------------|-----|---------|-------|-------|-----|--|--|--|--|--|
| l           | 112.5 16<br>199 2 |     | 212.5   | 262.5 | 362.5 |     |  |  |  |  |  |
| L           |                   |     | 249 299 |       | 399   | 449 |  |  |  |  |  |
| Weight (kg) | 1.8               | 2.1 | 2.4     | 2.7   | 2.9   | 3.2 |  |  |  |  |  |

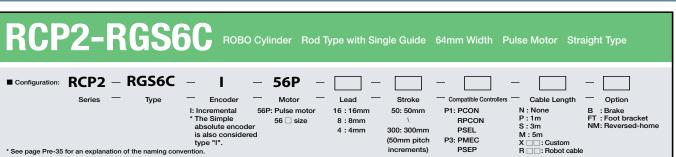
#### ② Compatible Controllers

The RCP2 series actuators can operate with the controllers below. Select the controller according to your usage

| The first 2 series detailed of our operate with the controlled series, except the controlled decorating to your dauge. |               |  |   |                         |                  |                       |                |          |
|--|---------------|--|---|-------------------------|------------------|-----------------------|----------------|----------|
| Name   | External View | Model  | Description   | Max. Positioning Points | Input Voltage    | Power Supply Capacity | Standard Price | See Page |
| Solenoid Valve Type  | 113           | PMEC-C-42PI-NP-2-①   | Easy-to-use controller, even for beginners  |                         | AC100V<br>AC200V | See P481              | -              | → P477   |
| Solenoid valve type  |               | PSEP-C-42PI-NP-2-0   | Operable with same signal as solenoid valve.  Supports both single and double solenoid types. | 3 points                |                  |                       | -              | → P487   |
| Splash-Proof<br>Solenoid Valve Type  |               | PSEP-CW-42PI-NP-2-0  | No homing necessary with simple absolute type.  |                         |                  |                       | -              | 7   1407 |
| Positioner Type  | F             | PCON-C-42PI-NP-2-0 Positioning is possible for up to 512 points 512 points           | Positioning is possible for up to 512 points  |                         |                  | -                     |                |          |
| Safety-Compliant<br>Positioner Type  |               | PCON-CG-42PI-NP-2-0  |   | O12 points              |                  |                       | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver)   | Ó             | PCON-PL-42PI-NP-2-0 Pulse train input type with differential line driver support (-) | DC24V   | 2A max.                 | -                | → P525                |                |          |
| Pulse Train Input Type<br>(Open Collector)   |               | PCON-PO-42PI-NP-2-0  | Pulse train input type with<br>open collector support   | (-)                     |                  |                       | -              |          |
| Serial Communication<br>Type   | ĺ             | PCON-SE-42PI-N-0-0   | Dedicated to serial communication   | 64 points               |                  |                       | -              |          |
| Field Network Type   |               | RPCON-42P  | Dedicated to field network  | 768 points              |                  |                       | -              | → P503   |
| Program Control Type   |               | PSEL-C-1-42PI-NP-2-0   | Programmed operation is possible<br>Operation is possible on up to 2 axes                     | 1500 points             |                  |                       | -              | → P557   |

\* This is for the single-axis PSEL.

\* ① is a placeholder for the power supply voltage (1: 100V, or 2:  $100\sim240$ V).



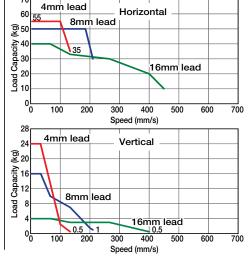


- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed.

  Use the actuator specification table below to check the maximum speed at the stroke you desire.
- (2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.
- (3) The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit of the acceleration. In addition, the horizontal load capacity is based on the use of an external guide. See the technical resources (page A-82) for the allowable weight using the supplied guide alone.

## Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



| Actuator Specifications   |                 |                 |                       |  |                                  |        |                   |  |  |
|---|-----------------|-----------------|-----------------------|--|----------------------------------|--------|-------------------|--|--|
| ■ Lead and Load Capacity (Note 1) Please note that the maximum load capacity decreases as the speed increases. ■ Stroke and Maximum Speed |                 |                 |                       |  |                                  |        |                   |  |  |
| Model   | Lead            | Max. Load Ca    | , ,                   | Maximum Push                                   | Stroke                           | Stroke | 50 ~ 300          |  |  |
| model   | (mm)            | Horizontal (kg) | Vertical (kg)         | Force (N)(Note 2)                              | (mm                              | Lead   | (50mm increments) |  |  |
| RCP2-RGS6C-I-56P-16-①-②-③-④   | 16              | ~ 40            | $\sim$ 4              | 240  |                                  | 16     | 450 <400>         |  |  |
| RCP2-RGS6C-I-56P-8-①-②-③-④  | 8               | ~ 50            | ~ 16                  | 470  | 50 ~ 300<br>(50mm<br>increments) | 8      | 210               |  |  |
| RCP2-RGS6C-I-56P-4-①-②-③-④  | 4               | ~ 55            | $\sim$ 24             | 800  | oronionio,                       | 4      | 130               |  |  |
| Legend: 1 Stroke 2 Compatible controller 3 Cable length 4   | for the pushing | force graphs.   | * The values enclosed | lin < > apply for vertical usage. (Unit: mm/s) |                                  |        |                   |  |  |

| ① Stroke List |                |  |  |  |  |  |
|---------------|----------------|--|--|--|--|--|
| Stroke (mm)   | Standard Price |  |  |  |  |  |
| 50            | -              |  |  |  |  |  |
| 100           | -              |  |  |  |  |  |
| 150           | -              |  |  |  |  |  |
| 200           | -              |  |  |  |  |  |
| 250           | -              |  |  |  |  |  |
| 300           | -              |  |  |  |  |  |

| ③ Cable List    |                       |                |  |  |  |  |  |
|-----------------|-----------------------|----------------|--|--|--|--|--|
| Туре            | Cable Symbol          | Standard Price |  |  |  |  |  |
|                 | P (1m)                | -              |  |  |  |  |  |
| Standard        | <b>S</b> (3m)         | -              |  |  |  |  |  |
|                 | <b>M</b> (5m)         | -              |  |  |  |  |  |
|                 | X06 (6m) ~ X10 (10m)  | -              |  |  |  |  |  |
| Special Lengths | X11 (11m) ~ X15 (15m) | _              |  |  |  |  |  |
|                 | X16 (16m) ~ X20 (20m) | -              |  |  |  |  |  |
|                 | R01 (1m) ~ R03 (3m)   | -              |  |  |  |  |  |
|                 | R04 (4m) ~ R05 (5m)   | -              |  |  |  |  |  |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |  |  |  |  |  |
|                 | R11 (11m) ~ R15 (15m) | -              |  |  |  |  |  |
|                 | R16 (16m) ~ R20 (20m) | _              |  |  |  |  |  |

<sup>\*</sup> See page A-39 for cables for maintenance.

| 4 Option List |             |          |                |
|---------------|-------------|----------|----------------|
| Name          | Option Code | See Page | Standard Price |
| Brake         | В           | → A-25   | _              |
| Foot bracket  | FT          | → A-29   | =              |
| Reversed-home | NM          | → A-33   | _              |

| Actuator Specifications          |  |  |  |  |  |
|----------------------------------|--|--|--|--|--|
| Item                             | Description  |  |  |  |  |
| Drive System                     | Ball screw ø12mm C10 grade                           |  |  |  |  |
| Positioning Repeatability        | ±0.02mm  |  |  |  |  |
| Lost Motion                      | 0.1mm or less  |  |  |  |  |
| Guide                            | Single guide Guide rod diameter ø12mm Ball bush type |  |  |  |  |
| Rod Diameter                     | ø30mm  |  |  |  |  |
| Non-rotating accuracy of rod     | ±0.05 deg  |  |  |  |  |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing)            |  |  |  |  |

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

For Special Orders



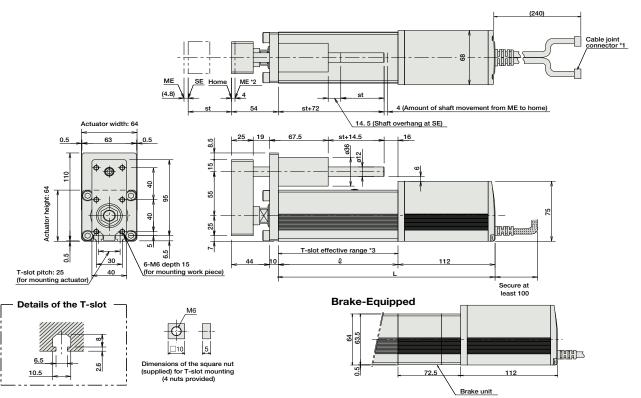




- \*1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- "2 When homing, the rod moves to the M.E.; therefore, please watch for any interference with the surrounding objects. ME: Mechanical end SE: Stroke end

The values enclosed in "( )" are reference dimensions

\*3. Please note that there is no T-slot on the bottom of the brake unit.



\* Compared to the standard model, the brake-equipped model is longer by 72.5mm and heavier by 0.9kg.

#### ■ Dimensions/Weight by Stroke

| Stroke      | 50  | 100 | 150 | 200 | 250 | 300 |  |  |  |  |
|-------------|-----|-----|-----|-----|-----|-----|--|--|--|--|
| R           | 138 | 188 | 238 | 288 | 338 | 388 |  |  |  |  |
| L           | 250 | 300 | 350 | 400 | 450 | 500 |  |  |  |  |
| Weight (kg) | 3.6 | 4.4 | 5.0 | 5.5 | 6.1 | 6.6 |  |  |  |  |

#### ② Compatible Controllers

The RCP2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View | Model                | Description  | Max. Positioning Points | Input Voltage    | Power Supply Capacity | Standard Price | See Page |
|--|---------------|----------------------|--|-------------------------|------------------|-----------------------|----------------|----------|
| Solenoid Valve Type                                  | 113           | PMEC-C-56PI-NP-2-①   | Easy-to-use controller, even for beginners   |                         | AC100V<br>AC200V | See P481              | -              | → P477   |
| Solenoid valve Type                                  |               | PSEP-C-56PI-NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |                  |                       | -              | → P487   |
| Splash-Proof Solenoid<br>Valve Type                  |               | PSEP-CW-56PI-NP-2-0  | No homing necessary with simple absolute type.   |                         |                  |                       | -              | → P487   |
| Positioner Type                                      |               | PCON-C-56PI-NP-2-0   | Positioning is possible for up to 512 points   | 512 points              |                  | 2A max.               | -              |          |
| Safety-Compliant<br>Positioner Type                  |               | PCON-CG-56PI-NP-2-0  | Positioning is possible for up to 312 points   | 312 points              |                  |                       | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) |               | PCON-PL-56PI-NP-2-0  | Pulse train input type with differential line driver support                                 | ()                      | DC24V            |                       | -              | → P525   |
| Pulse Train Input Type<br>(Open Collector)           |               | PCON-PO-56PI-NP-2-0  | Pulse train input type with open collector support   | (-)                     |                  |                       | -              |          |
| Serial Communication<br>Type                         |               | PCON-SE-56PI-N-0-0   | Dedicated to serial communication  | 64 points               |                  |                       | -              |          |
| Field Network Type                                   |               | RPCON-56P            | Dedicated to field network   | 768 points              |                  |                       | -              | → P503   |
| Program Control Type                                 |               | PSEL-C-1-56PI-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |                  |                       | -              | → P557   |

\* This is for the single-axis PSEL.

 $^{\star}$  (1) is a placeholder for the power supply voltage (1: 100V, or 2: 100  $\sim$  240V).

200

## CP2-SRGS4R ROBO Cylinder Short Rod Type with Single Guide 45mm Width Pulse Motor Side-Mounted Motor

■ Configuration: RCP2 — SRGS4R — 35P Encoder Lead Cable Length Option N : None P : 1m S : 3m M : 5m I: Incremental \* The Simple 35P: Pulse motor 5 : 5mm 20: 20mm P1: PCON See options below 35 □ size 2.5 : 2.5mm **RPCON** 200: 200mm absolute encoder PSEL is also considered (10mm pitch increments) P3: PMEC X 🗆 🗆 : Custom Set in 50mm increments PSEP \* See page Pre-35 for an explanation of the naming convention.



Technical References

[全 P. A-**5** 

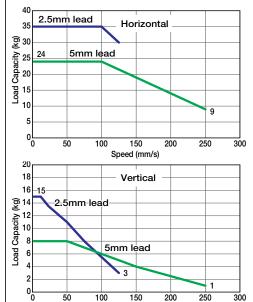
(1) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported. (2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2.5mm-lead model, or

when used vertically). This is the upper limit of the acceleration.

(3) The horizontal load capacity is based on the use of an external guide. See the technical resources (page A-82) for the allowable weight using the supplied guide alone.

#### Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



| Actuator opecinications                |              |   |                   |                                    |                   |
|--|--------------|---|-------------------|------------------------------------|-------------------|
| ■ Lead and Load Capacity (Note 1) Plea | se note th   | at the maximur  | n load capacity d | ecreases as the sp                 | eed increases.    |
| Model                                  | Lead<br>(mm) | Max. Load Capacity (Note 1) Horizontal (kg) Vertical (kg) |                   | Maximum Push<br>Force (N) (Note 2) | Stroke<br>(mm)    |
| RCP2-SRGS4R-I-35P-5-①-②-③-④            | 5            | ~ 24  | ~ 8               | 90                                 | 20 ~ 200<br>(10mm |

RCP2-SRGS4R-I-35P-2.5-1 - 2 - 3 - 4  $\sim$  35  $\sim$  15 170 (Note 3) Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options (Note 2) See page A-69 for the pushing force graphs. (Note 3) 50mm increments over 100mm.

|                | · · · · · · · · · · · · · · · · · · · |
|----------------|---------------------------------------|
| Stroke<br>Lead | $20 \sim 200$ (10mm increments)       |
| 5              | 250                                   |
| 2.5            | 125                                   |
|                | (Unit: mm/s)                          |

Speed (mm/s)

■ Stroke and Maximum Speed

#### Stroke (mm) Standard Price 20~50 60~100 150

| 3 Cable List          |   |  |  |  |  |  |
|-----------------------|---|--|--|--|--|--|
| Cable Symbol          | Standard Price  |  |  |  |  |  |
| P (1m)                | -   |  |  |  |  |  |
| <b>S</b> (3m)         | -   |  |  |  |  |  |
| <b>M</b> (5m)         | _   |  |  |  |  |  |
| X06 (6m) ~ X10 (10m)  | -   |  |  |  |  |  |
| X11 (11m) ~ X15 (15m) | -   |  |  |  |  |  |
| X16 (16m) ~ X20 (20m) | _   |  |  |  |  |  |
|                       | Cable Symbol  P (1m) S (3m) M (5m) X06 (6m) ~ X10 (10m) X11 (11m) ~ X15 (15m) |  |  |  |  |  |

Description

Ball screw ø8mm C10 grade

- \* The cable is a motor-encoder integrated cable, and is provided as a robot cable.
- \* See page A-39 for cables for maintenance.

±0.02mm

ø22mm ±0.05 dea

Ambient Operating Temp./Humidity 0 ~ 40°C, 85% RH or less (non-condensing)

0.1mm or less

Actuator Specifications Item

Drive System

Lost Motion

**Rod Diameter** 

Positioning Repeatability

Non-rotating accuracy of rod

| ④ Option List                             |                |          |                |
|---|----------------|----------|----------------|
| Name                                      | Option Code    | See Page | Standard Price |
| Brake                                     | В              | → A-25   | _              |
| Flange bracket (back)                     | FLR            | → A-28   | -              |
| Foot bracket 1 (base mounting)            | FT             | → A-29   | _              |
| Foot bracket 2 (right/left side mounting) | FT2/FT4        | → A-31   | _              |
| Guide mounting direction                  | GS2 $\sim$ GS4 | → A-156  | -              |
| Reversed-home                             | NM             | → A-33   | -              |

- The brake is available for strokes of 70mm or more.
- \* Please be sure that the mounting direction of the guide is specified in the product name.

  \* The guide and the foot bracket cannot be mounted in the same direction.

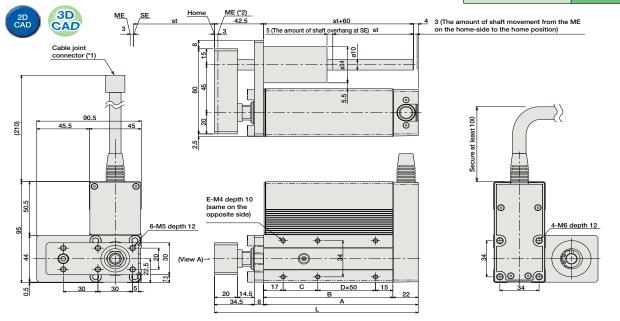
RCP2-SRGS4R

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

Dimensions

For Special Orders





GS4 Left-nounted GS2 Right GS3 Bottom mounted

Guide mounting direction (as viewed from view A)

E-M4 depth 10

\* The exterior dimensions for the brake-equipped model is no different than the standard model. However, 70mm is the minimum stroke of the brakeequipped models. (i.e. The brake is not compatible at 60mm strokes and under.)

ST : Stroke SE : Stroke end ME: Mechanical end

(\*1) The motor-encoder cable is connected here. See page A-39 for details on cables.

(\*2) When homing, the rod moves to the mechanical end position; therefore, please watch for any interference with the surrounding objects.

| Dimensions/ | _ | - |  |  |  |
|-------------|---|---|--|--|--|
|             |   |   |  |  |  |

| Stroke      | 20    | 30    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 150   | 200   |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L           | 126.5 | 136.5 | 146.5 | 156.5 | 166.5 | 176.5 | 186.5 | 196.5 | 206.5 | 256.5 | 306.5 |
| Α           | 84    | 94    | 104   | 114   | 124   | 134   | 144   | 154   | 164   | 214   | 264   |
| В           | 62    | 72    | 82    | 92    | 102   | 112   | 122   | 132   | 142   | 192   | 242   |
| С           | 30    | 40    | 50    | 60    | 70    | 30    | 40    | 50    | 60    | 60    | 60    |
| D           | 0     | 0     | 0     | 0     | 0     | 1     | 1     | 1     | 1     | 2     | 3     |
| E           | 4     | 4     | 4     | 4     | 4     | 6     | 6     | 6     | 6     | 8     | 10    |
| Weight (kg) | 1.2   | 1.27  | 1.34  | 1.41  | 1.48  | 1.54  | 1.61  | 1.68  | 1.75  | 2.09  | 2.43  |

## ② Compatible Controllers

The RCP2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View | Model                | Description  | Max. Positioning Points | Input Voltage    | Power Supply Capacity | Standard Price | See Page |  |
|--|---------------|----------------------|--|-------------------------|------------------|-----------------------|----------------|----------|--|
| Solenoid Valve Type                                  |               | PMEC-C-35PI-NP-2-①   | Easy-to-use controller, even for beginners   |                         | AC100V<br>AC200V | See P481              | -              | → P477   |  |
| Solelloid valve Type                                 |               | PSEP-C-35PI-NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |                  |                       | -              | → P487   |  |
| Splash-Proof Solenoid<br>Valve Type                  | 1             | PSEP-CW-35PI-NP-2-0  | No homing necessary with simple absolute type.   |                         |                  |                       | -              | → P407   |  |
| Positioner Type                                      | É             | PCON-C-35PI-NP-2-0   | Positioning is possible for up to 512 points 512 p   | 512 points              |                  |                       | -              |          |  |
| Safety-Compliant<br>Positioner Type                  |               | PCON-CG-35PI-NP-2-0  | 1 ostaoning is possible for up to 012 points   | 512 points              | orz points       |                       |                | -        |  |
| Pulse Train Input Type<br>(Differential Line Driver) | ei            | PCON-PL-35PI-NP-2-0  | Pulse train input type with differential line driver support                                 | (-)                     | DC24V            | 2A max.               | -              | → P525   |  |
| Pulse Train Input Type<br>(Open Collector)           |               | PCON-PO-35PI-NP-2-0  | Pulse train input type with<br>open collector support  | (-)                     | (-)              |                       |                | -        |  |
| Serial Communication<br>Type                         | ĺ             | PCON-SE-35PI-N-0-0   | Dedicated to serial communication  | 64 points               |                  |                       | -              |          |  |
| Field Network Type                                   |               | RPCON-35P            | Dedicated to field network   | 768 points              |                  |                       | -              | → P503   |  |
| Program Control Type                                 | 2             | PSEL-C-1-35PI-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |                  |                       | -              | → P557   |  |

\* This is for the single-axis PSEL. \* ① is a placeholder for the power supply voltage (1: 100V, or 2: 100 $\sim$ 240V).

#### RCP2-RGD3C ROBO Cylinder Rod Type with Double Guide 35mm Width Pulse Motor Straight Type $\blacksquare$ Configuration: RCP2 - RGD3C -— 28P Cable Length Encoder Compatible Contro Option I: Incremental \* The Simple FT : Foot bracket NM: Reversed-home 28P: Pulse motor 5 : 5mm 50: 50mm P1: PCON N: None P:1m S:3m M:5m 28 🗆 size 2.5 : 2.5mm **RPCON** absolute encoder **PSEL** 200: 200mm is also considered (50mm pitch P3: PMEC X .: Custom R .: Robot cable increments) PSEP \* See page Pre-35 for an explanation of the naming convention.



When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

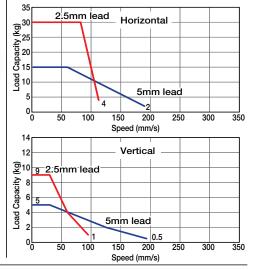
Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

The load capacity is based on operation at an acceleration of 0.2G.

The load capacity is based on operation as a successful of the load capacity is based on the use of an external guide. See the technical resources (page A-83) for load capacity is based on the use of an external guide. See the technical resources (page A-83) for the allowable weight using the supplied guide alone

#### ■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



#### ■ Lead and Load Capacity (Note 1) Please note that the maximum load capacity decreases as the speed increases. Max. Load Capacity (Note 1) Maximum Push Lead Stroke Vertical (kg) RCP2-RGD3C-I-28P-5-1 - 2 - 3 - 4 5 $\sim 15$ $\sim 5$ 73.5 50 ~ 200

(50mm RCP2-RGD3C-I-28P-2.5-1-2-3-4  $\sim 30$  $\sim 9$ 156.8 increments Legend: 1 Stroke Compatible controller Cable length Options (Note 2) See page A-69 for the pushing force graphs.

| - Otroke and   | Otrone and maximum opeca       |  |  |  |  |  |  |
|----------------|--------------------------------|--|--|--|--|--|--|
| Stroke<br>Lead | $50\sim 200$ (50mm increments) |  |  |  |  |  |  |
| 5              | 187                            |  |  |  |  |  |  |
| 2.5            | 114 <93>                       |  |  |  |  |  |  |
|                | (Unit: mm/s)                   |  |  |  |  |  |  |

## ① Stroke List

Actuator Specifications

| Stroke (mm) | Standard Price |
|-------------|----------------|
| 50          | -              |
| 100         | -              |
| 150         | -              |
| 200         | -              |

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
|                 | P (1m)                | -              |
| Standard        | <b>S</b> (3m)         | _              |
|                 | <b>M</b> (5m)         | -              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
|                 | R04 (4m) ~ R05 (5m)   | _              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | _              |
|                 | R11 (11m) ~ R15 (15m) | -              |
|                 |                       |                |

R16 (16m) ~ R20 (20m)

③ Cable List

| 4 Option List |             |               |                |
|---------------|-------------|---------------|----------------|
| Name          | Option Code | See Page      | Standard Price |
| Foot bracket  | FT          | → <b>A-29</b> | -              |
| Reversed-home | NM          | → <b>A-33</b> | -              |

| Description  |
|--|
| Ball screw ø8mm C10 grade                            |
| ±0.02mm  |
| 0.1 mm or less                                       |
| Double guide Guide rod diameter ø10mm Ball bush type |
| ø22mm  |
| ±0.05 deg  |
| 0 ~ 40°C, 85% RH or less (non-condensing)            |
|  |

See page A-39 for cables for maintenance.

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

For Special Orders

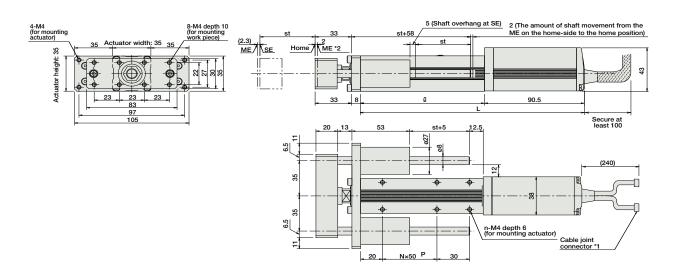






- \*1. The motor-encoder cable is connected here. See page A-39 for details on cables
- When homing, the rod moves to the M.E.; therefore, please watch for any interference with the surrounding objects. ME: Mechanical end

SE: Stroke end
The values enclosed in "( )" are reference dimensions.



## ■ Dimensions/Weight by Stroke

| _           |       |       | . ,   | -     |
|-------------|-------|-------|-------|-------|
| Stroke      | 50    | 100   | 150   | 200   |
| ٤           | 112.5 | 162.5 | 212.5 | 262.5 |
| L           | 203   | 253   | 303   | 353   |
| N           | 1     | 2     | 3     | 4     |
| n           | 6     | 8     | 10    | 12    |
| Weight (kg) | 1.1   | 1.3   | 1.4   | 1.6   |
|             |       |       |       |       |

#### ② Compatible Controllers

The RCP2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View | Model                 | Description  | Max. Positioning Points  | Input Voltage | Power Supply Capacity                      | Standard Price | See Page |   |  |
|--|---------------|-----------------------|--|--|---------------|--|----------------|----------|---|--|
| Solenoid Valve Type                                  |               | PMEC-C-28SPI-NP-2-①   | Easy-to-use controller, even for beginners   | use controller, even for beginners   |               | See P481                                   | -              | → P477   |   |  |
| Solelloid valve Type                                 |               | PSEP-C-28SPI-NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types.                             | 3 points   |               |  | -              | - → P487 |   |  |
| Splash-Proof Sole-<br>noid Valve Type                |               | PSEP-CW-28SPI-NP-2-0  | No homing necessary with simple absolute type.  C-28SPI-NP-2-0  Positioning is possible for up to 512 points  512 points |  |               |  | -              | → P407   |   |  |
| Positioner Type                                      |               | PCON-C-28SPI-NP-2-0   |  | e train input type with ntial line driver support e train input type with  (-) | As 510 milets | sitioning is possible for up to 512 points |                |          | - |  |
| Safety-Compliant<br>Positioner Type                  |               | PCON-CG-28SPI-NP-2-0  |  |  |               | DC24V 2A max.                              | -              |          |   |  |
| Pulse Train Input Type<br>(Differential Line Driver) | O)            | PCON-PL-28SPI-NP-2-0  | Pulse train input type with differential line driver support   |  | DC24V         |  | -              | → P525   |   |  |
| Pulse Train Input Type<br>(Open Collector)           |               | PCON-PO-28SPI-NP-2-0  | Pulse train input type with<br>open collector support  |  |               | -  |                |          |   |  |
| Serial Communica-<br>tion Type                       | Í             | PCON-SE-28SPI-N-0-0   | Dedicated to serial communication  | 64 points  |               |  | -              |          |   |  |
| Field Network Type                                   |               | RPCON-28SP            | Dedicated to field network   | 768 points   |               |  | -              | → P503   |   |  |
| Program Control<br>Type                              |               | PSEL-C-1-28SPI-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes  | 1500 points  |               |  | -              | → P557   |   |  |

\* This is for the single-axis PSEL. \* ① is a placeholder for the power supply voltage (1: 100V, or 2: 100 $\sim$ 240V).



RCP2-RGD3C

250 300

RCP2-RGD4C ROBO Cylinder Rod Type with Double Guide 45mm Width Pulse Motor Straight Type  $\blacksquare$  Configuration: RCP2 - RGD4C -**42P** Cable Length Encoder Compatible Contro Option N : None P : 1m S : 3m M : 5m B : Brake FT : Foot bracket NM: Reversed-home I: Incremental \* The Simple 42P: Pulse motor 10:10mm 50: 50mm P1: PCON 42 🗌 size 5 : 5mm **RPCON** absolute encoder PSEL 2.5 : 2.5mm 300: 300mm is also considered (50mm pitch P3: PMEC X .: Custom
R .: Robot cable increments) PSEP \* See page Pre-35 for an explanation of the naming convention.



(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

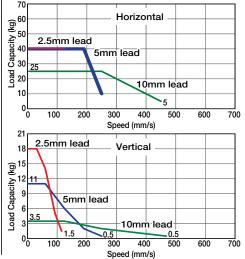
Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds.

Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported. The load capacity is based on operation at an acceleration of 0.2G.

0.2G is the upper limit of the acceleration. In addition, the horizontal load capacity is based on the use of an external guide. See the technical resources (page A-83) for the allowable weight using the supplied guide alone

#### ■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



#### Actuator Specifications ■ Lead and Load Capacity ■ Stroke and Maximum Speed (Note 1) Please note that the maximum load capacity decreases as the speed increases. Max. Load Capacity (Note 1) Maximum Push Stroke Horizontal (kg) Vertical (kg) orce (N)(Note RCP2-RGD4C-I-42P-10-① -② -③ -④ $\sim 3.5$ 10 ~ 25 150 $50 \sim 300$ RCP2-RGD4C-I-42P-5-①-②-③-④ 5 $\sim 40$ $\sim$ 11 284 (50mm incre ments) RCP2-RGD4C-I-42P-2.5-1 - 2 - 3 - 4 2.5 40 $\sim$ 18 358 Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options (Note 2) See page A-69 for the pushing force graphs.

| Stroke              | 50 ~ 200<br>(50mm increments) | 250<br>(mm)        | 300<br>(mm)      |  |
|---------------------|-------------------------------|--------------------|------------------|--|
| 10                  | 458                           | 458                | 350              |  |
| 5                   | 250                           | 237                | 175              |  |
| 2.5                 | 125<br><114>                  | 118<br><114>       | 87               |  |
| * The values enclos | sed in < > apply              | for vertical usage | ae. (Unit: mm/s) |  |

| 1) Stroke Lis | ot entremental entremental entremental entremental entremental entremental entremental entremental entremental |
|---------------|--|
| Stroke (mm)   | Standard Price   |
| 50            | -  |
| 100           | -  |
| 150           | -  |
| 200           | _  |

| 3 Cable List      |                           |                |  |  |  |  |
|-------------------|---------------------------|----------------|--|--|--|--|
| Туре              | Cable Symbol              | Standard Price |  |  |  |  |
|                   | <b>P</b> (1m)             | -              |  |  |  |  |
| Standard          | <b>S</b> (3m)             | -              |  |  |  |  |
|                   | <b>M</b> (5m)             | _              |  |  |  |  |
| Special Lengths   | X06 (6m) ~ X10 (10m)      | -              |  |  |  |  |
|                   | X11 (11m) ~ X15 (15m)     | -              |  |  |  |  |
|                   | X16 (16m) ~ X20 (20m)     | -              |  |  |  |  |
|                   | R01 (1m) ~ R03 (3m)       | _              |  |  |  |  |
|                   | R04 (4m) ~ R05 (5m)       | _              |  |  |  |  |
| Robot Cable       | R06 (6m) ~ R10 (10m)      | _              |  |  |  |  |
|                   | R11 (11m) ~ R15 (15m)     | -              |  |  |  |  |
|                   | R16 (16m) ~ R20 (20m)     | _              |  |  |  |  |
| * Coo pogo A 20 f | or cables for maintenance |                |  |  |  |  |

See page A-39 for cables for maintenance.

| Option List   |             |               |                |
|---------------|-------------|---------------|----------------|
| Name          | Option Code | See Page      | Standard Price |
| Brake         | В           | → A-25        | _              |
| Foot bracket  | FT          | → <b>A-29</b> | =              |
| Reversed-home | NM          | → <b>A-33</b> | _              |

| Description  |
|--|
| Ball screw ø8mm C10 grade                            |
| ±0.02mm  |
| 0.1mm or less  |
| Double guide Guide rod diameter ø10mm Ball bush type |
| ø22mm  |
| ±0.05 deg  |
| 0 ~ 40°C, 85% RH or less (non-condensing)            |
|  |

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

For Special Orders



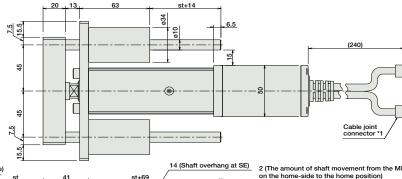


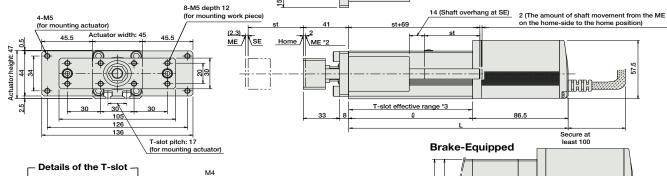
\*1. The motor-encoder cable is connected here. See page A-39 for details on cables.

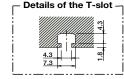
When homing, the rod moves to the M.E.; therefore, please watch for any interference with the surrounding objects. ME: Mechanical end

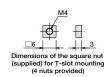
SE: Stroke end
The values enclosed in "( )" are reference dimensions.

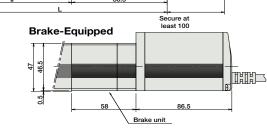
\*3. Please note that there is no T-slot on the bottom of the brake unit.











 $^{\star}$  Compared to the standard model, the brake-equipped model is longer by 58mm and heavier by 0.4kg.

#### ■ Dimensions/Weight by Stroke

| Stroke      | 50    | 100   | 150   | 200   | 250   | 300   |  |  |  |
|-------------|-------|-------|-------|-------|-------|-------|--|--|--|
| l           | 112.5 | 162.5 | 212.5 | 262.5 | 312.5 | 362.5 |  |  |  |
| L           | 199   | 249   | 299   | 349   | 399   | 449   |  |  |  |
| Weight (kg) | 2.2   | 2.5   | 2.8   | 3.1   | 3.4   | 3.7   |  |  |  |

## ② Compatible Controllers

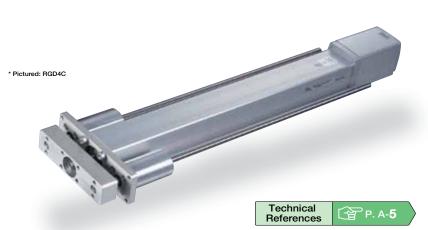
The RCP2 series actuators can operate with the controllers below. Select the controller according to your usage

| Name   | External View | Model                | Description   | Max. Positioning Points | Input Voltage    | Power Supply Capacity | Standard Price | See Page |       |
|--|---------------|----------------------|---|-------------------------|------------------|-----------------------|----------------|----------|-------|
| Solenoid Valve Type                                  |               | PMEC-C-42PI-NP-2-①   | Easy-to-use controller, even for beginners  |                         | AC100V<br>AC200V |                       | -              | → P477   |       |
| Sciencia valve type                                  | 1             | PSEP-C-42PI-NP-2-0   | Operable with same signal as solenoid valve.  Supports both single and double solenoid types. | 3 points                |                  | -                     |                | → P487   |       |
| Splash-Proof Solenoid<br>Valve Type                  | 1             | PSEP-CW-42PI-NP-2-0  | No homing necessary with simple absolute type.  | 512 points              |                  |                       |                | -        | 71407 |
| Positioner Type                                      | £             | PCON-C-42PI-NP-2-0   | Positioning is possible for up to 512 points 512 points                                       |                         |                  | -                     |                |          |       |
| Safety-Compliant<br>Positioner Type                  |               | PCON-CG-42PI-NP-2-0  | r containing to possible for up to 012 points   |                         | orz points       |                       | -              |          |       |
| Pulse Train Input Type<br>(Differential Line Driver) | e i           | PCON-PL-42PI-NP-2-0  | Pulse train input type with differential line driver support                                  | (-)                     | DC24V            | / 2A max.             | -              | → P525   |       |
| Pulse Train Input Type<br>(Open Collector)           |               | PCON-PO-42PI-NP-2-0  | Pulse train input type with<br>open collector support   |                         | ()               |                       |                | -        |       |
| Serial Communication<br>Type                         |               | PCON-SE-42PI-N-0-0   | Dedicated to serial communication   | 64 points               |                  |                       | -              |          |       |
| Field Network Type                                   | ELLE          | RPCON-42P            | Dedicated to field network  | 768 points              | 768 points       |                       | -              | → P503   |       |
| Program Control Type                                 |               | PSEL-C-1-42PI-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                     | 1500 points             |                  |                       | -              | → P557   |       |

\*This is for the single-axis PSEL.

\*① is a placeholder for the power supply voltage (1: 100V, or 2: 100~240V).

#### RCP2-RGD6C ROBO Cylinder Rod Type with Double Guide 64mm Width Pulse Motor Straight Type $\blacksquare$ Configuration: RCP2 - RGD6C -**56P** Encoder Stroke Compatible Controlle Cable Length Option N : None P : 1m S : 3m M : 5m B : Brake FT : Foot bracket NM: Reversed-home I: Incremental \* The Simple 56P: Pulse motor 16:16mm 50: 50mm P1: PCON 56 □ size 8:8mm **RPCON** absolute encoder PSEL 4:4 mm 300: 300mm is also considered (50mm pitch P3: PMEC X : Custom R : Robot cable increments) PSEP \* See page Pre-35 for an explanation of the naming convention.



(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds.

Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

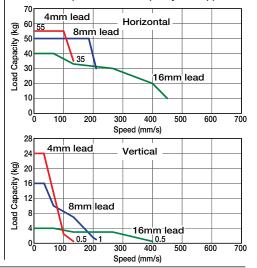
The load capacity is based on operation at an acceleration of 0.2G.

O.2G is the upper limit of the acceleration.

In addition, the horizontal load capacity is based on the use of an external guide. See the technical resources (page A-83) for the allowable weight using the supplied guide alone.

#### ■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



| Actuator Specifications                                   |                |                 |                 |                   |                                  |                       |   |
|---|----------------|-----------------|-----------------|-------------------|----------------------------------|-----------------------|---|
| ■ Lead and Load Capacity (Note 1) Please r                | ote that the m | naximum load o  | apacity decre   | ases as the sp    | eed increases.                   | ■ Stroke and          | d Maximum Speed                               |
| Model   | Lead           | Max. Load Ca    | pacity (Note 1) | Maximum Push      | Stroke                           | Stroke                | 50 ∼ 300                                      |
| Wiodei  | (mm)           | Horizontal (kg) | Vertical (kg)   | Force (N)(Note 2) | (mm)                             | Lead                  | (50mm increments)                             |
| RCP2-RGD6C-I-56P-16-①-②-③-④                               | 16             | ~ 40            | ~ 4             | 240               | 50 000                           | 16                    | 450 <400>                                     |
| RCP2-RGD6C-I-56P-8-①-②-③-④                                | 8              | ~ 50            | ~ 16            | 470               | 50 ~ 300<br>(50mm<br>increments) | 8                     | 210   |
| RCP2-RGD6C-I-56P-4-①-②-③-④                                | 4              | ~ 55            | ~ 24            | 800               | c.c.nenta)                       | 4                     | 130   |
| Legend: 1 Stroke 2 Compatible controller 3 Cable length 4 | Options        | (Note 2) S      | See page A-69   | for the pushing   | force graphs.                    | * The values enclosed | in < > apply for vertical usage. (Unit: mm/s) |

| ① Stroke List |                |  |  |  |  |  |
|---------------|----------------|--|--|--|--|--|
| Stroke (mm)   | Standard Price |  |  |  |  |  |
| 50            | -              |  |  |  |  |  |
| 100           | -              |  |  |  |  |  |
| 150           | -              |  |  |  |  |  |
| 200           | -              |  |  |  |  |  |
| 250           | -              |  |  |  |  |  |
| 300           | -              |  |  |  |  |  |

| ③ Cable List    |                       |                |  |  |  |  |
|-----------------|-----------------------|----------------|--|--|--|--|
| Туре            | Cable Symbol          | Standard Price |  |  |  |  |
|                 | P (1m)                | _              |  |  |  |  |
| Standard        | <b>S</b> (3m)         | -              |  |  |  |  |
|                 | <b>M</b> (5m)         | -              |  |  |  |  |
|                 | X06 (6m) ~ X10 (10m)  | -              |  |  |  |  |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |  |  |  |  |
|                 | X16 (16m) ~ X20 (20m) | -              |  |  |  |  |
|                 | R01 (1m) ~ R03 (3m)   | -              |  |  |  |  |
|                 | R04 (4m) ~ R05 (5m)   | -              |  |  |  |  |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |  |  |  |  |
|                 | R11 (11m) ~ R15 (15m) | _              |  |  |  |  |
|                 | R16 (16m) ~ R20 (20m) | _              |  |  |  |  |

<sup>\*</sup> See page A-39 for cables for maintenance.

| 4 Option List |             |               |                |
|---------------|-------------|---------------|----------------|
| Name          | Option Code | See Page      | Standard Price |
| Brake         | В           | → A-25        | _              |
| Foot bracket  | FT          | → A-29        | -              |
| Reversed-home | NM          | → <b>A-33</b> | _              |

| Item                             | Description  |
|----------------------------------|--|
| Drive System                     | Ball screw ø12mm C10 grade                           |
| Positioning Repeatability        | ±0.02mm  |
| Lost Motion                      | 0.1mm or less  |
| Guide                            | Double guide Guide rod diameter ø12mm Ball bush type |
| Rod Diameter                     | ø22mm  |
| Non-rotating accuracy of rod     | ±0.05 deg  |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing)            |

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

For Special Orders



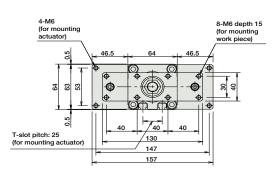


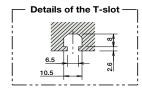
**3D** CAD

- \*1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- \*2 When homing, the rod moves to the M.E.; therefore, please watch for any interference with the surrounding objects. ME: Mechanical end

The values enclosed in "( )" are reference dimensions.

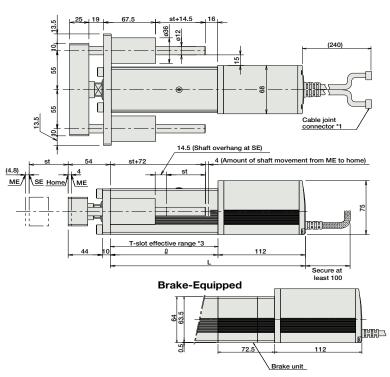
\*3. Please note that there is no T-slot on the bottom of the brake unit.







Dimensions of the square nut (supplied) for T-slot mounting (4 nuts provided)



 $^{\star}$  Compared to the standard model, the brake-equipped model is longer by 72.5mm and heavier by 0.9kg.

#### ■ Dimensions/Weight by Stroke

| Stroke      | 50  | 100 | 150 | 200 | 250 | 300 |  |  |  |  |  |
|-------------|-----|-----|-----|-----|-----|-----|--|--|--|--|--|
| ٤           | 138 | 188 | 238 | 288 | 338 | 388 |  |  |  |  |  |
| L           | 250 | 300 | 350 | 400 | 450 | 500 |  |  |  |  |  |
| Weight (kg) | 4.4 | 5.0 | 5.5 | 6.1 | 6.7 | 7.3 |  |  |  |  |  |

## ② Compatible Controllers

The RCP2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View | Model                | Description  | Max. Positioning Points | Input Voltage    | Power Supply Capacity | Standard Price | See Page |
|--|---------------|----------------------|--|-------------------------|------------------|-----------------------|----------------|----------|
| Solenoid Valve Type                                  | 1             | PMEC-C-56PI-NP-2-①   | Easy-to-use controller, even for beginners   |                         | AC100V<br>AC200V | See P481              | -              | → P477   |
| Solehold valve Type                                  |               | PSEP-C-56PI-NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |                  |                       | -              | - → P487 |
| Splash-Proof Solenoid<br>Valve Type                  |               | PSEP-CW-56PI-NP-2-0  | No homing necessary with simple absolute type.   |                         |                  |                       | -              | → P407   |
| Positioner Type                                      | E             | PCON-C-56PI-NP-2-0   | Positioning is possible for up to 512 points   | 512 points              |                  |                       | -              |          |
| Safety-Compliant<br>Positioner Type                  |               | PCON-CG-56PI-NP-2-0  | Toshlorning is possible for up to 312 points   | 512 points              |                  |                       | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) |               | PCON-PL-56PI-NP-2-0  | Pulse train input type with differential line driver support                                 | (-)                     | DC24V            | 2A max.               | -              | → P525   |
| Pulse Train Input Type<br>(Open Collector)           |               | PCON-PO-56PI-NP-2-0  | Pulse train input type with<br>open collector support  | (-)                     |                  |                       | -              |          |
| Serial Communication<br>Type                         | 1             | PCON-SE-56PI-N-0-0   | Dedicated to serial communication  | 64 points               |                  |                       | -              |          |
| Field Network Type                                   |               | RPCON-56P            | Dedicated to field network   | 768 points              |                  |                       | -              | → P503   |
| Program Control Type                                 |               | PSEL-C-1-56PI-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |                  |                       | -              | → P557   |

\* This is for the single-axis PSEL. \* 1 is a placeholder for the power supply voltage (1: 100V, or 2: 100 $\sim$ 240V).

\* See page Pre-35 for an explanation of the naming convention.

#### CP2-SRGD4R ROBO Cylinder Short-Length Rod Type with Double Guide 45mm Width Pulse Motor Side-Mounted Motor ■ Configuration: RCP2 —SRGD4R — 35P Encoder Compatible Controlle Cable Length Option N : None P : 1m S : 3m M : 5m I: Incremental \* The Simple 35P: Pulse motor 5 : 5mm 20: 20mm P1: PCON See Options below 35 □ size 2.5 : 2.5mm **RPCON** absolute encoder 200: 200mm **PSEL** is also considered (10mm pitch increments) P3: PMEC X 🗆 🗆 : Custom \* Set in 50mm increments PSEP



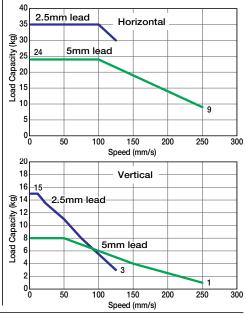
(1) Since the RCP2 series use a pulse motor, the load capacity decrea ses at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2.5mm-lead model, or when used vertically).
This is the upper limit of the acceleration.

The horizontal load capacity is based on the use of an external guide. See the technical resources (page A-83) for the allowable weight using the supplied guide alone.

#### ■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



#### Actuator Specifications ■ Lead and Load Capacity ■ Stroke and Maximum Speed Max. Load Capacity (Note 1) Maximum Push Stroke 20 ~ 200 Lead Stroke (10mm increments Horizontal (kg) Vertical (kg) Force (N)(Note 2 (mm) 20~200 RCP2-SRGD4R-I-35P-5-1 - 2 - 3 - 4 5 $\sim$ 24 ~ 8 90 5 (10mm RCP2-SRGD4R-I-35P-2.5- 1 - 2 - 3 - 4 170 (Note 2) See page A-69 for the pushing force graphs. (Note 3) 50mm increments over 100mm. Legend: Tstroke Compatible controller Cable length Options

| ① Stroke Lis | ① Stroke List  |  |  |  |  |  |  |  |
|--------------|----------------|--|--|--|--|--|--|--|
| Stroke (mm)  | Standard Price |  |  |  |  |  |  |  |
| 20~50        | -              |  |  |  |  |  |  |  |
| 60~100       | -              |  |  |  |  |  |  |  |
| 150          | -              |  |  |  |  |  |  |  |
| 200          | -              |  |  |  |  |  |  |  |

| Stroke (mm) | Standard Price |
|-------------|----------------|
| 20~50       | -              |
| 60~100      | -              |
| 150         | -              |
| 200         | -              |

| 3 Cable Lis     | ι                     |                |
|-----------------|-----------------------|----------------|
| Туре            | Cable Symbol          | Standard Price |
| Standard        | P (1m)                | -              |
|                 | <b>S</b> (3m)         | -              |
| (Robot Cables)  | <b>M</b> (5m)         | _              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | _              |
|                 | X16 (16m) ~ X20 (20m) | -              |

250

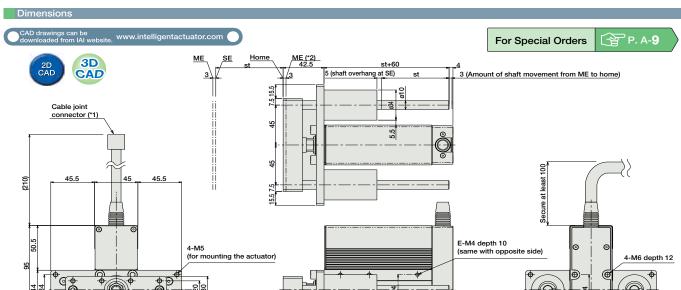
(Unit: mm/s)

- The cable is a motor-encoder integrated cable, and is provided as a robot cable.
- \* See page A-39 for cables for maintenance.

| ④ Option List                  |             |          |                |
|--------------------------------|-------------|----------|----------------|
| Name                           | Option Code | See Page | Standard Price |
| Brake                          | В           | → A-25   | -              |
| Foot bracket 1 (base mounting) | FT          | → A-29   | -              |
| Reversed-home                  | NM          | → A-33   | -              |
|                                |             |          |                |

- \* The brake can be used for strokes of 70mm or more.
- \* The foot bracket cannot be mounted on the side.

| Description   |
|---|
| Ball screw ø8mm C10 grade                                   |
| ±0.02mm   |
| 0.1mm or less   |
| ø22mm   |
| ±0.05 deg   |
| $0\sim40^{\circ}\text{C}$ , 85% RH or less (non-condensing) |
|   |



20

\* The exterior dimensions for the brake-equipped model is no different than the standard model.

However, 70mm is the minimum stroke of the brake-equipped models. (i.e. The brake is not compatible at 60mm strokes and under.)

E-M4 depth 10 D×50

15

ST : Stroke SE : Stroke end ME : Mechanical end

- (\*1) The motor-encoder cable is connected here. See page A-39 for details on cables
- (\*2) When ho therefore objects.

| ■ Dimensions/Weight by Stroke |       |       |       |       |       | g with b | rake) |       |       |       |       |
|-------------------------------|-------|-------|-------|-------|-------|----------|-------|-------|-------|-------|-------|
| Stroke                        | 20    | 30    | 40    | 50    | 60    | 70       | 80    | 90    | 100   | 150   | 200   |
| L                             | 126.5 | 136.5 | 146.5 | 156.5 | 166.5 | 176.5    | 186.5 | 196.5 | 206.5 | 256.5 | 306.5 |
| Α                             | 84    | 94    | 104   | 114   | 124   | 134      | 144   | 154   | 164   | 214   | 264   |
| В                             | 62    | 72    | 82    | 92    | 102   | 112      | 122   | 132   | 142   | 192   | 242   |
| C                             | 30    | 40    | 50    | 60    | 70    | 30       | 40    | 50    | 60    | 60    | 60    |

| noming, the rod moves to the mechanical end position;      | Α           | 84   | 94   | 104  | 114 | 124  | 134  | 144  | 154  | 164  | 214  | 264  |
|--|-------------|------|------|------|-----|------|------|------|------|------|------|------|
| •  | В           | 62   | 72   | 82   | 92  | 102  | 112  | 122  | 132  | 142  | 192  | 242  |
| re, please watch for any interference with the surrounding | С           | 30   | 40   | 50   | 60  | 70   | 30   | 40   | 50   | 60   | 60   | 60   |
| •  | D           | 0    | 0    | 0    | 0   | 0    | 1    | 1    | 1    | 1    | 2    | 3    |
|  | E           | 4    | 4    | 4    | 4   | 4    | 6    | 6    | 6    | 6    | 8    | 10   |
|  | Weight (kg) | 1.47 | 1.55 | 1.62 | 1.7 | 1.77 | 1.84 | 1.92 | 1.99 | 2.07 | 2.44 | 2.81 |
|  |             |      | •    |      |     |      |      |      |      |      |      |      |
|  |             |      |      |      |     |      |      |      |      |      |      |      |

## ② Compatible Controllers

The RCP2 series actuators can operate with the controllers below. Select the controller according to your usage.

8-M5 depth 12

(for mounting work piece)

| Name   | External View | Model                | Description  | Max. Positioning Points | Input Voltage    | Power Supply Capacity | Standard Price | See Page |
|--|---------------|----------------------|--|-------------------------|------------------|-----------------------|----------------|----------|
| Solenoid Valve Type                                  | 110           | PMEC-C-35PI-NP-2-①   | Easy-to-use controller, even for beginners   |                         | AC100V<br>AC200V | See P481              | -              | → P477   |
| Solelloid valve type                                 | 1             | PSEP-C-35PI-NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |                  |                       | -              | → P487   |
| Splash-Proof<br>Solenoid Valve Type                  | I             | PSEP-CW-35PI-NP-2-0  | No homing necessary with simple absolute type.   |                         |                  |                       | -              | 7 1407   |
| Positioner Type                                      | E             | PCON-C-35PI-NP-2-0   | Positioning is possible for up to 512  | 512 points              |                  |                       | -              |          |
| Safety-Compliant<br>Positioner Type                  |               | PCON-CG-35PI-NP-2-0  | points   |                         |                  |                       | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) | ei e          | PCON-PL-35PI-NP-2-0  | Pulse train input type with differential line driver support                                 | ()                      | DC24V            | 2A max.               | -              | → P525   |
| Pulse Train Input Type<br>(Open Collector)           |               | PCON-PO-35PI-NP-2-0  | Pulse train input type with<br>open collector support  | (-)                     |                  |                       | -              |          |
| Serial Communication<br>Type                         | 1             | PCON-SE-35PI-N-0-0   | Dedicated to serial communication  | 64 points               |                  |                       | -              |          |
| Field Network Type                                   |               | RPCON-35P            | Dedicated to field network   | 768 points              |                  |                       | -              | → P503   |
| Program Control Type                                 |               | PSEL-C-1-35PI-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |                  |                       | -              | → P557   |

\* This is for the single-axis PSEL. \*  $\odot$  is a placeholder for the power supply voltage (1: 100V, or 2: 100 $\sim$ 240V).

## ERC2-RA6C

\* See page Pre-35 for an explanation of the naming convention.

Controller-Integrated Rod Type 58mm Width Pulse Motor Straight Type

■ Configuration: ERC2 — RA6C

Туре

Encoder Motor I: Incremental PM: Pulse motor

**PM** 

12:12mm 6:6mm 3:3mm

50: 50mm 300: 300mm (50mm pitch increments)

NP:PIO (NPN) type PN:PIO (PNP) type

I/O Type SE : SIO type

Cable Length N:None P:1m S:3m M:5m FT:F

X : Custom NM:F

W : Double-ended cable

B : Brake FT : Foot bracket NM: Reversed-home R : Robot cable
RW : Double-ended Robot cable

Option

Speed vs. Load Capacity Due to the characteristics of the pulse motor, the ERC2 series' load capacity decreases at high speeds. In the table below, check if your



Technical References

P. A-**5** 



- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational Use the actuator specification table below to check the maximum speed at the stroke you desire
- Since the ERC2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.
- The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically). This is the upper limit of the acceleration.
- (4) The value for the horizontal load capacity is with an external guide.

|  | desire             | a spece | a ana  |         |        | are ear | port |          |
|--|--------------------|---------|--------|---------|--------|---------|------|----------|
| 70   |                    |         |        |         | 1      |         |      | _        |
| <del>≘</del> 60  |                    |         |        | Horizo  | ntal _ |         |      | _        |
| \$ 2   |                    |         |        | I       | 1      |         |      |          |
| 흕행   | 3mn                | n lead  | 6mm    | lead    |        |         |      |          |
| ğ 40   |                    |         |        |         |        |         |      | $\dashv$ |
| స్త 30   | 25 12r             | nm lea  | d      |         |        |         |      | $\dashv$ |
| ğ 20   |                    |         |        |         |        |         |      | _        |
| 10   |                    |         | 1      |         |        |         |      |          |
|  |                    |         |        |         |        |         | 2.5  |          |
| 0  | 0 10               | 0 20    | 0 30   | 0 40    | 0 50   | 00 60   | 00   | 700      |
|  |                    |         | Spe    | ed (mr  | n/e)   |         |      |          |
|  |                    |         | -      |         | 11/3/  |         |      |          |
| 35   |                    |         |        | · •     | ,      |         |      | $\neg$   |
| 30   |                    |         |        | Vertica | ,      |         |      |          |
| 30   |                    |         |        | · •     | ,      |         |      |          |
| 30   |                    | m-lead  |        | · •     | ,      |         |      |          |
| 30   |                    | m-lead  |        | · •     | ,      |         |      |          |
| 30   |                    |         |        | · •     | ,      |         |      |          |
| 30   |                    |         |        | · •     | ,      |         |      |          |
| 30   |                    | 6mm     |        | Vertica | al ——  |         |      |          |
| Load Capacity (kg) 05 10 10 5 10 5 10 5 10 5 10 5 10 10 10 10 10 10 10 10 10 10 10 10 10 | 18·3m<br>12<br>4.5 | 6mm     | ı lead | Vertica | al     |         | 0.5  |          |
| 30   | 18·3m<br>12<br>4.5 | 6mm     | n lead | Vertica | m-lead |         | 0.5  | 700      |

300

500

250

125 (Unit: mm/s)

| Actuator Specifications   |              |                                 |       |                                   |                                |                |                                 |          |
|---|--------------|---------------------------------|-------|-----------------------------------|--------------------------------|----------------|---------------------------------|----------|
| Lead and Load Capacity (Note 1) Please note that the maximum load capacity decreases as the speed increases.   Stroke and Maximum Speed |              |                                 |       |                                   |                                |                |                                 |          |
| Model   | Lead<br>(mm) | Max. Load Ca<br>Horizontal (kg) | , , , | Maximum Push<br>Force (N)(Note 2) | 000                            | Stroke<br>Lead | $50 \sim 250$ (50mm increments) | 30<br>(m |
| ERC2-RA6C-I-PM-12-①-②-③-④   | 12           | ~ 25                            | ~ 4.5 | 78                                |                                | 12             | 600                             | 50       |
| ERC2-RA6C-I-PM-6-①-②-③-④  | 6            | ~ 40                            | ~12   | 157                               | 50~300<br>(50mm<br>increments) | 6              | 300                             | 25       |
| ERC2-RA6C-I-PM-3-①-②-③-④  | 3            | 40                              | ~ 18  | 304                               | morements                      | 3              | 150                             | 12       |
| Legend 1 Stroke 2 1/O Type 1 Cable length 4 Options (Note 2) See page A-64 for the pushing force graphs. (U                             |              |                                 |       |                                   |                                |                | (Ur                             |          |

| ① Stroke List |                |  |  |  |  |
|---------------|----------------|--|--|--|--|
| Stroke (mm)   | Standard Price |  |  |  |  |
| 50            | -              |  |  |  |  |
| 100           | -              |  |  |  |  |
| 150           | -              |  |  |  |  |
| 200           | -              |  |  |  |  |
| 250           | -              |  |  |  |  |
| 300           | -              |  |  |  |  |

| ③ Cable List    |                       |                |  |  |  |  |
|-----------------|-----------------------|----------------|--|--|--|--|
| Туре            | Cable Symbol          | Standard Price |  |  |  |  |
|                 | P (1m)                | _              |  |  |  |  |
| Standard        | <b>S</b> (3m)         | _              |  |  |  |  |
|                 | <b>M</b> (5m)         | _              |  |  |  |  |
| Special Lengths | X06 (6m) ~ X10 (10m)  | _              |  |  |  |  |
|                 | W01 (1m) ~ W03 (3m)   | _              |  |  |  |  |
| Double-Ended    | W04 (4m) ~ W05 (5m)   | -              |  |  |  |  |
|                 | W06 (6m) ~ W10 (10m)  | _              |  |  |  |  |
|                 | R01 (1m) ~ R03 (3m)   | -              |  |  |  |  |
| Robot Cable     | R04 (4m) ~ R05 (5m)   | _              |  |  |  |  |
|                 | R06 (6m) ~ R10 (10m)  | -              |  |  |  |  |
| Double-Ended    | RW01 (1m)~ RW03 (3m)  | _              |  |  |  |  |
|                 | RW04 (4m)~ RW05 (5m)  | -              |  |  |  |  |
| Robot Cable     | RW06 (6m)~ RW10 (10m) | _              |  |  |  |  |

The values in < > apply to the SE type.

\* See page A-39 for cables for maintenance.

| 4 Option List |             |          |                |
|---------------|-------------|----------|----------------|
| Name          | Option Code | See Page | Standard Price |
| Brake         | В           | → A-25   | -              |
| Foot bracket  | FT          | → A-29   | -              |
| Reversed-home | NM          | → A-33   | _              |

|        |      | Page | • • |     |    | _ |
|--------|------|------|-----|-----|----|---|
| Actuat | or S | neci | fic | ati | on | s |

| Hotaator opcombations            |   |
|----------------------------------|---|
|                                  |   |
| Item                             | Description   |
| Drive System                     | Ball screw ø10mm C10 grade                            |
| Positioning Repeatability        | ±0.02mm   |
| Lost Motion                      | 0.1mm or less   |
| Rod Diameter                     | ø22mm special SUS type                                |
| Non-rotating accuracy of rod     | ±1.5 deg  |
| Ambient Operating Temp /Humidity | $0 \sim 40^{\circ}$ C 85% BH or less (non-condensing) |

For Special Orders

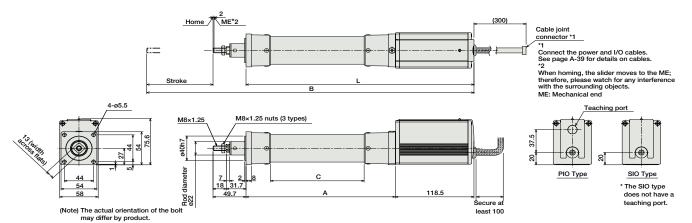






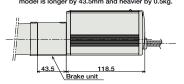
Note:

Do not apply any external force on the rod from any direction other than the direction of the rod's motion. If a force is exerted on the rod in a perpendicular or rotational direction, the detent may become damaged.



#### **Brake Specifications Diagram**

\* Compared to the standard model, the brake-equipped model is longer by 43.5mm and heavier by 0.5kg.



#### ■ Dimensions/Weight by Stroke

| Stroke      | 50    | 100   | 150   | 200   | 250   | 300   |
|-------------|-------|-------|-------|-------|-------|-------|
| L           | 293.5 | 343.5 | 393.5 | 443.5 | 493.5 | 543.5 |
| Α           | 175   | 225   | 275   | 325   | 375   | 425   |
| В           | 393.2 | 493.2 | 593.2 | 693.2 | 793.2 | 893.2 |
| С           | 91    | 141   | 191   | 241   | 291   | 341   |
| Weight (kg) | 1.6   | 1.7   | 1.8   | 2.0   | 2.1   | 2.2   |
|             |       |       |       |       |       |       |

## I/O Type (Built-In Controller)

② I/O Type

The integrated controller in the ERC2 series can be selected from the following 3 types based on the type of external input and output (I/O). Select the controller according to your applications.

| Name           | External View | Model            | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity | Standard Price | See Page |
|----------------|---------------|------------------|--|-------------------------|---------------|-----------------------|----------------|----------|
| PIO Type (NPN) |               | ERC2-RA6C-I-PM   | Easy to control,<br>capable of<br>positioning up to<br>16 points | 16                      |               |                       |                |          |
| PIO Type (PNP) |               | ERC2-RA6C-I-PMPN | Supports the PNP I/O, commonly used overseas.                    | 16                      | DC24V         | 2A max.               | -              | → P515   |
| SIO Type       |               | ERC2-RA6C-I-PMSE | For connecting to<br>a field network<br>(gateway unit<br>used)   | 64                      |               |                       |                |          |

Slider Type

Standard

ontrollers ntegrated

> Ro Typ

Min

controllers ntegrated

> Table/Arn /Flat Typ

Standard

inear Servo

Cleanroom Type

Spiash Proof

PMFC

PSEP /ASEP

PCON

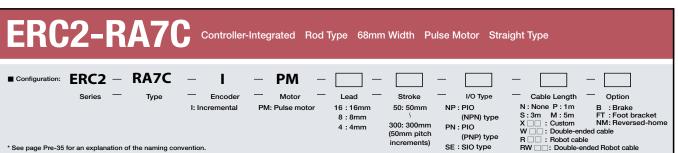
SCON

ASEI

Servo Moto (24V

Servo Motor (200V)

> Linear ervo Motor





(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed.

Use the actuator specification table below to check the maximum speed at the stroke you desire.

(2) Since the ERC2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity

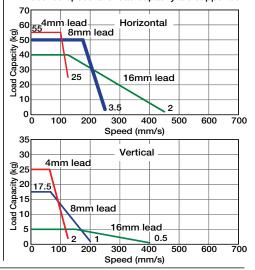
graph to see if your desired speed and load capacity are supported.

The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 4mm-lead model, or when used vertically).

(4) The value for the horizontal load capacity is with an external guide.

#### ■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the ERC2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



| Actuator Specifications   |              |                 |               |                   |                                |        |   |
|---|--------------|-----------------|---------------|-------------------|--------------------------------|--------|---|
| ■ Lead and Load Capacity (Note 1) Please  | ■ Stroke and | d Maximum Speed |               |                   |                                |        |   |
| Model   |              |                 | , ,           | Maximum Push      | 000                            | Stroke | 50~300  |
|   |              | Horizontal (kg) | Vertical (kg) | Force (N)(Note 2) | (mm)                           | Lead   | (50mm increments)                             |
| ERC2-RA7C-I-PM-16-①-②-③-④   | 16           | ~ 40            | ~ 5           | 220               |                                | 16     | 450 <400>                                     |
| ERC2-RA7C-I-PM-8-①-②-③-④  | 8            | ~ 50            | ∼ <b>17.5</b> | 441               | 50~300<br>(50mm<br>increments) | 8      | 250 <200>                                     |
| ERC2-RA7C-I-PM-4-①-②-③-④  | 4            | ~ 55            | ~ 25          | 873               |                                | 4      | 125   |
| egend 1 Stroke 2 1/O Type 3 Cable length 4 Options (Note 2) See page A-64 for the pushing force graphs. *The values enclosed in < > apply for vertical usage. (Unit: mr |              |                 |               |                   |                                |        | in < > apply for vertical usage. (Unit: mm/s) |

| ① Stroke List |                |  |  |  |  |
|---------------|----------------|--|--|--|--|
| Stroke (mm)   | Standard Price |  |  |  |  |
| 50            | -              |  |  |  |  |
| 100           | -              |  |  |  |  |
| 150           | -              |  |  |  |  |
| 200           | -              |  |  |  |  |
| 250           | -              |  |  |  |  |
| 300           | -              |  |  |  |  |

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
|                 | P (1m)                | -              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | _              |
| Special Lengths | X06 (6m) ~ X10 (10m)  | -              |
|                 | W01 (1m) ~ W03 (3m)   | -              |
| Double-Ended    | W04 (4m) ~ W05 (5m)   | _              |
|                 | W06 (6m) ~ W10 (10m)  | _              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
| Robot Cable     | R04 (4m) ~ R05 (5m)   | -              |
|                 | R06 (6m) ~ R10 (10m)  | -              |
| Double-Ended    | RW01 (1m)~ RW03 (3m)  | _              |
|                 | RW04 (4m)~ RW05 (5m)  | -              |
| Robot Cable     | RW06 (6m)~ RW10 (10m) | -              |

The values in < > apply to the SE type.

\* See page A-39 for cables for maintenance.

③ Cable List

| 4 Option List |             |               |                |
|---------------|-------------|---------------|----------------|
| Name          | Option Code | See Page      | Standard Price |
| Brake         | В           | → A-25        | -              |
| Foot bracket  | FT          | → A-29        | -              |
| Reversed-home | NM          | → <b>A-33</b> | -              |

| Item                             | Description                               |
|----------------------------------|---|
| Drive System                     | Ball screw ø12mm C10 grade                |
| Positioning Repeatability        | ±0.02mm                                   |
| Lost Motion                      | 0.1mm or less                             |
| Rod Diameter                     | ø30mm special SUS type                    |
| Non-rotating accuracy of rod     | ±1.5 deg                                  |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing) |

For Special Orders

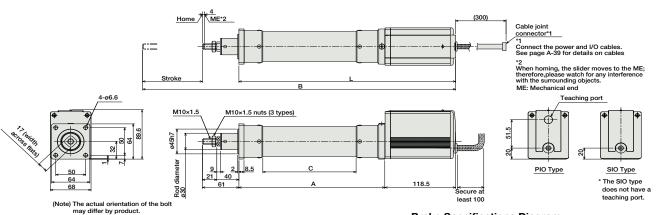






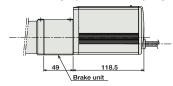
Note:

Do not apply any external force on the rod from any direction other than the direction of the rod's motion. If a force is exerted on the rod in a perpendicular or rotational direction, the detent may become damaged.



#### **Brake Specifications Diagram**

\* Compared to the standard model, the brake-equipped model is longer by 49mm and heavier by 0.5kg.



#### ■ Dimensions/Weight by Stroke

|             |       |       |       |       | -     |       |
|-------------|-------|-------|-------|-------|-------|-------|
| Stroke      | 50    | 100   | 150   | 200   | 250   | 300   |
| L           | 312.5 | 362.5 | 412.5 | 462.5 | 512.5 | 562.5 |
| Α           | 194   | 244   | 294   | 344   | 394   | 444   |
| В           | 423.5 | 523.5 | 623.5 | 723.5 | 823.5 | 923.5 |
| С           | 106   | 156   | 206   | 256   | 306   | 356   |
| Weight (kg) | 2.7   | 2.9   | 3.0   | 3.2   | 3.3   | 3.5   |
|             |       |       |       |       |       |       |

## I/O Type (Built-In Controller)

② I/O Type

The integrated controller in the ERC2 series can be selected from the following 3 types based on the type of external input and output (I/O). Select the controller according to your applications.

| Name           | External View | Model            | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity | Standard Price | See Page |
|----------------|---------------|------------------|--|-------------------------|---------------|-----------------------|----------------|----------|
| PIO Type (NPN) |               | ERC2-RA7C-I-PM   | Easy to control,<br>capable of<br>positioning up to<br>16 points | 16                      |               |                       |                |          |
| PIO Type (PNP) |               | ERC2-RA7C-I-PMPN | Supports the PNP I/O, commonly used overseas.                    | 16                      | DC24V         | 2A max.               | -              | → P515   |
| SIO Type       |               | ERC2-RA7C-I-PMSE | For connecting to<br>a field network<br>(gateway unit<br>used)   | 64                      |               |                       |                |          |

ERC2-RGS6C Controller-Integrated Rod Type with Single Guide 58mm Width Pulse Motor Straight Type

■ Configuration: ERC2 — RGS6C —

\* See page Pre-35 for an explanation of the naming convention.

Encoder I: Incremental

**PM** Motor PM: Pulse motor

12:12mm 6:6mm

3:3mm

50: 50mm 300: 300mm (50mm pitch

NP:PIO (NPN) type PN:PIO (PNP) type

I/O Type SE : SIO type

Cable Length N: None P:1m M : 5m : Custom X : Custom NM: F W : Double-ended cable

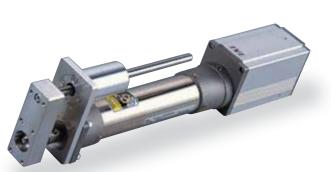
Option B : Brake FT : Foot bracket NM: Reversed-home

> 300 500

250

125 (Unit: mm/s)

RW : Double-ended Robot cable



Technical

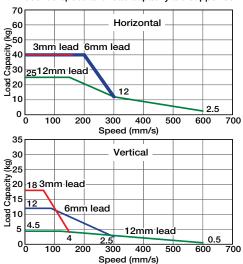
译 P. A-**5** 

- When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
- Since the ERC2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

  In doing so, use the load capacity values without the weight of the guide (see right of page).
- The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically). This is the upper limit of the acceleration
- (4) The value for the horizontal load capacity is with an external guide.

### ■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the ERC2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



|   | Actuator Specifications   |      |                 |                 |                   |                                |        |                   |    |  |  |
|---|---|------|-----------------|-----------------|-------------------|--------------------------------|--------|-------------------|----|--|--|
| ■ Lead and Load Capacity (Note 1) Please note that the maximum load capacity decreases as the speed increases. ■ Stroke and Maximum Spe |   |      |                 |                 |                   |                                |        |                   |    |  |  |
|   | Model   | Lead | Max. Load Ca    | pacity (Note 1) | Maximum Push      | Stroke                         | Stroke | 50~250            | 30 |  |  |
|   | модеі   |      | Horizontal (kg) | Vertical (kg)   | Force (N)(Note 2) | (mm)                           | Lead   | (50mm increments) | (m |  |  |
|   | ERC2-RGS6C-I-PM-12-1 - 2 - 3 - 4  | 12   | ~ 25            | ~ 4.5           | 78                |                                | 12     | 600               | 50 |  |  |
|   | ERC2-RGS6C-I-PM-6-①-②-③-④   | 6    | ~ 40            | ~ 12            | 157               | 50~300<br>(50mm<br>increments) | 6      | 300               | 25 |  |  |
|   | ERC2-RGS6C-I-PM-3-①-②-③-④   | 3    | 40              | ~ 18            | 304               | c.c.nenta)                     | 3      | 150               | 12 |  |  |
|   | Legend (Stroke (Vinder 2) Stroke (Vinder 2) See page A-64 for the pushing force graphs. (Un |      |                 |                 |                   |                                |        |                   |    |  |  |

| ① Stroke List |                |  |  |  |  |  |  |
|---------------|----------------|--|--|--|--|--|--|
| Stroke (mm)   | Standard Price |  |  |  |  |  |  |
| 50            | -              |  |  |  |  |  |  |
| 100           | -              |  |  |  |  |  |  |
| 150           | -              |  |  |  |  |  |  |
| 200           | -              |  |  |  |  |  |  |
| 250           | -              |  |  |  |  |  |  |
| 300           | =              |  |  |  |  |  |  |

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
|                 | P (1m)                | -              |
| Standard        | <b>S</b> (3m)         | _              |
|                 | <b>M</b> (5m)         | _              |
| Special Lengths | X06 (6m) ~ X10 (10m)  | -              |
| Double-Ended    | W01 (1m) ~ W03 (3m)   | _              |
|                 | W04 (4m) ~ W05 (5m)   | _              |
|                 | W06 (6m) ~ W10 (10m)  | -              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
| Robot Cable     | R04 (4m) ~ R05 (5m)   | -              |
|                 | R06 (6m) ~ R10 (10m)  | -              |
| Double-Ended    | RW01 (1m)~ RW03 (3m)  | -              |
|                 | RW04 (4m)~ RW05 (5m)  | -              |
| Robot Cable     | RW06 (6m)~ RW10 (10m) | _              |

The values in < > apply to the SE type.

\* See page A-39 for cables for maintenance.

③ Cable List

| 4 Option List |             |          |                |
|---------------|-------------|----------|----------------|
| Name          | Option Code | See Page | Standard Price |
| Brake         | В           | → A-25   | -              |
| Foot bracket  | FT          | → A-29   | -              |
| Reversed-home | NM          | → A-33   | -              |
|               |             |          |                |

| Actuator Specifications          |   |
|----------------------------------|---|
| Item                             | Description                               |
| Drive System                     | Ball screw ø10mm C10 grade                |
| Positioning Repeatability        | ±0.02mm                                   |
| Lost Motion                      | 0.1mm or less                             |
| Rod Diameter                     | ø22mm special SUS type                    |
| Non-rotating accuracy of rod     | ±0.05 deg                                 |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing) |

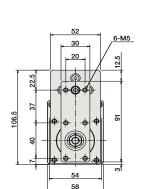
CAD drawings can be downloaded from IAI website. www.intelligentactuator.com

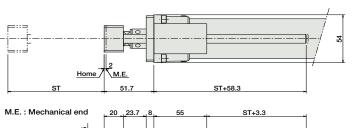
For Special Orders

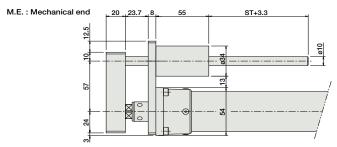












\* See page 166 for the dimensions of the actuator.

#### ■ Dimensions/Weight by Stroke

| Stroke                       | 50  | 100 | 150 | 200 | 250 | 300 |
|------------------------------|-----|-----|-----|-----|-----|-----|
| Guide weight (kg)            | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.4 |
| Guide + actuator weight (kg) | 1.8 | 1.9 | 2.1 | 2.3 | 2.4 | 2.6 |

## I/O Type (Built-In Controller)

#### ② I/O Type

The integrated controller in the ERC2 series can be selected from the following 3 types based on the type of external input and output (I/O). Select the controller according to your applications.

| Name           | External View | Model             | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity | Standard Price | See Page |
|----------------|---------------|-------------------|--|-------------------------|---------------|-----------------------|----------------|----------|
| PIO Type (NPN) |               | ERC2-RGS6C-I-PM   | Easy to control,<br>capable of<br>positioning up to<br>16 points | 16                      |               |                       |                |          |
| PIO Type (PNP) |               | ERC2-RGS6C-I-PMPN | Supports the PNP I/O, commonly used overseas.                    | 16                      | DC24V         | 2A max.               | -              | → P515   |
| SIO Type       |               | ERC2-RGS6C-I-PMSE | For connecting to<br>a field network<br>(gateway unit<br>used)   | 64                      |               |                       |                |          |

IAI

170

ERC2-RGS6C

Standard

Integrat

Rod Type

Mini

Controller Integrated

Table/Arm

Mini

Standard

Linear Serve

Туре

Туре

Splash Prod

Controllers

/AMEC

NET

PCON

ACON

ASEL

XSFI

T disc Mot

(24V)

Servo Mot (200V)

Servo Mo

## ERC2-RGS7C

Controller-Integrated Rod Type 68mm Width Pulse Motor Straight Type

■ Configuration: ERC2 — RGS7C —

\* See page Pre-35 for an explanation of the naming convention.

Encoder I: Incremental PM: Pulse motor

**PM** Motor

16:16mm 8:8mm

4:4mm

50: 50mm 300: 300mm (50mm pitch

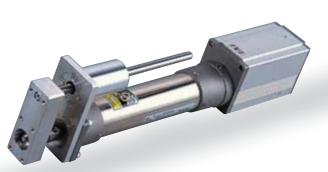
I/O Type NP:PIO (NPN) type PN:PIO (PNP) type SE : SIO type

Cable Length N: None P: 1m B: E S: 3m M: 5m FT: F X : Custom NM: F W : Double-ended cable

Option B : Brake FT : Foot bracket NM: Reversed-home

RW : Double-ended Robot cable

■ Speed vs. Load Capacity



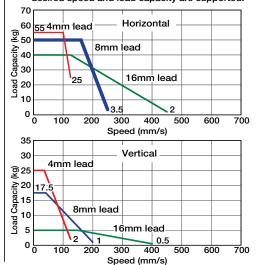
Technical



- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
- Since the ERC2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

  In doing so, use the load capacity values without the weight of the guide (see right of page).
- The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 4mm-lead model, or when used vertically). This is the upper limit of the acceleration.
- (4) The value for the horizontal load capacity is with an external guide.

Due to the characteristics of the pulse motor, the ERC2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



| Actuator Specifications   |              |      |        |                                    |                                |                |                             |  |  |
|---|--------------|------|--------|------------------------------------|--------------------------------|----------------|-----------------------------|--|--|
| ■ Lead and Load Capacity (Note 1) Please note that the maximum load capacity decreases as the speed increases. ■ Stroke and Maximum Speed                                   |              |      |        |                                    |                                |                |                             |  |  |
| Model   | Lead<br>(mm) |      |        | Maximum Push<br>Force (N) (Note 2) |                                | Stroke<br>Lead | 50~300<br>(50mm increments) |  |  |
| ERC2-RGS7C-I-PM-16-①-②-③-④  | 16           | ~ 40 | ~ 5    | 220                                |                                | 16             | 450 <400>                   |  |  |
| ERC2-RGS7C-I-PM-8-①-②-③-④   | 8            | ~ 50 | ∼ 17.5 | 441                                | 50~300<br>(50mm<br>increments) | 8              | 250 <200>                   |  |  |
| ERC2-RGS7C-I-PM-4-①-②-③-④   | 4            | ~ 55 | ~ 25   | 873                                | o.centa)                       | 4              | 125                         |  |  |
| Legend ① Stroke ② I/O Type ③ Cable length ④ Options (Note 2) See page A-64 for the pushing force graphs. *The values enclosed in < > apply for vertical usage. (Unit: mm/s) |              |      |        |                                    |                                |                |                             |  |  |

| 1 Stroke Lis | ① Stroke List  |  |  |  |  |  |
|--------------|----------------|--|--|--|--|--|
| Stroke (mm)  | Standard Price |  |  |  |  |  |
| 50           | -              |  |  |  |  |  |
| 100          | -              |  |  |  |  |  |
| 150          | -              |  |  |  |  |  |
| 200          | <del>-</del>   |  |  |  |  |  |
| 250          | -              |  |  |  |  |  |
| 300          | _              |  |  |  |  |  |

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
|                 | P (1m)                | -              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | -              |
| Special Lengths | X06 (6m) ~ X10 (10m)  | -              |
|                 | W01 (1m) ~ W03 (3m)   | -              |
| Double-Ended    | W04 (4m) ~ W05 (5m)   | -              |
|                 | W06 (6m) ~ W10 (10m)  | -              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
| Robot Cable     | R04 (4m) ~ R05 (5m)   | _              |
|                 | R06 (6m) ~ R10 (10m)  | -              |
| Double-Ended    | RW01 (1m)~ RW03 (3m)  | _              |
|                 | RW04 (4m)~ RW05 (5m)  | -              |
| Robot Cable     | RW06 (6m)~ RW10 (10m) | _              |

The values in < > apply to the SE type.
\* See page A-39 for cables for maintenance.

③ Cable List

Actuator Specifications

| 4 Option List |             |               |                |
|---------------|-------------|---------------|----------------|
| Name          | Option Code | See Page      | Standard Price |
| Brake         | В           | → <b>A-25</b> | -              |

NM

→ A-29

→ A-33

| Item                             | Description                                    |
|----------------------------------|--|
| Drive System                     | Ball screw ø12mm C10 grade                     |
| Positioning Repeatability        | ±0.02mm  |
| Lost Motion                      | 0.1mm or less                                  |
| Rod Diameter                     | ø30mm special SUS type                         |
| Non-rotating accuracy of rod     | ±0.05 deg                                      |
|                                  | •  |
| Ambient Operating Temp./Humidity | $0 \sim$ 40°C, 85% RH or less (non-condensing) |

Foot bracket

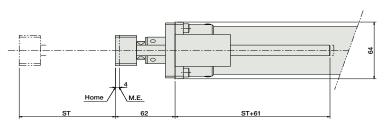
Reversed-home

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

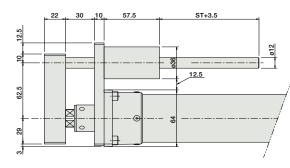
3D CAD For Special Orders



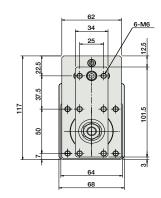




M.E.: Mechanical end



\* See page 168 for the dimensions of the actuator.



#### ■ Dimensions/Weight by Stroke

| Stroke                       | 50  | 100 | 150 | 200 | 250 | 300 |
|------------------------------|-----|-----|-----|-----|-----|-----|
| Guide weight (kg)            | 0.3 | 0.3 | 0.4 | 0.4 | 0.5 | 0.5 |
| Guide + actuator weight (kg) | 3.0 | 3.2 | 3.4 | 3.6 | 3.8 | 4.0 |

|                | /O Type (Built-In Controller)   |                   |  |                         |               |                       |                |          |  |
|----------------|---|-------------------|--|-------------------------|---------------|-----------------------|----------------|----------|--|
|                | ② I/O Type  The integrated controller in the ERC2 series can be selected from the following 3 types based on the type of external input and output (I/O). Select the controller according to your applications. |                   |  |                         |               |                       |                |          |  |
| Name           | External View   | Model             | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity | Standard Price | See Page |  |
| PIO Type (NPN) |   | ERC2-RGS7C-I-PM   | Easy to control,<br>capable of<br>positioning up to<br>16 points | 16                      |               |                       |                |          |  |
| PIO Type (PNP) |   | ERC2-RGS7C-I-PMPN | Supports the PNP I/O, commonly used overseas.                    | 16                      | DC24V         | 2A max.               | -              | → P515   |  |
| SIO Type       |   | ERC2-RGS7C-I-PMSE | For connecting to<br>a field network<br>(gateway unit<br>used)   | 64                      |               |                       |                |          |  |

ERC2-RGS7C

Slider Type

Mini

Controller Integrated

> Rod Type

Mini

Controllers Integrated

Table/Arm /Flat Type

Mini

Gripper/ Rotary Type

Linear Serv Type

Cleanroom Type

Splash Prod

PMEC /AMEC

ROBO NET

ACON

30011

ASEL

Servo Mo

Servo Mo

Servo Mo

\* See page Pre-35 for an explanation of the naming convention.

# ERC2-RGD6C Controller-Integrated Rod Type with Double Guide 58mm Width Pulse Motor Straight Type

lacktriangle Configuration: ERC2 - RGD6C -Encoder

I: Incremental PM: Pulse motor

12:12mm 6:6mm

3:3mm

50: 50mm 300: 300mm (50mm pitch

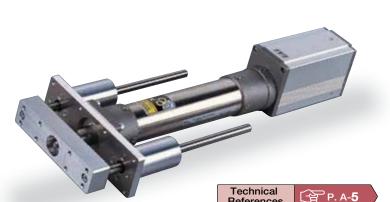
I/O Type NP:PIO PN:PIO

(NPN) type (PNP) type SE : SIO type

Cable Length N: None P:1m M : 5m : Custom X : Custom NM: F W : Double-ended cable

Option B : Brake FT : Foot bracket NM: Reversed-home

RW 🗆 : Double-ended Robot cable



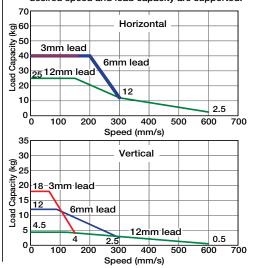
When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

- Since the ERC2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

  In doing so, use the load capacity values without the weight of the guide (see right of page).
- The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically). This is the upper limit of the acceleration.
- (4) The value for the horizontal load capacity is with an external guide.

#### ■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the ERC2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



| Actuator Specifications   |              |      |       |                                   |                 |                |                             |             |
|---|--------------|------|-------|-----------------------------------|-----------------|----------------|-----------------------------|-------------|
| ■ Lead and Load Capacity (Note 1) Please note that the maximum load capacity decreases as the speed increases. ■ Stroke and Maximum Speed |              |      |       |                                   |                 |                |                             |             |
| Model   | Lead<br>(mm) |      |       | Maximum Push<br>Force (N)(Note 2) |                 | Stroke<br>Lead | 50~250<br>(50mm increments) | 300<br>(mm) |
| ERC2-RGD6C-I-PM-12-①-②-③-④  | 12           | ~ 25 | ~ 4.5 | 78                                | 50, 000         | 12             | 600                         | 500         |
| ERC2-RGD6C-I-PM-6-①-②-③-④   | 6            | ~ 40 | ~12   | 157                               | 50~300<br>(50mm | 6              | 300                         | 250         |
| ERC2-RGD6C-I-PM-3-①-②-③-④   | 3            | 40   | ~ 18  | 304                               | increments)     | 3              | 150                         | 125         |
| Legend ① Stroke ② I/O Type ③ Cable length ④ Options (Note 2) See page A-64 for the pushing force graphs. (Unit: mm/s)                     |              |      |       |                                   |                 |                |                             |             |

| ① Stroke List |                |  |  |  |  |
|---------------|----------------|--|--|--|--|
| Stroke (mm)   | Standard Price |  |  |  |  |
| 50            | -              |  |  |  |  |
| 100           | -              |  |  |  |  |
| 150           | -              |  |  |  |  |
| 200           | -              |  |  |  |  |
| 250           | -              |  |  |  |  |
| 300           | -              |  |  |  |  |

| © Gabie Ele     | •                                  |                |
|-----------------|------------------------------------|----------------|
| Туре            | Cable Symbol                       | Standard Price |
|                 | P (1m)                             | -              |
| Standard        | <b>S</b> (3m)                      | -              |
|                 | <b>M</b> (5m)                      | _              |
| Special Lengths | X06 (6m) ~ X10 (10m)               | _              |
|                 | W01 (1m) ~ W03 (3m)                | -              |
| Double-Ended    | W04 (4m) ~ W05 (5m)                | _              |
|                 | <b>W06</b> (6m) ~ <b>W10</b> (10m) | _              |
|                 | R01 (1m) ~ R03 (3m)                | _              |
| Robot Cable     | R04 (4m) ~ R05 (5m)                | _              |
|                 | R06 (6m) ~ R10 (10m)               | _              |
| Double-Ended    | RW01 (1m)~ RW03 (3m)               | _              |
| Robot Cable     | RW04 (4m)~ RW05 (5m)               | _              |
| Robot Cable     | RW06 (6m)~ RW10 (10m)              | _              |

The values in < > apply to the SE type.
\* See page A-39 for cables for maintenance.

3 Cable List

Actuator Specifications

| The option List |             |          |                |
|-----------------|-------------|----------|----------------|
| Name            | Option Code | See Page | Standard Price |
| Brake           | В           | → A-25   | -              |
| Foot bracket    | FT          | → A-29   | _              |

→ A-33

NM

| Item                             | Description                                   |  |  |  |  |
|----------------------------------|---|--|--|--|--|
| Drive System                     | Ball screw ø10mm C10 grade                    |  |  |  |  |
| Positioning Repeatability        | ±0.02mm                                       |  |  |  |  |
| Lost Motion                      | 0.1mm or less                                 |  |  |  |  |
| Rod Diameter                     | ø22mm special SUS type                        |  |  |  |  |
| Non-rotating accuracy of rod     | ±0.05 deg                                     |  |  |  |  |
| Ambient Operating Temp./Humidity | $0\sim$ 40°C, 85% RH or less (non-condensing) |  |  |  |  |

Ontion List

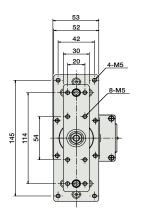
Reversed-home

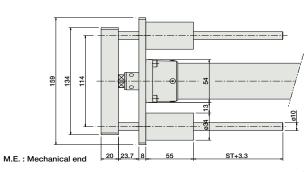
CAD drawings can be downloaded from IAI website. www.intelligentactuator.com

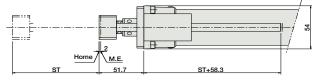
3D CAD For Special Orders











\* See page 166 for the dimensions of the actuator.

### ■ Dimensions/Weight by Stroke

| Stroke                       | 50  | 100 | 150 | 200 | 250 | 300 |
|------------------------------|-----|-----|-----|-----|-----|-----|
| Guide weight (kg)            | 0.4 | 0.4 | 0.5 | 0.6 | 0.6 | 0.7 |
| Guide + actuator weight (kg) | 2.0 | 2.1 | 2.3 | 2.6 | 2.7 | 2.9 |

## I/O Type (Built-In Controller)

② I/O Type

The integrated controller in the ERC2 series can be selected from the following 3 types based on the type of external input and output (I/O). Select the controller according to your applications.

| Name           | External View | Model             | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity | Standard Price | See Page       |
|----------------|---------------|-------------------|--|-------------------------|---------------|-----------------------|----------------|----------------|
| PIO Type (NPN) |               | ERC2-RGD6C-I-PMNP | Easy to control,<br>capable of<br>positioning up to<br>16 points | 16                      |               |                       |                |                |
| PIO Type (PNP) |               | ERC2-RGD6C-I-PMPN | Supports the PNP I/O, commonly used overseas.                    | 16                      | DC24V         | 2A max.               | -              | → <b>P</b> 515 |
| SIO Type       |               | ERC2-RGD6C-I-PMSE | For connecting to<br>a field network<br>(gateway unit<br>used)   | 64                      |               |                       |                |                |

Mini

Willi

Controllers

Rod Type

Mini

Standard Controller

Integrated

/Flat Type

Standard

Gripper/ Rotary Type

Linear Servo Type

Cleanroom Type

Splash Prod

Controllers

/AMEC
PSEP

ROBO NET

PCON

ACON

ASEL

SSEL

XSEL

Pulse Moto

Servo Mo (24V)

Servo Mot (200V)

Servo Mo

Foot bracket

Reversed-home

# ERC2-RGD7C Controller-Integrated Rod Type 68mm Width Pulse Motor Straight Type

\* See page Pre-35 for an explanation of the naming convention.

■ Configuration: ERC2 — RGD7C — **PM** 

> Encoder Motor I: Incremental PM: Pulse motor

References

(Note 1) Please note that the maximum load capacity decreases as the speed increases.

16:16mm 8:8mm 4:4mm

I/O Type 50: 50mm NP: PIO 300: 300mm PN:PIO (50mm pitch increments) SE: SIO type

(NPN) type (PNP) type

Cable Length Option B : Brake FT : Foot bracket NM: Reversed-home N: None P:1m M : 5m : Custom : Double-ended cable

RW : Double-ended Robot cable

Technical 译 P. A-**5** 

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed.

Use the actuator specification table below to check the maximum speed at the stroke you desire.

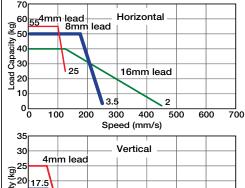
Since the ERC2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

In doing so, use the load capacity values without the weight of the guide (see right of page). The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 4mm-lead model, or when used vertically).

This is the upper limit of the acceleration (4) The value for the horizontal load capacity is with an external guide

#### ■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the ERC2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



20 (kg 15 10 8mm lead Load 5 16mm lead 0.5 ٥٢ 100 200 300 400 500 600 Speed (mm/s)

#### Actuator Specifications

Lead and Load Capacity Max. Load Capacity (Note 1) Maximum Push Stroke Lead Model Horizontal (kg) Vertical (kg) orce (N)(Note ERC2-RGD7C-I-PM-16-1 - 2 - 3 - 4 16 220  $\sim 40$  $\sim$  5 50~300 ERC2-RGD7C-I-PM-8-1 - 2 - 3 - 4 8  $\sim 50$  $\sim$  17.5 441 (50mm

increments ERC2-RGD7C-I-PM-4-1 - 2 - 3 - 4 4 ~ 55 ~ 25 873 Legend 1 Stroke 2 I/O Type 3 Cable length 4 Options

#### ■ Stroke and Maximum Speed

| Stroke<br>Lead | 50~300<br>(50mm increments) |
|----------------|-----------------------------|
| 16             | 450 <400>                   |
| 8              | 250 <200>                   |
| 4              | 125                         |

(Note 2) See page A-64 for the pushing force graphs. \* The values enclosed in < > apply for vertical usage. (Unit: mm/s)

| 1 Stroke Lis | st             |
|--------------|----------------|
| Stroke (mm)  | Standard Price |
| 50           | -              |
| 100          | -              |
| 150          | -              |
| 200          | -              |
| 250          | -              |
| 300          | =              |

| Туре            | Cable Symbol                       | Standard Price |
|-----------------|------------------------------------|----------------|
|                 | P (1m)                             | -              |
| Standard        | <b>S</b> (3m)                      | _              |
|                 | <b>M</b> (5m)                      | _              |
| Special Lengths | X06 (6m) ~ X10 (10m)               | _              |
|                 | W01 (1m) ~ W03 (3m)                | _              |
| Double-Ended    | W04 (4m) ~ W05 (5m)                | _              |
|                 | <b>W06</b> (6m) ~ <b>W10</b> (10m) | _              |
|                 | R01 (1m) ~ R03 (3m)                | _              |
| Robot Cable     | R04 (4m) ~ R05 (5m)                | _              |
|                 | R06 (6m) ~ R10 (10m)               | -              |
| Double-Ended    | RW01 (1m)~ RW03 (3m)               | _              |
| Robot Cable     | RW04 (4m)~ RW05 (5m)               | _              |
| nobot Cable     | RW06 (6m)~ RW10 (10m)              | _              |

The values in < > apply to the SE type.
\* See page A-39 for cables for maintenance.

③ Cable List

Actuator Specifications

4 Option List Name **Option Code** See Page Standard Price Brake В → A-25

NM

→ A-29

→ A-33

| Item                             | Description                                    |
|----------------------------------|--|
| Drive System                     | Ball screw ø12mm C10 grade                     |
| Positioning Repeatability        | ±0.02mm  |
| Lost Motion                      | 0.1mm or less                                  |
| Rod Diameter                     | ø30mm special SUS type                         |
| Non-rotating accuracy of rod     | ±0.05 deg                                      |
| Ambient Operating Temp./Humidity | $0 \sim$ 40°C, 85% RH or less (non-condensing) |

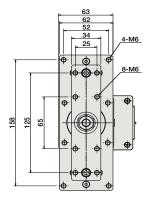
CAD drawings can be downloaded from IAI website. www.intelligentactuator.com

For Special Orders



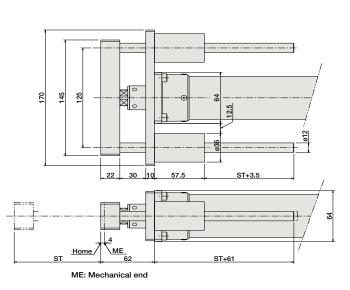






I/O Type (Built-In Controller)

SIO Type



\* See page 168 for the dimensions of the actuator.

### ■ Dimensions/Weight by Stroke

| Stroke                       | 50  | 100 | 150 | 200 | 250 | 300 |
|------------------------------|-----|-----|-----|-----|-----|-----|
| Guide weight (kg)            | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 |
| Guide + actuator weight (kg) | 3.2 | 3.5 | 3.7 | 4.0 | 4.2 | 4.5 |

| Name           | External View | Model                       | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity | Standard Price | See Page |
|----------------|---------------|-----------------------------|--|-------------------------|---------------|-----------------------|----------------|----------|
| PIO Type (NPN) |               | ERC2-RGD7C-I-PM             | Easy to control,<br>capable of<br>positioning up to<br>16 points | 16                      |               |                       |                |          |
| PIO Type (PNP) |               | ERC2-RGD7C-I-PM-[][]-PN-[]- | Supports the PNP I/O, commonly used overseas.                    | 16                      | DC24V         | 2A max.               | -              | → P515   |

176

IAI

64

For connecting to a field network

(gateway unit used)

ERC2-RGD7C-I-PM- ---------

RCA2-RN3N ROBO Cylinder Mini Rod Type Short-Length Nut-Mounting Type 28mm Width 24V Servo Motor Lead Screw  $\blacksquare$  Configuration: RCA2 - RN3N I 10 30 Encoder Motor Stroke Cable Length 10 : 10W Servo 4S: 4mm lead screw
Motor 2S: 2mm lead screw
1S: 1mm lead screw N : None P : 1m S : 3m M : 5m K2 : Connector Cable exit direction LA : Power-saving I: Incremental \* The Simple 30 :30mm A1:ACON RACON absolute encoder ASEL is also considered type "I". A3:AMEC X □□ : Custom ASEP \* See page Pre-35 for an explanation of the naming convention.

Power-saving

Technical References (1) The lead screw is not equipped with an anti-rotation device. Therefore, when using the actuator, add

**P. A-5** 

an anti-rotation device such as a guide to the end of the lead screw prior to use. (Without an anti-rotation device, the lead screw will rotate, and will not extend or retract.) The load capacity is based on operation at an acceleration of 0.2G. This is the upper limit of the acceleration.

Do not apply any external force on the rod from any direction other than the direction of the rod's

This model uses a lead screw. Please ensure that your usage is appropriate for its characteristics. (See page Pre-42 for more information.)

| _   |            |               |      |                 |               |            |                              |               |          |           |                 |
|---|------------|---------------|------|-----------------|---------------|------------|------------------------------|---------------|----------|-----------|-----------------|
| Actuator Specifications                       |            |               |      |                 |               |            |                              |               |          |           |                 |
| Lead and Load Capacity                        |            |               |      |                 |               |            |                              |               | <b>S</b> | troke and | d Maximum Speed |
| Model   | Motor      | Feed          | Lead | Max. Load       |               | Rated      | Positioning<br>Repeatability | Stroke        |          | Stroke    | 30              |
|   | Output (W) | Screw         | (mm) | Horizontal (kg) | Vertical (kg) | Thrust (N) | (mm)                         | (mm)          | Lead     |           | (mm)            |
| RCA2-RN3N-I-10-4S-30-①-②-③                    |            |               | 4    | 0.25            | 0.125         | 25.1       |                              |               | ew e     | 4         | 200             |
| RCA2-RN3N-I-10-2S-30-10-2-3                   | 10         | Lead<br>Screw | 2    | 0.5             | 0.25          | 50.3       | ±0.05                        | 30<br>(Fixed) | ad Screv | 2         | 100             |
| RCA2-RN3N-I-10-1S-30-1-2-3                    |            |               | 1    | 1               | 0.5           | 100.5      |                              | ,             | Lea      | 1         | 50              |
| Legend ① Compatible controller ② Cable length | 3 Optio    | ns            |      |                 |               |            |                              |               |          |           | (Unit: mm/s)    |

| Stroke List |                |
|-------------|----------------|
|             | Standard Price |
| Stroke (mm) | Feed Screw     |
|             | Lead Screw     |
| 30          | -              |

| τ                     |  |
|-----------------------|--|
| Cable Symbol          | Standard Price   |
| P (1m)                | _  |
| <b>S</b> (3m)         | -  |
| <b>M</b> (5m)         | -  |
| X06 (6m) ~ X10 (10m)  | -  |
| X11 (11m) ~ X15 (15m) | _  |
| X16 (16m) ~ X20 (20m) | -  |
|                       | Cable Symbol P (1m) S (3m) M (5m) X06 (6m) ~ X10 (10m) X11 (11m) ~ X15 (15m) |

- \* The RCA2 comes standard with a robot cable.
- \* See page A-39 for cables for maintenance.

| ③ Option List                  |             |          |                |
|--------------------------------|-------------|----------|----------------|
| Name                           | Option Code | See Page | Standard Price |
| Connector cable exit direction | K2          | → A-32   | -              |
| Power-saving                   | LA          | → A-32   | -              |

| Item                             | Description  |
|----------------------------------|--|
| Drive System                     | Lead Screw ø4mm C10 grade                                |
| Lost Motion                      | 0.3mm or less (initial value)                            |
| Frame                            | Material: Aluminum (white alumite treated)               |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non-condensing)                  |
| Service Life                     | Horizontal: 10 million cycles Vertical: 5 million cycles |

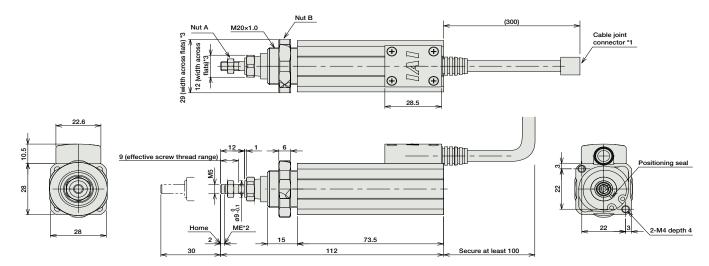
For Special Orders



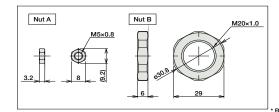




- \*1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- When homing, the rod moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.
- The orientation of the bolt will vary depending on the product.



ME: Mechanical end





Connector cable exit direction (Model: K2) \* Rotates 180 degrees with respect to the standard model.

#### ■ Dimensions/Weight by Stroke

| Stroke      | 30   |
|-------------|------|
| Weight (kg) | 0.25 |

#### 1 Compatible Controllers

The RCA2 series actuators can operate with the controllers below. Select the controller according to your usage

| Name   | External View | Model                | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity       | Standard Price | See Page |
|--|---------------|----------------------|--|-------------------------|---------------|-----------------------------|----------------|----------|
| Solenoid Valve Type                                  | de            | AMEC-C-10I①-NP-2-1   | Easy-to-use controller, even for beginners   |                         | AC100V        | 2.4A rated                  | -              | → P477   |
| Solenoid valve Type                                  | 1             | ASEP-C-10I①-NP-2-0   | Operable with same signal as solenoid valve.   | 3 points                |               | (Standard)<br>1.3A rated    | -              | → P487   |
| Splash-Proof Solenoid<br>Valve Type                  | 1             | ASEP-CW-10I①-NP-2-0  | Supports both single and double solenoid types. No homing necessary with simple absolute type. |                         |               |                             | -              |          |
| Positioner Type                                      |               | ACON-C-10I①-NP-2-0   | Positioning is possible for up to 512 points   | 512 points              |               |                             | -              |          |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-10I①-NP-2-0  | Positioning is possible for up to 312 points   | 0.2 points              |               |                             | 1              |          |
| Pulse Train Input Type<br>(Differential Line Driver) | O             | ACON-PL-10I①-NP-2-0  | Pulse train input type with differential line driver support                                   | (-)                     | DC24V         | 4.4A max.<br>(Power-saving) | -              | → P535   |
| Pulse Train Input Type<br>(Open Collector)           | ě             | ACON-PO-10I①-NP-2-0  | Pulse train input type with open collector support   | (-)                     |               | 1.3A rated<br>2.5A max.     | -              |          |
| Serial Communication<br>Type                         |               | ACON-SE-10I①-N-0-0   | Dedicated to serial communication  | 64 points               |               |                             | -              |          |
| Field Network Type                                   |               | RACON-10①            | Dedicated to field network   | 768 points              |               |                             | -              | → P503   |
| Program Control Type                                 |               | ASEL-C-1-10I①-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                      | 1500 points             |               |                             | -              | → P567   |

PMEC (AMEC)
PSEP (ASEP)
R080 (NET)
ERC2
PCON
ACON
SCON
PSEL
ASEL
SSEL

Servo Motor (24V)

<sup>\*</sup> This is for the single-axis ASEL.
\* ① is a placeholder for the code "LA" if the power-saving option is specified.

RCA2-RN4N

ROBO Cylinder Mini Rod Type Short-Length Nut-Mounting Type 34mm Width 24V Servo Motor Ball Screw/Lead Screw

■ Configuration: RCA2 — RN4N

Encoder I: Incremental \* The Simple

20 Motor 20 : 20W Servo

30 Compatible Controller 30:30mm A1:ACON RACON

Cable Length N: None P:1m S:3m M:5m

Option K2 : Connector Cable exit direction LA : Power-saving

\* See page Pre-35 for an explanation of the naming convention.

6: 6mm ball screw
4: 4mm ball screw
2: 2mm ball screw
6S: 6mm lead screw
4S: 4mm lead screw absolute encoder is also considered 2S: 2mm lead screw

Motor

ASEL A3 : AMEC ASEP

X 🗆 🗆 : Custom

Power-saving



Technical References



- The lead screw is not equipped with an anti-rotation device. Therefore, when using the actuality, add an anti-rotation device such as a guide to the end of the lead screw prior to use. (Workhout an anti-rotation device, the lead screw will rotate, and will not extend or
- The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2mm-lead model, lead screw model, or when used vertically). This is the upper limit of the acceleration.
- Do not apply any external force on the rod from any direction other than the direction of the rod's motion.
- When using the lead screw model, please use it for applications that are suitable for its characteristics. (See page Pre-42 for more information.)

#### Actuator Specifications Lead and Load Capacity

Positioning Repeatability (mm) Max. Load Capacity Rated Feed Lead Model Screw RCA2-RN4N-I-20-6-30-10-20-3 6 2 0.5 33.8 RCA2-RN4N-I-20-4-30- 1 2 3 20 Ball Screv 4 3 0.75 50.7 +0.02 (Fixed) RCA2-RN4N-I-20-2-30- ① \_ ② \_ ③ 2 6 1.5 101.5 RCA2-RN4N-I-20-6S-30- 1 2 3 6 0.25 0.125 19.9 30 RCA2-RN4N-I-20-4S-30- 1 2 3 20 4 0.5 0.25 29.8 ±0.05 Screw (Fixed) RCA2-RN4N-I-20-2S-30- 1 2 3 2 59.7

| Stroke and Maximum Speed |        |            |  |  |
|--------------------------|--------|------------|--|--|
| Lead                     | Stroke | 30<br>(mm) |  |  |
| ^                        | 6      | 270 <220>  |  |  |

| Lead       |            | (mm)                                   |
|------------|------------|--|
| Ball Screw | 6          | 270 <220>                              |
|            | 4          | 200                                    |
|            | 2          | 100                                    |
| Lead Screw | 6          | 220                                    |
|            | 4          | 200                                    |
|            | 2          | 100                                    |
|            | Ball Screw | ead Screw Ball Screw  6  4  2  6  4  4 |

\* The values enclosed in < > apply for vertical usage. (Unit: mm/s)

|             | Standard Price |            |  |  |
|-------------|----------------|------------|--|--|
| Stroke (mm) | Feed Screw     |            |  |  |
|             | Ball Screw     | Lead Screw |  |  |
| 30          | -              | -          |  |  |

Legend ① Compatible controller ② Cable length ③ Options

#### ② Cable List

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
| Standard        | P (1m)<br>S (3m)      | _              |
| (Robot Cables)  | M (5m)                | -              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |
|                 | X16 (16m) ~ X20 (20m) | -              |

- \* The RCA2 comes standard with a robot cable.
- \* See page A-39 for cables for maintenance.

| Name                           | Option Code | See Page      | Standard Price |
|--------------------------------|-------------|---------------|----------------|
| Connector cable exit direction | K2          | → <b>A-32</b> | -              |
| Power-saving                   | LA          | → A-32        | -              |

#### Actuator Specifications

| Item                             | Description   |  |  |
|----------------------------------|---|--|--|
| Drive System                     | Ball screw/lead screw ø6mm C10 grade                                |  |  |
| Lost Motion                      | Ball screw: 0.1mm or less/Lead screw: 0.3mm or less (initial value) |  |  |
| Frame                            | Material: Aluminum (white alumite treated)                          |  |  |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non-condensing)                             |  |  |
| Service Life Lead Screw          | Horizontal: 10 million cycles Vertical: 5 million cycles            |  |  |

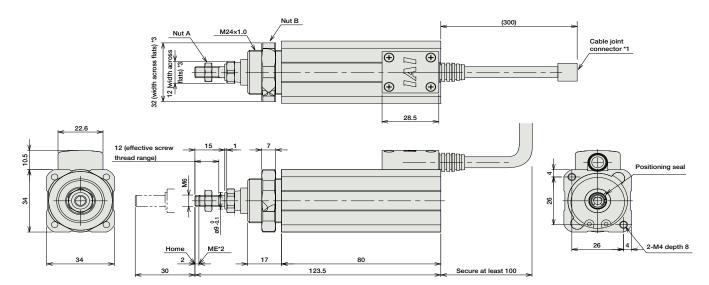
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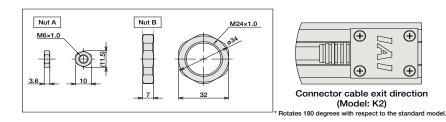




- \*1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- When homing, the rod moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.
- \*3 The orientation of the bolt will vary depending on the product.



ME: Mechanical end



#### ■ Dimensions/Weight by Stroke

| <b>_</b>    |     |  |  |  |  |  |
|-------------|-----|--|--|--|--|--|
| Stroke      | 30  |  |  |  |  |  |
| Weight (kg) | 0.5 |  |  |  |  |  |

#### ① Compatible Controllers

The RCA2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View | Model                | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity       | Standard Price | See Page |
|--|---------------|----------------------|--|-------------------------|---------------|-----------------------------|----------------|----------|
| Solenoid Valve Type                                  | No.           | AMEC-C-20I①-NP-2-1   | Easy-to-use controller, even for beginners   | AC100V                  | 2.4A rated    | -                           | → P477         |          |
| Solenoid valve type                                  | 1             | ASEP-C-20I①-NP-2-0   | Operable with same signal as solenoid valve.   |                         |               | (Standard)<br>1.3A rated    | -              | D407     |
| Splash-Proof Solenoid<br>Valve Type                  |               | ASEP-CW-20I①-NP-2-0  | Supports both single and double solenoid types. No homing necessary with simple absolute type. |                         |               |                             | -              | → P487   |
| Positioner Type                                      |               | ACON-C-20I①-NP-2-0   | Positioning is possible for up to 512 points   | 512 points              |               |                             | -              |          |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-20I①-NP-2-0  | Positioning is possible for up to 312 points   | 012 politic             |               |                             | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) | O             | ACON-PL-20I①-NP-2-0  | Pulse train input type with differential line driver support                                   | (-)                     | DC24V         | 4.4A max.<br>(Power-saving) | -              | → P535   |
| Pulse Train Input Type<br>(Open Collector)           | č.            | ACON-PO-20I①-NP-2-0  | Pulse train input type with<br>open collector support  | (-)                     |               | 1.3A rated<br>2.5A max.     | -              |          |
| Serial Communication<br>Type                         |               | ACON-SE-20I①-N-0-0   | Dedicated to serial communication  | 64 points               |               |                             | -              |          |
| Field Network Type                                   | ERREN         | RACON-20①            | Dedicated to field network   | 768 points              |               |                             | _              | → P503   |
| Program Control Type                                 |               | ASEL-C-1-20I①-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                      | 1500 points             |               |                             | -              | → P567   |

PMEC AMEC
PSEP //ASEP
ROBE NET
ERC2
PCON
ACON
SCON
PSEL
ASEL
SSEL

Servo Motor (24V)

<sup>\*</sup> This is for the single-axis ASEL.
\* ① is a placeholder for the code "LA" if the power-saving option is specified.

RCA2-RP3N ■ Configuration: RCA2 — RP3N

ROBO Cylinder Mini Rod Type Short-Length Tapped-Hole Mounting Type 28mm Width 24V Servo Motor Lead Screw

Lead

10 30

Encoder I: Incremental \* The Simple absolute encoder

\* See page Pre-35 for an explanation of the naming convention.

Motor 10 : 10W Servo 4S : 4mm lead screw
Motor 2S : 2mm lead screw
1S : 1mm lead screw is also considered

Stroke Compatible Controlle 30 :30mm A1: ACON RACON

ASEL A3 : AMEC ASEP

Cable Length N: None P:1m S:3m M:5m

Option K2 : Connector Cable exit direction LA : Power-saving

Power-saving

X 🗆 🗆 : Custom

Technical

References

**P. A-5** 

(Unit: mm/s)

- The lead screw is not equipped with an anti-rotation device. Therefore, when using the actuator, add an anti-rotation device such as a guide to the end of the lead screw prior to use. (Without an anti-rotation device, the lead screw will rotate, and will not extend or retract.)
- The load capacity is based on operation at an acceleration of 0.2G. This is the upper limit of the acceleration.
- Do not apply any external force on the rod from any direction other than the direction of the rod's motion.
- This model uses a lead screw. Please ensure that your usage is appropriate for its characteristics. (See page Pre-42 for more information.) (4)

#### Actuator Specifications ■ Stroke and Maximum Speed Lead and Load Capacity Positioning Repeatability (mm) Stroke (mm) Max. Load Capacity Rated Feed Lead 30 Model Output (M Screw RCA2-RP3N-I-10-4S-30-10-20-3 4 0.25 0.125 25.1 4 200 Lead Screw Lead 30 RCA2-RP3N-I-10-2S-30-10-2-3 10 2 0.5 0.25 50.3 +0.05 2 100 Screw RCA2-RP3N-I-10-1S-30-1 - 2 - 3 1 1 0.5 100.5 1 50 Legend ① Compatible controller ② Cable length ③ Options

| Stroke List |                |
|-------------|----------------|
|             | Standard Price |
| Stroke (mm) | Feed Screw     |
|             | Lead Screw     |

| 2 Cable List    |                       |                |  |  |  |
|-----------------|-----------------------|----------------|--|--|--|
| Туре            | Cable Symbol          | Standard Price |  |  |  |
| Standard        | P (1m)                | _              |  |  |  |
|                 | <b>S</b> (3m)         | -              |  |  |  |
| (Robot Cables)  | <b>M</b> (5m)         | -              |  |  |  |
|                 | X06 (6m) ~ X10 (10m)  | -              |  |  |  |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |  |  |  |
|                 | X16 (16m) ~ X20 (20m) | -              |  |  |  |

- \* The RCA2 comes standard with a robot cable.
- \* See page A-39 for cables for maintenance.

| ③ Option List                  |             |          |                |
|--------------------------------|-------------|----------|----------------|
| Name                           | Option Code | See Page | Standard Price |
| Connector cable exit direction | K2          | → A-32   | -              |
| Power-saving                   | LA          | → A-32   | -              |

| Item                             | Description  |
|----------------------------------|--|
| Drive System                     | Lead Screw ø4mm C10 grade                                |
| Lost Motion                      | 0.3mm or less (initial value)                            |
| Frame                            | Material: Aluminum (white alumite treated)               |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non-condensing)                  |
| Service Life                     | Horizontal: 10 million cycles Vertical: 5 million cycles |

181

30

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

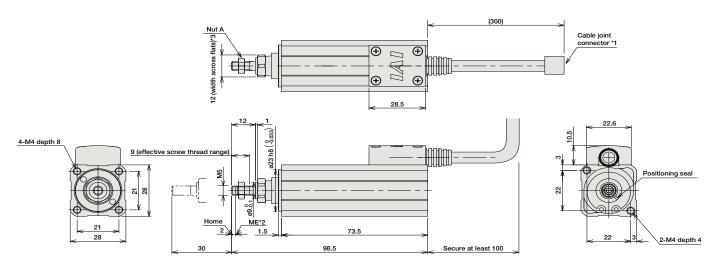
For Special Orders



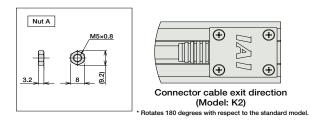




- \*1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- When homing, the rod moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.
- The orientation of the bolt will vary depending on the product.



ME: Mechanical end



#### ■ Dimensions/Weight by Stroke

| o           |     |  |  |  |  |
|-------------|-----|--|--|--|--|
| Stroke      | 30  |  |  |  |  |
| Weight (kg) | 0.2 |  |  |  |  |

#### ① Compatible Controllers

The RCA2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View | Model                | Description   | Max. Positioning Points | Input Voltage  | Power Supply Capacity   | Standard Price | See Page |
|--|---------------|----------------------|---|-------------------------|--|-------------------------|----------------|----------|
| Solenoid Valve Type                                  | CO.           | AMEC-C-10I①-NP-2-1   | Easy-to-use controller, even for beginners  |                         | AC100V   | 2.4A rated              | -              | → P477   |
| Solenoid valve Type                                  |               | ASEP-C-10I①-NP-2-0   | Operable with same signal as solenoid valve.  Supports both single and double solenoid types. | 3 points                |  |                         | -              | → P487   |
| Splash-Proof Solenoid<br>Valve Type                  | Ī             | ASEP-CW-10I①-NP-2-0  | No homing necessary with simple absolute type.  |                         |  |                         | -              | → P487   |
| Positioner Type                                      |               | ACON-C-10I①-NP-2-0   | Positioning is possible for up to 512 points  | 512 points              | (Standard)<br>1.3A rated<br>4.4A max.<br>DC24V<br>(Power-saving) |                         | -              |          |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-10I①-NP-2-0  | Positioning is possible for up to 312 points  | 312 points              |  |                         | -              | → P535   |
| Pulse Train Input Type<br>(Differential Line Driver) | O             | ACON-PL-10I①-NP-2-0  | Pulse train input type with<br>differential line driver support                               | (-)                     |  | (Power-saving)          | -              |          |
| Pulse Train Input Type<br>(Open Collector)           | ě             | ACON-PO-10I①-NP-2-0  | Pulse train input type with open collector support  | (-)                     |  | 1.3A rated<br>2.5A max. | -              |          |
| Serial Communication<br>Type                         |               | ACON-SE-10I①-N-0-0   | Dedicated to serial communication   | 64 points               |  |                         | -              |          |
| Field Network Type                                   |               | RACON-10①            | Dedicated to field network  | 768 points              |  |                         | -              | → P503   |
| Program Control Type                                 |               | ASEL-C-1-10I①-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                     | 1500 points             |  |                         | -              | → P567   |

PMEC AMEC
PSEP ASEP
ROBEO NET
ERC2
PCON
ACON
SCON
PSEL
ASEL
SSEL

Servo Motor (24V)

<sup>\*</sup> This is for the single-axis ASEL.
\* ① is a placeholder for the code "LA" if the power-saving option is specified.

RCA2-RP4N

ROBO Cylinder Mini Rod Type Short-Length Tapped-Hole Mounting Type 34mm Width 24V Servo Motor Ball Screw/Lead Screw

■ Configuration: RCA2 — RP4N

Encoder

absolute encoder

is also considered

I: Incremental \* The Simple

20 Motor

20 : 20W Servo

Motor

30

Stroke

Lead 6:6mm ball screw 4:4mm ball screw 2:2mm ball screw 6S:6mm lead screw 4S:4mm lead screw

2S:2mm lead screw

30:30mm A1: ACON RACON ASEL A3 : AMEC

ASEP

Compatible Controlle X 🗆 🗆 : Custom

Cable Length Option N : None P : 1m S : 3m M : 5m

K2 : Connector Cable exit direction LA : Power-saving

\* See page Pre-35 for an explanation of the naming convention.

Power-saving

Technical References

P. A-5

The lead screw is not equipped with an anti-rotation device. Therefore, when using the actuator, add an anti-rotation device such as a guide to the end of the lead screw prior to use. (Without an antirotation device, the lead screw will rotate, and will not extend or retract.)

The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2mm-lead model, lead screw model, or when used vertically). This is the upper limit of the acceleration.

Do not apply any external force on the rod from any direction other than the direction of the rod's

(4) When using the lead screw model, please use it for applications that are suitable for its characteristics. (See page Pre-42 for more information.)

Actuator Specifications

Lead and Load Capacity Positioning Repeatability (mm) Stroke Max. Load Capacity Rated Feed Lead Model Output (v Screw RCA2-RP4N-I-20-6-30-1 - 2 - 3 6 2 0.5 33.8 30 RCA2-RP4N-I-20-4-30- ① - ② - ③ 20 Ball Screv 4 3 0.75 50.7 +0.02 (Fixed) RCA2-RP4N-I-20-2-30-10-20-3 2 6 1.5 101.5 RCA2-RP4N-I-20-6S-30- 1 - 2 - 3 6 0.25 0.125 19.9 30 RCA2-RP4N-I-20-4S-30-1 - 2 - 3 20 4 0.5 0.25 29.8 ±0.05 Screw RCA2-RP4N-I-20-2S-30- ① - ② - ③ 2 59.7

30 270 <220> 6 Ball Screw 4 200 2 100 6 220 4 200 Lead 2 100

■ Stroke and Maximum Speed

The values enclosed in < > apply for vertical usage. (Unit: mm/s)

| Stroke (mm) | Standard Price |            |  |
|-------------|----------------|------------|--|
|             | Feed Screw     |            |  |
|             | Ball Screw     | Lead Screw |  |
| 30          | -              | -          |  |

Legend ① Compatible controller ② Cable length ③ Options

#### ② Cable List

Actuator Specifications

| Туре                       | Cable Symbol          | Standard Price |
|----------------------------|-----------------------|----------------|
| Standard<br>(Robot Cables) | P (1m)<br>S (3m)      | -              |
|                            | M (5m)                | _              |
| Special Lengths            | X06 (6m) ~ X10 (10m)  | -              |
|                            | X11 (11m) ~ X15 (15m) | -              |
|                            | X16 (16m) ~ X20 (20m) | -              |

- \* The RCA2 comes standard with a robot cable.
- \* See page A-39 for cables for maintenance.

| Name          | Option Code | See Page | Т |
|---------------|-------------|----------|---|
| ③ Option List |             |          |   |
|               |             |          |   |

| Name                           | Option Code | See Page | Standard Price |
|--------------------------------|-------------|----------|----------------|
| Connector cable exit direction | K2          | → A-32   | -              |
| Power-saving                   | LA          | → A-32   | =              |

| Actuator opcomoditorio           |   |  |  |  |
|----------------------------------|---|--|--|--|
|                                  |   |  |  |  |
| Item                             | Description   |  |  |  |
| Drive System                     | Ball screw/lead screw ø6mm C10 grade                                |  |  |  |
| Lost Motion                      | Ball screw: 0.1mm or less/Lead screw: 0.3mm or less (initial value) |  |  |  |
| Frame                            | Material: Aluminum (white alumite treated)                          |  |  |  |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non-condensing)                             |  |  |  |
| Service Life Lead Screw          | Horizontal: 10 million cycles Vertical: 5 million cycles            |  |  |  |

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

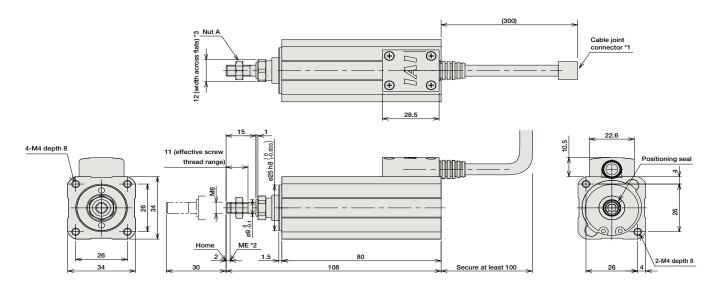
For Special Orders



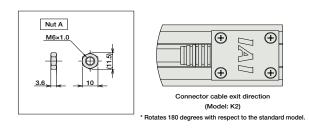




- \*1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- \*2 When homing, the rod moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.
- \*3 The orientation of the bolt will vary depending on the product.



ME: Mechanical end



#### ■ Dimensions/Weight by Stroke

| Stroke      | 30   |
|-------------|------|
| Weight (kg) | 0.42 |

#### ① Compatible Controllers

The RCA2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View | Model                | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity    | Standard Price | See Page |
|--|---------------|----------------------|--|-------------------------|---------------|--------------------------|----------------|----------|
| Solenoid Valve Type                                  |               | AMEC-C-20I①-NP-2-1   | Easy-to-use controller, even for beginners   |                         | AC100V        | 2.4A rated               | -              | → P477   |
| Solenoid valve Type                                  | 3             | ASEP-C-20I①-NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |               |                          | -              | → P487   |
| Splash-Proof Solenoid<br>Valve Type                  | 1             | ASEP-CW-20I①-NP-2-0  | No homing necessary with simple absolute type.   |                         |               |                          | -              | → P487   |
| Positioner Type                                      | E             | ACON-C-20I①-NP-2-0   | Positioning is possible for up to 512 points   | 512 points              |               |                          | -              |          |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-20I①-NP-2-0  | r ostaoning is possible for up to 012 points   | 312 points              |               | (Standard)<br>1.3A rated | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) |               | ACON-PL-20I①-NP-2-0  | Pulse train input type with<br>differential line driver support                              | (-)                     | DC24V         | 4.4A max. (Power-saving) | -              | → P535   |
| Pulse Train Input Type<br>(Open Collector)           | ě             | ACON-PO-20I①-NP-2-0  | Pulse train input type with open collector support   | (-)                     |               | 1.3A rated<br>2.5A max.  | -              |          |
| Serial Communication<br>Type                         |               | ACON-SE-20I①-N-0-0   | Dedicated to serial communication  | 64 points               |               |                          | -              |          |
| Field Network Type                                   |               | RACON-20①            | Dedicated to field network   | 768 points              |               |                          | -              | → P503   |
| Program Control Type                                 |               | ASEL-C-1-20I①-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |               |                          | -              | → P567   |

PMEC AMEC
PSEP //ASEP
ROBE NET
ERC2
PCON
ACON
SCON
PSEL
ASEL
SSEL

<sup>\*</sup> ① is a placeholder for the code "LA" if the power-saving option is specified.

\* See page Pre-35 for an explanation of the naming convention.

ROBO Cylinder Mini Rod Type Short-Length Mounting Type with Single Guide RCA2-GS3N 28mm Width 24V Servo Motor Lead Screw  $\blacksquare$  Configuration: RCA2 - GS3N 10 30 Encoder Motor Lead Stroke Compatible Controlle 10 : 10W Servo 4S: 4mm lead screw
Motor 2S: 2mm lead screw
1S: 1mm lead screw I: Incremental \* The Simple 30 :30mm A1: ACON RACON

absolute encoder

is also considered

Power-saving

Option

K2 : Connector Cable exit direction LA : Power-saving



Technical References

Cable Length

N: None

X 🗆 🗆 : Custom

P:1m S:3m M:5m

ASEL

ASEP

A3 : AMEC

**P. A-5** 

and/or moment load on the rod. If no guide will be installed, see the Tip Load vs. Service Life graph ( $\rightarrow$  page A-81).

The load capacity is based on operation at an acceleration of 0.2G. This is the upper limit of the acceleration.

(3) This model uses a lead screw. Please ensure that your usage is appropriate for

its characteristics. (See page Pre-42 for more information.)

#### **Actuator Specifications** ■ Stroke and Maximum Speed ■ Lead and Load Capacity Positioning Repeatability Stroke Max. Load Capacity Rated Feed Lead 30 Model Output (v Screw RCA2-GS3N-I-10-4S-30-1-2-3 200 4 0.25 0.125 25.1 4 Lead Screw Lead 30 RCA2-GS3N-I-10-2S-30- 1 2 3 10 2 0.5 0.25 50.3 ±0.05 2 100 Screw (Fixed RCA2-GS3N-I-10-1S-30-1-2-3 1 1 0.5 100.5 1 50 (Unit: mm/s) Legend ① Compatible controller ② Cable length ③ Options

| Stroke List |                |
|-------------|----------------|
|             | Standard Price |
| Stroke (mm) | Feed Screw     |
|             | Lead Screw     |
| 30          | -              |

| ② Cable List                                 |                       |                |  |  |
|--|-----------------------|----------------|--|--|
| Туре   | Cable Symbol          | Standard Price |  |  |
| Standard                                     | P (1m)                | -              |  |  |
| (Robot Cables)                               | <b>S</b> (3m)         | _              |  |  |
|  | <b>M</b> (5m)         | _              |  |  |
|  | X06 (6m) ~ X10 (10m)  | -              |  |  |
| Special Lengths                              | X11 (11m) ~ X15 (15m) | -              |  |  |
|  | X16 (16m) ~ X20 (20m) | -              |  |  |
| * The RCA2 comes standard with a robot cable |                       |                |  |  |

- \* See page A-39 for cables for maintenance.

| ③ Option List                  |             |               |                |
|--------------------------------|-------------|---------------|----------------|
| Name                           | Option Code | See Page      | Standard Price |
| Connector cable exit direction | K2          | → A-32        | -              |
| Power-saving                   | LA          | → <b>A-32</b> | -              |

| Item                             | Description  |
|----------------------------------|--|
| Drive System                     | Lead screw ø4mm C10 grade                                |
| Lost Motion                      | 0.3mm or less (initial value)                            |
| Frame                            | Material: Aluminum (white alumite treated)               |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non-condensing)                  |
| Service Life                     | Horizontal: 10 million cycles Vertical: 5 million cycles |

185 RCA2-GS3N



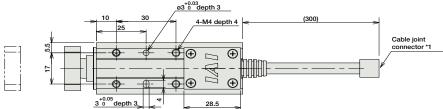
CAD drawings can be downloaded from IAI website. www.intelligentactuator.com

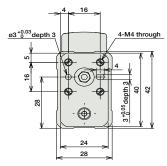
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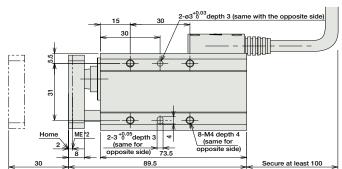


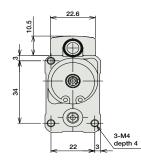


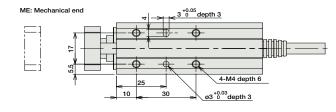
- A motor-encoder cable is connected here. See page A-39 for details on cables.
  - When homing, the rod moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.

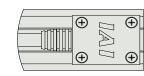












Connector cable exit direction (Model: K2)

\* Rotates 180 degrees with respect to the standard model.

#### ■ Dimensions/Weight by Stroke

| , , , , , , , , , |      |  |
|-------------------|------|--|
| Stroke            | 30   |  |
| Weight (kg)       | 0.32 |  |

## ① Compatible Controllers

The RCA2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View       | Model                | Description  | Max. Positioning Points               | Input Voltage | Power Supply Capacity       | Standard Price | See Page |  |   |  |
|--|---------------------|----------------------|--|---------------------------------------|---------------|-----------------------------|----------------|----------|--|---|--|
| Solenoid Valve Type                                  | 10                  | AMEC-C-10I①-NP-2-1   | Easy-to-use controller, even for beginners   |                                       | AC100V        | 2.4A rated                  | -              | → P477   |  |   |  |
| Solenoid valve Type                                  | 1                   | ASEP-C-10I①-NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                              |               |                             | -              | → P487   |  |   |  |
| Splash-Proof Solenoid<br>Valve Type                  |                     | ASEP-CW-10I①-NP-2-0  | No homing necessary with simple absolute type.   |                                       |               |                             | -              |          |  |   |  |
| Positioner Type                                      | I                   | ACON-C-10I①-NP-2-0   | Positioning is possible for up to 512 points   | 512 points                            |               |                             |                |          |  | - |  |
| Safety-Compliant<br>Positioner Type                  | ACON-CG-10I①-NP-2-0 | ACON-CG-10I①-NP-2-0  | Positioning is possible for up to 312 points   | 312 points                            |               | (Standard)<br>1.3A rated    | -              |          |  |   |  |
| Pulse Train Input Type<br>(Differential Line Driver) | Ó                   | ACON-PL-10I①-NP-2-0  | Pulse train input type with differential line driver support                                 | (-)                                   | DC24V         | 4.4A max.<br>(Power-saving) | -              | → P535   |  |   |  |
| Pulse Train Input Type<br>(Open Collector)           | č                   | ACON-PO-10I①-NP-2-0  | Pulse train input type with<br>open collector support  | Pulse train input type with 2.5A max. | (-)           | 1.3A rated<br>2.5A max.     | -              |          |  |   |  |
| Serial Communication<br>Type                         | Î                   | ACON-SE-10I①-N-0-0   | Dedicated to serial communication  | 64 points                             |               |                             | -              |          |  |   |  |
| Field Network Type                                   |                     | RACON-10①            | Dedicated to field network   | 768 points                            |               |                             | -              | → P503   |  |   |  |
| Program Control Type                                 |                     | ASEL-C-1-10I①-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points                           |               |                             | -              | → P567   |  |   |  |

<sup>\*</sup> This is for the single-axis ASEL.

\* ① is a placeholder for the code "LA" if the power-saving option is specified.

RCA2-GS4N ROBO Cylinder Mini Rod Type Short-Length Free Mounting Type with Single Guide 34mm Width 24V Servo Motor Ball Screw/Lead Screw lacktriangle Configuration: RCA2 - GS4N 20 30 Cable Length Encoder Motor Lead Stroke Compatible Controlle Option 6:6mm ball screw 4:4mm ball screw 2:2mm ball screw K2 : Connector Cable exit direction LA : Power-saving I: Incremental \* The Simple N: None 20 : 20W Servo 30:30mm A1: ACON P:1m S:3m M:5m Motor RACON absolute encoder ASEL 6S:6mm lead screw 4S:4mm lead screw is also considered A3 : AMEC X 🗆 🗆 : Custom 2S:2mm lead screw ASEP \* See page Pre-35 for an explanation of the naming convention.

Power-saving

Technical References

P. A-5

(1) The horizontal load capacity is based on the use of a guide to prevent any radial and/or moment load on the rod. If no guide will be installed, see the Tip Load vs. Service Life graph (  $\rightarrow$  page

(2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2mm-lead model, lead screw model, or when used vertically). This is the upper limit of the acceleration.

When using the lead screw model, please use it for applications that are suitable for its characteristics. (See page Pre-42 for more information.)

## **Actuator Specifications**

Lead and Load Capacity Positioning Repeatability Stroke Max. Load Capacity Rated Feed Model Lead Output (v Screw Thrust (N RCA2-GS4N-I-20-6-30-10-20-3 6 2 0.5 33.8 RCA2-GS4N-I-20-4-30- 1 - 2 - 3 20 Ball Screv 4 3 0.75 50.7 +0.02 (Fixed RCA2-GS4N-I-20-2-30-10-2-3 2 6 1.5 101.5 RCA2-GS4N-I-20-6S-30- 1 - 2 - 3 6 0.25 0.125 19.9 30 RCA2-GS4N-I-20-4S-30- 1 - 2 - 3 20 4 0.5 0.25 29.8 ±0.05 Screw (Fixed) RCA2-GS4N-I-20-2S-30- 1 - 2 - 3 2 0.5 59.7

| Stroke |   | 30<br>(mm) |
|--------|---|------------|
| We     | 6 | 270 <220>  |
| Screw  | 4 | 200        |

■ Stroke and Maximum Speed

| Loud       | _ | ()        |
|------------|---|-----------|
| We         | 6 | 270 <220> |
| Ball Screw | 4 | 200       |
| Ba         | 2 | 100       |
| ew         | 6 | 220       |
| Lead Screw | 4 | 200       |
| Les        | 2 | 100       |
|            |   |           |

The values enclosed in < > apply for vertical usage. (Unit: mm/s)

| Ottotto Liot         |                |            |
|----------------------|----------------|------------|
|                      |                |            |
|                      | Standard Price |            |
| Stroke (mm) Feed Scr |                | Screw      |
|                      | Ball Screw     | Lead Screw |
| 30                   | _              | _          |

#### ② Cable List

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
| Standard        | P (1m)                | -              |
| (Robot Cables)  | <b>S</b> (3m)         | _              |
|                 | <b>M</b> (5m)         | -              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | _              |
|                 | X16 (16m) ~ X20 (20m) | _              |

- \* The RCA2 comes standard with a robot cable.
- \* See page A-39 for cables for maintenance.

Legend ① Compatible controller ② Cable length ③ Options

| Name                           | Option Code | See Page | Standard Price |
|--------------------------------|-------------|----------|----------------|
| Connector cable exit direction | K2          | → A-32   | -              |
| Power-saving                   | LA          | → A-32   | -              |

#### Actuator Specifications

| Item Description                                  |   |
|---|---|
| Drive System Ball screw/lead screw ø6mm C10 grade |   |
| Lost Motion                                       | Ball screw: 0.1mm or less/lead screw: 0.3mm or less (initial value) |
| Frame Material: Aluminum (white alumite treated)  |   |
| Ambient Operating Temp./Humidity                  | 0~40°C, 85% RH or less (non-condensing)                             |
| Service Life Lead Screw                           | Horizontal: 10 million cycles Vertical: 5 million cycles            |

187 RCA2-GS4N

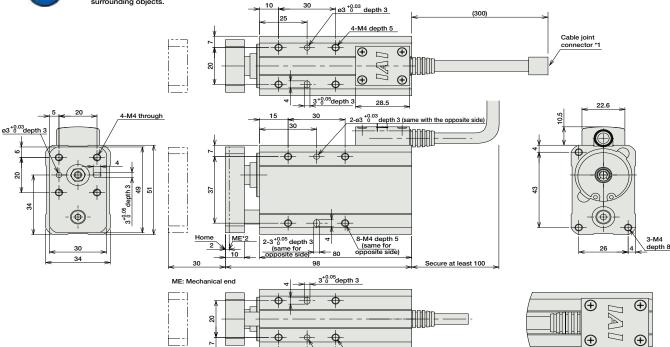
CAD drawings can be downloaded from IAI website. www.intelligentactuator.com

For Special Orders



2D CAD

- \*1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- When homing, the rod moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.



4-M4 depth 8

ø3 <sup>+0.03</sup> depth 3

### ■ Dimensions/Weight by Stroke

Connector cable exit direction

(Model: K2)

\* Rotates 180 degrees with respect to the standard model.

| - Difficultions Weight by Ottoke |      |  |
|----------------------------------|------|--|
| Stroke                           | 30   |  |
| Weight (kg)                      | 0.55 |  |

#### ① Compatible Controllers

The RCA2 series actuators can operate with the controllers below. Select the controller according to your usage.

10

| Name   | External View       | Model  | Description  | Max. Positioning Points | Input Voltage               | Power Supply Capacity    | Standard Price | See Page |
|--|---------------------|--|--|-------------------------|-----------------------------|--------------------------|----------------|----------|
| Onlaw and Makes Town                                 |                     | AMEC-C-20I①-NP-2-1   | Easy-to-use controller, even for beginners   | 3 points                | AC100V                      | 2.4A rated               | -              | → P477   |
| Solenoid Valve Type                                  | 1                   | ASEP-C-20I①-NP-2-0   | Operable with same signal as solenoid valve.   |                         |                             | (Standard)<br>1.3A rated | -              | - → P487 |
| Splash-Proof Solenoid<br>Valve Type                  |                     | ASEP-CW-20I①-NP-2-0  | Supports both single and double solenoid types. No homing necessary with simple absolute type. |                         |                             |                          | -              |          |
| Positioner Type                                      | E                   | ACON-C-20I①-NP-2-0   | - Positioning is possible for up to 512 points   | 512 points              |                             |                          | -              |          |
| Safety-Compliant<br>Positioner Type                  |                     | ACON-CG-20I①-NP-2-0  |  |                         |                             |                          | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) | ACON-PL-20I①-NP-2-0 | Pulse train input type with differential line driver support | (-)  | DC24V                   | 4.4A max.<br>(Power-saving) | -                        | → P535         |          |
| Pulse Train Input Type<br>(Open Collector)           |                     | ACON-PO-20I①-NP-2-0  | Pulse train input type with<br>open collector support  | (-)                     |                             | 1.3A rated<br>2.5A max.  | -              |          |
| Serial Communication<br>Type                         |                     | ACON-SE-20I①-N-0-0   | Dedicated to serial communication  | 64 points               |                             |                          | -              |          |
| Field Network Type                                   |                     | RACON-20①  | Dedicated to field network   | 768 points              |                             |                          | <u>-</u>       | → P503   |
| Program Control Type                                 |                     | ASEL-C-1-20I①-NP-2-0   | Programmed operation is possible<br>Operation is possible on up to 2 axes                      | 1500 points             |                             |                          | -              | → P567   |

<sup>\*</sup> This is for the single-axis ASEL.
\* ① is a placeholder for the code "LA" if the power-saving option is specified.

ROBO Cylinder Mini Rod Type Short-Length Mounting Type with Double Guide RCA2-GD3N 28mm Width 24V Servo Motor Lead Screw lacktriangle Configuration: RCA2 - GD3N 30 10 Encoder Motor Lead Stroke 10 : 10W Servo 4S: 4mm lead screw
Motor 2S: 2mm lead screw
1S: 1mm lead screw I: Incremental \* The Simple 30 :30mm absolute encoder is also considered \* See page Pre-35 for an explanation of the naming convention.

Compatible Controlle

Cable Length Option K2 : Connector Cable exit direction LA : Power-saving N: None P:1m S:3m M:5m

ASEL A3 : AMEC X 🗆 🗆 : Custom ASEP

A1: ACON

RACON

## Power-saving

**曾P. A-5** 



- (1) The horizontal load capacity is based on the use of a guide to prevent any radial and/or moment load on the rod. If no guide will be installed, see the Tip Load vs. Service Life graph ( ightarrow page
  - A-82).
- The load capacity is based on operation at an acceleration of 0.2G. This is the upper limit of the acceleration.
- This model uses a lead screw. Please ensure that your usage is appropriate for its characteristics. (See page Pre-42 for more information.)

#### Actuator Specifications ■ Lead and Load Capacity ■ Stroke and Maximum Speed Max. Load Capacity Rated Feed Stroke 30 Model Lead Output (W Screw RCA2-GD3N-I-10-4S-30-1 - 2 - 3 4 0.25 0.125 25.1 4 200 Lead Screw Lead RCA2-GD3N-I-10-2S-30-10-20-3 10 2 0.5 0.25 50.3 +0.05 30 2 100 Screw RCA2-GD3N-I-10-1S-30-1-2-3 1 1 0.5 100.5 1 50 (Unit: mm/s) Legend ① Compatible controller ② Cable length ③ Options

| Stroke List |                |
|-------------|----------------|
|             | Standard Price |
| Stroke (mm) | Feed Screw     |
|             | Lead Screw     |
| 30          | -              |

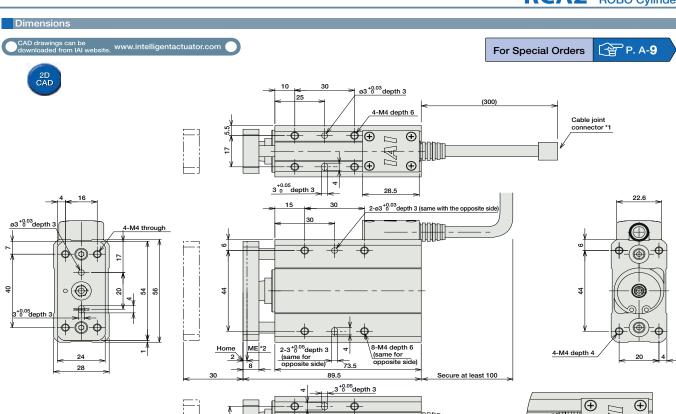
| ② Cable List    |                                    |                |  |  |
|-----------------|------------------------------------|----------------|--|--|
| Туре            | Cable Symbol                       | Standard Price |  |  |
| Standard        | P (1m)                             | _              |  |  |
|                 | <b>S</b> (3m)                      | -              |  |  |
| (Robot Cables)  | <b>M</b> (5m)                      | -              |  |  |
|                 | <b>X06</b> (6m) ~ <b>X10</b> (10m) | -              |  |  |
| Special Lengths | X11 (11m) ~ X15 (15m)              | -              |  |  |
|                 | X16 (16m) ~ X20 (20m)              | -              |  |  |
|                 |                                    |                |  |  |

- \* The RCA2 comes standard with a robot cable.
- \* See page A-39 for cables for maintenance.

| ③ Option List                  |             |          |                |  |  |
|--------------------------------|-------------|----------|----------------|--|--|
| Name                           | Option Code | See Page | Standard Price |  |  |
| Connector cable exit direction | K2          | → A-32   | -              |  |  |
| Power-saving                   | LA          | → A-32   | -              |  |  |

| Item                             | Description  |
|----------------------------------|--|
| Drive System                     | Lead screw ø4mm C10 grade                                |
| Lost Motion                      | 0.3mm or less (initial value)                            |
| Frame                            | Material: Aluminum (white alumite treated)               |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non-condensing)                  |
| Service Life                     | Horizontal: 10 million cycles Vertical: 5 million cycles |

189



4-M4 depth 6

⊨ ÿ3 <sup>+0.03</sup>depth 3

\*1 A motor-encoder cable is connected here. See page A-39 for details on cables.

\*2 When homing, the rod moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.

ME: Mechanical end SE: Stroke end

## ■ Dimensions/Weight by Stroke

**(** 

Connector cable exit direction

(Model: K2)

\* Rotates 180 degrees with respect to the standard model.

**(** 

| <b>=</b> 2  |      |  |
|-------------|------|--|
| Stroke      | 30   |  |
| Weight (kg) | 0.41 |  |

#### ① Compatible Controllers

10

| Name   | External View | Model   | Description   | Max. Positioning Points | Input Voltage               | Power Supply Capacity    | Standard Price | See Page |
|--|---------------|---|---|-------------------------|-----------------------------|--------------------------|----------------|----------|
|  |               | AMEC-C-10I①-NP-2-1  | Easy-to-use controller, even for beginners  | mater contoning round   | AC100V                      | 2.4A rated               | -              | → P477   |
| Solenoid Valve Type                                  | 1             | ASEP-C-10I①-NP-2-0  | Operable with same signal as solenoid valve.<br>Supports both single and double solenoid types.<br>No homing necessary with simple absolute type. | 3 points                | 3 points                    | (Standard)<br>1.3A rated | -              |          |
| Splash-Proof<br>Solenoid Valve Type                  | 1             | ASEP-CW-10I①-NP-2-0   |   |                         |                             |                          | -              | → P487   |
| Positioner Type                                      |               | ACON-C-10I①-NP-2-0  | - Positioning is possible for up to 512 points  | 512 points              |                             |                          | -              |          |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-10I①-NP-2-0   |   |                         |                             |                          | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) | O             | ACON-PL-10I①-NP-2-0  Pulse train input type with differential line driver support | (-)   | DC24V                   | 4.4A max.<br>(Power-saving) | -                        | → P535         |          |
| Pulse Train Input Type<br>(Open Collector)           |               | ACON-PO-10I①-NP-2-0   | Pulse train input type with<br>open collector support   | (-)                     |                             | 1.3A rated<br>2.5A max.  | -              |          |
| Serial<br>Communication Type                         |               | ACON-SE-10I①-N-0-0  | Dedicated to serial communication   | 64 points               |                             |                          | -              |          |
| Field Network Type                                   |               | RACON-10①   | Dedicated to field network  | 768 points              |                             |                          | <u>-</u>       | → P503   |
| Program Control Type                                 |               | ASEL-C-1-10I①-NP-2-0  | Programmed operation is possible<br>Operation is possible on up to 2 axes   | 1500 points             |                             |                          | -              | → P567   |

IAI

PMEC (AMEC)
PSEP (ASEP)
ROBO NET
ERC2
PCON
ACON
SCON
PSEL
ASEL
XSEL

Servo Motor (24V)

<sup>\*</sup> This is for the single-axis ASEL.
\* ① is a placeholder for the code "LA" if the power-saving option is specified.

Туре

lacktriangle Configuration: RCA2 - GD4N \* See page Pre-35 for an explanation of the naming convention.

ROBO Cylinder Mini Rod Type Short-Length Free Mounting Type with Double Guide RCA2-GD4N 34mm Width 24V Servo Motor Ball Screw/Lead Screw

30

Encoder Motor I: Incremental \* The Simple 20 : 20W Servo Motor absolute encoder is also considered

20

6: 6mm ball screw 4: 4mm ball screw 2: 2mm ball screw 6S: 6mm lead screw 4S: 4mm lead screw 2S: 2mm lead screw

Stroke Compatible Controlle 30:30mm A1: ACON RACON ASEL A3 : AMEC

ASEP

Cable Length N: None P:1m S:3m M:5m X 🗆 🗆 : Custom

Option K2 : Connector Cable exit direction LA : Power-saving

Power-saving

P. A-5



- (1) The horizontal load capacity is based on the use of a guide to prevent any radial and/or moment load on the rod. If no guide will be installed, see the Tip Load vs. Service Life graph (  $\rightarrow$  page
- The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2mm-lead model, lead screw model, or when used vertically). This is the upper limit of the acceleration.
- When using the lead screw model, please use it for applications that are suitable for its characteristics. (See page Pre-42 for more information.)

## Actuator Specifications

Lead and Load Capacity Positioning Repeatability (mm) Max. Load Capacity Rated Feed Lead Model Screw Thrust (N RCA2-GD4N-I-20-6-30-10-20-3 6 2 0.5 33.8 RCA2-GD4N-I-20-4-30- 1 - 2 - 3 20 Ball Screv 4 3 0.75 50.7 +0.02 30 RCA2-GD4N-I-20-2-30- 1 - 2 - 3 2 6 1.5 101.5 RCA2-GD4N-I-20-6S-30- 1 - 2 - 3 6 0.25 0.125 19.9 RCA2-GD4N-I-20-4S-30-10-20-3 20 4 0.5 0.25 29.8 ±0.05 30 Screw RCA2-GD4N-I-20-2S-30- 1 - 2 - 3 2 59.7

| Lead       | Stroke | 30<br>(mm) |
|------------|--------|------------|
| We         | 6      | 270 <220>  |
| Ball Screw | 4      | 200        |
| l ag       | 2      | 100        |
| we         | 6      | 220        |
| Lead Screw | 4      | 200        |
| Les        | 2      | 100        |

■ Stroke and Maximum Speed

The values enclosed in < > apply for vertical usage. (Unit: mm/s)

| Stroke (mm) | Standard Price |            |  |
|-------------|----------------|------------|--|
|             | Feed Screw     |            |  |
|             | Ball Screw     | Lead screw |  |
| 30          | -              | -          |  |

Legend ① Compatible controller ② Cable length ③ Options

#### ② Cable List

Actuator Specifications

Service Life Lead Screw

| Туре            | Cable Symbol                       | Standard Price |
|-----------------|------------------------------------|----------------|
| Standard        | P (1m)<br>S (3m)                   | -              |
| (Robot Cables)  | <b>M</b> (5m)                      | -              |
|                 | <b>X06</b> (6m) ~ <b>X10</b> (10m) | _              |
| Special Lengths | X11 (11m) ~ X15 (15m)              | _              |
|                 | X16 (16m) ~ X20 (20m)              | -              |

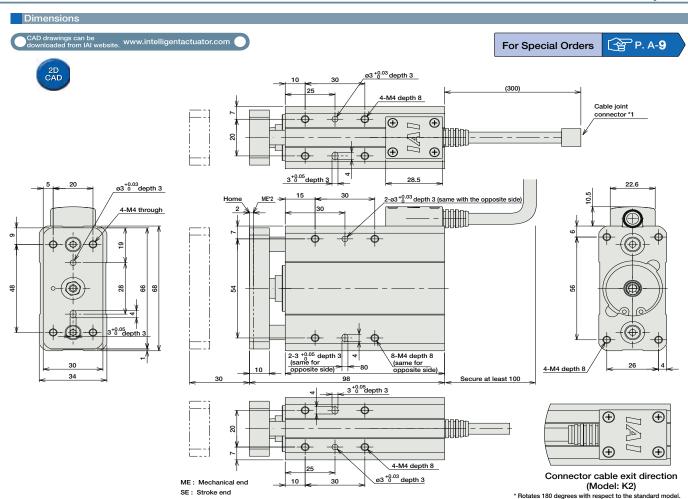
Horizontal: 10 million cycles Vertical: 5 million cycles

- \* The RCA2 comes standard with a robot cable.
- \* See page A-39 for cables for maintenance.

| © Option List                  | © Option Elec |          |                |  |  |  |
|--------------------------------|---------------|----------|----------------|--|--|--|
|                                |               |          |                |  |  |  |
| Name                           | Option Code   | See Page | Standard Price |  |  |  |
| Connector cable exit direction | K2            | → A-32   | -              |  |  |  |
| Power-saving                   | LA            | → A-32   | -              |  |  |  |
|                                | -             |          |                |  |  |  |

#### Item Description Drive System Ball screw/lead screw ø6mm C10 grade Ball screw: 0.1mm or less/lead screw: 0.3mm or less (initial value) Lost Motion Material: Aluminum (white alumite treated) Frame Ambient Operating Temp./Humidity 0~40°C, 85% RH or less (non-condensing)

3 Option List



- \*1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- \*2 When homing, the rod moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.

| ■ Dimensions/Weight by Stroke |      |  |
|-------------------------------|------|--|
| Stroke                        | 30   |  |
| Weight (kg)                   | 0.64 |  |

| Name  | External View  | Model                | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity    | Standard Price           | See Pag |
|---|--|----------------------|--|-------------------------|---------------|--------------------------|--------------------------|---------|
| Onland Makes Toron                                  | Control of the Contro | AMEC-C-20I①-NP-2-1   | Easy-to-use controller, even for beginners   |                         | AC100V        | 2.4A rated               | -                        | → P477  |
| Solenoid Valve Type                                 |  | ASEP-C-20I①-NP-2-0   | Operable with same signal as solenoid valve.   | 3 points                |               | (Standard)<br>1.3A rated | -                        | . D40   |
| Splash-Proof<br>Solenoid Valve Type                 | 1  | ASEP-CW-201①-NP-2-0  | Supports both single and double solenoid types. No homing necessary with simple absolute type. |                         |               |                          | -                        | → P487  |
| Positioner Type                                     |  | ACON-C-20I①-NP-2-0   | Pulse train input type with  | oints 512 points        |               |                          | -                        |         |
| Safety-Compliant<br>Positioner Type                 |  | ACON-CG-20I①-NP-2-0  |  |                         |               |                          | -                        |         |
| Pulse Train Input Type<br>Differential Line Driver) | A  | ACON-PL-20I①-NP-2-0  |  |                         |               | DC24V                    | 4.4A max. (Power-saving) | -       |
| Pulse Train Input Type<br>(Open Collector)          | e l  | ACON-PO-20I①-NP-2-0  | Pulse train input type with<br>open collector support  |                         |               |                          | 1.3A rated<br>2.5A max.  | -       |
| Serial<br>Communication Type                        |  | ACON-SE-20I①-N-0-0   | Dedicated to serial communication  | 64 points               |               |                          | -                        |         |
| Field Network Type                                  |  | RACON-20①            | Dedicated to field network   | 768 points              |               |                          | -                        | → P50   |
| rogram Control Type                                 |  | ASEL-C-1-20I①-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                      | 1500 points             |               |                          | -                        | → P56   |

IAI

192

RCA2-GD4N

Servo Motor (24V)

RCA2-SD3N ROBO Cylinder Mini Rod Type Short-Length Mounting Slide Unit Type with Double Guide 60mm Width 24V Servo Motor Lead Screw  $\blacksquare$  Configuration: RCA2 - SD3N 10 Encoder Motor Lead Stroke Compatible Controlle Cable Length Option 4S:4mm lead screw 2S:2mm lead screw 1S:1mm lead screw I: Incremental \* The Simple N: None 10 : 10W Servo 25:25mm A1: ACON LA: Power-saving P:1m S:3m M:5m X : Custom 50:50mm Motor RACON absolute encoder ASEL is also considered A3:AMEC ASEP \* See page Pre-35 for an explanation of the naming convention.



| Δε    | ctuator Specifications                  |                     |               |              |                              |               |                     |            |                |            |            |                 |
|-------|---|---------------------|---------------|--------------|------------------------------|---------------|---------------------|------------|----------------|------------|------------|-----------------|
|       | ead and Load Capacity                   |                     |               |              |                              |               |                     |            |                | <b>E</b> 8 | Stroke and | d Maximum Speed |
|       | Model                                   | Motor<br>Output (w) | Feed<br>Screw | Lead<br>(mm) | Max. Load<br>Horizontal (kg) |               | Rated<br>Thrust (N) |            | Stroke<br>(mm) | Lead       | Stroke     | 25/50<br>(mm)   |
| RC    | CA2-SD3N-I-10-4S-①-②-③-④                |                     |               | 4            | 0.25                         | 0.125<br>(*1) | 25.1                |            |                | ew         | 4          | 200             |
| RC    | CA2-SD3N-I-10-2S-①-②-③-④                | 10                  | Lead<br>screw | 2            | 0.5                          | 0.25<br>(*1)  | 50.3                | ±0.05      | 25<br>50       | ead Screw  | 2          | 100             |
| RC    | CA2-SD3N-I-10-1S-①-②-③-④                |                     |               | 1            | 1                            | 0.5<br>(*1)   | 100.5               |            |                | Lea        | 1          | 50              |
| Legen | d ① Stroke ② Compatible controller ③ Co | able lengt          | h 40          | ptions       |                              | (*1           | ) When th           | e actuator | is fixed       |            |            | (Unit: mm/s)    |

| ① Stroke List  |  |  |
|----------------|--|--|
| Standard Price |  |  |
| Feed Screw     |  |  |
| Lead Screw     |  |  |
| -              |  |  |
| -              |  |  |
|                |  |  |

| ③ Cable Lis        | ③ Cable List                       |                |  |  |  |
|--------------------|------------------------------------|----------------|--|--|--|
| Туре               | Cable Symbol                       | Standard Price |  |  |  |
| Standard (Patrice) | P (1m)                             | -              |  |  |  |
|                    | <b>S</b> (3m)                      | -              |  |  |  |
| (Robot Cables)     | <b>M</b> (5m)                      | -              |  |  |  |
|                    | <b>X06</b> (6m) ~ <b>X10</b> (10m) | -              |  |  |  |
| Special Lengths    | X11 (11m) ~ X15 (15m)              | _              |  |  |  |
|                    | X16 (16m) ~ X20 (20m)              | -              |  |  |  |
|                    |                                    |                |  |  |  |

<sup>\*</sup> The RCA2 comes standard with a robot cable.

| 4 Option List |             |          |                |
|---------------|-------------|----------|----------------|
| Name          | Option Code | See Page | Standard Price |
| Power-saving  | LA          | → A-32   | _              |

| Actuator Specifications          |  |  |
|----------------------------------|--|--|
| Item                             | Description  |  |
| Drive System                     | Lead Screw ø4mm C10 grade                                |  |
| Lost Motion                      | 0.3mm or less (initial value)                            |  |
| Frame                            | Material: Aluminum (white alumite treated)               |  |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non-condensing)                  |  |
| Service Life                     | Horizontal: 10 million cycles Vertical: 5 million cycles |  |

193 RCA2-SD3N

Type Mini

itegrate

Min

Controllers Integrated

/Flat Type

Standard

Gripper Rotary Type

турс

Туре

Jonardiler

PSEP

NET

PCON

PSE

ASE

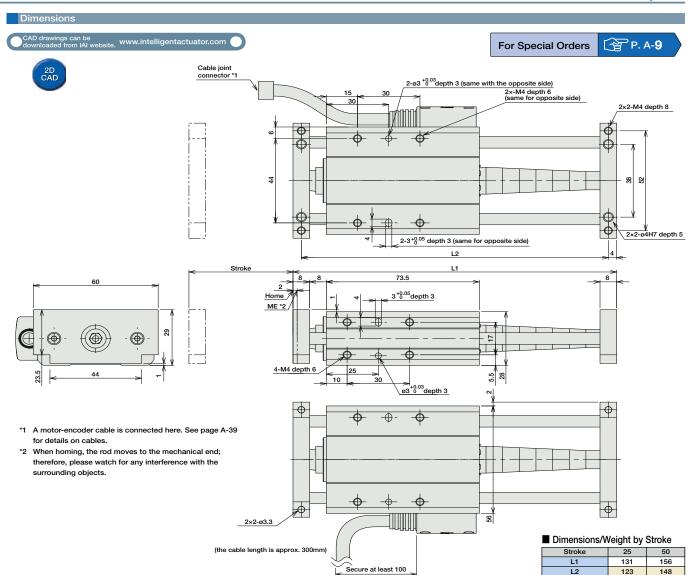
Dulas Mate

Servo Motor (24V)

Servo Motor (200V)

Linear Servo Motor

<sup>\*</sup> See page A-39 for cables for maintenance.



#### ② Compatible Controllers

The RCA2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View | Model                | Description   | Max. Positioning Points | Input Voltage | Power Supply Capacity       | Standard Price | See Page |
|--|---------------|----------------------|---|-------------------------|---------------|-----------------------------|----------------|----------|
| Solenoid Valve Type                                  | M             | AMEC-C-10I①-NP-2-1   | Easy-to-use controller, even for beginners  |                         | AC100V        | 2.4A rated                  | -              | → P477   |
| Solenoid valve type                                  | 1             | ASEP-C-10I①-NP-2-0   | Operable with same signal as solenoid valve.  | 3 points                |               |                             | -              | D407     |
| Splash-Proof<br>Solenoid Valve Type                  | 1             | ASEP-CW-10I①-NP-2-0  | Supports both single and double solenoid types.<br>No homing necessary with simple absolute type. |                         |               |                             | -              | → P487   |
| Positioner Type                                      |               | ACON-C-10I①-NP-2-0   | Positioning is possible for up to 512 points  | 512 points              |               |                             | -              |          |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-10I①-NP-2-0  | i ostaoning is possible for up to 512 points  | 012 pointe              |               | (Standard)<br>1.3A rated    | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) |               | ACON-PL-10I①-NP-2-0  | Pulse train input type with differential line driver support                                      | (-)                     | DC24V         | 4.4A max.<br>(Power-saving) | -              | → P535   |
| Pulse Train Input Type<br>(Open Collector)           | c.            | ACON-PO-10I①-NP-2-0  | Pulse train input type with<br>open collector support   | (-)                     |               | 1.3A rated<br>2.5A max.     | -              |          |
| Serial Communication<br>Type                         |               | ACON-SE-10I①-N-0-0   | Dedicated to serial communication   | 64 points               |               |                             | -              |          |
| Field Network Type                                   |               | RACON-10①            | Dedicated to field network  | 768 points              |               |                             | _              | → P503   |
| Program Control Type                                 |               | ASEL-C-1-10I①-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                         | 1500 points             |               |                             | -              | → P567   |

Servo Motor (24V)

Weight (kg)

0.48

0.5

<sup>\*</sup> This is for the single-axis ASEL.
\* ① is a placeholder for the code "LA" if the power-saving option is specified.

RCA2-SD4N

ROBO Cylinder Mini Rod Type Short-Length Slide Unit Type with Double Guide 72mm Width 24V Servo Motor Ball Screw/Lead Screw

■ Configuration: RCA2 — SD4N

\* See page Pre-35 for an explanation of the naming convention.

Encoder

I: Incremental \* The Simple

absolute encoder

is also considered

20 Motor 20 : 20W Servo

6: 6mm ball screw 4: 4mm ball screw 2: 2mm ball screw 6S: 6mm lead screw 4S: 4mm lead screw

2S: 2mm lead screw

Compatible Controlle 25 :25mm 50 :50mm 75 :75mm

A1: ACON RACON ASEL A3 : AMEC

ASEP

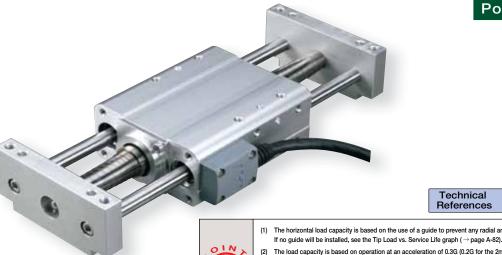
N: None P:1m S:3m M:5m

Cable Length

Option LA: Power-saving

X 🗆 🗆 : Custom

Power-saving



Motor

Technical References



The horizontal load capacity is based on the use of a guide to prevent any radial and/or moment load on the rod.

- The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2mm-lead model, lead screw model, or when used vertically). This is the upper limit of the acceleration.
- The values for the vertical load capacity are based on a setup in which the actuator is secured and the side bracket is moved. Please note that moving the actuator against the secured side bracket is not possible.
- When using the lead screw model, please use it for applications that are suitable for its characteristics. (See page Pre-42 for more information.)

#### Actuator Specifications Lead and Load Capacity

Max. Load Capacity Rated Positioning Repeatability Stroke Feed Lead Model Screw Vertical (kg) Thrust (N 0.5 RCA2-SD4N-I-20-6-1 - 2 - 3 - 4 6 2 33.8 (\*1) 0.75 RCA2-SD4N-I-20-4- 1 - 2 - 3 - 4 20 Ball Screv 4 3 50.7 +0.02 50 (\*1) 75 1.5 RCA2-SD4N-I-20-2-1 - 2 - 3 - 4 2 6 101.5 (\*1) 0.125 RCA2-SD4N-I-20-6S-1 - 2 - 3 - 4 6 0.25 19.9 (\*1) 25 0.25 RCA2-SD4N-I-20-4S-1 - 2 - 3 - 4 20 4 0.5 29.8 ±0.05 50 Screw (\*1) 75 0.5 RCA2-SD4N-I-20-2S-1 - 2 - 3 - 4 2 1 59.7

■ Stroke and Maximum Speed

|   | Lead       |                | (mm)                       | 50 ∼ 75<br>(mm)         |
|---|------------|----------------|----------------------------|-------------------------|
|   | We         | 6              | 240 <200>                  | 300                     |
|   | Ball Screw | 4              | 200                        | 200                     |
|   | Ba         | 2              | 100                        | 100                     |
|   | ew         | 6              | 200                        | 300                     |
|   | Lead Screw | 4              | 200                        | 200                     |
|   | Les        | 2              | 100                        | 100                     |
| - | * The v    | alues enclosed | l in < > apply for vertice | al usage (I Init: mm/s) |

(\*1) When the main unit is fixed

#### ① Stroke List

| · Circle List |                |            |  |  |  |  |
|---------------|----------------|------------|--|--|--|--|
|               |                |            |  |  |  |  |
|               | Standard Price |            |  |  |  |  |
| Stroke (mm)   | Feed Screw     |            |  |  |  |  |
|               | Ball Screw     | Lead Screw |  |  |  |  |
| 25            | _              | _          |  |  |  |  |
| 50            | -              | _          |  |  |  |  |
| 75            | 1              | _          |  |  |  |  |

Legend Stroke Compatible controller Cable length Options

#### ③ Cable List

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
| Standard        | P (1m)                | _              |
|                 | <b>S</b> (3m)         | _              |
| (Robot Cables)  | <b>M</b> (5m)         | _              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths |                       | _              |
|                 | X16 (16m) ~ X20 (20m) | -              |

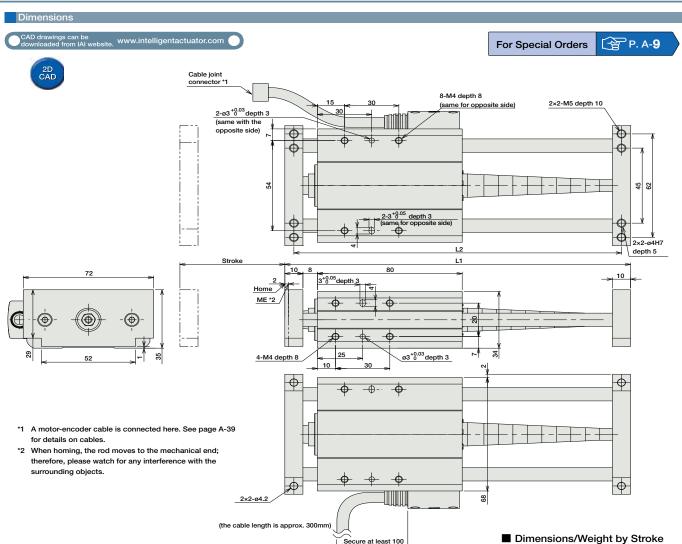
- \* The RCA2 comes standard with a robot cable.
- \* See page A-39 for cables for maintenance.

| 4 Option List |             |          |                |
|---------------|-------------|----------|----------------|
| Name          | Option Code | See Page | Standard Price |
| Power-saving  | 1.4         | → A 22   | _              |

#### Actuator Specifications

| Item                             | Description   |  |  |
|----------------------------------|---|--|--|
| Drive System                     | Ball screw/Lead screw ø6mm C10 grade                                |  |  |
| Lost Motion                      | Ball screw: 0.1mm or less/Lead screw: 0.3mm or less (initial value) |  |  |
| Frame                            | Material: Aluminum (white alumite treated)                          |  |  |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non-condensing)                             |  |  |
| Service Life Lead Screw          | Horizontal: 10 million cycles Vertical: 5 million cycles            |  |  |

195 RCA2-SD4N



| ② Compatible Controllers |
|--------------------------|
|--------------------------|

The RCA2 series actuators can operate with the controllers below. Select the controller according to your usage

| Name   | External View | Model                | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity    | Standard Price | See Page       |   |        |
|--|---------------|----------------------|--|-------------------------|---------------|--------------------------|----------------|----------------|---|--------|
| Solenoid Valve Type                                  | 14            | AMEC-C-20I①-NP-2-1   | Easy-to-use controller, even for beginners   |                         | AC100V        | 2.4A rated               | -              | → P477         |   |        |
| Soleliolu valve Type                                 | •             | ASEP-C-20I①-NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |               |                          | -              | → P487         |   |        |
| Splash-Proof<br>Solenoid Valve Type                  | 1             | ASEP-CW-20I①-NP-2-0  | No homing necessary with simple absolute type.   |                         |               |                          | -              | → P407         |   |        |
| Positioner Type                                      |               | ACON-C-20I①-NP-2-0   | Positioning is possible for up to 512 points   | 512 points              |               |                          |                | -              |   |        |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-20I①-NP-2-0  | Positioning is possible for up to 312 points   |                         |               | (Standard)<br>1.3A rated | -              |                |   |        |
| Pulse Train Input Type<br>(Differential Line Driver) |               | ACON-PL-20I①-NP-2-0  | Pulse train input type with differential line driver support                                 | (-)                     | DC24V         | (Power-saving)           | (Power-saving) | (Power-saving) | - | → P535 |
| Pulse Train Input Type<br>(Open Collector)           | ě             | ACON-PO-20I①-NP-2-0  | Pulse train input type with open collector support   | (-)                     |               | 1.3A rated<br>2.5A max.  | -              |                |   |        |
| Serial<br>Communication Type                         |               | ACON-SE-20I①-N-0-0   | Dedicated to serial communication  | 64 points               |               |                          |                |                | - |        |
| Field Network Type                                   |               | RACON-20①            | Dedicated to field network   | 768 points              |               |                          | -              | → P503         |   |        |
| Program Control Type                                 |               | ASEL-C-1-20I①-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |               |                          | -              | → P567         |   |        |
|  |               |                      |  | * This is for the si    | male evie ACI | -1                       |                |                |   |        |

Stroke

L1

Weight (kg)

75

191

181

0.77

50

166

156

0.75

25 141

131

0.73

Servo Motor (24V)

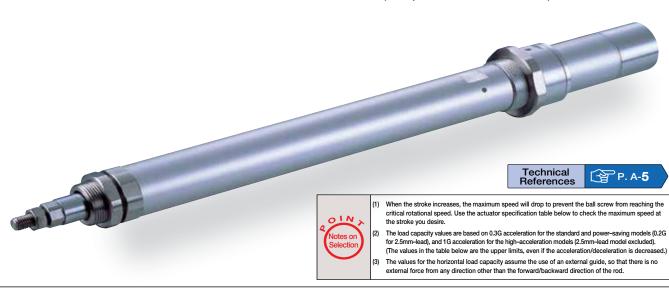
<sup>\*</sup> ① is a placeholder for the code "LA" if the power-saving option is specified.

RCA-RA3C ROBO Cylinder Rod Type ø32mm Diameter 24V Servo Motor Coupled RCA -RA3C 20 Configuration: Encoder Motor Type Lead Cable Length Option A1 : ACON I: Incremental \* The Simple 10: 10mm 5: 5mm N: None 20: 20W Servo 50:50mm See Options below N: None
P: 1m
S: 3m
M: 5m
X : Custom
R : Robot cable RACON Motor absolute encoder 2.5 : 2.5mm 200 : 200mm ASEL is also considered A3:AMEC (50mm pitch increments) ASEP \* See page Pre-35 for an explanation of the naming convention.

## For High Acceleration/Deceleration

Power-saving

(Except the 2.5mm-lead model)



## **Actuator Specifications** ■ Lead and Load Capacity

| = Loud and Loud Supasity                               |   |      |                 |               |            |                                |  |  |  |  |
|--|---|------|-----------------|---------------|------------|--------------------------------|--|--|--|--|
| Model  | Motor   | Lead | Max. Load       | I Capacity    | Rated      | Stroke                         |  |  |  |  |
| Wiodei   | Output (w)  | (mm) | Horizontal (kg) | Vertical (kg) | Thrust (N) | (mm)                           |  |  |  |  |
| RCA-RA3C-I-20-10-①-②-③-④                               |   | 10   | 4.0             | 1.5           | 36.2       | 50 000                         |  |  |  |  |
| RCA-RA3C-I-20-5-①-②-③-④                                | 20  | 5    | 9.0             | 3.0           | 72.4       | 50~200<br>(50mm<br>increments) |  |  |  |  |
| RCA-RA3C-I-20-2.5-1 -2 -3 -4                           |   | 2.5  | 18.0            | 6.5           | 144.8      | increments,                    |  |  |  |  |
| Legend ① Stroke ② Compatible controllers ③ Cable lengt | Legend ① Stroke ② Compatible controllers ③ Cable length ④ Options |      |                 |               |            |                                |  |  |  |  |

| ■ Stroke and   | Stroke and Maximum Speed        |  |  |  |  |  |  |  |  |  |
|----------------|---------------------------------|--|--|--|--|--|--|--|--|--|
| Stroke<br>Lead | $50 \sim 200$ (50mm increments) |  |  |  |  |  |  |  |  |  |
| 10             | 500                             |  |  |  |  |  |  |  |  |  |
| 5              | 250                             |  |  |  |  |  |  |  |  |  |
| 2.5            | 125                             |  |  |  |  |  |  |  |  |  |
|                | (Unit: mm/s)                    |  |  |  |  |  |  |  |  |  |

| ① Stroke Lis | st             |
|--------------|----------------|
| Stroke (mm)  | Standard Price |
| 50           | -              |
| 100          | -              |
| 150          | -              |
| 200          | -              |

|  | 3 Cable Lis     | L .                   |                |
|--|-----------------|-----------------------|----------------|
|  | Туре            | Cable Symbol          | Standard Price |
|  |                 | P (1m)                | -              |
|  | Standard        | <b>S</b> (3m)         | -              |
|  |                 | <b>M</b> (5m)         | -              |
|  | Special Lengths | X06 (6m) ~ X10 (10m)  | _              |
|  |                 | X11 (11m) ~ X15 (15m) | -              |
|  |                 | X16 (16m) ~ X20 (20m) | _              |
|  |                 | R01 (1m) ~ R03 (3m)   | -              |
|  |                 | R04 (4m) ~ R05 (5m)   | -              |
|  | Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |
|  |                 | R11 (11m) ~ R15 (15m) | _              |
|  |                 | R16 (16m) ~ R20 (20m) | _              |

<sup>\*</sup> See page A-39 for cables for maintenance.

| Option List                         |             |          |                |  |  |  |  |  |  |
|-------------------------------------|-------------|----------|----------------|--|--|--|--|--|--|
| Name                                | Option Code | See Page | Standard Price |  |  |  |  |  |  |
| Brake                               | В           | → A–25   | -              |  |  |  |  |  |  |
| Foot bracket                        | FT          | → A-29   | -              |  |  |  |  |  |  |
| Flange bracket (front)              | FL          | → A–27   | -              |  |  |  |  |  |  |
| Flange bracket (back)               | FLR         | → A–28   | -              |  |  |  |  |  |  |
| High-acceleration/deceleration (*1) | HA          | → A–32   | -              |  |  |  |  |  |  |
| Home sensor (*2)                    | HS          | → A–32   | -              |  |  |  |  |  |  |
| Power-saving (*3)                   | LA          | → A–32   | -              |  |  |  |  |  |  |
| Knuckle joint                       | NJ          | → A–34   | -              |  |  |  |  |  |  |
| Reversed-home                       | NM          | → A–33   | -              |  |  |  |  |  |  |
| Trunnion bracket (front)            | TRF         | → A–38   | -              |  |  |  |  |  |  |
| Trunnion bracket (back)             | TRR         | → A–38   | -              |  |  |  |  |  |  |

|   |                         | 7, 00               |        |
|---|-------------------------|---------------------|--------|
|   |                         |                     |        |
| (*1) The high-acceleration/deceleration | ontion is not availab   | le for 2.5mm-lead r | nodel. |
| ( )eg accoloration, accoloration        | opiioii io iiot avaiiak | ב                   |        |

RCA-RA3C

| riotaator opoomoationo           |  |
|----------------------------------|--|
| Item                             | Description                                |
| Drive System                     | Ball screw ø8mm C10 grade                  |
| Positioning Repeatability        | ±0.02mm                                    |
| Lost Motion                      | 0.1mm or less                              |
| Base                             | Material: Aluminum (white alumite treated) |
| Rod Diameter                     | ø16mm                                      |
| Non-rotating accuracy of rod     | ±1.0 deg                                   |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non-condensing)    |

<sup>(\*2)</sup> The home sensor (HS) cannot be used on the reversed-home models.

(\*3) The high acceleration/deceleration option and the power-saving option cannot be used simultaneously.



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

For Special Order







A motor-encoder cable is connected here. See page A-39 for details on cables.
 When homing, the rod moves to the ME; therefore, please watch for any interference with

\*3. The orientation of the bolt will vary depending on the product.

the surrounding objects.

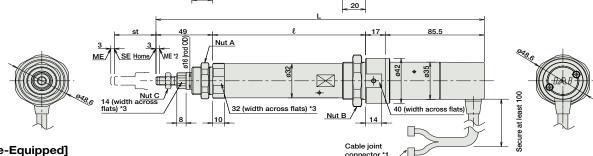
ME: Mechanical end SE: Stroke end

[No Brake]

M8x1.25
(effective screw thread range 16)

M8x1.25
(effective screw thread range 15.5)

M8x1.25
(effective screw thread range 15.5)



[Brake-Equipped]

St 49

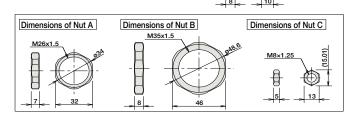
Nut A

Nut C

14 (width across flats)

Nut B

N



#### ■ Dimensions/Weight by Stroke

RCA-RA3C (without brake)

| RCA-RA3C (without brake) |       |       |       |       |  |  |  |  |  |
|--------------------------|-------|-------|-------|-------|--|--|--|--|--|
| Stroke                   | 50    | 100   | 150   | 200   |  |  |  |  |  |
| L                        | 283.5 | 333.5 | 383.5 | 433.5 |  |  |  |  |  |
| l                        | 132   | 182   | 232   | 282   |  |  |  |  |  |
| Weight (kg)              | 0.7   | 0.8   | 0.9   | 1.0   |  |  |  |  |  |
|                          | -     | -     | -     |       |  |  |  |  |  |

RCA-RA3C (with brake)

Stroke 50 100 150 200

L 322.5 372.5 422.5 472.5

& 132 182 232 282

Weight (kg) 0.9 1.0 1.1 1.2

#### ② Compatible Controllers

The RCA series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View | Model                   | Description   | Max. Positioning Points | Input Voltage | Power Supply Capacity   | Standard Price | See Page |   |  |
|--|---------------|-------------------------|---|-------------------------|---------------|-------------------------|----------------|----------|---|--|
| Solenoid Valve Type                                  | a s           | AMEC-C-20SI ① -NP-2-1   | Easy-to-use controller, even for beginners  |                         | AC100V        | 2.4A rated              | -              | → P477   |   |  |
| Solehold valve Type                                  | 1             | ASEP-C-20SI ① -NP-2-0   | Operable with same signal as solenoid valve.  | 3 points                |               |                         | -              |          |   |  |
| Splash-Proof Solenoid<br>Valve Type                  | p             | ASEP-CW-20SI ① -NP-2-0  | Supports both single and double solenoid types.  No homing necessary with simple absolute type. |                         |               |                         | -              | → P487   |   |  |
| Positioner Type                                      |               | ACON-C-20SI ① -NP-2-0   | Positioning is possible for up to 512 points  | 512 points              |               |                         | -              |          |   |  |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-20SI ① -NP-2-0  | rositioning is possible for up to 312 points  | 312 points              |               |                         | -              |          |   |  |
| Pulse Train Input Type<br>(Differential Line Driver) | Ol            | ACON-PL-20SI ① -NP-2-0  | Pulse train input type with differential line driver support                                    | ()                      | DC24V         | 1.7A rated<br>5.1A peak | -              | → P535   |   |  |
| Pulse Train Input Type<br>(Open Collector)           | ċ             | ACON-PO-20SI ① -NP-2-0  | Pulse train input type with<br>open collector support   | (-)                     |               |                         |                |          | - |  |
| Serial Communication<br>Type                         |               | ACON-SE-20SI ① -N-0-0   | Dedicated to serial communication   | 64 points               |               |                         | -              |          |   |  |
| Field Network Type                                   |               | RACON-20S①              | Dedicated to field network  | 768 points              |               |                         | -              | → P503   |   |  |
| Program Control Type                                 |               | ASEL-C-1-20SI ① -NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                       | 1500 points             |               |                         | -              | → P567   |   |  |

\* This is for the single–axis ASEL.

IAI

198

RCA-RA3C

Mini

Controllers

Rod Type

Mini

Controllers Integrated

able/Arm Flat Type

Standard

Gripper/

Linear Servo Type

Cleanroom Type

PMEC /AMEC

ROBO NET

PCON

ACON

PSFI

ASEL

VOL

Sarua Mata

Servo Mo

Linear Servo Mo

<sup>\*</sup> ① is a placeholder for the code "HA" or "LA" if the high acceleration/deceleration option or the power–saving option is specified.

RCA-RA4C ROBO Cylinder Rod Type ø37mm Diameter 24V Servo Motor Coupled RA4C ■ Configuration: RCA — Туре Encoder Compatible Controlle Cable Length I : Incremental A : Absolute N: None 20: 20W Servo 12:12mm 50:50mm A1: ACON N: None
P: 1m
S: 3m
M: 5m
X : Custom
R: : Robot cable 6:6mm RACON 3 : 3mm ASEL \* See page Pre-35 for an explanation of the naming convention.

\* The absolute models are only compatible with ASEL

\* See page Pre-35 for an explanation of the naming convention. 300:300mm (50mm pitch : AMEC increments) ASEP For High Acceleration/Deceleration Power-saving (\*1) Except all 20W models and 30W 3mm lead models

> References When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire. The load capacity values are based on 0.3G acceleration for the standard and power-saving models (0.2G for 3mm-lead), and 1G acceleration for the high-acceleration models (3mm-lead model excluded).
> (The values in the table below are the upper limits, even if the acceleration/deceleration is decreased.)

The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod.

#### Actuator Specifications

#### ■ Lead and Load Capacity

| Model   | Motor<br>Output (w) | Lead<br>(mm) | Max. Load | Capacity Vertical (kg) | Rated<br>Thrust (N) | Stroke<br>(mm)  |
|---|---------------------|--------------|-----------|------------------------|---------------------|-----------------|
| RCA-RA4C-①-20-12-②-③-④-⑤                          | Output (W)          | 12           | 3.0       | 1.0                    | 18.9                | (11111)         |
| RCA-RA4C-1 -20-6-2 -3 -4 -6                       | 20                  | 6            | 6.0       | 2.0                    | 37.7                |                 |
| RCA-RA4C-1 -20-3-2 -3 -4 -5                       |                     | 3            | 12.0      | 4.0                    | 75.4                | 50~300<br>(50mm |
| RCA-RA4C-1 -30-12-2 -3 -4 -5                      |                     | 12           | 4.0       | 1.5                    | 28.3                | increments)     |
| RCA-RA4C-1 -30-6-2 -3 -4 -6                       | 30                  | 6            | 9.0       | 3.0                    | 56.6                |                 |
| RCA-RA4C-1 -30-3-2 -3 -4 -6                       |                     | 3            | 18.0      | 6.5                    | 113.1               |                 |
| Legend ① Encoder ② Stroke ③ Compatible controller | 1 Control le        | ength 5      | Options   |                        |                     |                 |

|  | Stroke | and | Maximum | Speed |
|--|--------|-----|---------|-------|
|  |        |     |         |       |

Technical

| Stroke<br>Lead | $50 \sim 300$ (50mm increments) |
|----------------|---------------------------------|
| 12             | 600                             |
| 6              | 300                             |
| 3              | 150                             |
|                |                                 |

(Unit: mm/s)

Option

See Options below

P. A-5

#### Encoder & Stroke List

|          | Standard Price |           |                  |     |  |  |  |  |
|----------|----------------|-----------|------------------|-----|--|--|--|--|
| ② Stroke | ① Encoder      |           |                  |     |  |  |  |  |
| (mm)     | Increr         | nental    | Absolute         |     |  |  |  |  |
| (11111)  | Motor O        | utput (W) | Motor Output (W) |     |  |  |  |  |
|          | 20W            | 30W       | 20W              | 30W |  |  |  |  |
| 50       | -              | -         | -                | -   |  |  |  |  |
| 100      | -              | -         | -                | -   |  |  |  |  |
| 150      | -              | -         | -                | -   |  |  |  |  |
| 200      | -              | -         | _                | -   |  |  |  |  |
| 250      | 250 –<br>300 – |           | -                | _   |  |  |  |  |
| 300      |                |           | =                | _   |  |  |  |  |

| Туре            | Cable Symbol          | Standard Price |  |
|-----------------|-----------------------|----------------|--|
|                 | P (1m)                | -              |  |
| Standard        | <b>S</b> (3m)         | -              |  |
|                 | <b>M</b> (5m)         | -              |  |
|                 | X06 (6m) ~ X10 (10m)  | -              |  |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |  |
|                 | X16 (16m) ~ X20 (20m) | -              |  |
|                 | R01 (1m) ~ R03 (3m)   | -              |  |
|                 | R04 (4m) ~ R05 (5m)   | -              |  |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |  |
|                 | R11 (11m) ~ R15 (15m) | _              |  |
|                 | R16 (16m) ~ R20 (20m) | _              |  |

<sup>\*</sup> See page A-39 for cables for maintenance.

Actuator Specifications

#### 5 Option List

| Name                                | Option Code | See Page | Standard Price |
|-------------------------------------|-------------|----------|----------------|
| Brake                               | В           | → A-25   | -              |
| Foot bracket                        | FT          | → A–29   | -              |
| Flange bracket (front)              | FL          | → A–27   | -              |
| Flange bracket (back)               | FLR         | → A–28   | -              |
| High-acceleration/deceleration (*1) | HA          | → A–32   | -              |
| Home sensor (*2)                    | HS          | → A–32   | -              |
| Power-saving (*3)                   | LA          | → A–32   | -              |
| Knuckle joint                       | NJ          | → A–34   | -              |
| Reversed-home                       | NM          | → A–33   | _              |
| Trunnion bracket (front)            | TRF         | → A–38   | _              |
| Trunnion bracket (back)             | TRR         | → A–38   | _              |

| Item                             | Description                                |  |  |  |  |  |
|----------------------------------|--|--|--|--|--|--|
| Drive System                     | Ball screw ø10mm C10 grade                 |  |  |  |  |  |
| Positioning Repeatability        | ±0.02mm                                    |  |  |  |  |  |
| Lost Motion                      | 0.1mm or less                              |  |  |  |  |  |
| Base                             | Material: Aluminum (white alumite treated) |  |  |  |  |  |
| Rod Diameter                     | ø20mm                                      |  |  |  |  |  |
| Non-rotating accuracy of rod     | ±1.0 deg                                   |  |  |  |  |  |
| Ambient Operating Temp /Humidity | 0~40°C, 85% RH or less (non-condensing)    |  |  |  |  |  |

<sup>(\*1)</sup> The high-acceleration/deceleration option is not available for all 20W models and 30W model with 3mm lead.
(\*2) The home sensor (HS) cannot be used on the reversed-home models.
(\*3) The high acceleration/deceleration option and the power-saving option cannot be used simultaneously.



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

For Special Order





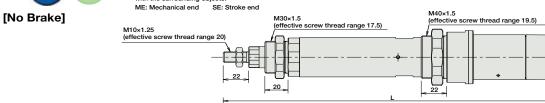
Dimensions



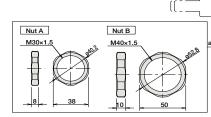
\*1 A motor-encoder cable is connected here. See page A-39 for details on cables.

\*2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.

\*3. The orientation of the bolt will vary depending on the product.



320 (rod OD) Home 36 (width across flats) \*3 ME \*2 19 (width across flats)\*3 47 (width across flats) Nut B Cable joint connector \*1 [Brake-Equipped] 19 m



Nut C M10x1.25

## ■ Dimensions/Weight by Stroke

Nut A

36 (width across flats)

 $\boxtimes$ 

RCA-RA4C (without brake)

Home,

19 (width

| TOA TIATO (WILLIOUT BILINO) |             |         |       |       |       |       |       |       |  |
|-----------------------------|-------------|---------|-------|-------|-------|-------|-------|-------|--|
|                             | Stro        | ke      | 50    | 100   | 150   | 200   | 250   | 300   |  |
|                             | 20W         | Increm. | 279.5 | 329.5 | 379.5 | 429.5 | 479.5 | 529.5 |  |
| L                           | 2000        | Absol.  | 292.5 | 342.5 | 392.5 | 442.5 | 492.5 | 542.5 |  |
| -                           | 30W         | Increm. | 294.5 | 344.5 | 394.5 | 444.5 | 494.5 | 544.5 |  |
|                             | 3000        | Absol.  | 307.5 | 357.5 | 407.5 | 457.5 | 507.5 | 557.5 |  |
|                             | l           |         | 137   | 187   | 237   | 287   | 337   | 387   |  |
|                             | 20W         | Increm. | 67.5  |       |       |       |       |       |  |
|                             | 2000        | Absol.  | 80.5  |       |       |       |       |       |  |
| m                           | 30W         | Increm. | 82.5  |       |       |       |       |       |  |
|                             | 3000        | Absol.  | 95.5  |       |       |       |       |       |  |
|                             | Weight (kg) |         | 1.1   | 1.2   | 1.4   | 1.5   | 1.7   | 1.8   |  |
|                             |             |         |       |       |       |       |       |       |  |

#### RCA-RA4C (with brake)

47 (width across flats)

47

(020)

|     | ion into (with brake) |         |       |       |       |       |       |       |  |
|-----|-----------------------|---------|-------|-------|-------|-------|-------|-------|--|
|     | Stro                  | ke      | 50    | 100   | 150   | 200   | 250   | 300   |  |
|     | 20W                   | Increm. | 322.5 | 372.5 | 422.5 | 472.5 | 522.5 | 572.5 |  |
| L   |                       | Absol.  | 335.5 | 385.5 | 435.5 | 485.5 | 535.5 | 585.5 |  |
| _   | 30W                   | Increm. | 337.5 | 387.5 | 437.5 | 487.5 | 537.5 | 587.5 |  |
|     | 3000                  | Absol.  | 350.5 | 400.5 | 450.5 | 500.5 | 550.5 | 600.5 |  |
|     | l                     |         | 137   | 187   | 237   | 287   | 337   | 387   |  |
| 20W | Increm.               | 110.5   |       |       |       |       |       |       |  |
|     | 2000                  | Absol.  | 123.5 |       |       |       |       |       |  |
| m   | 30W                   | Increm. | 125.5 |       |       |       |       |       |  |
|     | 3000                  | Absol.  | 138.5 |       |       |       |       |       |  |
|     | Weigh                 | t (kg)  | 1.3   | 1.4   | 1.6   | 1.7   | 1.9   | 2.0   |  |
|     |                       |         |       |       |       |       |       |       |  |

#### 3 Compatible Controllers

The RCA series actuators can operate with the controllers below. Select the controller according to your usage

| Name   | External View                                | Model  | Description   | Max. Positioning Points | Input Voltage | Power Supply Capacity  | Standard Price | See Page |
|--|--|--|---|-------------------------|---------------|--|----------------|----------|
|  | (Area  | AMEC-C-20I ② -NP-2-1<br>AMEC-C-30I ② -NP-2-1     | Easy-to-use controller, even for beginners  | 3 points                | AC100V        | 2.4A rated   | -              | → P477   |
| Solenoid Valve Type                                  | 1  | ASEP-C-20I ② -NP-2-0<br>ASEP-C-30I ② -NP-2-0     | Operable with same signal as solenoid valve.  Supports both single and double solenoid types. |                         |               |  | -              | → P487   |
| Splash-Proof<br>Solenoid Valve Type                  | P  | ASEP-CW-20I ② -NP-2-0<br>ASEP-CW-30I ② -NP-2-0   | No homing necessary with simple absolute type.  |                         |               |  | -              |          |
| Positioner Type                                      | ACON-C-201 ② -NP-2-0<br>ACON-C-301 ② -NP-2-0 |  | Positioning is possible for up to 512 points  | 512 points              |               |  | -              |          |
| Safety-Compliant<br>Positioner Type                  |  | ACON-CG-20I ② -NP-2-0<br>ACON-CG-30I ② -NP-2-0   | . Containing to possible to the process possible  | 012 pointo              | DC24V         | 20W<br>1.3A rated<br>4.4A peak<br>30W<br>1.3A rated<br>4.4A peak | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) | O.   | ACON-PL-20I ② -NP-2-0<br>ACON-PL-30I ② -NP-2-0   | Pulse train input type with differential line driver support                                  | (-)                     |               |  | -              | → P535   |
| Pulse Train Input Type<br>(Open Collector)           | ě  | ACON-PO-20I ② -NP-2-0<br>ACON-PO-30I ② -NP-2-0   | ACON-PO-20I ② -NP-2-0 Pulse train input type with   |                         |               |  | -              |          |
| Serial<br>Communication Type                         |  | ACON-SE-20I ② -N-0-0<br>ACON-SE-30I ② -N-0-0     | Dedicated to serial communication   | 64 points               |               |  | -              |          |
| Field Network Type                                   |  | RACON-202<br>RACON-302                           | Dedicated to field network  | 768 points              |               |  | -              | → P503   |
| Program Control Type                                 |  | ASEL-C-1-20 ①② -NP-2-0<br>ASEL-C-1-30 ①② -NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                     | 1500 points             |               |  | -              | → P567   |

\* This is for the single-axis ASEL.

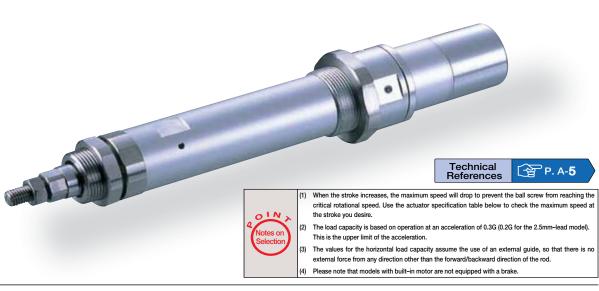
\* ① is a placeholder for the encoder type (I: incremental/A: absolute).

\* ② is a placeholder for the code "HA" or "LA" if the high acceleration/deceleration option or the power-saving option is specified.

Servo Motor (24V)

RCA-RA3D ROBO Cylinder Rod Type ø32mm Diameter 24V Servo Motor Built-In (Direct-Coupled) Motor lacktriangle Configuration: RCA - RA3D 20 Encoder Motor Compatible Controlle Cable Length Option I: Incremental \* The Simple 10: 10mm 5: 5mm N: None 20 : 20W Servo 50:50mm A1: ACON See Options below N: None
P: 1m
S: 3m
M: 5m
X : Custom
R: : Robot cable Motor RACON absolute encoder 2.5 : 2.5mm ASEL 200 : 200mm is also considered (50mm pitch A3 : AMEC increments) ASEP \* See page Pre-35 for an explanation of the naming convention.

Power-saving



#### Actuator Specifications ■ Lead and Load Capacity ■ Stroke and Maximum Speed Motor Max. Load Capacity $50 \sim 200$ Rated Lead Stroke RCA-RA3D-I-20-10-10-2-3-4 36.2 500 10 4.0 1.5 10 50~200 RCA-RA3D-I-20-5-1 - 2 - 3 - 4 3.0 20 5 9.0 72.4 5 250 RCA-RA3D-I-20-2.5-1 -2 -3 -4 18.0 6.5 144.8 2.5 125 (Unit: mm/s) Legend ① Stroke ② Compatible controllers ③ Cable length ④ Options

| ① Stroke Lis | ① Stroke List  |  |  |  |  |
|--------------|----------------|--|--|--|--|
| Stroke (mm)  | Standard Price |  |  |  |  |
| 50           | -              |  |  |  |  |
| 100          | -              |  |  |  |  |
| 150          | -              |  |  |  |  |
| 200          | -              |  |  |  |  |

| 3 Cable List    |                            |                |  |  |
|-----------------|----------------------------|----------------|--|--|
| Type            | Cable Symbol               | Standard Price |  |  |
|                 | P (1m)                     | _              |  |  |
| Standard        | <b>S</b> (3m)              | -              |  |  |
|                 | <b>M</b> (5m)              | -              |  |  |
| Special Lengths | X06 (6m) ~ X10 (10m)       | -              |  |  |
|                 | X11 (11m) ~ X15 (15m)      | _              |  |  |
|                 | X16 (16m) ~ X20 (20m)      | _              |  |  |
|                 | R01 (1m) ~ R03 (3m)        | -              |  |  |
|                 | R04 (4m) ~ R05 (5m)        | -              |  |  |
| Robot Cable     | R06 (6m) ~ R10 (10m)       | _              |  |  |
|                 | R11 (11m) ~ R15 (15m)      | -              |  |  |
|                 | R16 (16m) ~ R20 (20m)      | _              |  |  |
| * O A OO 4      | for achies for maintanance | -              |  |  |

<sup>\*</sup> See page A-39 for cables for maintenance.

| ④ Option List            |             |               |                |  |
|--------------------------|-------------|---------------|----------------|--|
| Name                     | Option Code | See Page      | Standard Price |  |
| Foot bracket             | FT          | → A-29        | -              |  |
| Flange bracket (front)   | FL          | → A–27        | -              |  |
| Flange bracket (back)    | FLR         | → A-28        | -              |  |
| Home sensor              | HS          | → A–32        | -              |  |
| Power-saving             | LA          | → A–32        | -              |  |
| Knuckle joint            | NJ          | → A–34        | -              |  |
| Reversed-home            | NM          | → <b>A–33</b> | -              |  |
| Trunnion bracket (front) | TRF         | → A–38        | -              |  |
| Trunnion bracket (back)  | TRR         | → A-38        | _              |  |

<sup>\*</sup> The home sensor (HS) cannot be used on the reversed-home models.

| Actuator Specifications          |  |  |  |  |
|----------------------------------|--|--|--|--|
| Item                             | Description                                |  |  |  |
| Drive System                     | Ball screw ø8mm C10 grade                  |  |  |  |
| Positioning Repeatability        | ±0.02mm                                    |  |  |  |
| Lost Motion                      | 0.1mm or less                              |  |  |  |
| Base                             | Material: Aluminum (white alumite treated) |  |  |  |
| Rod Diameter                     | ø16mm                                      |  |  |  |
| Non-rotating accuracy of rod     | ±1.0 deg                                   |  |  |  |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non–condensing)    |  |  |  |

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

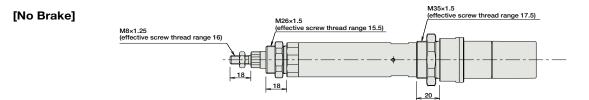
For Special Order

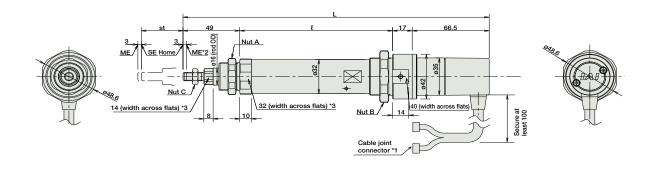


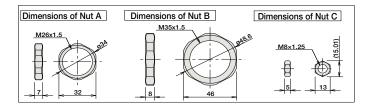


- \*1 A motor-encoder cable is connected here. See page A-39 for details on cables.
  \*2. When homing, the rod moves to the ME; therefore, please watch for any
- interference with the surrounding objects. ME: Mechanical end SE: Stroke end

\*3. The orientation of the bolt will vary depending on the product.







## ■ Dimensions/Weight by Stroke

| RCA-RA3D (without brake) |                    |                                  |  |  |  |
|--------------------------|--------------------|----------------------------------|--|--|--|
| 50                       | 100                | 150                              | 200  |  |  |
| 264.5                    | 314.5              | 364.5                            | 414.5  |  |  |
| 132                      | 182                | 232                              | 282  |  |  |
| 0.7                      | 0.8                | 0.9                              | 1.0  |  |  |
|                          | 50<br>264.5<br>132 | 50 100<br>264.5 314.5<br>132 182 | 50         100         150           264.5         314.5         364.5           132         182         232 |  |  |

The RCA-RA3D models are not equipped with a brake.

#### ② Compatible Controllers

The RCA series actuators can operate with the controllers below. Select the controller according to your usage

|  | The NOA series actuators can operate with the controllers below. Select the controller according to your usage. |   |   |   |               |                       |                |          |
|--|---|---|---|---|---------------|-----------------------|----------------|----------|
| Name   | External View   | Model   | Description   | Max. Positioning Points   | Input Voltage | Power Supply Capacity | Standard Price | See Page |
| Solenoid Valve Type                                  | (A)   | AMEC-C-20SI-① NP-2-1  | Easy-to-use controller, even for beginners                                | Easy-to-use controller, even for beginners  |               | 2.4A rated            | -              | → P477   |
| Solelloid valve Type                                 |   | ASEP-C-20SI-① NP-2-0  | Operable with same signal as solenoid valve.                              | 3 points  |               |                       | -              | → P487   |
| Splash-Proof<br>Solenoid Valve Type                  | 1   | ASEP-CW-20SI-① NP-2-0   | No homing necessary with simple absolute type.                            | Supports both single and double solenoid types.  No homing necessary with simple absolute type. |               |                       | -              | → P407   |
| Positioner Type                                      |   | ACON-C-20SI-① NP-2-0  | Positioning is possible for up to 512 points 512 points                   |   |               |                       | -              |          |
| Safety-Compliant<br>Positioner Type                  |   | ACON-CG-20SI-① NP-2-0   |   |   | 312 points    |                       | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) |   | ACON-PL-20SI-① NP-2-0 Pulse train input type with differential line driver support  ACON-PO-20SI-① NP-2-0 Pulse train input type with open collector support  (-) | DC24V   | 1.7A rated<br>5.1A peak   | -             | → P535                |                |          |
| Pulse Train Input Type<br>(Open Collector)           | ě   |   | Pulse train input type with   | (-)   |               |                       | -              |          |
| Serial<br>Communication Type                         |   | ACON-SE-20SI-① N-0-0  | Dedicated to serial communication   | 64 points   |               |                       | -              |          |
| Field Network Type                                   |   | RACON-20S ①   | Dedicated to field network  | 768 points  |               |                       | -              | → P503   |
| Program Control Type                                 |   | ASEL-C-1-20SI-① NP-2-0  | Programmed operation is possible<br>Operation is possible on up to 2 axes | 1500 points   |               |                       | -              | → P567   |

\* This is for the single-axis ASEL.

 $<sup>^{\</sup>star}$  1 is a placeholder for the code "LA" if the power–saving option is specified.

RCA ROBO Cylinder RCA-RA4D ROBO Cylinder Rod Type ø37mm Diameter 24V Servo Motor Built-In (Direct-Coupled) Motor lacktriangle Configuration: RCA - RA4D Encoder Compatible Controller Cable Length Motor

I:Incremental 20:20W Servo
A:Absolute 30:30W Servo
Motor
The absolute models are only compatible with ASEL
Simple absolute encoders are considered incremental
See page Pre-35 for an explanation of the naming convention. N: None 12: 12mm 50:50mm A1: ACON N: None
P: 1m
S: 3m
M: 5m
X : Custom
R: : Robot cable 6mm RACON 3mm ASEL 300:300mm (50mm pitch A3 : AMEC increments) ASEP Technical References

## (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire. The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model). This is the upper limit of the acceleration.

The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod.

#### Actuator Specifications

#### ■ Lead and Load Capacity

| Model  | Motor<br>Output (w) | Lead<br>(mm) | Max. Load | Capacity Vertical (kg) | Rated<br>Thrust (N) | Stroke<br>(mm)    |
|--|---------------------|--------------|-----------|------------------------|---------------------|-------------------|
| RCA-RA4D-①-20-12-②-③-④-⑤   | Output (w)          | 12           | 3.0       | 1.0                    | 18.9                | (IIIII)           |
| RCA-RA4D-①-20-6-②-③-④-⑤  | 20                  | 6            | 6.0       | 2.0                    | 37.7                |                   |
| RCA-RA4D-①-20-3-②-③-④-⑤  |                     | 3            | 12.0      | 4.0                    | 75.4                | 50~300            |
| RCA-RA4D-1 -30-12-2 -3 -4 -5   |                     | 12           | 4.0       | 1.5                    | 28.3                | (50mm increments) |
| RCA-RA4D-1 -30-6-2 -3 -4 -5  | 30                  | 6            | 9.0       | 3.0                    | 56.6                |                   |
| RCA-RA4D-1 -30-3-2 -3 -4 -5  |                     | 3            | 18.0      | 6.5                    | 113.1               |                   |
| Legend ① Encoder ② Stroke ③ Compatible controller ④ Control length ⑤ Options |                     |              |           |                        |                     |                   |

| Lead | $50 \sim 300$ (50mm increments) |
|------|---------------------------------|
| 12   | 600                             |
| 6    | 300                             |

150

■ Stroke and Maximum Speed

(Unit: mm/s)

Option

See Options below

Power-saving

P. A-5

#### Encoder & Stroke List

|               | Standard Price         |        |         |           |  |
|---------------|------------------------|--------|---------|-----------|--|
|               | ① Encoder              |        |         |           |  |
| 2 Stroke (mm) | Incren                 | nental | Abso    | Absolute  |  |
|               | Motor Output (W) Motor |        | Motor O | utput (W) |  |
|               | 20W                    | 30W    | 20W     | 30W       |  |
| 50            | -                      | -      | -       | -         |  |
| 100           | -                      |        |         | =         |  |
| 150           |                        |        | -       | =         |  |
| 200           | -                      |        |         | -         |  |
| 250           | -                      |        |         | -         |  |
| 300           |                        |        | _       | =         |  |

| ④ Cable List    |                       |                |  |  |
|-----------------|-----------------------|----------------|--|--|
| Туре            | Cable Symbol          | Standard Price |  |  |
|                 | P (1m)                | _              |  |  |
| Standard        | <b>S</b> (3m)         | -              |  |  |
|                 | <b>M</b> (5m)         | _              |  |  |
|                 | X06 (6m) ~ X10 (10m)  | -              |  |  |
| Special Lengths | X11 (11m) ~ X15 (15m) | _              |  |  |
|                 | X16 (16m) ~ X20 (20m) | -              |  |  |
|                 | R01 (1m) ~ R03 (3m)   | -              |  |  |
|                 | R04 (4m) ~ R05 (5m)   | _              |  |  |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | _              |  |  |
|                 | R11 (11m) ~ R15 (15m) | _              |  |  |
|                 | R16 (16m) ~ R20 (20m) | _              |  |  |

<sup>\*</sup> See page A-39 for cables for maintenance.

| Option List              |             |          |                |
|--------------------------|-------------|----------|----------------|
| Name                     | Option Code | See Page | Standard Price |
| Foot bracket             | FT          | → A–29   | _              |
| Flange bracket (front)   | FL          | → A–27   | -              |
| Flange bracket (back)    | FLR         | → A-28   | -              |
| Home sensor              | HS          | → A–32   | -              |
| Power-saving             | LA          | → A-32   | -              |
| Knuckle joint            | NJ          | → A–34   | -              |
| Reversed-home            | NM          | → A-33   | -              |
| Trunnion bracket (front) | TRF         | → A-38   | -              |
| Trunnion bracket (back)  | TRR         | → A-38   | -              |

| Actuator Specifications          |  |  |  |  |
|----------------------------------|--|--|--|--|
| Item                             | Description                                |  |  |  |
| Drive System                     | Ball screw ø10mm C10 grade                 |  |  |  |
| Positioning Repeatability        | ±0.02mm                                    |  |  |  |
| Lost Motion                      | 0.1mm or less                              |  |  |  |
| Base                             | Material: Aluminum (white alumite treated) |  |  |  |
| Rod Diameter                     | ø20mm                                      |  |  |  |
| Non-rotating accuracy of rod     | ±1.0 deg                                   |  |  |  |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non-condensing)    |  |  |  |

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

For Special Order



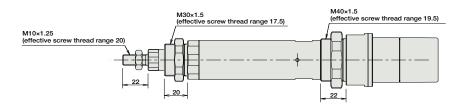


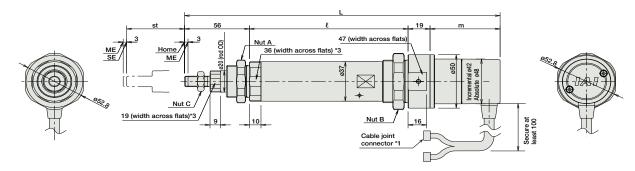
- \*1 A motor-encoder cable is connected here. See page A-39 for details on cables. \*2. When homing, the rod moves to the ME; therefore, please watch for any
- interference with the surrounding objects.

  ME: Mechanical end SE: Stroke end

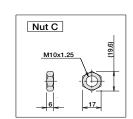
\*3. The orientation of the bolt will vary depending on the product.

#### [No Brake]





# Nut A Nut B M30×1.5 M40×1.5



#### ■ Dimensions/Weight by Stroke

BCA-BA4D (without brake)

| Stroke      |              | 50      | 100   | 150   | 200   | 250   | 300   |       |  |
|-------------|--------------|---------|-------|-------|-------|-------|-------|-------|--|
|             | 20W          | Increm. | 257.5 | 307.5 | 357.5 | 407.5 | 457.5 | 507.5 |  |
| L           | 2000         | Absol.  | 270.5 | 320.5 | 370.5 | 420.5 | 470.5 | 520.5 |  |
|             | 30W          | Increm. | 272.5 | 322.5 | 372.5 | 422.5 | 472.5 | 522.5 |  |
|             | 3000         | Absol.  | 285.5 | 335.5 | 385.5 | 435.5 | 485.5 | 535.5 |  |
| l           |              |         | 137   | 187   | 237   | 287   | 337   | 387   |  |
|             | 20W          | Increm. | 45.5  |       |       |       |       |       |  |
| m           | 20 <b>VV</b> | Absol.  | 58.5  |       |       |       |       |       |  |
| ""          | 30W          | Increm. | 60.5  |       |       |       |       |       |  |
|             | 3000         | Absol.  |       |       | 73    | 3.5   |       |       |  |
| Weight (kg) |              |         | 1.0   | 1.2   | 1.3   | 1.5   | 1.6   | 1.8   |  |

Brake-equipped configuration is not available with the RCA-RA4D.

#### 3 Compatible Controllers

The RCA series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View | Model  | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity   | Standard Price | See Page |  |
|--|---------------|--|--|-------------------------|---------------|---|----------------|----------|--|
| Solenoid Valve Type                                  | To the second | AMEC-C-20I-② NP-2-1<br>AMEC-C-30I-② NP-2-1     | Easy-to-use controller, even for beginners   |                         | AC100V        | 2.4A rated  | -              | → P477   |  |
| Solellold valve Type                                 | 1             | ASEP-C-20I-② NP-2-0<br>ASEP-C-30I-② NP-2-0     | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |               |   | -              | → P487   |  |
| Splash-Proof Solenoid<br>Valve Type                  |               | ASEP-CW-20I-2 NP-2-0<br>ASEP-CW-30I-2 NP-2-0   | No homing necessary with simple absolute type.   |                         |               |   | -              | → P487   |  |
| Positioner Type                                      |               | ACON-C-20I-2 NP-2-0<br>ACON-C-30I-2 NP-2-0     | Positioning is possible for up to 512 points   | 512 points              |               |   |                |          |  |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-20I-2 NP-2-0<br>ACON-CG-30I-2 NP-2-0   | Positioning is possible for up to 312 points   | 312 points              |               | 20W<br>1.3A rated<br>4.4A peak<br>0C24V<br>30W<br>1.3A rated<br>4.4A peak | -              |          |  |
| Pulse Train Input Type<br>(Differential Line Driver) | O             | ACON-PL-20I-② NP-2-0<br>ACON-PL-30I-② NP-2-0   | Pulse train input type with differential line driver support                                 | (-)                     | DC24V         |   | -              | → P535   |  |
| Pulse Train Input Type<br>(Open Collector)           | ě             | ACON-PO-20I-2 NP-2-0<br>ACON-PO-30I-2 NP-2-0   | Pulse train input type with<br>open collector support  | (-)                     |               |   | -              |          |  |
| Serial Communication<br>Type                         |               | ACON-SE-20I-2 N-0-0<br>ACON-SE-30I-2 N-0-0     | Dedicated to serial communication  | 64 points               |               |   | -              |          |  |
| Field Network Type                                   |               | RACON-20 <sup>2</sup><br>RACON-30 <sup>2</sup> | Dedicated to field network   | 768 points              |               |   | -              | → P503   |  |
| Program Control Type                                 |               | ASEL-C-1-20-①② NP-2-0<br>ASEL-C-1-30-①② NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |               |   | -              | → P567   |  |

\* This is for the single-axis ASEL.

- \* ①is a placeholder for the encoder type (I: incremental/A: absolute).
  \* ②is a placeholder for the code "LA" if the power–saving option is specified.

Servo Motor (24V)

Slider Type

Standard

Controllers Integrated

> Ro Typ

Ctandai

ntegrated

Mini

Grinner

Linear Serv

Cleanroom Type

Splash Proc

Jonandie

PSEP /ASEP

ERC

PCON

=

SSEL

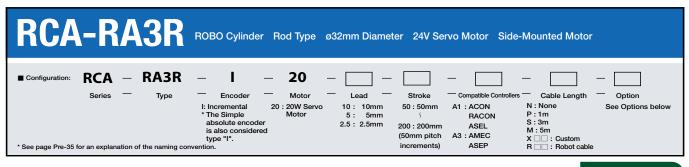
Pulse Motor

Servo Motor (24V)

Servo Motoi (200V)

> Linea ervo Moto

> > 205



Power-saving



Actuator Specifications

Lead and Load Capacity

Model

Motor Output (W)

Motor Outp

| Model  | Motor<br>Output (w) | Lead<br>(mm) | Max. Load<br>Horizontal (kg) | Capacity Vertical (kg) | Rated<br>Thrust (N) | Stroke<br>(mm)  |
|--|---------------------|--------------|------------------------------|------------------------|---------------------|-----------------|
| RCA-RA3R-I-20-10-①-②-③-④                               |                     | 10           | 4.0                          | 1.5                    | 36.2                | , ,             |
| RCA-RA3R-I-20-5-①-②-③-④                                | 20                  | 5            | 9.0                          | 3.0                    | 72.4                | 50~200<br>(50mm |
| RCA-RA3R-I-20-2.5-①-②-③-④                              |                     | 2.5          | 18.0                         | 6.5                    | 144.8               | increments)     |
| Legend ① Stroke ② Compatible controllers ③ Cable lengt | h ④Opt              | tions        |                              |                        |                     |                 |

| Lead | $50 \sim 200$ (50mm increments) |
|------|---------------------------------|
| 10   | 500                             |
| 5    | 250                             |
| 2.5  | 125                             |
|      | (Unit: mm/s)                    |

so that there is no external force from any direction other than the forward/backward direction of the rod.

| ① Stroke List |                |  |  |  |  |  |  |
|---------------|----------------|--|--|--|--|--|--|
| Stroke (mm)   | Standard Price |  |  |  |  |  |  |
| 50            | -              |  |  |  |  |  |  |
| 100           | -              |  |  |  |  |  |  |
| 150           | -              |  |  |  |  |  |  |
| 200           | -              |  |  |  |  |  |  |

| ③ Cable List    |                       |                |  |  |  |  |  |
|-----------------|-----------------------|----------------|--|--|--|--|--|
| Туре            | Cable Symbol          | Standard Price |  |  |  |  |  |
|                 | P (1m)                | -              |  |  |  |  |  |
| Standard        | <b>S</b> (3m)         | -              |  |  |  |  |  |
|                 | <b>M</b> (5m)         | -              |  |  |  |  |  |
|                 | X06 (6m) ~ X10 (10m)  | -              |  |  |  |  |  |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |  |  |  |  |  |
|                 | X16 (16m) ~ X20 (20m) | -              |  |  |  |  |  |
|                 | R01 (1m) ~ R03 (3m)   | -              |  |  |  |  |  |
|                 | R04 (4m) ~ R05 (5m)   | -              |  |  |  |  |  |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |  |  |  |  |  |
|                 | R11 (11m) ~ R15 (15m) | -              |  |  |  |  |  |
|                 | R16 (16m) ~ R20 (20m) | -              |  |  |  |  |  |

<sup>\*</sup> See page A-39 for cables for maintenance.

| 4 Option List            |             |          |                |
|--------------------------|-------------|----------|----------------|
| Name                     | Option Code | See Page | Standard Price |
| Brake                    | В           | → A–25   | _              |
| Foot bracket             | FT          | → A–29   | -              |
| Flange bracket (front)   | FL          | → A–27   | -              |
| Flange bracket (back)    | FLR         | → A–28   | -              |
| Home sensor              | HS          | → A–32   | -              |
| Power-saving             | LA          | → A–32   | -              |
| Knuckle joint            | NJ          | → A–34   | -              |
| Reversed-home            | NM          | → A–33   | -              |
| Clevis Bracket           | QR          | → A–34   | -              |
| Back-mounting plate      | RP          | → A-35   | -              |
| Trunnion bracket (front) | TRF         | → A-38   | _              |

<sup>\*</sup> The home sensor (HS) cannot be used on the reversed-home models.

| Actuator Specifications          |  |
|----------------------------------|--|
| Item                             | Description                                |
| Drive System                     | Ball screw ø8mm C10 grade                  |
| Positioning Repeatability        | ±0.02mm                                    |
| Lost Motion                      | 0.1mm or less                              |
| Base                             | Material: Aluminum (white alumite treated) |
| Rod Diameter                     | ø16mm                                      |
| Non-rotating accuracy of rod     | ±1.0 deg                                   |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non-condensing)    |



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

ME: Mechanical end

For Special Order





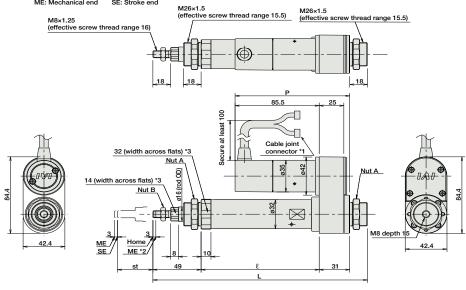


A motor-encoder cable is connected here. See page A-39 for details on cables. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.

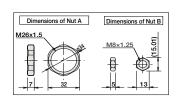
SE: Stroke end

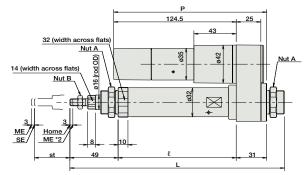
\*3. The orientation of the bolt will vary depending on the product.

[No Brake]



## [Brake-Equipped]





#### ■ Dimensions/Weight by Stroke

RCA-RA3R (without brake)

| 110A-11A311 (WILITOUT DIAKE) |        |     |     |     |  |  |  |  |
|------------------------------|--------|-----|-----|-----|--|--|--|--|
| Stroke                       | 50 100 |     | 150 | 200 |  |  |  |  |
| L                            | 218    | 268 | 318 | 368 |  |  |  |  |
| r                            | 120    | 170 | 220 | 270 |  |  |  |  |
| P                            | 116.5  |     |     |     |  |  |  |  |
| Weight (kg)                  | 0.8    | 0.9 | 1.0 | 1.1 |  |  |  |  |
|                              |        |     |     |     |  |  |  |  |

RCA-RA3R (with brake)

| Stroke      | 50    | 100 | 150 | 200 |  |  |  |
|-------------|-------|-----|-----|-----|--|--|--|
| L           | 218   | 268 | 318 | 368 |  |  |  |
| r           | 120   | 170 | 220 | 270 |  |  |  |
| Р           | 155.5 |     |     |     |  |  |  |
| Weight (kg) | 1.0   | 1.1 | 1.2 | 1.3 |  |  |  |
| •           | 1.0   |     |     | 1   |  |  |  |

#### ② Compatible Controllers

The RCA series actuators can operate with the controllers below. Select the controller according to your usage

| Name   | External View | Model                  | Description   | Max. Positioning Points  | Input Voltage | Power Supply Capacity   | Standard Price | See Page   |        |  |  |  |  |  |   |  |
|--|---------------|------------------------|---|--------------------------|---------------|-------------------------|----------------|------------|--------|--|--|--|--|--|---|--|
|  | Exernal view  | AMEC-C-20SI-① NP-2-1   | Easy-to-use controller, even for beginners  | Max. 1 contoning 1 cints | AC100V        | 2.4A rated              | -              | → P477     |        |  |  |  |  |  |   |  |
| Solenoid Valve Type                                  | 3             | ASEP-C-20SI-① NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types.    | 3 points                 |               |                         | -              | → P487     |        |  |  |  |  |  |   |  |
| Splash-Proof Solenoid<br>Valve Type                  | 1             | ASEP-CW-20SI-① NP-2-0  | Supports both single and double solenoid types.  No homing necessary with simple absolute type. |                          |               |                         | -              | → P487     |        |  |  |  |  |  |   |  |
| Positioner Type                                      |               | ACON-C-20SI-① NP-2-0   | Positioning is possible for up to 512 points  | 512 points 512 points    | DC24V         |                         |                | 512 points |        |  |  |  |  |  | - |  |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-20SI-① NP-2-0  | - contouring to possible for up to 0.12 points  |                          |               | 1.7A rated<br>5.1A peak | -              |            |        |  |  |  |  |  |   |  |
| Pulse Train Input Type<br>(Differential Line Driver) | D)            | ACON-PL-20SI-① NP-2-0  | Pulse train input type with differential line driver support                                    | (-)                      |               |                         |                | -          | → P535 |  |  |  |  |  |   |  |
| Pulse Train Input Type<br>(Open Collector)           |               | ACON-PO-20SI-① NP-2-0  | Pulse train input type with<br>open collector support   |                          |               |                         | -              |            |        |  |  |  |  |  |   |  |
| Serial Communication<br>Type                         |               | ACON-SE-20SI-① N-0-0   | Dedicated to serial communication   | 64 points                |               |                         | -              |            |        |  |  |  |  |  |   |  |
| Field Network Type                                   |               | RACON-20S ①            | Dedicated to field network  | 768 points               |               |                         | <del>-</del>   | → P503     |        |  |  |  |  |  |   |  |
| Program Control Type                                 |               | ASEL-C-1-20SI-① NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                       | 1500 points              |               |                         | -              | → P567     |        |  |  |  |  |  |   |  |

\* This is for the single-axis ASEL.

 $^{\star}$  1 is a placeholder for the code "LA" if the power–saving option is specified.

IAI

RCA-RA3R 206

\* See page Pre-35 for an explanation of the naming con

RCA-RA4R ROBO Cylinder Rod Type ø37mm Diameter 24V Servo Motor Side-Mounted Motor RA4R RCA -Configuration: Compatible Controlle Type Encoder Cable Length Option A1 : ACON I : Incremental A : Absolute 12: 12mm 6: 6mm N: None 20 : 20W Servo Motor 50:50mm See Options below Motor
30: 30W Servo
Motor
The absolute models are only compatible with ASEL
Simple absolute encoders are considered increment P:1m S:3m RACON 3 . 3mm 300 : 300mm ASEL M:5m
X : Custom
R : Robot cable A3:AMEC (50mm pitch increments) ASEP

Power-saving

Technical References



When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire. The load capacity is based on operation at an acceleration of 0.3G (0.2G for the

3mm-lead model). This is the upper limit of the acceleration.

The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod.

#### Actuator Specifications

#### ■ Lead and Load Capacity

| Model  | Motor<br>Output (w) | Lead<br>(mm) | Max. Load | Capacity Vertical (kg) | Rated<br>Thrust (N) | Stroke<br>(mm)       |  |  |
|--|---------------------|--------------|-----------|------------------------|---------------------|----------------------|--|--|
| RCA-RA4R-①-20-12-②-③-④-⑤   | output (ii)         | 12           | 3.0       | 1.0                    | 18.9                | (·····y              |  |  |
| RCA-RA4R-①-20-6-②-③-④-⑤  | 20                  | 6            | 6.0       | 2.0                    | 37.7                |                      |  |  |
| RCA-RA4R-① -20-3-② - ③ - ④ - ⑤   |                     | 3            | 12.0      | 4.0                    | 75.4                | 50~300               |  |  |
| RCA-RA4R-①-30-12-②-③-④-⑤   |                     | 12           | 4.0       | 1.5                    | 28.3                | (50mm<br>increments) |  |  |
| RCA-RA4R-①-30-6-②-③-④-⑤  | 30                  | 6            | 9.0       | 3.0                    | 56.6                |                      |  |  |
| RCA-RA4R-①-30-3-②-③-④-⑤  |                     | 3            | 18.0      | 6.5                    | 113.1               |                      |  |  |
| Legend ① Encoder ② Stroke ③ Compatible controller ④ Control length ⑤ Options |                     |              |           |                        |                     |                      |  |  |

#### ■ Stroke and Maximum Speed

| Stroke<br>Lead | $50 \sim 300$ (50mm increments) |
|----------------|---------------------------------|
| 12             | 600                             |
| 6              | 300                             |
| 3              | 150                             |
|                |                                 |

(Unit: mm/s)

#### Encoder & Stroke List

|               | Standard Price |           |         |           |  |  |
|---------------|----------------|-----------|---------|-----------|--|--|
|               | ① Encoder      |           |         |           |  |  |
| 2 Stroke (mm) | Increr         | nental    | Abso    | olute     |  |  |
|               | Motor O        | utput (W) | Motor O | utput (W) |  |  |
|               | 20W            | 30W       | 20W     | 30W       |  |  |
| 50            |                |           | -       | -         |  |  |
| 100           | -              | -         | -       | -         |  |  |
| 150           |                |           | -       | -         |  |  |
| 200           | 200 – –        |           | _       | -         |  |  |
| 250           |                |           | -       | _         |  |  |
| 300           |                |           | _       | -         |  |  |

|      | -             |
|------|---------------|
| Туре | Cable Symb    |
|      | <b>P</b> (1m) |
|      |               |

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
|                 | P (1m)                | -              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | _              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | _              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
|                 | R04 (4m) ~ R05 (5m)   | -              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | _              |
|                 | R11 (11m) ~ R15 (15m) | -              |
|                 | R16 (16m) ~ R20 (20m) | _              |

<sup>\*</sup> See page A-39 for cables for maintenance.

| Name                     | Option Code | See Page | Standard Price |
|--------------------------|-------------|----------|----------------|
| Brake                    | В           | → A-25   | _              |
| Foot bracket             | FT          | → A–29   | -              |
| Flange bracket (front)   | FL          | → A–27   | -              |
| Flange bracket (back)    | FLR         | → A–28   | -              |
| Home sensor              | HS          | → A–32   | -              |
| Power-saving             | LA          | → A–32   | -              |
| Knuckle joint            | NJ          | → A–34   | -              |
| Reversed-home            | NM          | → A–33   | -              |
| Clevis Bracket           | QR          | → A–34   | -              |
| Back-mounting plate      | RP          | → A–35   | -              |
| Trunnion bracket (front) | TRF         | → A–38   | -              |

<sup>\*</sup> The home sensor (HS) cannot be used on the reversed-home models.

#### Actuator Specifications Item Description Drive System Ball screw ø10mm C10 grade Positioning Repeatability ±0.02mm Lost Motion 0.1mm or less Material: Aluminum (white alumite treated) Base Rod Diameter ø20mm Non-rotating accuracy of rod ±1.0 deg Ambient Operating Temp./Humidity 0~40°C, 85% RH or less (non-condensing)

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

M10×1.25 (effective screw thread range 20)

Nut B

For Special Order





[No Brake]

Nut A M30×1. 5

\*1. A motor-encoder cable is connected here. See page A-39 for details on cables.

When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.

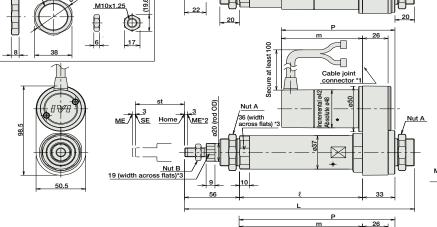
ME: Mechanical end SE: Stroke end

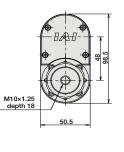
M30×1.5 (effective screw thread range 17.5) (effective screw thread range 17.5)

 $\bigoplus$ 

■ Dimensions/Weight by Stroke

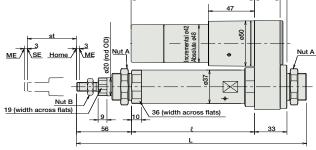
|             | Stro        | ike     | 50   | 100  | 150 | 200 | 250 | 300 |  |
|-------------|-------------|---------|------|------|-----|-----|-----|-----|--|
|             | 20W         | Increm. | 234  | 284  | 334 | 384 | 434 | 484 |  |
| L           | 2000        | Absol.  | 234  | 284  | 334 | 384 | 434 | 484 |  |
| -           | 30W         | Increm. | 234  | 284  | 334 | 384 | 434 | 484 |  |
|             | 3000        | Absol.  | 234  | 284  | 334 | 384 | 434 | 484 |  |
| l           |             |         | 125  | 175  | 225 | 275 | 325 | 375 |  |
|             | 20W Increm. |         | 67.5 |      |     |     |     |     |  |
|             | 2000        | Absol.  | 80.5 |      |     |     |     |     |  |
| m           | 30W         | Increm. | 82.5 |      |     |     |     |     |  |
|             | 3000        | Absol.  |      | 95.5 |     |     |     |     |  |
| 20W Increm. |             | 100.5   |      |      |     |     |     |     |  |
| Absol.      |             | 113.5   |      |      |     |     |     |     |  |
| _           | 30W         | Increm. |      |      | 11: | 5.5 |     |     |  |
| Absol.      |             | 128.5   |      |      |     |     |     |     |  |
| Weight (kg) |             |         | 1.2  | 1.4  | 1.5 | 1.7 | 1.8 | 2.0 |  |
|             |             |         |      |      |     |     |     |     |  |





BCA-BA4R (with brake)

#### [Brake-Equipped]



| 1107 | TOA-TA-TT (WITT BLAKE) |         |       |       |     |     |     |     |  |
|------|------------------------|---------|-------|-------|-----|-----|-----|-----|--|
|      | Stroke                 |         | 50    | 100   | 150 | 200 | 250 | 300 |  |
|      | 20W                    | Increm. | 234   | 284   | 334 | 384 | 434 | 484 |  |
| L    | 2000                   | Absol.  | 234   | 284   | 334 | 384 | 434 | 484 |  |
|      | 30W                    | Increm. | 234   | 284   | 334 | 384 | 434 | 484 |  |
|      | 3000                   | Absol.  | 234   | 284   | 334 | 384 | 434 | 484 |  |
|      | l                      |         | 125   | 175   | 225 | 275 | 325 | 375 |  |
|      | 20W                    | Increm. | 110.5 |       |     |     |     |     |  |
|      | 2000                   | Absol.  | 123.5 |       |     |     |     |     |  |
| m    | 30W                    | Increm. |       | 125.5 |     |     |     |     |  |
|      | 3000                   | Absol.  | 138.5 |       |     |     |     |     |  |
|      | 20W Increm.            |         | 143.5 |       |     |     |     |     |  |
| Р    | 2000                   | Absol.  |       |       | 156 | 6.5 |     |     |  |
| ۲    | 30W                    | Increm. |       |       | 158 | 8.5 |     |     |  |
|      | 3000                   | Absol.  |       |       | 17  | 1.5 |     |     |  |
|      |                        |         |       |       |     |     |     |     |  |

171.5 1.9

#### ③ Compatible Controllers

The RCA series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View | Model  | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity                 | Standard Price | See Page |
|--|---------------|--|--|-------------------------|---------------|---------------------------------------|----------------|----------|
| Solenoid Valve Type                                  | M             | AMEC-C-20I-② NP-2-1<br>AMEC-C-30I-② NP-2-1     | Easy-to-use controller, even for beginners   |                         | AC100V        | 2.4A rated                            | -              | → P477   |
| Solenoid valve type                                  | 1             | ASEP-C-20I-② NP-2-0<br>ASEP-C-30I-② NP-2-0     | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |               |                                       | -              | → P487   |
| Splash-Proof Solenoid<br>Valve Type                  | 1             | ASEP-CW-20I-② NP-2-0<br>ASEP-CW-30I-② NP-2-0   | No homing necessary with simple absolute type.   |                         |               |                                       | -              | → P407   |
| Positioner Type                                      |               | ACON-C-20I-② NP-2-0<br>ACON-C-30I-② NP-2-0     | Positioning is possible for up to 512 points   | 512 points              |               |                                       | -              |          |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-20I-② NP-2-0<br>ACON-CG-30I-② NP-2-0   | . containing to processe for up to 612 points  | 012 pointo              | DC24V         | 20W<br>1.3A rated<br>4.4A peak<br>30W | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) | O             | ACON-PL-20I-② NP-2-0<br>ACON-PL-30I-② NP-2-0   | Pulse train input type with differential line driver support                                 | ()                      |               |                                       | -              | → P535   |
| Pulse Train Input Type<br>(Open Collector)           | c .           | ACON-PO-20I-② NP-2-0<br>ACON-PO-30I-② NP-2-0   |  |                         |               | 1.3A rated<br>4.4A peak               | -              |          |
| Serial Communication<br>Type                         |               | ACON-SE-20I-2 N-0-0<br>ACON-SE-30I-2 N-0-0     | Dedicated to serial communication  | 64 points               |               |                                       | -              |          |
| Field Network Type                                   |               | RACON-202<br>RACON-302                         | Dedicated to field network   | 768 points              |               |                                       | <u>-</u>       | → P503   |
| Program Control Type                                 |               | ASEL-C-1-20-①② NP-2-0<br>ASEL-C-1-30-①② NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |               |                                       | -              | → P567   |

IAI

\* This is for the single-axis ASEL.

\* ① is a placeholder for the encoder type (I: incremental / A: absolute).

\* ② is a placeholder for the code "LA" if the power-saving option is specified.

RCA-RA4R 208

**3D** CAD

\*3. The orientation of the bolt will vary depending on the product.

RCA-RA4R (without brake)

50 100 150 200 250 300

Type

Standard

Controllers Integrated

> Ro Typ

Mir

ontrollers Integrated

/Flat Type

Standard

Gripper Rotary Type

Турє

PMEC /AMEC

ROBO NET

ERU2

ACON

SCON

FOL

SSFI

Pulse Motor

Servo Motor (24V)

Servo Motor (200V)

Linear ervo Motor

209

4 Option List

Flange bracket (front)

Flange bracket (back)

Power-saving

Reversed-home

Brake

Name

Foot bracket 1 (base mounting)

Foot bracket 2 (right/left side mounting)

\* The brake is available for strokes of 70mm or more.

RCA-SRA4R ROBO Cylinder Rod Type 45mm Diameter Servo Motor Short-Length Type Side-Mounted Motor lacktriangle Configuration: RCA - SRA4R 20 Туре Encoder Motor Compatible Controlle Cable Length Option N : None P : 1m S : 3m M : 5m I: Incremental \* The Simple 20 : 20W Servo 5mm 50:50mm A1 : ACON See Options below 2.5 : 2.5mm Motor RACON 200 : 200mm absolute encoder ASEL (50mm pitch increments)
Set in 50mm increments A3 is also considered : AMEC X 🗆 🗆 : Custom over 100mm ASEP \* See page Pre-35 for an explanation of the naming convention.



Power-saving

Technical References

P. A-5



- (1) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2.5mm-lead model, or when used vertically). This is the upper limit of the acceleration.
- 2) The horizontal load capacity is based on the use of an external guide. If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become damaged.

# Actuator Specifications Lead and Load Capacity Model Lead Max. Load Capacity (mm) Horizontal (kg) Vertical (kg)

| Model   | Lead | Max. Load       | d Capacity    | Rated Thrust | Stroke               |
|---|------|-----------------|---------------|--------------|----------------------|
| Wiodei  | (mm) | Horizontal (kg) | Vertical (kg) | (N)          | (mm)                 |
| RCA-SRA4R-I-20-5-①-②-③-④                                      | 5    | 9               | 3             | 41           | 20~200<br>(10mm      |
| RCA-SRA4R-I-20-2.5-①-②-③-④                                    | 2.5  | 18              | 6.5           | 81           | increments) (Note 1) |
| Legend  Stroke  Compatible controllers  Cable length  Options |      |                 |               |              |                      |

See Page Standard Price

→ A-25

→ A-27

→ A-28

→ A-29

→ A-31

→ A-32

→ A-33

| ■ Stroke and Maximum Speed |                                 |  |  |  |  |
|----------------------------|---------------------------------|--|--|--|--|
| Stroke<br>Lead             | $20 \sim 200$ (10mm increments) |  |  |  |  |
| 5                          | 250                             |  |  |  |  |
| 2.5                        | 125                             |  |  |  |  |
| (Unit: mm/s)               |                                 |  |  |  |  |

| ① Stroke List |                |  |  |  |
|---------------|----------------|--|--|--|
| Stroke (mm)   | Standard Price |  |  |  |
| 20~50         | -              |  |  |  |
| 60~100        | -              |  |  |  |
| 150           | -              |  |  |  |
| 200           | -              |  |  |  |

**Option Code** 

В

FL

FLR

FT

FT2/FT4

LA

NM

| ③ Cable List    |                                    |                |  |  |  |
|-----------------|------------------------------------|----------------|--|--|--|
| Туре            | Cable Symbol                       | Standard Price |  |  |  |
| Standard        | P (1m)                             | _              |  |  |  |
|                 | <b>S</b> (3m)                      | -              |  |  |  |
| (Robot Cables)  | <b>M</b> (5m)                      | _              |  |  |  |
|                 | <b>X06</b> (6m) ~ <b>X10</b> (10m) | _              |  |  |  |
| Special Lengths | X11 (11m) ~ X15 (15m)              | _              |  |  |  |
|                 | X16 (16m) ~ X20 (20m)              | -              |  |  |  |

- \* The cable is a motor-encoder integrated cable, and is provided as a robot cable.
- \* See page A-39 for cables for maintenance.

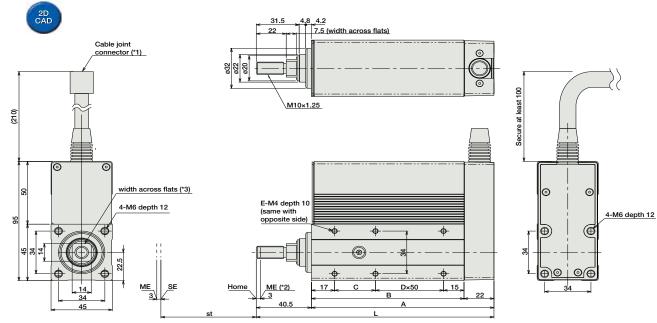
| Actuator Specification | nns - |
|------------------------|-------|

|                                  | 5   |  |  |  |  |  |
|----------------------------------|---|--|--|--|--|--|
| Item                             | Description                               |  |  |  |  |  |
| Drive System                     | Ball screw ø8mm C10 grade                 |  |  |  |  |  |
| Positioning Repeatability        | ±0.02mm                                   |  |  |  |  |  |
| Lost Motion                      | 0.1mm or less                             |  |  |  |  |  |
| Rod Diameter                     | ø22mm                                     |  |  |  |  |  |
| Non-rotating accuracy of rod     | -   |  |  |  |  |  |
| Ambient Operating Temp /Humidity | 0 ~ 40°C, 85% RH or less (non-condensing) |  |  |  |  |  |

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

For Special Order

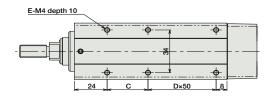




\* The exterior dimensions for the brake-equipped model is no different than the standard model.

However, 70mm is the minimum stroke of the brake-equipped

(i.e. The brake is not compatible at 60mm strokes and under.)



M10×1.25 Dimensions of the Supplied Nut

> ST: Stroke SE : Stroke end ME : Mechanical end

- (\*1) The motor-encoder cable is connected here. See page A-39 for details on
- (\*2) When homing, the rod moves to the mechanical end position; therefore, please watch for any interference with the surrounding objects.
- (\*3) The orientation of the bolt will vary depending on the product.

#### ■ Dimensions/Weight by Stroke (Add 0.2kg for brake equipped)

| Stroke      | 20    | 30    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 150   | 200   |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L           | 124.5 | 134.5 | 144.5 | 154.5 | 164.5 | 174.5 | 184.5 | 194.5 | 204.5 | 254.5 | 304.5 |
| Α           | 84    | 94    | 104   | 114   | 124   | 134   | 144   | 154   | 164   | 214   | 264   |
| В           | 62    | 72    | 82    | 92    | 102   | 112   | 122   | 132   | 142   | 192   | 242   |
| С           | 30    | 40    | 50    | 60    | 70    | 30    | 40    | 50    | 60    | 60    | 60    |
| D           | 0     | 0     | 0     | 0     | 0     | 1     | 1     | 1     | 1     | 2     | 3     |
| E           | 4     | 4     | 4     | 4     | 4     | 6     | 6     | 6     | 6     | 8     | 10    |
| Weight (kg) | 0.78  | 0.84  | 0.9   | 0.96  | 1.03  | 1.09  | 1.15  | 1.21  | 1.27  | 1.59  | 1.9   |

#### ② Compatible Controllers

The RCA series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View | Model                   | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity   | Standard Price | See Page |
|--|---------------|-------------------------|--|-------------------------|---------------|-------------------------|----------------|----------|
| Solenoid Valve Type                                  | (A)           | AMEC-C-20SI ① -NP-2-1   | Easy-to-use controller, even for beginners   |                         | AC100V        | 2.4A rated              | -              | → P477   |
| Sciencia valve type                                  |               | ASEP-C-20SI ① -NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |               |                         | -              | D407     |
| Splash-Proof Solenoid<br>Valve Type                  | D             | ASEP-CW-20SI ① -NP-2-0  | No homing necessary with simple absolute type.   |                         |               |                         | 1              | → P487   |
| Positioner Type                                      |               | ACON-C-20SI ① -NP-2-0   | Positioning is possible for up to 512 points   | 512 points              |               | 1.7A rated<br>5.1A peak | -              |          |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-20SI ① -NP-2-0  | Tostatoring is possible for up to 512 points   | 012 points              | DC24V         |                         | 1              |          |
| Pulse Train Input Type<br>(Differential Line Driver) |               | ACON-PL-20SI ① -NP-2-0  | Pulse train input type with differential line driver support                                 | (-)                     |               |                         | -              | → P535   |
| Pulse Train Input Type<br>(Open Collector)           | ě.            | ACON-PO-20SI ① -NP-2-0  | Pulse train input type with<br>open collector support  | (-)                     |               |                         | -              |          |
| Serial Communication<br>Type                         |               | ACON-SE-20SI ① -N-0-0   | Dedicated to serial communication  | 64 points               |               |                         | -              |          |
| Field Network Type                                   |               | RACON-20S ①             | Dedicated to field network   | 768 points              |               |                         | -              | → P503   |
| Program Control Type                                 |               | ASEL-C-1-20SI ① -NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |               |                         | -              | → P567   |

This is for the single-axis ASEL.

\* ① is a placeholder for the code "LA" if the power-saving option is specified.

Servo Motor (24V)

RCA-RGS3C ROBO Cylinder Rod Type with Single Guide ø32mm Diameter 24V Servo Motor Coupled

■ Configuration:

RCA - RGS3C

\* See page Pre-35 for an explanation of the naming convention.

20 Encoder Motor I: Incremental \* The Simple 20 : 20W Servo Motor

absolute encoder

is also considered

10: 10mm 5: 5mm 2.5 : 2.5mm

Compatible Controlle 50:50mm A1: ACON ASEL 200: 200mm (50mm pitch

increments)

RACON : AMEC ASEP

Cable Length N : None P : 1m S : 3m M : 5m

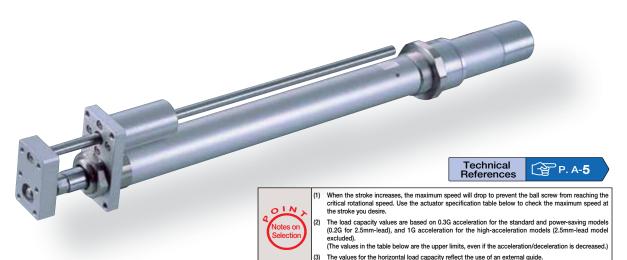
See Options below

X . : Custom R . : Robot cable

For High Acceleration/Deceleration

Power-saving

(Except the 2.5mm-lead model)



## Actuator Specifications Lead and Load Capacity

| Model   | Motor      | Lead  | Max. Load       |               | Rated      | Stroke      |
|---|------------|-------|-----------------|---------------|------------|-------------|
|   | Output (w) | (mm)  | Horizontal (kg) | Vertical (kg) | Thrust (N) | (mm)        |
| RCA-RGS3C-I-20-10-①-②-③-④                         |            | 10    | 4.0             | 1.2           | 36.2       | 50~200      |
| RCA-RGS3C-I-20-5-①-②-③-④                          | 20         | 5     | 9.0             | 2.7           | 72.4       | (50mm       |
| RCA-RGS3C-I-20-2.5-①-②-③-④                        |            | 2.5   | 18.0            | 6.2           | 144.8      | increments) |
| Legend Stroke Compatible controllers Cable length | h ④Opt     | tions |                 |               |            |             |

| ■ Stroke and   | Stroke and Maximum Speed        |  |  |  |  |  |  |  |
|----------------|---------------------------------|--|--|--|--|--|--|--|
| Stroke<br>Lead | $50 \sim 200$ (50mm increments) |  |  |  |  |  |  |  |
| 10             | 500                             |  |  |  |  |  |  |  |
| 5              | 250                             |  |  |  |  |  |  |  |
| 2.5            | 125                             |  |  |  |  |  |  |  |

(Unit: mm/s)

See the technical resources (page A-81) for the allowable weight using the supplied guide alone.

| st             |
|----------------|
| Standard Price |
| -              |
| -              |
| -              |
| -              |
|                |

| ③ Cable Lis     | t                     |                |
|-----------------|-----------------------|----------------|
|                 |                       |                |
| Туре            | Cable Symbol          | Standard Price |
|                 | P (1m)                | _              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | _              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | _              |
|                 | R04 (4m) ~ R05 (5m)   | -              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | _              |
|                 | R11 (11m) ~ R15 (15m) | -              |
|                 | R16 (16m) ~ R20 (20m) | _              |

<sup>\*</sup> See page A-39 for cables for maintenance.

| Option List                         |             |               |                |  |  |  |  |  |
|-------------------------------------|-------------|---------------|----------------|--|--|--|--|--|
| Name                                | Option Code | See Page      | Standard Price |  |  |  |  |  |
| Brake                               | В           | → <b>A-25</b> | -              |  |  |  |  |  |
| Foot bracket                        | FT          | → A-29        | -              |  |  |  |  |  |
| High-acceleration/deceleration (*1) | HA          | → A-32        | -              |  |  |  |  |  |
| Home sensor (*2)                    | HS          | → A-32        | -              |  |  |  |  |  |
| Power-saving (*3)                   | LA          | → A-32        | -              |  |  |  |  |  |
| Reversed-home                       | NM          | → A-33        | -              |  |  |  |  |  |
| Trunnion bracket (back)             | TRR         | → A-38        | -              |  |  |  |  |  |

(\*1) The high-acceleration/deceleration option is not available for 2.5mm-lead model.

(\*2) The home sensor (HS) cannot be used on the reversed-home models.

(\*3) The high acceleration/deceleration option and the power-saving option cannot be used simultaneously.

**Actuator Specifications** Item Description Drive System Ball screw ø8mm C10 grade Positioning Repeatability ±0.02mm Lost Motion 0.1mm or less Single guide (guide rod diameter ø12mm, Ball bush type) Guide Rod Diameter ø16mm Non-rotating accuracy of rod ±0.05 dea Ambient Operating Temp./Humidity 0~40°C, 85% RH or less (non-condensing)



For Special Order



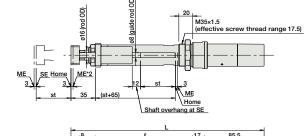


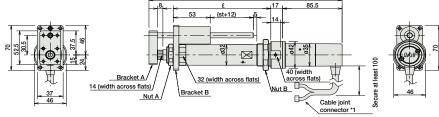


- \*1 A motor-encoder cable is connected here. See page A-39 for details on cables.
  - When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.

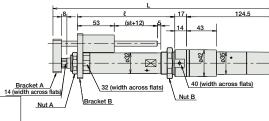
    ME: Mechanical end SE: Stroke end

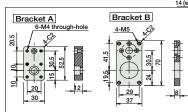
[No Brake]

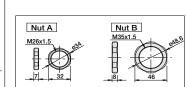




## [Brake-Equipped]







## ■ Dimensions/Weight by Stroke

| RCA-RGS3C (Without brake) |       |       |       |       |  |  |
|---------------------------|-------|-------|-------|-------|--|--|
| Stroke                    | 50    | 100   | 150   | 200   |  |  |
| L                         | 277.5 | 327.5 | 377.5 | 427.5 |  |  |
| Ł                         | 140   | 190   | 240   | 290   |  |  |
| Weight (kg)               | 0.9   | 1.1   | 1.2   | 1.3   |  |  |
|                           |       |       |       |       |  |  |

| RCA-RGS3C (with brake) |       |       |       |       |  |  |  |  |
|------------------------|-------|-------|-------|-------|--|--|--|--|
| Stroke                 | 50    | 100   | 150   | 200   |  |  |  |  |
| L                      | 316.5 | 366.5 | 416.5 | 466.5 |  |  |  |  |
| Ł                      | 140   | 190   | 240   | 290   |  |  |  |  |
| Weight (kg)            | 1.1   | 1.3   | 1.4   | 1.5   |  |  |  |  |

#### ② Compatible controller

| Name   | External View | Model                   | Description   | Max. Positioning Points | Input Voltage | Power Supply Capacity   | Standard Price | See Page |
|--|---------------|-------------------------|---|-------------------------|---------------|-------------------------|----------------|----------|
| Oslawsid Walso Torra                                 | Are           | MEC-C-20SI ① -NP-2-1    | Easy-to-use controller, even for beginners  |                         | AC100V        | 2.4A rated              | -              | → P477   |
| Solenoid Valve Type                                  | 1             | ASEP-C-20SI ① -NP-2-0   | Operable with same signal as solenoid valve.  | 3 points                |               |                         | -              | D407     |
| Splash-Proof Solenoid<br>Valve Type                  |               | ASEP-CW-20SI ① -NP-2-0  | Supports both single and double solenoid types.  No homing necessary with simple absolute type. |                         |               |                         | -              | → P487   |
| Positioner Type                                      | Í             | ACON-C-20SI ① -NP-2-0   | Positioning is possible for up to 512 points  |                         |               | -                       |                |          |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-20SI ① -NP-2-0  | Positioning is possible for up to 312 points  | 512 points              |               |                         | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) | O             | ACON-PL-20SI ① -NP-2-0  | Pulse train input type with differential line driver support                                    | ()                      | DC24V         | 1.7A rated<br>5.1A peak | -              | → P535   |
| Pulse Train Input Type<br>(Open Collector)           |               | ACON-PO-20SI ① -NP-2-0  | Pulse train input type with<br>open collector support   | (-)                     |               |                         | -              |          |
| Serial Communication<br>Type                         |               | ACON-SE-20SI ① -N-0-0   | Dedicated to serial communication   | 64 points               |               |                         | -              |          |
| Field Network Type                                   |               | RACON-20S①              | Dedicated to field network 768 points   |                         |               |                         | -              | → P503   |
| Program Control Type                                 |               | ASEL-C-1-20SI ① -NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                       | 1500 points             |               |                         | -              | → P567   |

<sup>\*</sup>This is for the single-axis ASEL.

\*① is a placeholder for the code "HA" or "LA" if the high acceleration/deceleration option or the power-saving option is specified.

RCA-RGS4C ROBO Cylinder Rod Type with Single Guide Ø37mm Diameter 24V Servo Motor Coupled  $\blacksquare$  Configuration: RCA - RGS4C Cable Length Туре I : Incremental A : Absolute A1 : ACON N: None 20 : 20W Servo 12: 12mm 50:50mm See Options below P:1m S:3m M:5m \* See page Pre-35 for an explanation of the naming convention.

\*\* ADSolute Motor 30: 30W Servo Motor "The absolute models are only compatible with ASEL Simple absolute encoders are considered incremental incremental models." 6mm RACON ASEL 300:300mm A3: AMEC (50mm pitch increments) ASEP

## For High Acceleration/Deceleration

Power-saving



Rod Diameter

Non-rotating accuracy of rod

Ambient Operating Temp./Humidity

#### Actuator Specifications

#### ■ Lead and Load Capacity

| Model  | Motor<br>Output (w) | Lead<br>(mm) | Max. Load<br>Horizontal (kg) | Capacity Vertical (kg) | Rated<br>Thrust (N) | Stroke<br>(mm)       |
|--|---------------------|--------------|------------------------------|------------------------|---------------------|----------------------|
| RCA-RGS4C-①-20-12-②-③-④-⑤  |                     | 12           | 3.0                          | 0.5                    | 18.9                |                      |
| RCA-RGS4C-①-20-6-②-③-④-⑤   | 20                  | 6            | 6.0                          | 1.5                    | 37.7                |                      |
| RCA-RGS4C-①-20-3-②-③-④-⑤   |                     | 3            | 12.0                         | 3.5                    | 75.4                | 50~300               |
| RCA-RGS4C-①-30-12-②-③-④-⑤  |                     | 12           | 4.0                          | 1.0                    | 28.3                | (50mm<br>increments) |
| RCA-RGS4C-①-30-6-②-③-④-⑤   | 30                  | 6            | 9.0                          | 2.5                    | 56.6                |                      |
| RCA-RGS4C-①-30-3-②-③-④-⑤   |                     | 3            | 18.0                         | 6.0                    | 113.1               |                      |
| Legend ① Encoder ② Stroke ③ Compatible controller ④ Control length ⑤ Options |                     |              |                              |                        |                     |                      |

#### ■ Stroke and Maximum Speed

(The values in the table below are the upper limits, even if the acceleration/deceleration is decrea The values for the horizontal load capacity reflect the use of an external guide.

See the technical resources (page A-81) for the allowable weight using the supplied guide alone.

| Stroke<br>Lead | $50 \sim 300$ (50mm increments) |
|----------------|---------------------------------|
| 12             | 600                             |
| 6              | 300                             |
| 3              | 150                             |
|                | 41.11 ()                        |

(Unit: mm/s)

#### Encoder & Stroke List

|               | Standard Price |           |         |           |  |  |
|---------------|----------------|-----------|---------|-----------|--|--|
|               |                | ① Encoder |         |           |  |  |
| 2 Stroke (mm) | Increr         | nental    | Abso    | olute     |  |  |
|               | Motor O        | utput (W) | Motor O | utput (W) |  |  |
|               | 20W            | 30W       | 20W     | 30W       |  |  |
| 50            | -              | -         | -       | -         |  |  |
| 100           | -              | -         | -       | -         |  |  |
| 150           | -              | =         | -       | -         |  |  |
| 200           | -              | -         | -       | -         |  |  |
| 250           | -              | -         | -       | -         |  |  |
| 300           | ı              | -         | =       | =         |  |  |

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
|                 | P (1m)                | _              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | -              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | _              |
|                 | R04 (4m) ~ R05 (5m)   | -              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | _              |
|                 | R11 (11m) ~ R15 (15m) | _              |

0~40°C, 85% RH or less (non-condensing)

#### ⑤ Option List **Option Code** Name See Page Standard Price Brake → A-25 Foot bracket FT → A-29 High-acceleration/deceleration (\*1) HA → A-32 HS Home sensor (\*2) → A-32 Power-saving (\*3) LA → A-32 NM Reversed-home → A-33 Trunnion bracket (back) TRR → A-38

- (\*1) The high-acceleration/deceleration option is not available for all 20W models and 30W model with 3mm lead.
- (\*2) The home sensor (HS) cannot be used on the reversed-home models.
- (\*3) The high acceleration/deceleration option and the power-saving option cannot be used simultaneously.

| _   |             | RU4 (4m) ~                 | HUO (5M)        | _               |  |
|---|-------------|----------------------------|-----------------|-----------------|--|
| -   | Robot Cable | R06 (6m) ~                 | R10 (10m)       | -               |  |
|   |             | R11 (11m) $\sim$           | R15 (15m)       | -               |  |
|   |             | R16 (16m) $\sim$           | R20 (20m)       | _               |  |
| * See page A-39 for cables for maintenance. |             |                            |                 |                 |  |
| Actuator Spe                                | cifications |                            |                 |                 |  |
| Item  |             | Description                |                 |                 |  |
| Drive System B                              |             | Ball screw ø10mm C10 grade |                 |                 |  |
| Positioning Repeatability                   |             | ±0.02mm                    |                 |                 |  |
| Lost Motion                                 |             | 0.1mm or less              |                 |                 |  |
| Guide                                       | Sing        | le quide (quide rod        | diameter ø10mm. | Rall hush type) |  |

ø20mm

±0.05 deg

RCA-RGS4C

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

For Special Order



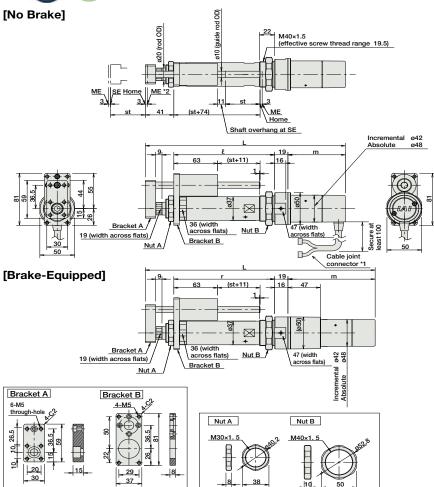




- \*1 A motor-encoder cable is connected here. See page A-39 for details on cables.
  - When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.

    ME: Mechanical end

    SE: Stroke end



#### ■ Dimensions/Weight by Stroke

| ACA-RG54C (Without brake) |         |         |       |       |       |       |       |       |
|---------------------------|---------|---------|-------|-------|-------|-------|-------|-------|
|                           | Stro    | ke      | 50    | 100   | 150   | 200   | 250   | 300   |
| 20W                       | Increm. | 272.5   | 322.5 | 372.5 | 422.5 | 472.5 | 522.5 |       |
| L                         | 2000    | Absol.  | 285.5 | 335.5 | 385.5 | 435.5 | 485.5 | 535.5 |
| -                         | 30W     | Increm. | 287.5 | 337.5 | 387.5 | 437.5 | 487.5 | 537.5 |
|                           | 3000    | Absol.  | 300.5 | 350.5 | 400.5 | 450.5 | 500.5 | 550.5 |
| l                         |         |         | 145   | 195   | 245   | 295   | 345   | 395   |
|                           | 20W     | Increm. | 67.5  |       |       |       |       |       |
| m                         | 2000    | Absol.  |       |       | 80    | ).5   |       |       |
|                           | 30W     | Increm. |       |       | 82    | 2.5   |       |       |
| Absol.                    |         |         |       | 95    | 5.5   |       |       |       |
| Weight (kg)               |         | 1.5     | 1.6   | 1.8   | 2.0   | 2.2   | 2.4   |       |
|                           |         |         |       |       |       |       |       |       |

#### RCA-RGS4C (with brake)

|             | Stro | ke      | 50           | 100   | 150   | 200   | 250   | 300   |
|-------------|------|---------|--------------|-------|-------|-------|-------|-------|
|             | 20W  | Increm. | 315.5        | 365.5 | 415.5 | 465.5 | 515.5 | 565.5 |
| L           | 2000 | Absol.  | 328.5        | 378.5 | 428.5 | 478.5 | 528.5 | 578.5 |
| -           | 30W  | Increm. | 330.5        | 380.5 | 430.5 | 480.5 | 530.5 | 580.5 |
|             | 3000 | Absol.  | 343.5        | 393.5 | 443.5 | 493.5 | 543.5 | 593.5 |
|             | Ł    |         | 145          | 195   | 245   | 295   | 345   | 395   |
|             | 20W  | Increm. | 110.5        |       |       |       |       |       |
| _           | 2000 | Absol.  | 123.5        |       |       |       |       |       |
| m           | 30W  | Increm. |              |       | 12    | 5.5   |       |       |
|             | 3000 | Absol.  | Absol. 138.5 |       |       |       |       |       |
| Weight (kg) |      |         | 1.7          | 1.8   | 2.0   | 2.2   | 2.4   | 2.6   |
|             |      |         |              |       |       |       |       |       |

#### ③ Compatible Controllers

The RCA series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View | Model  | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity   | Standard Price | See Page |
|--|---------------|--|--|-------------------------|---------------|-------------------------|----------------|----------|
| Solenoid Valve Type                                  |               | AMEC-C-20I ② -NP-2-1<br>AMEC-C-30I ② -NP-2-1     | Easy-to-use controller, even for beginners   |                         | AC100V        | 2.4A rated              | -              | → P477   |
| Solenoid valve Type                                  | 1             | ASEP-C-20I ② -NP-2-0<br>ASEP-C-30I ② -NP-2-0     | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |               | -                       | → P487         |          |
| Splash-Proof Solenoid<br>Valve Type                  |               | ASEP-CW-20I ② -NP-2-0<br>ASEP-CW-30I ② -NP-2-0   | No homing necessary with simple absolute type.   |                         |               |                         | -              | → P487   |
| Positioner Type                                      | Í             | ACON-C-20I ② -NP-2-0<br>ACON-C-30I ② -NP-2-0     | Positioning is possible for up to 512 points   | 512 points              |               | 20W<br>1.3A rated       | -              |          |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-20I ② -NP-2-0<br>ACON-CG-30I ② -NP-2-0   | - Positioning is possible for up to 512 points   |                         |               |                         | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) | ń             | ACON-PL-20I ② -NP-2-0<br>ACON-PL-30I ② -NP-2-0   | Pulse train input type with differential line driver support                                 | (-)                     | DC24V         | 4.4A peak<br>30W        | -              | → P535   |
| Pulse Train Input Type<br>(Open Collector)           | c .           | ACON-PO-20I ② -NP-2-0<br>ACON-PO-30I ② -NP-2-0   | Pulse train input type with<br>open collector support  | (-)                     |               | 1.3A rated<br>4.4A peak | -              |          |
| Serial Communication<br>Type                         |               | ACON-SE-20I ② -N-0-0<br>ACON-SE-30I ② -N-0-0     | Dedicated to serial communication  | 64 points               |               |                         | -              |          |
| Field Network Type                                   |               | RACON-202<br>RACON-302                           | Dedicated to field network   | 768 points              |               |                         | -              | → P503   |
| Program Control Type                                 |               | ASEL-C-1-20 ①② -NP-2-0<br>ASEL-C-1-30 ①② -NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |               |                         | -              | → P567   |

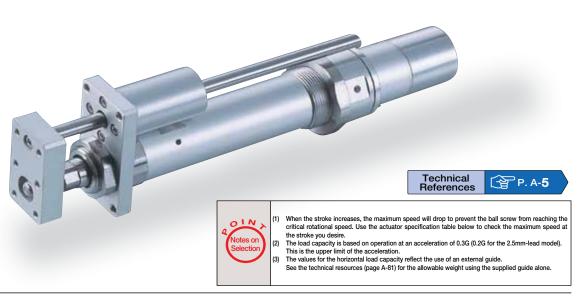
\* This is for the single-axis ASEL.

- \* ① is a placeholder for the encoder type (I: incremental / A: absolute).

  \* ② is a placeholder for the code "HA" or "LA" if the high acceleration/deceleration option or the power-saving option is specified.

RCA-RGS3D ROBO Cylinder Rod Type with Single Guide ø32mm Diameter 24V Servo Motor Built-In Model lacktriangledown Configuration: RCA - RGS3D -20 Cable Length Encoder Motor Option I: Incremental \* The Simple 20 : 20W Servo Motor 10: 10mm 5: 5mm N: None 50:50mm A1 : ACON See Options below N: None
P: 1m
S: 3m
M: 5m
X : Custom
R: : Robot cable RACON absolute encoder 2.5 : 2.5mm ASEL 200 : 200mm is also considered (50mm pitch A3 : AMEC increments) ASEP \* See page Pre-35 for an explanation of the naming convention.

Power-saving



#### Actuator Specifications ■ Lead and Load Capacity ■ Stroke and Maximum Speed Max. Load Capacity 50 ~ 200 Lead Stroke Rated RCA-RGS3D-I-20-10-10-2-3-4 36.2 500 10 4.0 1.2 10 50~200 RCA-RGS3D-I-20-5-1 - 2 - 3 - 4 20 5 9.0 2.7 72.4 5 250 RCA-RGS3D-I-20-2.5-1 - 2 - 3 - 4 18.0 6.2 144.8 2.5 125 (Unit: mm/s) Legend ① Stroke ② Compatible controllers ③ Cable length ④ Options

| ① Stroke List |                |  |
|---------------|----------------|--|
| Stroke (mm)   | Standard Price |  |
| 50            | -              |  |
| 100           | -              |  |
| 150           | -              |  |
| 200           | -              |  |

| 3 Cable List      |  |                |  |  |  |
|-------------------|--|----------------|--|--|--|
| Туре              | Cable Symbol                             | Standard Price |  |  |  |
|                   | P (1m)                                   | -              |  |  |  |
| Standard          | <b>S</b> (3m)                            | -              |  |  |  |
|                   | <b>M</b> (5m)                            | -              |  |  |  |
|                   | X06 (6m) ~ X10 (10m)                     | -              |  |  |  |
| Special Lengths   | X11 (11m) ~ X15 (15m)                    | -              |  |  |  |
|                   | X16 (16m) ~ X20 (20m)                    | -              |  |  |  |
|                   | R01 (1m) ~ R03 (3m)                      | -              |  |  |  |
|                   | R04 (4m) ~ R05 (5m)                      | -              |  |  |  |
| Robot Cable       | R06 (6m) ~ R10 (10m)                     | -              |  |  |  |
|                   | R11 (11m) ~ R15 (15m)                    | -              |  |  |  |
|                   | R16 (16m) ~ R20 (20m)                    | -              |  |  |  |
| * Soo page A-30 f | See nage A-30 for cables for maintenance |                |  |  |  |

See page A-39 for cables for maintenance.

| 4 Option List           |             |          |                |
|-------------------------|-------------|----------|----------------|
| Name                    | Option Code | See Page | Standard Price |
| Foot bracket            | FT          | → A-29   | -              |
| Home sensor             | HS          | → A-32   | -              |
| Power-saving            | LA          | → A-32   | -              |
| Reversed-home           | NM          | → A-33   | -              |
| Trunnion bracket (back) | TRR         | → A-38   | _              |

<sup>\*</sup> The home sensor (HS) cannot be used on the reversed-home models.

| Actuator Specifications          |   |
|----------------------------------|---|
| Item                             | Description   |
| Drive System                     | Ball screw ø8mm C10 grade                               |
| Positioning Repeatability        | ±0.02mm   |
| Lost Motion                      | 0.1mm or less   |
| Guide                            | Single guide (guide rod diameter ø12mm, Ball bush type) |
| Rod Diameter                     | ø16mm   |
| Non-rotating accuracy of rod     | ±0.05 deg   |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non-condensing)                 |

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

For Special Order

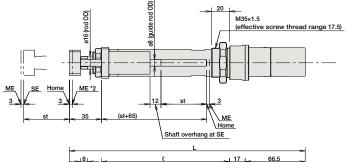


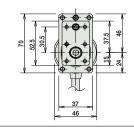


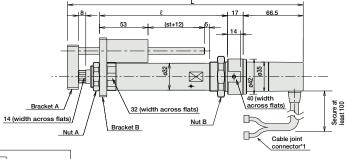


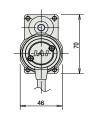
- \*1. A motor-encoder cable is connected here. See page A-39 for details on cables.
  \*2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
  ME: Mechanical end SE: Stroke end

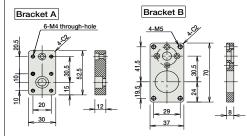
#### [No Brake]

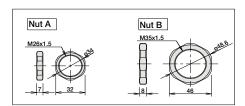












#### ■ Dimensions/Weight by Stroke

| nca-nd33D (without brake) |       |       |       |       |  |  |  |  |
|---------------------------|-------|-------|-------|-------|--|--|--|--|
| Stroke                    | 50    | 100   | 150   | 200   |  |  |  |  |
| L                         | 258.5 | 308.5 | 358.5 | 408.5 |  |  |  |  |
| l                         | 140   | 190   | 240   | 290   |  |  |  |  |
| Weight (kg)               | 0.9   | 1.1   | 1.2   | 1.3   |  |  |  |  |

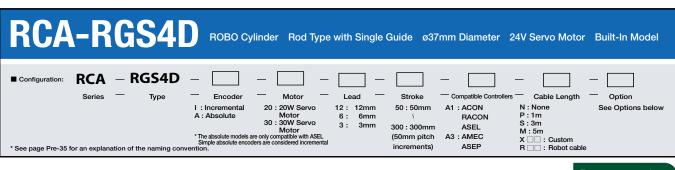
Brake-equipped configuration is not available with the RCA-RGS3D.

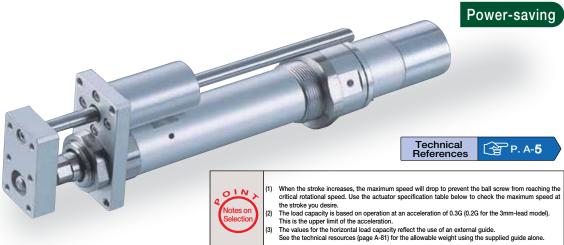
#### ② Compatible controller

| The RCA series actuators can operate with the controllers below. Select the controller according to your usage. |               |                         |   |  |               |                         |                |               |  |
|---|---------------|-------------------------|---|--|---------------|-------------------------|----------------|---------------|--|
| Name  | External View | Model                   | Description   | Max. Positioning Points  | Input Voltage | Power Supply Capacity   | Standard Price | See Page      |  |
| Solenoid Valve Type   | in the        | AMEC-C-20SI ① -NP-2-1   | Easy-to-use controller, even for beginners A                              |  | AC100V        | 2.4A rated              | -              | → P477        |  |
| Colcitoid valve Type  | 1             | ASEP-C-20SI ① -NP-2-0   | Operable with same signal as solenoid valve.                              | 3 points   |               |                         | -              |               |  |
| Splash-Proof Solenoid<br>Valve Type   |               | ASEP-CW-20SI ① -NP-2-0  | No homing necessary with simple absolute type.                            | ts both single and double solenoid types. ing necessary with simple absolute type. |               |                         | -              | → P487        |  |
| Positioner Type   | I             | ACON-C-20SI ① -NP-2-0   | Positioning is possible for up to 512 points                              | 512 points   | ints          |                         |                | -             |  |
| Safety-Compliant<br>Positioner Type   |               | ACON-CG-20SI ① -NP-2-0  |   | 312 points   |               |                         | -              |               |  |
| Pulse Train Input Type<br>(Differential Line Driver)  | ACON-PL-:     | ACON-PL-20SI ① -NP-2-0  | Pulse train input type with differential line driver support              | (-)  | DC24V         | 1.7A rated<br>5.1A peak | -              | → <b>P535</b> |  |
| Pulse Train Input Type<br>(Open Collector)  | 4             | ACON-PO-20SI ① -NP-2-0  | Pulse train input type with<br>open collector support                     |  |               |                         | -              |               |  |
| Serial Communication<br>Type  | Î             | ACON-SE-20SI ① -N-0-0   | Dedicated to serial communication 64 points                               |  |               |                         | -              |               |  |
| Field Network Type  |               | RACON-20S①              | Dedicated to field network  | 768 points   |               |                         | -              | → P503        |  |
| Program Control Type  |               | ASEL-C-1-20SI ① -NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes | 1500 points  |               |                         | -              | → P567        |  |

\* This is for the single-axis ASEL.

 $^{\star}$  ① is a placeholder for the code "LA" if the power-saving option is specified.





#### Actuator Specifications

#### ■ Lead and Load Capacity

| Model  | Motor<br>Output (w) | Lead<br>(mm) | Max. Load<br>Horizontal (kg) | Capacity Vertical (kg) | Rated<br>Thrust (N) | Stroke<br>(mm)       |  |
|--|---------------------|--------------|------------------------------|------------------------|---------------------|----------------------|--|
| RCA-RGS4D-①-20-12-②-③-④-⑤  |                     | 12           | 3.0                          | 0.5                    | 18.9                |                      |  |
| RCA-RGS4D-①-20-6-②-③-④-⑤   | 20                  | 6            | 6.0                          | 1.5                    | 37.7                |                      |  |
| RCA-RGS4D-①-20-3-②-③-④-⑤   |                     | 3            | 12.0                         | 3.5                    | 75.4                | 50~300               |  |
| RCA-RGS4D-①-30-12-②-③-④-⑤  |                     | 12           | 4.0                          | 1.0                    | 28.3                | (50mm<br>increments) |  |
| RCA-RGS4D-①-30-6-②-③-④-⑤   | 30                  | 6            | 9.0                          | 2.5                    | 56.6                |                      |  |
| RCA-RGS4D-①-30-3-②-③-④-⑤   |                     | 3            | 18.0                         | 6.0                    | 113.1               |                      |  |
| Legend ① Encoder ② Stroke ③ Compatible controller ④ Control length ⑤ Options |                     |              |                              |                        |                     |                      |  |

| Stroke and | Maximum | Speed |
|------------|---------|-------|
|------------|---------|-------|

| Stroke<br>Lead | $50\sim300$ (50mm increments) |
|----------------|-------------------------------|
| 12             | 600                           |
| 6              | 300                           |
| 3              | 150                           |

(Unit: mm/s)

| Encoder & S      | troke List  |
|------------------|-------------|
|                  | S           |
| ② Churche (mans) | Ingramental |

|               |           | Standa    | rd Price         |     |  |  |  |
|---------------|-----------|-----------|------------------|-----|--|--|--|
|               | ① Encoder |           |                  |     |  |  |  |
| 2 Stroke (mm) | Increr    | nental    | Absolute         |     |  |  |  |
|               | Motor O   | utput (W) | Motor Output (W) |     |  |  |  |
|               | 20W       | 30W       | 20W              | 30W |  |  |  |
| 50            | -         | -         | -                | -   |  |  |  |
| 100           | -         | -         | -                | -   |  |  |  |
| 150           | -         | -         | -                | -   |  |  |  |
| 200           | -         | -         | _                | -   |  |  |  |
| 250           | -         | -         | -                | -   |  |  |  |
| 300           | ı         | -         | -                | -   |  |  |  |

| ④ Cable List    |                       |                |  |  |  |  |
|-----------------|-----------------------|----------------|--|--|--|--|
| Туре            | Cable Symbol          | Standard Price |  |  |  |  |
| Standard        | P (1m)                | -              |  |  |  |  |
|                 | <b>S</b> (3m)         | -              |  |  |  |  |
|                 | <b>M</b> (5m)         | -              |  |  |  |  |
|                 | X06 (6m) ~ X10 (10m)  | -              |  |  |  |  |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |  |  |  |  |
|                 | X16 (16m) ~ X20 (20m) | -              |  |  |  |  |
|                 | R01 (1m) ~ R03 (3m)   | -              |  |  |  |  |
|                 | R04 (4m) ~ R05 (5m)   | -              |  |  |  |  |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |  |  |  |  |
|                 | R11 (11m) ~ R15 (15m) | _              |  |  |  |  |
|                 | R16 (16m) ~ R20 (20m) | -              |  |  |  |  |

<sup>\*</sup> See page A-39 for cables for maintenance.

| ⑤ Option List           |             |          |                |  |  |  |  |  |  |
|-------------------------|-------------|----------|----------------|--|--|--|--|--|--|
| Name                    | Option Code | See Page | Standard Price |  |  |  |  |  |  |
| Foot bracket            | FT          | → A-29   | -              |  |  |  |  |  |  |
| Home sensor             | HS          | → A-32   | -              |  |  |  |  |  |  |
| Power-saving            | LA          | → A-32   | -              |  |  |  |  |  |  |
| Reversed-home           | NM          | → A-33   | -              |  |  |  |  |  |  |
| Trunnion bracket (back) | TRR         | → A-38   | -              |  |  |  |  |  |  |

| Actuator Specifications          |   |  |  |  |  |  |
|----------------------------------|---|--|--|--|--|--|
| Item                             | Description   |  |  |  |  |  |
| Drive System                     | Ball screw ø10mm C10 grade                              |  |  |  |  |  |
| Positioning Repeatability        | ±0.02mm   |  |  |  |  |  |
| Lost Motion                      | 0.1mm or less   |  |  |  |  |  |
| Guide                            | Single guide (guide rod diameter ø10mm, Ball bush type) |  |  |  |  |  |
| Rod Diameter                     | ø20mm   |  |  |  |  |  |
| Non-rotating accuracy of rod     | ±0.05 deg   |  |  |  |  |  |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non-condensing)                 |  |  |  |  |  |

\*1. A motor-encoder cable is connected here. See page A-39 for details on cables.

For Special Order



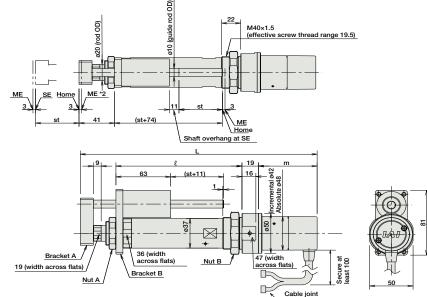


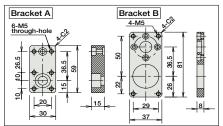


\*2. When homing, the rod moves to the ME; therefore, please watch for any interfere with the surrounding objects.

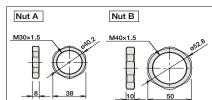
ME: Mechanical end SE: Stroke end

## [No Brake]





30



#### ■ Dimensions/Weight by Stroke

RCA-RGS4D (without brake)

|             | RCA-RGS4D (Without brake) |         |       |       |       |       |       |       |  |  |
|-------------|---------------------------|---------|-------|-------|-------|-------|-------|-------|--|--|
| Stroke      |                           | 50      | 100   | 150   | 200   | 250   | 300   |       |  |  |
|             | 20W                       | Increm. | 250.5 | 300.5 | 350.5 | 400.5 | 450.5 | 500.5 |  |  |
| L           | 2000                      | Absol.  | 263.5 | 313.5 | 363.5 | 413.5 | 463.5 | 513.5 |  |  |
| -           | 30W                       | Increm. | 265.5 | 315.5 | 365.5 | 415.5 | 465.5 | 515.5 |  |  |
|             | 3000                      | Absol.  | 278.5 | 328.5 | 378.5 | 428.5 | 478.5 | 528.5 |  |  |
| l           |                           | 145     | 195   | 245   | 295   | 345   | 395   |       |  |  |
|             | 20W Increm.               |         | 45.5  |       |       |       |       |       |  |  |
| _           | 2000                      | Absol.  | 58.5  |       |       |       |       |       |  |  |
| m           | 30W                       | Increm. | 60.5  |       |       |       |       |       |  |  |
|             | 3000                      | Absol.  |       |       | 73    | .5    |       |       |  |  |
| Weight (kg) |                           | 1.3     | 1.5   | 1.7   | 1.9   | 2.1   | 2.3   |       |  |  |
|             |                           |         |       |       |       |       |       |       |  |  |

Brake-equipped configuration is not available with the RCA-RGS4D.

#### ③ Compatible Controllers

The RCA series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View | Model  | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity   | Standard Price | See Page |
|--|---------------|--|--|-------------------------|---------------|-------------------------|----------------|----------|
| Solenoid Valve Type                                  |               | AMEC-C-20I ②-NP-2-1<br>AMEC-C-30I ②-NP-2-1     | Easy-to-use controller, even for beginners   |                         | AC100V        | 2.4A rated              | -              | → P477   |
| Solenoid valve type                                  | 1             | ASEP-C-20I ②-NP-2-0<br>ASEP-C-30I ②-NP-2-0     | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |               |                         | -              | → P487   |
| Splash-Proof Solenoid<br>Valve Type                  | D             | ASEP-CW-20I ②-NP-2-0<br>ASEP-CW-30I ②-NP-2-0   | No homing necessary with simple absolute type.   |                         |               |                         | -              | → P407   |
| Positioner Type                                      | I             | ACON-C-20I ②-NP-2-0<br>ACON-C-30I ②-NP-2-0     | Positioning is possible for up to 512 points   | 512 points              |               |                         | -              |          |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-20I ②-NP-2-0<br>ACON-CG-30I ②-NP-2-0   | rositioning is possible for up to 312 points   | 312 points              |               | 20W<br>1.3A rated       | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) |               | ACON-PL-20I ②-NP-2-0<br>ACON-PL-30I ②-NP-2-0   | Pulse train input type with<br>differential line driver support                              | (-)                     | DC24V         | 4.4A peak<br>30W        | -              | → P535   |
| Pulse Train Input Type<br>(Open Collector)           |               | ACON-PO-20I ②-NP-2-0<br>ACON-PO-30I ②-NP-2-0   | Pulse train input type with<br>open collector support  | (-)                     |               | 1.3A rated<br>4.4A peak | -              |          |
| Serial Communication<br>Type                         |               | ACON-SE-20I ②-N-0-0<br>ACON-SE-30I ②-N-0-0     | Dedicated to serial communication  | 64 points               |               |                         | -              |          |
| Field Network Type                                   |               | RACON-202<br>RACON-302                         | Dedicated to field network   | 768 points              |               |                         | -              | → P503   |
| Program Control Type                                 |               | ASEL-C-1-20 ①②-NP-2-0<br>ASEL-C-1-30 ①②-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |               |                         | -              | → P567   |

\* This is for the single-axis ASEL.

\* 1 is a placeholder for the encoder type (I: incremental / A: absolute). \* 2 is a placeholder for the code "LA" if the power-saving option is specified.

RCA-SRGS4R ROBO Cylinder Rod Type with Single Guide 45mm Width Servo Motor Short-Length Model Side-Mounted Motor  $\blacksquare$  Configuration: RCA - SRGS4R -20 Encoder Motor Compatible Contro Cable Length Type Lead Option N : None P : 1m S : 3m M : 5m A1: ACON I: Incremental 20: 20W Servo 5: 5mm 20:20mm See Options below The Simple absolute encoder RACON 200: 200mm ASEL (10mm pitch increments) ASEL
\* Set in 50mm increments A3 : AMEC is also considered type "I". X 🗆 🗆 : Custom over 100mm ASEP \* See page Pre-35 for an explanation of the naming convention.

# 0 IAI

Power-saving

P. A-5 Technical References

(1) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2.5mm-lead model, or when used vertically). This is the upper

(2) The values for the horizontal load capacity reflect the use of an external guide. See the technical resources (page A-82) for the allowable weight using the supplied guide alone.

#### Actuator Specifications

#### ■ Lead and Load Capacity

| - Loud and Loud Oupdonly                                |         |                    |               |              |                         |  |
|---|---------|--------------------|---------------|--------------|-------------------------|--|
| Model   |         | Max. Load Capacity |               | Rated        | Stroke (mm)             |  |
| Wodel   | (mm)    | Horizontal (kg)    | Vertical (kg) | Thrust (N)   | Stroke (IIIII)          |  |
| RCA-SRGS4R-I-20-5-①-②-③-④                               | 5       | 9                  | 2             | 41           | 20 ~ 200<br>(10mm       |  |
| RCA-SRGS4R-I-20-2.5-①-②-③-④                             | 2.5     | 18                 | 5.5           | 81           | increments)<br>(Note 1) |  |
| Legend 1 Stroke 2 Compatible controllers 3 Cable length | n Optio | ons                | (Note 1) 50   | mm increment | s over 100mm.           |  |

#### ■ Stroke and Maximum Speed

| Stroke<br>Lead | $20 \sim 200$ (10mm increments) |
|----------------|---------------------------------|
| 5              | 250                             |
| 2.5            | 125                             |
|                | (Unit: mm/s)                    |

#### ① Stroke List

| Stroke (mm) | Standard Price |
|-------------|----------------|
| 20~50       | -              |
| 60~100      | -              |
| 150         | -              |
| 200         | _              |

#### ③ Cable List

| Туре                       | Cable Symbol          | Standard Price |
|----------------------------|-----------------------|----------------|
| Standard<br>(Robot Cables) | P (1m)                | -              |
|                            | <b>S</b> (3m)         | -              |
|                            | <b>M</b> (5m)         | -              |
|                            | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths            | X11 (11m) ~ X15 (15m) | _              |
|                            | X16 (16m) ~ X20 (20m) | _              |

- \* The cable is a motor-encoder integrated cable, and is provided as a robot
- \* See page A-39 for cables for maintenance.

#### 4 Option List

| Name                                      | Option Code    | See Page      | Standard Price |
|---|----------------|---------------|----------------|
| Brake                                     | В              | → A-25        | -              |
| Flange bracket (back)                     | FLR            | → A-28        | -              |
| Foot bracket 1 (base mounting)            | FT             | → A-29        | -              |
| Foot bracket 2 (right/left side mounting) | FT2/FT4        | → A-31        | -              |
| Guide mounting direction                  | GS2 $\sim$ GS4 | → A-32        | -              |
| Power-saving                              | LA             | → A-32        | -              |
| Reversed-home                             | NM             | → <b>A-33</b> | -              |

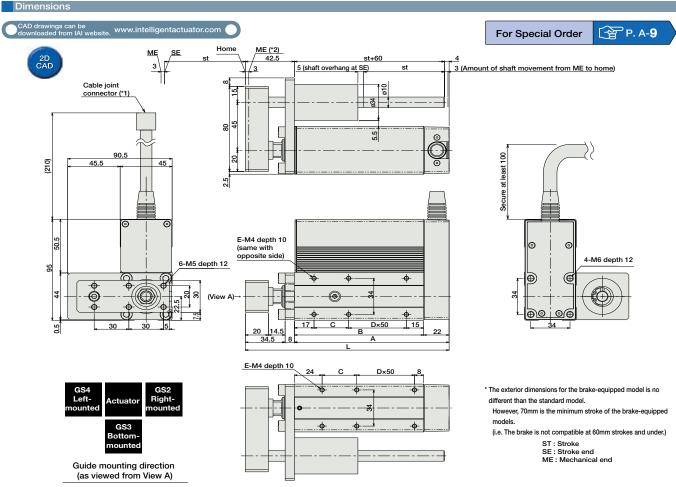
- \* The brake is available for strokes of 70mm or more.
- \* Please be sure that the mounting direction of the guide is specified in the product name.
- $\ensuremath{^{\star}}$  The guide and the foot bracket cannot be mounted in the same direction.

#### Actuator Specifications

| Item                             | Description                               |
|----------------------------------|---|
| Drive System                     | Ball screw ø8mm C10 grade                 |
| Positioning Repeatability        | ±0.02mm                                   |
| Lost Motion                      | 0.1mm or less                             |
| Rod Diameter                     | ø22 mm                                    |
| Non-rotating accuracy of rod     | ±0.05 deg                                 |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing) |

RCA-SRGS4R





- The motor-encoder cable is connected here. See page A-39 for details on cables.
- (\*2) When homing, the rod moves to the mechanical end position; therefore, please watch for any interference with the surrounding objects.

| ■ Dimensions/Weight by Stroke (Add 0.2kg) | g for brake equipped) |
|---|-----------------------|
|---|-----------------------|

| - Difficitions/ | vvcigi | по    | Otion | 6 (   |       |       |       | ,     |       |       |       |
|-----------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Stroke          | 20     | 30    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 150   | 200   |
| L               | 126.5  | 136.5 | 146.5 | 156.5 | 166.5 | 176.5 | 186.5 | 196.5 | 206.5 | 256.5 | 306.5 |
| Α               | 84     | 94    | 104   | 114   | 124   | 134   | 144   | 154   | 164   | 214   | 264   |
| В               | 62     | 72    | 82    | 92    | 102   | 112   | 122   | 132   | 142   | 192   | 242   |
| С               | 30     | 40    | 50    | 60    | 70    | 30    | 40    | 50    | 60    | 60    | 60    |
| D               | 0      | 0     | 0     | 0     | 0     | 1     | 1     | 1     | 1     | 2     | 3     |
| E               | 4      | 4     | 4     | 4     | 4     | 6     | 6     | 6     | 6     | 8     | 10    |
| Weight (kg)     | 1.15   | 1.21  | 1.28  | 1.35  | 1.42  | 1.49  | 1.56  | 1.62  | 1.69  | 2.03  | 2.38  |

| ② Compatible controller |
|-------------------------|
|-------------------------|

The RCA series actuators can operate with the controllers below. Select the controller according to your usage

| Name   | External View | Model                 | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity   | Standard Price | See Page |
|--|---------------|-----------------------|--|-------------------------|---------------|-------------------------|----------------|----------|
| Solenoid Valve Type                                  |               | AMEC-C-20SI①-NP-2-1   | Easy-to-use controller, even for beginners   |                         | AC100V        | 2.4A rated              | -              | → P477   |
| Sciencia valve type                                  | 1             | ASEP-C-20SI①-NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |               |                         | -              | → P487   |
| Splash-Proof Solenoid<br>Valve Type                  |               | ASEP-CW-20SI①-NP-2-0  | No homing necessary with simple absolute type.   |                         |               |                         | -              | → P487   |
| Positioner Type                                      | I             | ACON-C-20SI①-NP-2-0   | Positioning is possible for up to 512 points   | 512 points              |               |                         | -              |          |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-20SI①-NP-2-0  | r ostaoning is possible for up to 012 points   | OTZ POINTS              |               |                         | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) |               | ACON-PL-20S①-NP-2-0   | Pulse train input type with differential line driver support                                 | (-)                     | DC24V         | 1.7A rated<br>5.1A peak | -              | → P535   |
| Pulse Train Input Type<br>(Open Collector)           | č.            | ACON-PO-20SI①-NP-2-0  | Pulse train input type with<br>open collector support  | (-)                     |               |                         | -              |          |
| Serial Communication<br>Type                         | Î             | ACON-SE-20SI①-N-0-0   | Dedicated to serial communication  | 64 points               |               |                         | -              |          |
| Field Network Type                                   |               | RACON-20S①            | Dedicated to field network   | 768 points              |               |                         | -              | → P503   |
| Program Control Type                                 |               | ASEL-C-1-20SI①-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |               |                         | -              | → P567   |

\* This is for the single-axis ASEL.

Servo Motor (24V)

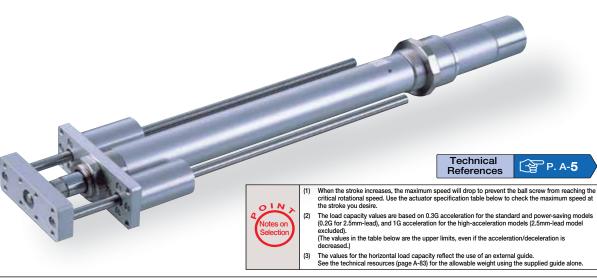
 $<sup>^{\</sup>star}$  1 is a placeholder for the code "LA" if the power-saving option is specified.

RCA-RGD3C ROBO Cylinder Rod Type with Double Guide ø32mm Diameter 24V Servo Motor Coupled lacktriangledown Configuration: RCA - RGD3C -20 Encoder Motor Compatible Controlle Cable Length I: Incremental \* The Simple 20 : 20W Servo Motor A1 : ACON N: None 10: 10mm 50:50mm See Options below P:1m S:3m M:5m 5mm RACON absolute encoder 2.5 : 2.5mm ASEL 200: 200mm is also considered : AMEC (50mm pitch increments) ASEP \* See page Pre-35 for an explanation of the naming convention.

## For High Acceleration/Deceleration

Power-saving

(Except the 2.5mm-lead model)



#### **Actuator Specifications** ■ Lead and Load Capacity ■ Stroke and Maximum Speed Max. Load Capacity Rated 50 ~ 200 Lead Stroke Output (W RCA-RGD3C-I-20-10-10-2-3-4 36.2 500 10 10 4 1.2 50~200 RCA-RGD3C-I-20-5-1 - 2 - 3 - 4 20 5 9 2.7 72.4 (50mm 5 250 RCA-RGD3C-I-20-2.5-1 - 2 - 3 - 4 2.5 18 6.2 144.8 2.5 125 (Unit: mm/s) Legend ① Stroke ② Compatible controllers ③ Cable length ④ Options

| ① Stroke List  |  |  |  |  |  |
|----------------|--|--|--|--|--|
| Standard Price |  |  |  |  |  |
| _              |  |  |  |  |  |
| -              |  |  |  |  |  |
| -              |  |  |  |  |  |
| -              |  |  |  |  |  |
| 318            |  |  |  |  |  |

| ③ Cable Lis       | t                          |                |
|-------------------|----------------------------|----------------|
| Туре              | Cable Symbol               | Standard Price |
|                   | P (1m)                     | -              |
| Standard          | <b>S</b> (3m)              | -              |
|                   | <b>M</b> (5m)              | -              |
|                   | X06 (6m) ~ X10 (10m)       | -              |
| Special Lengths   | X11 (11m) ~ X15 (15m)      | -              |
|                   | X16 (16m) ~ X20 (20m)      | -              |
|                   | R01 (1m) ~ R03 (3m)        | -              |
|                   | R04 (4m) ~ R05 (5m)        | -              |
| Robot Cable       | R06 (6m) ~ R10 (10m)       | -              |
|                   | R11 (11m) ~ R15 (15m)      | -              |
|                   | R16 (16m) ~ R20 (20m)      | -              |
| * See page A-30 f | or cables for maintenance. |                |

See page A-39 for cables for maintenance.

| 4 Option List                       |             |               |                |
|-------------------------------------|-------------|---------------|----------------|
| Name                                | Option Code | See Page      | Standard Price |
| Brake                               | В           | → <b>A-25</b> | -              |
| Foot bracket                        | FT          | → A-29        | -              |
| High-acceleration/deceleration (*1) | HA          | → A-32        | -              |
| Home sensor (*2)                    | HS          | → A-32        | -              |
| Power-saving (*3)                   | LA          | → A-32        | -              |
| Reversed-home                       | NM          | → A-33        | _              |
| Trunnion bracket (back)             | TRR         | → A-38        | -              |

(\*1) The high-acceleration/deceleration option is not available for 2.5mm-lead model.

<sup>(\*2)</sup> The home sensor (HS) cannot be used on the reversed-home models.

(\*3) The high acceleration/deceleration option and the power-saving option cannot be used simultaneously.

| Actuator Specification           | ons   |
|----------------------------------|---|
| Item                             | Description   |
| Drive System                     | Ball screw ø8mm C10 grade                               |
| Positioning Repeatability        | ±0.02mm   |
| Lost Motion                      | 0.1mm or less   |
| Guide                            | Double guide (guide rod diameter ø10mm, Ball bush type) |
| Rod Diameter                     | ø16mm   |
| Non-rotating accuracy of rod     | ±0.05 deg   |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non-condensing)                 |

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

For Special Orders





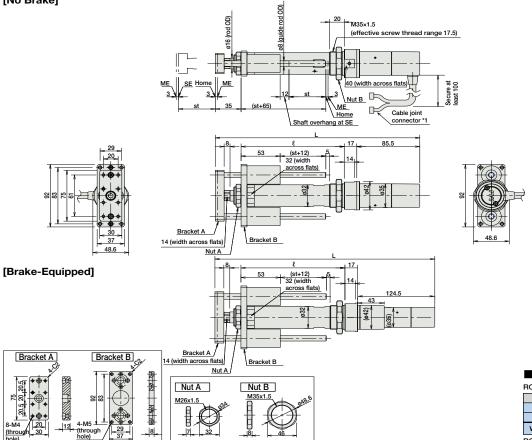


- \*1. A motor-encoder cable is connected here. See page A-39 for details on cables.
  - When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.

    ME: Mechanical end

    SE: Stroke end





#### ■ Dimensions/Weight by Stroke

RCA-RGD3C (without brake) Stroke

| TOA Haboo ( |          | D. a, |       |       |
|-------------|----------|-------|-------|-------|
| Stroke      | 50       | 100   | 150   | 200   |
| L           | 277.5    | 327.5 | 377.5 | 427.5 |
| l           | 140      | 190   | 240   | 290   |
| Weight (kg) | 1.1      | 1.2   | 1.4   | 1.5   |
| RCA-RGD3C ( | with bra | ıke)  |       | -     |
| Stroke      | 50       | 100   | 150   | 200   |
| L           | 316.5    | 366.5 | 416.5 | 466.5 |
| ٤           | 140      | 190   | 240   | 290   |
| Weight (kg) | 1.3      | 1.4   | 1.6   | 1.7   |

#### ② Compatible controller

| THE NOA SERIE  | s actuators carre | perate with the control | ers below. Select the controller acco   | rung to your usag       | je.           |                         |                |          |
|--|-------------------|-------------------------|---|-------------------------|---------------|-------------------------|----------------|----------|
| Name   | External View     | Model                   | Description   | Max. Positioning Points | Input Voltage | Power Supply Capacity   | Standard Price | See Page |
| Solenoid Valve Type                                  |                   | AMEC-C-20SI①-NP-2-1     | Easy-to-use controller, even for beginners  |                         | AC100V        | 2.4A rated              | -              | → P477   |
| Sciencia valve Type                                  | 1                 | ASEP-C-20SI①-NP-2-0     | Operable with same signal as solenoid valve.  Supports both single and double solenoid types. | 3 points                |               |                         | -              | → P487   |
| Splash-Proof<br>Solenoid Valve Type                  | 1                 | ASEP-CW-20SI①-NP-2-0    | No homing necessary with simple absolute type.  |                         |               |                         | -              | 7 740    |
| Positioner Type                                      | Í                 | ACON-C-20SI①-NP-2-0     | Positioning is possible for up to 512   | 512 points              |               |                         | -              |          |
| Safety-Compliant<br>Positioner Type                  |                   | ACON-CG-20SI①-NP-2-0    | points  | 312 points              |               |                         | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) |                   | ACON-PL-20SI①-NP-2-0    | Pulse train input type with differential line driver support                                  | (-)                     | DC24V         | 1.7A rated<br>5.1A peak | -              | → P53    |
| Pulse Train Input Type<br>(Open Collector)           |                   | ACON-PO-20SI①-NP-2-0    | Pulse train input type with<br>open collector support   | (-)                     |               |                         | -              |          |
| Serial<br>Communication Type                         |                   | ACON-SE-20SI①-N-0-0     | Dedicated to serial communication   | 64 points               |               |                         | -              |          |
| Field Network<br>Type                                |                   | RACON-20S①              | Dedicated to field network  | 768 points              |               |                         | -              | → P50    |
| Program Control<br>Type                              |                   | ASEL-C-1-20SI①-NP-2-0   | Programmed operation is possible<br>Operation is possible on up to 2 axes                     | 1500 points             |               |                         | -              | → P56    |

\* This is for the single-axis ASEL.

<sup>\*</sup> ① is a placeholder for the code "HA" or "LA" if the high acceleration/deceleration option or the power-saving option is specified.

RCA ROBO Cylinder RCA-RGD4C ROBO Cylinder Rod Type with Double Guide ø37mm Diameter 24V Servo Motor Coupled lacktriangle Configuration: RCA - RGD4C -Cable Length Туре Compatible Controlle Option A1 : ACON I : Incremental A : Absolute N: None 20 : 20W Servo 12: 12mm 50:50mm See Options below P:1m S:3m M:5m 6mm RACON ASEL 300:300mm \* The absolusingle abs Simple absolute the same state of the saming convention. A3: AMEC (50mm pitch X . : Custom R . : Robot cable increments) ASEP For High Acceleration/Deceleration Power-saving (\*1) (\*1) Except all 20W models and

30W 3mm lead models Technical P. A-5 References When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire. The load capacity values are based on 0.3G acceleration for the standard and power-saving mode (0.2G for 3mm-lead), and 1G acceleration for the high-acceleration models (3mm-lead model excluded). (2) (The values in the table below are the upper limits, even if the acceleration/deceleration is decreased.)

> (3) The values for the horizontal load capacity reflect the use of an external guide. See the technical resources (page A-83) for the allowable weight using the supplied guide alone

#### Actuator Specifications

#### ■ Lead and Load Capacity

| Model   | Motor<br>Output (w) | Lead<br>(mm) | Max. Load<br>Horizontal (kg) |     | Rated<br>Thrust (N) | Stroke<br>(mm)       |
|---|---------------------|--------------|------------------------------|-----|---------------------|----------------------|
| RCA-RGD4C-① -20-12-② - ③ - ④ - ⑤                  |                     | 12           | 3.0                          | 0.5 | 18.9                |                      |
| RCA-RGD4C-①-20-6-②-③-④-⑤                          | 20                  | 6            | 6.0                          | 1.5 | 37.7                |                      |
| RCA-RGD4C-① -20-3-② -③ -④ -⑤                      |                     | 3            | 12.0                         | 3.5 | 75.4                | 50~300               |
| RCA-RGD4C-①-30-12-②-③-④-⑤                         |                     | 12           | 4.0                          | 1.0 | 28.3                | (50mm<br>increments) |
| RCA-RGD4C-①-30-6-②-③-④-⑤                          | 30                  | 6            | 9.0                          | 2.5 | 56.6                |                      |
| RCA-RGD4C-①-30-3-②-③-④-⑤                          |                     | 3            | 18.0                         | 6.0 | 113.1               |                      |
| Legend ① Encoder ② Stroke ③ Compatible controller | 1 Control le        | ength 5      | Options                      |     |                     |                      |

| Stroke<br>Lead | $50 \sim 300$ (50mm increments) |
|----------------|---------------------------------|
| 12             | 600                             |

■ Stroke and Maximum Speed

| Lead | (50mm increments) |
|------|-------------------|
| 12   | 600               |
| 6    | 300               |
| 3    | 150               |
|      | (Linit: mm/e)     |

#### Encoder & Stroke List

|               |         | Standa    | rd Price |           |
|---------------|---------|-----------|----------|-----------|
|               |         | ① En      | coder    |           |
| 2 Stroke (mm) | Incren  | nental    | Abso     | olute     |
|               | Motor O | utput (W) | Motor O  | utput (W) |
|               | 20W     | 30W       | 20W      | 30W       |
| 50            | -       | -         | -        | -         |
| 100           | -       | -         | -        | -         |
| 150           | -       | -         | -        | -         |
| 200           | -       | -         | -        | -         |
| 250           | _       | -         | _        | _         |
| 300           | -       | -         | -        | -         |

| 4 Cable Lis     | t                     |                |
|-----------------|-----------------------|----------------|
| Туре            | Cable Symbol          | Standard Price |
|                 | P (1m)                | -              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | -              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
|                 | R04 (4m) ~ R05 (5m)   | -              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |
|                 | R11 (11m) ~ R15 (15m) | -              |
|                 | R16 (16m) ~ R20 (20m) | _              |

<sup>\*</sup> See page A-39 for cables for maintenance.

| ⑤ Option List                       |             |          |                |
|-------------------------------------|-------------|----------|----------------|
| Name                                | Option Code | See Page | Standard Price |
| Brake                               | В           | → A-25   | -              |
| Foot bracket                        | FT          | → A-29   | -              |
| High-acceleration/deceleration (*1) | HA          | → A-32   | -              |
| Home sensor (*2)                    | HS          | → A-32   | -              |
| Power-saving (*3)                   | LA          | → A-32   | -              |
| Reversed-home                       | NM          | → A-33   | -              |
| Trunnion bracket (back)             | TRR         | → A-38   | -              |

|--|

<sup>(\*2)</sup> The home sensor (HS) cannot be used on the reversed-home models.

**Actuator Specifications** Item Description Ball screw ø10mm C10 grade Drive System Positioning Repeatability ±0.02mm Lost Motion 0.1mm or less Double guide (guide rod diameter ø10mm, Ball bush type) Guide Rod Diameter ø20mm Non-rotating accuracy of rod ±0.05 deg 0~40°C, 85% RH or less (non-condensing) Ambient Operating Temp./Humidity

<sup>(\*3)</sup> The high acceleration/deceleration option and the power-saving option cannot be used simultaneously.

For Special Orders

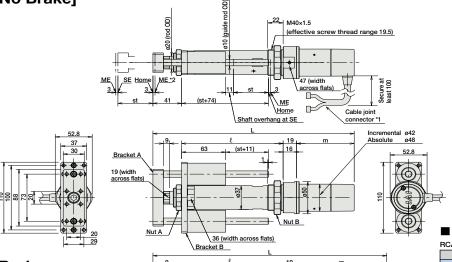




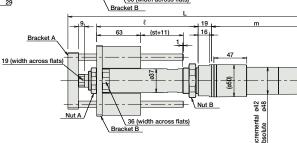


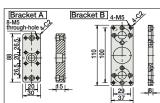
- - \*1. A motor-encoder cable is connected here. See page A-39 for details on cables.
    \*2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects. ME: Mechanical end SE: Stroke end

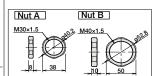
## [No Brake]



## [Brake-**Equipped**]







## ■ Dimensions/Weight by Stroke

| HU/ | N-RGD | 4C (with | out brai            | ie)   |       |       |       |       |  |  |  |
|-----|-------|----------|---------------------|-------|-------|-------|-------|-------|--|--|--|
|     | Stro  | ke       | 50                  | 100   | 150   | 200   | 250   | 300   |  |  |  |
|     | 20W   | Increm.  | 272.5               | 322.5 | 372.5 | 422.5 | 472.5 | 522.5 |  |  |  |
| L   | 2000  | Absol.   | 285.5               | 335.5 | 385.5 | 435.5 | 485.5 | 535.5 |  |  |  |
| -   | 30W   | Increm.  | 287.5               | 337.5 | 387.5 | 437.5 | 487.5 | 537.5 |  |  |  |
|     | 3000  | Absol.   | 300.5               | 350.5 | 400.5 | 450.5 | 500.5 | 550.5 |  |  |  |
|     | Ł     |          | 145                 | 195   | 245   | 295   | 345   | 395   |  |  |  |
|     | 20W   | Increm.  | 67.5                |       |       |       |       |       |  |  |  |
| m   | 2000  | Absol.   |                     |       | 80    | .5    |       |       |  |  |  |
| ""  | 30W   | Increm.  |                     |       | 82    | 2.5   |       |       |  |  |  |
|     | 3000  | Absol.   |                     |       | 95    | i.5   |       |       |  |  |  |
|     | Weigh | t (kg)   | 1.8 2.0 2.2 2.4 2.6 |       |       |       | 2.8   |       |  |  |  |
|     |       |          |                     |       | •     |       | •     |       |  |  |  |

#### RCA-RGD4C (with brake)

|   | Stro  | ke      | 50    | 100   | 150   | 200   | 250                              | 300   |  |  |  |
|---|-------|---------|-------|-------|-------|-------|----------------------------------|-------|--|--|--|
|   | 20W   | Increm. | 315.5 | 365.5 | 415.5 | 465.5 | 515.5                            | 565.5 |  |  |  |
| L | 2000  | Absol.  | 328.5 | 378.5 | 428.5 | 478.5 | 528.5                            | 578.5 |  |  |  |
| - | 30W   | Increm. | 330.5 | 380.5 | 430.5 | 480.5 | 530.5                            | 580.5 |  |  |  |
|   | 3000  | Absol.  | 343.5 | 393.5 | 443.5 | 493.5 | 543.5                            | 593.5 |  |  |  |
|   | l     |         | 145   | 195   | 245   | 295   | 345                              | 395   |  |  |  |
|   | 20W   | Increm. | 110.5 |       |       |       |                                  |       |  |  |  |
|   | 2000  | Absol.  |       |       | 12    | 3.5   | 515.5<br>528.5<br>530.5<br>543.5 |       |  |  |  |
| m | 30W   | Increm. |       |       | 12    | 5.5   |                                  |       |  |  |  |
|   | 3000  | Absol.  |       |       | 13    | 8.5   |                                  |       |  |  |  |
|   | Weigh | t (kg)  | 2.0   | 2.2   | 2.4   | 2.6   | 2.8                              | 3.0   |  |  |  |
|   |       |         |       |       |       |       |                                  |       |  |  |  |

#### ③ Compatible Controllers

The RCA series actuators can operate with the controllers below. Select the controller according to your usage.

| Name   | External View | Model  | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity   | Standard Price | See Page      |   |  |
|--|---------------|--|--|-------------------------|---------------|-------------------------|----------------|---------------|---|--|
| Solenoid Valve Type                                  |               | AMEC-C-20I2-NP-2-1<br>AMEC-C-30I2-NP-2-1       | Easy-to-use controller, even for beginners   |                         | AC100V        | 2.4A rated              | -              | → P477        |   |  |
| Solelloid valve Type                                 |               | ASEP-C-20I2-NP-2-0<br>ASEP-C-30I2-NP-2-0       | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |               |                         | -              | → P487        |   |  |
| Splash-Proof Solenoid<br>Valve Type                  | D             | ASEP-CW-2012-NP-2-0<br>ASEP-CW-3012-NP-2-0     | No homing necessary with simple absolute type.   |                         |               |                         | -              | → F407        |   |  |
| Positioner Type                                      |               | ACON-C-2012-NP-2-0<br>ACON-C-3012-NP-2-0       | Positioning is possible for up to 512 points   | 512 points              |               | 20W<br>1.3A rated       |                |               | - |  |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-2012-NP-2-0<br>ACON-CG-3012-NP-2-0     | rositioning is possible for up to 312 points   | 312 points              |               |                         | -              |               |   |  |
| Pulse Train Input Type<br>(Differential Line Driver) |               | ACON-PL-2012-NP-2-0<br>ACON-PL-3012-NP-2-0     | Pulse train input type with differential line driver support                                 | (-)                     | DC24V         | 4.4A peak<br>30W        | -              | → <b>P535</b> |   |  |
| Pulse Train Input Type<br>(Open Collector)           |               | ACON-PO-2012-NP-2-0<br>ACON-PO-3012-NP-2-0     | Pulse train input type with open collector support   | (-)                     |               | 1.3A rated<br>4.4A peak | -              |               |   |  |
| Serial Communication<br>Type                         | Î             | ACON-SE-20(2)-N-0-0<br>ACON-SE-30(2)-NP-0-0    | Dedicated to serial communication  | 64 points               |               |                         | -              |               |   |  |
| Field Network Type                                   |               | RACON-20(2)<br>RACON-30(2)                     | Dedicated to field network   | 768 points              |               |                         |                | → P503        |   |  |
| Program Control Type                                 |               | ASEL-C-1-20 ①②-NP-2-0<br>ASEL-C-1-30 ①②-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |               |                         | -              | → P567        |   |  |

\* This is for the single-axis ASEL.

- In its to the single-axis Act...

  \*① is a placeholder for the encoder type (I: incremental / A: absolute).

  \*② is a placeholder for the code "HA" or "LA" if the high acceleration/deceleration option or the power-saving option is specified.

# RCA-RGD3D

\* See page Pre-35 for an explanation of the naming convention.

ROBO Cylinder Rod Type with Double Guide ø32mm Diameter 24V Servo Motor Built-In Model

lacktriangle Configuration: RCA - RGD3D -20

Encoder I: Incremental \* The Simple absolute encoder

is also considered

Motor 20 : 20W Servo Motor

10: 10mm 5: 5mm 2.5 : 2.5mm

50:50mm 200 : 200mm (50mm pitch

A1: ACON RACON ASEL A3 : AMEC increments) ASEP

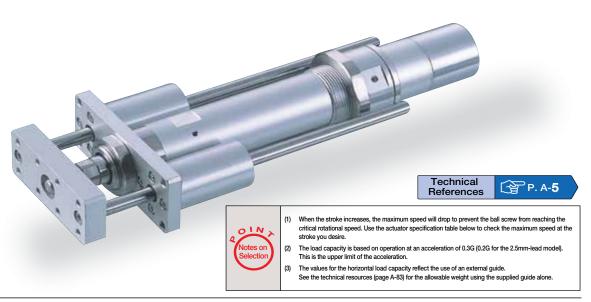
Compatible Controlle

Cable Length

N: None
P:1m
S:3m
M:5m
X : Custom
R : Robot cable See Options below

Power-saving

Option



| Actuator Specifications   |                     |               |                              |     |                     |                 |        |                                 |  |  |  |
|---|---------------------|---------------|------------------------------|-----|---------------------|-----------------|--------|---------------------------------|--|--|--|
| ■ Lead and Load Capacity ■ Stroke and Maximum Speed                           |                     |               |                              |     |                     |                 |        |                                 |  |  |  |
| Model   | Motor<br>Output (w) | Lead<br>(mm)  | Max. Load<br>Horizontal (kg) |     | Rated<br>Thrust (N) | Stroke<br>(mm)  | Stroke | $50 \sim 200$ (50mm increments) |  |  |  |
| RCA-RGD3D-I-20-10-①-②-③-④   |                     | 10 4 1.2 36.2 | 50.000                       | 10  | 500                 |                 |        |                                 |  |  |  |
| RCA-RGD3D-I-20-5-①-②-③-④  | 20                  | 5             | 9                            | 2.7 | 72.4                | 50~200<br>(50mm | 5      | 250                             |  |  |  |
| RCA-RGD3D-I-20-2.5-①-②-③-④  | 2.5                 |               | 18                           | 6.2 | 144.8               | increments)     | 2.5    | 125                             |  |  |  |
| egend 1 Stroke 2 Compatible controllers 3 Cable length 4 Options (Unit: mm/s) |                     |               |                              |     |                     |                 |        |                                 |  |  |  |

| ① Stroke List |                |  |  |  |  |  |
|---------------|----------------|--|--|--|--|--|
| Stroke (mm)   | Standard Price |  |  |  |  |  |
| 50            | -              |  |  |  |  |  |
| 100           | -              |  |  |  |  |  |
| 150           | -              |  |  |  |  |  |
| 200           | -              |  |  |  |  |  |

| ③ Cable Lis     | t                     |                |
|-----------------|-----------------------|----------------|
| Туре            | Cable Symbol          | Standard Price |
|                 | P (1m)                | _              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | -              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
|                 | R04 (4m) ~ R05 (5m)   | _              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |
|                 | R11 (11m) ~ R15 (15m) | -              |
|                 | R16 (16m) ~ R20 (20m) | _              |

<sup>\*</sup> See page A-39 for cables for maintenance.

| 4 Option List           |             |          |                |
|-------------------------|-------------|----------|----------------|
| Name                    | Option Code | See Page | Standard Price |
| Foot bracket            | FT          | → A-29   | -              |
| Home sensor             | HS          | → A-32   | -              |
| Power-saving            | LA          | → A-32   | -              |
| Reversed-home           | NM          | → A-33   | -              |
| Trunnion bracket (back) | TRR         | → A-38   | _              |

<sup>\*</sup> The home sensor (HS) cannot be used on the reversed-home models.

| Actuator Specifications          |   |  |  |  |  |  |  |  |
|----------------------------------|---|--|--|--|--|--|--|--|
| Item                             | Description   |  |  |  |  |  |  |  |
| Drive System                     | Ball screw ø8mm C10 grade                               |  |  |  |  |  |  |  |
| Positioning Repeatability        | ±0.02mm   |  |  |  |  |  |  |  |
| Lost Motion                      | 0.1mm or less   |  |  |  |  |  |  |  |
| Guide                            | Double guide (guide rod diameter ø10mm, Ball bush type) |  |  |  |  |  |  |  |
| Rod Diameter                     | ø16mm   |  |  |  |  |  |  |  |
| Non-rotating accuracy of rod     | ±0.05 deg   |  |  |  |  |  |  |  |
| Ambient Operating Temp./Humidity | 0~40°C. 85% RH or less (non-condensing)                 |  |  |  |  |  |  |  |



For Special Orders



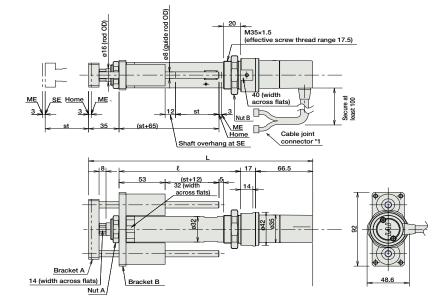


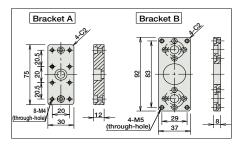
- \*1 A motor-encoder cable is connected here. See page A-39 for details on cables.
  - When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.

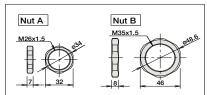
    ME: Mechanical end

    SE: Stroke end

[No Brake]







## ■ Dimensions/Weight by Stroke

| A-RGD3D (   | without | brake)  |   |                     |  |
|-------------|---------|---|---|---------------------|--|
| Stroke      | 50      | 100   | 150   | 200                 |  |
| L           | 258.5   | 308.5   | 358.5   | 408.5               |  |
| l           | 140     | 190   | 240   | 290                 |  |
| Veight (kg) | 1.1     | 1.2   | 1.4   | 1.5                 |  |
|             |         | Stroke         50           L         258.5           ℓ         140 | Stroke         50         100           L         258.5         308.5           ℓ         140         190 | L 258.5 308.5 358.5 |  |

Brake-equipped configuration is not available with the RCA-RGD3D.

| (2) | Compatible contro | llor |
|-----|-------------------|------|
| (2) | Companie como     | ner  |

| Name   | External View | Model                 | Description  | Max. Positioning Points Input Voltage Power Supply Capacity |                               | Standard Price    | See Page |        |  |
|--|---------------|-----------------------|--|---|-------------------------------|-------------------|----------|--------|--|
| Solenoid Valve Type                                  | las           | AMEC-C-20SI①-NP-2-1   | Easy-to-use controller, even for beginners   |   | AC100V                        | AC100V 2.4A rated |          | → P477 |  |
| Solelloid valve Type                                 | 1             | ASEP-C-20SI①-NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points  | DC24V 1.7A rated<br>5.1A peak |                   | -        | → P487 |  |
| Splash-Proof Solenoid<br>Valve Type                  |               | ASEP-CW-20SI①-NP-2-0  | No homing necessary with simple absolute type.   |   |                               |                   | -        | 71407  |  |
| Positioner Type                                      |               | ACON-C-20SI①-NP-2-0   | Positioning is possible for up to 512 points   | 512 points  |                               |                   |          | -      |  |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-20SI①-NP-2-0  | . Collecting to possible for up to 0.12 points   | 012 pointo  |                               |                   | -        |        |  |
| Pulse Train Input Type<br>(Differential Line Driver) |               | ACON-PL-20SI①-NP-2-0  | Pulse train input type with differential line driver support                                 | (-)   |                               |                   | -        | → P53  |  |
| Pulse Train Input Type<br>(Open Collector)           |               | ACON-PO-20SI①-NP-2-0  | Pulse train input type with<br>open collector support  | (-)   |                               |                   | -        |        |  |
| Serial Communication<br>Type                         |               | ACON-SE-20SI①-N-0-0   | Dedicated to serial communication  | 64 points   |                               |                   | -        |        |  |
| Field Network Type                                   |               | RACON-20S①            | Dedicated to field network   | 768 points  |                               |                   | -        | → P50  |  |
| Program Control Type                                 | Ĩ             | ASEL-C-1-20SI①-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points   |                               |                   | -        | → P56  |  |

\* This is for the single-axis ASEL.

 $<sup>^{\</sup>star}$  1 is a placeholder for the code "LA" if the power-saving option is specified.

RCA-RGD4D lacktriangle Configuration: RCA - RGD4D -

ROBO Cylinder Rod Type with Double Guide ø37mm Diameter 24V Servo Motor Built-In Model

I: Incremental 20: 20W Servo A: Absolute Motor 30: 30W Servo Motor The absolute models are only compatible with ASEL Simple absolute encoders are considered incremental Services.

12: 12mm

6mm

50:50mm 300:300mm (50mm pitch

A1: ACON RACON ASEL A3 : AMEC increments) ASEP

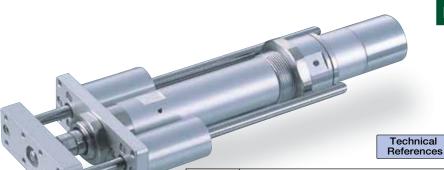
N: None

Cable Length Option See Options below

N: None
P: 1m
S: 3m
M: 5m
X : Custom
R: : Robot cable

Power-saving

P. A-5



(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire. The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model). This is the upper limit of the acceleration.

The values for the horizontal load capacity reflect the use of an external guide. See the technical resources (page A-83) for the allowable weight using the supplied guide alone.

#### Actuator Specifications

#### ■ Lead and Load Capacity

| Model   | Motor      | Lead    |                 | Capacity     | Rated      | Stroke               |
|---|------------|---------|-----------------|--------------|------------|----------------------|
|   | Output (w) |         | Horizontal (kg) | Vertical kg) | Thrust (N) | (mm)                 |
| RCA-RGD4D-①-20-12-②-③-④-⑤                           | 20         | 12      | 3.0             | 0.5          | 18.9       |                      |
| RCA-RGD4D-①-20-6-②-③-④-⑤                            |            | 6       | 6.0             | 1.5          | 37.7       |                      |
| RCA-RGD4D-①-20-3-②-③-④-⑤                            |            | 3       | 12.0            | 3.5          | 75.4       | 50~300               |
| RCA-RGD4D-①-30-12-②-③-④-⑤                           |            | 12      | 4.0             | 1.0          | 28.3       | (50mm<br>increments) |
| RCA-RGD4D-①-30-6-②-③-④-⑤                            | 30         | 6       | 9.0             | 2.5          | 56.6       |                      |
| RCA-RGD4D-①-30-3-②-③-④-⑤                            |            | 3       | 18.0            | 6.0          | 113.1      |                      |
| Legend ① Encoder ② Stroke ③ Compatible controller ② | Control le | ength 5 | Options         |              |            |                      |

#### ■ Stroke and Maximum Speed

| Stroke | $50 \sim 300$ (50mm increments) |
|--------|---------------------------------|
| 12     | 600                             |
| 6      | 300                             |
| 3      | 150                             |
|        |                                 |

(Unit: mm/s)

#### Encoder List & Stroke List

|               | Standard Price |           |                  |       |  |  |  |
|---------------|----------------|-----------|------------------|-------|--|--|--|
|               | ① Encoder      |           |                  |       |  |  |  |
| 2 Stroke (mm) | Increr         | nental    | Abso             | olute |  |  |  |
|               | Motor O        | utput (W) | Motor Output (W) |       |  |  |  |
|               | 20W            | 30W       | 20W              | 30W   |  |  |  |
| 50            | -              | -         | -                | -     |  |  |  |
| 100           | -              |           |                  | -     |  |  |  |
| 150           | -              | =         | -                | -     |  |  |  |
| 200           | -              | -         | -                | -     |  |  |  |
| 250           | -              |           |                  | -     |  |  |  |
| 300           |                |           | =                | =     |  |  |  |

| O Cable List    |                       |                |  |  |
|-----------------|-----------------------|----------------|--|--|
| Туре            | Cable Symbol          | Standard Price |  |  |
|                 | P (1m)                | -              |  |  |
| Standard        | <b>S</b> (3m)         | -              |  |  |
|                 | <b>M</b> (5m)         | -              |  |  |
|                 | X06 (6m) ~ X10 (10m)  | -              |  |  |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |  |  |
|                 | X16 (16m) ~ X20 (20m) | _              |  |  |
|                 | R01 (1m) ~ R03 (3m)   | -              |  |  |
|                 | R04 (4m) ~ R05 (5m)   | _              |  |  |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |  |  |
|                 | R11 (11m) ~ R15 (15m) | _              |  |  |
|                 | R16 (16m) ~ R20 (20m) | -              |  |  |

<sup>\*</sup> See page A-39 for cables for maintenance.

Actuator Specifications

#### ⑤ Option List See Page Option Code Standard Price Foot bracket → A-29 Home sensor HS → A-32 Power-saving LA → A-32 NM Reversed-home → A-33 TRR Trunnion bracket (back) → A-38

\* The home sensor (HS) cannot be used on the reversed-home models.

| riotation opcomoditions          |   |  |  |  |
|----------------------------------|---|--|--|--|
| Item                             | Description   |  |  |  |
| Drive System                     | Ball screw ø10mm C10 grade                              |  |  |  |
| Positioning Repeatability        | ±0.02mm   |  |  |  |
| Lost Motion                      | 0.1mm or less   |  |  |  |
| Guide                            | Double guide (guide rod diameter ø10mm, Ball bush type) |  |  |  |
| Rod Diameter                     | ø20mm   |  |  |  |
| Non-rotating accuracy of rod     | ±0.05 deg   |  |  |  |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non-condensing)                 |  |  |  |

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

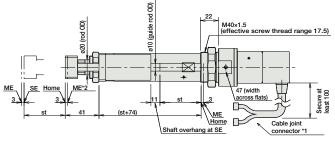
For Special Orders

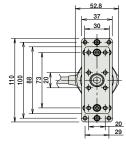


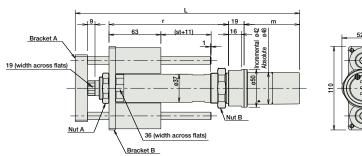


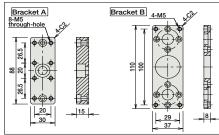
- \*1. A motor-encoder cable is connected here. See page A-39 for details on cables.
  \*2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
  ME: Mechanical end SE: Stroke end

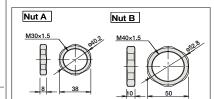
#### [No Brake]











#### ■ Dimensions/Weight by Stroke

| HUF | RCA-RGD4D (Without brake) |         |       |       |       |       |       |       |
|-----|---------------------------|---------|-------|-------|-------|-------|-------|-------|
|     | Stroke                    |         | 50    | 100   | 150   | 200   | 250   | 300   |
|     | 20W                       | Increm. | 250.5 | 300.5 | 350.5 | 400.5 | 450.5 | 500.5 |
| L   | 2000                      | Absol.  | 263.5 | 313.5 | 363.5 | 413.5 | 463.5 | 513.5 |
| - 1 | 30W                       | Increm. | 265.5 | 315.5 | 365.5 | 415.5 | 465.5 | 515.5 |
|     | 3000                      | Absol.  | 278.5 | 328.5 | 378.5 | 428.5 | 478.5 | 528.5 |
|     | l                         |         | 145   | 195   | 245   | 295   | 345   | 395   |
|     | 20W Increm.               |         | 45.5  |       |       |       |       |       |
| m   | 2000                      | Absol.  |       |       | 58    | 3.5   |       |       |
| ""  | 30W                       | Increm. | 60.5  |       |       |       |       |       |
|     | Absol.                    |         | 73.5  |       |       |       |       |       |
|     | Weight (kg)               |         | 1.6   | 1.8   | 2.1   | 2.3   | 2.5   | 2.7   |
|     |                           |         |       |       |       |       |       |       |

Brake-equipped configuration is not available with the RCA-RGD4D.

#### ③ Compatible Controllers

| Name   | External View | Model  | Description  | Max. Positioning Points | Input Voltage     | Power Supply Capacity                       | Standard Price | See Page |
|--|---------------|--|--|-------------------------|-------------------|---|----------------|----------|
| Solenoid Valve Type                                  | 10            | AMEC-C-20(2)-NP-2-1<br>AMEC-C-30(2)-NP-2-1   | Easy-to-use controller, even for beginners   |                         | AC100V            | 2.4A rated                                  | -              | → P477   |
| Soleliold valve Type                                 |               | ASEP-C-201②-NP-2-0<br>ASEP-C-301②-NP-2-0     | Operable with same signal as solenoid valve.   | 3 points                |                   |   | -              | → P487   |
| Splash-Proof Solenoid<br>Valve Type                  | 1             | ASEP-CW-20I2-NP-2-0<br>ASEP-CW-30I2-NP-2-0   | Supports both single and double solenoid types. No homing necessary with simple absolute type. |                         |                   |   | -              | → P407   |
| Positioner Type                                      |               | ACON-C-2012-NP-2-0<br>ACON-C-3012-NP-2-0     | Positioning is possible for up to 512 points   | 512 points              |                   |   |                | -        |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-2012-NP-2-0<br>ACON-CG-3012-NP-2-0   | 012 pointe   |                         | 20W<br>1.3A rated | -   |                |          |
| Pulse Train Input Type<br>(Differential Line Driver) |               | ACON-PL-20I2-NP-2-0<br>ACON-PL-30I2-NP-2-0   | Pulse train input type with differential line driver support                                   | (-)                     | DC24V             | 4.4A peak<br>30W<br>1.3A rated<br>4.4A peak | -              | → P538   |
| Pulse Train Input Type<br>(Open Collector)           |               | ACON-PO-2012-NP-2-0<br>ACON-PO-3012-NP-2-0   | Pulse train input type with open collector support   | (-)                     |                   |   | -              |          |
| Serial Communication<br>Type                         |               | ACON-SE-20(2)-N-0-0<br>ACON-SE-30(2)-N-0-0   | Dedicated to serial communication  | 64 points               |                   |   | -              |          |
| Field Network Type                                   |               | RACON-202<br>RACON-302                       | Dedicated to field network   | 768 points              |                   |   | -              | → P500   |
| Program Control Type                                 |               | ASEL-C-1-20①②-NP-2-0<br>ASEL-C-1-30①②-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                      | 1500 points             |                   |   | -              | → P56    |

- \*This is for the single-axis ASEL.

  \*① is a placeholder for the encoder type (I: incremental / A: absolute).

  \*② is a placeholder for the code "LA" if the power-saving option is specified.

\* See page Pre-35 for an explanation of the naming convention.

■ Configuration:

# RCA-RGD3R ROBO Cylinder Rod Type with Double Guide Ø32mm Diameter 24V Servo Motor Side-Mounted Motor

RCA - RGD3R -

Encoder I: Incremental \* The Simple absolute encoder is also considered

Motor 20 : 20W Servo Motor

20

10: 10mm 5: 5mm 2.5 : 2.5mm

50:50mm 200: 200mm (50mm pitch

increments)

Compatible Controlle A1 : ACON RACON ASEL

A3: AMEC ASEP

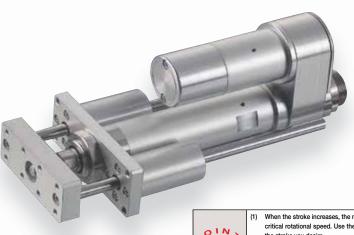
Cable Length N: None
P:1m
S:3m
M:5m
X : Custom
R : Robot cable

Option See Options below

Power-saving

**曾** P. A-**5** 

(Unit: mm/s)



When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

Technical

References

The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2.5mm-lead model). (2) This is the upper limit of the acceleration.

(3) The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod. See the technical resources (page A-83) for the allowable weight using the supplied guide alone

## Actuator Specifications

| ■ Lead and Load Capacity   |            |      |                 |               |            |                                  |
|----------------------------|------------|------|-----------------|---------------|------------|----------------------------------|
| Model                      |            | Lead | Max. Load       | Capacity      | Rated      | Stroke                           |
| Model                      | Output (w) | (mm) | Horizontal (kg) | Vertical (kg) | Thrust (N) | (mm)                             |
| RCA-RGD3R-I-20-10-①-②-③-④  |            | 10   | 4.0             | 1.2           | 36.2       | 50 000                           |
| RCA-RGD3R-I-20-5-①-②-③-④   | 20         | 5    | 9.0             | 2.7           | 72.4       | 50 ~ 200<br>(50mm<br>increments) |
| RCA-RGD3R-I-20-2.5-①-②-③-④ |            | 2.5  | 18.0            | 6.2           | 144.8      | morements)                       |

|                   | ■ Stroke and Maximum Speed |                |                                |  |  |
|-------------------|----------------------------|----------------|--------------------------------|--|--|
| ke<br>)           |                            | Stroke<br>Lead | $50 \sim 200$ (50mm increments |  |  |
| 200<br>m<br>ents) | 10                         | 500            |                                |  |  |
|                   | 5                          | 250            |                                |  |  |
|                   | 2.5                        | 125            |                                |  |  |
|                   |                            |                |                                |  |  |

| ① Stroke List              |   |  |  |  |  |
|----------------------------|---|--|--|--|--|
| Stroke (mm) Standard Price |   |  |  |  |  |
| 50                         | - |  |  |  |  |
| 100                        | - |  |  |  |  |
| 150                        | - |  |  |  |  |
| 200                        | - |  |  |  |  |

Legend ① Stroke ② Compatible controllers ③ Cable length ④ Options

| 3 | Cable | List |
|---|-------|------|
|   |       |      |
|   |       |      |

| Type            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
|                 | P (1m)                | -              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | -              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
|                 | R04 (4m) ~ R05 (5m)   | -              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |
|                 | R11 (11m) ~ R15 (15m) | -              |
|                 | R16 (16m) ~ R20 (20m) | -              |

<sup>\*</sup> See page A-39 for cables for maintenance.

| Option List           |             |               |                |  |  |  |
|-----------------------|-------------|---------------|----------------|--|--|--|
| Name                  | Option Code | See Page      | Standard Price |  |  |  |
| Brake                 | В           | → <b>A-25</b> | -              |  |  |  |
| Foot bracket          | FT          | → A-29        | -              |  |  |  |
| Flange bracket (back) | FLR         | → A-28        | -              |  |  |  |
| Home sensor           | HS          | → A-32        | -              |  |  |  |
| Power-saving          | LA          | → A-32        | -              |  |  |  |
| Reversed-home         | NM          | → A-33        | -              |  |  |  |
| Clevis Bracket        | QR          | → <b>A-34</b> | -              |  |  |  |
| Back-mounting plate   | RP          | → <b>A-35</b> | -              |  |  |  |

<sup>\*</sup> The home sensor (HS) cannot be used on the reversed-home models.

Actuator Specification Item Description Drive System Ball screw ø8mm C10 grade Positioning Repeatability ±0.02mm Lost Motion 0.1mm or less Material: Aluminum (white alumite treated) Base Rod Diameter ø16mm ±0.05 deg Non-rotating accuracy of rod 0  $\sim$  40°C, 85% RH or less (non-condensing) Ambient Operating Temp./Humidity



ME: Mechanical end

For Special Orders





Nut A M26x1.5

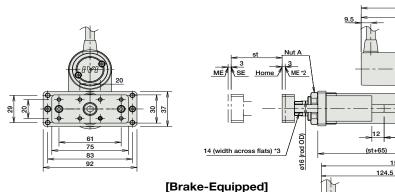


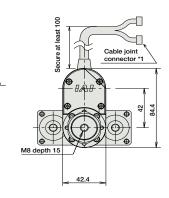
\*1. A motor-encoder cable is connected here. See page A-39 for details on cables.
\*2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.

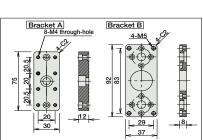
SE: Stroke end

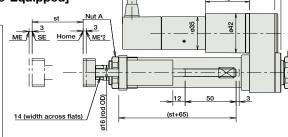
\*3. The orientation of the bolt will vary depending on the product.

[No Brake] 35 \_ 181









Bracket B

116.5

25

25

Nut A

85.5

155.5

## ■ Dimensions/Weight by Stroke

BCA-BGD3B (without brake)

| TIOA-TIODSIT (WILLIOUT BIAKE) |     |     |     |     |  |  |  |  |
|-------------------------------|-----|-----|-----|-----|--|--|--|--|
| Stroke                        | 50  | 100 | 150 | 200 |  |  |  |  |
| L                             | 212 | 262 | 312 | 362 |  |  |  |  |
| Ł                             | 128 | 178 | 228 | 278 |  |  |  |  |
| Weight (kg)                   | 1.2 | 1.3 | 1.5 | 1.6 |  |  |  |  |
|                               |     |     |     |     |  |  |  |  |

DCA DCD2D (with health)

| HCA-HGD3H (With brake) |                  |   |           |   |  |  |  |  |
|------------------------|------------------|---|-----------|---|--|--|--|--|
| Stroke                 | 50               | 100   | 150       | 200   |  |  |  |  |
| L                      | 212              | 262   | 312       | 362   |  |  |  |  |
| l                      | 128              | 178   | 228       | 278   |  |  |  |  |
| Weight (kg)            | 1.4              | 1.5   | 1.7       | 1.8   |  |  |  |  |
|                        | Stroke<br>L<br>ℓ | Stroke         50           L         212           ℓ         128 | L 212 262 | Stroke         50         100         150           L         212         262         312           ℓ         128         178         228 |  |  |  |  |

#### ② Compatible controller

| Name   | External View | Model                    | Description  | Max. Positioning Points | Input Voltage | Power Supply Capacity   | Standard Price | See Page |  |   |  |
|--|---------------|--------------------------|--|-------------------------|---------------|-------------------------|----------------|----------|--|---|--|
| Solenoid Valve Type                                  |               | AMEC-C-20SI2-NP-2-1      | Easy-to-use controller, even for beginners   |                         | AC100V        | 2.4A rated              | -              | → P477   |  |   |  |
| Solellold valve Type                                 | 1             | ASEP-C-20SI2-NP-2-0      | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |               |                         | -              | → P487   |  |   |  |
| Splash-Proof Solenoid<br>Valve Type                  | 1             | ASEP-CW-20SI2-NP-2-0     | No homing necessary with simple absolute type.   |                         |               |                         | -              | → P407   |  |   |  |
| Positioner Type                                      |               | ACON-C-20SI2-NP-2-0      | Positioning is possible for up to 512 points   | 512 points              |               |                         | -              |          |  |   |  |
| Safety-Compliant<br>Positioner Type                  |               | ACON-CG-20SI2-<br>NP-2-0 | rositioning is possible for up to 312 points   | 512 points              |               |                         | -              |          |  |   |  |
| Pulse Train Input Type<br>(Differential Line Driver) |               | ACON-PL-20SI2-NP-2-0     | Pulse train input type with<br>differential line driver support                              | (-)                     | DC24V         | 1.7A rated<br>5.1A peak | -              | → P535   |  |   |  |
| Pulse Train Input Type<br>(Open Collector)           |               | ACON-PO-20SI@-NP-2-0     | Pulse train input type with<br>open collector support  | (-)                     |               | (-)                     | ( )            |          |  | - |  |
| Serial Communication<br>Type                         |               | ACON-SE-20SI(2)-N-0-0    | Dedicated to serial communication  | 64 points               |               |                         | -              |          |  |   |  |
| Field Network Type                                   |               | RACON-20S(2)             | Dedicated to field network   | 768 points              |               |                         | -              | → P503   |  |   |  |
| Program Control Type                                 |               | ASEL-C-1-20SI2-NP-2-0    | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |               |                         | -              | → P567   |  |   |  |

<sup>\*</sup> This is for the single-axis ASEL.
\* ② is a placeholder for the code "LA" if the power-saving option is specified.

RCA ROBO Cylinder RCA-RGD4R ROBO Cylinder Rod Type with Double Guide Ø37mm Diameter 24V Servo Motor Side-Mounted Motor RCA - RGD4R -Configuration: Type Compatible Control Cable Length I : Incremental A : Absolute N: None 20 : 20W Servo Motor 12: 12mm 50:50mm A1: ACON P:1m S:3m 6mm RACON A : ADSOLUTE MOTOR

30 : 30W Servo
Motor

\* The absolute models are only compatible with ASEL
Simple absolute encoders are considered incremental 3mm 300 : 300mm ASEL M:5m
X : Custom
R : Robot cable A3 : AMEC (50mm pitch increments) ASEP \* See page Pre-35 for an explanation of the naming con-Technical References When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the  $\frac{1}{2}$ critical rotational speed. Use the actuator specification table below to check the maximum speed at

Power-saving

Option

See Options below

P. A-5

- The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model).
- This is the upper limit of the acceleration. The values for the horizontal load capacity assume the use of an external guide, so that there is no
- external force from any direction other than the forward/backward direction of the rod. See the technical resources (page A-83) for the allowable weight using the supplied guide alone.

#### Actuator Specifications

#### ■ Lead and Load Capacity

| Model   | Motor<br>Output (w) | Lead<br>(mm) | Max. Load<br>Horizontal (kg) |     | Rated<br>Thrust (N) | Stroke<br>(mm)    |
|---|---------------------|--------------|------------------------------|-----|---------------------|-------------------|
| RCA-RGD4R-①-20-12-②-③-④-⑤                         |                     | 12           | 3.0                          | 0.5 | 18.9                |                   |
| RCA-RGD4R-①-20-6-②-③-④-⑤                          | 20                  | 6            | 6.0                          | 1.5 | 37.7                |                   |
| RCA-RGD4R-① -20-3-② - ③ - ④ - ⑤                   |                     | 3            | 12.0                         | 3.5 | 75.4                | 50 ~ 300<br>(50mm |
| RCA-RGD4R-①-30-12-②-③-④-⑤                         |                     | 12           | 4.0                          | 1.0 | 28.3                | increments)       |
| RCA-RGD4R-① -30-6-② -③ -④ -⑤                      | 30                  | 6            | 9.0                          | 2.5 | 56.6                |                   |
| RCA-RGD4R-①-30-3-②-③-④-⑤                          |                     | 3            | 18.0                         | 6.0 | 113.1               |                   |
| Legend ① Encoder ② Stroke ③ Compatible controller | 1 Control le        | ength 5      | Options                      |     |                     |                   |

## ■ Stroke and Maximum Speed

| Stroke | $50 \sim 300$ (50mm increments) |
|--------|---------------------------------|
| 12     | 600                             |
| 6      | 300                             |
| 3      | 150                             |
|        |                                 |

(Unit: mm/s)

#### Encoder & Stroke List

|               | Standard Price |           |         |           |  |  |  |  |
|---------------|----------------|-----------|---------|-----------|--|--|--|--|
|               |                | ① Encoder |         |           |  |  |  |  |
| 2 Stroke (mm) | Increr         | nental    | Abso    | olute     |  |  |  |  |
|               | Motor O        | utput (W) | Motor O | utput (W) |  |  |  |  |
|               | 20W            | 30W       | 20W     | 30W       |  |  |  |  |
| 50            | -              | -         | -       | -         |  |  |  |  |
| 100           | -              | -         | -       | -         |  |  |  |  |
| 150           | -              | -         | -       | -         |  |  |  |  |
| 200           | -              | -         | -       | -         |  |  |  |  |
| 250           |                |           | -       | -         |  |  |  |  |
| 300           | -              | -         | -       | ì         |  |  |  |  |

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
|                 | P (1m)                | _              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | _              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | =              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
|                 | R04 (4m) ~ R05 (5m)   | -              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | _              |

R11 (11m) ~ R15 (15m) R16 (16m) ~ R20 (20m)

| Name                  | Option Code | See Page      | Standard Price |
|-----------------------|-------------|---------------|----------------|
| Brake                 | В           | → <b>A-25</b> | -              |
| Foot bracket          | FT          | → <b>A-29</b> | -              |
| Flange bracket (back) | FLR         | → A-28        | -              |
| Home sensor           | HS          | → A-32        | -              |
| Power-saving          | LA          | → A-32        | -              |
| Reversed-home         | NM          | → A-33        | -              |
| Clevis Bracket        | QR          | → <b>A-34</b> | -              |
| Back-mounting plate   | RP          | → A-35        | -              |

<sup>\*</sup> The home sensor (HS) cannot be used on the reversed-home models.

#### **Actuator Specification** Item Description **Drive System** Ball screw ø10mm C10 grade Positioning Repeatability ±0.02mm Lost Motion 0.1mm or less Material: Aluminum (white alumite treated) Base Rod Diameter ø20mm ±0.05 deg Non-rotating accuracy of rod Ambient Operating Temp./Humidity $0 \sim 40^{\circ}\text{C}$ , 85% RH or less (non-condensing)

<sup>\*</sup> See page A-39 for cables for maintenance.

2D CAD

[No Brake]

Nut A M30×1.5

ME.

ME /

SE Home

ME \*2

Nut A

Cable joint connector \*1

100

[Brake-Equipped]

Bracket A Bracket B

3D CAD

\*1 A motor-encoder cable is connected here. See page A-39 for details on cables.
\*2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end
\*3. The orientation of the bolt will vary depending on the product.

 $\oplus$ 

(st+74)

38

(st+74)

Ρ 47

920

Bracket B

ø20 (rod OD)

3 SE Home ME\*2

## For Special Orders

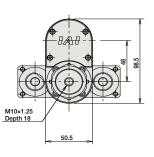






33

| RCA-RGD4R (without brake) |      |         |       |      |     |     |     |     |  |  |
|---------------------------|------|---------|-------|------|-----|-----|-----|-----|--|--|
|                           | Stro | ke      | 50    | 100  | 150 | 200 | 250 | 300 |  |  |
|                           | 20W  | Increm. | 227   | 277  | 327 | 377 | 427 | 477 |  |  |
| L                         | 2000 | Absol.  | 227   | 277  | 327 | 377 | 427 | 477 |  |  |
| -                         | 30W  | Increm. | 227   | 277  | 327 | 377 | 427 | 477 |  |  |
|                           | 3000 | Absol.  | 227   | 277  | 327 | 377 | 427 | 477 |  |  |
|                           | Ł    |         | 133   | 188  | 233 | 288 | 333 | 383 |  |  |
|                           | 20W  | Increm. |       | 67.5 |     |     |     |     |  |  |
|                           | 2000 | Absol.  | 80.5  |      |     |     |     |     |  |  |
| m                         | 30W  | Increm. | 82.5  |      |     |     |     |     |  |  |
|                           | 3000 | Absol.  | 95.5  |      |     |     |     |     |  |  |
|                           | 20W  | Increm. |       |      | 10  | 0.5 |     |     |  |  |
| Р                         | 2000 | Absol.  | 113.5 |      |     |     |     |     |  |  |
| ۲                         | 30W  | Increm. | 115.5 |      |     |     |     |     |  |  |
| Absol.                    |      |         |       |      | 12  | 8.5 |     |     |  |  |
| Weight (kg)               |      |         | 1.9   | 2.2  | 2.3 | 2.6 | 2.7 | 3.0 |  |  |
|                           |      |         |       |      |     |     |     |     |  |  |



#### RCA-RGD4R (with brake)

| • | noa-noben (with brake) |       |         |       |     |     |     |     |     |  |
|---|------------------------|-------|---------|-------|-----|-----|-----|-----|-----|--|
|   |                        | Stro  | ke      | 50    | 100 | 150 | 200 | 250 | 300 |  |
|   |                        | 20W   | Increm. | 227   | 277 | 327 | 377 | 427 | 477 |  |
| - | L                      | 2000  | Absol.  | 227   | 277 | 327 | 377 | 427 | 477 |  |
| ٦ | -                      | 30W   | Increm. | 227   | 277 | 327 | 377 | 427 | 477 |  |
|   |                        | 3000  | Absol.  | 227   | 277 | 327 | 377 | 427 | 477 |  |
| Ī |                        | l     |         | 133   | 188 | 233 | 288 | 333 | 383 |  |
| ı |                        | 20W   | Increm. | 110.5 |     |     |     |     |     |  |
|   |                        | 2000  | Absol.  | 123.5 |     |     |     |     |     |  |
| - | m                      | 30W   | Increm. | 125.5 |     |     |     |     |     |  |
| - |                        | 3000  | Absol.  |       |     | 13  | 8.5 |     |     |  |
| Ī |                        | 20W   | Increm. |       |     | 14  | 3.5 |     |     |  |
| - | Р                      | 2000  | Absol.  |       |     | 15  | 6.5 |     |     |  |
|   | ۲                      | 30W   | Increm. |       |     | 15  | 8.5 |     |     |  |
|   |                        | 3000  | Absol.  |       |     | 17  | 1.5 |     |     |  |
| Ī |                        | Weigh | t (kg)  | 2.1   | 2.4 | 2.5 | 2.8 | 2.9 | 3.2 |  |

#### ③ Compatible Controllers

The RCA series actuators can operate with the controllers below. Select the controller according to your usage

| Name   | External View  | Model  | Description  | Max. Positioning Points | Input Voltage           | Power Supply Capacity | Standard Price | See Page |        |
|--|--|--|--|-------------------------|-------------------------|-----------------------|----------------|----------|--------|
| Solenoid Valve Type                                  | The state of the s | AMEC-C-20(2-NP-2-1<br>AMEC-C-30(2-NP-2-1     | Easy-to-use controller, even for beginners   |                         | AC100V                  | 2.4A rated            | -              | → P477   |        |
| Colonold valve type                                  | 1  | ASEP-C-2012-NP-2-0<br>ASEP-C-3012-NP-2-0     | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |                         |                       |                | -        | → P487 |
| Splash-Proof Solenoid<br>Valve Type                  | I  | ASEP-CW-2012-NP-2-0<br>ASEP-CW-3012-NP-2-0   | No homing necessary with simple absolute type.   |                         |                         |                       | -              | 7 1 407  |        |
| Positioner Type                                      |  | ACON-C-2012-NP-2-0<br>ACON-C-3012-NP-2-0     | Positioning is possible for up to 512 points   | 512 points              |                         |                       | -              |          |        |
| Safety-Compliant<br>Positioner Type                  |  | ACON-CG-2012-NP-2-0<br>ACON-CG-3012-NP-2-0   | 1 distributing is possible for up to 012 points  | orz pomie               |                         | 20W<br>1.3A rated     | -              |          |        |
| Pulse Train Input Type<br>(Differential Line Driver) |  | ACON-PL-2012-NP-2-0<br>ACON-PL-3012-NP-2-0   | Pulse train input type with differential line driver support                                 | (-)                     | DC24V                   | 4.4A peak<br>30W      | -              | → P535   |        |
| Pulse Train Input Type<br>(Open Collector)           | 2  | ACON-PO-2012-NP-2-0<br>ACON-PO-3012-NP-2-0   | 1.0A latec   | (-)                     | 1.3A rated<br>4.4A peak | -                     |                |          |        |
| Serial Communication<br>Type                         |  | ACON-SE-2012-N-0-0<br>ACON-SE-3012-N-0-0     | Dedicated to serial communication  | 64 points               |                         |                       | -              |          |        |
| Field Network Type                                   |  | RACON-202<br>RACON-302                       | Dedicated to field network   | 768 points              |                         |                       |                | → P503   |        |
| Program Control Type                                 |  | ASEL-C-1-20①②-NP-2-0<br>ASEL-C-1-30①②-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |                         |                       | -              | → P567   |        |

This is for the single-axis ASEL.

- \* (1) is a placeholder for the encoder type (I: incremental / A: absolute).

  \* (2) is a placeholder for the code "LA" if the power-saving option is specified.

RCA-SRGD4R

Type

ROBO Cylinder Rod Type with Double Guide 45mm Width Servo Motor Short-Length Model

■ Configuration: RCA -SRGD4R -

20 Encoder Motor I: Incremental \* The Simple 20 : 20W Servo Motor

absolute encoder

is also considered

5mm 20:20mm

Compatible Controller A1 : ACON RACON 200 : 200mm (50mm pitch increments) ASEL
Set in 50mm increments A3 : AMEC over 100mm ASEP

ASEP

Cable Length N: None P:1m S:3m M : 5m X □□ : Custom

Option See Options below

\* See page Pre-35 for an explanation of the naming convention.

Power-saving

Technical References

P. A-5



- (1) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2.5mm-lead model, or when used vertically). This is the upper limit of the acceleration.
- (2) The values for the horizontal load capacity reflect the use of an external guide. See the technical resources (page A-83) for the allowable weight using the supplied guide alone.

## Actuator Specifications

#### ■ Lead and Load Capacity

| Model   | Lead<br>(mm) | Max. Load<br>Horizontal (kg) |             | Rated<br>Thrust (N) | Stroke (mm)             |
|---|--------------|------------------------------|-------------|---------------------|-------------------------|
| RCA-SRGD4R-I-20-5-①-②-③-④                               | 5            | 9                            | 2           | 41                  | 20~200<br>(10mm         |
| RCA-SRGD4R-I-20-2.5-①-②-③-④                             | 2.5          | 18                           | 5.5         | 81                  | increments)<br>(Note 1) |
| Legend ① Stroke ② Compatible controllers ③ Cable length | h 4 Optio    | ons                          | (Note 1) 50 | mm increment        | s over 100mm.           |

■ Stroke and Maximum Speed

| Lead | $20 \sim 200$ (10mm increments) |
|------|---------------------------------|
| 5    | 250                             |
| 2.5  | 125                             |
|      | (Unit: mm/s)                    |

① Stroke List

| Stroke (mm) | Standard Price |
|-------------|----------------|
| 20~50       | -              |
| 60~100      | -              |
| 150         | -              |
| 200         | -              |

#### ③ Cable List

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
| Standard        | P (1m)                | _              |
|                 | <b>S</b> (3m)         | -              |
| (Robot Cables)  | <b>M</b> (5m)         | -              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths |                       | _              |
|                 | X16 (16m) ~ X20 (20m) | _              |
|                 |                       |                |

- \* The cable is a motor-encoder integrated cable, and is provided as a robot cable.
- \* See page A-39 for cables for maintenance.

| Name                           | Option Code | See Page      | Standard Price |
|--------------------------------|-------------|---------------|----------------|
| Brake                          | В           | → A-25        | -              |
| Foot bracket 1 (base mounting) | FT          | → <b>A-29</b> | -              |
| Reversed-home                  | NM          | → <b>A-33</b> | -              |

- \* The brake is available for strokes of 70mm or more.
- \* The foot bracket cannot be mounted on the side.

#### Actuator Specifications

|                                  | 5  |  |  |  |  |
|----------------------------------|--|--|--|--|--|
| Item                             | Description                                    |  |  |  |  |
| Drive System                     | Ball screw ø8mm C10 grade                      |  |  |  |  |
| Positioning Repeatability        | ±0.02mm  |  |  |  |  |
| Lost Motion                      | 0.1mm or less                                  |  |  |  |  |
| Rod Diameter                     | ø22 mm   |  |  |  |  |
| Non-rotating accuracy of rod     | ±0.05 deg                                      |  |  |  |  |
| Ambient Operating Temp./Humidity | $0 \sim$ 40°C, 85% RH or less (non-condensing) |  |  |  |  |



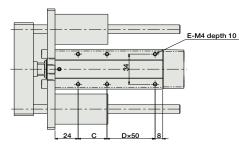
CAD drawings can be downloaded from IAI website. www.intelligentactuator.com (音 P. A-9 For Special Orders Home 2D CAD st+60 5 (shaft overhang at SE) 3 (Amount of shaft movement from ME to home) Cable joint connector (\*1) -- 절 --5.5 Secure at least 100 (210) E-M4 depth 10 0 4-M5 (same with opposite side) (for mounting the actuator) 1-M6 depth 12 **(Heap)** 15 8-M5 depth 12 (for mounting work piece) 20

\* The exterior dimensions for the brake-equipped model is no different than the standard model.

However, 70mm is the minimum stroke of the brake-equipped models.

(i.e. The brake is not compatible at 60mm strokes and under.)

Dimensions



ST : Stroke SE : Stroke end ME : Mechanical end

- (\*1) The motor-encoder cable is connected here. See page A-39 for details on cables.
- (\*2) When homing, the rod moves to the mechanical end position; therefore, please watch for any interference with the surrounding objects.

| Dimensions/Weight by Stroke (Add 0.2kg for brake equipped) |       |       |       |       |       |       |       |       |       |   |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|---|
| Stroke   | 20    | 30    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | Ī |
| L  | 126.5 | 136.5 | 146.5 | 156.5 | 166.5 | 176.5 | 186.5 | 196.5 | 206.5 |   |

| Stroke      | 20    | 30    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 150   | 200   |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L           | 126.5 | 136.5 | 146.5 | 156.5 | 166.5 | 176.5 | 186.5 | 196.5 | 206.5 | 256.5 | 306.5 |
| Α           | 84    | 94    | 104   | 114   | 124   | 134   | 144   | 154   | 164   | 214   | 264   |
| В           | 62    | 72    | 82    | 92    | 102   | 112   | 122   | 132   | 142   | 192   | 242   |
| С           | 30    | 40    | 50    | 60    | 70    | 30    | 40    | 50    | 60    | 60    | 60    |
| D           | 0     | 0     | 0     | 0     | 0     | 1     | 1     | 1     | 1     | 2     | 3     |
| E           | 4     | 4     | 4     | 4     | 4     | 6     | 6     | 6     | 6     | 8     | 10    |
| Weight (kg) | 1.42  | 1.49  | 1.56  | 1.64  | 1.71  | 1.79  | 1.86  | 1.94  | 2.01  | 2.38  | 2.75  |

#### ② Compatible Controllers

The RCA series actuators can operate with the controllers below. Select the controller according to your usage

| Name   | External View  | Model                 | Description  | Max. Positioning Points | Input Voltage      | Power Supply Capacity   | Standard Price | See Page |
|--|--|-----------------------|--|-------------------------|--------------------|-------------------------|----------------|----------|
| Solenoid Valve Type                                  | To the same of the | AMEC-C-20SI①-NP-2-1   | Easy-to-use controller, even for beginners   |                         | AC100V             | 2.4A rated              | -              | → P477   |
| Solellold valve type                                 | 1  | ASEP-C-20SI①-NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types. | 3 points                |                    |                         | -              | → P487   |
| Splash-Proof Solenoid<br>Valve Type                  | 1  | ASEP-CW-20SI①-NP-2-0  | No homing necessary with simple absolute type.   |                         |                    |                         | ı              | 7 1407   |
| Positioner Type                                      |  | ACON-C-20SI①-NP-2-0   | Positioning is possible for up to 512 points 512 points                                      | 512 points              | spirite E10 mainte |                         | -              |          |
| Safety-Compliant<br>Positioner Type                  |  | ACON-CG-20SI①-NP-2-0  | r ostaoring is possible for up to 012 points   |                         |                    | 1.7A rated<br>5.1A peak | -              |          |
| Pulse Train Input Type<br>(Differential Line Driver) |  | ACON-PL-20SI①-NP-2-0  | Pulse train input type with differential line driver support                                 | (-)                     | DC24V              |                         | ı              | → P535   |
| Pulse Train Input Type<br>(Open Collector)           |  | ACON-PO-20SI①-NP-2-0  | Pulse train input type with<br>open collector support  | (-)                     |                    |                         | -              |          |
| Serial Communication<br>Type                         |  | ACON-SE-20SI①-N-0-0   | Dedicated to serial communication  | 64 points               |                    |                         | -              |          |
| Field Network Type                                   | ERRER  | RACON-20S①            | Dedicated to field network   | 768 points              | ]                  |                         | -              | → P503   |
| Program Control Type                                 |  | ASEL-C-1-20SI①-NP-2-0 | Programmed operation is possible<br>Operation is possible on up to 2 axes                    | 1500 points             |                    |                         | -              | → P567   |

\* This is for the single-axis ASEL.

Servo Motor (24V)

 $<sup>^{\</sup>star}$  1 is a placeholder for the code "LA" if the power-saving option is specified.

RCS2-RA4C ROBO Cylinder Rod Type ø37mm Diameter 200V Servo Motor Coupled  $\blacksquare$  Configuration: RCS2 - RA4C Туре N: None P:1m S:3m M:5m I : Incremental A: Absloute 20 : 20W Servo 12: 12mm 50 : 50mm T1:XSEL-J/K See Options below Motor 6: 6mm T2:SCON 30 : 30W Servo 3mm 300:300mm SSEL Motor XSEL-P/Q (50mm pitch X : Custom
R : Robot cable increments) \* See page Pre-35 for an explanation of the naming convention.

## For High Acceleration/Deceleration



#### Actuator Specifications

#### ■ Lead and Load Capacity

| Model  | Motor<br>Output (w) | Lead<br>(mm) | Max. Load<br>Horizontal (kg) | <u> </u> | Rated<br>Thrust (N) | Stroke<br>(mm)    |
|--|---------------------|--------------|------------------------------|----------|---------------------|-------------------|
| RCS2-RA4C-①-20-12-②-③-④-⑤                          |                     | 12           | 3.0                          | 1.0      | 18.9                |                   |
| RCS2-RA4C-①-20-6-②-③-④-⑤                           | 20                  | 6            | 6.0                          | 2.0      | 37.7                |                   |
| RCS2-RA4C-①-20-3-②-③-④-⑤                           |                     | 3            | 12.0                         | 4.0      | 75.4                | 50 ~ 300<br>(50mm |
| RCS2-RA4C-①-30-12-②-③-④-⑤                          |                     | 12           | 4.0                          | 1.5      | 28.3                | increments)       |
| RCS2-RA4C-①-30-6-②-③-④-⑤                           | 30                  | 6            | 9.0                          | 3.0      | 56.6                |                   |
| RCS2-RA4C-①-30-3-②-③-④-⑤                           |                     | 3            | 18.0                         | 6.5      | 113.1               |                   |
| Legend: ① Encoder ② Stroke ③ Compatible controller | 4 Cable le          | ngth 5       | Options                      |          |                     |                   |

#### ■ Stroke and Maximum Speed

| Stroke<br>Lead | $50 \sim 300$ (50mm increments) |
|----------------|---------------------------------|
| 12             | 600                             |
| 6              | 300                             |
| 3              | 150                             |
|                | 41.11 ()                        |

(Unit: mm/s)

#### Encoder & Stroke List

|               | Standard Price |            |           |            |  |  |
|---------------|----------------|------------|-----------|------------|--|--|
|               |                | ① Enco     | der Type  |            |  |  |
| 2 Stroke (mm) | Incren         | nental     | Abso      | olute      |  |  |
|               | Motor pov      | ver output | Motor pov | ver output |  |  |
|               | 20W            | 30W        | 20W       | 30W        |  |  |
| 50            | -              | -          | -         | -          |  |  |
| 100           | -              | -          | -         | =          |  |  |
| 150           | -              | -          | -         | -          |  |  |
| 200           | -              |            |           | -          |  |  |
| 250           |                |            | _         | -          |  |  |
| 300           | _              |            |           | =          |  |  |

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
|                 | P (1m)                | -              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | _              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | _              |
|                 | R04 (4m) ~ R05 (5m)   | -              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |
|                 | R11 (11m) ~ R15 (15m) | _              |
|                 | R16 (16m) ~ R20 (20m) | _              |

<sup>\*</sup> See page A-39 for cables for maintenance.

#### (5) Option List

| © Option List                       |             |          |                |
|-------------------------------------|-------------|----------|----------------|
| Name                                | Option Code | See Page | Standard Price |
| Brake                               | В           | → A-25   | _              |
| Foot bracket                        | FT          | → A-29   | -              |
| Flange bracket (front)              | FL          | → A-27   | -              |
| Flange bracket (back)               | FLR         | → A-28   | -              |
| High-acceleration/deceleration (*1) | HA          | → A-32   | -              |
| Home sensor (*2)                    | HS          | → A-32   | -              |
| Knuckle joint                       | NJ          | → A-34   | -              |
| Reversed-home                       | NM          | → A-33   | -              |
| Trunnion bracket (front)            | TRF         | → A-38   | _              |
| Trunnion bracket (back)             | TRR         | → A-38   | _              |

## Actuator Specifications

| Item                             | Description                                |  |  |  |  |  |
|----------------------------------|--|--|--|--|--|--|
| Drive System                     | Ball screw ø10mm C10 grade                 |  |  |  |  |  |
| Positioning Repeatability        | ±0.02mm                                    |  |  |  |  |  |
| Lost Motion                      | 0.1mm or less                              |  |  |  |  |  |
| Base                             | Material: Aluminum (white alumite treated) |  |  |  |  |  |
| Rod Diameter                     | ø20mm                                      |  |  |  |  |  |
| Non-rotating accuracy of rod     | ±1.0 deg                                   |  |  |  |  |  |
| Ambient Operating Temp /Humidity | 0 ~ 40°C, 85% BH or less (non-condensing)  |  |  |  |  |  |

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

For Special Orders

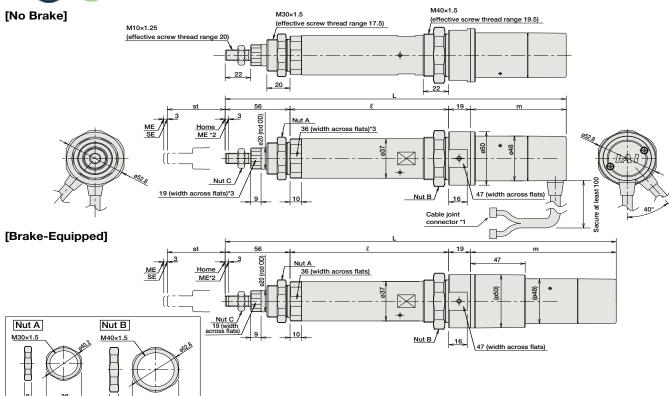






- \*1. The motor-encoder cable is connected here. See page A-39 for details on cables.
  - \*2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects. ME: Mechanical end SE: Stroke end

\*3. The orientation of the bolt will vary depending on the product.



## Nut C (19.6)M10x1.25

#### ■ Dimensions/Weight by Stroke

RCS2-RA4C (without brake)

| S                   | troke | 50 100                 |       | 150   | 200   | 250   | 300   |  |
|---------------------|-------|------------------------|-------|-------|-------|-------|-------|--|
|                     | 20W   | 292.5                  | 342.5 | 392.5 | 442.5 | 492.5 | 542.5 |  |
| _                   | 30W   | 307.5                  | 357.5 | 407.5 | 457.5 | 507.5 | 557.5 |  |
|                     | l     | 137 187 237 287 337 48 |       |       |       | 487   |       |  |
|                     | 20W   | 80.5                   |       |       |       |       |       |  |
| m                   | 30W   | 95.5                   |       |       |       |       |       |  |
| Weight (kg) 1.1 1.2 |       |                        | 1.4   | 1.5   | 1.7   | 1.8   |       |  |

#### BCS2-BA4C (with brake)

| 1002-11A40 (With brake) |          |       |       |       |       |       |       |  |
|-------------------------|----------|-------|-------|-------|-------|-------|-------|--|
| Stroke                  |          | 50    | 100   | 150   | 200   | 250   | 300   |  |
|                         | 20W      | 335.5 | 385.5 | 435.5 | 485.5 | 535.5 | 585.5 |  |
| L                       | 30W      | 350.5 | 400.5 | 450.5 | 500.5 | 550.5 | 600.5 |  |
|                         | Ł        | 137   | 187   | 237   | 287   | 337   | 487   |  |
| m                       | 20W      | 123.5 |       |       |       |       |       |  |
|                         | 30W      | 138.5 |       |       |       |       |       |  |
| Wei                     | ght (kg) | 1.3   | 1.5   | 1.6   | 1.7   | 1.9   | 2.0   |  |
|                         |          |       |       |       |       |       |       |  |

#### ③ Compatible Controllers

| Name                              | External View | perate with the controllers below. Selection Model   | Description   | Max. Positioning Points | Input Voltage                             | Power Supply Capacity                         | Standard Price | See Page       |
|-----------------------------------|---------------|--|---|-------------------------|---|---|----------------|----------------|
| Positioner Mode                   |               |  | Positioning is possible for up to 512 points 512 points                         | 512 points              |   | 200V * When operating a 200V 150W single-Axes |                |                |
| Solenoid Valve Mode               |               | SCON-C-20①②-NP-2-③<br>SCON-C-30D①②-NP-2-③            | Operable with same controls as solenoid valve.                                  | 7 points                |   |   |                | → <b>P</b> 547 |
| Serial Communication<br>Type      |               |  | Dedicated to serial communication   | 64 points               | Single-Phase AC 100V Single-Phase AC 200V |   | -              | → <b>P</b> 547 |
| Pulse Train Input<br>Control Type |               |  | Dedicated for Pulse<br>Train Input  | (-)                     | Three-phase AC 200V<br>(XSEL-P/Q only)    |   |                |                |
| Program Control<br>1-2 Axes Type  |               | SSEL-C-1-20①-NP-2-③<br>SSEL-C-1-300①-②-NP-2-③        | Programmed operation<br>is possible<br>Operation is possible on<br>up to 2 axes | 20000 points            |   |   | -              | → <b>P</b> 577 |
| Program Control<br>1-6 Axes Type  | Pilita        | XSEL-④-1-20①-N1-EEE-2-⑤<br>XSEL-④-1-30D①②-N1-EEE-2-⑤ | Programmed operation<br>is possible<br>Operation is possible on<br>up to 6 axes | 20000 points            |   |   | -              | → P587         |

- \* For SSEL and XSEL, only applicable to the single-Axes model.

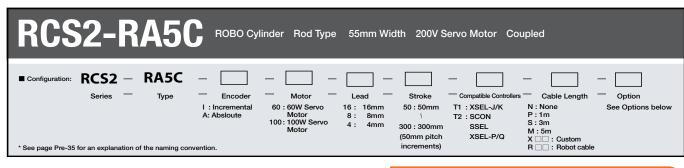
  \* ① is a placeholder for the encoder type (I: incremental / A: absolute).

  \* ② is a placeholder for the code "HA" if the high-acceleration/deceleration option is specified.

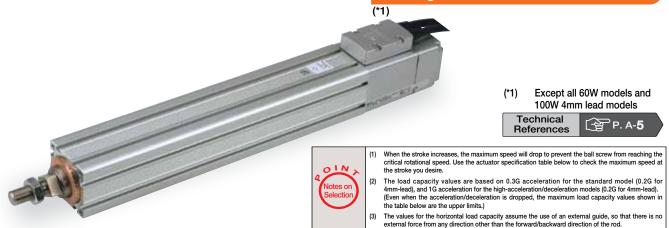
  \* ③ is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V).

  \* ④ is a placeholder for the XSEL type name ("J", "K", "P", "Q").

  \* ⑤ is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V, or 3: three-phase 200V).



# For High Acceleration/Deceleration



### Actuator Specifications

# ■ Lead and Load Capacity

| Model  | Motor<br>Output (w) | Lead<br>(mm) | Max. Load |      | Rated<br>Thrust (N) | Stroke<br>(mm)    |
|--|---------------------|--------------|-----------|------|---------------------|-------------------|
| RCS2-RA5C-①-60-16-②-③-④-⑤  | . , ,               | 16           | 12.0      | 2.0  | 63.8                |                   |
| RCS2-RA5C-①-60-8-②-③-④-⑤   | 60                  | 8            | 25.0      | 5.0  | 127.5               |                   |
| RCS2-RA5C-①-60-4-②-③-④-⑤   |                     | 4            | 50.0      | 11.5 | 255.1               | 50 ~ 300<br>(50mm |
| RCS2-RA5C-①-100-16-②-③-④-⑤   |                     | 16           | 15.0      | 3.5  | 105.8               | increments)       |
| RCS2-RA5C-①-100-8-②-③-④-⑤  | 100                 | 8            | 30.0      | 9.0  | 212.7               |                   |
| RCS2-RA5C-①-100-4-②-③-④-⑤  |                     | 4            | 60.0      | 18.0 | 424.3               |                   |
| Legend: ①Encoder ②Stroke ③Compatible controller ④Cable length ⑤Options |                     |              |           |      |                     |                   |

# ■ Stroke and Maximum Speed

| Stroke | $50 \sim 250$ (50mm increments) | 300<br>(mm) |
|--------|---------------------------------|-------------|
| 16     | 800                             | 755         |
| 8      | 400                             | 377         |
| 4      | 200                             | 188         |
|        |                                 |             |

(Unit: mm/s)

### Encoder & Stroke List

|               | Standard Price     |        |                    |       |  |
|---------------|--------------------|--------|--------------------|-------|--|
|               |                    | ① Enco | der Type           |       |  |
| 2 Stroke (mm) | Incren             | nental | Abso               | olute |  |
|               | Motor power output |        | Motor power output |       |  |
|               | 60W                | 100W   | 60W                | 100W  |  |
| 50            | -                  | -      | -                  | -     |  |
| 100           | -                  | -      | -                  | -     |  |
| 150           | -                  | -      | -                  | -     |  |
| 200           | -                  | -      | -                  | -     |  |
| 250           | -                  | -      | -                  | -     |  |
| 300           | _                  | _      | _                  | -     |  |

### 4 Cable List

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
|                 | P (1m)                | -              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | -              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
|                 | R04 (4m) ~ R05 (5m)   | -              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |
|                 | R11 (11m) ~ R15 (15m) | _              |
|                 | R16 (16m) ~ R20 (20m) | -              |

<sup>\*</sup> See page A-39 for cables for maintenance.

### Option List Name See Page Option Code Standard Price Connector cable exit direction **A2** → A-25 Brake В → A-25 FL Flange → A-27 FT Foot bracket → A-29 High-acceleration/deceleration (\*1) HA → A-32

(\*1) The high-acceleration/deceleration option is not available for all 60W models and 100W model with 4mm lead.

| Actuator Specifications          |  |  |  |  |  |
|----------------------------------|--|--|--|--|--|
| Item                             | Description                                |  |  |  |  |
| Drive System                     | Ball screw ø12mm C10 grade                 |  |  |  |  |
| Positioning Repeatability        | ±0.02mm                                    |  |  |  |  |
| Lost Motion                      | 0.1mm or less                              |  |  |  |  |
| Base                             | Material: Aluminum (white alumite treated) |  |  |  |  |
| Rod Diameter                     | ø30mm                                      |  |  |  |  |
| Non-rotating accuracy of rod     | ±0.7 deg                                   |  |  |  |  |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing)  |  |  |  |  |





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

For Special Orders



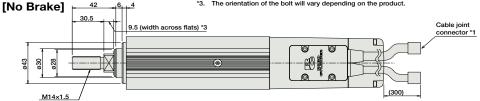


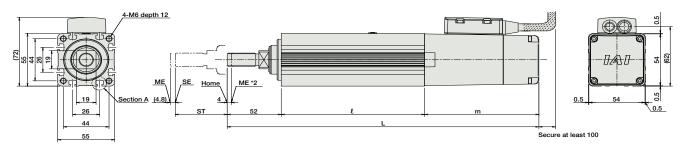
Dimensions

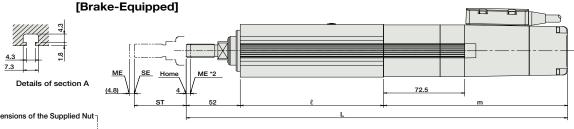


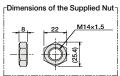
\*The RA5C is not available in reversed-home configuration, due to its construction.

- \*1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
  - ME: Mechanical end SE: Stroke end
- \*3. The orientation of the bolt will vary depending on the product.









## ■ Dimensions/Weight by Stroke

RCS2-RA5C (brake)

|   | S   | troke    | 50  | 100 | 150 | 200 | 250 | 300 |
|---|-----|----------|-----|-----|-----|-----|-----|-----|
|   | ٦   | 60W      | 282 | 332 | 382 | 432 | 482 | 532 |
|   | -   | 100W     | 300 | 350 | 400 | 450 | 500 | 550 |
|   | Ł   |          | 138 | 188 | 238 | 288 | 338 | 388 |
| Ī | 60W |          | 92  |     |     |     |     |     |
|   | m   | 100W     |     | 110 |     |     |     |     |
|   | Wei | ght (kg) | 1.9 | 2.2 | 2.5 | 2.8 | 3.1 | 3.4 |

### RCS2-RA5C (with brake)

| 1.002 1.000 (         |      |       |       |       |       |       |       |
|-----------------------|------|-------|-------|-------|-------|-------|-------|
| Stroke                |      | 50    | 100   | 150   | 200   | 250   | 300   |
| L                     | 60W  | 354.5 | 404.5 | 454.5 | 504.5 | 554.5 | 604.5 |
| -                     | 100W | 372.5 | 422.5 | 472.5 | 522.5 | 572.5 | 622.5 |
|                       | Ł    | 138   | 188   | 238   | 288   | 338   | 388   |
|                       | 60W  | 164.5 |       |       |       |       |       |
| m 100W<br>Weight (kg) |      | 182.5 |       |       |       |       |       |
|                       |      | 2.2   | 2.5   | 2.8   | 3.1   | 3.4   | 3.7   |
|                       |      |       |       |       |       |       |       |

# ③ Compatible Controllers

| Name                              | External View | Model  | Description   | Max. Positioning Points | Input Voltage                                | Power Supply Capacity | Standard Price | See Page       |  |  |   |               |
|-----------------------------------|---------------|--|---|-------------------------|--|-----------------------|----------------|----------------|--|--|---|---------------|
| Positioner Mode                   |               |  | Positioning is possible for up to 512 points  | 512 points              |  |                       |                |                |  |  |   |               |
| Solenoid Valve Mode               |               | SCON-C-60(1)-NP-2-(3)                                  | Operable with same controls as solenoid valve.  | 7 points                |  |                       |                | → <b>P</b> 547 |  |  |   |               |
| Serial Communication<br>Type      |               | SCON-C-100①②-NP-2-③                                    | Dedicated to serial communication   | 64 points               | Single-Phase AC 100V<br>Single-Phase AC 200V | 360VA max.            | -              | → <b>P</b> 347 |  |  |   |               |
| Pulse Train Input<br>Control Type |               |  | Dedicated to Pulse Train Input (-) Three-phase AC 200V (XSEL-P/Q only) *When operating a 150W single-Axes model | 150W single-Axes        |  |                       |                |                |  |  |   |               |
| Program Control<br>1-2 Axes Type  |               | SSEL-C-1-60①-NP-2-③<br>SSEL-C-1-100 ①②-NP-2-③          | Programmed operation<br>is possible<br>Operation is possible on<br>up to 2 axes                                 | 20000 points            |  |                       |                |                |  |  | - | → <b>P577</b> |
| Program Control<br>1-6 Axes Type  | riffra        | XSEL-@-1-60 ①-N1-EEE-2-⑤<br>XSEL-@-1-100 ①②-N1-EEE-2-⑤ | Programmed operation<br>is possible<br>Operation is possible on<br>up to 6 axes                                 | 20000 points            |  |                       | -              | → P587         |  |  |   |               |

- \* For SSEL and XSEL, only applicable to the single-Axes model.

- \*\*Of is a placeholder for the encoder type (it incremental / A: absolute).

  \*\*2 is a placeholder for the encoder type (it incremental / A: absolute).

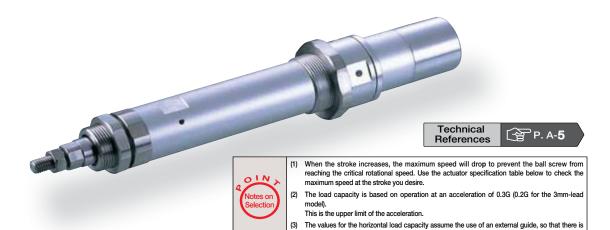
  \*\*2 is a placeholder for the code "HA" if the high-acceleration/deceleration option is specified.

  \*\*3 is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V).

  \*\*4 is a placeholder for the XSEL type name ("J", "K", "P", "Q").

  \*\*5 is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V, or 3: three-phase 200V).

ROBO Cylinder Rod Type ø37mm Diameter 200V Servo Motor Built-In (Direct-Coupled) Motor ■ Configuration: RCS2 — RA4D Туре Encoder Cable Length Option 20 : 20W Servo Motor 30 : 30W Servo Motor I : Incremental A: Absloute N: None 12: 12mm 50:50mm T1:XSEL-J/K See Options below N: None
P: 1m
S: 3m
M: 5m
X : Custom
R : Robot cable 6mm T2:SCON 3mm SSEL 300:300mm (50mm pitch increments) \* See page Pre-35 for an explanation of the naming convention.



# Actuator Specifications

# ■ Lead and Load Capacity

| Model   | Motor<br>Output (w) | Lead<br>(mm) | Max. Load<br>Horizontal (kg) |     | Rated<br>Thrust (N) | Stroke<br>(mm)       |
|---|---------------------|--------------|------------------------------|-----|---------------------|----------------------|
| RCS2-RA4D-①-20-12-②-③-④-⑤   |                     | 12           | 3.0                          | 1.0 | 18.9                |                      |
| RCS2-RA4D-①-20-6-②-③-④-⑤  | 20                  | 6            | 6.0                          | 2.0 | 37.7                |                      |
| RCS2-RA4D-①-20-3-②-③-④-⑤  |                     | 3            | 12.0                         | 4.0 | 75.4                | 50 ~ 300             |
| RCS2-RA4D-①-30-12-②-③-④-⑤   |                     | 12           | 4.0                          | 1.5 | 28.3                | (50mm<br>increments) |
| RCS2-RA4D-①-30-6-②-③-④-⑤  | 30                  | 6            | 9.0                          | 3.0 | 56.6                |                      |
| RCS2-RA4D-①-30-3-②-③-④-⑤  |                     | 3            | 18.0                         | 6.5 | 113.1               |                      |
| Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options |                     |              |                              |     |                     |                      |

# ■ Stroke and Maximum Speed

no external force from any direction other than the forward/backward direction of the rod.

| Stroke<br>Lead | $50 \sim 300$ (50mm increments) |
|----------------|---------------------------------|
| 12             | 600                             |
| 6              | 300                             |
| 3              | 150                             |
|                | 41.11 ()                        |

(Unit: mm/s)

# Encoder & Stroke List

|               | Standard Price     |          |                    |       |  |  |
|---------------|--------------------|----------|--------------------|-------|--|--|
|               |                    | der Type |                    |       |  |  |
| 2 Stroke (mm) | Increr             | nental   | Abso               | olute |  |  |
|               | Motor power output |          | Motor power output |       |  |  |
|               | 20W                | 30W      | 20W                | 30W   |  |  |
| 50            | -                  | -        | -                  | -     |  |  |
| 100           | -                  | -        | -                  | -     |  |  |
| 150           | -                  | =        | -                  | -     |  |  |
| 200           | -                  | -        | -                  | -     |  |  |
| 250           | -                  | -        | -                  | _     |  |  |
| 300           | -                  | -        | =                  | =     |  |  |

| (4) Cable List  |                       |                |  |  |  |
|-----------------|-----------------------|----------------|--|--|--|
| Type            | Cable Symbol          | Standard Price |  |  |  |
|                 | P (1m)                | -              |  |  |  |
| Standard        | <b>S</b> (3m)         | -              |  |  |  |
|                 | <b>M</b> (5m)         | -              |  |  |  |
|                 | X06 (6m) ~ X10 (10m)  | -              |  |  |  |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |  |  |  |
|                 | X16 (16m) ~ X20 (20m) | -              |  |  |  |
|                 | R01 (1m) ~ R03 (3m)   | _              |  |  |  |
|                 | R04 (4m) ~ R05 (5m)   | -              |  |  |  |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | _              |  |  |  |
|                 | R11 (11m) ~ R15 (15m) | _              |  |  |  |
|                 | R16 (16m) ~ R20 (20m) | -              |  |  |  |

<sup>\*</sup> See page A-39 for cables for maintenance.

| ⑤ Option List            |             |          |                |
|--------------------------|-------------|----------|----------------|
| Name                     | Option Code | See Page | Standard Price |
| Foot bracket             | FT          | → A-29   | -              |
| Flange bracket (front)   | FL          | → A-27   | _              |
| Flange bracket (back)    | FLR         | → A-28   | _              |
| Home sensor              | HS          | → A-32   | -              |
| Knuckle joint            | NJ          | → A-34   | _              |
| Reversed-home            | NM          | → A-33   | _              |
| Trunnion bracket (front) | TRF         | → A-38   | _              |
| Trunnion bracket (back)  | TRR         | → A-38   | _              |

| riotaator opoomoationo           |  |
|----------------------------------|--|
| Item                             | Description                                |
| Drive System                     | Ball screw ø10mm C10 grade                 |
| Positioning Repeatability        | ±0.02mm                                    |
| Lost Motion                      | 0.1mm or less                              |
| Base                             | Material: Aluminum (white alumite treated) |
| Rod Diameter                     | ø20mm                                      |
| Non-rotating accuracy of rod     | ±1.0 deg                                   |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing)  |

Actuator Specifications

\* The home sensor (HS) cannot be used on the reversed-home models.

239



For Special Orders

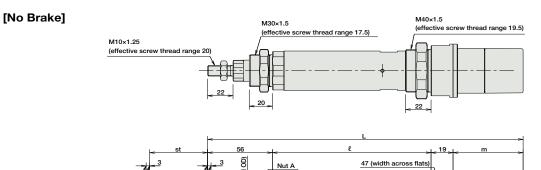


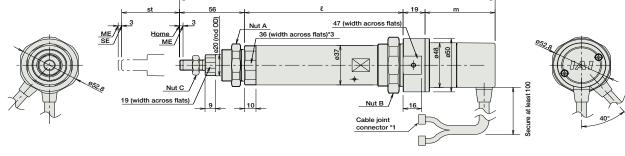


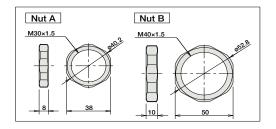
- \*1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- \*2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.

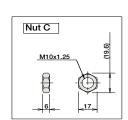
  ME: Mechanical end

  SE: Stroke end
- \*3. The orientation of the bolt will vary depending on the product.









# ■ Dimensions/Weight by Stroke

RCS2-RA4D (without brake)

| HC52 | RCS2-RA4D (Without brake) |       |       |       |       |       |       |  |  |
|------|---------------------------|-------|-------|-------|-------|-------|-------|--|--|
| S    | troke                     | 50    | 100   | 150   | 200   | 250   | 300   |  |  |
|      | 20W                       | 270.5 | 320.5 | 370.5 | 420.5 | 470.5 | 520.5 |  |  |
| -    | 30W                       | 285.5 | 335.5 | 385.5 | 435.5 | 485.5 | 535.5 |  |  |
|      | l                         | 137   | 187   | 237   | 287   | 337   | 487   |  |  |
|      | 20W                       | 58.5  |       |       |       |       |       |  |  |
| m    | 30W                       |       |       | 73    | 1.5   |       |       |  |  |
| Wei  | ght (kg)                  | 1.0   | 1.2   | 1.3   | 1.5   | 1.6   | 1.8   |  |  |
|      |                           |       |       |       |       |       |       |  |  |

Brake-equipped configuration is not available with the RCS2-RA4D.

# ③ Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name                              | External View | Model   | Description   | Max. Positioning Points | Input Voltage                             | Power Supply Capacity | Standard Price | See Page       |   |               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---------------|---|---|-------------------------|---|-----------------------|----------------|----------------|---|---------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Positioner Mode                   |               |   | Positioning is possible for up to 512 points 512 points                         |                         |   |                       |                |                |   |               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Solenoid Valve Mode               |               |   | Operable with same controls as solenoid valve.                                  | 7 points                |   |                       |                | → <b>P</b> 547 |   |               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Serial Communication<br>Type      |               |   | Dedicated to serial communication   | 64 points               | Single-Phase AC 100V Single-Phase AC 200V | 360VA max.            | -              | → P547         |   |               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Pulse Train Input<br>Control Type |               |   | Dedicated to Pulse<br>Train Input   | (-)                     | Three-phase AC 200V<br>(XSEL-P/Q only)    |                       |                |                |   |               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Program Control<br>1-2 Axes Type  |               | SSEL-C-1-20 ①-NP-2-2<br>SSEL-C-1-30D ①-NP-2-2         | Programmed operation<br>is possible<br>Operation is possible on<br>up to 2 axes | 20000 points            |   |                       |                |                | - | → <b>P577</b> |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Program Control<br>1-6 Axes Type  | Pilita        | XSEL-③-1-20 ①-N1-EEE-2-④<br>XSEL-③-1-30D ①-N1-EEE-2-① | Programmed operation<br>is possible<br>Operation is possible on<br>up to 6 axes | 20000 points            |   |                       | -              | → <b>P587</b>  |   |               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

- \* For SSEL and XSEL, only applicable to the single-Axes model.

  \*① is a placeholder for the encoder type (I: incremental / A: absolute).

  \*② is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V).

  \*③ is a placeholder for the XSEL type name ("\u00fc", "\u00bc", "\u00bc", "\u00bc", "\u00bc", \u00bc", \u0
- \* 4 is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V, or 3: three-phase 200V).

\* See page Pre-35 for an explanation of the naming convention.

# RCS2-SRA7BD ROBO Cylinder Rod Type 75mm Width 200V Servo Motor Short-Length Type

■ Configuration: RCS2 — SRA7BD — Encoder

I : Incremental

60 : 60W Servo Motor 100 : 100W Servo Motor 150: 150W Servo

16: 16mm 8mm 4: 4mm

50:50mm 300 : 300mm (50mm pitch

T1:XSEL-J/K T2:SCON SSEL increments)

N: None

See Options below

N: None
P: 1m
S: 3m
M: 5m
X : Custom
R: : Robot cable



Technical References



- When operated at the rated acceleration, the maximum load capacity is the load capacity at the rated acceleration.
- When operated at the maximum acceleration, the maximum load capacity is the load capacity at the maximum acceleration.
- If positioning repeatability and/or lost motion is required, the rotation of the rod must be restricted. In this case, select a
- model with a guide, or add a separate guide.

  (4) The standard model may exhibit vibration of the rod at long strokes. If this is an issue, select a model with a guide, or add a separate guide.

# Actuator Specifications

# ■ Lead and Load Capacity

| ■ Lead and Load Capacity     |     |      |                  |  |               |                         |                                       |               |                 |                |
|------------------------------|-----|------|------------------|--|---------------|-------------------------|---------------------------------------|---------------|-----------------|----------------|
| Model                        |     | Lead | Rated            | Load Capacity at Rated<br>Acceleration |               | Maximum<br>Acceleration | Load Capacity at Max.<br>Acceleration |               | Rated<br>Thrust | Stroke (mm)    |
|                              |     | (mm) | Acceleration (G) | Horizontal (kg)                        | Vertical (kg) |                         | Horizontal<br>(kg)                    | Vertical (kg) | (N)             | Olloke (IIIII) |
| RCS2-SRA7BD-I-60-16-①-②-③-④  |     | 16   | 0.25             | 5                                      | 2             | 0.35                    | 2.5                                   | 1             | 63              |                |
| RCS2-SRA7BD-I-60-8-①-②-③-④   | 60  | 8    | 0.15             | 10                                     | 5             | 0.25                    | 5                                     | 2.5           | 127             |                |
| RCS2-SRA7BD-I-60-4-①-②-③-④   |     | 4    | 0.05             | 20                                     | 10            | 0.15                    | 10                                    | 5             | 254             |                |
| RCS2-SRA7BD-I-100-16-①-②-③-④ |     | 16   | 0.3              | 10                                     | 3.5           | 0.4                     | 5                                     | 1.5           | 103             | 50~300         |
| RCS2-SRA7BD-I-100-8-①-②-③-④  | 100 | 8    | 0.2              | 22                                     | 9             | 0.3                     | 10                                    | 4.5           | 207             | (50mm          |
| RCS2-SRA7BD-I-100-4-①-②-③-④  |     | 4    | 0.1              | 40                                     | 19.5          | 0.2                     | 20                                    | 9             | 414             | increments)    |
| RCS2-SRA7BD-I-150-16-①-②-③-④ |     | 16   | 0.3              | 15                                     | 6.5           | 0.4                     | 7.5                                   | 3             | 157             |                |
| RCS2-SRA7BD-I-150-8-①-②-③-④  | 150 | 8    | 0.2              | 35                                     | 14.5          | 0.3                     | 17.5                                  | 7             | 314             |                |
| RCS2-SRA7BD-I-150-4-①-②-③-④  |     | 4    | 0.1              | 55                                     | 22.5          | 0.2                     | 27.5                                  | 11            | 628             |                |

■ Stroke and Maximum Speed

| Stroke | (50mm<br>increments) |
|--------|----------------------|
| 16     | 800                  |
| 8      | 400                  |
| 4      | 200                  |
|        | (Unit: mm/s)         |

| 1) Stroke Lis | ST             |                    |      |  |  |
|---------------|----------------|--------------------|------|--|--|
| Stroke (mm)   | Standard Price |                    |      |  |  |
| Stroke (mm)   |                | Motor power output |      |  |  |
|               | 60W            | 100W               | 150W |  |  |
| 50            | _              | -                  | -    |  |  |
| 100           | -              | -                  | -    |  |  |
| 150           | -              | -                  | -    |  |  |
| 200           | -              | -                  | -    |  |  |
| 250           | -              | -                  | -    |  |  |
| 300           | _              | _                  | _    |  |  |

| 3 Cable Lis     | l .                   |                |
|-----------------|-----------------------|----------------|
| Туре            | Cable Symbol          | Standard Price |
|                 | P (1m)                | -              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | -              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
|                 | R04 (4m) ~ R05 (5m)   | -              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |
|                 | R11 (11m) ~ R15 (15m) | _              |
|                 | R16 (16m) ~ R20 (20m) | _              |

<sup>\*</sup> See page A-39 for cables for maintenance.

# 4 Option List

| Name                           | Option Code | See Page      | Standard Price |
|--------------------------------|-------------|---------------|----------------|
| Connector cable exit direction | A1 ∼ A3     | → <b>A-25</b> | -              |
| Brake                          | В           | → A-25        | -              |
| Flange                         | FL          | → <b>A-27</b> | -              |
| Foot bracket                   | FT          | → A-29        | -              |
| Extended rod tip               | RE          | → A-35        | _              |

### Actuator Specifications

| Item                             | Description                                |  |  |  |  |  |
|----------------------------------|--|--|--|--|--|--|
| Drive System                     | Ball screw ø12mm C10 grade                 |  |  |  |  |  |
| Positioning Repeatability        | ±0.02mm                                    |  |  |  |  |  |
| Lost Motion                      | 0.1mm or less                              |  |  |  |  |  |
| Base                             | Material: Aluminum (white alumite treated) |  |  |  |  |  |
| Rod Diameter                     | ø35mm                                      |  |  |  |  |  |
| Non-rotating accuracy of rod     | -  |  |  |  |  |  |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing)  |  |  |  |  |  |

# CAD drawings can be downloaded from IAI website. www.intelligentactuator.com

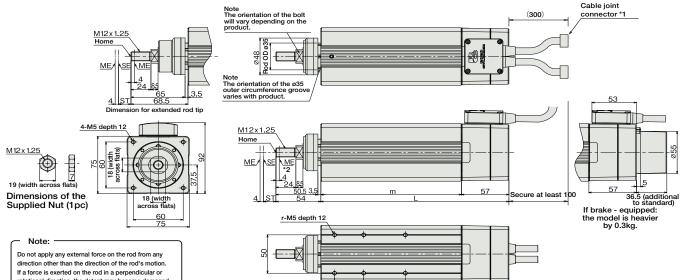




\* The SRA7BD is not available in reversed-home configuration, due to its construction.

- \*1. The motor-encoder cable is connected here See page A-39 for details on cables
- \*2. When homing, the rod moves to the mechanical end position; therefore, please watch for any interference with the surrounding objects.
  - ST: Stroke
  - SE: Stroke end
- ME: Mechanical end

\*3. The orientation of the bolt will vary depending on the product.



px50 pitch

rotational direction, the detent may become damaged

### Note:

A slit is provided in the side of the actuator body to prevent pauses due to forward/backward operation.

Please make a separate request for a dustproof/splashproof model.

## ■ Dimensions/Weight by Stroke

|        | - Dimensions, Weight by Groke |     |     |     |     |     |     |  |  |  |
|--------|-------------------------------|-----|-----|-----|-----|-----|-----|--|--|--|
| Str    | oke                           | 50  | 100 | 150 | 200 | 250 | 300 |  |  |  |
|        | 60W                           | 126 | 176 | 226 | 276 | 326 | 376 |  |  |  |
| L      | 100W                          | 133 | 176 | 226 | 276 | 326 | 376 |  |  |  |
|        | 150W                          | 145 | 176 | 226 | 276 | 326 | 376 |  |  |  |
|        | 60W                           | 69  | 119 | 169 | 219 | 269 | 319 |  |  |  |
| m      | 100W                          | 76  | 119 | 169 | 219 | 269 | 319 |  |  |  |
|        | 150W                          | 88  | 119 | 169 | 219 | 269 | 319 |  |  |  |
|        | n                             | 25  | 35  | 35  | 35  | 35  | 35  |  |  |  |
|        | р                             | 0   | 0   | 1   | 2   | 3   | 4   |  |  |  |
|        | r                             | 4   | 4   | 6   | 8   | 10  | 12  |  |  |  |
| Weight | 60W                           | 2.4 | 2.9 | 3.5 | 4.1 | 4.6 | 5.2 |  |  |  |
| (kg)   | 100W                          | 2.6 | 3.1 | 3.7 | 4.2 | 4.8 | 5.4 |  |  |  |
| (Ng)   | 150W                          | 2.9 | 3.3 | 3.9 | 4.4 | 5   | 5.6 |  |  |  |
|        |                               |     |     |     |     |     |     |  |  |  |

# ② Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name                              | External View | Model                  | Description   | Max. Positioning Points | Input Voltage                                | Power Supply Capacity                    | Standard Price | See Page       |                |
|-----------------------------------|---------------|------------------------|---|-------------------------|--|--|----------------|----------------|----------------|
| Positioner Mode                   |               |                        | Positioning is possible for up to 512 points                                    | 512 points              |  |  |                |                |                |
| Solenoid Valve Mode               |               | SCOM C (T) MD 2 (7)    | Operable with same controls as solenoid valve.                                  | 7 points                |  | Single-Phase AC 200V  * When operating a |                | → <b>P</b> 547 |                |
| Serial Communication<br>Type      |               | SCON-G-⊕L-NP-2-©       | Dedicated to serial communication   | 64 points               | Single-Phase AC 100V<br>Single-Phase AC 200V |  | -              | → <b>P</b> 547 |                |
| Pulse Train Input<br>Control Type |               |                        | Dedicated to Pulse<br>Train Input   | (-)                     | Three-phase AC 200V<br>(XSEL-P/Q only)       |  |                |                |                |
| Program Control<br>1-2 Axes Type  |               | SSEL-C-1-①I-NP-2-②     | Programmed operation<br>is possible<br>Operation is possible on<br>up to 2 axes | 20000 points            |  |  |                | -              | → <b>P</b> 577 |
| Program Control<br>1-6 Axes Type  | Pilita        | XSEL-③-1-①I-N1-EEE-2-④ | Programmed operation<br>is possible<br>Operation is possible on<br>up to 6 axes | 20000 points            |  |  | -              | → <b>P587</b>  |                |

Note: The SRA7BD type actuator cannot be connected to the 5th and 6th axis of the XSEL-P/Q controller.

- \* For SSEL and XSEL, only applicable to the single-axis model
- $^{\star}$   $\textcircled{\scriptsize{1}}$  is a place holder for the motor output (W) (60, 100, 150).
- © is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V).

  \*③ is a placeholder for the XSEL type name ("J", "K", "P", or "C").
- \* ④ is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V, or 3: three-phase 200V).

\* See page Pre-35 for an explanation of the naming convention.

ROBO Cylinder Rod Type ø37mm Diameter 200V Servo Motor Side-Mounted Motor ■ Configuration: RCS2 — RA4R Туре Encoder 20 : 20W Servo Motor 30 : 30W Servo Motor N: None P:1m S:3m M:5m I : Incremental A : Absolute 12: 12mm 50:50mm T1:XSEL-J/K See Options below 6mm T2:SCON 3mm SSEL 300:300mm (50mm pitch XSEL-P/Q X . : Custom R . : Robot cable

increments)

When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the

Technical References P. A-5

- critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
- The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model). This is the upper limit of the acceleration. (2)
- (3) The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod.

# Actuator Specifications

# ■ Lead and Load Capacity

| Model   | Motor<br>Output (w) | Lead<br>(mm) | Max. Load<br>Horizontal (kg) |     | Rated<br>Thrust (N) | Stroke<br>(mm)    |
|---|---------------------|--------------|------------------------------|-----|---------------------|-------------------|
| RCS2-RA4R-①-20-12-②-③-④-⑤   |                     | 12           | 3.0                          | 1.0 | 18.9                |                   |
| RCS2-RA4R-①-20-6-②-③-④-⑤  | 20                  | 6            | 6.0                          | 2.0 | 37.7                |                   |
| RCS2-RA4R-①-20-3-②-③-④-⑤  |                     | 3            | 12.0                         | 4.0 | 75.4                | 50 ~ 300<br>(50mm |
| RCS2-RA4R-①-30-12-②-③-④-⑤   |                     | 12           | 4.0                          | 1.5 | 28.3                | increments)       |
| RCS2-RA4R-①-30-6-②-③-④-⑤  | 30                  | 6            | 9.0                          | 3.0 | 56.6                |                   |
| RCS2-RA4R-①-30-3-②-③-④-⑤  |                     | 3            | 18.0                         | 6.5 | 113.1               |                   |
| Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options |                     |              |                              |     |                     |                   |

# ■ Stroke and Maximum Speed

| Stroke<br>Lead | $50 \sim 300$ (50mm increments) |
|----------------|---------------------------------|
| 12             | 600                             |
| 6              | 300                             |
| 3              | 150                             |
|                |                                 |

(Unit: mm/s)

# Encoder & Stroke List

|               | Standard Price |           |          |           |  |
|---------------|----------------|-----------|----------|-----------|--|
|               | ① Encoder      |           |          |           |  |
| 2 Stroke (mm) | ) Incremental  |           | Absolute |           |  |
|               | Motor O        | utput (W) | Motor O  | utput (W) |  |
|               | 20W            | 30W       | 20W      | 30W       |  |
| 50            | -              | -         | -        | -         |  |
| 100           | -              | -         | -        | =         |  |
| 150           | -              | -         | -        | -         |  |
| 200           | -              | -         | _        | -         |  |
| 250           | -              | -         | -        | -         |  |
| 300           | ı              | -         | -        | -         |  |

|  | Туре            | Cable Symbol          | Standard Price |
|--|-----------------|-----------------------|----------------|
|  |                 | P (1m)                | _              |
|  | Standard        | <b>S</b> (3m)         | -              |
|  | <b>M</b> (5m)   | -                     |                |
|  | Special Lengths | X06 (6m) ~ X10 (10m)  | -              |
|  |                 | X11 (11m) ~ X15 (15m) | _              |
|  |                 | X16 (16m) ~ X20 (20m) | _              |
|  | Robot Cable     | R01 (1m) ~ R03 (3m)   | -              |
|  |                 | R04 (4m) ~ R05 (5m)   | -              |
|  |                 | R06 (6m) ~ R10 (10m)  | _              |
|  |                 | R11 (11m) ~ R15 (15m) | -              |
|  |                 | R16 (16m) ~ R20 (20m) | _              |

<sup>\*</sup> See page A-39 for cables for maintenance.

| © Option List            |             |          |                |
|--------------------------|-------------|----------|----------------|
|                          |             |          |                |
| Name                     | Option Code | See Page | Standard Price |
| Brake                    | В           | → A-25   | -              |
| Foot bracket             | FT          | → A-29   | _              |
| Flange bracket (front)   | FL          | → A-27   | -              |
| Flange bracket (back)    | FLR         | → A-28   | -              |
| Home sensor              | HS          | → A-32   | -              |
| Knuckle joint            | NJ          | → A-34   | -              |
| Reversed-home            | NM          | → A-33   | -              |
| Clevis Bracket           | QR          | → A-34   | -              |
| Back-mounting plate      | RP          | → A-35   | _              |
| Trunnion bracket (front) | TRF         | → A-38   | _              |

\* The home sensor (HS) cannot be used on the reversed-home models.

| Actuator Specifications          |  |
|----------------------------------|--|
| Item                             | Description                                    |
| Drive System                     | Ball screw ø10mm C10 grade                     |
| Positioning Repeatability        | ±0.02mm  |
| Lost Motion                      | 0.1mm or less                                  |
| Base                             | Material: Aluminum (white alumite treated)     |
| Rod Diameter                     | ø20mm  |
| Non-rotating accuracy of rod     | ±1.0 deg                                       |
| Ambient Operating Temp./Humidity | $0 \sim$ 40°C, 85% RH or less (non-condensing) |

Dimensions

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

For Special Orders

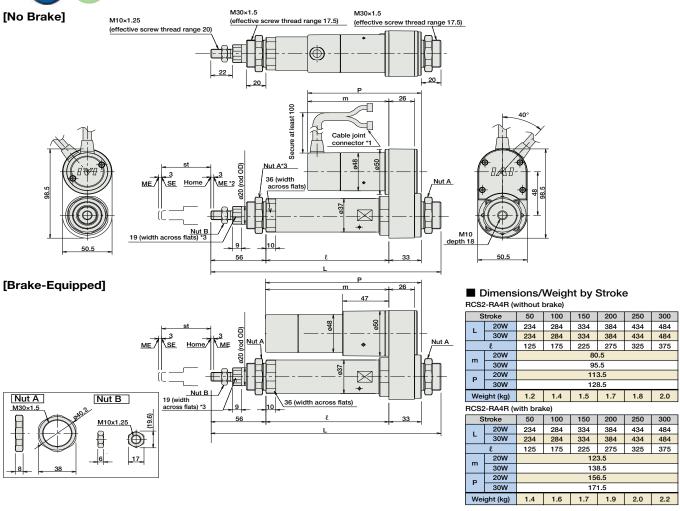






- \*1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
   ME: Mechanical end SE: Stroke end

\*3. The orientation of the bolt will vary depending on the product.



| © Companible Controllers | ③ Compatible Controllers |  |
|--------------------------|--------------------------|--|
|--------------------------|--------------------------|--|

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name                              | External View | Model   | Description   | Max. Positioning Points | Input Voltage  | Power Supply Capacity | Standard Price | See Page       |
|-----------------------------------|---------------|---|---|-------------------------|--|-----------------------|----------------|----------------|
| Positioner Mode                   |               |   | Positioning is possible for up to 512 points                                    | 512 points              |  |                       |                |                |
| Solenoid Valve Mode               |               | SCON-C-20 ①-NP-2-(2)<br>SCON-C-30D①-NP-2-(2)        | Operable with same controls as solenoid valve.                                  | 7 points                | Single-Phase AC 100V Single-Phase AC 200V Three-phase AC 200V (XSEL-P/Q only)  Three-phase AC 200V (XSEL-P/Q only) |                       |                | → <b>P</b> 547 |
| Serial Communication<br>Type      |               |   | Dedicated to serial communication   | 64 points               |  |                       | → <b>r34</b> / |                |
| Pulse Train Input<br>Control Type |               |   | Dedicated to Pulse<br>Train Input   | (-)                     |  | 150W single-axis      |                |                |
| Program Control 1-2<br>Axes Type  |               | SSEL-C-1-20①-NP-2-②<br>SSEL-C-1-30D①-NP-2-②         | Programmed operation<br>is possible<br>Operation is possible on<br>up to 2 axes | 20000 points            |  |                       | -              | → <b>P577</b>  |
| Program Control 1-6<br>Axes Type  | emeal.        | XSEL-③-1-20①-N1-EEE-2-④<br>XSEL-③-1-30D①-N1-EEE-2-④ | Programmed operation<br>is possible<br>Operation is possible on<br>up to 6 axes | 20000 points            |  |                       | -              | → <b>P587</b>  |

\* For SSEL and XSEL, only applicable to the single-axis model.

\* ① is a placeholder for the encoder type (I: incremental / A: absolute).

\* ② is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V).

\* 4 is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V, or 3: three-phase 200V).

Туре

Mini

Standard

Rod

Mini

Standard

Integrated

/Flat Type

Standard

Linear Servo

Cleanroom

Controllara

PMEC /AMEC

ROBO NET

PCON

ACON

PSEL

ASEL

Veel

Pulse Moto

Servo Mo (24V)

Servo Mot (200V)

Servo Moto

RCS2-RA5R ROBO Cylinder Rod Type 55mm Width 200V Servo Motor Side-Mounted Motor  $\blacksquare$  Configuration: RCS2 - RA5R 60 Туре Encoder Motor Compatible Controlle Cable Length Option N: None
P:1m
S:3m
M:5m
X : Custom
R : Robot cable See Options below \* Be sure to specify which side the motor is to be I : Incremental A : Absolute 60 : 60W Servo Motor 16: 16mm 50:50mm T1:XSEL-J/K 8: 8mm T2:SCON 4mm 300:300mm SSEL mounted (ML/MR). (50mm pitch XSEL-P/Q increments) \* See page Pre-35 for an explanation of the naming convention.



### Actuator Specifications ■ Lead and Load Capacity ■ Stroke and Maximum Speed Max. Load Capacity Rated 50 ~ 250 Lead Stroke 300 Thrust (N RCS2-RA5R-①-60-16-②-③-④-⑤ 63.8 755 16 12.0 2.0 16 800 50 ~ 300 RCS2-RA5R-1 -60-8-2 -3 -4 -5 60 8 25.0 5.0 127.5 (50mm 8 400 377 RCS2-RA5R-1-60-4-2-3-4-5 50.0 11.5 255.1 4 200 188 Legend: 1 Encoder 2 Stroke 3 Compatible controller 4 Cable length 5 Options (Unit: mm/s)

| Encoder & Stroke List |             |          |  |  |
|-----------------------|-------------|----------|--|--|
| ② Stroke (mm)         | Standa      | rd Price |  |  |
|                       | ① Encoder   |          |  |  |
|                       | Incremental | Absolute |  |  |
|                       | I           | Α        |  |  |
| 50                    | 1           | _        |  |  |
| 100                   | -           | _        |  |  |
| 150                   | 1           | _        |  |  |
| 200                   | 1           | _        |  |  |
| 250                   | ı           | _        |  |  |
| 300                   | -           | _        |  |  |

| 4 Cable Lis                                | (4) Cable List        |                |  |  |  |
|--|-----------------------|----------------|--|--|--|
| Туре                                       | Cable Symbol          | Standard Price |  |  |  |
|  | P (1m)                | _              |  |  |  |
| Standard                                   | <b>S</b> (3m)         | -              |  |  |  |
|  | <b>M</b> (5m)         | -              |  |  |  |
| Special Lengths                            | X06 (6m) ~ X10 (10m)  | -              |  |  |  |
|  | X11 (11m) ~ X15 (15m) | -              |  |  |  |
|  | X16 (16m) ~ X20 (20m) | -              |  |  |  |
|  | R01 (1m) ~ R03 (3m)   | -              |  |  |  |
| Robot Cable                                | R04 (4m) ~ R05 (5m)   | -              |  |  |  |
|  | R06 (6m) ~ R10 (10m)  | -              |  |  |  |
|  | R11 (11m) ~ R15 (15m) | -              |  |  |  |
|  | R16 (16m) ~ R20 (20m) | -              |  |  |  |
| * See page Δ-39 for cables for maintenance |                       |                |  |  |  |

The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod.

| ⑤ Option List                  |             |               |                |  |  |
|--------------------------------|-------------|---------------|----------------|--|--|
| Name                           | Option Code | See Page      | Standard Price |  |  |
| Connector cable exit direction | A2          | → A-25        | -              |  |  |
| Brake                          | В           | → A-25        | -              |  |  |
| Flange                         | FL          | → A-27        | -              |  |  |
| Foot bracket                   | FT          | → A-29        | -              |  |  |
| Left-Mounted Motor (Standard)  | ML          | → A-33        | _              |  |  |
| Right-Mounted Motor            | MR          | → <b>A-33</b> | -              |  |  |

| Actuator Specifications          | 3  |
|----------------------------------|--|
| Item                             | Description                                |
| Drive System                     | Ball screw ø12mm C10 grade                 |
| Positioning Repeatability        | ±0.02mm                                    |
| Lost Motion                      | 0.1mm or less                              |
| Base                             | Material: Aluminum (white alumite treated) |
| Rod Diameter                     | ø30mm                                      |
| Non-rotating accuracy of rod     | ±0.7 deg                                   |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing)  |

<sup>\*</sup> See page A-39 for cables for maintenance.



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

For Special Orders

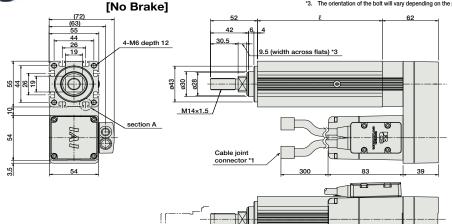


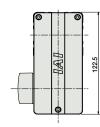
2D CAD

Dimensions

\*The RA5R is not available in reversed-home configuration, due to its construction.

- 11. The motor-encoder cable is connected here. See page A-39 for details on cables.
   22. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
   ME: Mechanical end SE: Stroke end
- \*3. The orientation of the bolt will vary depending on the product.

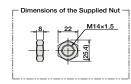


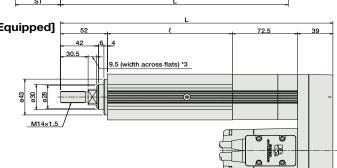






(4.8)





### ■ Dimensions/Weight by Stroke

| 1002-114011 (Without blake) |     |     |     |     |     |     |
|-----------------------------|-----|-----|-----|-----|-----|-----|
| Stroke                      | 50  | 100 | 150 | 200 | 250 | 300 |
| L                           | 252 | 302 | 352 | 402 | 452 | 502 |
| l                           | 138 | 188 | 238 | 288 | 338 | 388 |
| Weight (kg)                 | 2.3 | 2.6 | 2.9 | 3.2 | 3.5 | 3.8 |

| RCS2-RA5R | (with | brake) |  |
|-----------|-------|--------|--|

| HCS2-HASH (With brake) |       |       |       |       |       |       |
|------------------------|-------|-------|-------|-------|-------|-------|
| Stroke                 | 50    | 100   | 150   | 200   | 250   | 300   |
| L                      | 301.5 | 351.5 | 401.5 | 451.5 | 501.5 | 551.5 |
| l                      | 138   | 188   | 238   | 288   | 338   | 388   |
| Weight (kg)            | 2.6   | 2.9   | 3.2   | 3.5   | 3.8   | 4.1   |

# ③ Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name                              | External View | Model                   | Description   | Max. Positioning Points | Input Voltage  | Power Supply Capacity                           | Standard Price | See Page       |
|-----------------------------------|---------------|-------------------------|---|-------------------------|--|---|----------------|----------------|
| Positioner Mode                   |               |                         | Positioning is possible for up to 512 points                                    | 512 points              |  |   |                |                |
| Solenoid Valve Mode               |               | SCON-C-60①-NP-2-②       | Operable with same controls as solenoid valve.                                  | 7 points                | Single-Phase AC 100V<br>360'<br>Single-Phase AC 200V |   |                | → <b>P</b> 547 |
| Serial Communication<br>Type      |               |                         | Dedicated to serial communication   | 64 points               |  | 360VA max.                                      | -              | → P34/         |
| Pulse Train Input<br>Control Type |               |                         | Dedicated to Pulse<br>Train Input   | (-)                     | Three-phase AC 200V<br>(XSEL-P/Q only)               | * When operating a<br>150W single-axis<br>model |                |                |
| Program Control 1-2<br>Axes Type  |               | SSEL-C-1-60①-NP-2-②     | Programmed operation<br>is possible<br>Operation is possible on<br>up to 2 axes | 20000 points            |  |   | -              | → P577         |
| Program Control 1-6<br>Axes Type  | Piiira        | XSEL-3-1-601-N1-EEE-2-4 | Programmed operation<br>is possible<br>Operation is possible on<br>up to 6 axes | 20000 points            |  |   | -              | → P587         |

- \* For SSEL and XSEL, only applicable to the single-axis model.
- \*① is a placeholder for the encoder type (I: incremental / A: absolute).
  \*② is a placeholder for the power supply voltage (1: 100\, 2: single-phase 200\).
  \*③ is a placeholder for the XSEL type name ("J", "K", "P", or "O").
- $^{\star}$  4 is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V, 3: 3-phase 200V).

RCS2-RA13R

ROBO Cylinder Ultra High Thrust Rod Type 130mm Width 200V Servo Motor Side-Mounted Motor

■ Configuration: RCS2 — RA13R —

Туре

Encoder I : Incremental A : Absolute **- 750** Motor 750: 750W Servo Motor 2.5 : 2.5mm 1.25 :1.25mm

50 : 50mm 200: 200mm

Compatible Controllers T2:SCON (50mm pitch

**T2** 

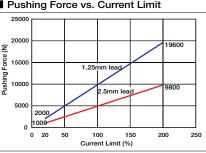
Cable Length N: None P:1m S:3m M:5m X . : Custom R . : Robot cable

Option See Options below \* Please be sure to specify one of the codes for the motor mounting direction and the cable exit direction.

\* See page Pre-35 for an explanation of the naming convention.

■ Pushing Force vs. Current Limit

increments)



- . The correlation between the pushing The correlation between the pushing force and the current limit are only rough guide values, and may deviate from the actual numbers. The pushing force may be inconsistent if the current limit is low. Therefore, please set it at 20% or higher.
- higher. The travel speed while the pushing
- force is acting is fixed at 10mm/s. The graph shows pushing action at 10mm/s. Please note that the pushing force will decrease if the
- speed changes.

  Depending on operational conditions, the pushing force may decrease due to the rise in the temperature of the motor.

Technical References



- When performing pushing operation, duration of continuous use is preset for the set pushing force. In addition, the continuous thrust (with load and duty factored in) must be less than the rated thrust. For details, please see selection reference material ( $\rightarrow$  A-71).
- The load capacity is based on operation at an acceleration of 0.02G for 2.5mm-lead, and 0.01 for 1.25-lead. This is the upper limit of the acceleration.
- The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod.
- The brake option requires, in addition to the actuator and the controller, a brake box (see accessories on P248).

# Actuator Specifications

■ Lead and Load Capacity

| Model   | Motor Output<br>(W) | Lead<br>(mm) | Max.<br>Acceleration<br>(G) | Max. Load |     | Rated Thrust<br>(N) | Continuous<br>Pushing Force<br>(N) | Maximum Push<br>Force<br>(N) | Stroke<br>(mm)       |
|---|---------------------|--------------|-----------------------------|-----------|-----|---------------------|------------------------------------|------------------------------|----------------------|
| RCS2-RA13R-1 -750-2.5-2 -T2-3 -4                    | 750                 | 2.5          | 0.02                        | 400       | 200 | 5106                | 3567                               | 9800                         | 50~ 200              |
| RCS2-RA13R-1 -750-1.25-2 -T2-3 -4                   | 750                 | 1.25         | 0.01                        | 500       | 300 | 10211               | 7141                               | 19600                        | (50mm<br>increments) |
| _egend: ① Encoder ② Stroke ③ Cable length ④ Options |                     |              |                             |           |     |                     |                                    |                              |                      |

Stroke and Maximum Speed Stroke (mm) 50 100 150 200

2.5 85 120 125 1.25 62 (Unit: mm/s)

Encoder & Stroke List

|               |  | Standard Price |                      |                       |  |  |  |  |
|---------------|--|----------------|----------------------|-----------------------|--|--|--|--|
|               |  | ① En           | coder                |                       |  |  |  |  |
| 2 Stroke (mm) | Increr                                     | nental         | Absolute             |                       |  |  |  |  |
|               | 1t type (2.5mm lead) 2t type (1.25mm lead) |                | 1t type (2.5mm lead) | 2t type (1.25mm lead) |  |  |  |  |
| 50            | -  | -              | -                    | -                     |  |  |  |  |
| 100           | -  | -              | -                    | -                     |  |  |  |  |
| 150           | -  | -              | -                    | -                     |  |  |  |  |
| 200           | -  | -              | -                    | -                     |  |  |  |  |

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
|                 | P (1m)                | _              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | -              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | _              |
|                 | R04 (4m) ~ R05 (5m)   | _              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |
|                 | R11 (11m) ~ R15 (15m) | -              |
|                 | R16 (16m) ~ R20 (20m) | _              |

<sup>\*</sup> See page A-39 for cables for maintenance.

| 4 Option List             |             |          |                |
|---------------------------|-------------|----------|----------------|
| Name                      | Option Code | See Page | Standard Price |
| Brake (with brake box)    | В           | → P248   | -              |
| Brake (without brake box) | BN          | → P248   | -              |
| Top-mounted motor         | MT1/MT2/MT3 | → P248   | -              |
| Right-mounted motor       | MR1/MR2     | → P248   | -              |
| Left-mounted motor        | ML1/ML3     | → P248   | -              |
| Flange                    | FL          | → A-27   | -              |
| Foot bracket              | FT          | → A 20   | _              |

| Actuator Specifications          | 3   |
|----------------------------------|---|
| Item                             | Description                               |
| Drive System                     | Ball screw ø32mm C10 grade                |
| Positioning Repeatability        | ±0.01mm                                   |
| Lost Motion                      | 0.2mm or less                             |
| Rod Diameter                     | ø50mm (ball spline)                       |
| Allowable Load Moment of the Rod | 120 N⋅m                                   |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing) |
| Push Force Service Life          | 1000 pushes (*1)                          |

<sup>(\*1)</sup> The number of pushes are based on maximum pushing force and a distance of 1mm.

# Motor-mounting direction / Cable exit direction (Options)

### Note:

Please be sure to specify one of the codes for the motor mounting direction and the cable exit direction.















40

42.5 67.5

8

90

35

40

3

8

90

37

756.5 806.5

42.5 67.5

65

3

8

36

65

3

8

115

38

| Option Code              | MT1            | MT2   | MT3  | MR1   | ML1  | MR2   | ML3  |
|--------------------------|----------------|-------|------|-------|------|-------|------|
| Motor-mounting direction | Top (standard) | Тор   | Тор  | Right | Left | Right | Left |
| Cable exit direction     | Top (standard) | Right | Left | Тор   | Тор  | Right | Left |

### Compatible Controllers The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage Positioning is possible Positioner Mode 512 points for up to 512 points Operable with same Solenoid Valve Mode controls as solenoid 7 points 1569VA max. valve. SCON-C-750①-NP-2-2 Single-Phase AC 200V → P547 \* When operating a Serial Communication Dedicated to serial 750W single-axis 64 points communication model Type Dedicated to Pulse Pulse Train Input (-) Control Type Train Input $^{\star}\, \textcircled{1}$ is a placeholder for the encoder type (I: incremental, A: absolute).

ROBO Cylinder Rod Type with Single Guide ø37mm Diameter 200V Servo Motor RCS2-RGS4 Coupled  $\blacksquare$  Configuration: RCS2 - RGS4C -Encoder Type Cable Length Option T1:XSEL-J/K I : Incremental A : Absolute 12: 12mm 6: 6mm 20 : 20W Servo Motor 50:50mm N: None See Options below T2:SCON 30W Servo Motor 3: 3mm 300 : 300mm SSEL M : 5m (50mm pitch \* See page Pre-35 for an explanation of the naming convention.

# For High Acceleration/Deceleration



# Actuator Specifications

# ■ Lead and Load Capacity

| Model  | Motor<br>Output (w) | Lead<br>(mm) | Max. Load<br>Horizontal (kg) |     | Rated<br>Thrust (N) | Stroke<br>(mm)    |
|--|---------------------|--------------|------------------------------|-----|---------------------|-------------------|
| RCS2-RGS4C-①-20-12-②-③-④-⑤   | Output (w)          | 12           | 3.0                          | 0.5 | 18.9                | (1111)            |
| RCS2-RGS4C-①-20-6-②-③-④-⑤  | 20                  | 6            | 6.0                          | 1.5 | 37.7                |                   |
| RCS2-RGS4C-①-20-3-②-③-④-⑤  |                     | 3            | 12.0                         | 3.5 | 75.4                | 50 ~ 300<br>(50mm |
| RCS2-RGS4C-①-30-12-②-③-④-⑤   |                     | 12           | 4.0                          | 1.0 | 28.3                | increments)       |
| RCS2-RGS4C-①-30-6-②-③-④-⑤  | 30                  | 6            | 9.0                          | 2.5 | 56.6                |                   |
| RCS2-RGS4C-①-30-3-②-③-④-⑤  |                     | 3            | 18.0                         | 6.0 | 113.1               |                   |
| Legend: ①Encoder ②Stroke ③Compatible controller ④Cable length ⑤Options |                     |              |                              |     |                     |                   |

# ■ Stroke and Maximum Speed

| Stroke<br>Lead | $50 \sim 300$ (50mm increments)         |
|----------------|---|
| 12             | 600                                     |
| 6              | 300                                     |
| 3              | 150                                     |
|                | # 1 · · · · · · · · · · · · · · · · · · |

(Unit: mm/s)

### Encoder & Stroke List

|               | Standard Price   |        |         |           |  |  |
|---------------|------------------|--------|---------|-----------|--|--|
|               |                  | ① En   | coder   |           |  |  |
| ② Stroke (mm) | Incren           | nental | Abso    | olute     |  |  |
|               | Motor Output (W) |        | Motor O | utput (W) |  |  |
|               | 20W              | 30W    | 20W     | 30W       |  |  |
| 50            | -                | -      | -       | -         |  |  |
| 100           | -                | -      | -       | -         |  |  |
| 150           | -                | -      | -       | -         |  |  |
| 200           | -                | -      | -       | -         |  |  |
| 250           | _                | -      | _       | _         |  |  |
| 300           | _                | _      |         |           |  |  |

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
|                 | P (1m)                | -              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | -              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
|                 | R04 (4m) ~ R05 (5m)   | -              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |
|                 | R11 (11m) ~ R15 (15m) | -              |
|                 | R16 (16m) ~ R20 (20m) | _              |

<sup>\*</sup> See page A-39 for cables for maintenance.

### ⑤ Option List

| Option Code | See Page                  | Standard Price                                       |
|-------------|---------------------------|--|
| В           | → <b>A-25</b>             | -  |
| FT          | → A-29                    | -  |
| HA          | → A-32                    | -  |
| HS          | → A-32                    | -  |
| NM          | → <b>A-33</b>             | -  |
| TRR         | → A-38                    | -  |
|             | B<br>FT<br>HA<br>HS<br>NM | $\begin{array}{cccccccccccccccccccccccccccccccccccc$ |

and 30W model with 3mm lead.

## Actuator Specifications

| Item                             | Description   |  |  |  |
|----------------------------------|---|--|--|--|
| Drive System                     | Ball screw ø10mm C10 grade                              |  |  |  |
| Positioning Repeatability        | ±0.02mm   |  |  |  |
| Lost Motion                      | 0.1mm or less   |  |  |  |
| Guide                            | Single guide (guide rod diameter ø10mm, Ball bush type) |  |  |  |
| Rod Diameter                     | ø20mm   |  |  |  |
| Non-rotating accuracy of rod     | ±0.05 deg   |  |  |  |
| Ambient Operating Temp /Humidity | 0 ~ 40°C 85% BH or less (non-condensing)                |  |  |  |

<sup>(\*2)</sup> The home sensor (HS) cannot be used on the reversed-home models.

Dimensions

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

For Special Orders

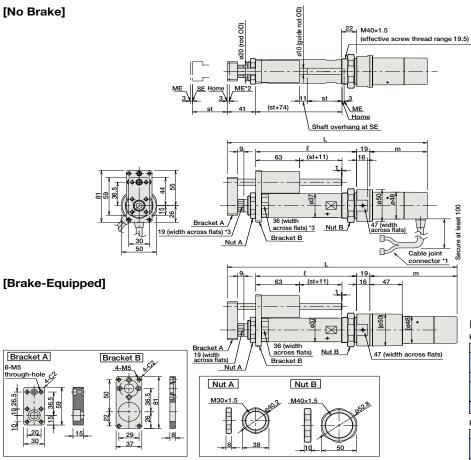


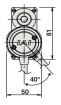




- \*1. The motor-encoder cable is connected here. See page A-39 for details on cables.
  - When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects. ME: Mechanical end SE: Stroke end

\*3. The orientation of the bolt will vary depending on the product.





### ■ Dimensions/Weight by Stroke

RCS2-RGS4C (without brake)

| S   | troke     | 50    | 100   | 150   | 200   | 250   | 300   |
|-----|-----------|-------|-------|-------|-------|-------|-------|
| L   | 20W       | 285.5 | 335.5 | 385.5 | 435.5 | 485.5 | 535.5 |
| -   | 30W       | 300.5 | 350.5 | 400.5 | 450.5 | 500.5 | 550.5 |
|     | l         | 145   | 195   | 245   | 295   | 345   | 395   |
|     | 20W       | 80.5  |       |       |       |       |       |
| m   | 30W       | 95.5  |       |       |       |       |       |
| Wei | ight (kg) | 1.5   | 1.6   | 1.8   | 2.0   | 2.2   | 2.4   |
|     |           |       |       |       |       |       |       |

### BCS2-BGS4C (with brake)

| 11002-110040 (With brake) |          |         |       |       |       |       |       |
|---------------------------|----------|---------|-------|-------|-------|-------|-------|
| S                         | troke    | 50      | 100   | 150   | 200   | 250   | 300   |
| L                         | 20W      | 328.5   | 378.5 | 428.5 | 478.5 | 528.5 | 578.5 |
| _                         | 30W      | 343.5   | 393.5 | 443.5 | 493.5 | 543.5 | 593.5 |
| l                         |          | 145     | 195   | 245   | 295   | 345   | 395   |
|                           | 20W      | 123.5   |       |       |       |       |       |
| m                         | 30W      | 138.5   |       |       |       |       |       |
| Wei                       | ght (kg) | 1.7 1.8 |       | 2.0   | 2.2   | 2.4   | 2.6   |
|                           |          | •       | •     |       |       |       |       |

# ③ Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage

| Name                              | External View | Model  | Description   | Max. Positioning Points | Input Voltage                                      | Power Supply Capacity                | Standard Price | See Page |  |
|-----------------------------------|---------------|--|---|-------------------------|--|--------------------------------------|----------------|----------|--|
| Positioner Mode                   |               |  | Positioning is possible for up to 512 points                                    | 512 points              |  |                                      |                |          |  |
| Solenoid Valve Mode               |               | SCON-C-20①-NP-2-③                                    | Operable with the same controls as the solenoid valve.                          | 7 points                |  |                                      |                | → P547   |  |
| Serial Communication<br>Type      |               | SCON-C-30D①②-NP-2-③                                  | Dedicated to serial communication   | 64 points               | Single-Phase AC<br>100V<br>Single-Phase AC<br>200V | Maximum<br>360VA                     | -              | → P547   |  |
| Pulse Train Input<br>Control Type |               |  | Dedicated to Pulse Train<br>Input   | (-)                     | 3-Phase AC<br>200V<br>(XSEL-P/Q only)              | * Single-axis model operated at 150W |                |          |  |
| Program Control 1-2<br>Axes Type  |               | SSEL-C-1-20①-NP-2-③<br>SSEL-C-1-30D① ②-NP-2-③        | Programmed operation<br>is possible<br>Operation is possible on<br>up to 2 axes | 20000 points            | V 1/4 (111)  |                                      | -              | → P577   |  |
| Program Control 1-6<br>Axes Type  | Pilled        | XSEL-④-1-20①-N1-EEE-2-⑤<br>XSEL-④-1-30D①②-N1-EEE-2-⑤ | Programmed operation<br>is possible<br>Operation is possible on<br>up to 6 axes | 20000 points            |  |                                      | -              | → P587   |  |

\* For SSEL and XSEL, only applicable to the single-axis model.

ROBO Cylinder Rod Type with Single Guide ø55mm Diameter 200V Servo Motor RCS2-RGS5 Coupled lacktriangle Configuration: RCS2 - RGS5C -Туре Encoder Cable Length Option 60 : 60W Servo Motor 100 : 100W Servo Motor I : Incremental A : Absolute N: None 16: 16mm 50:50mm T1:XSEL-J/K See Options below N: None
P: 1m
S: 3m
M: 5m
X : Custom
R: : Robot cable 8mm T2:SCON 4mm 300:300mm SSEL (50mm pitch increments) \* See page Pre-35 for an explanation of the naming convention.

# For High Acceleration/Deceleration



### Actuator Specifications

# ■ Lead and Load Capacity

| Model  | Motor<br>Output (w) | Lead<br>(mm) | Max. Load | Capacity Vertical (kg) | Rated<br>Thrust (N) | Stroke<br>(mm)    |
|--|---------------------|--------------|-----------|------------------------|---------------------|-------------------|
| RCS2-RGS5C-①-60-16-②-③-④-⑤                         | . , ,               | 16           | 12.0      | 1.3                    | 63.8                |                   |
| RCS2-RGS5C-①-60-8-②-③-④-⑤                          | 60                  | 8            | 25.0      | 4.3                    | 127.5               |                   |
| RCS2-RGS5C-①-60-4-②-③-④-⑤                          |                     | 4            | 50.0      | 10.8                   | 255.1               | 50 ~ 300<br>(50mm |
| RCS2-RGS5C-①-100-16-②-③-④-⑤                        |                     | 16           | 15.0      | 2.8                    | 105.8               | increments)       |
| RCS2-RGS5C-①-100-8-②-③-④-⑤                         | 100                 | 8            | 30.0      | 8.3                    | 212.7               |                   |
| RCS2-RGS5C-①-100-4-②-③-④-⑤                         |                     | 4            | 60.0      | 17.3                   | 424.3               |                   |
| Legend: ① Encoder ② Stroke ③ Compatible controller | 4 Cable le          | ngth 5       | Options   |                        |                     |                   |

# ■ Stroke and Maximum Speed

See the technical resources (page A-82) for the allowable weight using the supplied guide alone.

| Stroke | $50 \sim 250$ (50mm increments) | 300<br>(mm) |
|--------|---------------------------------|-------------|
| 16     | 800                             | 755         |
| 8      | 400                             | 377         |
| 4      | 200                             | 188         |
|        |                                 |             |

(Unit: mm/s)

# Encoder & Stroke List

|               | Standard Price |           |         |           |  |  |
|---------------|----------------|-----------|---------|-----------|--|--|
|               |                | ① En      | coder   |           |  |  |
| 2 Stroke (mm) | Incren         | nental    | Abso    | olute     |  |  |
|               | Motor O        | utput (W) | Motor O | utput (W) |  |  |
|               | 60W            | 100W      | 60W     | 100W      |  |  |
| 50            | -              | -         | -       | -         |  |  |
| 100           | -              | -         | -       | -         |  |  |
| 150           | -              | -         | -       | -         |  |  |
| 200           | -              | -         | -       | -         |  |  |
| 250           | -              | -         | _       | -         |  |  |
| 300           | _              | -         |         |           |  |  |

| (4) | Cable | List |
|-----|-------|------|
|     |       |      |
|     |       |      |

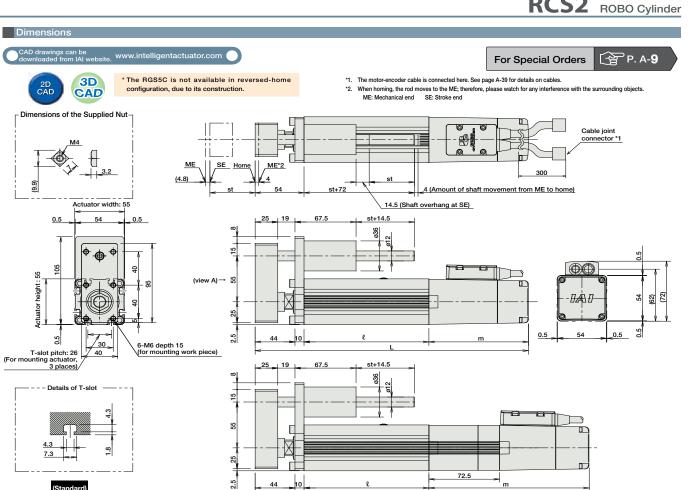
| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
|                 | P (1m)                | _              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | -              |
| Special Lengths | X06 (6m) ~ X10 (10m)  | -              |
|                 | X11 (11m) ~ X15 (15m) | -              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
|                 | R04 (4m) ~ R05 (5m)   | -              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |
|                 | R11 (11m) ~ R15 (15m) | -              |
|                 | R16 (16m) ~ R20 (20m) | _              |

<sup>\*</sup> See page A-39 for cables for maintenance.

### ⑤ Option List **Option Code** See Page Name Standard Price Connector cable exit direction **A2** → A-25 В Brake → A-25 Foot bracket FT → A-29 $GS2 \sim GS4$ Guide mounting direction → P252 НА High-acceleration/deceleration (\*1) → A-32

<sup>(\*1)</sup> The high-acceleration/deceleration option is not available for all 60W models and 100W model

| Actuator Specifications          |   |  |  |  |  |  |
|----------------------------------|---|--|--|--|--|--|
| Item                             | Description   |  |  |  |  |  |
| Drive System                     | Ball screw ø12mm C10 grade                                  |  |  |  |  |  |
| Positioning Repeatability        | ±0.02mm   |  |  |  |  |  |
| Lost Motion                      | 0.1mm or less   |  |  |  |  |  |
| Guide                            | Single guide (guide rod diameter ø12mm, Ball bush type)     |  |  |  |  |  |
| Rod Diameter                     | ø30mm   |  |  |  |  |  |
| Non-rotating accuracy of rod     | ±0.1 deg  |  |  |  |  |  |
| Ambient Operating Temp./Humidity | $0\sim40^{\circ}\text{C}$ , 85% RH or less (non-condensing) |  |  |  |  |  |



| ■ Dimensions/Weight | by Stroke |
|---------------------|-----------|
|---------------------|-----------|

Top-mounted

Actuato

GS3 Bottom

Right-

Guide mounting direction (as viewed from view A)

GS4 Left-mounted

| RCS2 | RGS5C    | (withou | t brake) |     |     |     |     |  |
|------|----------|---------|----------|-----|-----|-----|-----|--|
| S    | troke    | 50      | 100      | 150 | 200 | 250 | 300 |  |
|      | 60W      | 284     | 334      | 384 | 434 | 484 | 534 |  |
| _    | 100W     | 302     | 352      | 402 | 452 | 502 | 552 |  |
|      | l        | 138     | 188      | 238 | 288 | 338 | 388 |  |
|      | 60W      |         | 92       |     |     |     |     |  |
| m    | 100W     |         |          | 11  | 10  |     |     |  |
| Wei  | aht (ka) | 2.5     | 2.8      | 3.2 | 3.6 | 3.9 | 4.3 |  |

|  | RCS2   | -RGS5C | (with br | ake)  |       |       |       |       |
|--|--------|--------|----------|-------|-------|-------|-------|-------|
|  | S      | troke  | 50       | 100   | 150   | 200   | 250   | 300   |
|  |        | 60W    | 356.5    | 406.5 | 456.5 | 506.5 | 556.5 | 606.5 |
|  | _      | 100W   | 374.5    | 424.5 | 474.5 | 524.5 | 574.5 | 624.5 |
|  |        | Ł      | 138      | 188   | 238   | 288   | 338   | 388   |
|  | L<br>m | 60W    |          |       | 16    | 4.5   |       |       |
|  | ""     | 100W   |          |       | 18    | 2.5   |       |       |

3.5 3.9 4.2

Weight (kg) 2.8 3.1

| Name                              | External View | Model  | Description   | Max. Positioning Points                                | Input Voltage                                      | Power Supply Capacity                | Standard Price | See Page |                |
|-----------------------------------|---------------|--|---|--|--|--------------------------------------|----------------|----------|----------------|
| Positioner Mode                   |               |  | Positioning is possible for up to 512 points                                    | 512 points   |  |                                      |                |          |                |
| Solenoid Valve Mode               |               |  | SCON-C-60①-NP-2-③   | Operable with the same controls as the solenoid valve. | 7 points   |                                      |                |          | → <b>P</b> 547 |
| Serial Communication<br>Type      |               | SCON-C-100 ⊕ (2-NP-2-3)                              | Dedicated to serial communication   | 64 points  | Single-Phase AC<br>100V<br>Single-Phase AC<br>200V | Maximum<br>360VA                     |                | 7 - 1347 |                |
| Pulse Train Input<br>Control Type |               |  | Dedicated to Pulse Train<br>Input   | (-)  | * Single-axis mo                                   | * Single-axis model operated at 150W |                |          |                |
| Program Control 1-2<br>Axes Type  |               | SSEL-C-1-60①-NP-2-③<br>SSEL-C-1-100①②-NP-2-③         | Programmed operation<br>is possible<br>Operation is possible on<br>up to 2 axes | 20000 points   | (VOLE 174 only)                                    |                                      | -              | → P577   |                |
| Program Control 1-6<br>Axes Type  | Pilled        | XSEL-④-1-60①-N1-EEE-2-⑤<br>XSEL-④-1-100①②-N1-EEE-2-⑤ | Programmed operation<br>is possible<br>Operation is possible on<br>up to 6 axes | 20000 points   |  |                                      | -              | → P587   |                |

ROBO Cylinder Rod Type with Single Guide ø37mm Diameter 200V Servo Motor RCS2-RGS4 Built-In Model lacktriangle Configuration: RCS2 - RGS4D -Encoder Cable Length Option 60 : 60W Servo Motor 30 : 30W Servo Motor I : Incremental A : Absolute N: None 12:12mm 50:50mm T1:XSEL-J/K See Options below N: None
P: 1m
S: 3m
M: 5m
X : Custom
R : Robot cable 6: 6mm T2:SCON 3: 3mm 300:300mm SSEL (50mm pitch increments) \* See page Pre-35 for an explanation of the naming convention.



# (2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model). This is the upper limit of the acceleration. (3) The values for the horizontal load capacity assume the use of an external guide, so that there is

(3) The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod. See the technical resources (page A-82) for the allowable weight using the supplied guide alone.

### Actuator Specifications

# ■ Lead and Load Capacity

| Model  | Motor<br>Output (w) | Lead<br>(mm) | Max. Load<br>Horizontal (kg) |     | Rated<br>Thrust (N) | Stroke<br>(mm)       |
|--|---------------------|--------------|------------------------------|-----|---------------------|----------------------|
|  | Output (w)          | , ,          |                              |     | . ,                 | (11111)              |
| RCS2-RGS4D-①-20-12-②-③-④-⑤                         |                     | 12           | 3.0                          | 0.5 | 18.9                |                      |
| RCS2-RGS4D-①-20-6-②-③-④-⑤                          | 20                  | 6            | 6.0                          | 1.5 | 37.7                |                      |
| RCS2-RGS4D-①-20-3-②-③-④-⑤                          |                     | 3            | 12.0                         | 3.5 | 75.4                | 50 ~ 300             |
| RCS2-RGS4D-①-30-12-②-③-④-⑤                         |                     | 12           | 4.0                          | 1.0 | 28.3                | (50mm<br>increments) |
| RCS2-RGS4D-①-30-6-②-③-④-⑤                          | 30                  | 6            | 9.0                          | 2.5 | 56.6                |                      |
| RCS2-RGS4D-①-30-3-②-③-④-⑤                          |                     | 3            | 18.0                         | 6.0 | 113.1               |                      |
| Legend: 1 Encoder 2 Stroke 3 Compatible controller | 4 Cable le          | ngth 5       | Options                      |     |                     |                      |

# ■ Stroke and Maximum Speed

| Stroke | $50 \sim 300$ (50mm increments) |
|--------|---------------------------------|
| 12     | 600                             |
| 6      | 300                             |
| 3      | 150                             |
|        |                                 |

(Unit: mm/s)

# Encoder & Stroke List

|               | Standard Price |           |                  |     |  |  |  |  |
|---------------|----------------|-----------|------------------|-----|--|--|--|--|
| ② Stroke (mm) | ① Encoder      |           |                  |     |  |  |  |  |
|               | Increr         | nental    | Absolute         |     |  |  |  |  |
|               | Motor O        | utput (W) | Motor Output (W) |     |  |  |  |  |
|               | 20W            | 30W       | 20W              | 30W |  |  |  |  |
| 50            | -              | -         | -                | -   |  |  |  |  |
| 100           | -              | -         | -                | -   |  |  |  |  |
| 150           | -              | -         | -                | -   |  |  |  |  |
| 200           | -              | -         | -                | -   |  |  |  |  |
| 250           | -              | -         | -                | -   |  |  |  |  |
| 300           | -              | -         | =                | -   |  |  |  |  |

| O CUDIO LIO     | -                     |                |
|-----------------|-----------------------|----------------|
| Туре            | Cable Symbol          | Standard Price |
|                 | P (1m)                | -              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | -              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
|                 | R04 (4m) ~ R05 (5m)   | -              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |
|                 | R11 (11m) ~ R15 (15m) | -              |
|                 | R16 (16m) ~ R20 (20m) | _              |

<sup>\*</sup> See page A-39 for cables for maintenance.

### 

 $<sup>^{\</sup>star}$  The home sensor (HS) cannot be used on the reversed-home models.

| Actuator Specifications          |   |  |  |  |  |  |
|----------------------------------|---|--|--|--|--|--|
| Item                             | Description   |  |  |  |  |  |
| Drive System                     | Ball screw ø10mm C10 grade                              |  |  |  |  |  |
| Positioning Repeatability        | ±0.02mm   |  |  |  |  |  |
| Lost Motion                      | 0.1mm or less   |  |  |  |  |  |
| Guide                            | Single guide (guide rod diameter ø10mm, Ball bush type) |  |  |  |  |  |
| Rod Diameter                     | ø20mm   |  |  |  |  |  |
| Non-rotating accuracy of rod     | ±0.05 deg   |  |  |  |  |  |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing)               |  |  |  |  |  |

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

For Special Orders

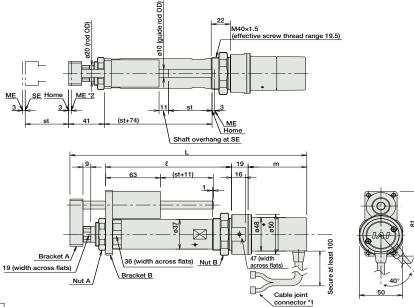


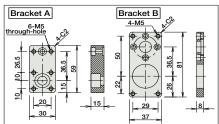


- \*1. The motor-encoder cable is connected here. See page A-39 for details on cables.
  - When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.

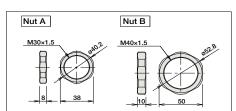
    ME: Mechanical end

    SE: Stroke end





30



# ■ Dimensions/Weight by Stroke

RCS2-RGS4D (without brake)

| 11002  | 1002 TIGO+B (WILLIOUT BILING) |       |       |       |       |       |       |  |
|--------|-------------------------------|-------|-------|-------|-------|-------|-------|--|
| Stroke |                               | 50    | 100   | 150   | 200   | 250   | 300   |  |
| L      | 20W                           | 263.5 | 313.5 | 363.5 | 413.5 | 463.5 | 513.5 |  |
|        | 30W                           | 278.5 | 328.5 | 378.5 | 428.5 | 478.5 | 528.5 |  |
|        | l                             | 145   | 195   | 245   | 295   | 345   | 395   |  |
|        | 20W                           | 58.5  |       |       |       |       |       |  |
| m      | 30W                           |       | 73.5  |       |       |       |       |  |
| Wei    | ight (kg)                     | 1.3   | 1.5   | 1.7   | 1.9   | 2.1   | 2.3   |  |
|        |                               |       |       |       |       |       |       |  |

RCS2-RGS4D does not come in a brake-equipped configuration.

# ③ Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name                              | External View | Model   | Description   | Max. Positioning Points           | Input Voltage                          | Power Supply Capacity                | Standard Price   | See Page       |
|-----------------------------------|---------------|---|---|-----------------------------------|--|--------------------------------------|------------------|----------------|
| Positioner Mode                   |               |   | Positioning is possible for up to 512 points                                    | 512 points                        |  |                                      |                  |                |
| Solenoid Valve Mode               |               | SCON-C-20①-NP-2-②                                   | Operable with the same controls as the solenoid valve.                          | 7 points                          |  |                                      | _                | → <b>P</b> 547 |
| Serial Communication<br>Type      |               | s   | SCON-C-30D①-NP-2-②  | Dedicated to serial communication | 64 points                              | Single-Phase AC                      | Maximum<br>360VA | -              |
| Pulse Train Input<br>Control Type |               |   | Dedicated to Pulse<br>Train Input   | (-)                               | 200V  3-Phase AC 200V  (XSEL-P/Q only) | * Single-axis model operated at 150W |                  |                |
| Program Control 1-2<br>Axes Type  |               | SSEL-C-1-20①-NP-2-(2)<br>SSEL-C-1-30D①-NP-2-(2)     | Programmed operation<br>is possible<br>Operation is possible on<br>up to 2 axes | 20000 points                      | (IOLE 174 GIII)                        |                                      | -                | → <b>P577</b>  |
| Program Control 1-6<br>Axes Type  | Pilita        | XSEL-③-1-20①-N1-EEE-2-④<br>XSEL-③-1-30D①-N1-EEE-2-④ | Programmed operation<br>is possible<br>Operation is possible on<br>up to 6 axes | 20000 points                      |  |                                      | -                | → P587         |

\* For SSEL and XSEL, only applicable to the single-axis model.

To Subt. and Xubt., winy aphicace or use single-east index.

'① is a placeholder for the encoder type (i: incremental /R. absolute).

'② is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V).

'③ is a placeholder for the XSEL type name ("J", "K", "P", "C").

'④ is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V, or 3: three-phase 200V).

\* See page Pre-35 for an explanation of the naming convention.

# RCS2-SRGS7BD ROBO Cylinder Rod Type with Single Guide ø75mm Width 200V Servo Motor Short-Length Model

 $\blacksquare$  Configuration: RCS2 - SRGS7BD -Encoder I : Incremental

60 : 60W Servo Motor 100 : 100W Servo Motor 150 : 150W Servo Motor

12:12mm 6:6mm 3: 3mm

50:50mm 300 : 300mm (50mm pitch

increments)

T1: XSEL-J/K T2:SCON SSEL XSEL-P/Q

N : None

P:1m S:3m M:5m

Cable Length



Technical References



Option

See Options below



- When operated at the rated acceleration, the maximum load capacity is the load capacity at the rated acceleration.
- When operated at the maximum acceleration, the maximum load capacity is the load capacity at the maximum acceleration.
- The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod. See the technical resources (page A-82) for the allowable weight using the

# Actuator Specifications

## ■ Lead and Load Capacity

| Model                         |     | tor Lead |      | Load Capacity at Rated<br>Acceleration |                  | Max.<br>Acceleration | Load Capacity at Max.<br>Acceleration |                  | Rated      | Stroke      |
|-------------------------------|-----|----------|------|--|------------------|----------------------|---------------------------------------|------------------|------------|-------------|
|                               |     | (mm)     | (G)  | Horizontal<br>(kg)                     | Vertical<br>(kg) | (G)                  | Horizontal<br>(kg)                    | Vertical<br>(kg) | Thrust (N) | (mm)        |
| RCS2-SRGS7BD-I-60-16-①-②-③-④  |     | 16       | 0.25 | 5                                      | 1.5              | 0.35                 | 2.5                                   | 0.5              | 63         |             |
| RCS2-SRGS7BD-I-60-8-①-②-③-④   | 60  | 8        | 0.15 | 10                                     | 4.5              | 0.25                 | 5                                     | 2                | 127        |             |
| RCS2-SRGS7BD-I-60-4-①-②-③-④   |     | 4        | 0.05 | 20                                     | 9.5              | 0.15                 | 10                                    | 4.5              | 254        |             |
| RCS2-SRGS7BD-I-100-16-①-②-③-④ | 100 | 16       | 0.3  | 10                                     | 3                | 0.4                  | 5                                     | 1                | 103        | 50~300      |
| RCS2-SRGS7BD-I-100-8-①-②-③-④  |     | 8        | 0.2  | 22                                     | 8.5              | 0.3                  | 10                                    | 4                | 207        | (50mm       |
| RCS2-SRGS7BD-I-100-4-①-②-③-④  |     | 4        | 0.1  | 40                                     | 19               | 0.2                  | 20                                    | 8.5              | 414        | increments) |
| RCS2-SRGS7BD-I-150-16-①-②-③-④ |     | 16       | 0.3  | 15                                     | 6                | 0.4                  | 7.5                                   | 2.5              | 157        |             |
| RCS2-SRGS7BD-I-150-8-①-②-③-④  | 150 | 8        | 0.2  | 35                                     | 14               | 0.3                  | 17.5                                  | 6.5              | 314        |             |
| RCS2-SRGS7BD-I-150-4-①-②-③-④  |     | 4        | 0.1  | 55                                     | 22               | 0.2                  | 27.5                                  | 10.5             | 628        |             |

| Ŀ | Lead        | (50mm increments) |  |  |  |  |
|---|-------------|-------------------|--|--|--|--|
|   | 16          | 800               |  |  |  |  |
|   | 8           | 400               |  |  |  |  |
|   | 4           | 200               |  |  |  |  |
| _ | (Unit: mm/s |                   |  |  |  |  |

■ Stroke and Maximum Speed

Stroke 50 a 200

# ① Stroke List

|             | Standard Price |                  |      |  |
|-------------|----------------|------------------|------|--|
| Stroke (mm) |                | Motor Output (W) |      |  |
|             | 60W            | 100W             | 150W |  |
| 50          | -              | _                | =    |  |
| 100         | -              | -                | -    |  |
| 150         | -              | -                | -    |  |
| 200         | _              | _                | =    |  |
| 250         | -              | -                | =    |  |
| 300         | -              | -                | -    |  |

Legend 1 Stroke 2 Compatible controller 3 Cable length 4 Options

| 3 Cable List    |                       |                |  |  |
|-----------------|-----------------------|----------------|--|--|
| Туре            | Cable Symbol          | Standard Price |  |  |
|                 | P (1m)                | -              |  |  |
| Standard        | <b>S</b> (3m)         | -              |  |  |
|                 | <b>M</b> (5m)         | _              |  |  |
|                 | X06 (6m) ~ X10 (10m)  | -              |  |  |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |  |  |
|                 | X16 (16m) ~ X20 (20m) | -              |  |  |
|                 | R01 (1m) ~ R03 (3m)   | -              |  |  |
|                 | R04 (4m) ~ R05 (5m)   | -              |  |  |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |  |  |
|                 | R11 (11m) ~ R15 (15m) | _              |  |  |
|                 | R16 (16m) ~ R20 (20m) | -              |  |  |

<sup>\*</sup> See page A-39 for cables for maintenance.

## Ontion List

| 4 Option List                  |              |          |                |  |  |  |
|--------------------------------|--------------|----------|----------------|--|--|--|
| Name                           | Option Code  | See Page | Standard Price |  |  |  |
| Connector cable exit direction | A1 $\sim$ A3 | → A-25   | -              |  |  |  |
| Brake                          | В            | → A-25   | -              |  |  |  |
| Foot bracket                   | FT           | → A-29   | -              |  |  |  |
| Guide mounting direction       | GS2 ~ GS4    | → P256   | _              |  |  |  |

### Actuator Specifications

| Item                             | Description   |  |  |
|----------------------------------|---|--|--|
| Drive System                     | Ball screw ø12mm C10 grade                            |  |  |
| Positioning Repeatability        | ±0.02mm   |  |  |
| Lost Motion                      | 0.1mm or less   |  |  |
| Guide                            | Single guide (guide rod diameter ø16, Ball bush type) |  |  |
| Rod Diameter                     | ø35mm   |  |  |
| Non-rotating accuracy of rod     | ±0.1 deg  |  |  |
| Ambient Operating Temp /Humidity | 0 ~ 40°C, 85% BH or less (non-condensing)             |  |  |

### Dimensions

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





\*The SRGS7BD is not available in reversed-home configuration, due to its construction.

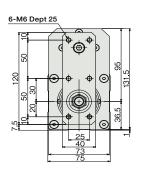
### Note:

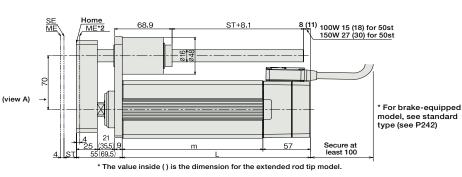
A slit is provided in the side of the actuator body to prevent pauses due to forward/backward operation. Please make a separate request for a dustproof/splashproof model.



- The motor-encoder cable is connected here. See page A-39 for details on cables.
- When homing, the rod moves to the mechanical end position; therefore, please watch for any interference with the surrounding objects.
  - ST: Stroke SE: Stroke end

  - ME: Mechanical end





Cable joint (300)connector \*1 r-M5, depth 12 px50 pitch

Top-nounte GS4 Left-GS2 Right-nounte Actuato GS3 Bottom

mounted Guide mounting direction (as viewed from view A)

# ■ Dimensions/Weight by Stroke

| Str    | roke | 50  | 100 | 150 | 200 | 250 | 300 |
|--------|------|-----|-----|-----|-----|-----|-----|
|        | 60W  | 126 | 176 | 226 | 276 | 326 | 376 |
| L      | 100W | 133 | 176 | 226 | 276 | 326 | 376 |
|        | 150W | 145 | 176 | 226 | 276 | 326 | 376 |
|        | 60W  | 69  | 119 | 169 | 219 | 269 | 319 |
| m      | 100W | 76  | 119 | 169 | 219 | 269 | 319 |
|        | 150W | 88  | 119 | 169 | 219 | 269 | 319 |
|        | n    |     | 35  | 35  | 35  | 35  | 35  |
|        | р    |     | 0   | 1   | 2   | 3   | 4   |
|        | r    | 4   | 4   | 6   | 8   | 10  | 12  |
| Weight | 60W  | 3.5 | 4.1 | 4.8 | 5.4 | 6.1 | 6.7 |
| (kg)   | 100W | 3.7 | 4.3 | 4.9 | 5.6 | 6.2 | 6.9 |
| (Kg)   | 150W | 4   | 4.5 | 5.1 | 5.8 | 6.4 | 7.1 |
|        |      |     |     |     |     |     |     |

# ② Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name                              | External View | Model                  | Description   | Max. Positioning Points | Input Voltage                          | Power Supply Capacity                           | Standard Price | See Page       |               |
|-----------------------------------|---------------|------------------------|---|-------------------------|--|---|----------------|----------------|---------------|
| Positioner Mode                   |               |                        | Positioning is possible for up to 512 points                                    | 512 points              |  |   | -              |                |               |
| Solenoid Valve Mode               |               |                        | Operable with the same controls as the solenoid valve.                          | 7 points                | Single-Phase AC 100V Maximum 360VA     |   |                | → <b>P</b> 547 |               |
| Serial Communication<br>Type      |               |                        | Dedicated to serial communication   | 64 points               |  |   |                | → P547         |               |
| Pulse Train Input<br>Control Type |               |                        | Dedicated for Pulse<br>Train Input  | (-)                     | 200V  3-Phase AC 200V  (XSEL-P/Q only) | * Single-axis model 3-Phase AC operated at 150W |                |                |               |
| Program Control 1-2<br>Axes Type  |               | SSEL-C-1-①I-NP-2-②     | Programmed operation<br>is possible<br>Operation is possible on<br>up to 2 axes | 20000 points            | (                                      |   | -              | → <b>P577</b>  |               |
| Program Control 1-6<br>Axes Type  | effira        | XSEL-③-1-①I-N1-EEE-2-④ | Programmed operation<br>is possible<br>Operation is possible on<br>up to 6 axes | 20000 points            |  |   |                | -              | → <b>P587</b> |

Note: The SRGS7BD type actuator cannot be connected to the 5th and 6th axes of the XSEL-P/Q controller.

- \* For SSEL and XSEL, only applicable to the single-axis model.
- $^{\star}$  ① is a place holder for the motor output (W) (60, 100, 150).
- 3 a place holder for the power supply voltage (1: 100/, 2: single-phase 200V).

  3 is a placeholder for the XSEL type name ("J", "K", "P", or "Q").

  4 is a placeholder for the power supply voltage (1: 100/, 2: single-phase 200V, or 3: three-phase 200V).

For Special Orders

ROBO Cylinder Rod Type with Double Guide ø37mm Diameter 200V Servo Motor RCS2-RGD4C Coupled  $\blacksquare$  Configuration: RCS2 - RGD4C Cable Length Type Encoder Lead Stroke Compatible Controller Option T1:XSEL-J/K I : Incremental A : Absolute 12:12mm 6:6mm 20 : 20W Servo Motor 50:50mm N: None See Options below P:1m S:3m T2:SCON 30W Servo Motor 3: 3mm 300 : 300mm SSEL M : 5m X 🔲 : Custom R 🔲 : Robot cable (50mm pitch increments) \* See page Pre-35 for an explanation of the naming convention.

# For High Acceleration/Deceleration

(\*1) Except all 20W models and 30W 3mm lead models Technical P. A-5 References When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you The load capacity values are based on 0.3G acceleration for the standard model (0.2G for 3mm-lead), and 1G acceleration for the high-acceleration/deceleration model (3mm-lead excluded). (The values in the table below are the upper limits, even if the acceleration/deceleration is decreased.) The values for the horizontal load capacity assume the use of an external guide, so that there is no exterior form any direction other than the forward/backward direction of the rod. See the technical resources (page A-83) for the allowable weight using the supplied guide alone.

# Actuator Specifications

# ■ Lead and Load Capacity

| Model  | Motor<br>Output (w) | Lead<br>(mm) | Max. Load<br>Horizontal (kg) |     | Rated<br>Thrust (N) | Stroke<br>(mm)    |
|--|---------------------|--------------|------------------------------|-----|---------------------|-------------------|
| RCS2-RGD4C-①-20-12-②-③-④-⑤   |                     | 12           | 3.0                          | 0.5 | 18.9                |                   |
| RCS2-RGD4C-①-20-6-②-③-④-⑤  | 20                  | 6            | 6.0                          | 1.5 | 37.7                |                   |
| RCS2-RGD4C-①-20-3-②-③-④-⑤  |                     | 3            | 12.0                         | 3.5 | 75.4                | 50 ~ 300<br>(50mm |
| RCS2-RGD4C-①-30-12-②-③-④-⑤   |                     | 12           | 4.0                          | 1.0 | 28.3                | increments)       |
| RCS2-RGD4C-①-30-6-②-③-④-⑤  | 30                  | 6            | 9.0                          | 2.5 | 56.6                |                   |
| RCS2-RGD4C-①-30-3-②-③-④-⑤  |                     | 3            | 18.0                         | 6.0 | 113.1               |                   |
| Legend: ①Encoder ②Stroke ③Compatible controller ④Cable length ⑤Options |                     |              |                              |     |                     |                   |

# ■ Stroke and Maximum Speed

| Stroke<br>Lead | $50 \sim 300$ (50mm increments) |
|----------------|---------------------------------|
| 12             | 600                             |
| 6              | 300                             |
| 3              | 150                             |
|                | 41.11 ()                        |

(Unit: mm/s)

# Encoder & Stroke List

|               | Standard Price |                  |          |           |  |  |  |
|---------------|----------------|------------------|----------|-----------|--|--|--|
|               |                | ① Encoder        |          |           |  |  |  |
| 2 Stroke (mm) | Increr         | nental           | Absolute |           |  |  |  |
|               | Motor O        | Motor Output (W) |          | utput (W) |  |  |  |
|               | 20W            | 30W              | 20W      | 30W       |  |  |  |
| 50            | -              | -                | -        | -         |  |  |  |
| 100           | -              | -                | -        | -         |  |  |  |
| 150           | -              | -                | -        | -         |  |  |  |
| 200           | -              | -                | -        | -         |  |  |  |
| 250           | -              | -                | _        | _         |  |  |  |
| 300           | -              | -                | =        | -         |  |  |  |

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
|                 | P (1m)                | -              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | -              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | _              |
|                 | X16 (16m) ~ X20 (20m) | _              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
|                 | R04 (4m) ~ R05 (5m)   | -              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | _              |
|                 | R11 (11m) ~ R15 (15m) | -              |
|                 | R16 (16m) ~ R20 (20m) | _              |

<sup>\*</sup> See page A-39 for cables for maintenance.

### Option List Name **Option Code** See Page Standard Price Brake В → A-25 Foot bracket FT → **A-29** High-acceleration/deceleration (\*1) НΑ → A-32 Home sensor (\*2) HS → A-32 Reversed-home MM → A-33 Trunnion bracket (back) TRR → A-38

(\*2) The home sensor (HS) cannot be used on the reversed-home models.

| Actuator Specifications          |   |  |  |  |  |  |  |
|----------------------------------|---|--|--|--|--|--|--|
| Item                             | Description   |  |  |  |  |  |  |
| Drive System                     | Ball screw ø10mm C10 grade                                  |  |  |  |  |  |  |
| Positioning Repeatability        | ±0.02mm   |  |  |  |  |  |  |
| Lost Motion                      | 0.1mm or less   |  |  |  |  |  |  |
| Guide                            | Double guide (guide rod diameter ø10, Ball bush type)       |  |  |  |  |  |  |
| Rod Diameter                     | ø20mm   |  |  |  |  |  |  |
| Non-rotating accuracy of rod     | ±0.05 deg   |  |  |  |  |  |  |
| Ambient Operating Temp./Humidity | $0\sim40^{\circ}\text{C}$ , 85% RH or less (non-condensing) |  |  |  |  |  |  |

257

<sup>(\*1)</sup> The high-acceleration/deceleration option is not available for all 20W models and 30W model with 3mm lead

Dimensions

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

For Special Orders

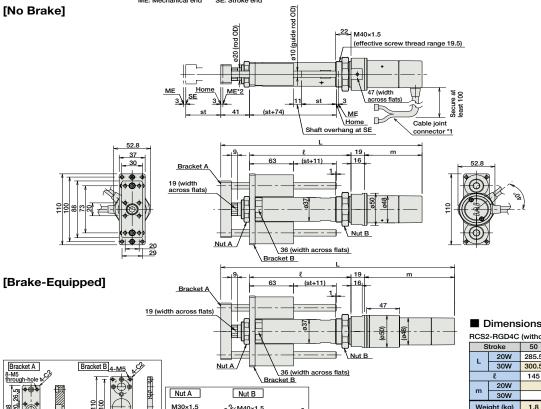






- \*1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.

ME: Mechanical end SE: Stroke end



# ■ Dimensions/Weight by Stroke

| HC52-HGD4C (Without brake) |        |        |   |   |   |                               |   |  |
|----------------------------|--------|--------|---|---|---|-------------------------------|---|--|
| S                          | troke  | 50     | 100   | 150   | 200   | 250                           | 300   |  |
| -                          | 20W    | 285.5  | 335.5   | 385.5   | 435.5   | 485.5                         | 535.5   |  |
| _                          | 30W    | 300.5  | 350.5   | 400.5   | 450.5   | 500.5                         | 550.5   |  |
|                            | l      | 145    | 195   | 245   | 295   | 345                           | 395   |  |
| 3                          | 20W    | 80.5   |   |   |   |                               |   |  |
| m 30W                      |        | 95.5   |   |   |   |                               |   |  |
| Weight (kg)                |        | 1.8    | 2.0   | 2.2   | 2.4   | 2.6                           | 2.8   |  |
|                            | L<br>m | Stroke | Stroke         50           L         20W         285.5           30W         300.5           l         145           m         20W           30W         30W | Stroke         50         100           L         20W         285.5         335.5           30W         300.5         350.5           Ł         145         195           m         20W           30W         30W | 20W 285.5 335.5 385.5 300.5 300.5 350.5 400.5 245 250 30W 30W 500.5 245 30W 500.5 30W | Stroke   50   100   150   200 | Stroke         50         100         150         200         250           L         20W         285.5         335.5         385.5         485.5         485.5           30W         300.5         350.5         400.5         450.5         500.5           ℓ         145         195         245         295         345           m         20W         80.5           30W         95.5 |  |

### BCS2-BGD4C (with brake)

| 11002-110040 (With blake) |           |       |       |       |       |       |       |  |
|---------------------------|-----------|-------|-------|-------|-------|-------|-------|--|
| S                         | troke     | 50    | 100   | 150   | 200   | 250   | 300   |  |
| L                         | 20W       | 328.5 | 378.5 | 428.5 | 478.5 | 528.5 | 578.5 |  |
| _                         | 30W       | 343.5 | 393.5 | 443.5 | 493.5 | 543.5 | 593.5 |  |
|                           | £         | 145   | 195   | 245   | 295   | 345   | 395   |  |
|                           | 20W       | 123.5 |       |       |       |       |       |  |
| m 30W                     |           | 138.5 |       |       |       |       |       |  |
| Wei                       | ight (kg) | 2.0   | 2.2   | 2.4   | 2.6   | 2.8   | 3.0   |  |
|                           |           |       |       |       |       |       |       |  |

# ③ Compatible Controllers

20 30

15

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name                              | External View | Model  | Description   | Max. Positioning Points | Input Voltage                             | Power Supply Capacity                    | Standard Price | See Page       |
|-----------------------------------|---------------|--|---|-------------------------|---|--|----------------|----------------|
| Positioner Mode                   |               |  | Positioning is possible for up to 512 points                                    | 512 points              |   |  |                |                |
| Solenoid Valve Mode               |               | SCON-C-20①-NP-2-③<br>SCON-C-30①①②-NP-2-③             | Operable with the same controls as the solenoid valve.                          | 7 points                |   | Single-Phase AC 200V  * When operating a |                | → <b>P547</b>  |
| Serial Communication<br>Type      |               |  | Dedicated to serial communication   | 64 points               | Single-Phase AC 100V Single-Phase AC 200V |  | -              | → F34/         |
| Pulse Train Input<br>Control Type |               |  | Dedicated to Pulse Train<br>Input   | (-)                     | Three-phase AC 200V<br>(XSEL-P/Q only)    |  |                |                |
| Program Control 1-2<br>Axes Type  |               | SSEL-C-1-20①-NP-2-③<br>SSEL-C-1-300①-②-NP-2-③        | Programmed operation<br>is possible<br>Operation is possible on<br>up to 2 axes | 20000 points            |   |  | -              | → <b>P</b> 577 |
| Program Control 1-6<br>Axes Type  | Pilita        | XSEL-④-1-20①-N1-EEE-2-⑤<br>XSEL-④-1-300①②-N1-EEE-2-⑤ | Programmed operation<br>is possible<br>Operation is possible on<br>up to 6 axes | 20000 points            |   |  | -              | → P587         |

- \* For SSEL and XSEL, only applicable to the single-axis model.
- \* ① is a placeholder for the encoder type (I: incremental / A: absolute).

- ⊕ is a piaceholder for the encoder type (; incrementar /\*\* ansosuler).
   (2) is a placeholder for the code "HA" if the high-acceleration/deceleration option is specified.
   (3) is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V).
   (4) is a placeholder for the XSEL type name ("J", "K", "P", "Q").
   (5) is a placeholder for the your supply voltage (1: 100V, 2: single-phase 200V, or 3: three-phase 200V).

ROBO Cylinder Rod Type with Single Guide ø37mm Diameter 200V Servo Motor RCS2-RGD5C Built-In Model  $\blacksquare$  Configuration: RCS2 - RGD5C Encoder Option N: None
P:1m
S:3m
M:5m
X: Custom
R: R: Robot cable 60 : 60W Servo Motor 100 : 100W Servo Motor I : Incremental A : Absolute 16:16mm 50:50mm T1:XSEL-J/K See Options below 8:8mm T2:SCON 4: 4mm 300:300mm SSEL (50mm pitch XSEL-P/Q increments) \* See page Pre-35 for an explanation of the naming convention.

# For High Acceleration/Deceleration



### Actuator Specifications

# ■ Lead and Load Capacity

| Model  | Motor<br>Output (w) | Lead<br>(mm) | Max. Load<br>Horizontal (kg) | Capacity Vertical (kg) | Rated<br>Thrust (N) | Stroke<br>(mm)    |  |  |
|--|---------------------|--------------|------------------------------|------------------------|---------------------|-------------------|--|--|
| RCS2-RGD5C-①-60-16-②-③-④-⑤   |                     | 16           | 12.0                         | 1.3                    | 63.8                | , ,               |  |  |
| RCS2-RGD5C-①-60-8-②-③-④-⑤  | 60                  | 8            | 25.0                         | 4.3                    | 127.5               |                   |  |  |
| RCS2-RGD5C-①-60-4-②-③-④-⑤  |                     | 4            | 50.0                         | 10.8                   | 255.1               | 50 ~ 300<br>(50mm |  |  |
| RCS2-RGD5C-①-100-16-②-③-④-⑤  |                     | 16           | 15.0                         | 2.8                    | 105.8               | increments)       |  |  |
| RCS2-RGD5C-①-100-8-②-③-④-⑤   | 100                 | 8            | 30.0                         | 8.3                    | 212.7               |                   |  |  |
| RCS2-RGD5C-①-100-4-②-③-④-⑤   |                     | 4            | 60.0                         | 17.3                   | 424.3               |                   |  |  |
| Legend: ①Encoder ②Stroke ③Compatible controller ④Cable length ⑤Options |                     |              |                              |                        |                     |                   |  |  |

# ■ Stroke and Maximum Speed

| Stroke | $50 \sim 250$ (50mm increments) | 300<br>(mm) |
|--------|---------------------------------|-------------|
| 16     | 800                             | 755         |
| 8      | 400                             | 377         |
| 4      | 200                             | 188         |
|        |                                 |             |

(Unit: mm/s)

# Encoder & Stroke List

|               | Standard Price |           |                  |       |  |  |  |
|---------------|----------------|-----------|------------------|-------|--|--|--|
|               | ① Encoder      |           |                  |       |  |  |  |
| 2 Stroke (mm) | Incren         | nental    | Abso             | olute |  |  |  |
|               | Motor O        | utput (W) | Motor Output (W) |       |  |  |  |
|               | 60W            | 100W      | 60W              | 100W  |  |  |  |
| 50            | -              | -         | -                | -     |  |  |  |
| 100           | -              | -         | -                | =     |  |  |  |
| 150           | -              |           |                  | -     |  |  |  |
| 200           | -              | -         | -                | -     |  |  |  |
| 250           | -              | -         | _                | -     |  |  |  |
| 300           |                |           | =                | =     |  |  |  |

| 4 | Cable | List |
|---|-------|------|
|   |       |      |
|   |       |      |

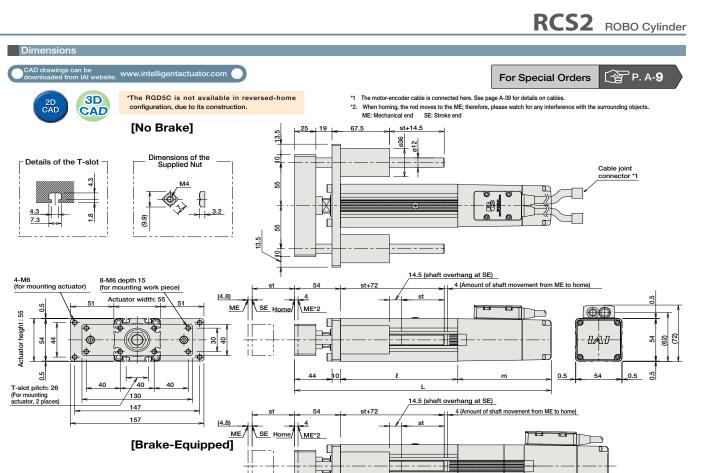
| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
|                 | P (1m)                | _              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | -              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
|                 | R04 (4m) ~ R05 (5m)   | -              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |
|                 | R11 (11m) ~ R15 (15m) | -              |
|                 | R16 (16m) ~ R20 (20m) | _              |

<sup>\*</sup> See page A-39 for cables for maintenance.

### ⑤ Option List See Page Name Option Code Standard Price Connector cable exit direction A2 → A-25 В Brake → A-25 Foot bracket FT → A-29 HA High-acceleration/deceleration (\*1)

(\*1) The high-acceleration/deceleration option is not available for all 60W models and 100W model with 4mm lead.

| Actuator Specifications          |   |  |  |  |  |  |
|----------------------------------|---|--|--|--|--|--|
| Item                             | Description   |  |  |  |  |  |
| Drive System                     | Ball screw ø12mm C10 grade                            |  |  |  |  |  |
| Positioning Repeatability        | ±0.02mm   |  |  |  |  |  |
| Lost Motion                      | 0.1mm or less   |  |  |  |  |  |
| Guide                            | Double guide (guide rod diameter ø12, Ball bush type) |  |  |  |  |  |
| Rod Diameter                     | ø30mm   |  |  |  |  |  |
| Non-rotating accuracy of rod     | ±0.08 deg   |  |  |  |  |  |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing)             |  |  |  |  |  |



## ■ Dimensions/Weight by Stroke

RCS2-RGD5C (without brake)

| S   | troke      | 50  | 100 | 150 | 200 | 250 | 300 |  |  |
|-----|------------|-----|-----|-----|-----|-----|-----|--|--|
|     | 60W        | 284 | 334 | 384 | 434 | 484 | 524 |  |  |
| _   | 100W       | 302 | 352 | 402 | 452 | 502 | 552 |  |  |
|     | £          | 138 | 188 | 238 | 288 | 338 | 388 |  |  |
|     | 60W        | 92  |     |     |     |     |     |  |  |
| m   | 100W       |     | 110 |     |     |     |     |  |  |
| Wei | ght (kg)   | 2.7 | 3.0 | 3.4 | 3.8 | 4.2 | 5.5 |  |  |
| ••• | 9.11 (119) |     | 0.0 | 0   | 0.0 |     | 0.0 |  |  |

### RCS2-RGD5C (with brake)

72.5

| riosz riazos (marziano) |       |       |       |       |       |       |       |  |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|--|
| S                       | troke | 50    | 100   | 150   | 200   | 250   | 300   |  |
| L                       | 60W   | 356.5 | 406.5 | 456.5 | 506.5 | 556.5 | 606.5 |  |
| -                       | 100W  | 374.5 | 424.5 | 474.5 | 524.5 | 574.5 | 624.5 |  |
|                         | £     | 138   | 188   | 238   | 288   | 338   | 388   |  |
|                         | 60W   | 164.5 |       |       |       |       |       |  |
| m 100W                  |       | 182.5 |       |       |       |       |       |  |
| Weight (kg)             |       | 3.0   | 3.3   | 3.7   | 4.1   | 4.5   | 5.8   |  |
|                         |       |       |       |       |       |       |       |  |

# ③ Compatible Controllers

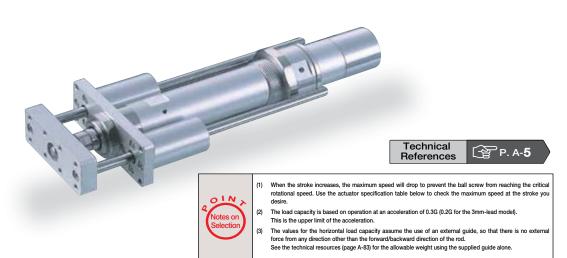
| Name                              | External View | Model  | Description   | Max. Positioning Points                      | Input Voltage                          | Power Supply Capacity                           | Standard Price | See Page |
|-----------------------------------|---------------|--|---|--|--|---|----------------|----------|
| Positioner Mode                   |               |  | Positioning is possible for up to 512 points                                    | 512 points                                   |  |   |                |          |
| Solenoid Valve Mode               |               | SCON-C-60①-NP-2-③  | Operable with the same controls as the solenoid valve.                          | 7 points                                     |  |   |                | → P547   |
| erial Communication<br>Type       |               | SCON-C-100 ① ②-NP-2-③  Dedicated to serial communication | 64 points   | Single-Phase AC 100V<br>Single-Phase AC 200V | 360VA max.                             | -   | → <b>P34</b> 7 |          |
| Pulse Train Input<br>Control Type |               |  | Dedicated to Pulse<br>Train Input   | (-)  | Three-phase AC 200V<br>(XSEL-P/Q only) | * When operating a<br>150W single-axis<br>model |                |          |
| Program Control 1-2<br>Axes Type  |               | SSEL-C-1-60①-NP-2-③<br>SSEL-C-1-100①②-NP-2-③             | Programmed operation<br>is possible<br>Operation is possible on<br>up to 2 axes | 20000 points                                 |  |   | -              | → P577   |
| Program Control 1-6<br>Axes Type  | Pilita        | XSEL-4-1-60 1-N1-EEE-2-5<br>XSEL-4-1-100 1 2-N1-EEE-2-5  | Programmed operation<br>is possible<br>Operation is possible on<br>up to 6 axes | 20000 points                                 |  |   | -              | → P587   |

- For SSEL and XSEL, only applicable to the single-axis model.
  The is a placeholder for the encoder type (I: incremental / A: absolute).
- $^{\star}\, \textcircled{2}$  is a placeholder for the code "HA" if the high-acceleration/deceleration option is specified.
- \*③ is a placeholder for the power supply voltage (f: 100V, 2: single-phase 200V).

  \*④ is a placeholder for the XSEL type name ("J", "K", "P", "Q").

  \*⑤ is a placeholder for the power supply voltage (f: 100V, 2: single-phase 200V, or 3: three-phase 200V).

ROBO Cylinder Rod Type with Double Guide ø37mm Diameter 200V Servo Motor RCS2-RGD4 Built-In Model  $\blacksquare$  Configuration: RCS2 - RGD4D Туре 20 : 20W Servo Motor 30 : 30W Servo Motor I : Incremental A : Absolute N: None 12:12mm 50:50mm T1:XSEL-J/K See Options below N: None
P: 1m
S: 3m
M: 5m
X : Custom
R : Robot cable 6: 6mm T2:SCON 3: 3mm SSEL 300:300mm (50mm pitch XSEL-P/Q increments) \* See page Pre-35 for an explanation of the naming convention.



# Actuator Specifications

# ■ Lead and Load Capacity

| Model   |            | Lead<br>(mm) | Max. Load |     | Rated<br>Thrust (N) | Stroke<br>(mm)    |  |
|---|------------|--------------|-----------|-----|---------------------|-------------------|--|
| RCS2-RGD4D-①-20-12-②-③-④-⑤  | Output (W) | 12           | 3.0       | 0.5 | 18.9                |                   |  |
| RCS2-RGD4D-①-20-6-②-③-④-⑤   | 20         | 6            | 6.0       | 1.5 | 37.7                |                   |  |
| RCS2-RGD4D-①-20-3-②-③-④-⑤   |            | 3            | 12.0      | 3.5 | 75.4                | 50 ~ 300<br>(50mm |  |
| RCS2-RGD4D-①-30-12-②-③-④-⑤  |            | 12           | 4.0       | 1.0 | 28.3                | increments)       |  |
| RCS2-RGD4D-①-30-6-②-③-④-⑤   | 30         | 6            | 9.0       | 2.5 | 56.6                |                   |  |
| RCS2-RGD4D-①-30-3-②-③-④-⑤   |            | 3            | 18.0      | 6.0 | 113.1               |                   |  |
| Legend: 1 Encoder 2 Stroke 3 Compatible controller 4 Cable length 5 Options |            |              |           |     |                     |                   |  |

# ■ Stroke and Maximum Speed

|   | Stroke | $50 \sim 300$ (50mm increments) |
|---|--------|---------------------------------|
|   | 12     | 600                             |
|   | 6      | 300                             |
|   | 3      | 150                             |
| ı |        | 4                               |

(Unit: mm/s)

# Encoder & Stroke List

| Standard Price |           |   |                        |  |  |  |  |
|----------------|-----------|---|------------------------|--|--|--|--|
| ① Encoder      |           |   |                        |  |  |  |  |
| Increr         | nental    | Absolute                                |                        |  |  |  |  |
| Motor O        | utput (W) | Motor Output (W)                        |                        |  |  |  |  |
| 20W            | 30W       | 20W                                     | 30W                    |  |  |  |  |
| -              | -         | -                                       | -                      |  |  |  |  |
| -              | -         | -                                       | -                      |  |  |  |  |
| -              | -         | -                                       | -                      |  |  |  |  |
| -              | -         | -                                       | -                      |  |  |  |  |
| -              | -         | -                                       | -                      |  |  |  |  |
|                |           | -                                       | -                      |  |  |  |  |
|                | Motor O   | ① En<br>Incremental<br>Motor Output (W) | 1 Encoder   Absorption |  |  |  |  |

| O CADIO LIO |           |
|-------------|-----------|
| Туре        | Cable Sym |
|             | P (1m)    |
| a           | 0 (0 )    |

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
|                 | P (1m)                | -              |
| Standard        | <b>S</b> (3m)         | _              |
|                 | <b>M</b> (5m)         | -              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | _              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
|                 | R04 (4m) ~ R05 (5m)   | _              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | _              |
|                 | R11 (11m) ~ R15 (15m) | -              |
|                 | R16 (16m) ~ R20 (20m) | _              |

<sup>\*</sup> See page A-39 for cables for maintenance.

| ⑤ Option List           |             |          |                |
|-------------------------|-------------|----------|----------------|
| Name                    | Option Code | See Page | Standard Price |
| Foot bracket            | FT          | → A-29   | -              |
| Home sensor             | HS          | → A-32   | -              |
| Reversed-home           | NM          | → A-33   | _              |
| Trunnion bracket (back) | TRR         | → A-38   | -              |

 $<sup>^{\</sup>star}$  The home sensor (HS) cannot be used on the reversed-home models.

| Actuator Specifications          |   |  |  |  |  |  |
|----------------------------------|---|--|--|--|--|--|
| Item                             | Description   |  |  |  |  |  |
| Drive System                     | Ball screw ø10mm C10 grade                            |  |  |  |  |  |
| Positioning Repeatability        | ±0.02mm   |  |  |  |  |  |
| Lost Motion                      | 0.1mm or less   |  |  |  |  |  |
| Guide                            | Double guide (guide rod diameter ø10, Ball bush type) |  |  |  |  |  |
| Rod Diameter                     | ø20mm   |  |  |  |  |  |
| Non-rotating accuracy of rod     | ±0.05 deg   |  |  |  |  |  |
| Ambient Operating Temp./Humidity | $0\sim$ 40°C, 85% RH or less (non-condensing)         |  |  |  |  |  |



For Special Orders

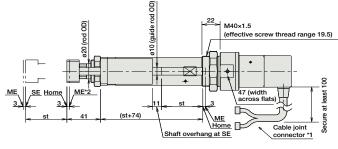


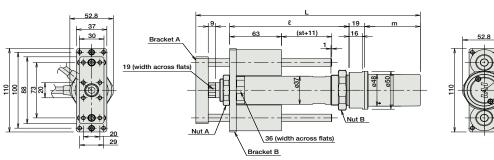


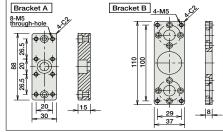
- \*1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.

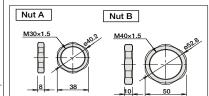
  ME: Mechanical end SE: Stroke end

# [No Brake]









## ■ Dimensions/Weight by Stroke

BCS2-BGD4D (without brake)

| 11032-110D4D (Without brake) |       |       |       |       |       |       |       |  |  |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|--|--|
| S                            | troke | 50    | 100   | 150   | 200   | 250   | 300   |  |  |
| L                            | 20W   | 263.5 | 313.5 | 363.5 | 413.5 | 463.5 | 513.5 |  |  |
| _                            | 30W   | 278.5 | 328.5 | 378.5 | 428.5 | 478.5 | 528.5 |  |  |
|                              | l     | 145   | 195   | 245   | 295   | 345   | 395   |  |  |
| 20W                          |       | 58.5  |       |       |       |       |       |  |  |
| m                            | 30W   | 73.5  |       |       |       |       |       |  |  |
| Weight (kg)                  |       | 1.6   | 1.8   | 2.1   | 2.3   | 2.5   | 2.7   |  |  |
|                              |       |       |       |       |       |       |       |  |  |

RCS2-RGD4D is not available in a brake-equipped configuration.

# ③ Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name                              | External View | Model  | Description   | Max. Positioning Points | Input Voltage                                | Power Supply Capacity                           | Standard Price | See Page       |
|-----------------------------------|---------------|--|---|-------------------------|--|---|----------------|----------------|
| Positioner Mode                   |               |  | Positioning is possible for up to 512 points                                    | 512 points              |  |   |                |                |
| Solenoid Valve Mode               |               | SCON-C-20①-NP-2-②                                      | Operable with the same controls as the solenoid valve.                          | 7 points                |  |   | _              | → <b>P54</b> 7 |
| Serial Communication<br>Type      |               | SCON-C-30D①-NP-2-②                                     | Dedicated to serial communication   | 64 points               | Single-Phase AC 100V<br>Single-Phase AC 200V | 360VA max.                                      |                | → F04/         |
| Pulse Train Input<br>Control Type |               |  | Dedicated to Pulse<br>Train Input   | (-)                     | Three-phase AC 200V<br>(XSEL-P/Q only)       | * When operating a<br>150W single-axis<br>model |                |                |
| Program Control 1-2<br>Axes Type  |               | SSEL-C-1-20①-NP-2-②<br>SSEL-C-1-30D①-NP-2-②            | Programmed operation<br>is possible<br>Operation is possible on<br>up to 2 axes | 20000 points            |  |   | -              | → <b>P</b> 577 |
| Program Control 1-6<br>Axes Type  | Pilita        | XSEL-(③-1-20①-N1-EEE-2-(④) XSEL-(③-1-30D①-N1-EEE-2-(④) | Programmed operation<br>is possible<br>Operation is possible on<br>up to 6 axes | 20000 points            |  |   | -              | → P587         |

- \* For SSEL and XSEL, only applicable to the single-axis model.

  \*① is a placeholder for the encoder type (I: incremental / A: absolute).

  \*② is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V).

  \*③ is a placeholder for the XSEL type rame ("", "", "", "", "", "", "").

  \*④ is a placeholder for the XSEL type rame ("1", "K", "", "", "", "").

RCS2-SRGD7BD

\* See page Pre-35 for an explanation of the naming convention.

ROBO Cylinder Rod Type with Double Guide 75mm Diameter 200V Servo Motor Short-Length Model

lacktriangledown Configuration: RCS2 -SRGD7BD -

Type

Encoder I : Incremental 60 : 60W Servo Motor

100 : 100W Servo Motor 150 : 150W Servo Motor

16 :16mm 8 : 8mm 4: 4mm

50:50mm 300 : 300mm (50mm pitch

increments)

T1: XSEL-J/K T2:SCON SSEL

N: None

Cable Length Option See Options below

M : 5m X 🔲 : Custom R 🔲 : Robot cable

**Technical** References





- When operated at the rated acceleration, the maximum load capacity is the load capacity at the rated acceleration.
- (2) When operated at the maximum acceleration, the maximum load capacity is the load capacity at the maximum acceleration. The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod.

See the technical resources (page A-83) for the allowable weight using the supplied guide alone.

# Actuator Specifications

## ■ Lead and Load Capacity

| Model                              |     | Rated<br>Acceleration | Load Capacity at Rated Acceleration Horizontal |      | Max.<br>Acceleration | Load Capacity at Max. Acceleration Horizontal (kg) Vertical (kg) |      | Rated Thrust  | Stroke |             |
|------------------------------------|-----|-----------------------|--|------|----------------------|--|------|---------------|--------|-------------|
|                                    | (W) | ()                    | (G)  | (kg) | Vertical (kg)        | (G)  | (kg) | Vertical (kg) | (-)    | (11111)     |
| RCS2-SRGD7BD-I-60-16-①-②-③-④       |     | 16                    | 0.25   | 5    | 1                    | 0.35   | 2.5  | (N/A)         | 63     |             |
| RCS2-SRGD7BD-I-60-8-①-②-③-④        | 60  | 8                     | 0.15   | 10   | 4                    | 0.25   | 5    | 1.5           | 127    |             |
| RCS2-SRGD7BD-I-60-4-1 - 2 - 3 - 4  |     | 4                     | 0.05   | 20   | 9                    | 0.15   | 10   | 4             | 254    |             |
| RCS2-SRGD7BD-I-100-16-①-②-③-④      |     | 16                    | 0.3  | 10   | 2.5                  | 0.4  | 5    | 0.5           | 103    | 50~300      |
| RCS2-SRGD7BD-I-100-8-①-②-③-④       | 100 | 8                     | 0.2  | 22   | 8                    | 0.3  | 10   | 3.5           | 207    | (50mm       |
| RCS2-SRGD7BD-I-100-4-1 - 2 - 3 - 4 |     | 4                     | 0.1  | 40   | 18.5                 | 0.2  | 20   | 8             | 414    | increments) |
| RCS2-SRGD7BD-I-150-16-①-②-③-④      |     | 16                    | 0.3  | 15   | 5.5                  | 0.4  | 7.5  | 2             | 157    |             |
| RCS2-SRGD7BD-I-150-8-①-②-③-④       | 150 | 8                     | 0.2  | 35   | 13.5                 | 0.3  | 17.5 | 6             | 314    |             |
| RCS2-SRGD7BD-I-150-4-①-②-③-④       |     | 4                     | 0.1  | 55   | 21.5                 | 0.2  | 27.5 | 10            | 628    |             |
|                                    |     | J                     |  |      |                      |  |      |               |        |             |

■ Stroke and Maximum Speed

| Stroke | $50 \sim 300$ (50mm increments) |
|--------|---------------------------------|
| 16     | 800                             |
| 8      | 400                             |
| 4      | 200                             |
|        |                                 |

(Unit: mm/s)

① Stroke List

| © Stroke List |   |   |   |  |  |  |
|---------------|---|---|---|--|--|--|
|               | Standard Price   Motor Output (W)   60W   100W   150W |   |   |  |  |  |
| Stroke (mm)   |   |   |   |  |  |  |
|               |   |   |   |  |  |  |
| 50            | -   | - | - |  |  |  |
| 100           | -   | - | ı |  |  |  |
| 150           | _   | _ | _ |  |  |  |
| 200           | _   | - | = |  |  |  |
| 250           | -   |   |   |  |  |  |
| 300           | -   | ı | ı |  |  |  |

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

# ③ Cable List

| Туре            | Cable              | Standard Price |   |
|-----------------|--------------------|----------------|---|
|                 | P (1m)             |                | - |
| Standard        | <b>S</b> (3m)      |                | - |
|                 | <b>M</b> (5m)      |                | - |
| Special Lengths | <b>X06</b> (6m) ~  | X10 (10m)      | - |
|                 | <b>X11</b> (11m) ~ | X15 (15m)      | - |
|                 | <b>X16</b> (16m) ~ | X20 (20m)      | - |
|                 | R01 (1m) $\sim$    | R03 (3m)       | - |
|                 | R04 (4m) ~         | R05 (5m)       | - |
| Robot Cable     | <b>R06</b> (6m) ~  | R10 (10m)      | - |
|                 | R11 (11m) $\sim$   | R15 (15m)      | - |
|                 | R16 (16m) $\sim$   | R20 (20m)      | _ |

<sup>\*</sup> See page A-39 for cables for maintenance.

# 4 Option List

| Name                           | Option Code  | See Page | Standard Price |
|--------------------------------|--------------|----------|----------------|
| Connector cable exit direction | A1 $\sim$ A3 | → A-25   | -              |
| Brake                          | В            | → A-25   | -              |
| Foot bracket                   | FT           | → A-29   | _              |

### Actuator Specifications

| Item                             | Description   |  |  |  |  |
|----------------------------------|---|--|--|--|--|
| Drive System                     | Ball screw ø12mm C10 grade                            |  |  |  |  |
| Positioning Repeatability        | ±0.02mm   |  |  |  |  |
| Lost Motion                      | 0.1mm or less   |  |  |  |  |
| Guide                            | Double guide (guide rod diameter ø16, Ball bush type) |  |  |  |  |
| Rod Diameter                     | ø35mm   |  |  |  |  |
| Non-rotating accuracy of rod     | ±0.08 deg   |  |  |  |  |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing)             |  |  |  |  |

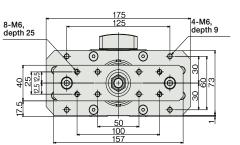
CAD drawings can be downloaded from IAI website. www.intelligentactuator.com

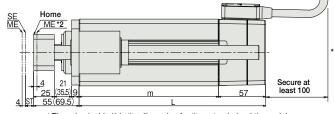
For Special Orders





\*The SRGD7BD is not available in reversed-home configuration, due to its construction.





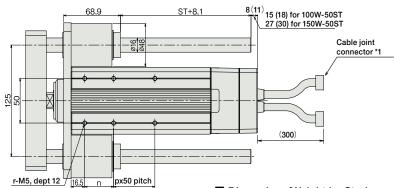
\* The value inside () is the dimension for the extended rod tip model.

For brake-equipped model, see standard type (see P242)

### Note:

A slit is provided in the side of the actuator body to prevent pauses due to forward/backward operation. Please make a separate request for a dustproof/splash-proof model.

- \*1: The motor-encoder cable is connected here. See page A-39 for details on cables.
- When homing, the rod moves to the mechanical end position; therefore, please watch for any interference with the surrounding objects.
  - ST: Stroke
  - SE: Stroke end
  - ME: Mechanical end



■ Dimensions/Weight by Stroke

| Billiensions, weight by otione |      |     |     |     |     |     |     |  |
|--------------------------------|------|-----|-----|-----|-----|-----|-----|--|
| Stroke                         |      | 50  | 100 | 150 | 200 | 250 | 300 |  |
|                                | 60W  | 126 | 176 | 226 | 276 | 326 | 376 |  |
| L                              | 100W | 133 | 176 | 226 | 276 | 326 | 376 |  |
|                                | 150W | 145 | 176 | 226 | 276 | 326 | 376 |  |
|                                | 60W  | 69  | 119 | 169 | 219 | 269 | 319 |  |
| m                              | 100W | 76  | 119 | 169 | 219 | 269 | 319 |  |
|                                | 150W | 88  | 119 | 169 | 219 | 269 | 319 |  |
|                                | n    | 25  | 35  | 35  | 35  | 35  | 35  |  |
|                                | p    | 0   | 0   | 1   | 2   | 3   | 4   |  |
|                                | r    | 4   | 4   | 6   | 8   | 10  | 12  |  |
| Weight                         | 60W  | 4.3 | 5   | 5.7 | 6.4 | 7.2 | 7.9 |  |
| (kg)                           | 100W | 4.5 | 5.1 | 5.9 | 6.6 | 7.3 | 8   |  |
| (kg)                           | 150W | 4.8 | 5.3 | 6.1 | 6.8 | 7.5 | 8.2 |  |
|                                |      |     |     |     |     |     |     |  |

# ② Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

| Name                              | External View | Model   | Description   | Max. Positioning Points | Input Voltage                                | Power Supply Capacity | Standard Price | See Page       |
|-----------------------------------|---------------|---|---|-------------------------|--|-----------------------|----------------|----------------|
| Positioner Mode                   |               | Positioning is possible for up to 512 points 512 points |   |                         |  |                       |                |                |
| Solenoid Valve Mode               |               | SCON-C-(1)I-NP-2-(2)                                    | Operable with the same controls as the solenoid valve.                          | 7 points                |  | 360VA max.            |                | → <b>P</b> 547 |
| Serial Communication<br>Type      |               | SCON-C-DINP-2-2   | Dedicated to serial communication   | 64 points               | Single-Phase AC 100V<br>Single-Phase AC 200V |                       | -              | → ₽347         |
| Pulse Train Input<br>Control Type |               |   | Dedicated to Pulse<br>Train Input   | (-)                     |  |                       |                |                |
| Program Control 1-2<br>Axes Type  |               | SSEL-C-1-①I-NP-2-②                                      | Programmed operation<br>is possible<br>Operation is possible on<br>up to 2 axes | 20000 points            |  |                       | -              | → <b>P577</b>  |
| Program Control 1-6<br>Axes Type  | Mira          | XSEL-③-1-①I-N1-EEE-2-④                                  | Programmed operation<br>is possible<br>Operation is possible on<br>up to 6 axes | 20000 points            |  |                       | -              | → <b>P587</b>  |

Note: The SRGD7BD type actuator cannot be connected to the 5th and 6th axis of the XSEL-P/Q controller.

- \* For SSEL and XSEL, only applicable to the single

- \*\*\text{\$\text{0}\$ is a placeholder for the motor output (W) (60, 100, 150).

  \*\*\text{\$\text{2}\$ is a placeholder for the motor output (W) (60, 100, 150).

  \*\*\text{\$\text{2}\$ is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V).

  \*\*\text{\$\text{3}\$ is a placeholder for the XSEL type name ("J", "K", "P", or "Q").

  \*\*\text{\$\text{4}\$ is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V, or 3: three-phase 200V).

ROBO Cylinder Rod Type with Double Guide ø37mm Diameter 200V Servo Motor Side-Mounted Motor  $\blacksquare$  Configuration: RCS2 - RGD4R -Encoder Cable Length Option 20 : 20W Servo Motor 30 : 30W Servo Motor N: None P:1m S:3m M:5m I : Incremental A : Absolute 12:12mm 50:50mm T1:XSEL-J/K See Options below 6: 6mm T2:SCON 3: 3mm 300:300mm SSEL (50mm pitch X . : Custom R . : Robot cable increments) \* See page Pre-35 for an explanation of the naming convention.

> When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the the stroke you desire. This is the upper limit of the acceleration.

# critical rotational speed. Use the actuator specification table below to check the maximum speed at The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model).

The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod. See the technical resources (page A-83) for the allowable weight using the supplied guide alone.

# Actuator Specifications

# ■ Lead and Load Capacity

| Model  | Motor<br>Output (w) | Lead<br>(mm) | Max. Load |     | Rated<br>Thrust (N) | Stroke<br>(mm)       |
|--|---------------------|--------------|-----------|-----|---------------------|----------------------|
| RCS2-RGD4R-①-20-12-②-③-④-⑤                         |                     | 12           | 3.0       | 0.5 | 18.9                | , ,                  |
| RCS2-RGD4R-①-20-6-②-③-④-⑤                          | 20                  | 6            | 6.0       | 1.5 | 37.7                |                      |
| RCS2-RGD4R-① -20-3-②-③-④-⑤                         |                     | 3            | 12.0      | 3.5 | 75.4                | 50~300               |
| RCS2-RGD4R-①-30-12-②-③-④-⑤                         |                     | 12           | 4.0       | 1.0 | 28.3                | (50mm<br>increments) |
| RCS2-RGD4R-①-30-6-②-③-④-⑤                          | 30                  | 6            | 9.0       | 2.5 | 56.6                |                      |
| RCS2-RGD4R-①-30-3-②-③-④-⑤                          |                     | 3            | 18.0      | 6.0 | 113.1               |                      |
| Legend: ① Encoder ② Stroke ③ Compatible controller | 4 Cable le          | ngth 5       | Options   |     |                     |                      |

# ■ Stroke and Maximum Speed

Technical

References

| Stroke | $50 \sim 300$ (50mm increments) |
|--------|---------------------------------|
| 12     | 600                             |
| 6      | 300                             |
| 3      | 150                             |
|        |                                 |

(Unit: mm/s)

P. A-5

# Encoder & Stroke List

| Standard Price |           |   |                          |  |
|----------------|-----------|---|--------------------------|--|
|                | ① En      | coder                                     |                          |  |
| Incremental    |           | Abso                                      | olute                    |  |
| Motor O        | utput (W) | Motor Output (W)                          |                          |  |
| 20W            |           | 20W                                       | 30W                      |  |
| -              | -         | -   | -                        |  |
| -              | -         | -   | -                        |  |
| -              | -         | -   | -                        |  |
| -              | -         | -   | -                        |  |
|                |           | _   | _                        |  |
| -              | -         | =   | -                        |  |
|                | Motor O   | 1 En Incremental Motor Output (W) 20W 30W | 1   Encoder   Absorption |  |

| Туре            | Cable Symbol          | Standard Price |
|-----------------|-----------------------|----------------|
|                 | P (1m)                | _              |
| Standard        | <b>S</b> (3m)         | -              |
|                 | <b>M</b> (5m)         | -              |
|                 | X06 (6m) ~ X10 (10m)  | -              |
| Special Lengths | X11 (11m) ~ X15 (15m) | -              |
|                 | X16 (16m) ~ X20 (20m) | -              |
|                 | R01 (1m) ~ R03 (3m)   | -              |
|                 | R04 (4m) ~ R05 (5m)   | -              |
| Robot Cable     | R06 (6m) ~ R10 (10m)  | -              |
|                 | R11 (11m) ~ R15 (15m) | _              |
|                 | R16 (16m) ~ R20 (20m) | _              |

<sup>\*</sup> See page A-39 for cables for maintenance.

### ⑤ Option List See Page Name **Option Code** Standard Price Brake В → A-25 Foot bracket FT → A-29 Flange bracket (back) FLR → A-28 Home sensor HS → A-32 Reversed-home NM → A-33 Clevis Bracket QR → A-34 Back-mounting plate RP → A-35

| Actuator Specifications          |  |
|----------------------------------|--|
| Item                             | Description                                |
| Drive System                     | Ball screw ø10mm C10 grade                 |
| Positioning Repeatability        | ±0.02mm                                    |
| Lost Motion                      | 0.1mm or less                              |
| Base                             | Material: Aluminum (white alumite treated) |
| Rod Diameter                     | ø20mm                                      |
| Non-rotating accuracy of rod     | ±1.0 deg                                   |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non-condensing)    |

RCS2-RGD4R

For Special Orders



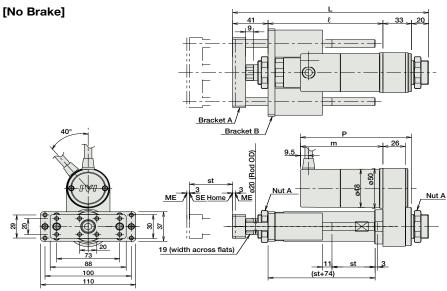


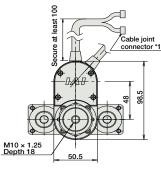
[Brake-Equipped]



- \*1. The motor-encoder cable is connected here. See page A-39 for details on cables.
  - When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects. ME: Mechanical end SE: Stroke end

\*3. The orientation of the bolt will vary depending on the product.





# ■ Dimensions/Weight by Stroke

RCS2-RGD4R (without brake)

| Stroke              |     | 50        | 100 | 150 | 200 | 250 | 300 |
|---------------------|-----|-----------|-----|-----|-----|-----|-----|
| L                   | 20W | 227       | 277 | 327 | 377 | 427 | 477 |
| -                   | 30W | 227       | 277 | 327 | 377 | 427 | 477 |
| Ł                   |     | 133       | 188 | 233 | 288 | 333 | 383 |
| m 20W<br>30W        |     | 80.5      |     |     |     |     |     |
|                     |     | 95.5      |     |     |     |     |     |
| Р                   | 20W |           |     | 113 | 3.5 |     |     |
| -                   | 30W | 30W 128.5 |     |     |     |     |     |
| Weight (kg) 1.9 2.2 |     |           | 2.2 | 2.3 | 2.6 | 2.7 | 3.0 |
|                     |     | ,         |     |     |     |     |     |

| RCS2-RGD4R (with brake) |        |    |    |  |  |  |
|-------------------------|--------|----|----|--|--|--|
|                         | Stroke | 50 | 10 |  |  |  |
|                         |        |    |    |  |  |  |

| S           | troke | 50    | 100 | 150   | 200  | 250 | 300 |  |
|-------------|-------|-------|-----|-------|--|-----|-----|--|
| L           | 20W   | 227   | 277 | 327   | 377  | 427 | 477 |  |
| _           | 30W   | 227   | 277 | 327   | 377  | 427 | 477 |  |
|             | l     | 133   | 188 | 233   | 288  | 333 | 383 |  |
|             | 20W   |       |     | 123.5 |  |     |     |  |
| ""          | 30W   |       |     | 13    | 27 377 427<br>27 377 427<br>33 288 333<br>123.5<br>138.5<br>156.5<br>171.5 |     |     |  |
| В           | 20W   | 156.5 |     |       |  |     |     |  |
| m -         | 30W   | 171.5 |     |       |  |     |     |  |
| Weight (kg) |       | 2.1   | 2.4 | 2.5   | 2.8  | 2.9 | 3.2 |  |
|             |       |       |     |       |  |     |     |  |

# Bracket A Bracket B 8-M5 through-hole ME SE Home 8 19 (width across flats)

| ③ Compatible Controllers |  |  |
|--------------------------|--|--|
| © Compatible Controllers |  |  |

9.5

3 ME

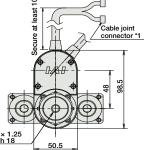
| Name                              | External View | Model   | Description   | Max. Positioning Points              | Input Voltage                             | Power Supply Capacity                               | Standard Price | See Page       |
|-----------------------------------|---------------|---|---|--------------------------------------|---|---|----------------|----------------|
| Positioner Mode                   |               |   | Positioning is possible for up to 512 points                                    | 512 points                           |   | 360VA max.  Single-Phase AC 200V  *When operating a |                |                |
| Solenoid Valve Mode               |               |   | Operable with the same controls as the solenoid valve.                          | 7 points                             |   |   |                | → <b>P</b> 547 |
| Serial Communication<br>Type      |               |   | Dedicated to serial communication   | 64 points                            | Single-Phase AC 100V Single-Phase AC 200V |   | -              | → <b>P</b> 54/ |
| Pulse Train Input<br>Control Type |               |   | Dedicated to Pulse<br>Train Input   | (-)                                  | Three-phase AC 200V<br>(XSEL-P/Q only)    |   |                |                |
| Program Control 1-2<br>Axes Type  |               | SSEL-C-1-20①-NP-2-②<br>SSEL-C-1-30D①-NP-2-②           | Programmed operation<br>is possible<br>Operation is possible on<br>up to 2 axes | 20000 points                         |   |   | -              | → P577         |
| Program Control 1-6<br>Axes Type  | Pilita        | XSEL-(③-1-20①-N1-EEE-2-④<br>XSEL-(③-1-30D①-N1-EEE-2-④ | Programmed operation<br>is possible<br>Operation is possible on<br>up to 6 axes | is possible Departion is possible on | 0 points                                  |   | -              | → P587         |

ø20

Nut A

848

(st+74)



\* For SSEL and XSEL, only applicable to the single-axis model.

\*① is a placeholder for the encoder type (I: incremental / A: absolute).

\*② is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V).

\*③ is a placeholder for the XSEL type name ("", ""K", "P", "O").

\*④ is a placeholder for the SSEL type name ("", ""K", "P", "O").