

# ERC3-SA5C

● Slider type ● Actuator Width 50mm

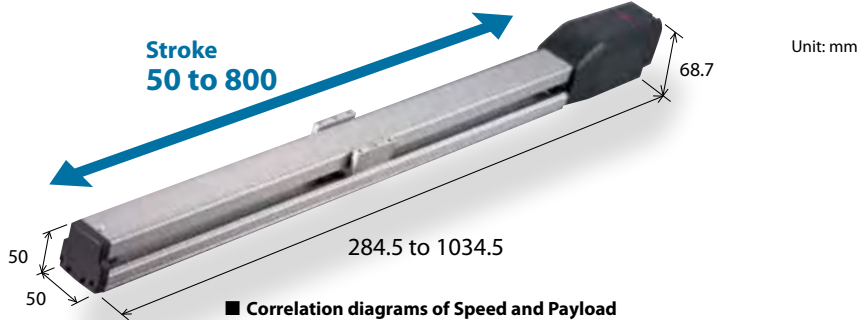
Model Specification Items

**ERC3-SA5C-I-42P**

Series — Type — Encoder type — Motor type — Lead — Stroke — I/O type — Cable length — Controller type — Option

I: Incremental specification  
 42P: Pulse motor, size 42□  
 20: 20mm  
 12: 12mm  
 6: 6mm  
 3: 3mm  
 50: 50mm  
 }  
 800: 800mm  
 (Can be set in 50-mm increments)  
 NP: PIO (NPN) type  
 PN: PIO (PNP) type  
 SE: SIO type  
 PLN: Pulse-train (NPN) type  
 PLP: Pulse-train (PNP) type  
 N: None P: 1m  
 S: 3 m M: 5m  
 X□□: Specified length  
 CN: CON type  
 MC: MEC type  
 B : Brake  
 NM : Non-motor side specification  
 ABU: Simple absolute specification

\*Refer to P. 14 for the description of items constituting the model number.

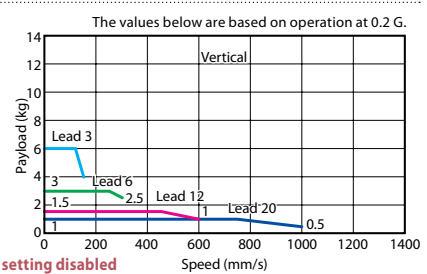
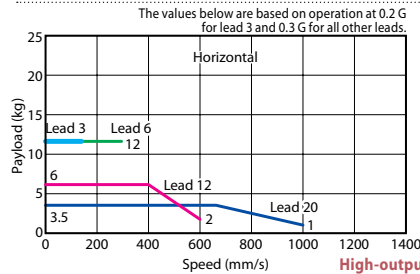
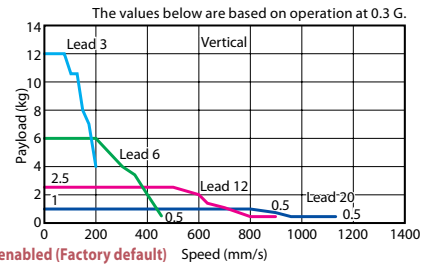
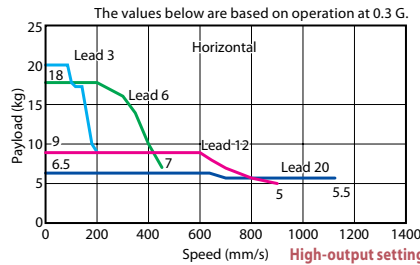


### Correlation diagrams of Speed and Payload

With the ERC3 series, due to the characteristics of the pulse motor, payload decreases as the speed increases. Use the chart below to confirm that the desired speed and payload requirements are met.

### POINT Notes on selection

If the high-output setting is enabled (factory default), the duty must be limited. (Refer to P. 16.) If the high-output setting is disabled, the payload and maximum speed become lower, but the actuator can be used at a duty of 100%. Refer to the operation manual for information on how to change the high-output setting. Refer to P. 26 for the payload at each speed/acceleration when the high-output setting is enabled. For other cautionary items, refer to "Explanations of/Cautionary Notes on Items Specified in Catalog (P. 15)."



### Actuator Specifications (High-output Setting Enabled)

#### Leads and Payloads

(Note 1) Take caution that the maximum payload decreases as the speed increases.

| Model number               | Lead (mm) | Maximum payload (Note 1) |               | Stroke (mm)          |
|----------------------------|-----------|--------------------------|---------------|----------------------|
|                            |           | Horizontal (kg)          | Vertical (kg) |                      |
| ERC3-SA5C-I-42P-20-①-②-③-④ | 20        | 6.5                      | 1             | 50~800 (every 50 mm) |
| ERC3-SA5C-I-42P-12-①-②-③-④ | 12        | 9                        | 2.5           |                      |
| ERC3-SA5C-I-42P-6-①-②-③-④  | 6         | 18                       | 6             |                      |
| ERC3-SA5C-I-42P-3-①-②-③-④  | 3         | 20                       | 12            |                      |

Legend ① Stroke ② I/O type ③ Cable length ④ Option

#### Stroke and Maximum Speed

| Stroke / Lead | 50~450 (every 50mm) | 500 (mm) | 550 (mm) | 600 (mm) | 650 (mm) | 700 (mm) | 750 (mm) | 800 (mm) |
|---------------|---------------------|----------|----------|----------|----------|----------|----------|----------|
| 20            | 1120                | 1115     | 935      | 795      | 680      | 585      | 510      |          |
| 12            | 900                 | 805      | 665      | 560      | 475      | 405      | 350      | 300      |
| 6             | 450                 | 400      | 330      | 280      | 235      | 200      | 175      | 150      |
| 3             | 225                 | 200      | 165      | 140      | 115      | 100      | 85       | 75       |

(Unit: mm/s)

#### ① Stroke

| Stroke (mm) | Standard price | Stroke (mm) | Standard price |
|-------------|----------------|-------------|----------------|
| 50          | —              | 450         | —              |
| 100         | —              | 500         | —              |
| 150         | —              | 550         | —              |
| 200         | —              | 600         | —              |
| 250         | —              | 650         | —              |
| 300         | —              | 700         | —              |
| 350         | —              | 750         | —              |
| 400         | —              | 800         | —              |

#### ③ Cable length

| Type                        | Cable symbol     | Standard price |          |
|-----------------------------|------------------|----------------|----------|
|                             |                  | PIO type       | SIO type |
| Standard type (Robot cable) | P (1m)           | —              | —        |
|                             | S (3m)           | —              | —        |
|                             | M (5m)           | —              | —        |
| Special length              | X06(6m)~X10(10m) | —              | —        |

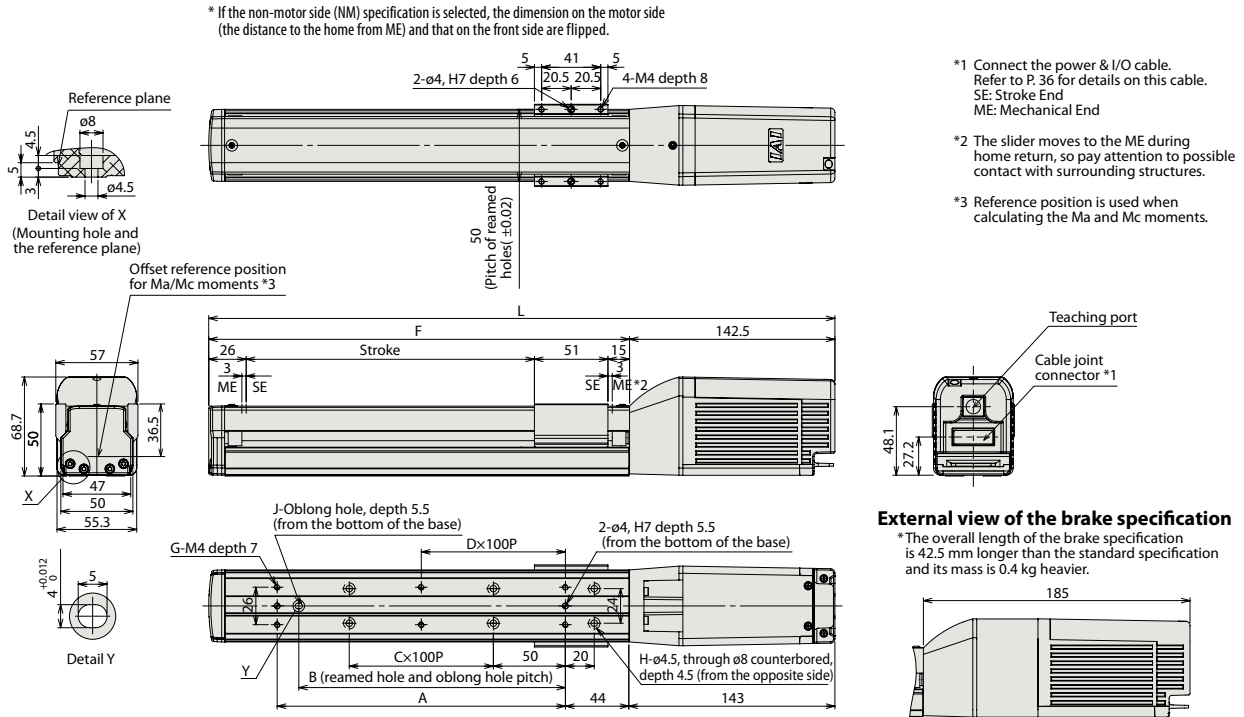
\*Refer to P. 36 for maintenance cables.

#### ④ Options

| Name                          | Option code | See page | Standard price |
|-------------------------------|-------------|----------|----------------|
| Brake                         | B           | →P15     | —              |
| Non-motor side specification  | NM          | →P15     | —              |
| Simple absolute specification | ABU         | →P15     | — (*)          |

(\*) If the simple absolute specification is selected, the separately sold PIO converter of simple absolute specification (with battery) is required.

Dimensional Drawings

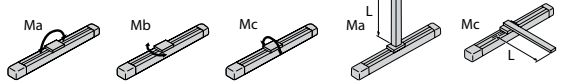


Actuator specification

| Item                                    | Description   |
|---|---|
| Drive system                            | Ball screw $\phi 10$ mm, rolled C10                                     |
| Positioning repeatability (*1)          | $\pm 0.02$ mm [ $\pm 0.03$ mm]  |
| Lost motion                             | 0.1 mm or less  |
| Static allowable load moment            | Ma: 29.4 N-m, Mb: 42.0 N-m, Mc: 60.5 N-m                                |
| Dynamic allowable load moment (*2)      | Ma: 7.1 N-m, Mb: 10.2 N-m, Mc: 14.7 N-m                                 |
| Overhang load lengths                   | 150 mm or less in Ma directions, 150 mm or less in Mb and Mc directions |
| Ambient operating temperature, humidity | 0 to 40°C, 85% RH or less (Non-condensing)                              |

(\*1) The specification in [ ] applies when the lead is 20 mm.  
 (\*2) Based on 5,000 km of traveling life

Allowable load moment directions



Dimensions and Mass by Stroke

| Stroke    | 50    | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650   | 700   | 750   | 800    |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| L         | 284.5 | 334.5 | 384.5 | 434.5 | 484.5 | 534.5 | 584.5 | 634.5 | 684.5 | 734.5 | 784.5 | 834.5 | 884.5 | 934.5 | 984.5 | 1034.5 |
| A         | 73    | 100   | 100   | 200   | 200   | 300   | 300   | 400   | 400   | 500   | 500   | 600   | 600   | 700   | 700   | 800    |
| B         | 0     | 85    | 85    | 185   | 185   | 285   | 285   | 385   | 385   | 485   | 485   | 585   | 585   | 685   | 685   | 785    |
| C         | 0     | 0     | 1     | 1     | 2     | 2     | 3     | 3     | 4     | 4     | 5     | 5     | 6     | 6     | 7     | 7      |
| D         | 0     | 0     | 0     | 1     | 1     | 2     | 2     | 3     | 3     | 4     | 4     | 5     | 5     | 6     | 6     | 7      |
| F         | 142   | 192   | 242   | 292   | 342   | 392   | 442   | 492   | 542   | 592   | 642   | 692   | 742   | 792   | 842   | 892    |
| G         | 4     | 4     | 4     | 6     | 6     | 8     | 8     | 10    | 10    | 12    | 12    | 14    | 14    | 16    | 16    | 18     |
| H         | 4     | 4     | 6     | 6     | 8     | 8     | 10    | 10    | 12    | 12    | 14    | 14    | 16    | 16    | 18    | 18     |
| J         | 0     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1      |
| Mass (kg) | 1.4   | 1.5   | 1.6   | 1.7   | 1.9   | 2.0   | 2.1   | 2.2   | 2.3   | 2.4   | 2.5   | 2.7   | 2.8   | 2.9   | 3.0   | 3.1    |

Controllers (Built into the Actuator)

I/O type

With the ERC3 series, one of the following five types of built-in controllers can be selected depending on the external input/output (I/O) type. Select the type that meets your purpose.

| Name                                 | External view | Model number                | Features  | Maximum number of positioning points | Input power | Power supply capacity   | Standard price | Reference page |
|--------------------------------------|---------------|-----------------------------|---|--------------------------------------|-------------|---|----------------|----------------|
| PIO type (NPN specification)         |               | ERC3-SA5C-I-42P-□-□-NP-□-□  | Simple control type accommodating up to 16 positioning points                         | 16                                   | DC24V       | High-output setting enabled: 3.5A rated 4.2A max.<br>High-output setting disabled: 2A | —              | →P27           |
| PIO type (PNP specification)         |               | ERC3-SA5C-I-42P-□-□-PN-□-□  | PNP I/O type  | 16                                   |             |   |                |                |
| SIO type                             |               | ERC3-SA5C-I-42P-□-□-SE-□-□  | High-function type accommodating up to 512 positioning points (PIO converter is used) | 512                                  |             |   |                |                |
| Pulse-train type (NPN specification) |               | ERC3-SA5C-I-42P-□-□-PLN-□-□ | Pulse-train input type supporting the NPN specification                               | —                                    |             |   |                |                |
| Pulse-train type (PNP specification) |               | ERC3-SA5C-I-42P-□-□-PLP-□-□ | Pulse-train input type supporting the PNP specification                               | —                                    |             |   |                |                |