The SHA series comprises AC servo actuators that integrate a thin speed reducer HarmonicDrive® for precision control and a super flat AC servo motor. The SHA series features an unmatched compact hollow body. Entire machine and equipment structures can be simplified by passing wires, pipes and laser beams through a hole in the center of the actuator. Additionally, output shaft bearing, speed reducer, motor winding and others can be selected. The SHA series features wider variation that can meet various needs. Combination with the compact and multi-functional dedicated driver HA-800 controls the motions of the SHA series with high levels of accuracy and precision.

**Features**

- Hollow structure (maximum hollow opening diameter φ65mm), flat structure (maximum outside diameter φ284mm, total length 222mm)
  * Both in SHA65
- Torque cubic volume ratio more than 5 times of direct drive motor is achieved. * According to the technical information of HarmonicDrive®.
- Torque from 26Nm to 3419Nm is set as series.
- Shaft bearing, speed reducer, and motor winding specifications can be selected to “meet various needs”
- 17bit magnetic type absolute encoder is mounted as standard (conforming to Nicon A format)
- By combining with hollow planetary reducer for precision control of “Harmonic Planetary®” HPF series, high-speed revolution is available. (Model No. 25 and 32)
- By using dedicated drivers, control with MECHATROLINK-II or CC-Link becomes available.
- Motor itself can be sold as well.

**Structure**

- **Reducer model**
  - Standard
    - High torque Harmonic Drive® SHG series
    - High-speed Harmonic Planetary® HPF series (Model No. 25 and 32)
  - Variation
    - Changeable reducer model
      - Flat Harmonic Drive® (SHD series)
      - Planetary gear reducer (HPG series)
    - Reduction ratio: selectable between 1/11 and 1/161

- **Cable lead-out**
  - Standard
    - Rear lead-out (Connector used in models 58 and 65)
  - Variation
    - Side lead-out is available. (Models 25, 32, and 40)

- **Encoder**
  - Standard
    - Magnetic type absolute encoder (17bit)
  - Variation
    - Multi revolution backup (16bit) (conforming to Nicon A format)

- **Holding brake**
  - Standard
    - Without brake
  - Variation
    - With brake (can be mounted without changing dimensions.)

- **AC Servo motor**
  - Standard
    - Supported power voltage specification: AC 200V (SHA25 is AC100V spec and 200V spec.)
  - Variation
    - Supported power voltage specification: AC100V, DC48V to 90V (Inquire at Harmonic drive’s sales office for the supported model.)

- **Environment specification**
  - Standard
    - Protection code: IP54
    - Operating temperature: 0°C to +40°C
    - UL and CE markings
    - Compliance with RoHS directive
  - Variation
    - Can be compatible with IP65 of protection code.
Example of System Configuration

Basic configuration of SHA actuator, HA-800 driver, and relay cable are illustrated.

Versatile I/O command type    System configuration

Notes:
Starred ( * ) items are to be supplied by the customer.
* See the technical information for the details of configuration related to power supply.
SHA Series

Models and Symbols

AC servo actuator

<table>
<thead>
<tr>
<th>Example of standard item model</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
<th>(9)</th>
<th>(10)</th>
<th>(11)</th>
<th>(12)</th>
<th>(13)</th>
<th>(14)</th>
<th>(15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHA 32 A 101 SG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Type: AC servo actuator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHA series</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Model Nos.: 20, 25, 32, 40, 58, 65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Version symbol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Reduction ratio 1/11 is set by combination with hollow planetary reducer HPF series. The Applicable Model Nos. for the ratio are 25 and 32, and the ratio is available in case of AC200V only.

<table>
<thead>
<tr>
<th>Item</th>
<th>Model</th>
<th>SHA20A</th>
<th>SHA25A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>51</td>
<td>81</td>
</tr>
<tr>
<td>Maximum Torque *2</td>
<td>Nm</td>
<td>73</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>kgf·m</td>
<td>7.4</td>
<td>9.8</td>
</tr>
<tr>
<td>Max. Rotational Speed</td>
<td>n/min</td>
<td>117.6</td>
<td>74.1</td>
</tr>
<tr>
<td>Torque Constant</td>
<td>Nm/A</td>
<td>16.5</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>kgf·m/A</td>
<td>1.7</td>
<td>2.7</td>
</tr>
<tr>
<td>Maximum Current *5</td>
<td>A</td>
<td>6.0</td>
<td>4.9</td>
</tr>
<tr>
<td>Moment of Inertia (without brake)</td>
<td>GID/4 kgm²</td>
<td>0.23</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>J kgfcm²</td>
<td>2.4</td>
<td>6.0</td>
</tr>
<tr>
<td>Moment of Inertia (with brake)</td>
<td>GID/4 kgm²</td>
<td>0.26</td>
<td>0.65</td>
</tr>
<tr>
<td></td>
<td>J kgfcm²</td>
<td>2.6</td>
<td>6.6</td>
</tr>
<tr>
<td>Permissible Moment Load</td>
<td>Nm</td>
<td>187</td>
<td>410</td>
</tr>
<tr>
<td></td>
<td>kgf·m</td>
<td>19.1</td>
<td>41.8</td>
</tr>
<tr>
<td>Moment Stiffness</td>
<td>Nm/rad</td>
<td>25.2×10⁶</td>
<td>37.9×10⁶</td>
</tr>
<tr>
<td></td>
<td>kgf·m/arc-min</td>
<td>7.5</td>
<td>11.3</td>
</tr>
</tbody>
</table>

Encoder method
- Magnetic type 17bit absolute encoder

Encoder resolution per motor revolution
- 2⁴⁴(131,072)

Multi revolution detection
- 2⁶⁶(65,536)

<table>
<thead>
<tr>
<th>Output shaft resolution</th>
<th>Pulse/revolution</th>
<th>6,084,072</th>
<th>16,014,832</th>
<th>12,158,272</th>
<th>13,093,712</th>
<th>21,102,592</th>
<th>14,437,802</th>
<th>6,084,072</th>
<th>16,014,832</th>
<th>12,158,272</th>
<th>13,093,712</th>
<th>21,102,592</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input power voltage V</td>
<td>AC200</td>
<td>AC200</td>
<td>AC100</td>
<td>AC100</td>
<td>AC100</td>
<td>AC100</td>
<td>AC200</td>
<td>AC200</td>
<td>AC100</td>
<td>AC100</td>
<td>AC100</td>
<td></td>
</tr>
<tr>
<td>Mass (without brake) kg</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>Mass (with brake) kg</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td></td>
</tr>
</tbody>
</table>

Protection Structure
- Totally enclosed self-cooled type

Environmental Conditions
- Operating temperature 0°C to 40°C, storage temperature -20°C to 60°C
- Humidity 20% to 80% RH (Do not expose to condensation)
- No dust, no metal powder, no corrosive gas, no inflammable gas and no oil mist
- Indoor use only

Mounting Direction
- All directions

Safety Standard Compliance
- CE Marking, Certifications for UL and TUV

Combined Driver
- HA-800<sup>-1</sup>_3
- HA-800<sup>-1</sup>_4

* 1: The aforementioned values are those at the output shaft.
* 2: Values in combination with an HA-800 servo driver.
* 3: The value in parentheses () of SHA25 is the value when the input power voltage is AC100V.
* 4: The value in parentheses () of SHA40 is the value when combined with HA-800<sup>-2</sup>_4 (rated output current 24A).
* 5: Please check the actuator rotation direction in our technical data sheet.
(7) Motor size

| 08 | Model Nos. 20 |
| 09 | Model Nos. 25 |
| 12 | Model Nos. 32 |
| 15 | Model Nos. 40 |
| 21 | Model Nos. 58, 65 |

(10) Encoder format

A format, transmission speed: 2.5Mbps, one-to-one connection

(11) Encoder type, resolution

S17b 17bit absolute encoder, 131072 pulse/revolution

(13) Attached connector

C Connector attached as standard
N Without connector
D With special connector (special specification)

(14) Option symbol

L Near origin and end limit sensors
Y Side lead-out of cable

(15) Special specification

No description  Standard  Special specification item

(8) Brake

| A | Without brake |
| B | With brake |

(9) Power supply of motor

| 200 | AC200V |
| 100 | AC100V |

(100V is available only with our model No. 25.)

<table>
<thead>
<tr>
<th>SHA32A</th>
<th>SHA40A</th>
<th>SHA58A</th>
<th>SHA65A</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>51</td>
<td>81</td>
<td>101</td>
</tr>
<tr>
<td>62</td>
<td>281</td>
<td>395</td>
<td>439</td>
</tr>
<tr>
<td>6.3</td>
<td>28.7</td>
<td>40.3</td>
<td>44.6</td>
</tr>
<tr>
<td>436.4</td>
<td>94.1</td>
<td>59.3</td>
<td>47.5</td>
</tr>
<tr>
<td>4.5</td>
<td>21</td>
<td>33</td>
<td>42</td>
</tr>
<tr>
<td>0.46</td>
<td>2.1</td>
<td>3.4</td>
<td>4.2</td>
</tr>
<tr>
<td>19</td>
<td>17.3</td>
<td>15.2</td>
<td>13.5</td>
</tr>
<tr>
<td>0.092</td>
<td>2.0</td>
<td>5.1</td>
<td>8.0</td>
</tr>
<tr>
<td>0.999</td>
<td>21</td>
<td>52</td>
<td>81</td>
</tr>
<tr>
<td>0.107</td>
<td>2.3</td>
<td>5.9</td>
<td>9.2</td>
</tr>
<tr>
<td>1.067</td>
<td>24</td>
<td>60</td>
<td>94</td>
</tr>
<tr>
<td>932</td>
<td>580</td>
<td>849</td>
<td>2180</td>
</tr>
<tr>
<td>95</td>
<td>59.1</td>
<td>86.6</td>
<td>222</td>
</tr>
<tr>
<td>88.1×10³</td>
<td>100×10³</td>
<td>178×10³</td>
<td>531×10³</td>
</tr>
<tr>
<td>25.7</td>
<td>29.6</td>
<td>53.2</td>
<td>158</td>
</tr>
</tbody>
</table>

Magnetic type 17bit absolute encoder

2\(^{11}(131,072)\)

2\(^{16}(65,536)\)

All directions

CE Marking, Certifications for UL and TUV

HA-80G-2-6  HA-80G-2-6  HA-80C-24  HA-80C-24

Model Nos. 32

100V is available only with our model No. 25.

Operating temperature 0 to 40°C, storage temperature -20 to 60°C, Operating humidity / storage humidity 20 to 80% RH (Do not expose to condensation), No dust, no metal powder, no corrosive gas, no flammable gas and no oil mist, follow use only. No exposure to direct sunshine. Altitude 1000m or less.
SHA Series

External Dimensions

### SHA20A
(Reducer type: SG type)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Unit: mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor connector Pin-hole positioning Ø1.5 ±0.005 Depth 5.5</td>
<td></td>
</tr>
<tr>
<td>Motor cable Encoder cable AWG24X3 pairs + shield</td>
<td></td>
</tr>
<tr>
<td>Hollow shaft inside diameter</td>
<td>3 ±0.005</td>
</tr>
<tr>
<td>Opening diameter</td>
<td>3.4X6</td>
</tr>
<tr>
<td>Encoder connector Motor connector</td>
<td></td>
</tr>
<tr>
<td>Motor connector Housing: 350715-1(AMP)</td>
<td></td>
</tr>
<tr>
<td>Encoder connector Housing: 350690-1(AMP)</td>
<td></td>
</tr>
<tr>
<td>Pin contact (Motor U V W) Housing: 350669-1(AMP)</td>
<td></td>
</tr>
<tr>
<td>Pin contact (Motor PE) Housing: 1-1903130-4(AMP)</td>
<td></td>
</tr>
<tr>
<td>Pin contact :1903111-2(AMP)</td>
<td></td>
</tr>
</tbody>
</table>

*The differential range may differ depending on the method for manufacturing parts (molded articles, machining articles). Contact us for the differential range of the size that is not described.*
 SHA32A  
(Reducer type: HP type)

 SHA32A  
(Reducer type: SG type)

 SHA40A  
(Reducer type: SG type)

* The differential range may differ depending on the method for manufacturing parts (molded articles, machining articles). Contact us for the differential range of the size that is not described.
SHA Series

External Dimensions

■ SHA58A
(Reducer type: SG type)

■ SHA65
(Reducer type: SG type)

* The differential range may differ depending on the method for manufacturing parts (molded articles, machining articles).
Contact us for the differential range of the size that is not described.
Uni-directional Positional accuracy

The “uni-directional positional accuracy” represents the maximum difference in one revolution among differences between an angle actually rotated from the datum position and an angle that is supposed to turn in each position by repeating positioning sequentially in a preset rotational direction. (Source: JIS [Japanese Industrial Standards] B 6201-1987). The SHA series contains a speed reducer HarmonicDrive® for precision control or a hollow planetary speed reducer for precision control HPF series. Therefore, positioning errors of the motor shaft are compressed according to reduction ratio. The “uni-directional positional accuracy” of the individual models are shown below.

<table>
<thead>
<tr>
<th>Reduction ratio</th>
<th>SHA20A</th>
<th>SHA25A</th>
<th>SHA32A</th>
<th>SHA40A</th>
<th>SHA58A</th>
<th>SHA65A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:11</td>
<td>—</td>
<td>120</td>
<td>120</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1:51</td>
<td>60</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1:81 or more</td>
<td>50</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
</tbody>
</table>

Theoretical stop position

Actual stop position

Datum position

Mechanical Accuracy

The mechanical accuracies of the output shaft and mounting flange of the actuators in the SHA series are as follows.

<table>
<thead>
<tr>
<th>Item</th>
<th>SHA20A</th>
<th>SHA25A</th>
<th>SHA32A</th>
<th>SHA40A</th>
<th>SHA58A</th>
<th>SHA65A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Output shaft surface runout</td>
<td>0.030</td>
<td>0.035</td>
<td>0.040</td>
<td>0.045</td>
<td>0.050</td>
<td>0.050</td>
</tr>
<tr>
<td>2. Output shaft axial runout</td>
<td>0.030</td>
<td>0.035 (0.020)</td>
<td>0.040 (0.020)</td>
<td>0.045</td>
<td>0.050</td>
<td>0.050</td>
</tr>
<tr>
<td>3. Parallelism between the output shaft and mounted surface</td>
<td>0.030</td>
<td>0.035</td>
<td>0.040</td>
<td>0.045</td>
<td>0.050</td>
<td>0.050</td>
</tr>
<tr>
<td>4. Parallelism between the output shaft and mounted surface</td>
<td>0.055</td>
<td>0.050</td>
<td>0.055</td>
<td>0.060</td>
<td>0.070</td>
<td>0.070</td>
</tr>
<tr>
<td>5. Concentricity between the output shaft and fitting part</td>
<td>0.030</td>
<td>0.035</td>
<td>0.040</td>
<td>0.045</td>
<td>0.050</td>
<td>0.050</td>
</tr>
<tr>
<td>6. Concentricity between the output shaft and fitting part</td>
<td>0.045</td>
<td>0.060</td>
<td>0.065</td>
<td>0.070</td>
<td>0.080</td>
<td>0.080</td>
</tr>
</tbody>
</table>

* See the technical information for the measuring method.

* The aforementioned values are T.I.R (total indicator reading) values.

* The values in parentheses () is the value when combining reducer type and HP type (hollow planetary reducer).
SHA Series

Operable Range

The following diagrams show the operable range of the SHA series (combined with driver HA-800 servo driver).

- **50% duty motion range**
  - Range of torque-rotational speed operable at 50% duty (ratio between operational and standby hours is 50:50)

- **Continuous motion range**
  - Range of continuously operable torque-rotational speed.

- **Motion range during acceleration and deceleration**
  - Range of torque-rotational speed that is operable momentarily. Normally, this range is used during acceleration and deceleration.

---

**Note 1:** Motion ranges for continuous motion and that at 50% duty are the values when the radiation plate mentioned in the graphs is mounted.

**Note 2:** See the technical information for selection of a model No.

### Table: Operable Range

<table>
<thead>
<tr>
<th>SHA20A51SG</th>
<th>Input voltage: 200V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotational Speed [r/min]</td>
<td>Torque [Nm]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>40</td>
<td>0</td>
</tr>
<tr>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>80</td>
<td>0</td>
</tr>
<tr>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>120</td>
<td>0</td>
</tr>
<tr>
<td>140</td>
<td>0</td>
</tr>
</tbody>
</table>

**Radiation plate:** 320×320×16 (mm)

<table>
<thead>
<tr>
<th>SHA20A81SG</th>
<th>Input voltage: 200V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotational Speed [r/min]</td>
<td>Torque [Nm]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>40</td>
<td>0</td>
</tr>
<tr>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>80</td>
<td>0</td>
</tr>
<tr>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>120</td>
<td>0</td>
</tr>
<tr>
<td>140</td>
<td>0</td>
</tr>
</tbody>
</table>

**Radiation plate:** 320×320×16 (mm)

<table>
<thead>
<tr>
<th>SHA20A101SG</th>
<th>Input voltage: 200V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotational Speed [r/min]</td>
<td>Torque [Nm]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>40</td>
<td>0</td>
</tr>
<tr>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>80</td>
<td>0</td>
</tr>
<tr>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>120</td>
<td>0</td>
</tr>
<tr>
<td>140</td>
<td>0</td>
</tr>
</tbody>
</table>

**Radiation plate:** 320×320×16 (mm)

<table>
<thead>
<tr>
<th>SHA20A121SG</th>
<th>Input voltage: 200V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotational Speed [r/min]</td>
<td>Torque [Nm]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
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<tr>
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<td>120</td>
<td>0</td>
</tr>
<tr>
<td>140</td>
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</tbody>
</table>

**Radiation plate:** 320×320×16 (mm)

<table>
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<tr>
<th>SHA20A161SG</th>
<th>Input voltage: 200V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotational Speed [r/min]</td>
<td>Torque [Nm]</td>
</tr>
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<td>0</td>
</tr>
<tr>
<td>20</td>
<td>0</td>
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<tr>
<td>40</td>
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<td>60</td>
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<tr>
<td>80</td>
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<tr>
<td>100</td>
<td>0</td>
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<tr>
<td>120</td>
<td>0</td>
</tr>
<tr>
<td>140</td>
<td>0</td>
</tr>
</tbody>
</table>

**Radiation plate:** 320×320×16 (mm)
AC servo actuator

- **SHA25A51SG** Input voltage: 100V
  - Radiation plate: 350×350×18 (mm)
  - Torque: ʦNm
  - Motion range: Acceleration/deceleration motion range
  - 50% duty motion range
  - Continuous motion range

- **SHA25A81SG** Input voltage: 100V
  - Radiation plate: 350×350×18 (mm)
  - Torque: ʦNm
  - Motion range: Acceleration/deceleration motion range
  - 50% duty motion range
  - Continuous motion range

- **SHA25A101SG** Input voltage: 100V
  - Radiation plate: 350×350×18 (mm)
  - Torque: ʦNm
  - Motion range: Acceleration/deceleration motion range
  - 50% duty motion range
  - Continuous motion range

- **SHA25A121SG** Input voltage: 100V
  - Radiation plate: 350×350×18 (mm)
  - Torque: ʦNm
  - Motion range: Acceleration/deceleration motion range
  - 50% duty motion range
  - Continuous motion range

- **SHA25A161SG** Input voltage: 100V
  - Radiation plate: 350×350×18 (mm)
  - Torque: ʦNm
  - Motion range: Acceleration/deceleration motion range
  - 50% duty motion range
  - Continuous motion range

- **SHA25A11HP** Input voltage: 200V
  - Radiation plate: 350×350×18 (mm)
  - Torque: ʦNm
  - Motion range: Acceleration/deceleration motion range
  - 50% duty motion range
  - Continuous motion range

- **SHA25A51SG** Input voltage: 200V
  - Radiation plate: 350×350×18 (mm)
  - Torque: ʦNm
  - Motion range: Acceleration/deceleration motion range
  - 50% duty motion range
  - Continuous motion range

- **SHA25A81SG** Input voltage: 200V
  - Radiation plate: 350×350×18 (mm)
  - Torque: ʦNm
  - Motion range: Acceleration/deceleration motion range
  - 50% duty motion range
  - Continuous motion range

- **SHA25A101SG** Input voltage: 200V
  - Radiation plate: 350×350×18 (mm)
  - Torque: ʦNm
  - Motion range: Acceleration/deceleration motion range
  - 50% duty motion range
  - Continuous motion range

- **SHA25A121SG** Input voltage: 200V
  - Radiation plate: 350×350×18 (mm)
  - Torque: ʦNm
  - Motion range: Acceleration/deceleration motion range
  - 50% duty motion range
  - Continuous motion range

- **SHA25A161SG** Input voltage: 200V
  - Radiation plate: 350×350×18 (mm)
  - Torque: ʦNm
  - Motion range: Acceleration/deceleration motion range
  - 50% duty motion range
  - Continuous motion range
AC servo actuator

**SHA40A515G**
- Input voltage: 200V
- Radiation plate: 500×500×25 (mm)
- Torque range:
  - Acceleration/deceleration motion range
  - 50% duty motion range
  - Continuous motion range

**SHA40A815G**
- Input voltage: 200V
- Radiation plate: 500×500×25 (mm)
- Torque range:
  - Acceleration/deceleration motion range
  - 50% duty motion range
  - Continuous motion range

**SHA40A1015G**
- Input voltage: 200V
- Radiation plate: 500×500×25 (mm)
- Torque range:
  - Acceleration/deceleration motion range
  - 50% duty motion range
  - Continuous motion range

**SHA40A1215G**
- Input voltage: 200V
- Radiation plate: 500×500×25 (mm)
- Torque range:
  - Acceleration/deceleration motion range
  - 50% duty motion range
  - Continuous motion range

**SHA58A815G**
- Input voltage: 200V
- Radiation plate: 650×650×30 (mm)
- Torque range:
  - Acceleration/deceleration motion range
  - 50% duty motion range
  - Continuous motion range

**SHA58A1015G**
- Input voltage: 200V
- Radiation plate: 650×650×30 (mm)
- Torque range:
  - Acceleration/deceleration motion range
  - 50% duty motion range
  - Continuous motion range

**SHA58A1215G**
- Input voltage: 200V
- Radiation plate: 650×650×30 (mm)
- Torque range:
  - Acceleration/deceleration motion range
  - 50% duty motion range
  - Continuous motion range

*2: When combined with HA-800**
SHA Series

Operable Range

**SHA65A81SG** Input voltage: 200V

![SHA65A81SG Graph](image1)

**SHA65A101SG** Input voltage: 200V

![SHA65A101SG Graph](image2)

**SHA65A121SG** Input voltage: 200V

![SHA65A121SG Graph](image3)

**SHA65A161SG** Input voltage: 200V

![SHA65A161SG Graph](image4)
Options

### Relay Cable (for motors)
Actuator model Nos.: 20, 25, 32, 40 (Model No. 40 is applicable when combined with HA-800-6D)
Order Code Example: EWD-MB * -A06-TN3
The cable for connecting SHA series to HA-800 driver. There are two types of relay cable; for motor (including brake wire) and for absolute encoder. The relay cable is required for connecting SHA series to HA-800 driver. Standard cable lengths are 3, 5 and 10m.

### Relay Cable (for motors)
Actuator model No. 40 (when combined with HA-800-24D)
Order Code Example: EWD-MB * -A06-TMC
Standard cable lengths are 3, 5 and 10m.

### Relay Cable (for motors)
Actuator model No. 58, 65
Order Code Example: EWD-MB * -D09-TMC
Standard cable lengths are 3, 5 and 10m.

### Relay Cable (for absolute encoders)
Actuator model No. 20, 25, 32, 40
Order Code Example: EWD-S * -A08-3M14
Standard cable lengths are 3, 5 and 10m.