

Discontinue



Direct drive actuator

# AX2000 Series actuator

Small diameter to downsize (AX2006, AX2012)

Types with a hollow fixed shaft are available (AX2021, AX2042), facilitating cable wiring.

● Max. torque: 6/12/21/42 N·m

## Actuator specifications

| Descriptions                      |                   | AX2006                               | AX2012  | AX2021  | AX2042  |
|-----------------------------------|-------------------|--------------------------------------|---------|---------|---------|
| Maximum output torque             | N·m               | 6                                    | 12      | 21      | 42      |
| Continuous output torque          | N·m               | 2                                    | 4       | 7       | 14      |
| Maximum rotation speed            | rpm               | 100 (Note 2)                         |         |         |         |
| Allowable axial load              | N                 | 1000                                 |         | 2000    |         |
| Allowable moment load             | N·m               | 40                                   |         | 60      |         |
| Output shaft moment of inertia    | kg·m <sup>2</sup> | 0.00575                              | 0.00695 | 0.03450 | 0.04830 |
| Allowable load moment of inertia  | kg·m <sup>2</sup> | 0.3                                  | 0.4     | 0.6     | 0.9     |
| Index accuracy (Note 1)           | sec.              | ±15                                  |         |         |         |
| Repeatability                     | sec.              | ±5                                   |         |         |         |
| Output shaft friction torque      | N·m               | 0.4                                  |         | 3.0     |         |
| Resolver resolution               | P/rev             | 540672                               |         |         |         |
| Motor insulation grade            |                   | Class F                              |         |         |         |
| Motor withstanding voltage        |                   | 1500 VAC for one minute              |         |         |         |
| Motor insulation resistance       |                   | 10MΩ and over 500 VDC                |         |         |         |
| Working ambient temperature range |                   | 0 to 45°C                            |         |         |         |
| Working ambient humidity range    |                   | 20 to 85%RH with no dew condensation |         |         |         |
| Storage ambient temperature range |                   | -20 to 80°C                          |         |         |         |
| Storage ambient humidity range    |                   | 20 to 90%RH with no dew condensation |         |         |         |
| Weight                            | kg                | 4.7                                  | 5.8     | 13.0    | 17.0    |
| Runout of output shaft            | mm                | 0.03                                 |         |         |         |
| Runout of output shaft surface    | mm                | 0.03                                 |         |         |         |

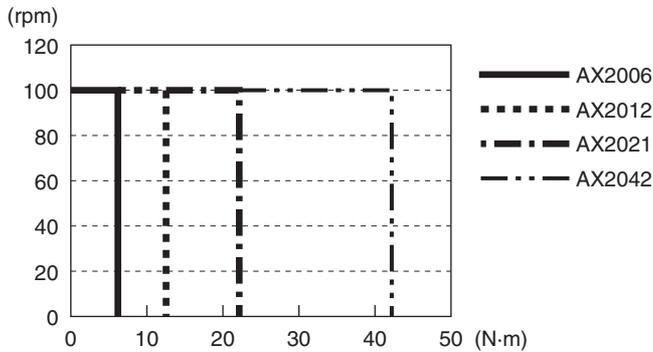
Note 1: Refer to the "CKD Index Units General Catalog" (CB-019SA) "Technical explanation, Static index precision" for details on the index precision.

Note 2: Rotational speeds exceeding 100 rpm are compatible with the direct drive actuator compatible model (AX2\*\*\*GS).

The S driver is used with special specifications up to 150 rpm and the H driver up to 180 rpm. Contact CKD for details.

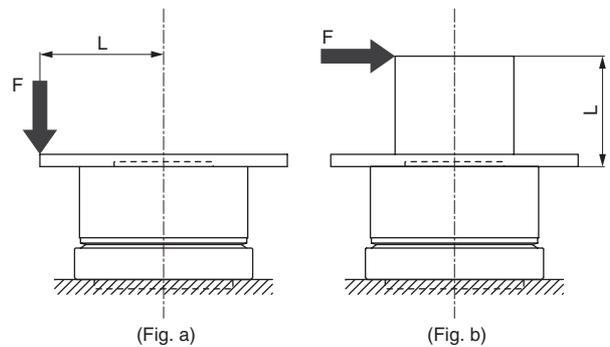
Note that max. rotational speed cannot be changed after delivery.

## Speed/max. torque characteristics



\*This is characteristics at three phase 200 VAC .

(Note) Moment load



$$M \text{ (N·m)} = F \text{ (N)} \times L \text{ (m)}$$

M : Moment load

F : Load

L : Distance from center of output shaft

$$M \text{ (N·m)} = F \text{ (N)} \times (L + 0.02) \text{ (m)}$$

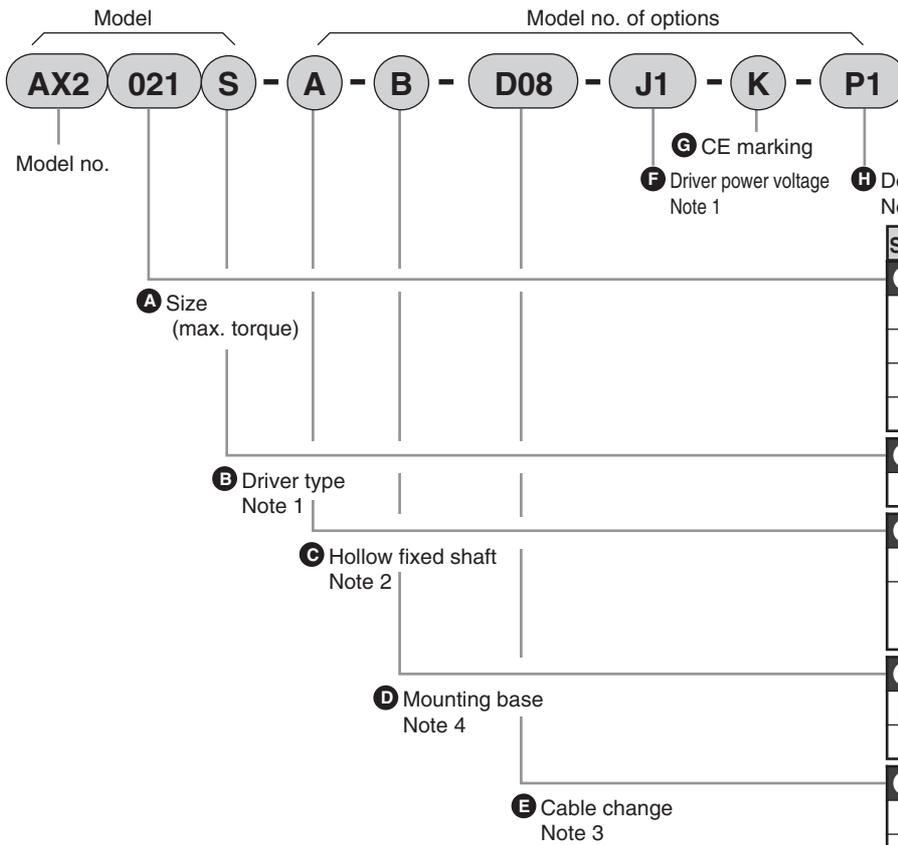
M : Moment load

F : Load

L : Distance from output shaft flange surface

⚠ Refer to the safety precautions on Intro 13 to 20 before operating.

### How to order



| Symbol  | Descriptions  |   |
|---|---|---|
| <b>A Size (max. torque)</b>   |   |   |
| 006   | 6 N·m   |   |
| 012   | 12 N·m  |   |
| 021   | 21 N·m  |   |
| 042   | 42 N·m  |   |
| <b>B Driver type</b>  |   |   |
| S   | S type driver   |   |
| <b>C Hollow fixed shaft</b>   |   |   |
| Blank   | Standard  |   |
| A   | Hollow fixed shaft extension (Only AX2021, AX2042 available)                |   |
| <b>D Mounting base (cannot be used with dowel holes P2 and P3)</b>                                |   |   |
| Blank   | Standard (without mounting base)  |   |
| B   | With blackening mounting base   |   |
| <b>E Cable change</b>   |   |   |
| Blank   | Standard (cable length 4 m)   |   |
| D**   | Cable length change   |   |
| DM**  | Flexible cable length change <small>(Only AX2006, AX2012 available)</small> |   |
| <b>** cable length</b> <small>Note: The length and type cannot be changed after delivery.</small> |   |   |
| 02  | 2 m   | [Note]<br>Use the noise filter for the motor cable if the cable is longer than 6 m. |
| Blank   | 4 m   |   |
| 06  | 6 m   |   |
| 08  | 8 m   |   |
| 10  | 10 m  |   |
| 15  | 15 m  |   |
| 20  | 20 m  |   |
| 25  | 25 m  |   |
| 30  | 30 m  |   |
| Blank   | 4 m   |   |
| <b>F Driver power voltage</b>   |   |   |
| Refer to the driver - power voltage table on the left.  |   |   |
| <b>G CE marking</b>   |   |   |
| Blank   | Standard (CE marking not available)   |   |
| K   | CE marking  |   |
| <b>H Dowel hole</b>   |   |   |
| Blank   | Standard (without dowel hole)   |   |
| P1  | 1 on top  |   |
| P2  | 1 on bottom   |   |
| P3  | 1 each on both top and bottom   |   |

### Note on model no. selection

Note 1: Select the driver according to the table below.

Driver - power voltage table

| Driver type | S type driver (including CE products) |         | H type driver  |                |
|-------------|---------------------------------------|---------|----------------|----------------|
|             | 200 to 230 VAC                        | 100 VAC | 200 to 230 VAC | 100 to 115 VAC |
| AX2006      | Blank                                 | J1      |                |                |
| AX2012      | Blank                                 | J1      |                |                |
| AX2021      | Blank                                 | J1      |                |                |
| AX2042      | Blank                                 | J1      |                |                |

\* S type driver is recommended if the max. torque is 42 N·m or less. Contact CKD for details on the availability of the H type driver.

Note 2: Refer to the Option Table and select required options.

Option table

|                         |                                     | AX2006 | AX2012 | AX2021 | AX2042 |
|-------------------------|-------------------------------------|--------|--------|--------|--------|
| Hollow fixed shaft (-A) |                                     | X      | X      | ○      | ○      |
| Flexible cable (-DM)    |                                     | ○      | ○      | X      | X      |
| Dowel hole              | 1 on top (-P1)                      | ○      | ○      | ○      | ○      |
|                         | 1 on bottom (-P2)                   | ○      | ○      | X      | X      |
|                         | 1 each on both top and bottom (-P3) | ○      | ○      | X      | X      |

Note 3: Use the optional flexible cable in applications where the cable is bent repeatedly. (Only AX2006, AX2012 available)

Refer to page 57 for dimensions of the cable.

Note 4: "P2" and "P3" cannot be selected if "B" with a blackening base is designated for (D) mounting base.

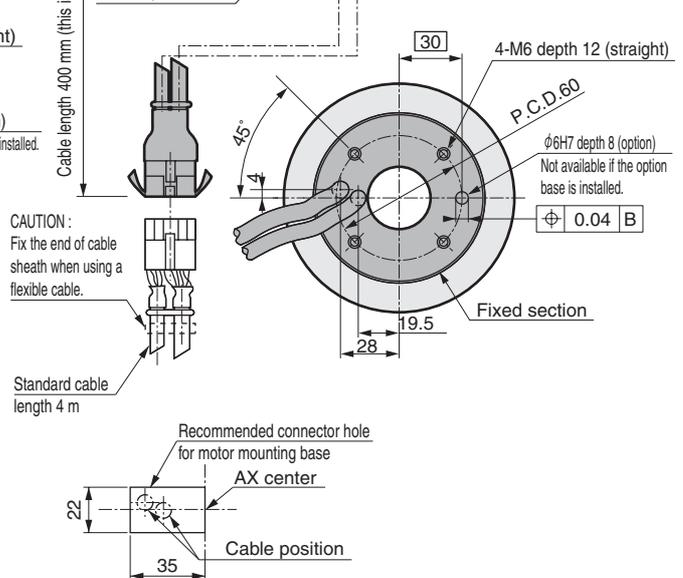
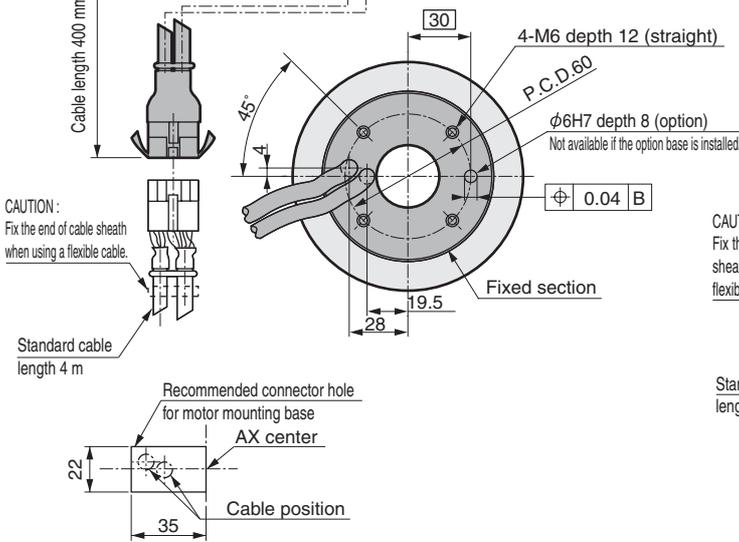
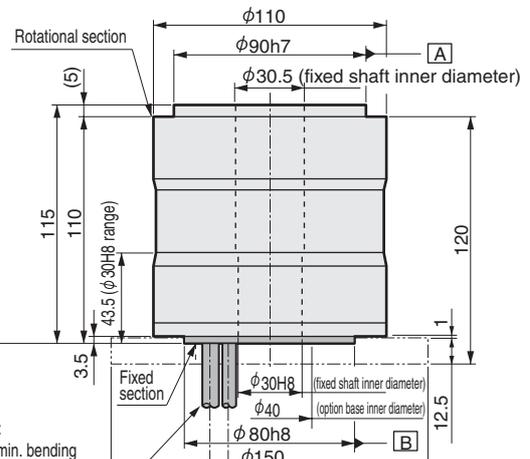
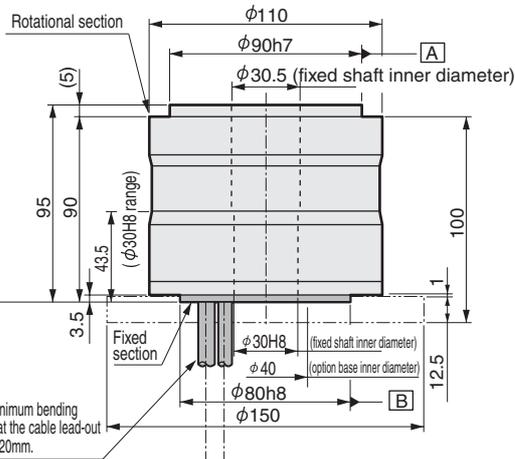
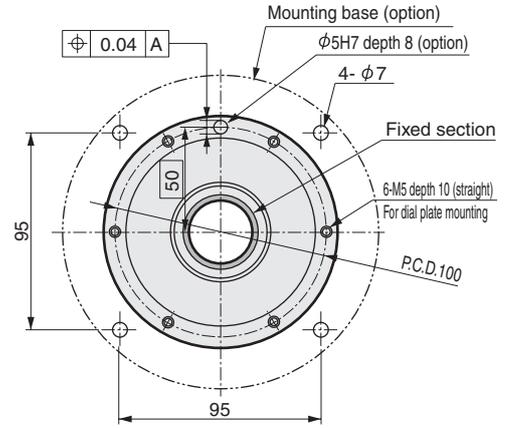
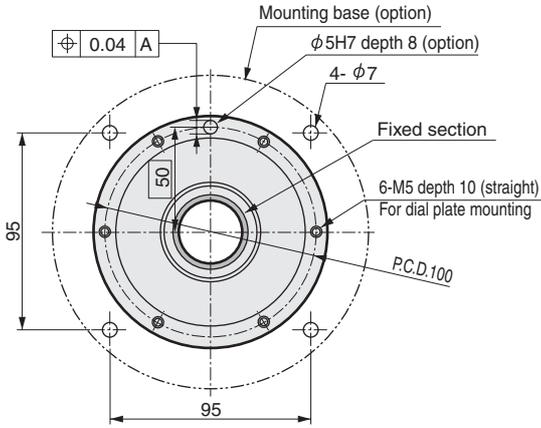
Note 5: Additionally machined sections may not have a treated surface.

## AX2000 Series

### Dimensions

● AX2006

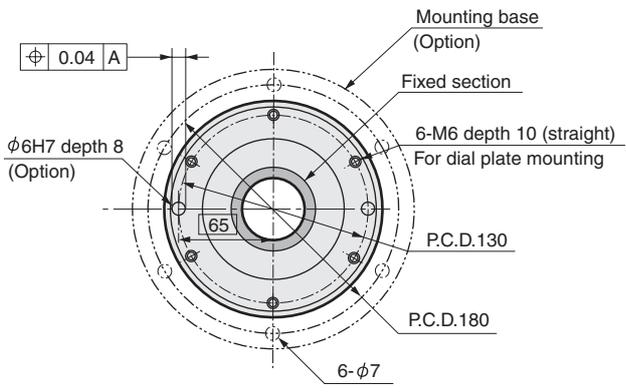
● AX2012



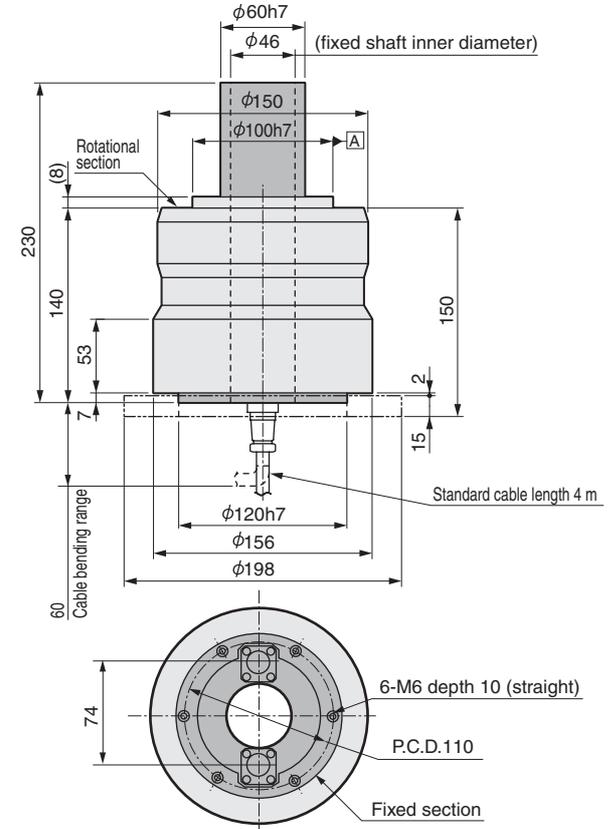
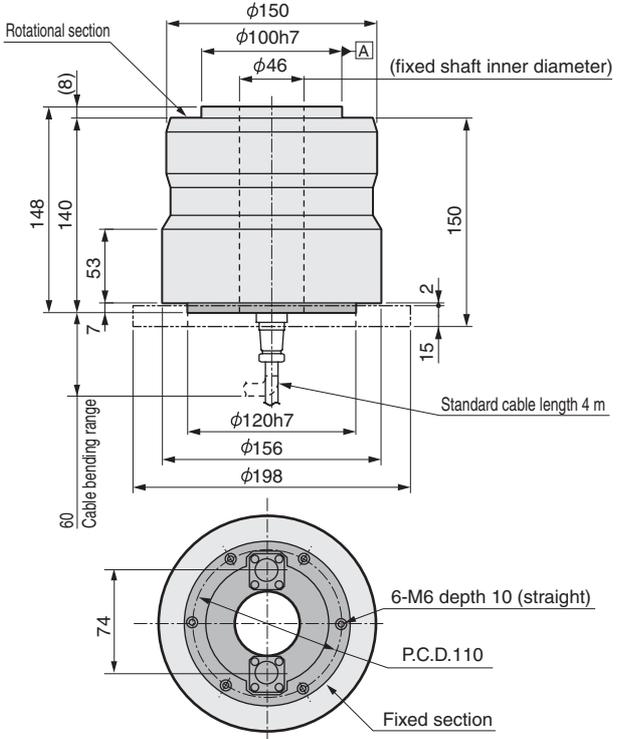
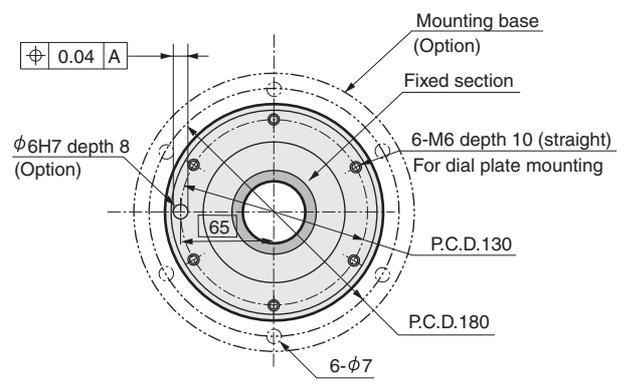
Note: The min. bending range at the cable lead-out port is 20mm.

**Dimensions**

● AX2021



● AX2021-A

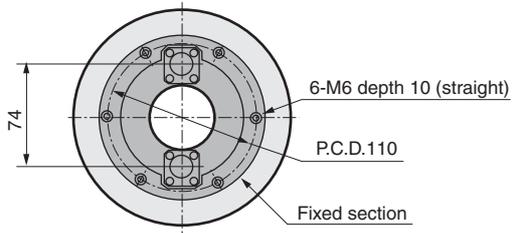
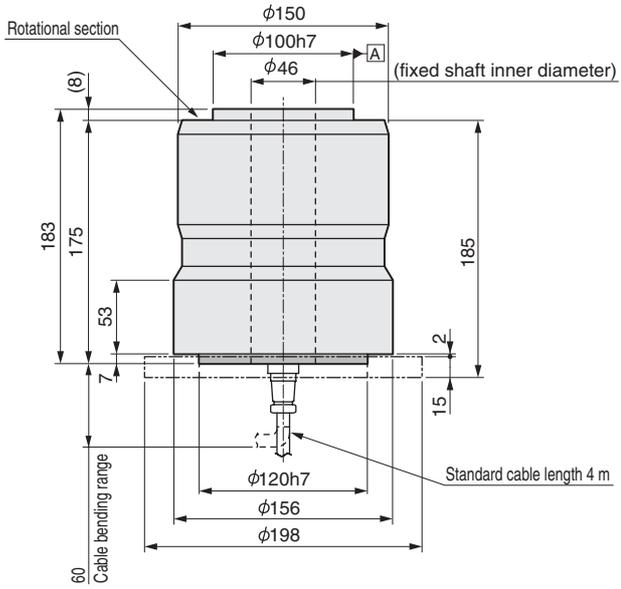
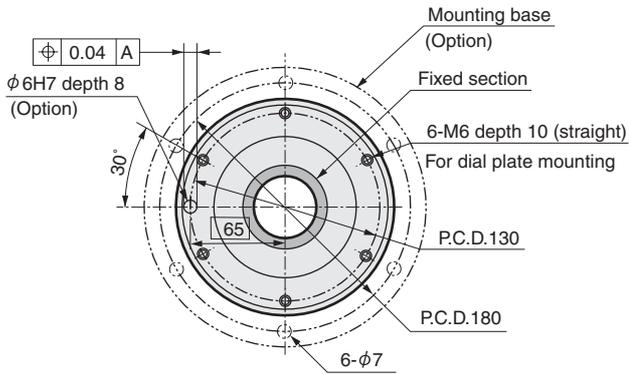


AX2000 Actuator

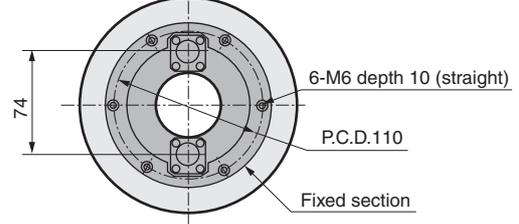
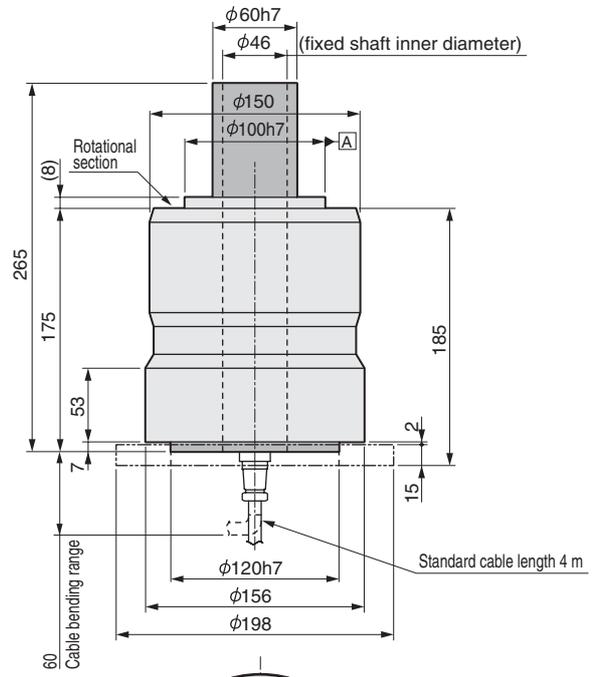
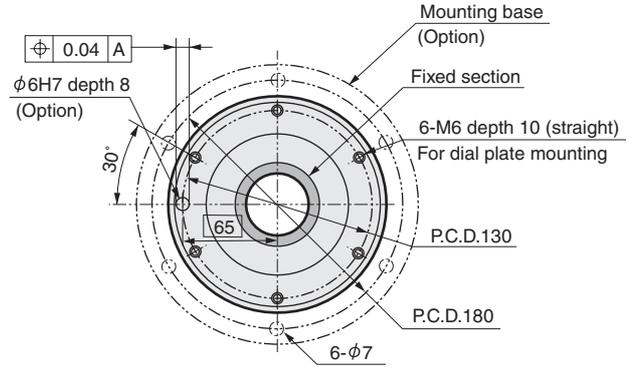
# AX2000 Series

## Dimensions

● AX2042



● AX2042-A



**CE marking products dimensions**

● AX2021-K

● AX2042-K

