

# RF03-N

## Rotary type / Limit rotation specification

- CE compliance
- Rotation range : 320°

### Ordering method

**RF03** - **N** - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

|              |  |   |   |  |  |   |   |   |   |
|--------------|--|---|---|--|--|---|---|---|---|
| <b>Model</b> | <b>Return-to-origin method</b><br>N: Stroke end (Limit rotation) | <b>Bearing</b><br>N: Standard<br>H: High rigidity | <b>Torque</b><br>N: Standard torque<br>H: High torque | <b>Cable entry location</b><br>R: From the right<br>L: From the left | <b>Rotation direction</b><br>N: CCW<br>Z: CW | <b>Cable length</b> <small>Note 1</small><br>1L: 1m<br>3L: 3m<br>5L: 5m<br>10L: 10m | <b>Robot positioner</b><br>S2: TS-S2 <small>Note 2</small><br>SH: TS-SH | <b>I/O</b><br>NP: NPN<br>PN: PNP<br>CC: CC-Link<br>DN: DeviceNet™<br>EP: EtherNet/IP™<br>GW: No I/O board <small>Note 3</small> | <b>Battery</b> <small>Note 4</small><br>B: With battery (Absolute)<br>N: None (Incremental) |
|--------------|--|---|---|--|--|---|---|---|---|

**SD** - **1**

|                                  |                           |
|----------------------------------|---------------------------|
| <b>Robot driver</b><br>SD: TS-SD | <b>I/O cable</b><br>1: 1m |
|----------------------------------|---------------------------|

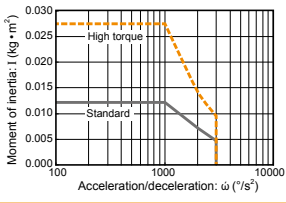
Note 1. The robot cable is flexible and resists bending.  
 Note 2. See P.446 for DIN rail mounting bracket.  
 Note 3. Select this selection when using the gateway function. For details, see P.439.  
 Note 4. Select whether or not the battery is provided only when using the TS-SH.

### Basic specifications

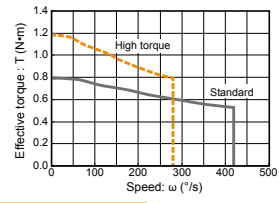
|  |                                |             |
|--|--------------------------------|-------------|
| <b>Motor</b>   | 28 □ Step motor                |             |
| <b>Resolution (Pulse/rotation)</b>                                       | 4096                           |             |
| <b>Repeatability</b> <small>Note 1</small> (°)                           | ±0.05                          |             |
| <b>Drive method</b>  | Special worm gear + belt       |             |
| <b>Torque type</b>   | Standard                       | High torque |
| <b>Maximum speed</b> <small>Note 2</small> (°/sec)                       | 420                            | 280         |
| <b>Rotating torque (N·m)</b>   | 0.8                            | 1.2         |
| <b>Max. pushing torque (N·m)</b>   | 0.4                            | 0.6         |
| <b>Backlash (°)</b>  | ±0.5                           |             |
| <b>Max. moment of inertia</b> <small>Note 3</small> (kg·m <sup>2</sup> ) | 0.012                          | 0.027       |
| <b>Cable length (m)</b>  | Standard: 1 / Option: 3, 5, 10 |             |
| <b>Rotation range (°)</b>  | 320                            |             |

Note 1. Positioning repeatability in one direction.  
 Note 2. The maximum speed may vary depending on the moment of inertia. Check the maximum speed while referring to the "Moment of inertia vs. Acceleration/deceleration" graph and the "Effective torque vs. speed" graph (reference).  
 Note 3. For moment of inertia and effective torque details, see P.520.

### Moment of inertia Acceleration/deceleration



### Effective torque vs. speed



### Allowable load

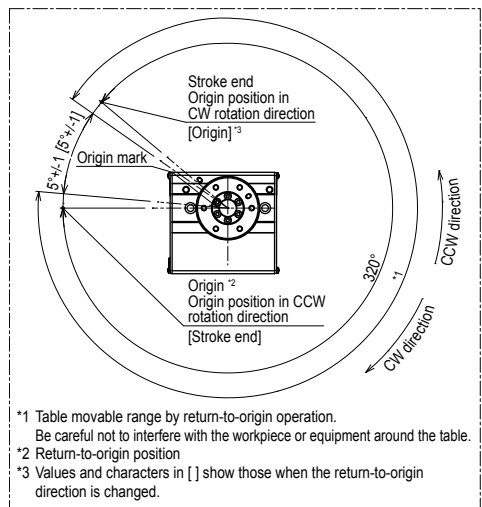
|                           |                           |                |                     |                |                        |                     |
|---------------------------|---------------------------|----------------|---------------------|----------------|------------------------|---------------------|
| Allowable radial load (N) | Allowable thrust load (N) |                |                     |                | Allowable moment (N·m) |                     |
|                           | (a)                       |                | (b)                 |                | Standard model         | High rigidity model |
| Standard model            | High rigidity model       | Standard model | High rigidity model | Standard model | High rigidity model    |                     |
| 196                       | 233                       | 197            | 363                 | 5.3            | 6.4                    |                     |

### Controller

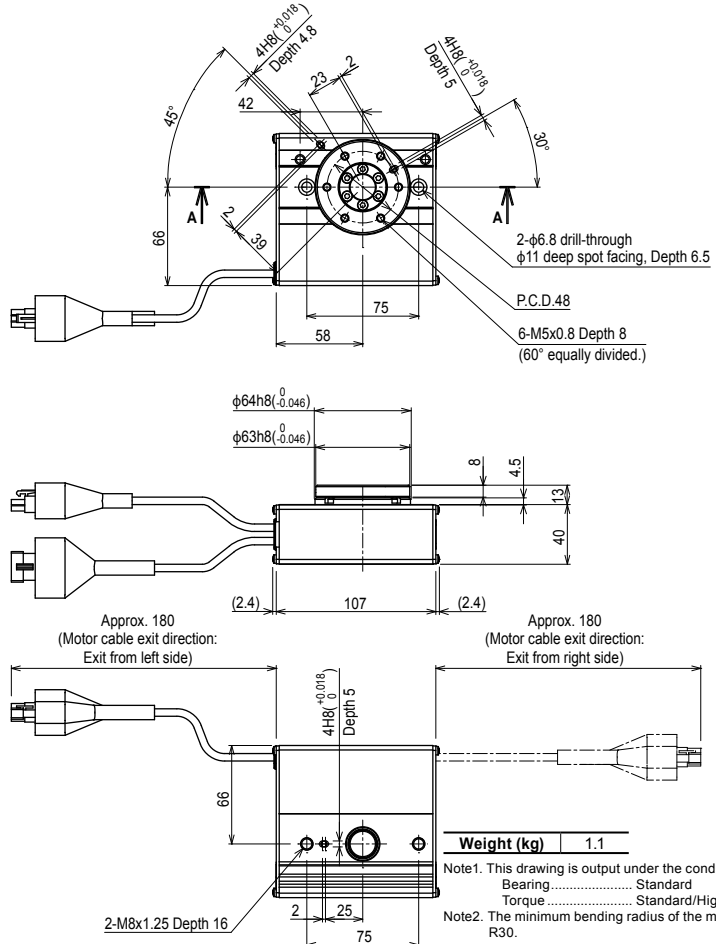
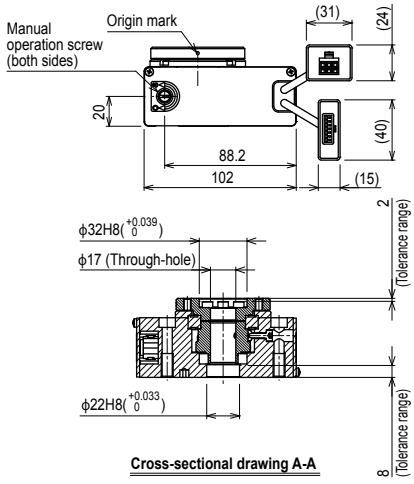
|                   |                                  |
|-------------------|----------------------------------|
| <b>Controller</b> | <b>Operation method</b>          |
| TS-S2             | I/O point trace / Remote command |
| TS-SH             | Remote command                   |
| TS-SD             | Pulse train control              |

Note. When purchasing the product, set the controller acceleration while carefully checking the "Moment of inertia vs. Acceleration/Deceleration" and "Effective torque vs. Speed" graphs. For details, please refer to the TRANSEURO Series User's Manual.

### RF03-NN Limit rotation specification – Standard model



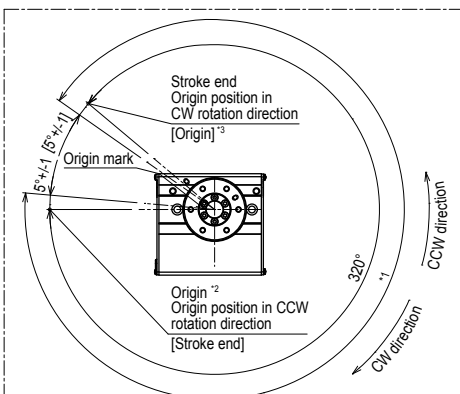
\*1 Table movable range by return-to-origin operation.  
 Be careful not to interfere with the workpiece or equipment around the table.  
 \*2 Return-to-origin position  
 \*3 Values and characters in [ ] show those when the return-to-origin direction is changed.



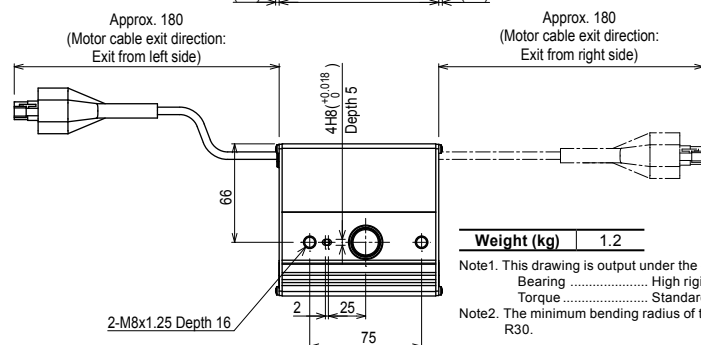
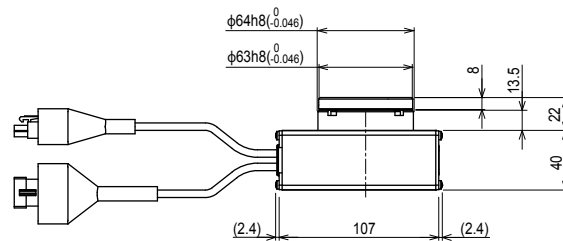
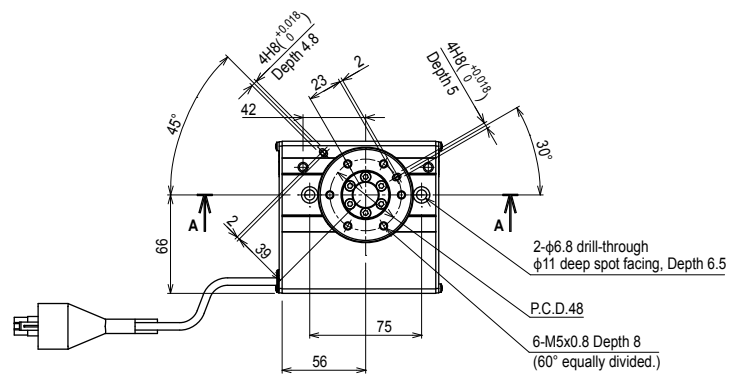
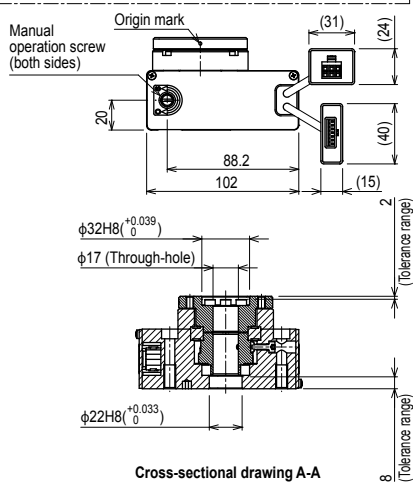
**Weight (kg)** 1.1

Note 1. This drawing is output under the conditions below.  
 Bearing ..... Standard  
 Torque ..... Standard/High torque  
 Note 2. The minimum bending radius of the motor cable is R30.

RF03-NH Limit rotation specification – High rigidity model



- \*1 Table movable range by return-to-origin operation. Be careful not to interfere with the workpiece or equipment around the table.
- \*2 Return-to-origin position
- \*3 Values and characters in [ ] show those when the return-to-origin direction is changed.



|                    |     |
|--------------------|-----|
| <b>Weight (kg)</b> | 1.2 |
|--------------------|-----|

Note1. This drawing is output under the conditions below.  
 Bearing ..... High rigidity  
 Torque ..... Standard/High torque  
 Note2. The minimum bending radius of the motor cable is R30.