

## **ForTorque**® FT01-1643 & FT01-2043 - the Swivel-Dwarfs for Smallroom Automation - Servo-Electric miniaturized Swivelling-Rotary Modules

The FT01 **ForTorque**® swivelling-rotary modules are high-dynamic, low-wear positioning rotary modules for handling, assembly and automation technologies. They are equipped with a high-speed rotating AC servo drive and a gearbox with high reduction ratio. With their performance, their compactness and weight, the modules are an ideal addition to our **QuickLab**® linear motor actuators. With the matching adaptors they are mechanically compatible with this actuator family. FT01 modules are suitable for infinitely rotating applications, as well as applications for absolute angular positioning. The rotating axis can be initialized by a precision home switch.



### Characteristics

- swivelling-rotary modules with AC servo drive and a high-reduction gearbox
- very compact, slim and light design
- rotation angle & speed, angular acceleration and torque programmable
- torque value via motor current evaluable
- torques up to 0,62 Nm, rotational speed up to 280 RPM
- suitable for large external inertia loads
- mechanical compatible with our **QuickLab**® series
- electrically controllable with **LinMot**® positioning controllers

### Data **ForTorque**® Swivelling-Rotary Modules FT01-1643 und FT01-2043

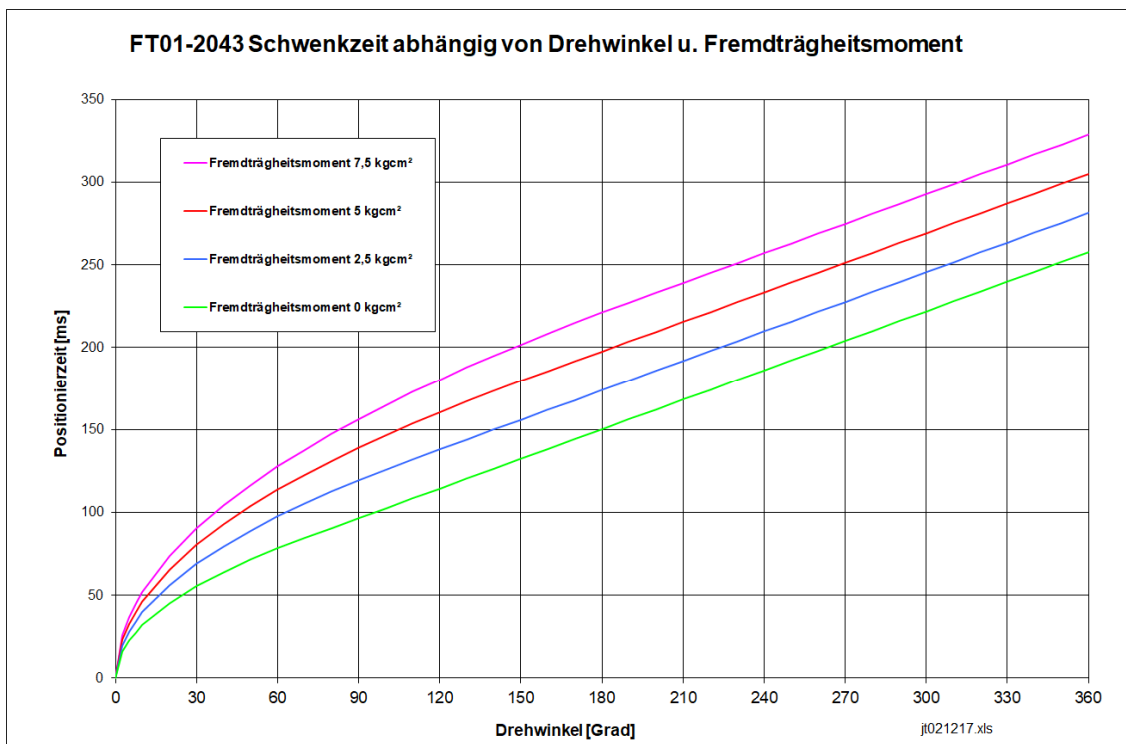
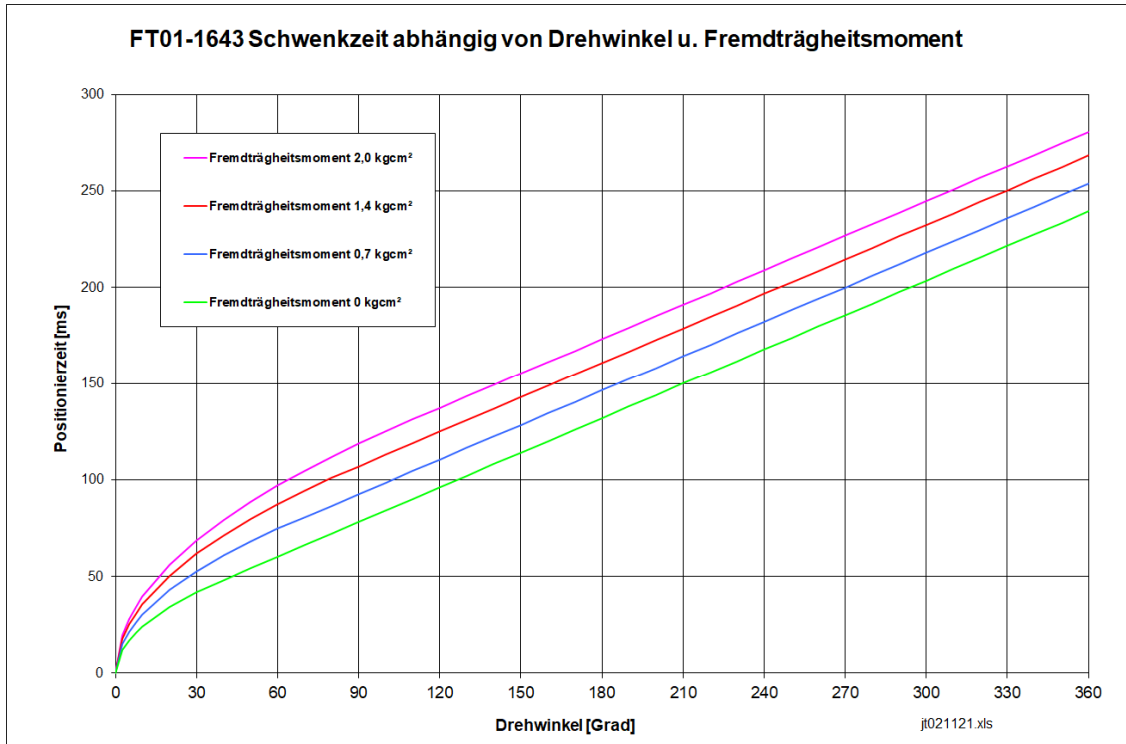
| Module Type                                                 | FT01-1643    | FT01-2043     |
|-------------------------------------------------------------|--------------|---------------|
| <b>Technical Data</b>                                       |              |               |
| diameter of output flange [mm]                              | 16           | 20            |
| rotation angle                                              | +/- infinite |               |
| peak- / cont.-output torque $M_2$ [Nm]                      | 0,3 / 0,14   | 0,62 / 0,3    |
| one-time collision torque $M_2$ [Nm]                        | 0,45         | 1,0           |
| rot. speed $n_2$ peak / cont. [RPM]                         | 280 / 140    | 280 / 256     |
| angular speed peak / cont. [deg/s]                          | 1.680 / 840  | 1.680 / 1.536 |
| max. angular acceleration [deg/s <sup>2</sup> ]             | 68.700       | 39.000        |
| recommended external moment of inertia [kgcm <sup>2</sup> ] | < 2          | < 7,5         |
| recommended load mass [g]                                   | < 100        | < 200         |

**Data *ForTorque*® Swivelling-Rotary Modules FT01-1643 und FT01-2043 Continuation**

| Module Type                                                 | FT01-1643       | FT01-2043 |
|-------------------------------------------------------------|-----------------|-----------|
| <b>Technical Data</b>                                       |                 |           |
| rotor of servo motor + gearbox inertia [kgcm <sup>2</sup> ] | 0,00054         | 0,00195   |
| reduction of gearbox                                        | 43              | 43        |
| gearbox backlash unloaded [angular minutes]                 | < 60            | < 60      |
| max. load on output middle<br>axial / radial [N]            | 5 / 30          | 20 / 75   |
| max. diameter / length<br>(without electric cables) [mm]    | 16 / 69         | 20 / 80   |
| weight [g]                                                  | 65              | 114       |
| operating temperature [°C]                                  | - 10° to + 125° |           |
| IP protection class                                         | IP 20           |           |
| mounting                                                    | clamping flange |           |

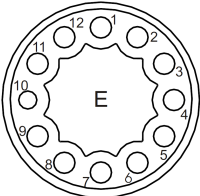
STEP files on demand!

## Dynamic Data *ForTorque*® Swivelling-Rotary Modules FT01-1643 & FT01-2043



## Electrical Data & Connectors *ForTorque*® Swivelling-Rotary Modules FT01-1643 & FT01-2043

| Modul Type                       | FT01-1643                        | FT01-2043 |
|----------------------------------|----------------------------------|-----------|
| <b>Technical Data</b>            |                                  |           |
| torque constant of motor [mNm/A] | 7,08                             | 12,2      |
| max. phase current [A]           | 0,98                             | 1,2       |
| const. phase current [A]         | 0,466                            | 0,6       |
| max. DC-bus voltage [VDC]        | 75                               |           |
| connector servo motor            | 185 mm cable not for cable chain |           |

| Servo Motor Connector |         | mating view<br> |
|-----------------------|---------|---------------------------------------------------------------------------------------------------|
| Contact-No.           | Signal  |                                                                                                   |
| 1                     | GND     |                                                                                                   |
| 2                     | NC      |                                                                                                   |
| 3                     | + 5 VDC |                                                                                                   |
| 4                     | Phase A |                                                                                                   |
| 5                     | Phase B |                                                                                                   |
| 6                     | Phase C |                                                                                                   |
| 7                     | Hall A  |                                                                                                   |
| 8                     | Hall B  |                                                                                                   |
| 9                     | Hall C  |                                                                                                   |
| 10                    | NC      |                                                                                                   |
| 11                    | NC      |                                                                                                   |
| 12                    | NC      |                                                                                                   |
| housing               |         |                                                                                                   |

| Suitable Positioning Controllers |            |             |
|----------------------------------|------------|-------------|
| Brand                            |            |             |
| LinMot®                          | FAULHABER® | TECHNOSOFT® |

| Available Interfaces |                                                                                      |           |             |                  |
|----------------------|--------------------------------------------------------------------------------------|-----------|-------------|------------------|
| RS 232               |    | DeviceNet | CANopen     | EtherCAT         |
| RS 485               |  | PROFINET  | EtherNet/IP | POWERLINK        |
|                      |                                                                                      |           |             | SERCOS interface |

## Accessories & Options

- clamping flanges for our **QuickLab**® modules
- positioning controller with all current fieldbus interfaces
- controller for safe machine control
- controller pre-parameterised
- motor cable sets

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