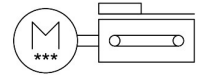


# Toothed belt axis unit ELGS-TB-KF-45-600-ST-M-H1-PLK-AA

Part number: 8083668

FESTO



[PDF](#) General operating condition

## Data sheet

| Feature                                            | Value                                                                                                   |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Effective diameter of drive pinion                 | 19.1 mm                                                                                                 |
| Working stroke                                     | 600 mm                                                                                                  |
| Size                                               | 45                                                                                                      |
| Stroke reserve                                     | 0 mm                                                                                                    |
| Toothed-belt stretch                               | 0.187 %                                                                                                 |
| Toothed-belt pitch                                 | 2 mm                                                                                                    |
| Mounting position                                  | Horizontal                                                                                              |
| Guide                                              | Recirculating ball bearing guide                                                                        |
| Design                                             | Electromechanical linear axis<br>With toothed belt<br>With integrated drive                             |
| Type of motor                                      | Stepper motor                                                                                           |
| Symbol                                             | 00997293                                                                                                |
| Position detection                                 | Motor encoder<br>Via proximity switch                                                                   |
| Referencing                                        | Positive fixed stop block<br>Negative fixed stop block                                                  |
| Rotor position sensor                              | Absolute single-turn encoder                                                                            |
| Rotor position sensor, encoder measuring principle | Magnetic                                                                                                |
| Temperature monitoring                             | Switch-off for excessive temperature<br>Integrated precise CMOS temperature sensor with analogue output |
| Additional functions                               | User interface<br>Integrated end-position sensing                                                       |
| Display                                            | LED                                                                                                     |
| Ready status indication                            | LED                                                                                                     |
| Max. acceleration                                  | 6 m/s <sup>2</sup>                                                                                      |
| Max. speed                                         | 1.2 m/s                                                                                                 |
| Speed "Speed press"                                | 0.024 m/s                                                                                               |
| Repetition accuracy                                | ±0.1 mm                                                                                                 |
| Features of digital logic outputs                  | Configurable<br>Not galvanically isolated                                                               |
| Duty cycle                                         | 100%                                                                                                    |
| Insulation protection class                        | B                                                                                                       |
| Max. current digital logic outputs                 | 100 mA                                                                                                  |
| Max. current consumption                           | 5300 mA                                                                                                 |
| Max. current consumption, logic                    | 0.3 A                                                                                                   |
| Nominal voltage DC                                 | 24 V                                                                                                    |
| Nominal current                                    | 5.3 A                                                                                                   |

| Feature                                                           | Value                                                                            |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Parameterisation interface                                        | IO-Link<br>User interface                                                        |
| Rotor position transducer resolution                              | 16 bit                                                                           |
| Permissible voltage fluctuations                                  | +/- 15%                                                                          |
| Power supply, connection type                                     | Plugs                                                                            |
| power supply, connection system                                   | M12x1, T-coded according to EN 61076-2-111                                       |
| Power supply, number of pins/wires                                | 4                                                                                |
| Power supply, connection pattern                                  | 00995989                                                                         |
| Approval                                                          | RCM trademark                                                                    |
| KC mark                                                           | KC-EMV                                                                           |
| CE mark (see declaration of conformity)                           | To EU EMC Directive<br>In accordance with EU RoHS Directive                      |
| UKCA marking (see declaration of conformity)                      | To UK instructions for EMC<br>To UK RoHS instructions                            |
| Vibration resistance                                              | Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6 |
| Shock resistance                                                  | Shock test with severity level 1 to FN 942017-5 and EN 60068-2-27                |
| LABS (PWIS) conformity                                            | VDMA24364 zone III                                                               |
| Cleanroom class                                                   | Class 7 according to ISO 14644-1                                                 |
| Storage temperature                                               | -20 °C ... 60 °C                                                                 |
| Relative air humidity                                             | 0 - 90%                                                                          |
| Degree of protection                                              | IP40                                                                             |
| Protection class                                                  | III                                                                              |
| Ambient temperature                                               | 0 °C ... 50 °C                                                                   |
| Note on ambient temperature                                       | Power must be reduced by 2% per K at ambient temperatures above 30°C.            |
| 2nd moment of area Iy                                             | 140000 mm <sup>4</sup>                                                           |
| 2nd moment of area Iz                                             | 170000 mm <sup>4</sup>                                                           |
| Max. force Fy                                                     | 880 N                                                                            |
| Max. force Fz                                                     | 880 N                                                                            |
| Max. force Fy total axis                                          | 300 N                                                                            |
| Max. force Fz total axis                                          | 600 N                                                                            |
| Fy at theoretical life value of 100 km (only guide consideration) | 3240 N                                                                           |
| Fz at theoretical life value of 100 km (only guide consideration) | 3240 N                                                                           |
| Max. moment Mx                                                    | 5.5 Nm                                                                           |
| Max. moment My                                                    | 4.7 Nm                                                                           |
| Max. moment Mz                                                    | 4.7 Nm                                                                           |
| Max. moment Mx total axis                                         | 5.5 Nm                                                                           |
| Max. moment My total axis                                         | 4.7 Nm                                                                           |
| Max. moment Mz total axis                                         | 4.7 Nm                                                                           |
| Mx at theoretical life value of 100 km (only guide consideration) | 20 Nm                                                                            |
| My at theoretical life value of 100 km (only guide consideration) | 17 Nm                                                                            |
| Mz at theoretical life value of 100 km (only guide consideration) | 17 Nm                                                                            |
| Max. feed force Fx                                                | 75 N                                                                             |
| Reference value effective load, horizontal                        | 2.5 kg                                                                           |
| Torsional mass moment of inertia It                               | 8500 mm <sup>4</sup>                                                             |
| Feed constant                                                     | 60 mm/U                                                                          |
| Reference service life                                            | 5000 km                                                                          |
| Maintenance interval                                              | Life-time lubrication                                                            |
| Moving mass                                                       | 169 g                                                                            |
| Moving mass for 0 mm stroke                                       | 169 g                                                                            |
| Weight of slide                                                   | 55 g                                                                             |
| Product weight                                                    | 3170 g                                                                           |
| Dynamic deflection (moving load)                                  | 0.05% of the axis length, max. 0.5 mm                                            |

| Feature                                 | Value                                                                                                   |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------|
| Static deflection (load in standstill)  | 0.1% of the axis length                                                                                 |
| Number of digital logic outputs 24 V DC | 2                                                                                                       |
| Number of digital logic inputs          | 2                                                                                                       |
| Specification logic input               | Based on IEC 61131-2, type 1                                                                            |
| Working range of logic input            | 24 V                                                                                                    |
| IO-Link, SIO-Mode support               | Yes                                                                                                     |
| Features of logic input                 | Configurable<br>Not galvanically isolated                                                               |
| IO-Link, Protocol version               | Device V 1.1                                                                                            |
| IO-Link, communication mode             | COM3 (230.4 kBaud)                                                                                      |
| IO-Link, Port class                     | A                                                                                                       |
| IO-Link, Number of ports                | 1                                                                                                       |
| IO-Link, Process data length OUT        | 2 bytes                                                                                                 |
| IO-Link, Process data content OUT       | Move in 1 bit<br>Move out 1 bit<br>Quit Error 1 bit<br>Move intermediate 1 bit                          |
| IO-Link, Process data length IN         | 2 bytes                                                                                                 |
| IO-Link, Process data content IN        | State Device 1 bit<br>State In 1 bit<br>State Intermediate 1 bit<br>State Move 1 bit<br>State Out 1 bit |
| IO-Link, Service data IN                | 32-bit force<br>32-bit position<br>32-bit speed                                                         |
| IO-Link, Min. cycle time                | 1 ms                                                                                                    |
| IO-Link, Data storage required          | 500 Byte                                                                                                |
| Max. cable length                       | 15 m outputs<br>15 m inputs<br>20 m with IO-Link® operation                                             |
| Switching logic for outputs             | PNP (positive switching)                                                                                |
| Switching logic for inputs              | PNP (positive switching)                                                                                |
| IO-Link, connection technology          | Plugs                                                                                                   |
| Logic interface, connection type        | Plug                                                                                                    |
| Logic interface, connection technology  | M12x1, A-coded according to EN 61076-2-101                                                              |
| Logic interface, number of pins/wires   | 8                                                                                                       |
| Logic interface, plug pattern           | 00992264                                                                                                |
| Type of mounting                        | Via female thread<br>Via centring sleeve and pin<br>With accessories                                    |
| Material end cap                        | Painted die cast aluminium                                                                              |
| Material profile                        | Anodised wrought aluminium alloy                                                                        |
| Note on materials                       | RoHS-compliant                                                                                          |
| Material cover tape                     | Stainless steel strip                                                                                   |
| Material drive cover                    | Painted die cast aluminium                                                                              |
| Material guide slide                    | Tempered steel                                                                                          |
| Material guide rail                     | Tempered steel                                                                                          |
| Material pulleys                        | High-alloy stainless steel                                                                              |
| Material slide                          | Die-cast aluminium                                                                                      |
| Material toothed belt                   | Polychloroprene with glass fibre                                                                        |