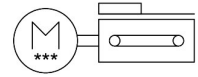


# Toothed belt axis unit ELGS-TB-KF-60-1800-ST-M-H1-PLK-AA

Part number: 8083578

**FESTO**



 General operating condition

## Data sheet

| Feature                                   | Value                                                                                                        |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Drive pinion effective diameter           | 24.83 mm                                                                                                     |
| Working stroke                            | 1800 mm                                                                                                      |
| Size                                      | 60                                                                                                           |
| Stroke reserve                            | 0 mm                                                                                                         |
| Toothed belt elongation                   | 0.124 %                                                                                                      |
| Toothed belt pitch                        | 3 mm                                                                                                         |
| Mounting position                         | Horizontal                                                                                                   |
| Guide                                     | Recirculating ball bearing guide                                                                             |
| Structural design                         | with toothed belt<br>With integrated drive                                                                   |
| Motor type                                | Stepper motor                                                                                                |
| Symbol                                    | 00997293                                                                                                     |
| Position sensing                          | Motor encoder<br>For proximity sensor                                                                        |
| Homing                                    | Fixed stop block positive<br>Fixed stop block, negative                                                      |
| Rotor position sensor                     | Absolute encoder, single-turn                                                                                |
| Rotor position sensor measuring principle | Magnetic                                                                                                     |
| Temperature monitoring                    | Shutdown in the event of over 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                                | 1.3 m/s                                                                                                      |
| Speed "Speed Press"                       | 0.026 m/s                                                                                                    |
| Repetition accuracy                       | ±0.1 mm                                                                                                      |
| Characteristics of digital logic outputs  | Configurable<br>Not galvanically isolated                                                                    |
| Duty cycle                                | 100%                                                                                                         |
| Insulation protection class               | B                                                                                                            |
| Max. current of digital logic outputs     | 100 mA                                                                                                       |
| Max. current consumption                  | 5300 mA                                                                                                      |
| Logic max. current consumption            | 0.3 A                                                                                                        |
| DC nominal voltage                        | 24 V                                                                                                         |
| Nominal current                           | 5.3 A                                                                                                        |

| Feature                                                                    | Value                                                                                |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Parameterization interface                                                 | IO-Link®<br>User interface                                                           |
| Rotor position sensor resolution                                           | 16 bit                                                                               |
| Permissible voltage fluctuations                                           | +/- 15 %                                                                             |
| Power supply, type of connection                                           | Plug                                                                                 |
| Power supply, connection technology                                        | M12x1, T-coded as per EN 61076-2-111                                                 |
| Power supply, number of pins/wires                                         | 4                                                                                    |
| Power supply, connection pattern                                           | 00995989                                                                             |
| Certification                                                              | RCM compliance mark                                                                  |
| KC characters                                                              | KC EMC                                                                               |
| CE marking (see declaration of conformity)                                 | As per EU EMC directive<br>As per 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 as per FN 942017-4 and EN 60068-2-6 |
| Shock resistance                                                           | Shock test with severity level 1 as per 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                                                | Above an ambient temperature of 30°C, the power must be reduced by 2% per K.         |
| 2nd moment of area Iy                                                      | 441000 mm <sup>4</sup>                                                               |
| 2nd moment of area Iz                                                      | 542000 mm <sup>4</sup>                                                               |
| Max. force Fy                                                              | 3641 N                                                                               |
| Max. force Fz                                                              | 3641 N                                                                               |
| Max. force Fy total axis                                                   | 600 N                                                                                |
| Max. force Fz total axis                                                   | 1800 N                                                                               |
| Fy with theoretical service life of 100 km (from a guide perspective only) | 13400 N                                                                              |
| Fz with theoretical service life of 100 km (from a guide perspective only) | 13400 N                                                                              |
| Max. torque Mx                                                             | 29.1 Nm                                                                              |
| Max. torque My                                                             | 31.8 Nm                                                                              |
| Max. torque Mz                                                             | 31.8 Nm                                                                              |
| Max. moment Mx total axis                                                  | 29.1 Nm                                                                              |
| Max. moment My total axis                                                  | 31.8 Nm                                                                              |
| Max. moment Mz total axis                                                  | 31.8 Nm                                                                              |
| Mx with theoretical service life of 100 km (from a guide perspective only) | 107 Nm                                                                               |
| My with theoretical service life of 100 km (from a guide perspective only) | 117 Nm                                                                               |
| Mz with theoretical service life of 100 km (from a guide perspective only) | 117 Nm                                                                               |
| Max. feed force Fx                                                         | 65 N                                                                                 |
| Guide value for payload, horizontal                                        | 4 kg                                                                                 |
| Torsion moment of inertia It                                               | 29800 mm <sup>4</sup>                                                                |
| Feed constant                                                              | 78 mm/U                                                                              |
| Reference service life                                                     | 5000 km                                                                              |
| Maintenance interval                                                       | Life-time lubrication                                                                |
| Moving mass                                                                | 482 g                                                                                |
| Moving mass at 0 mm stroke                                                 | 482 g                                                                                |
| Slide weight                                                               | 139 g                                                                                |
| Product weight                                                             | 10695 g                                                                              |

| Feature                                 | Value                                                                                                   |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------|
| Dynamic deflection (load moved)         | 0.05% of axis length, maximum 0.5 mm                                                                    |
| Static deflection (load at standstill)  | 0.1 % of axis length                                                                                    |
| Number of digital logic outputs 24 V DC | 2                                                                                                       |
| Number of digital logic inputs          | 2                                                                                                       |
| Logic input specification               | Based on IEC 61131-2, type 1                                                                            |
| Work range of logic input               | 24 V                                                                                                    |
| IO-Link®, SIO mode support              | Yes                                                                                                     |
| Characteristics of logic input          | Configurable<br>Not galvanically isolated                                                               |
| IO-Link®, protocol version              | Device V 1.1                                                                                            |
| IO-Link®, communication mode            | COM3 (230.4 kBd)                                                                                        |
| IO-Link®, port class                    | A                                                                                                       |
| IO-Link®, number of ports               | 1                                                                                                       |
| IO-Link®, process data width OUT        | 2 Byte                                                                                                  |
| 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 width IN         | 2 Byte                                                                                                  |
| 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 contents IN      | 32 bit force<br>32 bit position<br>32 bit speed                                                         |
| IO-Link®, minimum cycle time            | 1 ms                                                                                                    |
| IO-Link®, data memory required          | 500 byte                                                                                                |
| Max. cable length                       | 15 m outputs<br>15 m inputs<br>20 m for IO-Link® operation                                              |
| Switching logic at outputs              | PNP (positive switching)                                                                                |
| Input switching logic                   | PNP (positive switching)                                                                                |
| IO-Link®, Connection technology         | Plug                                                                                                    |
| Logic interface, connection type        | Plug                                                                                                    |
| Logic interface, connection technology  | M12x1, A-coded as per EN 61076-2-101                                                                    |
| Logic interface, number of poles/wires  | 8                                                                                                       |
| Logic interface, connection pattern     | 00992264                                                                                                |
| Type of mounting                        | With internal thread<br>With centering sleeve and pin<br>With accessories                               |
| Material of end caps                    | Die cast aluminum, painted                                                                              |
| Profile material                        | Wrought aluminum alloy, anodized                                                                        |
| Note on materials                       | RoHS-compliant                                                                                          |
| Cover strip material                    | Stainless steel strip                                                                                   |
| Drive cover material                    | Die cast aluminum, painted                                                                              |
| Slide carriage material                 | Tempered steel                                                                                          |
| Guide rail material                     | Tempered steel                                                                                          |
| Belt pulley material                    | High-alloy stainless steel                                                                              |
| Slide material                          | Die-cast aluminum                                                                                       |
| Toothed belt material                   | Polychloroprene with glass fiber                                                                        |