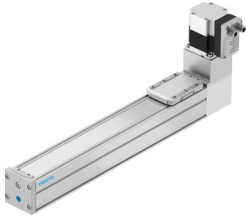


# Toothed belt axis unit ELGS-TB-KF-60-300-ST-M-H1-PLK-AA

FESTO

Part number: 8083571



[PDF](#) General operating condition

## Data sheet

| Feature                                   | Value  |
|---|--|
| Drive pinion effective diameter           | 24.83 mm   |
| Working stroke                            | 300 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                         | Electromechanical linear axis<br>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                                | 1.17 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 suitability, measured according to ISO 14644-14                  | 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   | 4245 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  |