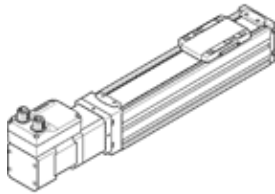


# spindle axis unit

## ELGS-BS-KF-45-300-10P-ST-M-H1-PLK-AA

Part number: 8083472

FESTO



### Data sheet

| Feature                                     | Value                                                                                             |
|---------------------------------------------|---------------------------------------------------------------------------------------------------|
| Working stroke                              | 300 mm                                                                                            |
| Size                                        | 45                                                                                                |
| Stroke reserve                              | 0 mm                                                                                              |
| Spindle diameter                            | 10 mm                                                                                             |
| Spindle pitch                               | 10 mm/U                                                                                           |
| Assembly position                           | Any                                                                                               |
| Guide                                       | Recirculating ball bearing guide                                                                  |
| Design structure                            | Electromechanical linear axis<br>with recirculating ball bearing spindle<br>With integrated drive |
| Motor type                                  | Stepper motor                                                                                     |
| Spindle type                                | Ball screw                                                                                        |
| Position detection                          | Motor encoder<br>For proximity sensor                                                             |
| Referencing                                 | Fixed stop block positive<br>Fixed stop block negative                                            |
| Rotor position sensor                       | Absolute single turn encoder                                                                      |
| Rotary position encoder measuring principle | Magnetic                                                                                          |
| Temperature monitoring                      | Shutdown at over-temperature<br>Integrated precise CMOS temperature sensor with analogue output   |
| Additional functions                        | User interface<br>Integrated end-position sensing                                                 |
| Display                                     | LED                                                                                               |
| Ready status display                        | LED                                                                                               |
| Max. acceleration                           | 5 m/s <sup>2</sup>                                                                                |
| Max. speed                                  | 0.25 m/s                                                                                          |
| Repetition accuracy                         | ±0,015 mm                                                                                         |
| Digital logic output characteristics        | configurable<br>Not electrically isolated                                                         |
| Duty cycle                                  | 100 %                                                                                             |
| Insulation protection class                 | B                                                                                                 |
| Max. current, digital logic outputs         | 100 mA                                                                                            |
| Max. current consumption                    | 3 A                                                                                               |
| Nominal voltage DC                          | 24 V                                                                                              |
| Nominal current                             | 3 A                                                                                               |
| Parameters configuring interface            | IO-Link<br>User interface                                                                         |
| Rotor position encoder resolution           | 16 Bit                                                                                            |
| Permissible voltage fluctuation             | +/- 15 %                                                                                          |
| Power supply, type of connection            | Plug                                                                                              |
| Power supply, connection technology         | M12x1, T-coded to EN 61076-2-111                                                                  |
| Power supply, number of pins/wires          | 4                                                                                                 |
| Authorisation                               | RCM Mark                                                                                          |
| KC mark                                     | KC-EMV                                                                                            |
| CE mark (see declaration of conformity)     | to EU directive for EMC<br>in accordance with EU RoHS directive                                   |

| <b>Feature</b>                                                             | <b>Value</b>                                                                         |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 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 in accordance with FN 942017-5 and EN 60068-2-27    |
| PWIS conformity                                                            | VDMA24364 zone III                                                                   |
| Storage temperature                                                        | -20 ... 60 °C                                                                        |
| Relative air humidity                                                      | 0 - 90 %                                                                             |
| Protection class                                                           | IP40                                                                                 |
| Safety class                                                               | III                                                                                  |
| Ambient temperature                                                        | 0 ... 50 °C                                                                          |
| Note on ambient temperature                                                | Above an ambient temperature of 30 °C, the power must be reduced by 2% per K.        |
| Area moment of inertia 2nd degree Iy                                       | 140E+03 mm <sup>4</sup>                                                              |
| Area moment of inertia 2nd degree Iz                                       | 170E+03 mm <sup>4</sup>                                                              |
| Max. force Fy                                                              | 300 N                                                                                |
| Max. force Fz                                                              | 600 N                                                                                |
| Fy with theoretical service life of 100 km (from a guide perspective only) | 1,104 N                                                                              |
| Fz with theoretical service life of 100 km (from a guide perspective only) | 2,208 N                                                                              |
| Max. torque Mx                                                             | 5.5 Nm                                                                               |
| Max. torque My                                                             | 4.7 Nm                                                                               |
| Max. torque Mz                                                             | 4.7 Nm                                                                               |
| Mx with theoretical service life of 100 km (from a guide perspective only) | 20 Nm                                                                                |
| My with theoretical service life of 100 km (from a guide perspective only) | 17 Nm                                                                                |
| Mz with theoretical service life of 100 km (from a guide perspective only) | 17 Nm                                                                                |
| Max. feed force Fx                                                         | 100 N                                                                                |
| Reference value for working load, horizontal                               | 10 kg                                                                                |
| Reference value for working load, vertical                                 | 5 kg                                                                                 |
| Torsional mass moment of inertia It                                        | 8.5E+03 mm <sup>4</sup>                                                              |
| Feed constant                                                              | 10 mm/U                                                                              |
| Moving mass                                                                | 220 g                                                                                |
| Product weight                                                             | 2,434 g                                                                              |
| Dynamic deflection (load moved)                                            | 0.05% of the axis length, max. 0.5 mm                                                |
| Static deflection (load at standstill)                                     | 0.1% of the axis length                                                              |
| Number of 24 V DC digital logic outputs                                    | 2                                                                                    |
| Number of digital logic inputs                                             | 2                                                                                    |
| Specification, logic input                                                 | Based on IEC 61131-2, type 1                                                         |
| Logic input working range                                                  | 24 V                                                                                 |
| IO-Link, SIO mode support                                                  | Yes                                                                                  |
| Logic input characteristics                                                | configurable<br>Not electrically isolated                                            |
| IO-Link, protocol                                                          | Device V 1.1                                                                         |
| IO-Link, communication mode                                                | COM3 (230.4 kbd)                                                                     |
| IO-Link, port type                                                         | A                                                                                    |
| IO-Link, number of ports                                                   | 1                                                                                    |
| IO-Link, process data width OUT                                            | 2 Byte                                                                               |
| IO-Link, process data content OUT                                          | 1 bit (Move in)<br>1 bit (Move out)<br>1 bit (Quit Error)                            |
| IO-Link, process data width IN                                             | 2 Byte                                                                               |
| IO-Link, process data content IN                                           | 1 bit (State Device)<br>1 bit (State Move)<br>1 bit (State in)<br>1 bit (State out)  |
| 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                                              | 0.5 Kilobyte                                                                         |
| Max. line length                                                           | 15 m outputs                                                                         |

| Feature                                | Value                                            |
|----------------------------------------|--------------------------------------------------|
|                                        | 15 m inputs<br>20 m with IO-Link operation       |
| Switching logic, outputs               | PNP (positive-switching)                         |
| Input circuit logic                    | PNP (positive-switching)                         |
| IO-Link, connection technology         | Plug                                             |
| Logic interface, connection type       | Plug                                             |
| Logic interface, connection technology | M12x1, A-coded in accordance with EN 61076-2-101 |
| Logic interface, number of poles/wires | 8                                                |
| Logic interface, connection pattern    | 00992264                                         |
| Material of end caps                   | Die-cast aluminium, painted                      |
| Material of profile                    | Anodised wrought aluminium alloy                 |
| Materials note                         | Conforms to RoHS                                 |
| Material cover tape                    | High alloy steel, non-corrosive                  |
| Material drive cover                   | Die-cast aluminium, painted                      |
| Material guide slide                   | Steel                                            |
| Material guide rail                    | Steel                                            |
| Material slide                         | Aluminium die cast                               |
| Material spindle nut                   | Steel                                            |
| Material spindle                       | Steel                                            |