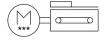
## Toothed belt axis unit ELGS-TB-KF-45-300-ST-M-H1-PLK-AA

**FESTO** 

Part number: 8083666





## **Data sheet**

Working stroke 300 mm  Size 45  Stroke reserve 0 mm  Toothed belt elongation 0.187 %  Toothed belt pitch 2 mm  Mounting position Horizontal Guide Recirculating ball bearing guide  Structural design Electromechanical linear axis with toothed belt With integrated drive  Position sensing Motor encoder for proximity sensor  Rotor position sensor Absolute encoder, single-turn  Rotor position sensor measuring principle Magnetic  Temperature monitoring Shutdown in the event of over temperature Integrated precise CMOS temperature sensor with analogue output  Additional functions User interface Integrated end-position sensing  Display LED  Max. acceleration 6 m/s²  Max. speed 1.2 m/s  Repetition accuracy 20.1 mm  Characteristics of digital logic outputs Configurable Not galvanically isolated  Duty cycle 100%  Max. current of digital logic outputs 100 mA  Max. current of outputs 100 mA  Max. current consumption 1.3 A  DC nominal voltage 24 V	Feature	Value
Size 45 Stroke reserve 0 0 mm Toothed belt elongation 0.187 % Toothed belt elongation 0.187 % Toothed belt pitch 2 mm Mounting position Horizontal Guide Recirculating ball bearing guide Structural design Electromechanical linear axis with toothed belt with integrated drive Position sensing Motor encoder For proximity sensor Rotor position sensor Absolute encoder, single-turn Rotor position sensor measuring principle Magnetic Temperature monitoring Shutdown in the event of over temperature integrated precise CMOS temperature sensor with analogue output Additional functions User interface integrated end-position sensing Display LED Max. acceleration 6 m/s² Max. speed 1.2 m/s Repetition accuracy 5.1 mm Ccharacteristics of digital logic outputs Configurable Not galvanically isolated Duty cycle 100% Max. current of digital logic outputs 100 mA Max. current of digital logic outputs 24 V	Drive pinion effective diameter	19.1 mm
Stroke reserve 0 mm Toothed belt elongation 0.187 % Toothed belt pitch 2 mm Mounting position Horizontal Guide Recirculating ball bearing guide Structural design Electromechanical linear axis with toothed belt with integrated drive Position sensing Motor encoder For proximity sensor Rotor position sensor Absolute encoder, single-turn Rotor position sensor measuring principle Magnetic Temperature monitoring Shutdown in the event of over temperature Integrated precise CMOS temperature sensor with analogue output Additional functions User interface Integrated end-position sensing Display LED Max. acceleration 6 m/s² Max. speed 1.2 m/s Repetition accuracy ±0.1 mm Characteristics of digital logic outputs Configurable Not galvanically isolated Duty cycle 100% Insulation protection class B Max. current of digital logic outputs 1.3 A Logic max. current consumption 5.3 A Logic max. current consumption 0.3 A DC nominal voltage 24 V	Working stroke	300 mm
Toothed belt elongation Toothed belt pitch 2 mm  Mounting position Guide Recirculating ball bearing guide Structural design Electromechanical linear axis with toothed belt With integrated drive  Position sensing Motor encoder For proximity sensor Rotor position sensor Absolute encoder, single-turn Rotor position sensor measuring principle Magnetic  Temperature monitoring Shutdown in the event of over temperature Integrated precise CMOS temperature sensor with analogue output  Additional functions User interface Integrated end-position sensing  Display LED  Max. acceleration 6 m/s² Max. speed 1.2 m/s  Repetition accuracy 40.1 mm  Characteristics of digital logic outputs  Duty cycle 100% Insulation protection class B  Max. current of digital logic outputs  Day on A  Max. current consumption 5.3 A  Logic max. current consumption 0.3 A  DC nominal voltage  24 V	Size	45
Tothed belt pitch  2 mm  Mounting position  Guide  Recirculating ball bearing guide  Electromechanical linear axis with toothed belt With integrated drive  Position sensing  Motor encoder For proximity sensor  Rotor position sensor measuring principle  Rotor position sensor measuring principle  Temperature monitoring  Shutdown in the event of over temperature Integrated end-position sensing  Display  LED  Max. acceleration  Max. acceleration  6 m/s²  Max. speed  1.2 m/s  Repetition accuracy  2.0.1 mm  Characteristics of digital logic outputs  Configurable Not galvanically isolated  Duty cycle  Insulation protection class  Max. current of digital logic outputs  100 mA  Max. current consumption  5.3 A  Logic max. current consumption  0.3 A  DC nominal voltage  Electromechanical linear axis with toothed belt with toothed with toothed belt with toothed with toothed belt with toothed with toothed belt wi	Stroke reserve	0 mm
Mounting position Guide Recirculating ball bearing guide Electromechanical linear axis with toothed belt With integrated drive  Position sensing Motor encoder For proximity sensor Rotor position sensor measuring principle Magnetic  Temperature monitoring Shutdown in the event of over temperature Integrated precise CMOS temperature sensor with analogue output  Additional functions User interface Integrated end-position sensing  Display LED Max. acceleration 6 m/s² Max. speed 1.2 m/s  Repetition accuracy 2.0.1 mm  Characteristics of digital logic outputs  Duty cycle Insulation protection class B Max. current of digital logic outputs  Max. current consumption 5.3 A Logic max. current consumption 0.3 A DC nominal voltage  Electromechanical linear axis with toothed belt With integrated precise Whot encoder, single-turn Magnetic  For proximity sensor  Absolute encoder, single-turn Magnetic  Shutdown in the event of over temperature Integrated precise CMOS temperature sensor with analogue output  User interface Integrated end-position sensing  User interface Integrated end-position sensing  User interface Integrated end-position sensing  User interface Integrated integrated end-position sensing  User integrated end-position sensing  User interface Integrated precise CMOS temperature Integrated precise CMOS tempe	Toothed belt elongation	0.187 %
Recirculating ball bearing guide  Structural design  Electromechanical linear axis with toothed belt With integrated drive  Position sensing  Motor encoder For proximity sensor  Rotor position sensor measuring principle  Temperature monitoring  Shutdown in the event of over temperature Integrated precise CMOS temperature sensor with analogue output  Additional functions  LED  Max. acceleration  Max. speed  1.2 m/s  Repetition accuracy  4.0.1 mm  Characteristics of digital logic outputs  Duty cycle  Insulation protection class  B  Max. current of digital logic outputs  Max. current consumption  5.3 A  Logic max. current consumption  0.3 A  DC nominal voltage  Electromechanical linear axis with toothed belt With toothed belt With integrated drive With integrated drive With integrated drive With integrated or over temperature Integrated precise CMOS temperature sensor with analogue output  LED  Max. acceleration  6 m/s²  1.2 m/s  2.1 m/s  2.0.1 mm  Characteristics of digital logic outputs  No aglivanically isolated  Duty cycle  100%  Insulation protection class  B  Max. current consumption  5.3 A  Logic max. current consumption  0.3 A  DC nominal voltage	Toothed belt pitch	2 mm
Structural design  Electromechanical linear axis with toothed belt With integrated drive  Position sensing  Motor encoder For proximity sensor  Rotor position sensor Absolute encoder, single-turn  Rotor position sensor measuring principle  Magnetic  Temperature monitoring  Shutdown in the event of over temperature Integrated precise CMOS temperature sensor with analogue output  User interface Integrated end-position sensing  Display  LED  Max. acceleration  6 m/s²  Max. speed  1.2 m/s  Repetition accuracy  ±0.1 mm  Configurable Not galvanically isolated  Duty cycle  Insulation protection class  B  Max. current of digital logic outputs  Max. current consumption  5.3 A  Logic max. current consumption  0.3 A  DC nominal voltage	Mounting position	Horizontal
with toothed belt With integrated drive  Position sensing  Motor encoder For proximity sensor  Rotor position sensor  Rotor position sensor measuring principle  Magnetic  Temperature monitoring  Shutdown in the event of over temperature Integrated precise CMOS temperature sensor with analogue output  Additional functions  User interface Integrated end-position sensing  Display  LED  Max. acceleration  6 m/s²  Max. speed  1.2 m/s  Repetition accuracy  4.0.1 mm  Characteristics of digital logic outputs  Duty cycle  100%  Insulation protection class  B  Max. current of digital logic outputs  Max. current consumption  5.3 A  Logic max. current consumption  0.3 A  DC nominal voltage  Washingtone  Modern about the with toothed belt with integrated drive With integrated drive Magnetics  Absolute encoder, single-turn  Magnetic  Shutdown in the event of over temperature Integrated precise CMOS temperature Integrated precise C	Guide	Recirculating ball bearing guide
For proximity sensor Rotor position sensor Rotor position sensor measuring principle Magnetic Temperature monitoring Shutdown in the event of over temperature Integrated precise CMOS temperature sensor with analogue output Additional functions User interface Integrated end-position sensing Display LED Max. acceleration 6 m/s² Max. speed 1.2 m/s Repetition accuracy ±0.1 mm Characteristics of digital logic outputs Configurable Not galvanically isolated Duty cycle 100% Insulation protection class B Max. current of digital logic outputs 100 mA Max. current consumption 5.3 A Logic max. current consumption 0.3 A DC nominal voltage 24 V	Structural design	with toothed belt
Rotor position sensor measuring principle Temperature monitoring Shutdown in the event of over temperature Integrated precise CMOS temperature sensor with analogue output  User interface Integrated end-position sensing  Display LED Max. acceleration 6 m/s² Max. speed 1.2 m/s Repetition accuracy 20.1 mm Characteristics of digital logic outputs Characteristics of digital logic outputs Not galvanically isolated  Duty cycle Insulation protection class B Max. current of digital logic outputs  Magnetic Shutdown in the event of over temperature lenters temperature sensor with analogue output  User interface Integrated precise CMOS temperature sensor with analogue output  ED  Om/s²  1.2 m/s  20.1 mm  Characteristics of digital logic outputs  Not galvanically isolated  Not galvanically isolated  Duty cycle  Insulation protection class  B  Max. current of digital logic outputs  100 mA  Max. current consumption  5.3 A  Logic max. current consumption  0.3 A  DC nominal voltage	Position sensing	
Temperature monitoring  Shutdown in the event of over temperature Integrated precise CMOS temperature sensor with analogue output  User interface Integrated end-position sensing  Display  LED  Max. acceleration  6 m/s²  Max. speed  1.2 m/s  Repetition accuracy  Characteristics of digital logic outputs  Duty cycle  Insulation protection class  B  Max. current of digital logic outputs  Duty accuracy  100 mA  Max. current consumption  5.3 A  Logic max. current consumption  0.3 A  DC nominal voltage	Rotor position sensor	Absolute encoder, single-turn
Integrated precise CMOS temperature sensor with analogue output  User interface Integrated end-position sensing  Display  LED  Max. acceleration  6 m/s²  Max. speed  1.2 m/s  Repetition accuracy  ±0.1 mm  Characteristics of digital logic outputs  Configurable Not galvanically isolated  Duty cycle  100%  Insulation protection class  B  Max. current of digital logic outputs  Max. current consumption  5.3 A  Logic max. current consumption  0.3 A  DC nominal voltage  User integrated precise CMOS temperature sensor with analogue output  Integrated precise CMOS temperature sensor with analogue outputs  Integrated precise CMOS temperature sensor with analogue outputs  6 m/s²  1.2 m/s  20.1 mm  Configurable Not galvanically isolated  100 mA  5.3 A  100 mA	Rotor position sensor measuring principle	Magnetic
Integrated end-position sensing  Display  Max. acceleration  6 m/s²  Max. speed  1.2 m/s  Repetition accuracy  ±0.1 mm  Characteristics of digital logic outputs  Characteristics of digital logic outputs  Duty cycle  100%  Insulation protection class  B  Max. current of digital logic outputs  Max. current consumption  5.3 A  Logic max. current consumption  0.3 A  DC nominal voltage  LED  Amys  End  Amys  Comfigurable  Not galvanically isolated  100 mA  5.3 A  24 V	Temperature monitoring	
Max. acceleration 6 m/s²  Max. speed 1.2 m/s  Repetition accuracy ±0.1 mm  Characteristics of digital logic outputs Configurable Not galvanically isolated  Duty cycle 100%  Insulation protection class B  Max. current of digital logic outputs 100 mA  Max. current consumption 5.3 A  Logic max. current consumption 0.3 A  DC nominal voltage 24 V	Additional functions	
Max. speed  Repetition accuracy  £0.1 mm  Configurable Not galvanically isolated  Duty cycle  Insulation protection class  Max. current of digital logic outputs  Max. current consumption  Logic max. current consumption  DC nominal voltage  1.2 m/s  £0.1 mm  Configurable Not galvanically isolated  Now How galvanically isolated  100 %  100 mA  100 mA  24 V	Display	LED
Repetition accuracy  Characteristics of digital logic outputs  Configurable Not galvanically isolated  Duty cycle  100%  Insulation protection class  B  Max. current of digital logic outputs  100 mA  Max. current consumption  5.3 A  Logic max. current consumption  0.3 A  DC nominal voltage  24 V	Max. acceleration	6 m/s <sup>2</sup>
Characteristics of digital logic outputs  Configurable Not galvanically isolated  100%  Insulation protection class  Max. current of digital logic outputs  100 mA  Max. current consumption  5.3 A  Logic max. current consumption  0.3 A  DC nominal voltage  24 V	Max. speed	1.2 m/s
Not galvanically isolated  Duty cycle 100%  Insulation protection class B  Max. current of digital logic outputs 100 mA  Max. current consumption 5.3 A  Logic max. current consumption 0.3 A  DC nominal voltage 24 V	Repetition accuracy	±0.1 mm
Insulation protection class  Max. current of digital logic outputs  100 mA  Max. current consumption  5.3 A  Logic max. current consumption  0.3 A  DC nominal voltage  24 V	Characteristics of digital logic outputs	
Max. current of digital logic outputs  100 mA  Max. current consumption  5.3 A  Logic max. current consumption  0.3 A  DC nominal voltage  24 V	Duty cycle	100%
Max. current consumption 5.3 A Logic max. current consumption 0.3 A DC nominal voltage 24 V	Insulation protection class	В
Logic max. current consumption 0.3 A DC nominal voltage 24 V	Max. current of digital logic outputs	100 mA
DC nominal voltage 24 V	Max. current consumption	5.3 A
· · · · · · · · · · · · · · · · · · ·	Logic max. current consumption	0.3 A
Nominal current 5.3 A	DC nominal voltage	24 V
	Nominal current	5.3 A

Feature	Value
Parameterization interface	IO-Link®
	User interface
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
Certification	RCM compliance mark
CE marking (see declaration of conformity)	As per EU EMC directive As per EU RoHS directive
LABS (PWIS) conformity	VDMA24364 zone III
Storage temperature	-20 °C60 °C
Relative air humidity	0 - 90 %
Degree of protection	IP40
Ambient temperature	0 °C50 °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 ly	140000 mm <sup>4</sup>
2nd moment of area lz	170000 mm <sup>4</sup>
Max. force Fy	880 N
Max. force Fz	880 N
Fy with theoretical service life of 100 km (from a guide perspective only)	3240 N
Fz with theoretical service life of 100 km (from a guide perspective only)	3240 N
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	75 N
Guide value for payload, horizontal	2.5 kg
Feed constant	60 mm/U
Moving mass	169 g
Moving mass at 0 mm stroke	169 g
Slide weight	55 g
Product weight	2480 g
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
Work range of logic input	24 V
Characteristics of logic input	Configurable Not galvanically isolated
IO-Link®, process data content OUT	Move in 1 bit Move out 1 bit Quit Error 1 bit Move Intermediate 1 bit
IO-Link®, process data content IN	State Device 1 bit State In 1 bit State Intermediate 1 bit State Move 1 bit State Out 1 bit
IO-Link®, service data contents IN	32 bit force 32 bit position 32 bit speed
IO-Link®, data memory required	0.5 KB
Input switching logic	PNP (positive switching)
Logic interface, connection type	Plug

Feature	Value
Logic interface, connection technology	M12x1, A-coded as per EN 61076-2-101
Logic interface, number of poles/wires	8
Type of mounting	With internal thread With centering sleeve and pin 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
Slide carriage material	Tempered steel
Guide rail material	Tempered steel
Toothed belt material	Polychloroprene with glass fiber