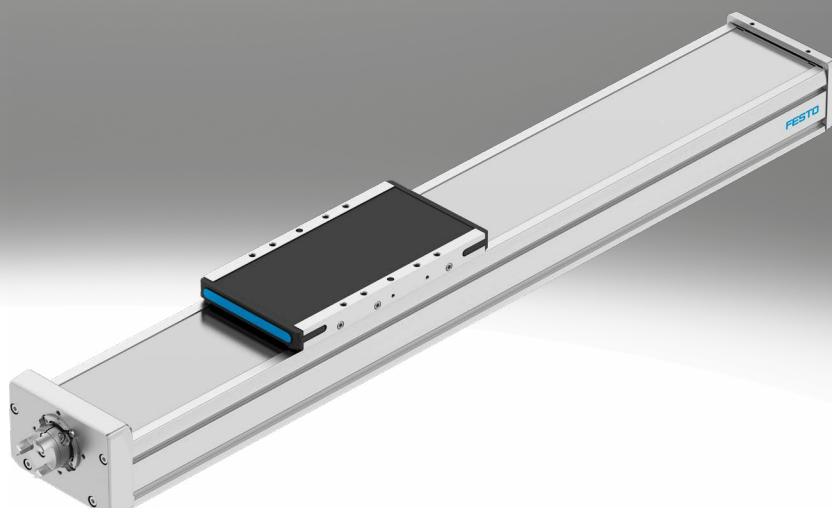


Ball screw axes ELGD-BS-WD

FESTO



Key features

At a glance

ELGD-BS (standard design)

- Profile with a square cross section and sturdy drive elements for high feed forces
- With NSF-H1 lubricant for the food zone
- Suitable for the production of Li-ion batteries

ELGD-BS-WD (wide design)

- Reduced profile height offers smaller installation dimensions for handling systems and applications that do not require such high feed forces
- 30% lighter, while rigidity and guide load capacity are still similar to the axis in the standard design
- With NSF-H1 lubricant for the food zone
- Suitable for the production of Li-ion batteries

Innovative guide technology

- Excellent rigidity and load capacity of the guide for greater load in the same installation space
- Less vibration and smoother slide movement protect sensitive workpieces
- High speeds ensure short cycle times and a very long service life minimises downtime

Powerful drive elements

- High feed forces and acceleration for shorter process times
- Long service life and increased reliability reduce TCO

Innovative stainless steel cover strip solution

- Abrasion-free and clean surface protects workpieces from particles
- Minimised number of particles for use in cleanrooms
- Reduced ingress of dirt for use in harsh ambient conditions

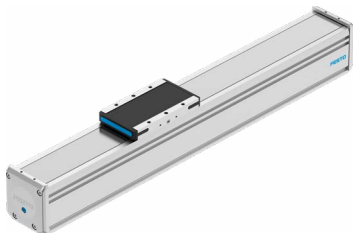
Options:

- Extended or additional slide for higher axial and lateral torques and higher loads

Sealing air connection:

- Air is exchanged between the interior of the cylinder and the environment via the sealing air connection. This prevents negative pressure or excess pressure from building up inside the cylinder.
- Application of slight negative pressure prevents the emission of particles
- Application of slight excess pressure prevents the ingress of particles

Guide axis ELFD



- Driveless linear guide units with guide and freely movable slide
- The guide axis is designed to support forces and torques in multi-axis applications

Key features

Engineering tools

More information → [electric-motion-sizing](#)



Save time with smart engineering tools for the optimal solution. Our goal is to increase your productivity. Our engineering tools play an integral part in achieving this goal. They help you size your system correctly, tap into unimagined productivity reserves and generate additional productivity along the entire value chain. In every phase of your project, from the initial contact to the modernisation of your machine, you will come across a number of different tools and useful tools.

Electric Motion Sizing

- Create the optimum drive package quickly and reliably. Electric Motion Sizing calculates suitable combinations of electric axis, electric motor and servo drive using just a few application details. It provides you with all the relevant data including the bill of materials and documentation for the selected combination. This avoids design errors and results in significantly improved energy efficiency for the system. A smooth connection to the Festo Automation Suite also makes commissioning easier for you.

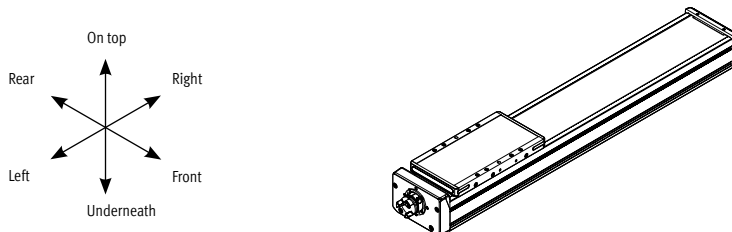
Graphs

More information → [elgd-bs](#)



The graphs shown in this document are also available online. These can be used to display precise values.

Orientation guide



- The side on which the labelling is applied is defined as the front.

Drive system

[BS] Ball screw

- For applications requiring precision
- High reliability and long service life
- For high loads

Stroke reserve

- The stroke reserve is a safety distance from the mechanical end position and is not used in normal operation.
- The sum of the stroke length and 2x stroke reserve must not exceed the maximum working stroke.

Screw pitch

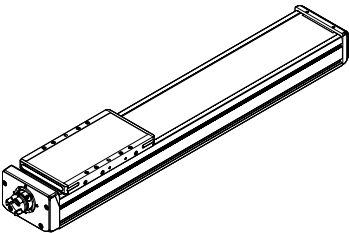
The screw pitch describes the distance travelled by the ball screw nut per revolution of the ball screw in millimetres.

Ball screw support

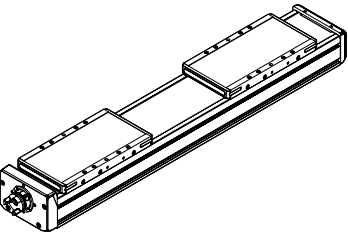
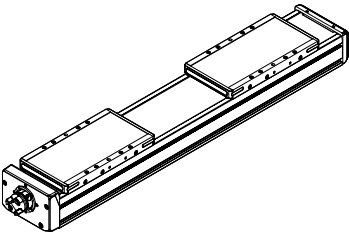
The ball screw support enables maximum travel speed with all stroke lengths.

Key features

Slide design	
[L]	Long



Additional slide	
[ZR]	Right
[ZL]	Left



Lubrication	
[]	Standard
[GN]	Lubrication nipple

- | | |
|--|--|
| <ul style="list-style-type: none">• With lifetime lubrication (this applies under standard conditions. Please refer to the operating manual for maintenance intervals for specific applications)• Lubrication nipple not included in delivery | <ul style="list-style-type: none">• The lubrication adapters enable the guide to be permanently lubricated using semi- or fully automatic relubrication devices• The adapters are suitable for oils and greases |
|--|--|

Type of mounting	
[M]	Direct mounting
[M7]	Mounting type for front end use

- | | |
|--|--|
| <ul style="list-style-type: none">• When direct mounting is selected, the axis is supplied with threads in the underside of the profile. It can then be mounted without profile mountings, which saves space• Additional centring holes make it easy to install the axis in the machine | <ul style="list-style-type: none">• Attachments can be fitted on the front of the axis using the front-end mounting feature• Threads are therefore integrated into the underside of the profile on the side facing away from the motor; this, together with an angle kit, makes for stable front-end assembly |
|--|--|

Measurement system	
[M3]	With displacement encoder

The position of the slide can be sensed directly when using the incremental displacement encoder. This means that all elasticities of the drivetrain can be detected and corrected by the motor controller

Type codes

001	Series	
ELGD	Gantry axis	
002	Drive system	
BS	Ball screw drive	
003	Guide	
KF	Recirculating ball bearing guide	
004	Design type	
WD	Wide	
005	Size	
100	100	
120	120	
006	Stroke [mm]	
100	100	
200	200	
300	300	
400	400	
500	500	
600	600	
800	800	
1000	1000	
...	50 ... 1500	
007	Stroke reserve	
OH	None	
...H	0 ... 999 mm	

008	Ball screw pitch	
5P	5 mm	
10P	10 mm	
009	Ball screw support	
	None	
SU	With	
010	Slide design	
L	Slide, long	
011	Additional slide	
	None	
ZL	1 slide left	
ZR	1 slide right	
012	Lubrication	
	Standard	
GN	Lubrication nipple	
013	Type of mounting	
	Profile slots with clamping jaws	
M	Direct mounting	
M7	Mounting type for front end use	
014	Displacement encoder	
	None	
M3	With displacement encoder, incremental, resolution 2.5 µm, 10... 30 V	
015	Displacement encoder attachment position	
	None	
B	Rear	
F	Front	

Datasheet

General technical data					
Size		100		120	
Screw pitch [mm/rev]		5	10	5	10
Design		Electromechanical axis with ball screw			
Guide		Recirculating ball bearing guide			
Mounting position		Any			
Working stroke					
ELGD-... [mm]		50 ... 1000		50 ... 1500	
ELGD-...-M [mm]		50 ... 1000		50 ... 1370	
Max. feed force F _x					
With axial kit [N]		1100	1100	1880	1880
With parallel kit [N]		1100	575	1880	1880
No-load torque [Nm]		0.11	0.051	0.104	0.147
at low travel speed: [m/s]		0.05	0.05	0.05	0.05
No-load torque [Nm]		0.26	0.077	0.213	0.39
at min. travel speed [m/s]		0.25	0.5	0.25	0.5
Max. radial force ¹⁾ [N]		180	180	230	230
Max. rotational speed ²⁾ [rpm]		8000	8000	6667	6667
Max. speed [m/s]		0.66	1.33	0.56	1.11
Max. acceleration [m/s²]		15			
Repetition accuracy [mm]		±0.01			
Reversing backlash [mm]		0.15			
Position sensing		Via proximity switch			

1) At the drive shaft

2) Rotational speed and velocity are stroke-dependent

Weight [g]		
Size	100	120
Basic weight with 0 mm stroke ¹⁾	2979	5290
Additional weight per 10 mm stroke	59	86
Moving mass	1185	2200

1) Including slide

Ball screw			
Size		100	120
Diameter	[mm]	10	12
Pitch	[mm/rev]	5/10	5/10

Homing

Homing can be carried out in two ways:

- Against a fixed stop
- Using a reference switch

The following values must be observed:

Size	100	120
Max. impact energy	[mJ]	1
Note on the impact energy in the end positions	[m/s]	At maximum homing speed of 0.01 m/s

Datasheet

Operating and environmental conditions		
Ambient temperature ¹⁾	[°C]	0 ... +60
Degree of protection		IP40
Duty cycle	[%]	100
Maintenance interval ²⁾		Lifetime lubrication

1) Note operating range of proximity switches

2) This information applies under standard conditions. Please refer to the operating manual for maintenance intervals for specific applications.

Cleanroom suitability

The axis ELGD is designed for cleanroom applications and tested under typical operating conditions. The ISO class is determined using standardised testing procedures in which particle emissions are measured for several hours until stable values are reached. The classification of the cleanroom class is carried out according to ISO 14644 14 using reliable statistical methods. The tests are carried out with 100% duty cycle. The ISO class is determined over a period of 100 minutes to obtain reliable performance data.

The standard grease used in the ELGD has a low particle emission and is therefore well suited for cleanroom applications.

Our engineering team can carry out a detailed assessment for applications with specific cleanroom requirements and recommend an optimal configuration that is tailored to your process.

Size	100	120
Suitable for cleanrooms, measured according to ISO 14644-14	ISO class 4 (vacuum) ISO class 7	

1) In order to achieve the required ISO class, the axis must be cleaned and correctly prepared before commissioning.

ISO class			4			5				6				7			
Speed		[m/s]	0.1	0.2	0.5	0.1	0.2	0.5	1	0.1	0.2	0.5	1	0.1	0.2	0.5	1
	For size																
Required vacuum flow rate	100	[l/min]	10	20	50	10	20	50	*	0	10	30	*	0	0	10	*
	120	[l/min]	10	10	30	10	10	30	80	0	0	10	50	0	0	0	30

* Not measured

** Not reached

Mass moment of inertia					100		120	
Size								
Screw pitch		[mm/rev]	5	10				
J_0		[kg mm ²]	5.632	5.632				
J_H per metre stroke		[kg mm ² /m]	7.554	7.554				
J_L per kg effective load		[kg mm ² /kg]	0.633	2.533				

The mass moment of inertia J_A of the entire axis is calculated as follows:

$$J_A = J_0 + J_H \times \text{working stroke [m]} + J_L \times m_{\text{effective load [kg]}}$$

Datasheet

Materials

Axis	
Drive cover	Gravity die-cast aluminium, painted
Ball screw nut	Steel
Ball screw	Steel
Slide	Wrought aluminium alloy
Cover strip	High-alloy stainless steel
Guide	Steel
Profile	Anodised wrought aluminium alloy
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-C1-L
Suitable for the production of Li-ion batteries	Suitable for battery production with reduced Cu/Zn/Ni values (F1a)

Technical data – Displacement encoder

Type	ELGD-...-M3	
Resolution	[µm]	2.5
Max. travel speed with displacement encoder	[m/s]	7
Supply voltage	[VDC]	10 – 30 (±10%)
Current	[mA]	Max. 150
Encoder signal	5 V TTL; A/A, B/B; reference signal (N/N) cyclically every 5 mm (zero pulse)	
Signal output	Line driver, alternating, resistant to sustained short circuit	
Electrical connection	8-pin plug connector, round design, M12	
Cable length	[mm]	160

Operating and environmental conditions – Displacement encoder

Ambient temperature	[°C]	–10 ... +70
Degree of protection	IP64	
CE marking (see declaration of conformity)	To EU EMC Directive ¹⁾	

1) For information about the area of use, see the EC declaration of conformity at: www.festo.com/sp → Certificates.

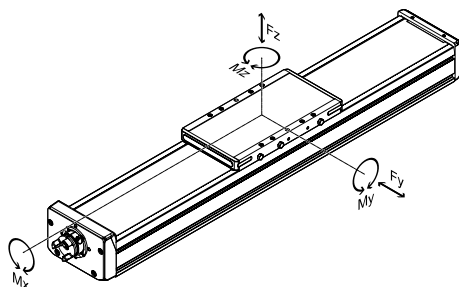
If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

Datasheet

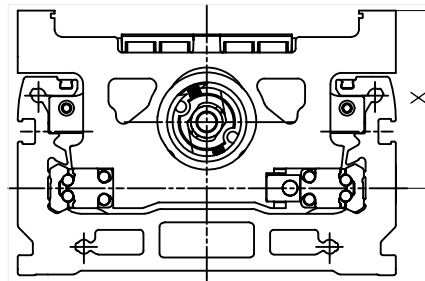
Load values

The indicated forces and torques refer to the centre of the guide. The point of application of force is the point where the centre of the guide and the longitudinal centre of the slide intersect. The appropriate size is selected using the following three steps:

1. Check the maximum permissible values (must not be exceeded)
2. Calculate the load comparison factor
3. Determine the service life



Distance from the slide surface to the centre of the guide



Distance from the slide surface to the centre of the guide

Size	100	120
Dimension x [mm]	47	51

1. Check the maximum permissible values

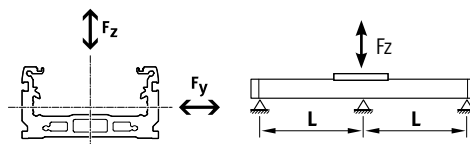
Max. permissible forces and torques for the overall axis (strength limits)

Size	100	120
Max. force F_y , overall axis [N]	4092	5914
Max. force F_z , overall axis [N]	2250	5280
Max. torque M_x , overall axis [Nm]	160	290
Max. torque M_y , overall axis [Nm]	191	590
Max. torque M_z , overall axis [Nm]	191	527

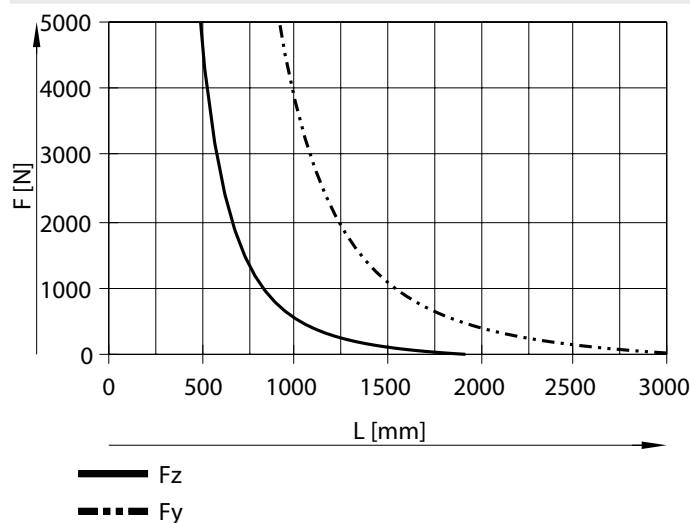
Maximum permissible support spacing L as a function of force F

The axis may need to be supported in order to limit deflection in the case of long strokes.

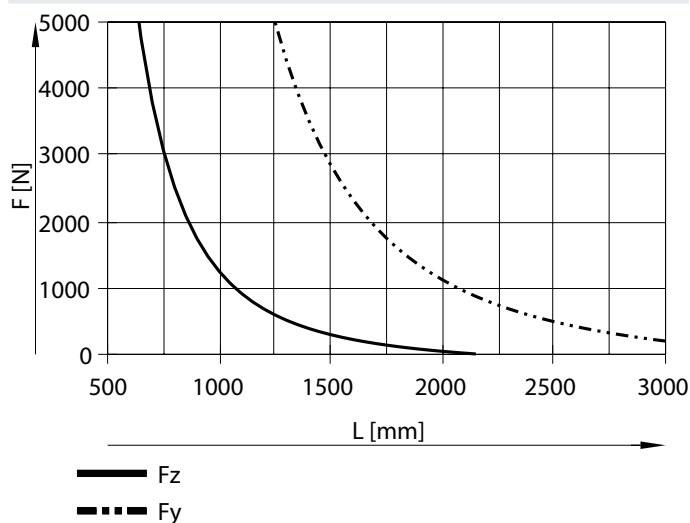
The following graphs can be used to determine the maximum permissible support spacing L as a function of force F acting on the axis. The deflection is $f = 0.5 \text{ mm}$.



Size 100



Size 120



Datasheet

2. Calculate the load comparison factor


Note

For a guide system to have a service life of 5000 km, the load comparison factor must have a value of $f_v \leq 1$, based on the maximum permissible forces and torques for a service life of 5000 km.

This formula can be used to calculate a guide value.

The engineering software "Electric Motion Sizing" is available for more precise calculations

→ www.festo.com/x/electric-motion-sizing

If the axis is subjected to several of the indicated forces and torques at the same time, the following equation must be satisfied in addition to the indicated maximum loads:

Calculating the load comparison factor:

$$f_v = \frac{|F_{y1}|}{F_{y2}} + \frac{|F_{z1}|}{F_{z2}} + \frac{|M_{x1}|}{M_{x2}} + \frac{|M_{y1}|}{M_{y2}} + \frac{|M_{z1}|}{M_{z2}} \leq 1$$

F1/M1 = Values occurring in the application

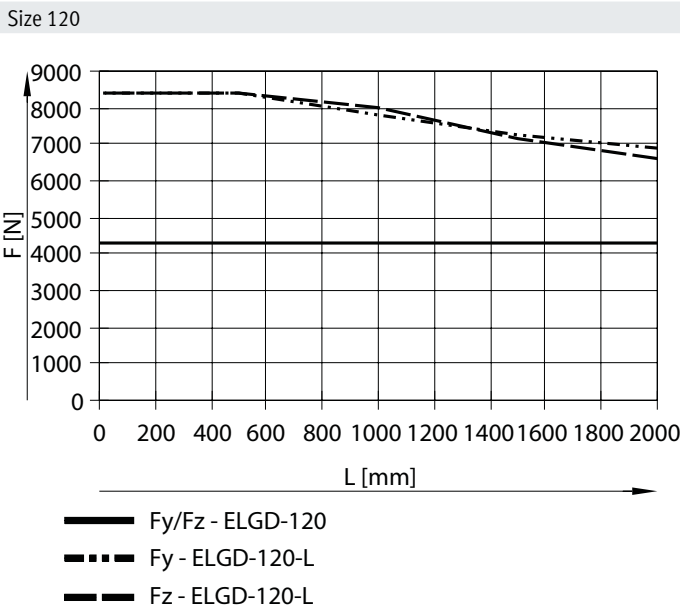
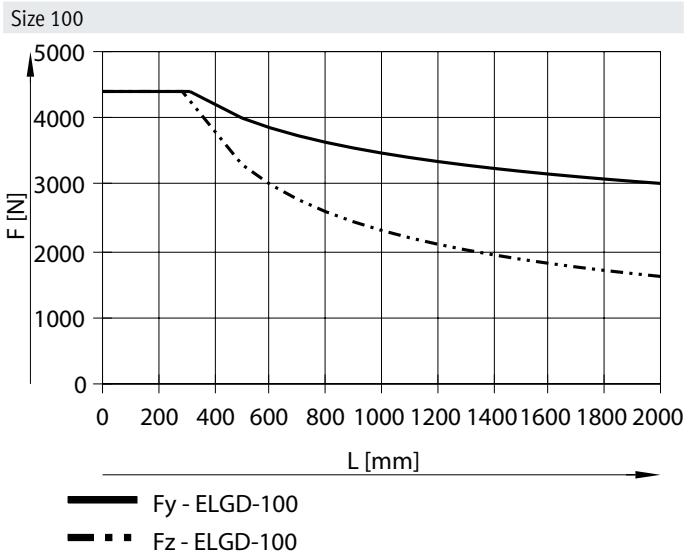
F2 = Permissible values at 5000 km from the graph "load as a function of support spacing"

M2 = Maximum permissible values (see table)

Max. permissible torques for the guide calculation with reference service life			
Size		100	120
Reference service life	[km]	5000	
Max. torque Mx	[Nm]	140	330
Max. torque My	[Nm]	230	600
Max. torque Mz	[Nm]	220	540

Permissible guide load as a function of the support spacing

Depending on how firmly the axis is supported, the maximum permissible forces vary due to the design of the guide system.
 If the axis is used as a cantilever or in yoke operation, the values for a support spacing of 2000 mm can be selected.



Datasheet

3. Determine the service life

The service life of the guide depends on the load. To be able to provide an indication of the service life of the guide, the graph below plots the load comparison factor f_v against the service life.

These values are only theoretical. You must consult your local Festo contact for a load comparison factor f_v greater than 1.3.

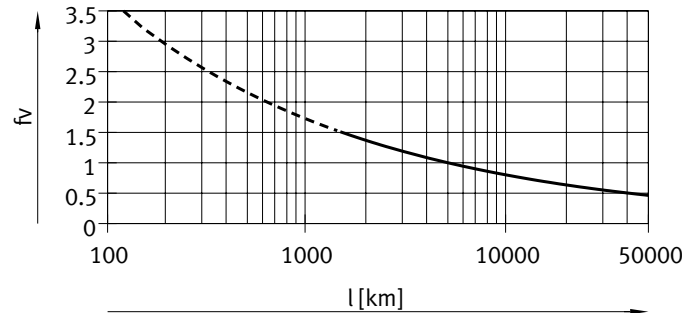
Load comparison factor f_v as a function of service life l

Example:

A user wants to move an x kg load. Using the formula (→ page 10) gives a value of 1.3 for the load comparison factor f_v . According to the graph, the guide would have a service life of approx. 2500 km. Reducing the acceleration reduces the M_z and M_y values. A load comparison factor f_v of 1 now gives a service life of 5000 km.

Note:

If the application has been calculated using “Electric Motion Sizing”, the average guide comparison figure represents the workload of the guide. (100% average guide comparison figure corresponds to $f_v = 1$). With this value, the service life can be estimated using the service life graph



Comparison of the characteristic load values for 100 km with dynamic forces and torques of recirculating ball bearing guides

The characteristic load values of the bearing guides are standardised to ISO and JIS using dynamic and static forces and torques. These forces and torques are based on an expected service life of the guide system of 100 km to ISO or 50 km to JIS.

As the characteristic load values are dependent on the service life, the maximum permissible forces and torques for a 5000 km service life cannot be compared with the dynamic forces and torques of bearing guides to ISO/JIS.

To make it easier to compare the guide capacity of linear axes ELGD with bearing guides, the table below lists the theoretically permissible forces and torques for a calculated service life of 100 km. This corresponds to the dynamic forces and torques to ISO.

These 100 km values have been calculated mathematically and are only to be used for comparing with dynamic forces and torques to ISO. The drives must not be loaded with these characteristic values as this could damage the axes.

Max. permissible forces and torques for a theoretical service life of 100 km (from a guide perspective only)

Size	100	120
$F_{y_{max}}$ [N]	18415	35153
$F_{z_{max}}$ [N]	18415	35153
$M_{x_{max}}$ [Nm]	645	1459
$M_{y_{max}}$ [Nm]	720	1920
$M_{z_{max}}$ [Nm]	720	1920

Datasheet

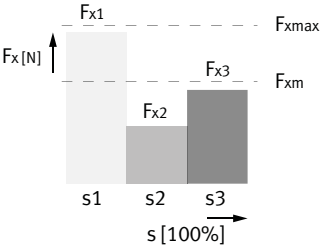
Service life of the ball screw

- The service life of the ball screw axis depends on the service life of the guide as well as on that of the drive screw.
The operating coefficient plays a considerable role in determining the possible service life. It can be determined with the help of the table below
- The distance between the foremost and rearmost positions must be at least 2.5 times the screw pitch per travel cycle
- The specifications for the running performance are based on experimentally determined and theoretically calculated data (at room temperature).
The running performance that can be achieved in practice can deviate considerably from the specified curves under different parameters

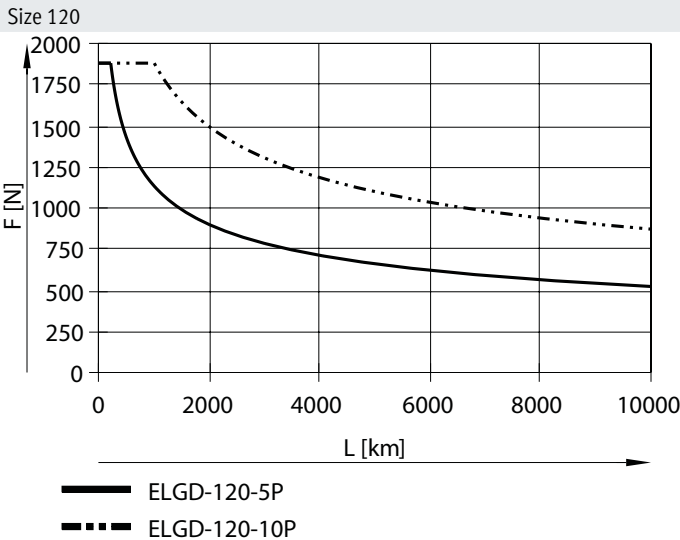
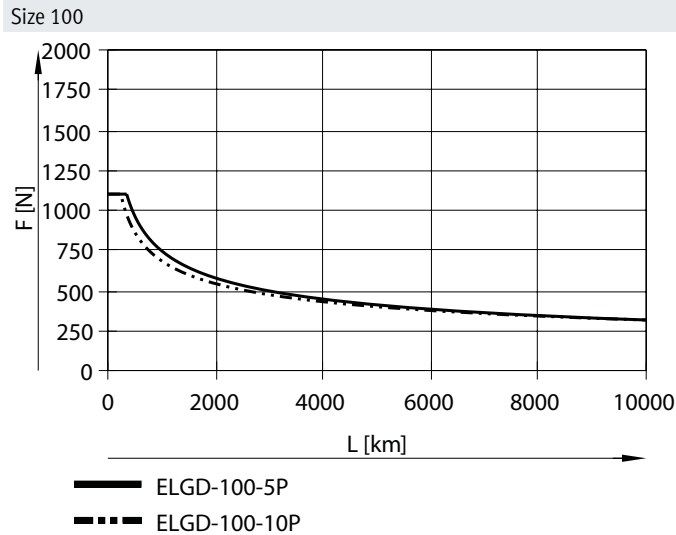
Calculation of the mean feed force F_{xm} with ball screw

$$F_{xm} = \sqrt[3]{\frac{F_{x1}^3 \cdot s_1 + \dots + F_{xn}^3 \cdot s_n}{s_1 + \dots + s_n}}$$

F_{xm} = Mean feed force
 $F_{x1/n}$ = Feed force of the section
 $s_{1/n}$ = Part of the movement cycle that is travel



Mean feed force F_{xm} as a function of running performance L, with an operating coefficient f_B of 1.0 at room temperature



Service life taking into account the operating coefficient

$$L_1 = \frac{L}{f_B^3}$$

L_{ist} = Actual service life
 L = Target service life
(→ graph)
 f_B = Operating coefficient

Load ¹⁾	Operating coefficient f_B	Application example
None	1.0 ... 1.2	Measuring machine
Light	1.2 ... 1.4	Handling, robot technology
Medium	1.4 ... 1.6	Press-in operations
High	1.6 ... 2.0	Construction, agriculture

1) Loads caused by impact, temperature, contamination, shock and vibrations

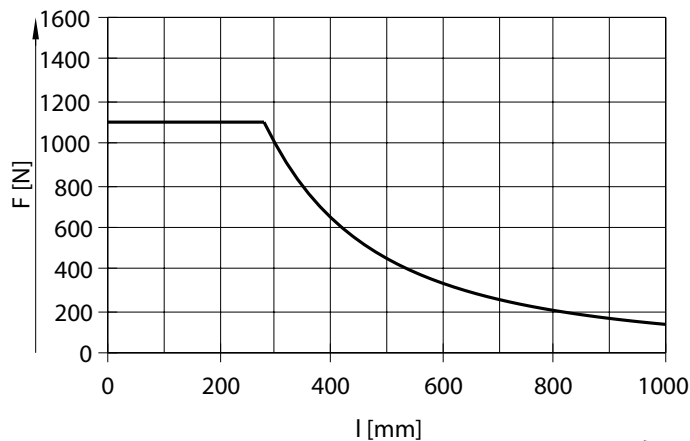
Datasheet

Max. feed force F as a function of the working stroke l

The feed force that pushes the ball screw in the direction of the motor must be limited depending on the stroke due to possible buckling (e.g. acceleration of a load mass away from the motor, deceleration of a load moving towards the motor).

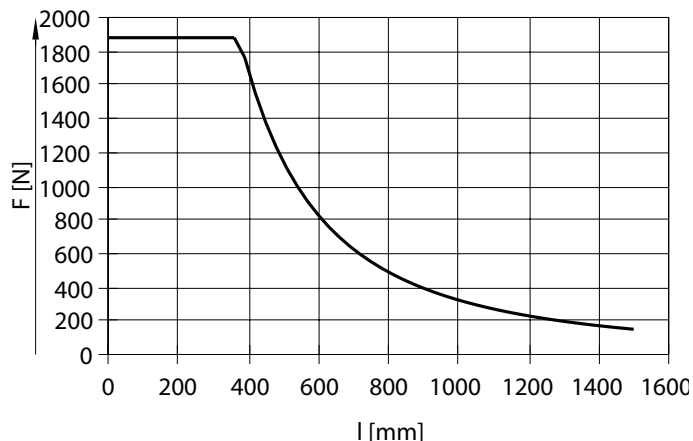
The feed force in the opposite direction is not affected by this.

Size 100



ELGD-100

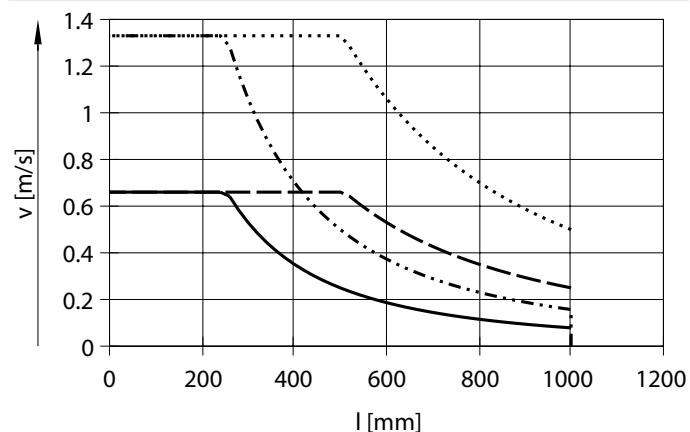
Size 120



ELGD-120

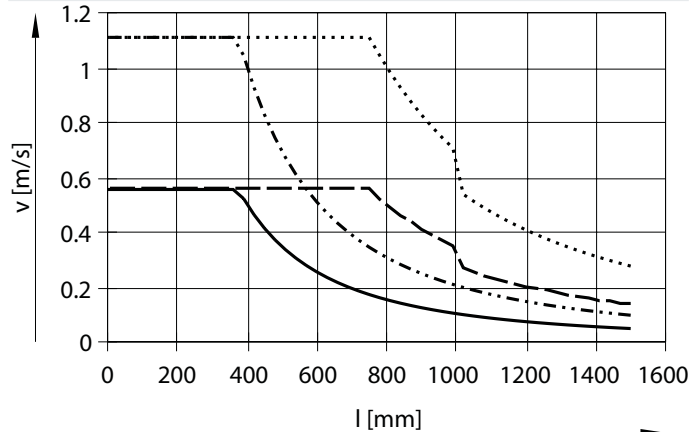
Speed v as a function of working stroke l

Size 100



ELGD-100-5P
 ELGD-100-10P
 ELGD-100-5P-SU
 ELGD-100-10P-SU

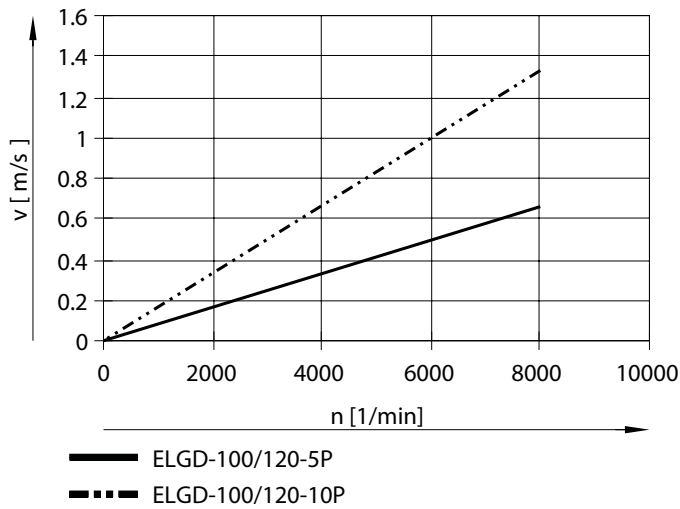
Size 120



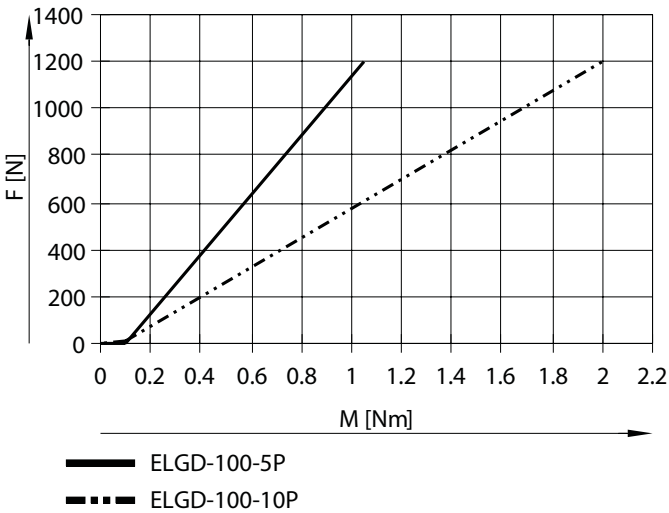
ELGD-120-5P
 ELGD-120-10P
 ELGD-120-5P-SU
 ELGD-120-10P-SU

Datasheet

Speed v as a function of rotational speed n

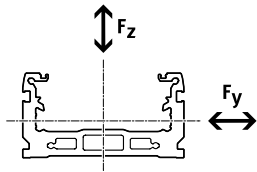


Feed force F as a function of input torque M



Datasheet

Second moment of area



Size		100	120
I_y	[mm ⁴]	0.347×10^6	0.771×10^6
I_z	[mm ⁴]	2.268×10^6	5.801×10^6

Recommended deflection limit values

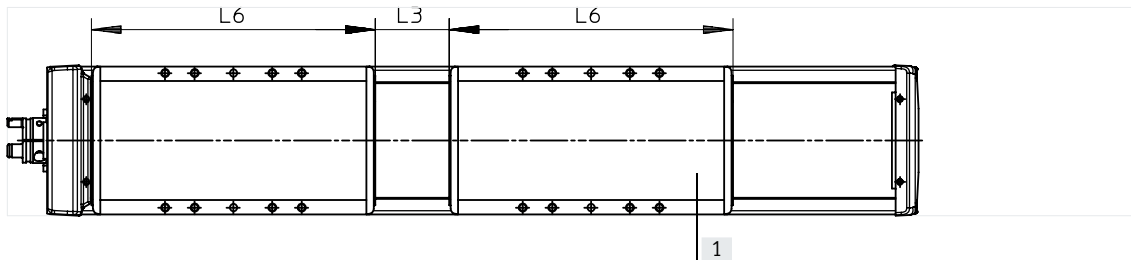
Adherence to the following limit values for deflection is recommended to ensure the continuing functionality of the axes. Greater deformation can result in increased friction, greater wear and reduced service life.

Size	Dynamic deflection (moving load)	Static deflection (stationary load)
100, 120	0.05% of the axis length, max. 0.5 mm	0.1% of the axis length

Working stroke reduction

For axis ELGD with additional slide ZL/ZR

For a ball screw axis with additional slide, the working stroke is reduced by the length of the additional slide and the distance between both slides



L_6 = Slide length
 L_6 = Additional slide length
 L_3 = Distance between the two slides
 [1] Additional slide

Example:

Type ELGD-BS-KF-WD-100-500-...-ZR
 Working stroke without
 Additional slide = 500 mm
 L_3 = 50 mm
 L_6 = 192 mm
 Working stroke with additional slide = 258 mm
 (500 mm – 50 mm – 192 mm)

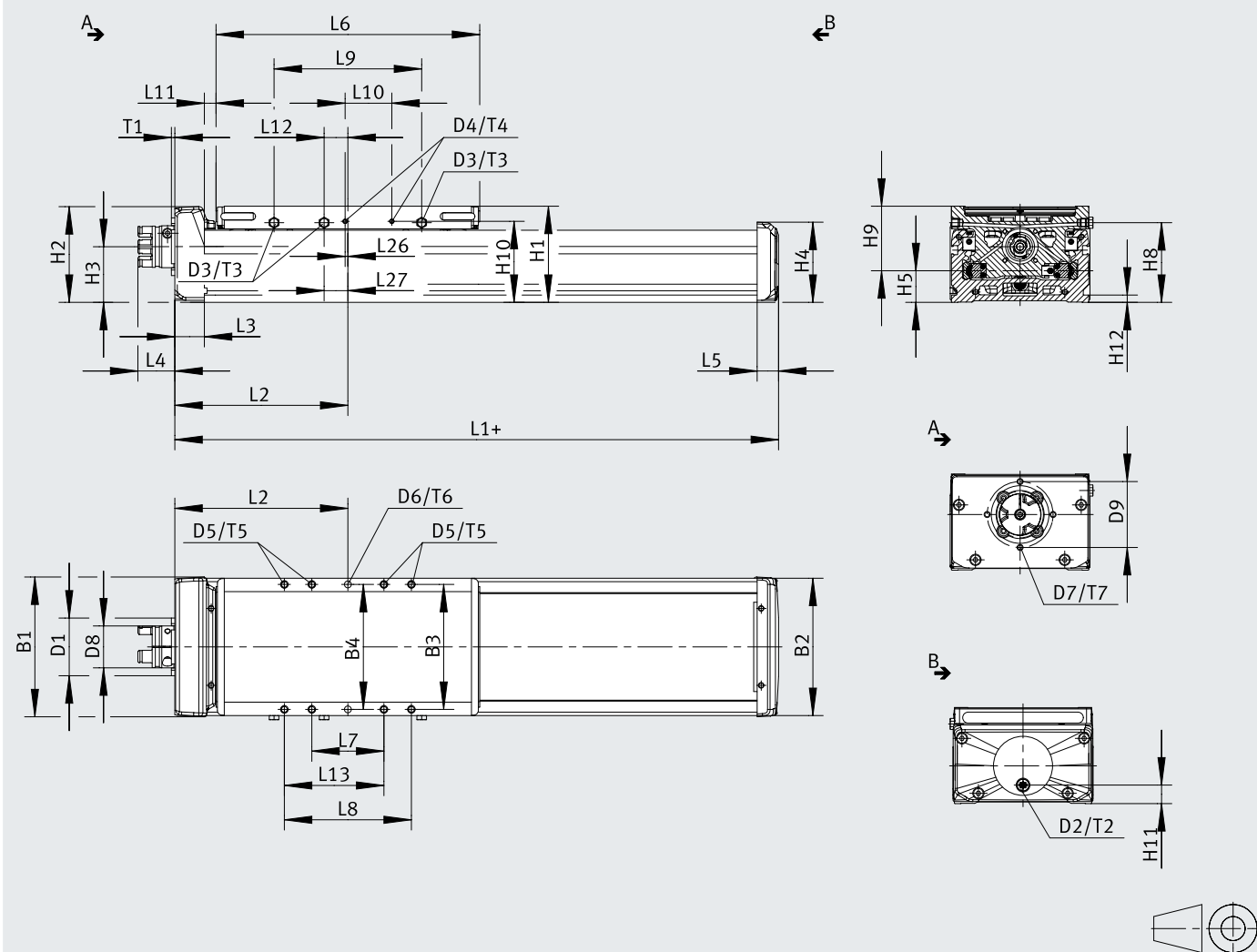
Dimensions – Additional slide

Size		100	120
Length L_2	[mm]	192	263
Min. distance between the slides L_3	[mm]	≥ 50	≥ 50

Datasheet

Dimensions – ELGD-BS-...

Download CAD data → www.festo.com



$+=$ plus stroke length + 2x stroke reserve

	B1	B2	B3	B4 ±0.03	D1 ø f7	D2	D3	D4	D5	D6 ø H7	D7	D8 ø	D9 ø	H1	H2
ELGD-BS-100	102	100	91	91	42	G1/8	M6	M3	M5	5	M4	30.5	48	70	70
ELGD-BS-100-SU															
ELGD-BS-120	123	120	107	107	42	G1/8	M6	M3	M6	6	M4	30.5	48	82	76.8
ELGD-BS-120-SU															

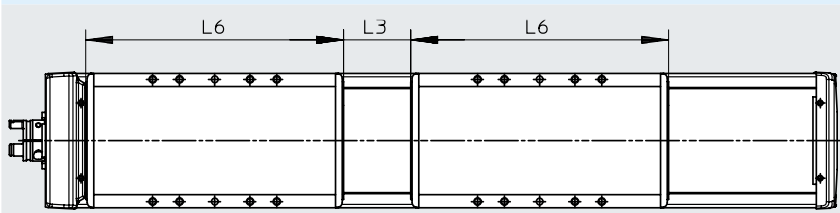
	H3	H4	H5	H8	H9	H10	H11	H12	L1	L2	L3	L4	L5	L6	L7	L8
										min.					±0.1	±0.1
ELGD-BS-100	40.5	58.5	23	58	47	59	13.5	5.3	239.6	126.5	21.5	26.9	15.6	192	52.5	92.5
ELGD-BS-100-SU																
ELGD-BS-120	46.4	69	31	68.5	50.5	69.5	20.4	5.3	313	165	30.5	26.9	13.5	263	92.5	132.5
ELGD-BS-120-SU																

[illegible]

Datasheet

Dimensions – ELGD-BS-...-ZR (with additional slide)

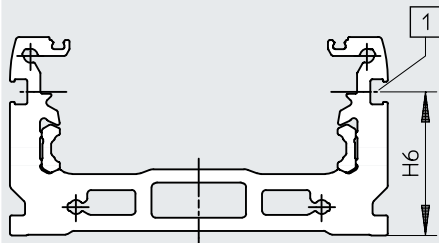
Download CAD data → www.festo.com



	L3 (Minimum distance)	L6
ELGD-BS-100	50	192
ELGD-BS-120	50	263

Dimensions – ELGD-BS-...- (profile)

Download CAD data → www.festo.com

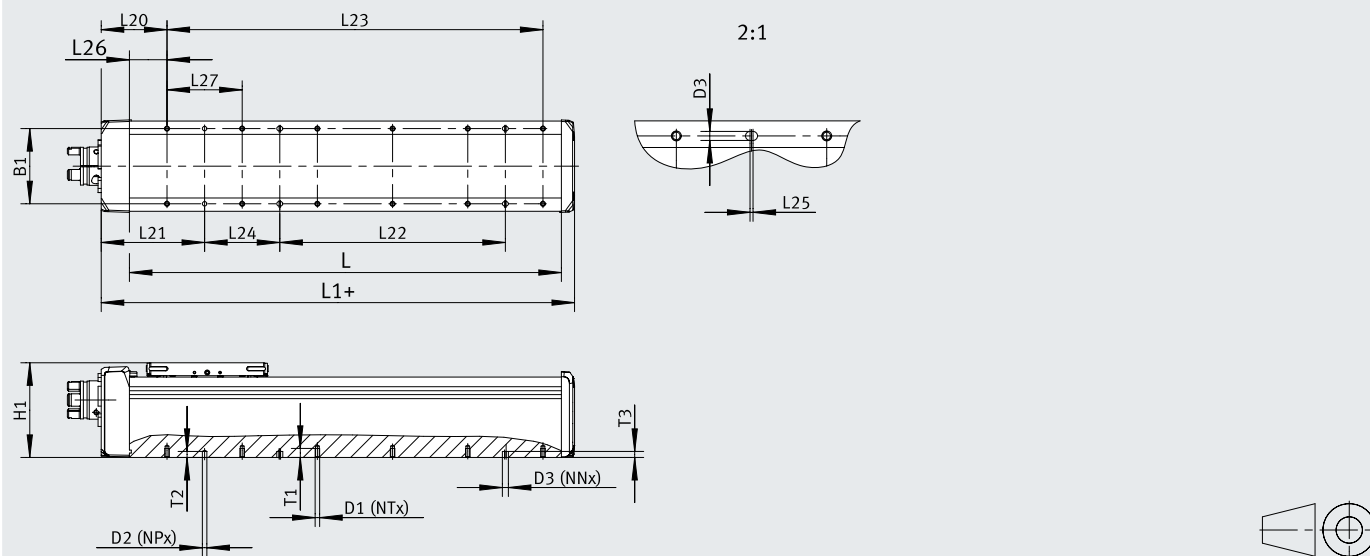


[1] Sensor slot for proximity switch

	H6
ELGD-BS-100	38
ELGD-BS-120	47.4

Datasheet

Dimensions – ELGD-BS-...-M (for direct mounting)

Download CAD data → www.festo.com


+ = plus stroke length + 2x stroke reserve

$$L23 = (NT/2-1) \times 100$$

	B1	B2	D1	D2 Ø	H1	L (with zero stroke length)	L20	L21
ELGD-BS-100-...-L-M	83	H7 6	M5	H7 6	69.4	202.5	71.5	121.5
ELGD-BS-120-...-L-M	100		M6		81.4	269	80.5	130.5

	L25	L26	L27	T1	T2	T3
ELGD-BS-100-...-L-M	2	50	100	10.5	8	8
ELGD-BS-120-...-L-M				12.5		

L	D1 ¹⁾		D2 ²⁾	D3 ³⁾		L24	
	NT	L23	NP	NN	L22		
<270	4	100	2	–	–	–	
≥270	6	200		2			
≥370	8	300		4	100	100	
≥470	10	400			200		
≥570	12	500			300		
≥670	14	600			400		
≥770	16	700			500		
≥870	18	800			600		
≥970	20	900			700		
≥1070	22	1000			800		
≥1170	24	1100			900		
≥1270	26	1200			1000		
≥1370	28	1300			1100		
≥1470	30	1400			1200		
≥1570	32	1500			1300		
≤1650							

1) Threaded hole

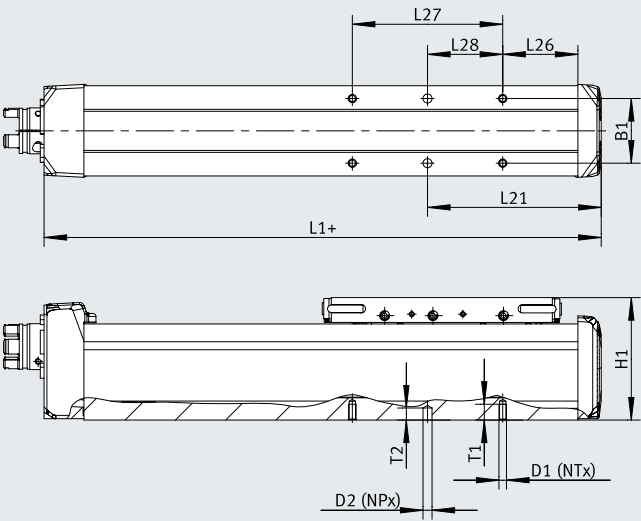
2) Pin hole

3) Slotted hole

Datasheet

Dimensions – ELGD-BS-...-M7 (for front-end use)

Download CAD data → www.festo.com

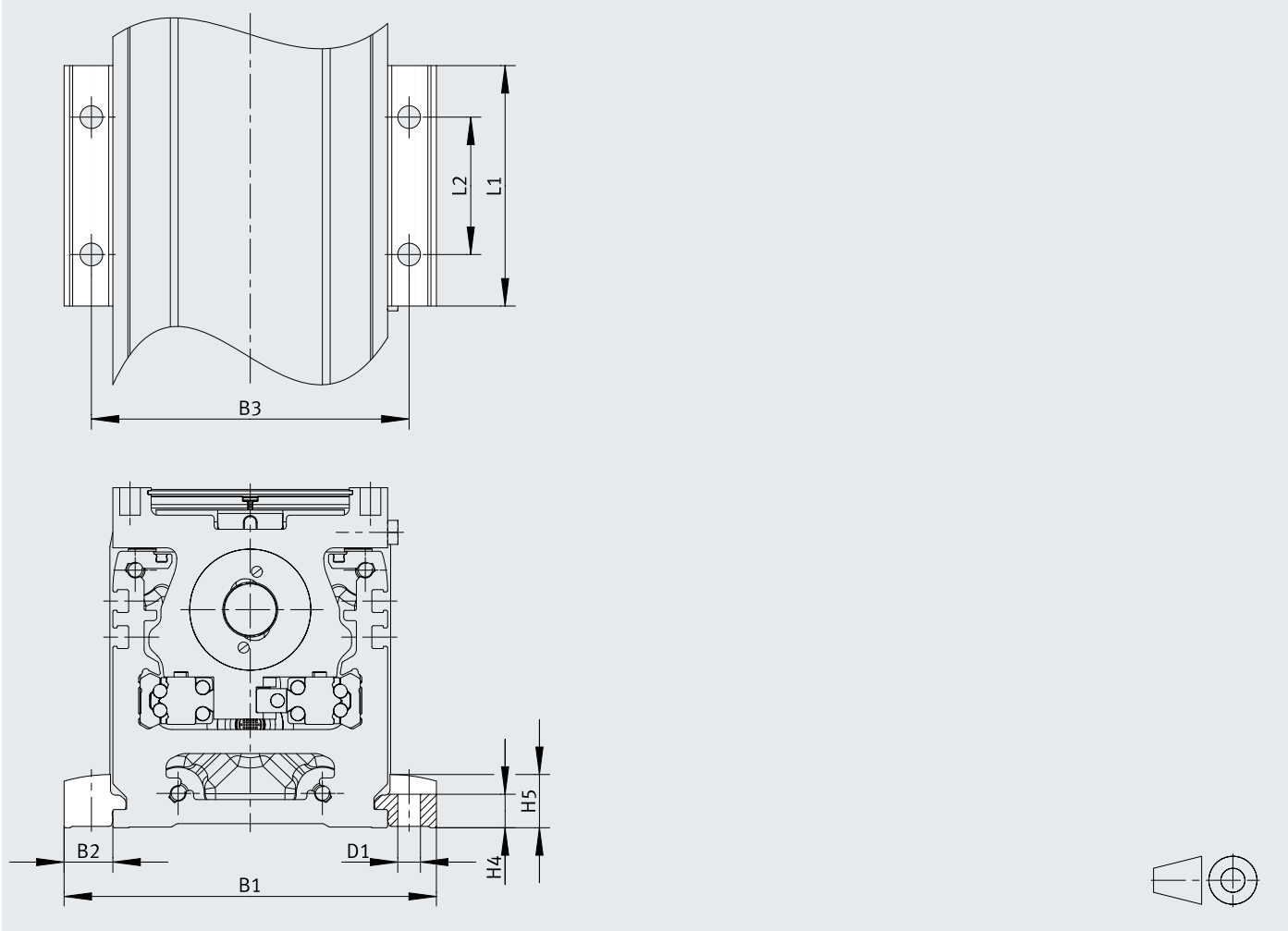


+ = plus stroke length + 2x stroke reserve

	B1	D1	D2 Ø H7	H1	L21	L26	L27	L28	T1	T2
ELGD-BS-100-...-M7	83	M5	6	69,4	115,6	50	100	50	10,5	8

Datasheet

Dimensions – Profile mounting EAHF-E24-60-P (standard mounting) Download CAD data → www.festo.com

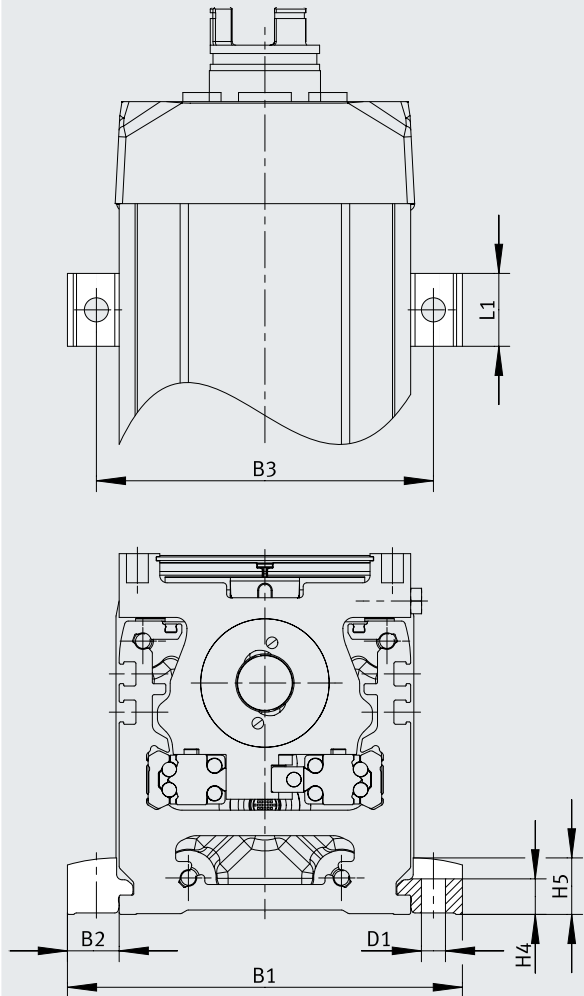


		B1	B2	B3	D1 Ø H13	H4 ±0.1	H5	L1	L2
EAHF-E24-60-P	ELGD-BS-100	128.4	14.2	112.5	6.6	10.3	16.5	70	40
	ELGD-BS-120	148.4	14.2	132.5	6.6	10.3	16.5	70	40

Datasheet

Dimensions – Profile mounting EAHF-E24-60-P-S

Download CAD data → www.festo.com

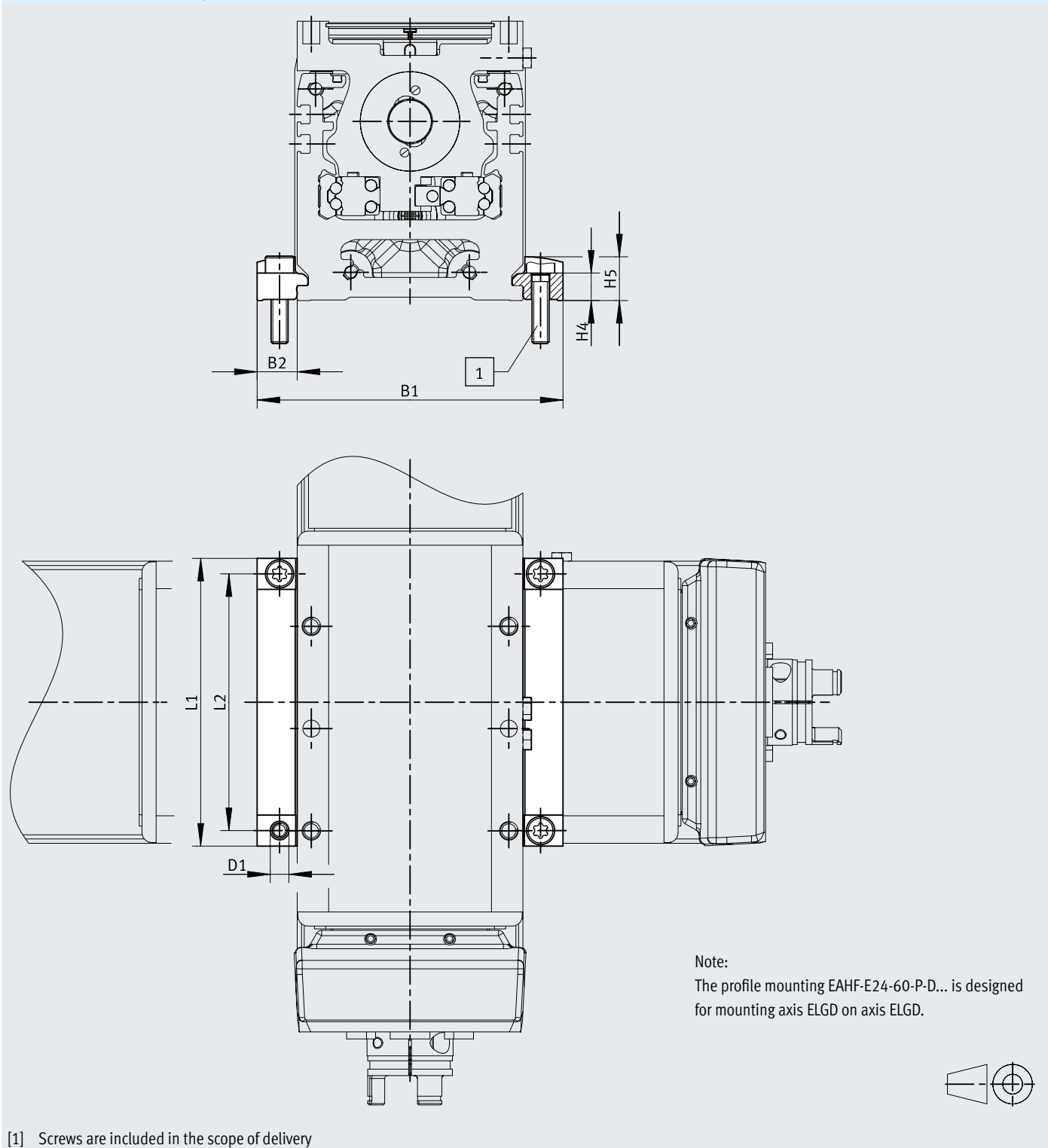


		B1	B2	B3	D1 Ø H13	H4 ±0.1	H5	L1
EAHF-E24-60-P-S	ELGD-BS-100	128.4	14.2	112.5	6.6	10.3	16.5	20
	ELGD-BS-120	148.4	14.2	132.5	6.6	10.3	16.5	20

Datasheet

Dimensions – Profile mounting EAHF-E24-60-P-D

Download CAD data → www.festo.com

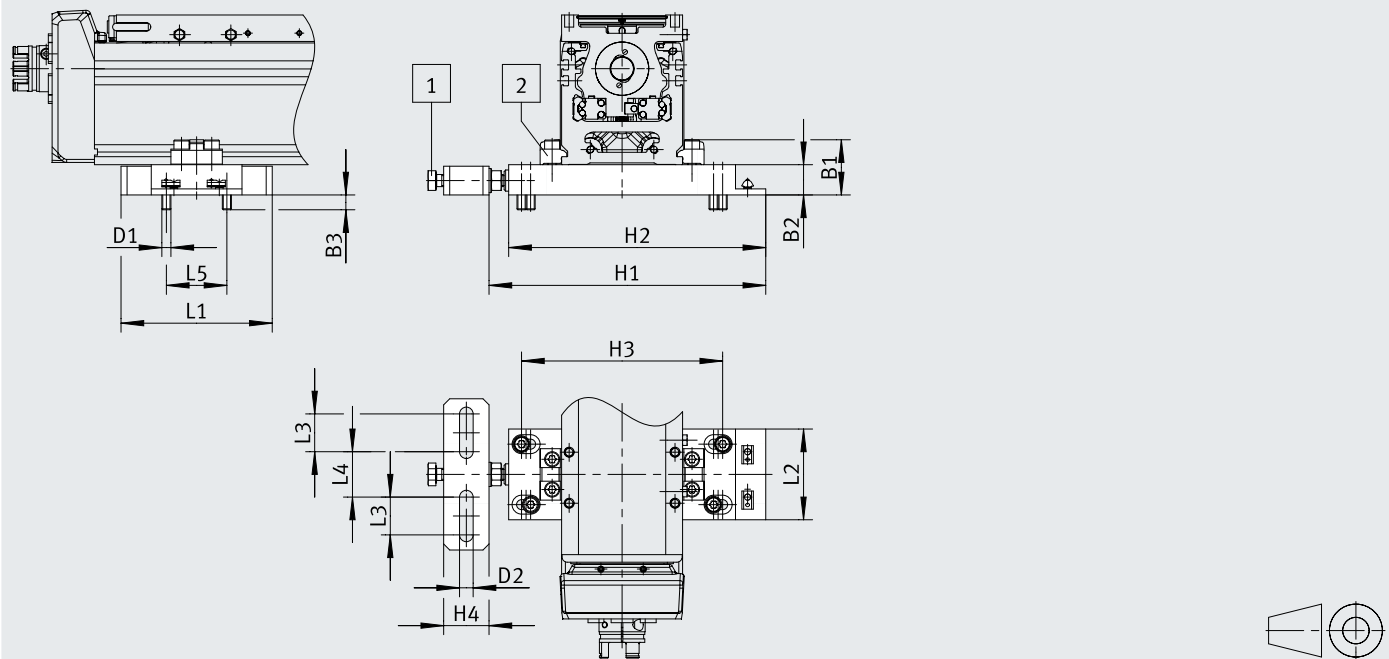


		B1	B2	D1 Ø H13	H4 ±0.1	H5	L1	L2
EAHF-E24-60-P-D6	ELGD-BS-100	128.4	14.2	5.5	10.3	16.5	102	91
EAHF-E24-60-P-D7	ELGD-BS-120	148.4	14.2	6.6	10.3	16.5	102	91

Datasheet

Dimensions – Adjusting kit EADC-E16-...

Download CAD data → www.festo.com



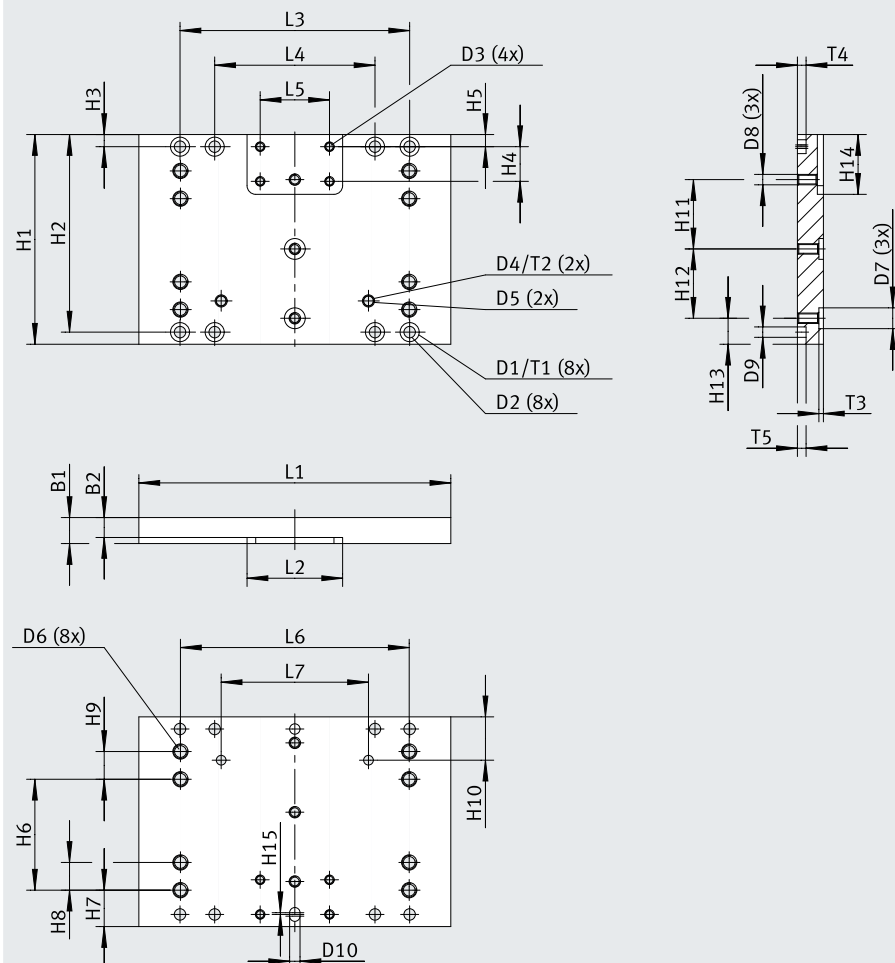
- [1] M8 screw
- [2] Profile mounting

		B1	B2	B3	D1	D2	H1	H2
EADC-E16-120-E24	ELGD-BS-120	36.5	20	9.8	M6	9	203	190

		H3		H4	L1	L2	L3	L4	L5
		min.	min.						
EADC-E16-120-E24	ELGD-BS-120	161	173	30	100	60	25	30	40

Datasheet

Dimensions – Mounting kit EAHM-E24-AP-120

Download CAD data → www.festo.com

Note:

For the following combinations:

Base axis: ELGD-BS-120-L

Assembly:

Mini slide DGST-20/25

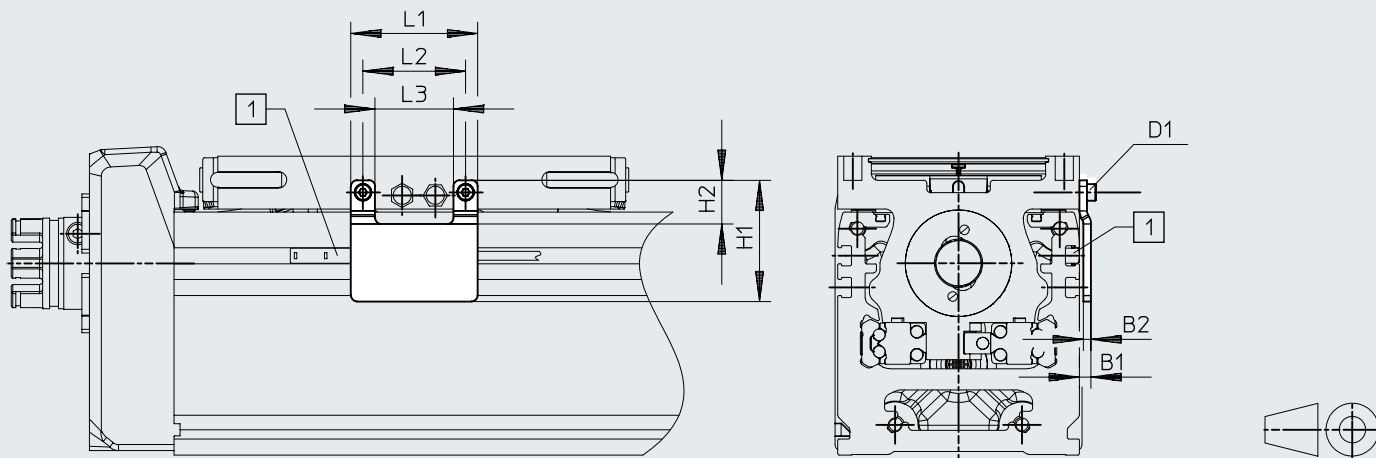
		B1	B2	D1 ø H13	D2 ø H13	D3	D4 ø H7	D5 ø	D6	D7 ø H8	D8	D9 ø H8	D10	H1
EAHM-E24-AP-120	ELGD-BS-120-L	15	11.5	11	6.6	M5	6	5.6	M8	12	M6	6	6	121

		H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14
EAHM-E24-AP-120	ELGD-BS-120-L	114	7	20	7	64	21	16	16	25	40	40	15	34.5

		L1	L2 +0.5	L3	L4	L5	L6	L7	T1	T2	T3	T4	T5
EAHM-E24-AP-120	ELGD-BS-120-L	180	55.2	132.5	92.5	40	132	85	6.5	5	2.6	5	5

Datasheet

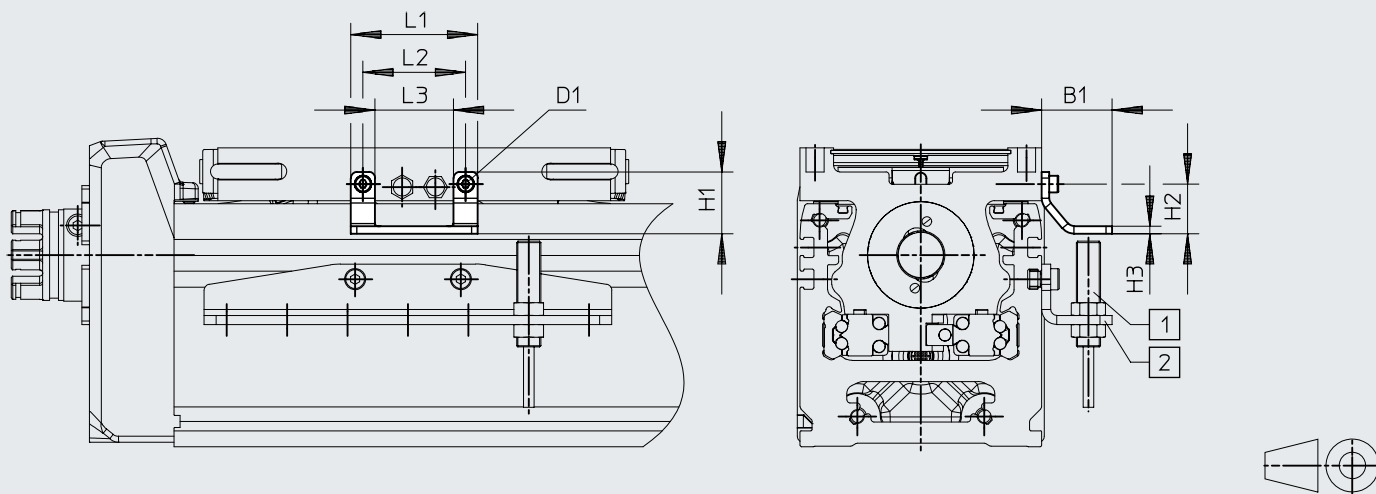
Dimensions – Switch lug EAPM-E24-60-SLS

Download CAD data → www.festo.com


[1] Sensor slot for proximity switch SIES-8M

		B1	B2	D1	H1	H2	L1	L2	L3
EAPM-E24-60-SLS	ELGD-BS-100	3.5	2.5	M3	40.2	14.5	42	34	26
	ELGD-BS-120								

Dimensions – Switch lug EAPM-E24-...-SLE

Download CAD data → www.festo.com


[1] Proximity switch SIEN-M8

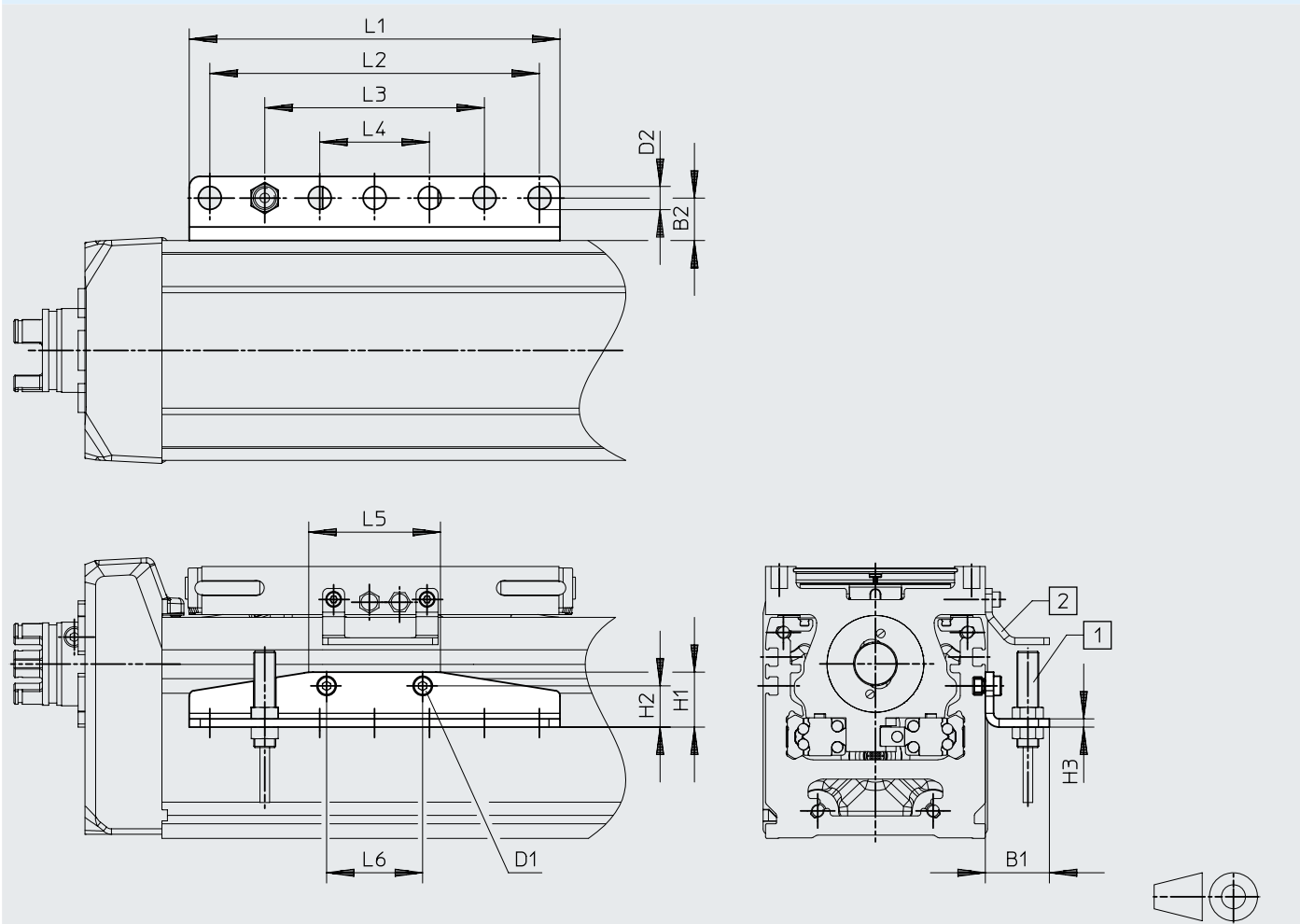
[2] Sensor bracket EAPM-E24-60-SHE

		B1	D1	H1	H2	H3	L1	L2	L3
EAPM-E24-60-SLE	ELGD-BS-100	23.4	M3	20.5	16.5	2.5	42	34	26
	ELGD-BS-120								

Datasheet

Dimensions – Sensor bracket EAPM-E24-60-SHE

Download CAD data → www.festo.com



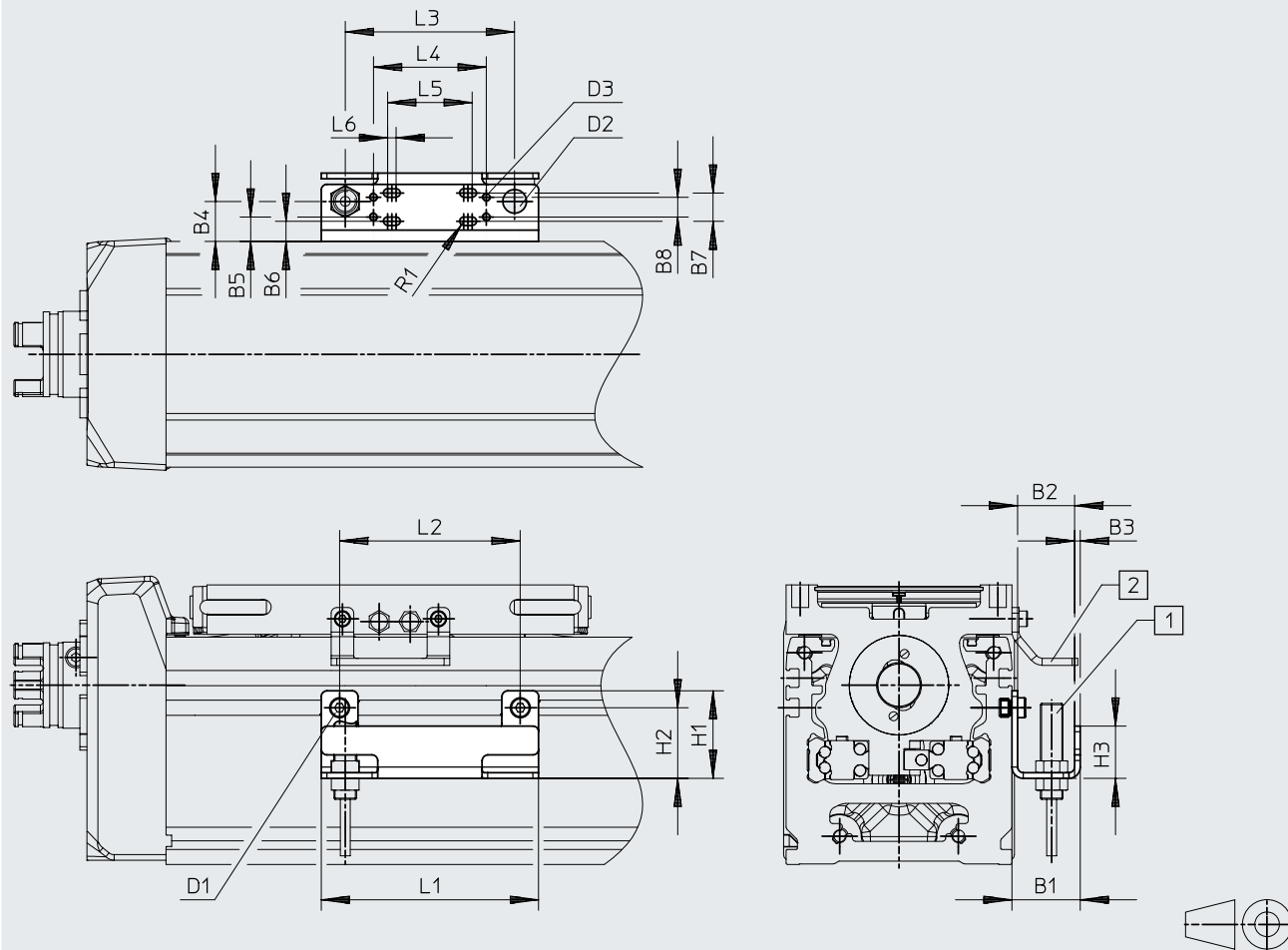
- [1] Proximity switch SIEN-8M
- [2] Switch lug EAPM-E24-60-SLE

		B1	B2	D1	D2 Ø H13	H1	H2	H3
EAPM-E24-60-SHE	ELGD-BS-100	23.4	15.5	M4	8.4	20	15	3
	ELGD-BS-120							

		L1	L2	L3	L4	L5	L6
		±0.2					
EAPM-E24-60-SHE	ELGD-BS-100	135	120	80	40	48	35
	ELGD-BS-120						

Datasheet

Dimensions – Sensor bracket EAPM-E24-60-SHO

Download CAD data → www.festo.com


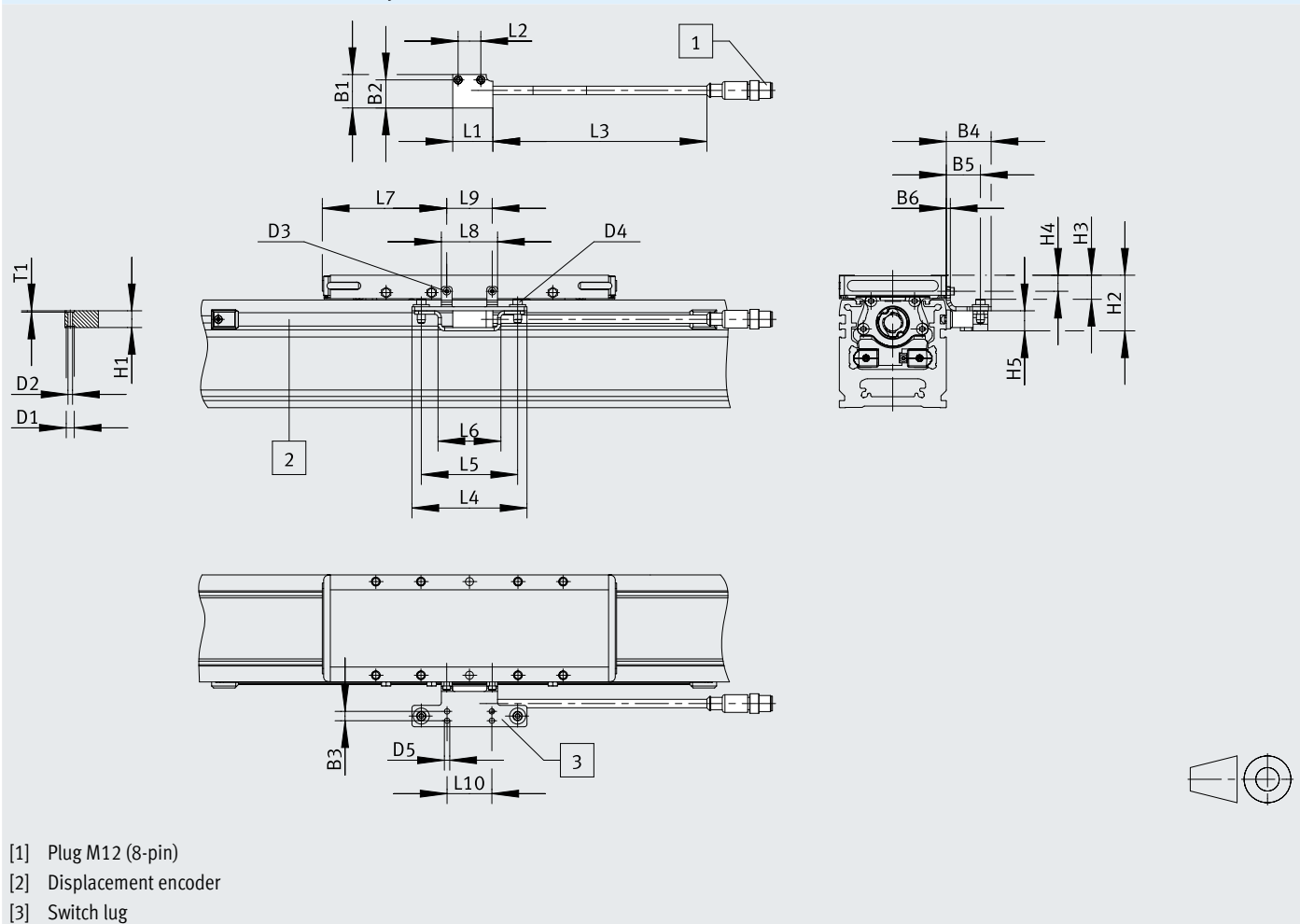
- [1] Inductive sensor M8
[2] Switch lug EAPM-E24-60-SLE

		B1	B2	B3	B4	B5	B6	B7
EAPM-E24-60-SHO	ELGD-BS-100	24.2	20.2	2	14.1	8.6	7.1	10
	ELGD-BS-120							
		B8	D1	D2 Ø	D3	H1	H2	H3
EAPM-E24-60-SHO	ELGD-BS-100	7	M3	8.4	M3	31	25	18.5
	ELGD-BS-120							
		L1	L2	L3	L4	L5	L6	R1
EAPM-E24-60-SHO	ELGD-BS-100	77	64	60	40	24	3	1.5
	ELGD-BS-120							

Datasheet

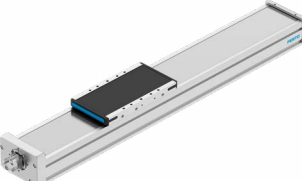
Dimensions – ELGD-...-M3 with incremental displacement encoder

Download CAD data → www.festo.com



	B1	B2	B3	B4	B5	B6	D1 Ø
ELGD-BS-100	25	21	7	33.5	25.5	3	6
ELGD-BS-120							
	D2 Ø	D3	D4	D5 Ø	H1 ±0.1	H2	H3
ELGD-BS-100	3.4	M2	M4	4	12.5	40.6	17
ELGD-BS-120						42.1	18.5
	H4	H5	L1	L2	L3	L4	L5
ELGD-BS-100	11	15	30	17	160	86	72
ELGD-BS-120	12.5						
	L6	L7	L8	L9	L10	T1	
ELGD-BS-100	47	79	42	34	33.5	1	
ELGD-BS-120		114.5					

Datasheet

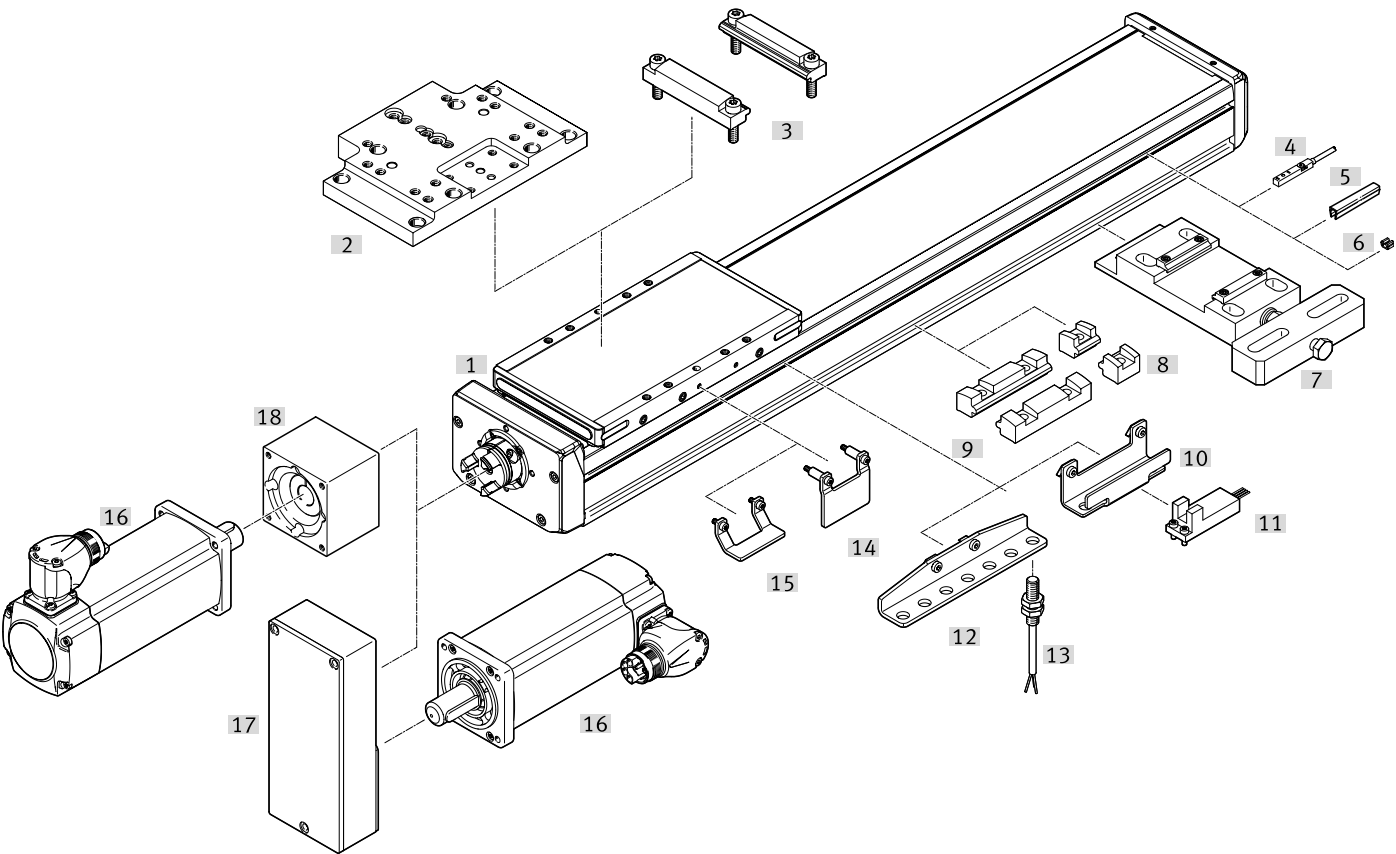
Ordering data	Size	Screw pitch [mm]	Stroke [mm]	Part no.	Type
	100	5	100	8192312	ELGD-BS-KF-WD-100-100-0H-5P-L
			200	8192313	ELGD-BS-KF-WD-100-200-0H-5P-L
			300	8192314	ELGD-BS-KF-WD-100-300-0H-5P-L
			400	8192315	ELGD-BS-KF-WD-100-400-0H-5P-L
			500	8192316	ELGD-BS-KF-WD-100-500-0H-5P-L
			600	8192317	ELGD-BS-KF-WD-100-600-0H-5P-L
			800	8192318	ELGD-BS-KF-WD-100-800-0H-5P-L
			1000	8192319	ELGD-BS-KF-WD-100-1000-0H-5P-L
		10	100	8192320	ELGD-BS-KF-WD-100-100-0H-10P-L
			200	8192321	ELGD-BS-KF-WD-100-200-0H-10P-L
			300	8192322	ELGD-BS-KF-WD-100-300-0H-10P-L
			400	8192323	ELGD-BS-KF-WD-100-400-0H-10P-L
			500	8192324	ELGD-BS-KF-WD-100-500-0H-10P-L
			600	8192325	ELGD-BS-KF-WD-100-600-0H-10P-L
			800	8192326	ELGD-BS-KF-WD-100-800-0H-10P-L
			1000	8192327	ELGD-BS-KF-WD-100-1000-0H-10P-L
	120	5	100	8192328	ELGD-BS-KF-WD-120-100-0H-5P-L
			200	8192329	ELGD-BS-KF-WD-120-200-0H-5P-L
			300	8192330	ELGD-BS-KF-WD-120-300-0H-5P-L
			400	8192331	ELGD-BS-KF-WD-120-400-0H-5P-L
			500	8192332	ELGD-BS-KF-WD-120-500-0H-5P-L
			600	8192333	ELGD-BS-KF-WD-120-600-0H-5P-L
			800	8192334	ELGD-BS-KF-WD-120-800-0H-5P-L
			1000	8192335	ELGD-BS-KF-WD-120-1000-0H-5P-L
		10	100	8192336	ELGD-BS-KF-WD-120-100-0H-10P-L
			200	8192337	ELGD-BS-KF-WD-120-200-0H-10P-L
			300	8192338	ELGD-BS-KF-WD-120-300-0H-10P-L
			400	8192339	ELGD-BS-KF-WD-120-400-0H-10P-L
			500	8192340	ELGD-BS-KF-WD-120-500-0H-10P-L
			600	8192341	ELGD-BS-KF-WD-120-600-0H-10P-L
			800	8192342	ELGD-BS-KF-WD-120-800-0H-10P-L
			1000	8192343	ELGD-BS-KF-WD-120-1000-0H-10P-L

Ordering data – Modular product system

More information → [elgd-bs](#)

	Size	Stroke [mm]	Part no.	Type
	100	50 ... 1000	8176878	ELGD-BS-KF-WD-100-...
	120	50 ... 1500	8176879	ELGD-BS-KF-WD-120-...

Peripherals overview

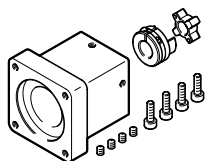


Peripherals overview

Accessories			
	Type	Description	→ Page/Internet
[1]	Ball screw axis ELGD-BS-WD	Electric drive	elgd-bs
[2]	Mounting kit EAHM-E...-AP	For mounting mini slide DGST or EGSC on the slide	32
[3]	Profile mounting EAHF-E24-...-D...	For axis/axis mounting with adapter plate	32
[4]	Proximity switch, T-slot SIES-8M	Inductive proximity switch, for T-slot	33
[5]	Slot cover ABP-S	For protection against contamination	34
[6]	Clip SMBK	For mounting the proximity switch cable in the slot	34
[7]	Adjusting kit EADC-E16	For mounting the axis on a vertical surface. Once mounted, the axis can be aligned horizontally	32
[8]	Profile mounting EAHF-E24-...-S	For mounting the axis on the side of the profile	32
[9]	Profile mounting EAHF-E24-...	For mounting the axis on the side of the profile	32
[10]	Sensor bracket EAPM-E24-SHO	For mounting third-party sensors on the axis	33
[11]	Sensor OMRON	Third-party sensor OMRON, EE-SX674 series	–
[12]	Sensor bracket EAPM-E24-SHE	For mounting the inductive proximity switches SIEN-M8 (round design) on the axis	33
[13]	Proximity switch, M8 SIEN-M8	Inductive proximity switch, round design	34
[14]	Switch lug EAPM-E24-SLS	For sensing the slide position using inductive proximity switch SIES-8M or for optical sensors (Omron) with sensor bracket EAPM-E24-SHO	33
[15]	Switch lug EAPM-E24-SLE	For sensing the slide position using inductive proximity switch SIEN-M8 (round design) and sensor bracket EAPM-E24-SHE	33
[16]	Motor EMMT	Motors and kits specially matched with the axis Detailed information: www.festo.com/catalogue/eamm Engineering tool: www.festo.com/x/electric-motion-sizing	emmt
[17]	Parallel kit EAMM	For parallel motor mounting	eammm-u
[18]	Axial kit EAMM	For axial motor mounting	eammm-a

Accessories

Permitted axis/motor combinations for axial and parallel kits



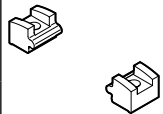
Under the following links you will find all information about:

- Axis/motor combinations
- Permitted third-party motors
- Technical data
- Dimensions

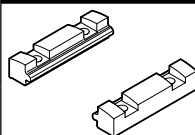
For axial kits → Internet: [eamm-a](#)

For parallel kits → Internet: [eamm-u](#)

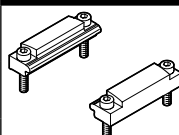
Profile mounting EAHF-E24-...-P-S

	Description	Suitable for the production of Li-ion batteries	Material	Product weight	Part no.	Type
	For size 60, 80, 120, WD-100, WD-120	F1a	Anodised wrought aluminium alloy	18 g	8197128	EAHF-E24-60-P-S

Profile mounting EAHF-E24-...-P

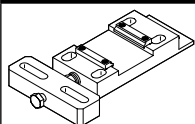
	Description	Suitable for the production of Li-ion batteries	Material	Product weight	Part no.	Type
	For size 60, 80, 120, WD-100, WD-120	F1a	Anodised wrought aluminium alloy	71 g	8197132	EAHF-E24-60-P

Profile mounting EAHF-E24-...-P-D...

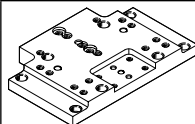
	Description ¹⁾	Suitable for the production of Li-ion batteries	Material	Product weight	Part no.	Type
	ELGD-60 on ELGD-WD-100-L 1)	F1a	Anodised wrought aluminium alloy	133 g	8197130	EAHF-E24-60-P-D6
	ELGD-80 on ELGD-WD-100-L			133 g	8197130	EAHF-E24-60-P-D6
	ELGD-80 on ELGD-120-L			165 g	8229954	EAHF-E24-60-P-D7
	ELGD-WD-100-L on ELGD-120-L			165 g	8229954	EAHF-E24-60-P-D7

1) With this combination, the axis is mounted off-centre on the slide (see dimension L13 on the dimensional drawing with long slide).

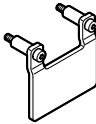
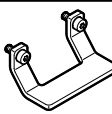
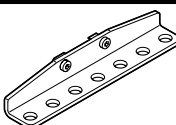
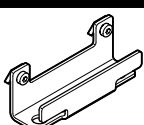
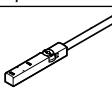
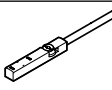
Adjusting kit EADC-E16

	Description	Adapter plate material	Product weight	Part no.	Type
	For size 120	Anodised wrought aluminium alloy	845 g	8234414	EADC-E16-120-E24

Mounting kit EAHM-E...-AP

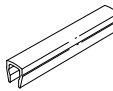
	Description	For assembly	Adapter plate material	Product weight	Part no.	Type
	For size 120	DGST-20/25	Anodised aluminium	887 g	8238435	EAHM-E26-AP-120

Accessories

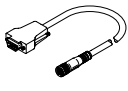
Switch lug EAPM-E24-...-SLS						
	Description	Suitable for the production of Li-ion batteries	Material	Product weight	Part no.	Type
	For size 100, 120	F1a	Steel	32 g	8197117	EAPM-E24-60-SLS
Switch lug EAPM-E24-...-SLE						
	Description	Suitable for the production of Li-ion batteries	Material	Product weight	Part no.	Type
	For size 100, 120	F1a	Steel	20 g	8197116	EAPM-E24-60-SLE
Sensor bracket EAPM-E24-...-SHE						
	Description	Suitable for the production of Li-ion batteries	Material	Product weight	Part no.	Type
	For size 100, 120	F1a	Steel	103 g	8197123	EAPM-E24-60-SHE
Sensor bracket EAPM-E24-...-SHO						
	Description	Suitable for the production of Li-ion batteries	Material	Product weight	Part no.	Type
	For size 100, 120	F1a	Steel	67 g	8197121	EAPM-E24-60-SHO
Proximity switch for T-slot, inductive						Datasheets → Internet: sies
	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part no.	Type
	Inserted in the slot from above, flush with the cylinder profile	PNP	Cable, 3-core	7.5	551386	SIES-8M-PS-24V-K-7.5-OE
			Plug M8x1, 3-pin	0.3	551387	SIES-8M-PS-24V-K-0.3-M8D
		NPN	Cable, 3-core	7.5	551396	SIES-8M-NS-24V-K-7.5-OE
			Plug M8x1, 3-pin	0.3	551397	SIES-8M-NS-24V-K-0.3-M8D
	Inserted in the slot from above, flush with the cylinder profile	PNP	Cable, 3-core	7.5	551391	SIES-8M-PO-24V-K-7.5-OE
			Plug M8x1, 3-pin	0.3	551392	SIES-8M-PO-24V-K-0.3-M8D
		NPN	Cable, 3-core	7.5	551401	SIES-8M-NO-24V-K-7.5-OE
			Plug M8x1, 3-pin	0.3	551402	SIES-8M-NO-24V-K-0.3-M8D

Accessories

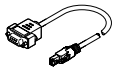
Proximity switch M8 (round design), inductive					Datasheets → Internet: sien	
	Switching output	Electrical connection	Cable length [m]	Part no.	Type	
N/O						
	PNP	Cable, 3-core	2.5	150386	SIEN-M8B-PS-K-L	
	NPN		2.5	150384	SIEN-M8B-NS-K-L	
	PNP	Plug M8x1, 3-pin	–	150387	SIEN-M8B-PS-S-L	
	NPN		–	150385	SIEN-M8B-NS-S-L	
N/C						
	PNP	Cable, 3-core	2.5	150390	SIEN-M8B-PO-K-L	
	NPN		2.5	150388	SIEN-M8B-NO-K-L	
	PNP	Plug M8x1, 3-pin	–	150391	SIEN-M8B-PO-S-L	
	NPN		–	150389	SIEN-M8B-NO-S-L	

Slot cover ABP-5-S1						
	Description	Material	Pack size	Product weight	Part no.	Type
	For size 100, 120	ABS	2 every 0.5 m	13 g	563360	ABP-5-S1

Clip SMBK						
	Description	Pack size	Product weight	Part no.	Type	
	For size 100, 120	10	1g	534254	SMBK-8	

Ordering data – Encoder cables for displacement encoder, ELGD-...-M3						Datasheets → Internet: nebm
	Electrical connection, left	Electrical connection, right	Cable length [m]	Part no.	Type	
	Displacement encoder ELGD-...-M3	Motor controller CMMP-AS and CMMT-AS	5	1599105	NEBM-M12G8-E-5-S1G9-V3	
			10	1599106	NEBM-M12G8-E-10-S1G9-V3	
			15	1599107	NEBM-M12G8-E-15-S1G9-V3	
			X ¹⁾	1599108	NEBM-M12G8-E-...-S1G9-V3	

1) Max. cable length: 25 m.

Ordering data – Adapter			
	Description	Part no.	Type
	Required in combination with the servo drive CMMT-AS as adapter between encoder cable NEBM-M12G8-...-V3 and interface X3 (position encoder 2)	8106112	NEFM-S1G9-K-0.5-R3G8