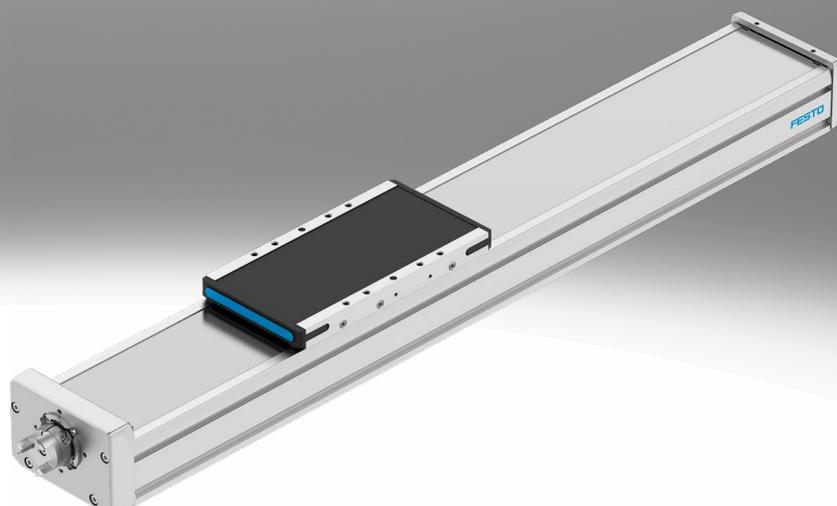


Ball screw axes ELGD-BS-WD

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 loads 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

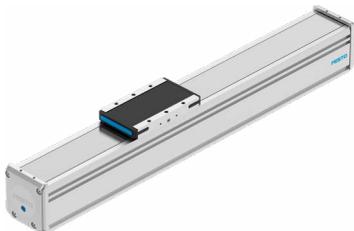
Options:

- 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. There, precise values can be displayed.

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.

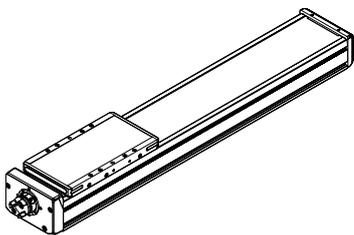
Ball screw support

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

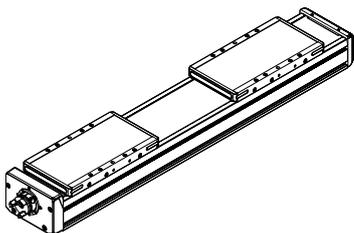
Key features

Slide design

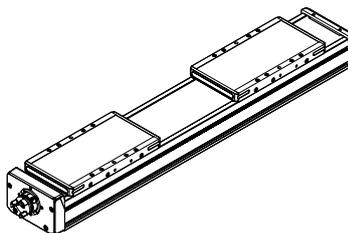
[L] Long

**Additional slide**

[ZR] Right



[ZL] Left



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

Lubrication

[] Standard

- Lubricated for life (the specification applies under standard conditions. For special applications, please refer to the operating manual for the maintenance intervals)
- Supplied without lubrication nipple

[GN] Lubrication nipple

- 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

- If direct mounting is selected, the axis is supplied with threads in the bottom of the profile. This means that it can be installed without a profile mounting, thus saving space
- Additional centring holes allow the axis to be easily positioned in the machine

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	
...	50 ... 1500	
007	Stroke reserve	
OH	None	
...H	0 ... 999 mm	

008	Spindle pitch	
5P	5 mm	
10P	10 mm	
009	Spindle 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	
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]	575	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 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⁾	[1/min]	8000	8000	6667	6667
Max. speed	[m/s]	0.66	1.33	0.56	1.11
Max. acceleration	[m/s ²]	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 speed are stroke-dependent

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

1) Note the operation range of the proximity switches

2) The specification applies under standard conditions. For special applications, please refer to the operating manual for the maintenance intervals.

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) Incl. slide

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

Datasheet

Mass moment of inertia					
Size		100		120	
Screw pitch	[mm/rev]	5	10	5	10
J_0	[kg mm ²]	5.632	5.632	9.61	9.47
J_H per metre stroke	[kg mm ² /m]	7.554	7.554	13.5	13
J_L per kg payload	[kg mm ² /kg]	0.633	2.533	0.633	2.533

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

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

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	1
Note on the impact energy in the end positions	[m/s]	At maximum homing speed of 0.01 m/s	

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 zone III
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) cyclic 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 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 reducing the emitted interference may be necessary.

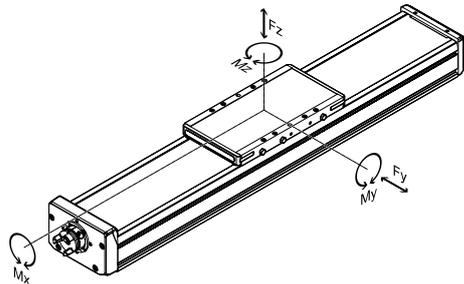
Datasheet

Load values

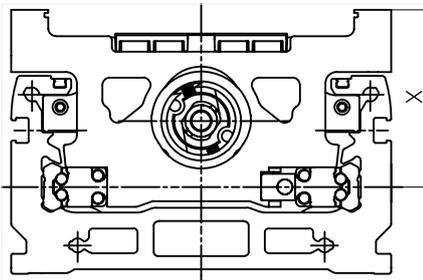
The indicated forces and torques refer to the centre of the guide. The point of application of force is the point where the centre of the guide and the longitudinal centre of the slide intersect.

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

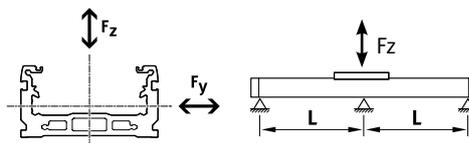
Max. permissible forces and torques for the overall axis (strength limits)

Size	100	120
Max. force F_y , overall axis [N]	3236	5914
Max. force F_z , overall axis [N]	2250	7200
Max. torque M_x , overall axis [Nm]	160	330
Max. torque M_y , overall axis [Nm]	230	501
Max. torque M_z , overall axis [Nm]	191	501

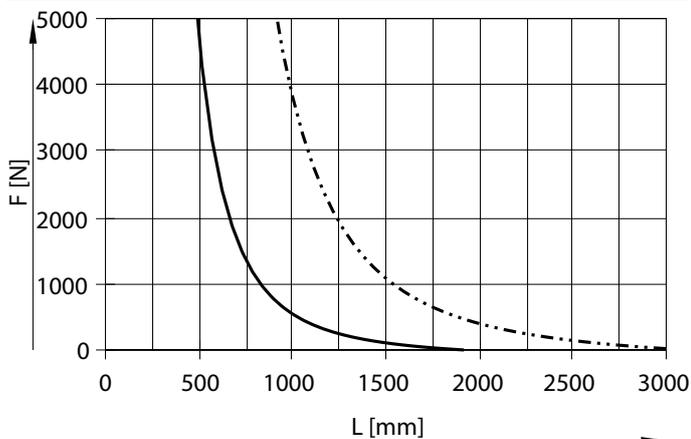
Maximum permissible support spacing L as a function of force F

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

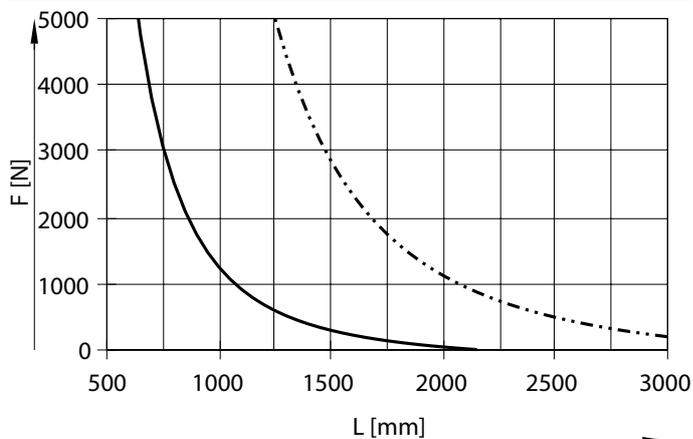
The following graphs can be used to determine the maximum permissible support spacing L as a function of force F acting on the axis. The deflection is $f = 0.5 \text{ mm}$.



Size: 100



Size: 120



— F_y
- - - F_z

— F_y
- - - F_z

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:

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

F_1/M_1 = values occurring in the application

F_2 = permissible values at 5000 km from the graph "support spacing over load"

M_2 = maximum permissible values (see table)

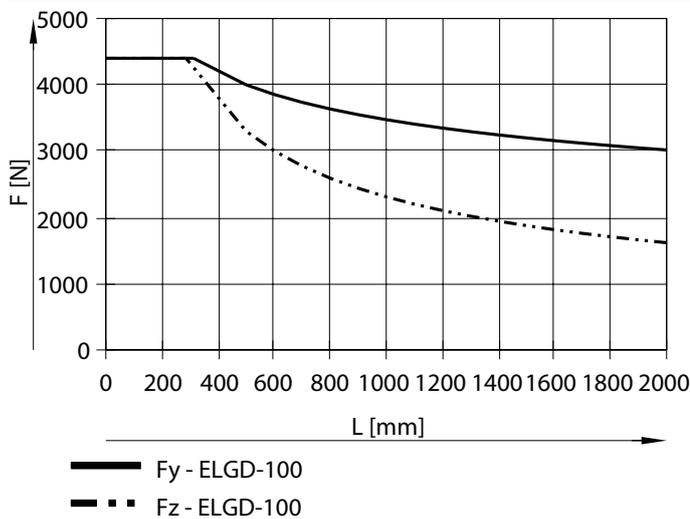
Max. permissible torques for the guide calculation with reference service life

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

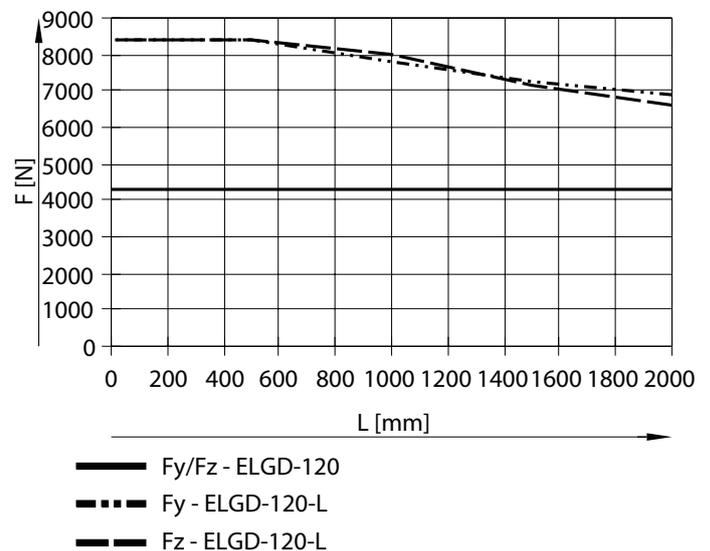
Max. permissible support spacing L as a function of the force F

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.

Size: 100



Size: 120



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, 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 load comparison factors f_v greater than 1.3.

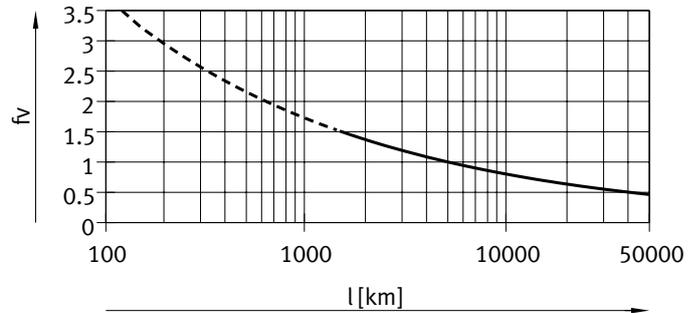
Load comparison factors f_v as a function of service life l

Example:

A user wants to move an x kg load. Using the formula (→ page 9) results in a value of 1.3 for the load comparison factor f_v . According to the graph, the guide has 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 index represents the workload of the guide. (100% average guide comparison index 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 moments are based on an expected service life of the guide system of 100 km according to ISO or 50 km according 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

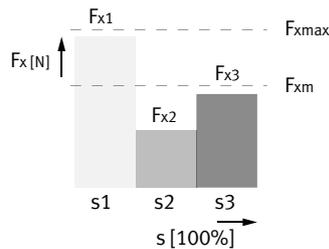
Service life of the ball screw

- The service life of the ball screw axis depends on the service life of the guide as well as that of the screw drive. 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

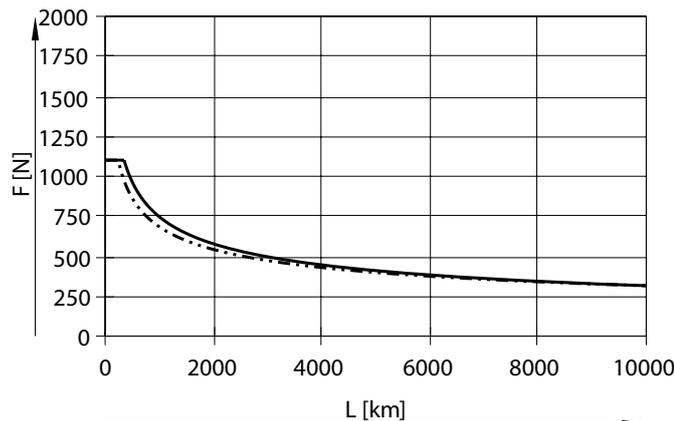
$$F_{xm} = \sqrt[3]{\frac{F_{x1}^3 \cdot s_1 + \dots + F_{xn}^3 \cdot s_n}{s_1 + \dots + s_n}}$$

F_{xm} = mean feed force
 $F_{x1/n}$ = feed force of the section
 $s_{1/n}$ = travel part of the movement cycle



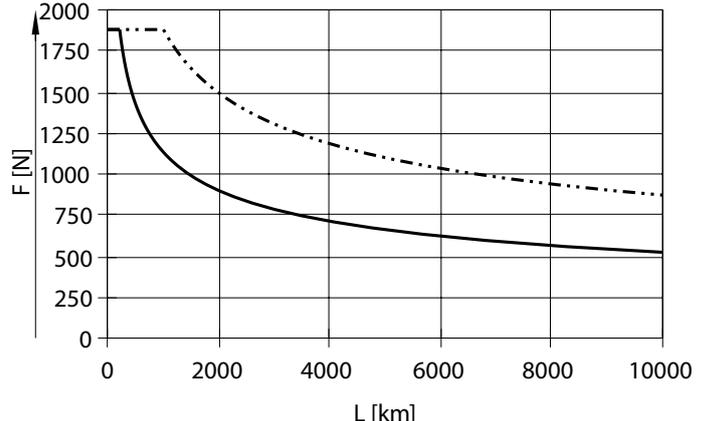
Mean feed force F_{xm} as a function of running performance L, with an operating coefficient f_B of 1.0 at room temperature

Size: 100



— ELGD-100-5P
 - - - ELGD-100-10P

Size: 120



— ELGD-120-5P
 - - - ELGD-120-10P

Service life taking into account the operating coefficient

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

L_{ist} = actual service life
 L = Target service life (→ graphs)
 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

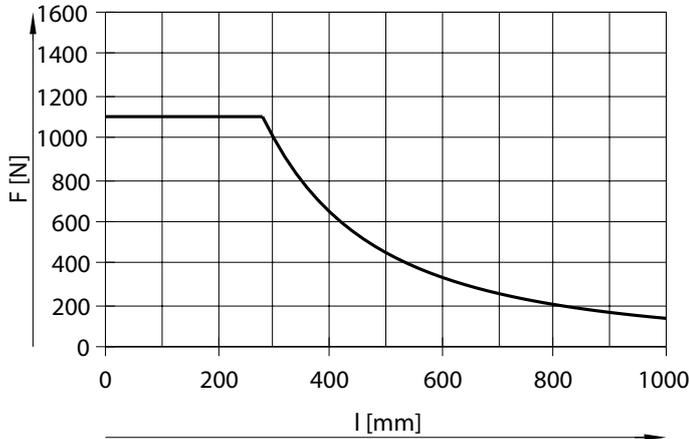
Datasheet

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).

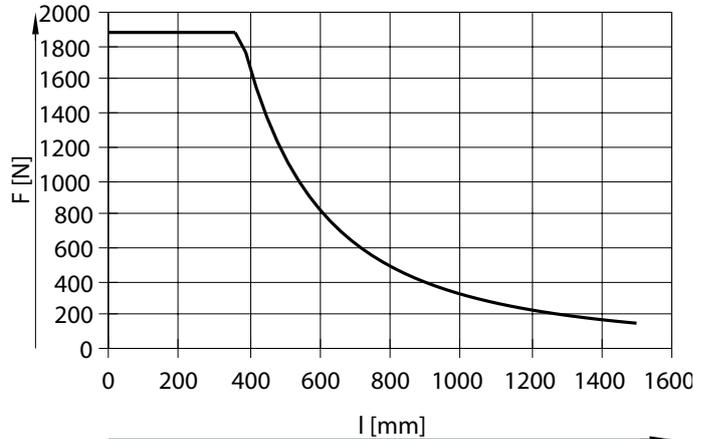
The feed force in the opposite direction is not affected by this.

Size: 100



ELGD-100

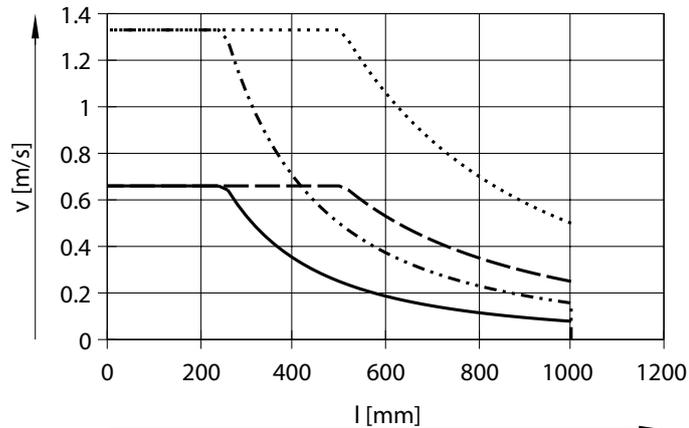
Size: 120



ELGD-120

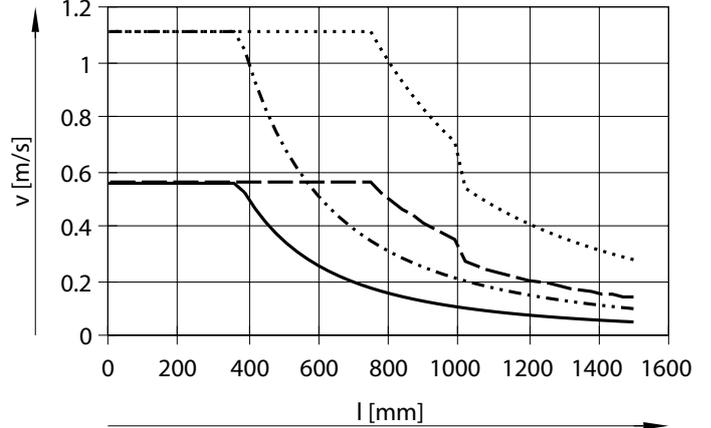
Speed v as a function of working stroke l

Size: 100



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

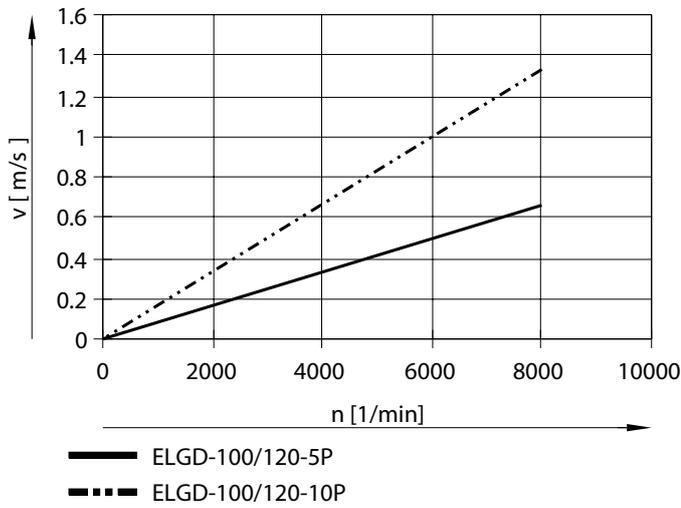
Size: 120



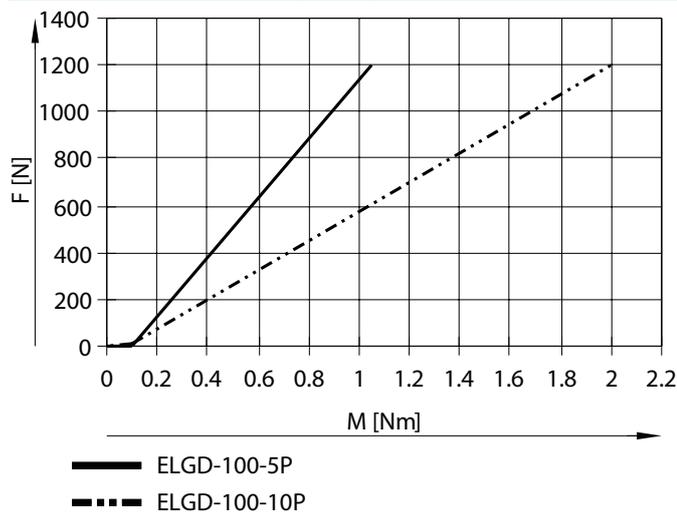
ELGD-120-5P
 ELGD-120-10P
 ELGD-120-5P-SU
 ELGD-120-10P-SU

Datasheet

Speed v as a function of rotational speed n

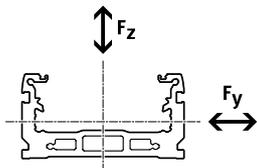


Feed force F as a function of input torque M



Datasheet

2nd moment of area



Size		100	120
ly	[mm ⁴]	0.347x10 ⁶	0.771x10 ⁶
lz	[mm ⁴]	2.268x10 ⁶	5.801x10 ⁶

Recommended deflection limits

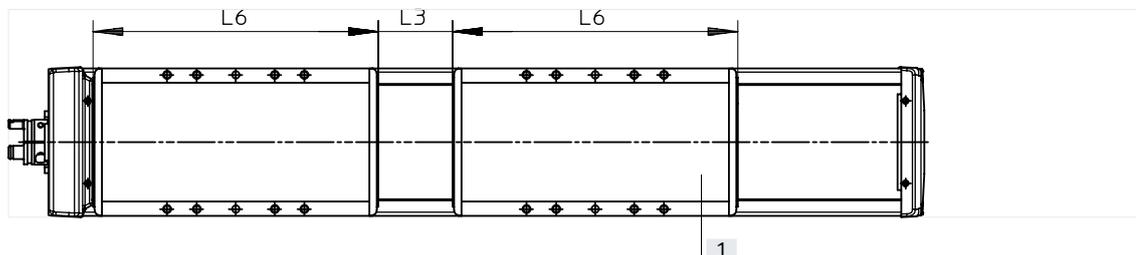
Compliance with the following critical limits for deflection is recommended to ensure the continuing functionality of the axes. Greater deformation can result in increased friction, greater wear and reduced service life.

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

Working stroke reduction

For axis ELGT 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



L6 = Slide length
 L6 = Additional slide length
 L3 = Distance between the two slides
 [1] Additional slide

Example:
 Type ELGD-BS-KF-WD-100-500-...-ZR
 Working stroke without additional slide = 500 mm
 L3 = 50 mm
 L6 = 192 mm
 Working stroke with additional slide = 332 mm
 (500 mm – 50 mm – 118 mm)

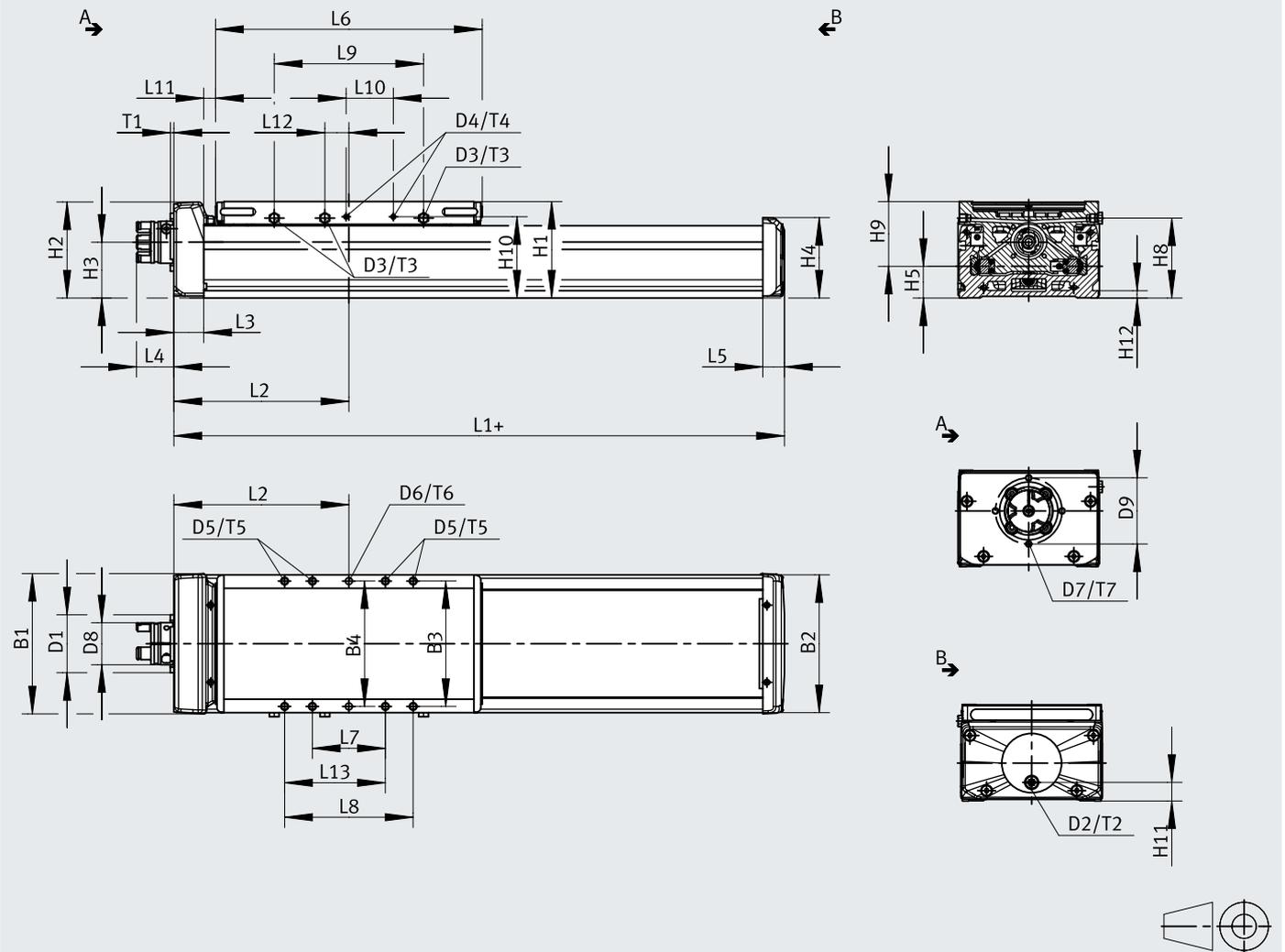
Dimensions – Additional slide

Size		100	120
Length L2	[mm]	192	263
Min. distance between the slides L3	[mm]	≥ 50	≥ 50

Datasheet

Dimensions – ELGD-BS-...

Download CAD data → www.festo.com



+ = plus stroke length + 2x stroke reserve

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

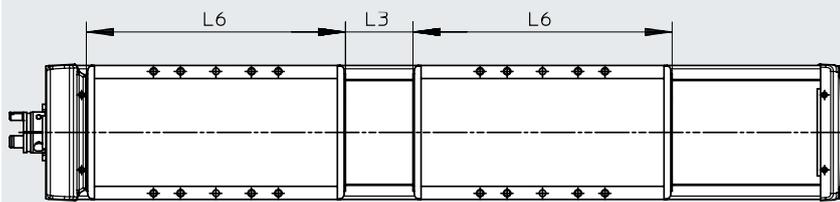
	H2	H3	H4	H5	H8	H9	H10	H11	H12	L1	L2	L3	L4	L5	L6
											min.				
ELGD-BS-100	70	40.5	58.5	23	58	47	59	13.5	5.3	239.6	126.5	21.5	26.9	15.6	192
ELGD-BS-100-SU															
ELGD-BS-120	76.8	46.4	69	31	68.5	50.5	69.5	20.4	5.3	313	165	30.5	26.9	13.5	263
ELGD-BS-120-SU															

	L7	L8	L9	L10	L11		L12	L13	T1	T2	T3	T4	T5	T6	T7
	±0.1	±0.1			min.	max.									
ELGD-BS-100	52.5	92.5	107.5	34	9	9.5	17.3	72.5	2.5	6	6	7	16.5	6 ±0.05	8
ELGD-BS-100-SU															
ELGD-BS-120	92.5	132.5	161	34	3	-	55.5	112.5	2.5	6	6	7	17.5	8 ±0.1	8
ELGD-BS-120-SU															

Datasheet

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

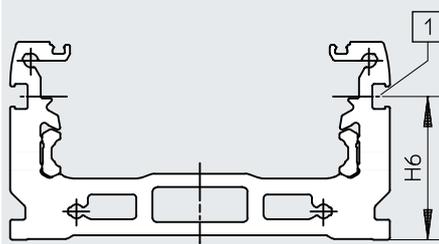
Download CAD data → www.festo.com



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

Dimensions – ELGD-BS-...- (profile)

Download CAD data → www.festo.com



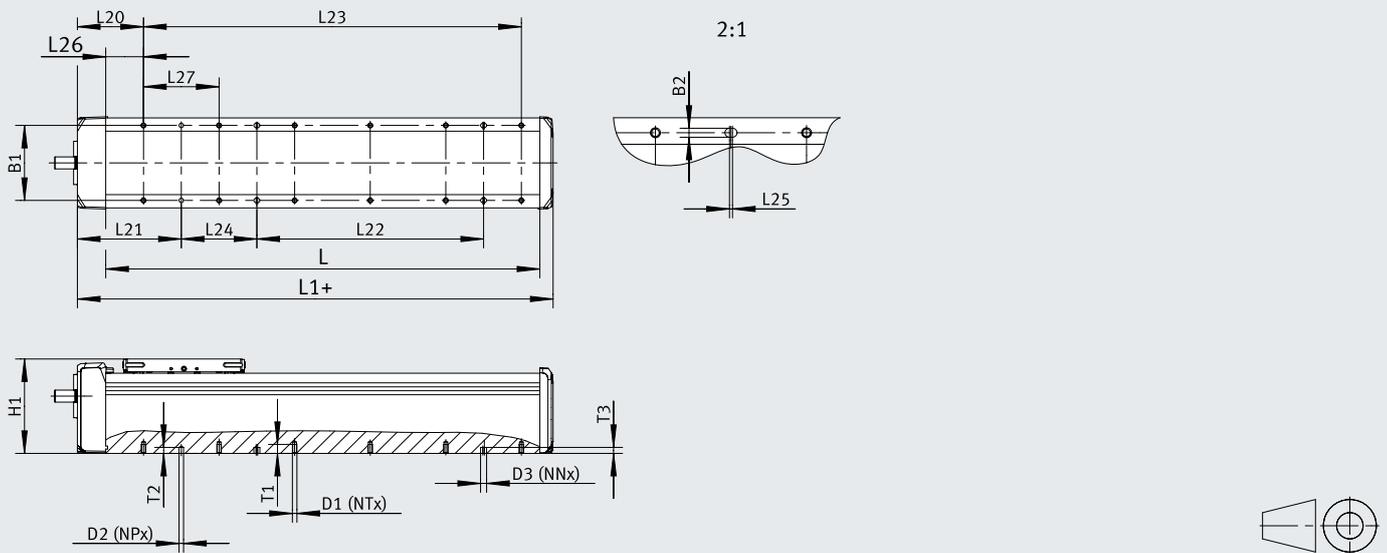
[1] Sensor slot for proximity switch

	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 H7	D1	D2 ∅ H7	H1	L (at zero stroke)	L20	L21
ELGD-BS-100-...-L-M	83	6	M6	6	69.4	202.5	71.5	121.5
ELGD-BS-120-...-L-M	100				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		

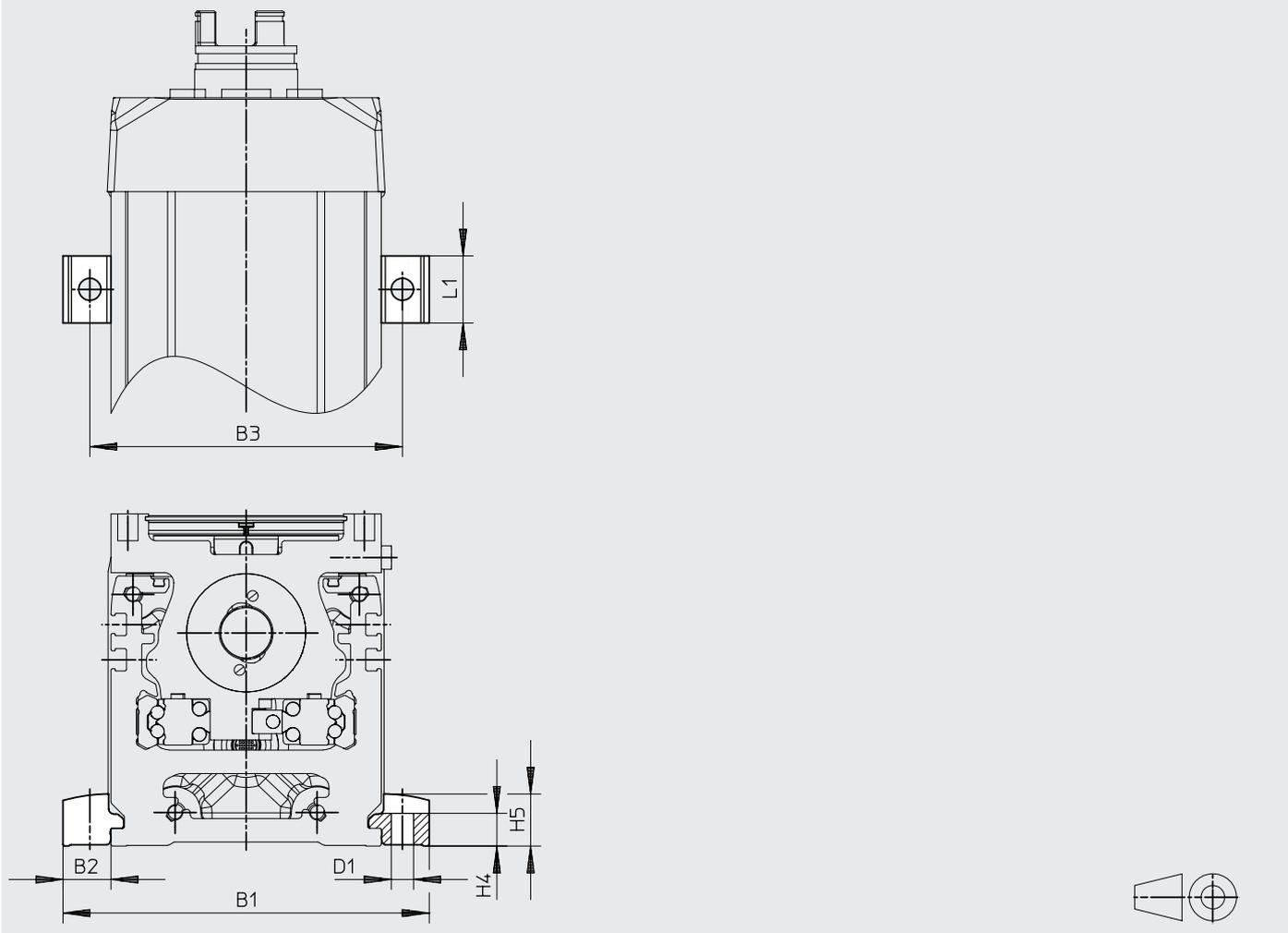
L	D1 ¹⁾		D2 ²⁾	D3 ³⁾		L24
	NT	L23	NP	NN	L22	
<270	4	100	2	–	–	100
≥270 l/min	6	200		2	–	
≥370	8	300		4	100	
≥470	10	400			200	
≥570	12	500			300	
≥670	14	600			400	
≥770	16	700			500	
≥870	18	800			600	
≥970	20	900			700	
≥1070	22	1000			800	
≥1170	24	1100			900	
≥1270	26	1200			1000	
≥1370	28	1300	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

- 1) Threaded hole
- 2) Pin hole
- 3) Slotted hole

Datasheet

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

Download CAD data → www.festo.com

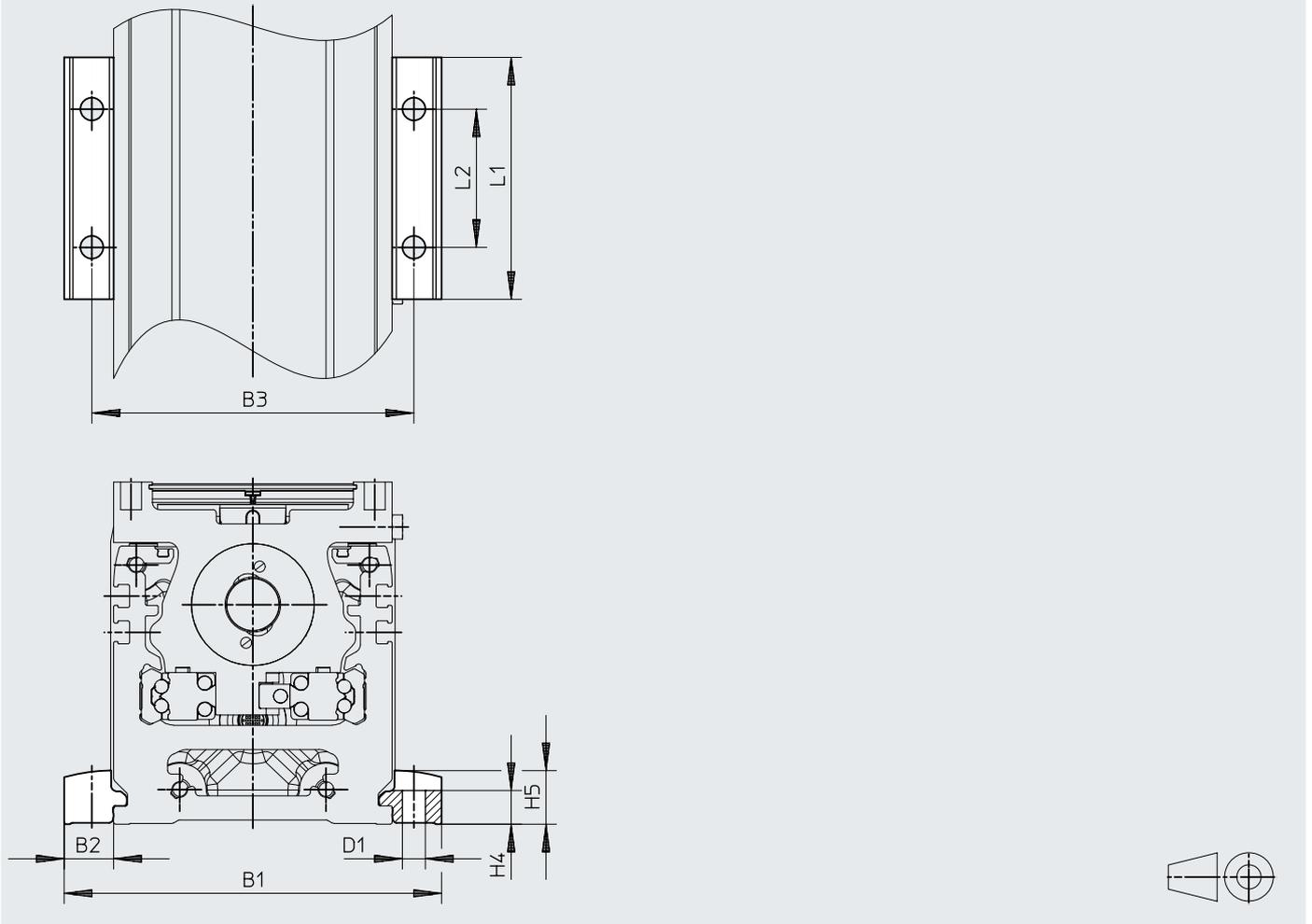


		B1	B2	B3	D1 ∅ H13	H4	H5	L1
EAHF-E24-60-P-S	ELGD-BS-100	128.4	14.2	112.5	6.6	10.3	16.5	20
	ELGD-BS-120	148.4	14.2	132.5	6.6	10.3	16.5	20

Datasheet

Dimensions – Profile mounting EAHF-E24-60-P

Download CAD data → www.festo.com

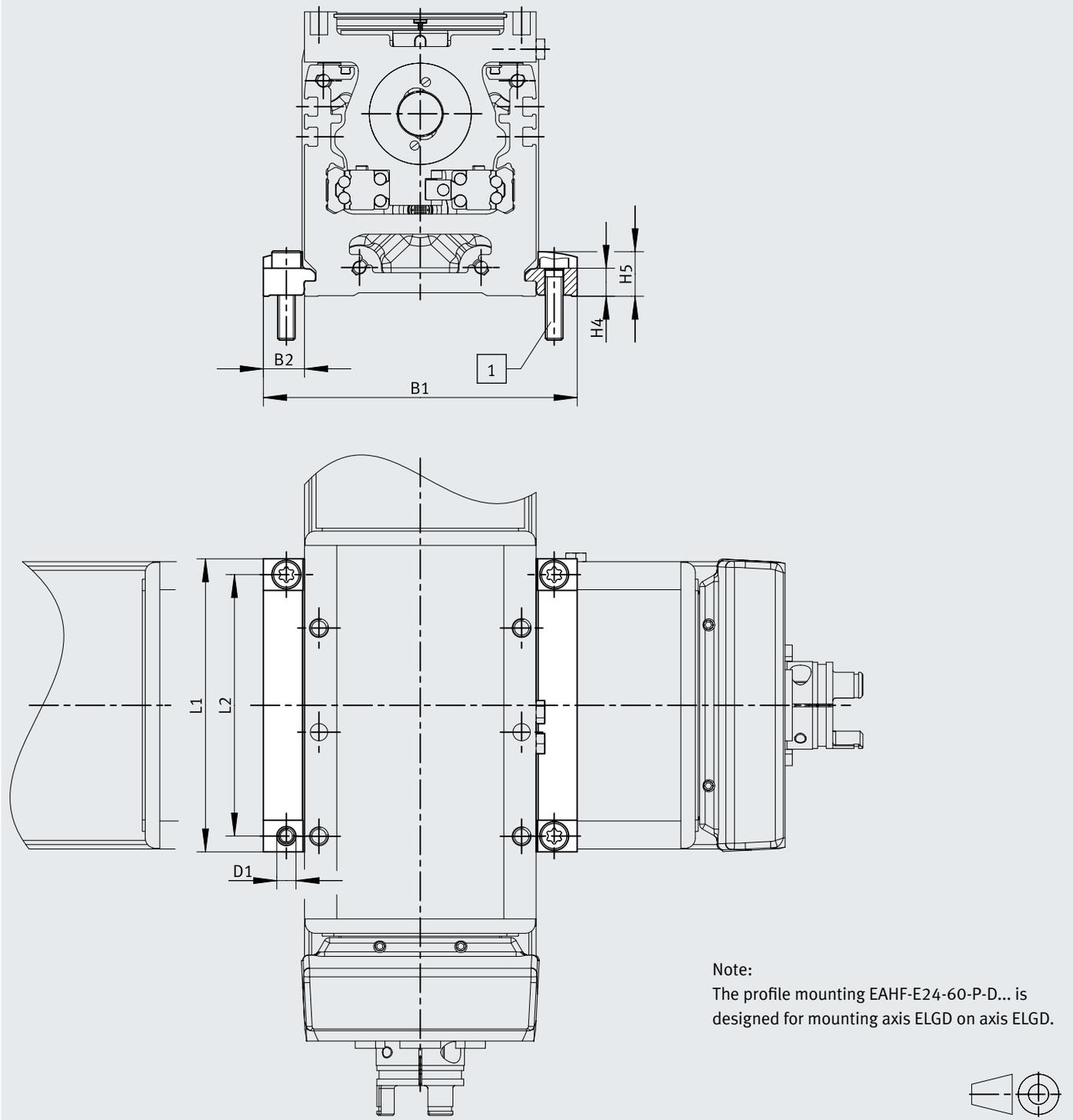


		B1	B2	B3	D1 ∅ H13	H4	H5	L1	L2
EAHF-E24-60-P	ELGD-BS-100	128.4	14.2	112.5	6.6	10.3	16.5	70	40
	ELGD-BS-120	148.4	14.2	132.5	6.6	10.3	16.5	70	40

Datasheet

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

Download CAD data → www.festo.com



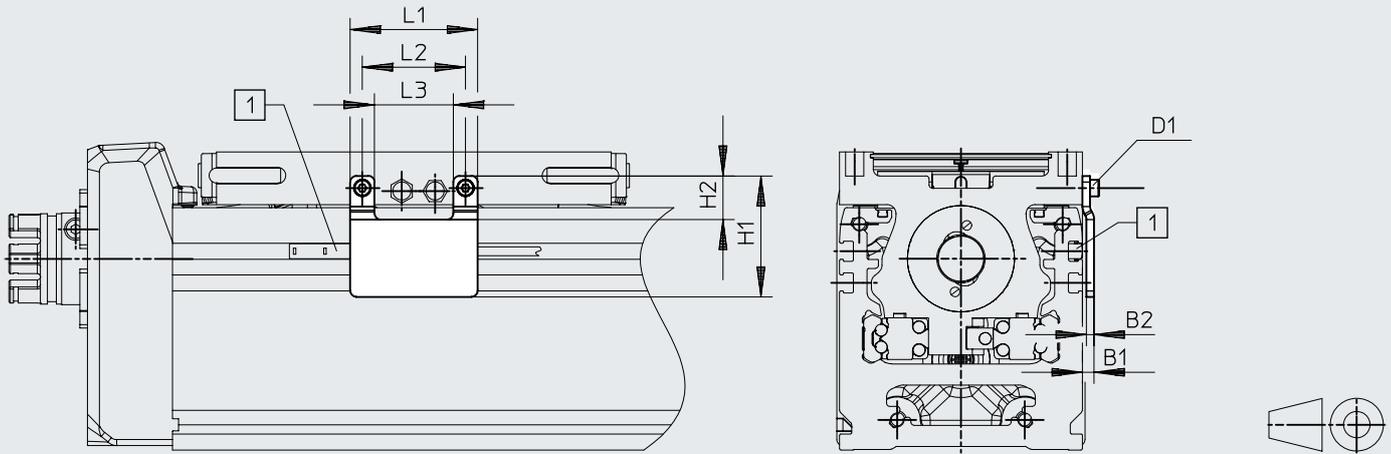
[1] Screws are included in the scope of delivery

		B1	B2	D1 ∅ H13	H4	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 – Switch lug EAPM-E24-60-SLS

Download CAD data → www.festo.com

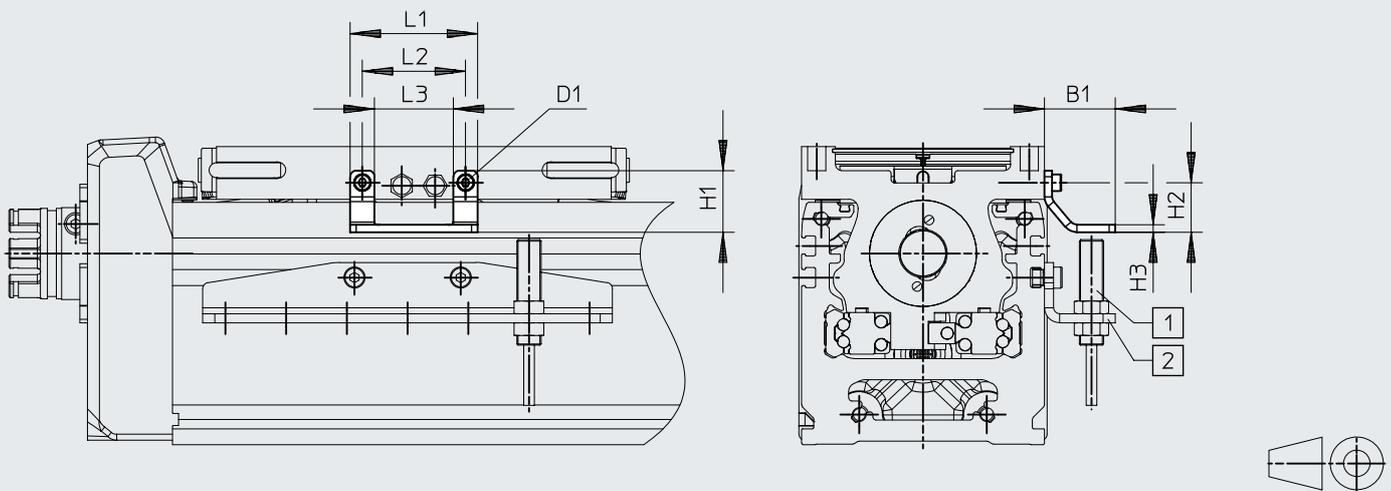


[1] Sensor slot for proximity switch SIES-8M

		B1	B2	D1	H1	H2	L1	L2	L3
EAPM-E24-60-SLS	ELGD-BS-100	3.8	2.5	M3x8	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

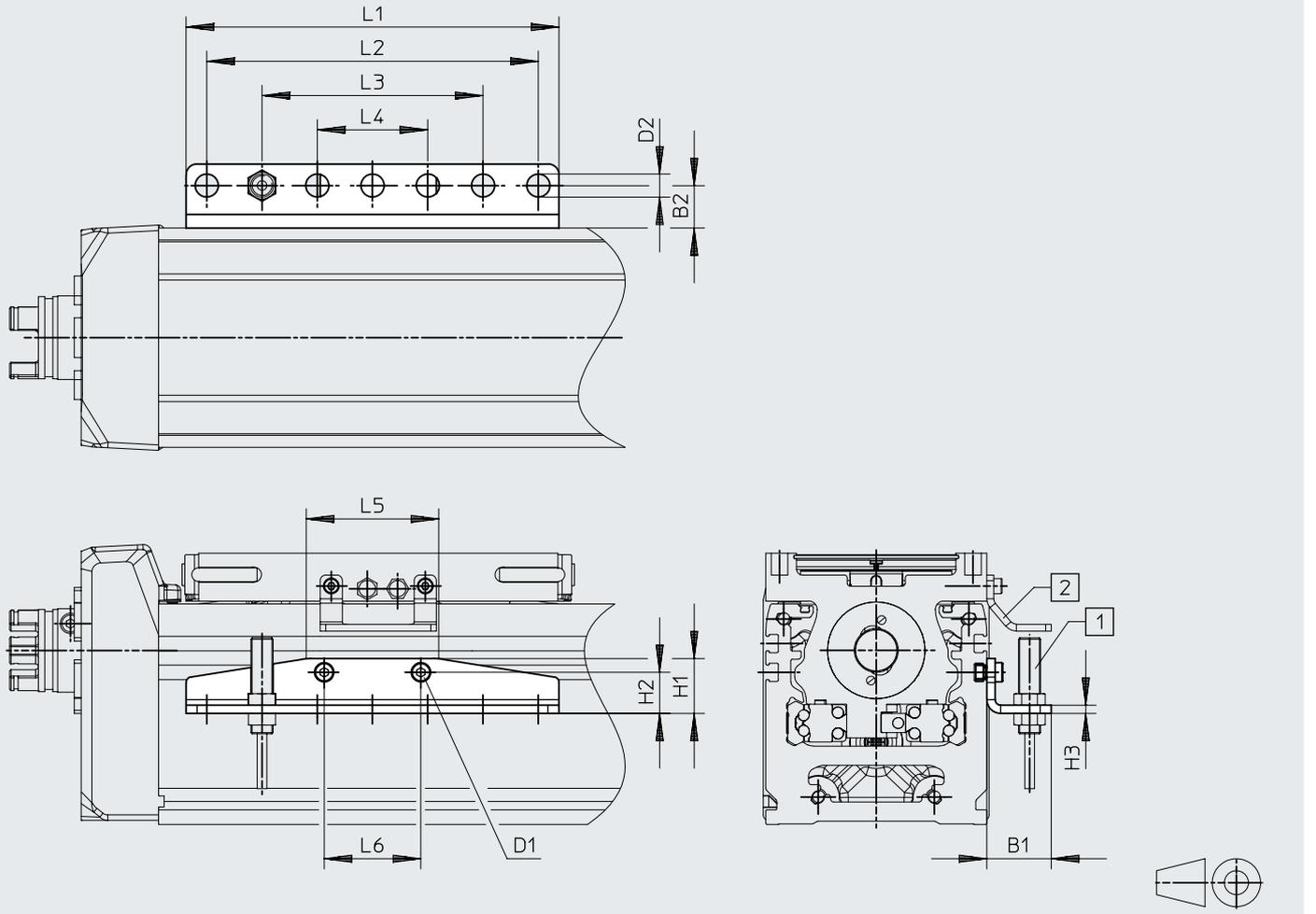
[2] Sensor bracket EAPM-E24-60-SHE

		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



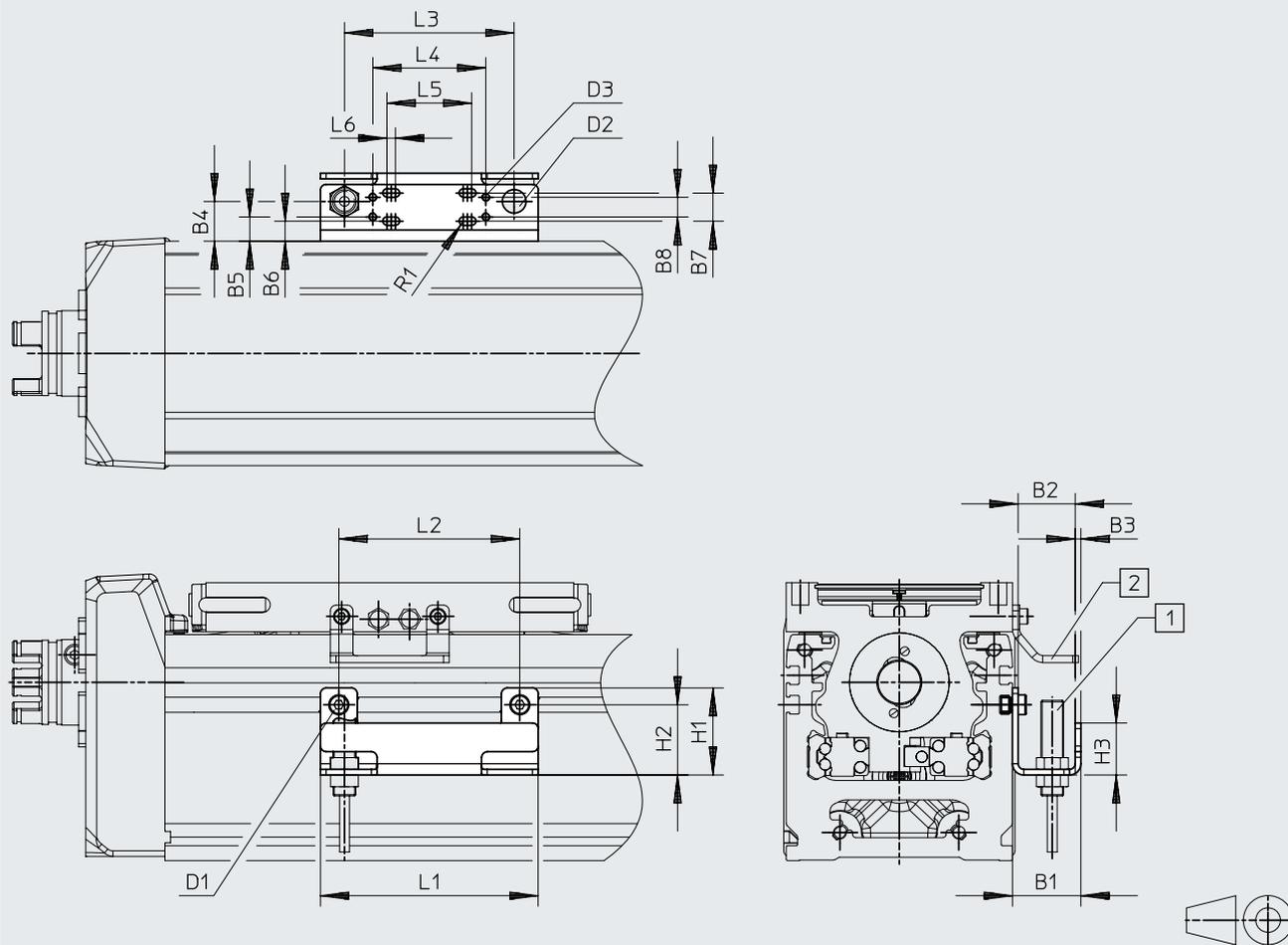
- [1] Proximity switch SIEN-8M
- [2] Switch lug EAPM-E24-60-SLE

		B1	B2	D1	D2 ∅ H13	H1	H2	H3
		±0.3				±0.3		
EAPM-E24-60-SHE	ELGD-BS-100	23.4	15.5	M4x6	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



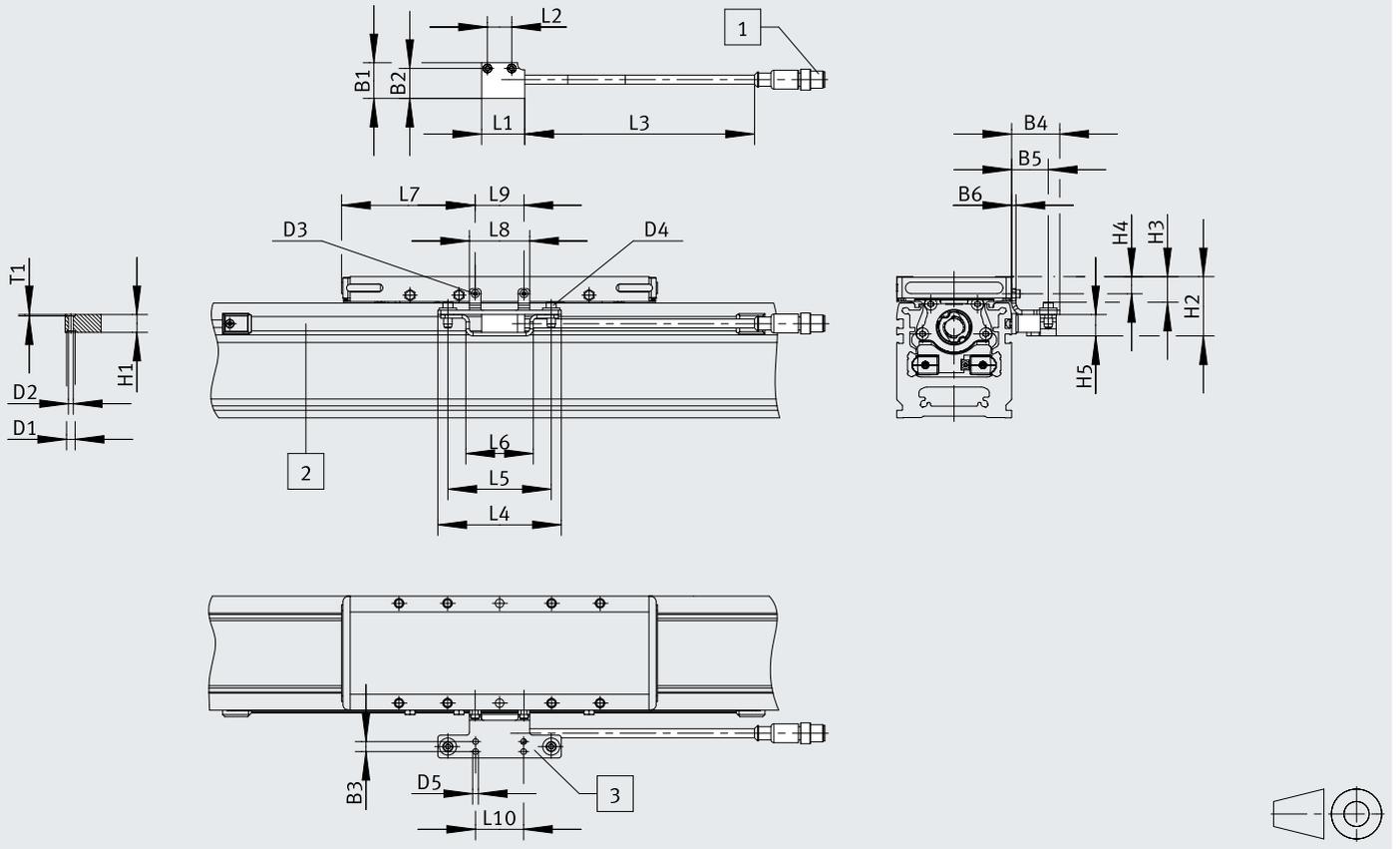
- [1] Inductive sensor (Omron)
- [2] Switch lug EAPM-E24-60-SLE

		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 ∅	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



- [1] Plug M12 (8-pin)
- [2] Displacement encoder
- [3] Switch lug

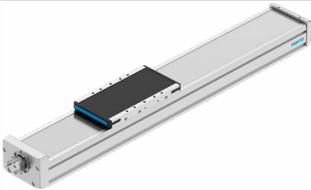
	B1	B2	B3	B4	B5	B6	D1 ø
ELGD-BS-100	25	21	7	33.5	25.5	3	6
ELGD-BS-120							

	D2 ø	D3	D4	D5 ø	H1 ±0.1	H2	H3
ELGD-BS-100	3.4	M2x10	M4x14	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

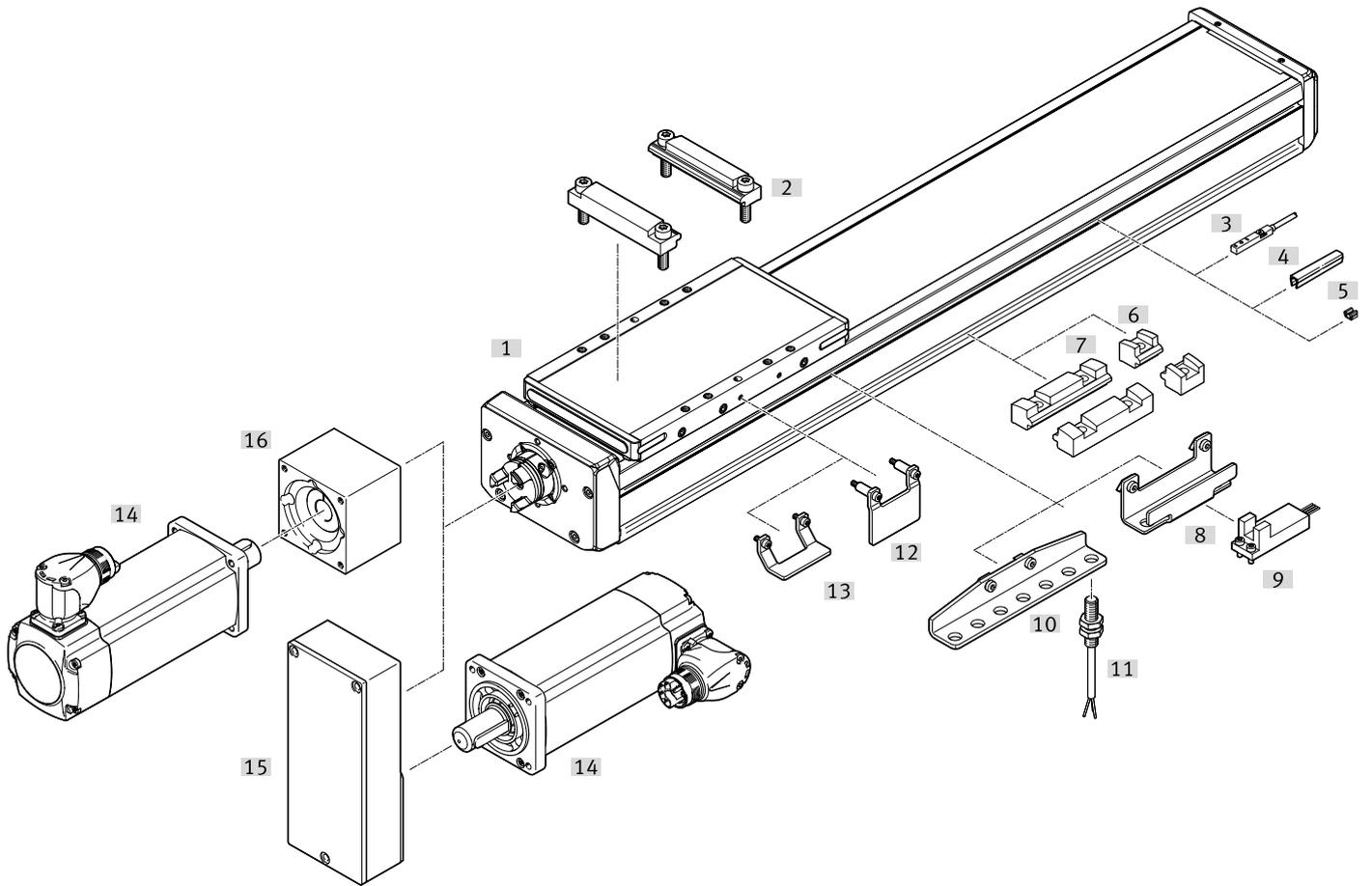
Ordering data	Size	Screw pitch [mm]	Stroke [mm]	Part no.	Type
	100	5	100	8192312	ELGD-BS-KF-WD-100-100-0H-5P-L
			200	8192313	ELGD-BS-KF-WD-100-200-0H-5P-L
			300	8192314	ELGD-BS-KF-WD-100-300-0H-5P-L
			400	8192315	ELGD-BS-KF-WD-100-400-0H-5P-L
			500	8192316	ELGD-BS-KF-WD-100-500-0H-5P-L
			600	8192317	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	
	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

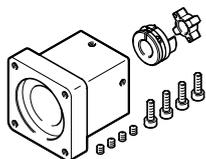


Peripherals overview

Accessories		
Type	Description	→ Page/Internet
[1] Ball screw axis ELGD-BS-WD	Electric drive	elgd-bs
[2] Profile mounting EAHF-E24-...-D...	For axis/axis mounting with adapter plate	28
[3] Proximity switch, T-slot SIES-8M	Inductive proximity switch, for T-slot	29
[4] Slot cover ABP-S	For protection against contamination	30
[5] Clip SMBK	For mounting the proximity switch cable in the slot	30
[6] Profile mounting EAHF-E24-...-S	For mounting the axis on the side of the profile	28
[7] Profile mounting EAHF-E24-...	For mounting the axis on the side of the profile	28
[8] Sensor bracket EAPM-E24-SHO	For mounting third-party sensors on the axis	29
[9] Sensor OMRON	Third-party sensor OMRON, EE-SX674 series	–
[10] Sensor bracket EAPM-E24-SHE	For mounting the inductive proximity switches SIEN-M8 (round design) on the axis	29
[11] Proximity switch, M8 SIEN-M8	Inductive proximity switch, round design	29
[12] 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	28
[13] Switch lug EAPM-E24-SLE	For sensing the slide position using inductive proximity switch SIEN-M8 (round design) and sensor bracket EAPM-E24-SHE	28
[14] 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
[15] Parallel kit EAMM	For parallel motor mounting	eamm-u
[16] Axial kit EAMM	For axial motor mounting	eamm-a

Accessories

Permitted axis/motor combinations for axial and parallel kits



Follow these links to find all the information you need on:

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

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

Parallel kits → Internet: [eamm-uparallel kits](#)

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

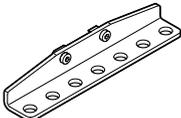
Profile mounting EAHF-E24-...-P-D...						
	Description ¹⁾	Suitable for the production of Li-ion batteries	Material	Product weight	Part no.	Type
	ELGD-60 on ELGD-100-L ¹⁾	F1a	Anodised wrought aluminium alloy	133 g	8197130	EAHF-E24-60-P-D6
	ELGD-80 to ELGD-100-L			133 g	8197130	EAHF-E24-60-P-D6
	ELGD-80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

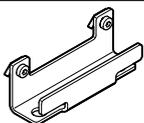
1) With this combination, the axis is mounted off-centre on the slide (see dimension L13 on the dimensional drawing with long slide).

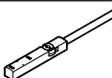
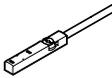
Switch lug EAPM-E24-...-SLS						
	Description	Suitable for the production of Li-ion batteries	Material	Product weight	Part no.	Type
	For sizes 100, 120	F1a	Steel	32 g	8197117	EAPM-E24-60-SLS

Switch lug EAPM-E24-...-SLE						
	Description	Suitable for the production of Li-ion batteries	Material	Product weight	Part no.	Type
	For sizes 100, 120	F1a	Steel	20 g	8197116	EAPM-E24-60-SLE

Accessories

Sensor bracket EAPM-E24-....SHE						
	Description	Suitable for the production of Li-ion batteries	Material	Product weight	Part no.	Type
	For sizes 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 sizes 100, 120	F1a	Steel	67 g	8197121	EAPM-E24-60-SHO

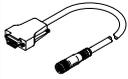
Proximity switch for T-slot, inductive							Datasheets → Internet: sien
	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part no.	Type	
N/O							
	Inserted in the slot from above, flush with the cylinder profile	PNP	Cable, 3-core	7.5	551386	SIES-8M-PS-24V-K-7.5-OE	
			Pug M8x1, 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	
			Pug M8x1, 3-pin	0.3	551397	SIES-8M-NS-24V-K-0.3-M8D	
N/C							
	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	
			Pug 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	
			Pug M8x1, 3-pin	0.3	551402	SIES-8M-NO-24V-K-0.3-M8D	

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	Pug 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	Pug M8x1, 3-pin	–	150391	SIEN-M8B-PO-S-L		
	NPN		–	150389	SIEN-M8B-NO-S-L		

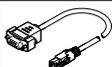
Accessories

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

Clip SMBK						
	Description	Pack size	Product weight	Part no.	Type	
	For sizes 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	
			χ ¹⁾	1599108	NEBM-M12G8-E-...-S1G9-V3	

1) Max. cable length 25 m.

Ordering data – Adapter			
	Description	Part no.	Type
	Required in combination wqith 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