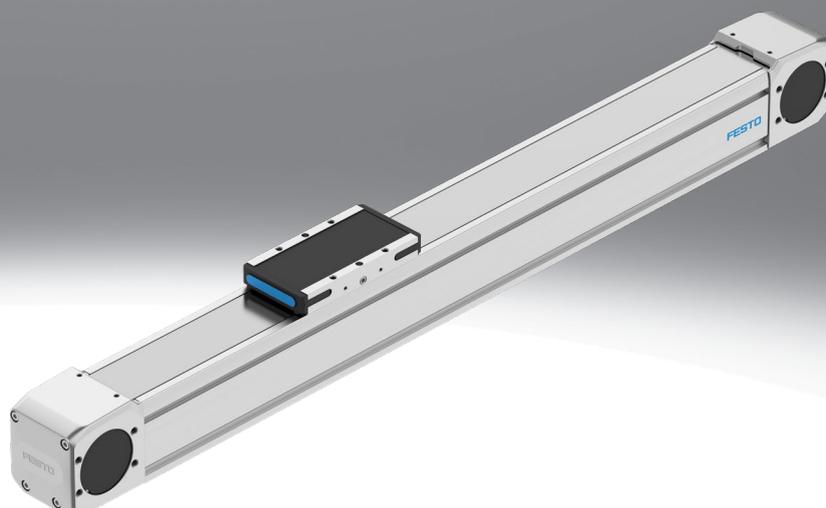


Toothed belt axes ELGD-TB

FESTO



Key features

At a glance

ELGD-TB (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-TB-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

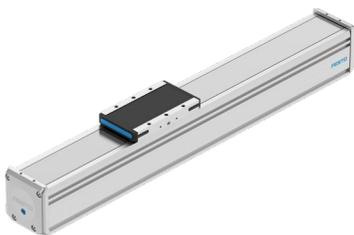
Options:

- Extended or additional slide for higher axial and lateral torques and higher loads
- Two freely selectable motor positions at one end of the axis

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-tb](#)



The graphs shown in this document are also available online. There, precise values can be displayed.

Drive system

[TB] Toothed belt

- For applications requiring a high dynamic response and short positioning times
- For long strokes

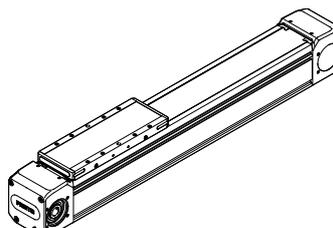
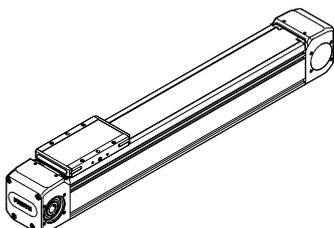
Stroke reserve

- 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.

Slide design

[] Standard

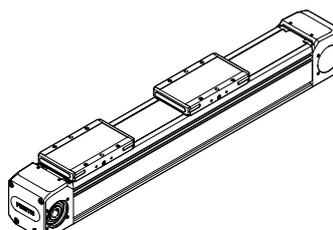
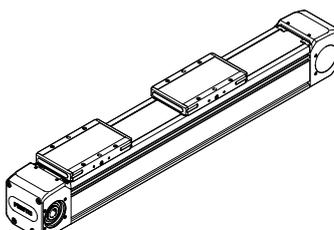
[L] Long



Additional slide

[ZL] Left

[ZR] Right



- The side on which the labelling is applied is defined as the front.
- The additional slide is always a standard slide

Key features

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.

Toothed belt material

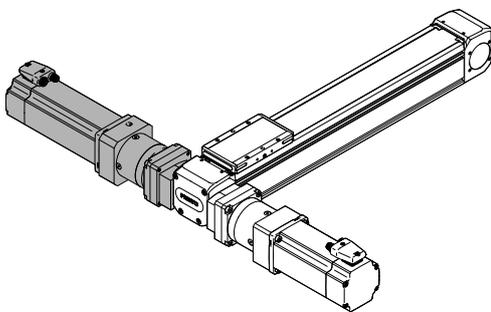
[PU2] Coated PU

- With steel reinforcements for high rigidity
- Fabric coating for a long service life and low abrasion
- Polyurethane material for resistance to many cooling lubricants

[PU1] Uncoated PU, FDA-conform

- With steel reinforcements for high rigidity
- Blue, FDA-conform polyurethane for use in the food industry

Motor attachment



- The motor can be attached to the left end of the axis at the front or rear.
- The position of the motor does not have to be specified when ordering and can be changed later
- Note: Unlike other axes from Festo, the motor cannot be mounted on both ends of the axis. However, the axis has a symmetrical design so that the left end can also be rotated to the right

Type codes

001		Series
ELGD		Gantry axis
002		Drive system
TB		Toothed belt
003		Guide
KF		Recirculating ball bearing guide
004		Size
60		60
80		80
120		120
005		Stroke [mm]
200		200
300		300
500		500
600		600
800		800
1000		1000
1200		1200
1500		1500
1800		1800
2000		2000
...		50 ... 8500
006		Stroke reserve
0H		None
...H		0 ... 999 mm

007		Slide design
		Standard
L		Slide, long
008		Additional slide
		None
ZL		1 slide left
ZR		1 slide right
009		Lubrication
		Standard
GN		Lubrication nipple
010		Type of mounting
		Profile slots with clamping jaws
M		Direct mounting
011		Displacement encoder
		None
M3		With displacement encoder, incremental, resolution 2.5 µm, 10... 30 V
012		Displacement encoder attachment position
		None
B		Rear
F		Front
013		Material of toothed belt
PU1		Uncoated PU, FDA-compliant
PU2		Coated PU

Datasheet

General technical data				
Size		60	80	120
Design	Electromechanical axis with toothed belt			
Guide	Recirculating ball bearing guide			
Mounting position	Any			
Working stroke				
ELGD-...	[mm]	50 ... 8500	50 ... 8500	50 ... 8500
ELGD-...-M	[mm]	50 ... 1400	50 ... 1400	50 ... 1400
ELGD-...-L-M	[mm]	50 ... 1400	50 ... 1400	50 ... 1370
Max. feed force F_x	[N]	350	800	1300
Max. no-load torque ¹⁾				
ELGD-...-PU1	[Nm]	0.5	1	1.5
ELGD-...-PU2	[Nm]	0.5	1.2	2
Max. no-load resistance to shifting ¹⁾	[N]	29.8	55.8	71.8
Max. driving torque	[Nm]	5.5	17.2	36.2
Max. speed	[m/s]	3		
Max. acceleration	[m/s ²]	50		
Repetition accuracy	[mm]	±0.04		
Position sensing	For inductive sensors			

1) At 0.2 m/s

Operating and environmental conditions		
Ambient temperature ¹⁾	[°C]	0 ... +60
Storage temperature	[°C]	-20 ... ++60
Degree of protection		IP40
Duty cycle	[%]	100
Maintenance interval ²⁾		Lifetime lubrication

1) Note operating range of 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	60		80		120	
		L		L		L
Basic weight with 0 mm stroke ¹⁾	2486	2909	4715	6030	10425	13075
Additional weight per 10 mm stroke	49	49	79	79	116	116
Moving mass	490	710	1110	1810	1733	3179

1) Including slide

Toothed belt				
Size		60	80	120
Pitch	[mm]	3	5	5
Effective diameter	[mm]	31.51	42.97	55.7
Feed constant	[mm/rev]	99	135	175

Mass moments of inertia							
Size		60		80		120	
			L		L		L
J_0	[kg mm ²]	210.16	267.49	752.16	1056.47	3021.36	4163.24
J_H per metre stroke	[kg mm ² /m]	31.28	31.28	112.63	112.63	279.2	279.2
J_L per kg payload	[kg mm ² /Kg]	248.22	248.22	461.61	431.61	775.62	775.62

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

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

Datasheet

Homing

Homing can be carried out in two ways:

- Against a fixed stop
- Using a reference switch

The following values must be observed:

Size		60	80	120
Max. impact energy	[mJ]	0.125	0.25	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
Slide	Wrought aluminium alloy
Cover strip	High-alloy stainless steel
Toothed belt	
ELGD-...-PU2	Polyurethane with steel cord and nylon cover
ELGD-...-PU1	Polyurethane with steel cord
Guide	Steel
Profile	Anodised wrought aluminium alloy
Belt pulley	High-alloy stainless steel
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) 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 reducing the emitted interference may be necessary.

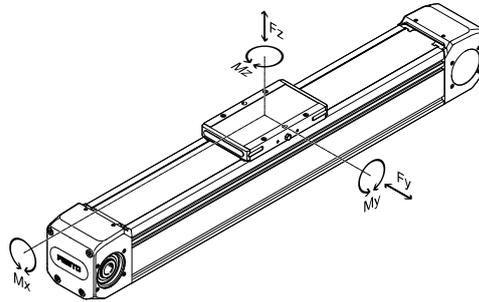
Datasheet

Load values

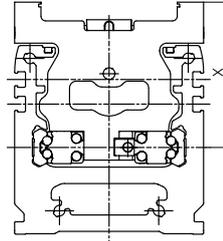
The indicated forces and torques refer to the centre of the guide.
The point of application of force is the point where the centre of the guide and the longitudinal centre of the slide intersect.

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	60	80	120
Dimension x [mm]	49	62	80

1. Check the maximum permissible values

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

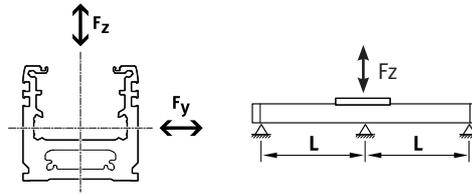
Size	60		80		120	
		L		L		L
Max. force F_y , overall axis [N]	1945	3890	2800	5500	2957	5914
Max. force F_z , overall axis [N]	4300	3200	3500	5600	6500	9000
Max. torque M_x , overall axis [Nm]	68	119	136	190	251	520
Max. torque M_y , overall axis [Nm]	40	128	95	356	80	819
Max. torque M_z , overall axis [Nm]	40	133	79	383	105	527

Datasheet

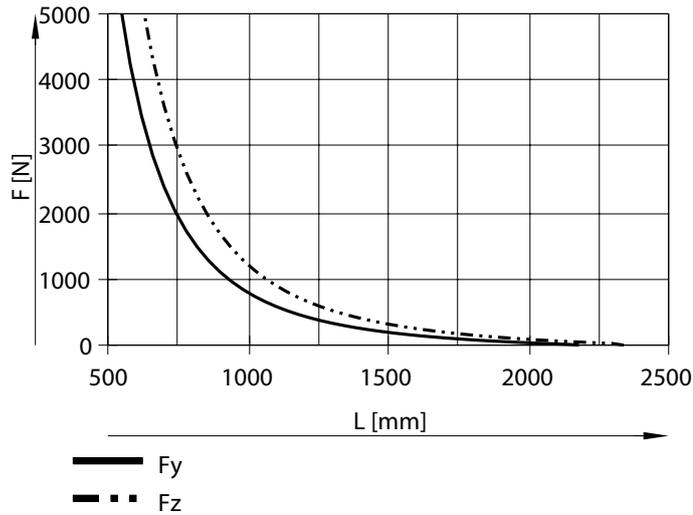
Maximum permissible support spacing L as a function of force F

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

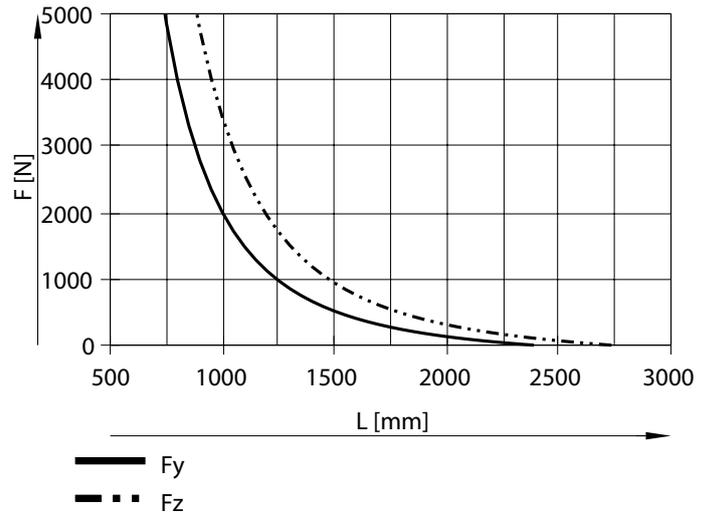
The following graphs can be used to determine the maximum permissible support spacing L as a function of force F acting on the axis. The deflection is $f = 0.5 \text{ mm}$.



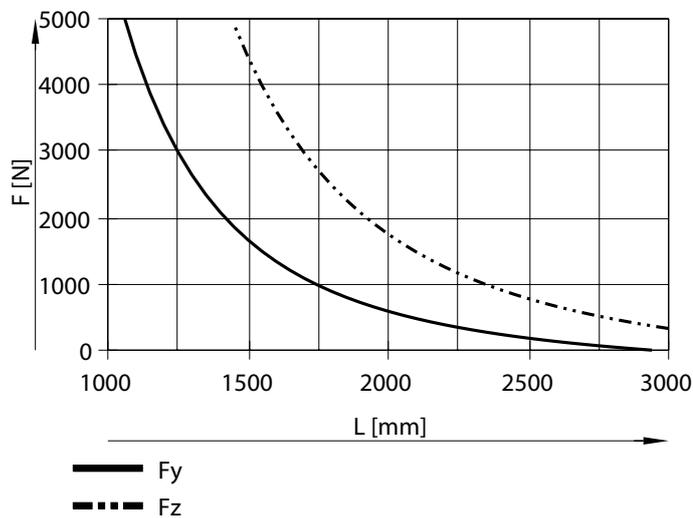
Size 60



Size 80



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:

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

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)

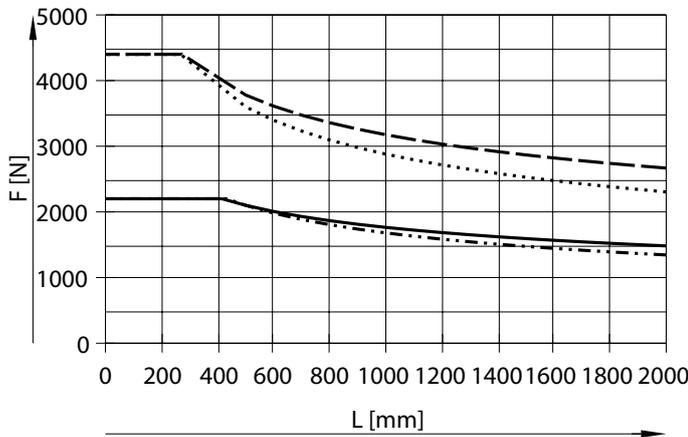
Max. permissible torques for the guide calculation with reference service life

Size	60		80		120	
Slide design		L		L		L
Reference service life [km]	5000					
Max. torque M_x [Nm]	38	75	106	200	170	350
Max. torque M_y [Nm]	15	150	42	390	50	620
Max. torque M_z [Nm]	15	140	42	390	60	580

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

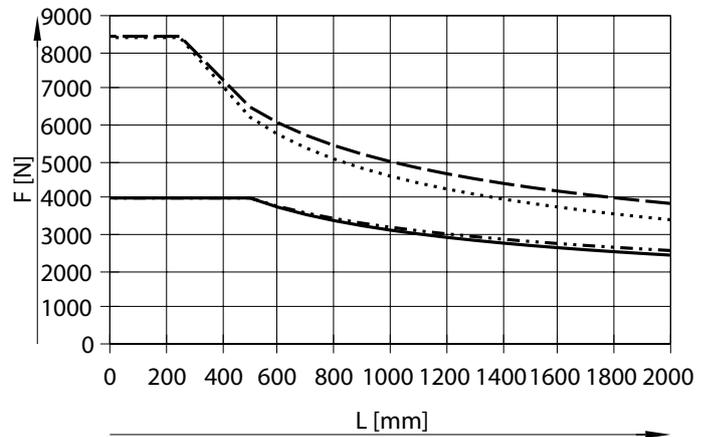
Depending on how firmly the axis is supported, the maximum permissible forces vary due to the design of the guide system. If the axis is used as a cantilever or in yoke operation, the values for a support spacing of 2000 mm can be selected.

Size 60



- Fy - ELGD-60
- - Fz - ELGD-60
- · Fy - ELGD-60-L
- · Fz - ELGD-60-L

Size 80



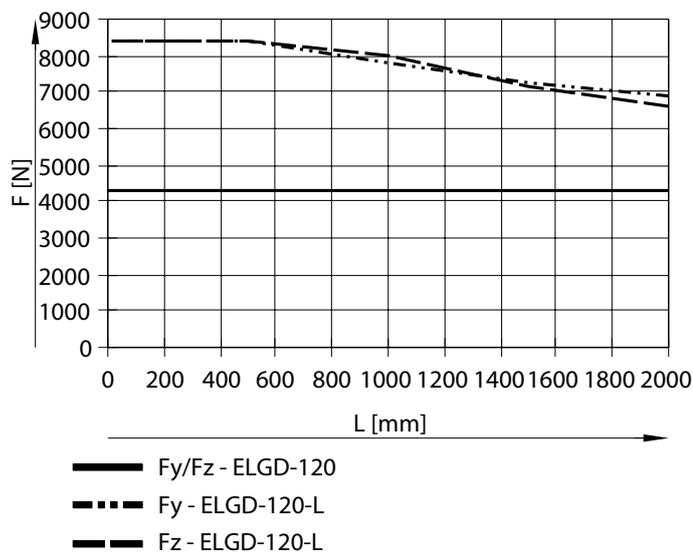
- Fy - ELGD-80
- - Fz - ELGD-80
- · Fy - ELGD-80-L
- · Fz - ELGD-80-L

Datasheet

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 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 a load comparison factor f_v greater than 1.3.

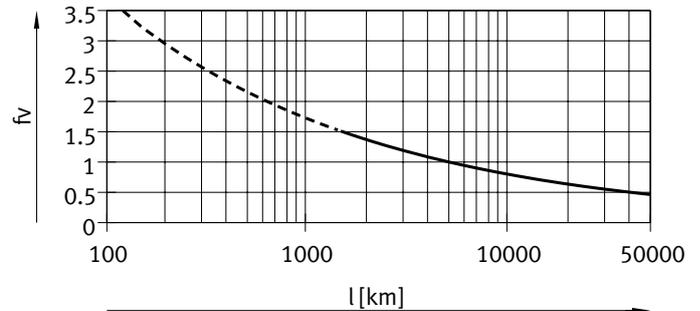
Load comparison factor f_v as a function of service life l

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 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 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.

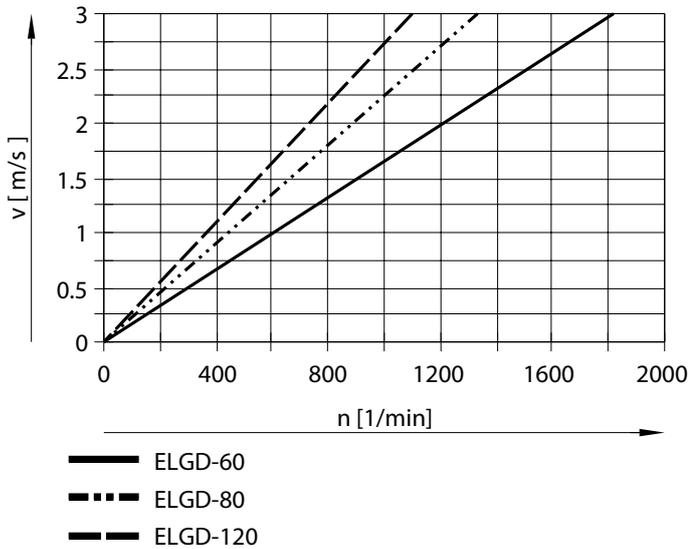
These 100 km values have been calculated mathematically and are only to be used for comparing with dynamic forces and torques to ISO. The drives must not be loaded with these characteristic values as this could damage the axes.

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

Size	60		80		120		
		L		L		L	
$F_{y_{max}}$	[N]	9208	18415	17576	35153	17576	35153
$F_{z_{max}}$	[N]	9208	18415	17576	35153	17576	35153
$M_{x_{max}}$	[Nm]	157	314	422	844	730	1459
$M_{y_{max}}$	[Nm]	60	500	162	1356	162	1920
$M_{z_{max}}$	[Nm]	60	500	162	1356	162	1920

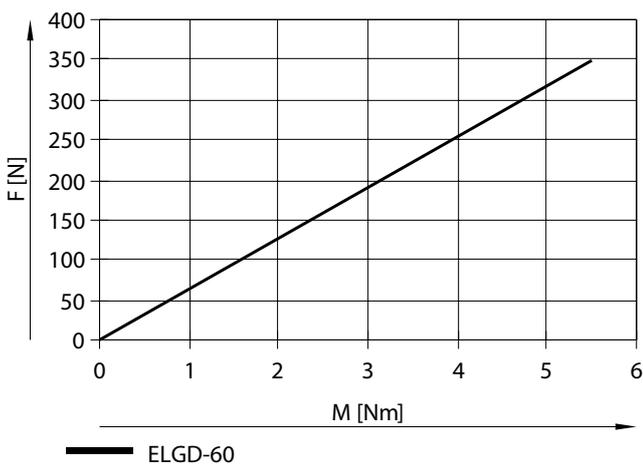
Datasheet

Speed v as a function of rotational speed n

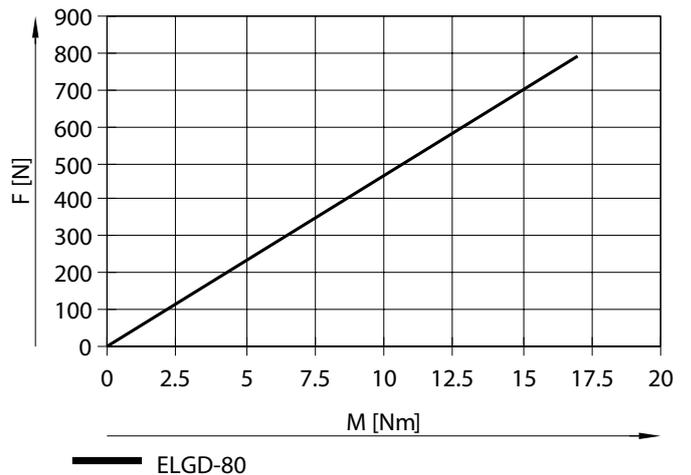


Feed force F as a function of input torque M

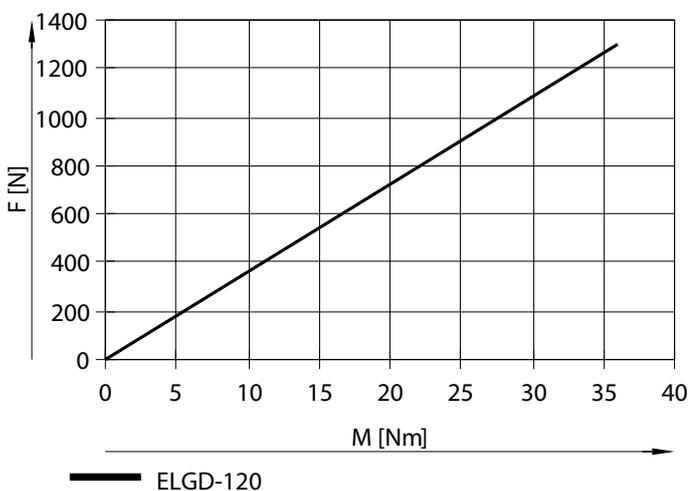
Size 60



Size 80

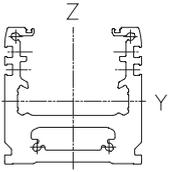


Size 120



Datasheet

2nd moment of area



Size		60	80	120
I_y	[mm ⁴]	0.485x10 ⁶	1.213x10 ⁶	3.55x10 ⁶
I_z	[mm ⁴]	0.731x10 ⁶	2.052x10 ⁶	8.985x10 ⁶

Recommended deflection limits

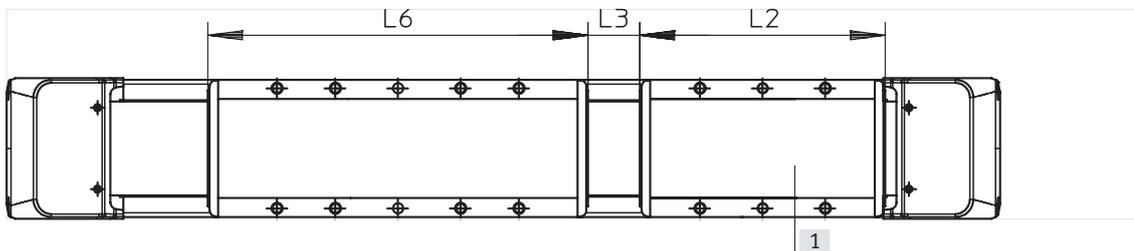
Compliance with the following critical limits for deflection is recommended to ensure the continuing functionality of the axes. Greater deformation can result in increased friction, greater wear and reduced service life.

Size	Dynamic deflection (load moves)	Static deflection (stationary load)
60, 80, 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 toothed belt 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	Example:	
L2 =	Additional slide length	Type ELGD-TB-KF-60-500-...-ZR	
L3 =	Distance between the two slides	Working stroke without additional slide	= 500 mm
[1]	Additional slide	L3	= 50 mm
		L2	= 118 mm
		Working stroke with additional slide	= 332 mm
			(500 mm – 50 mm – 118 mm)

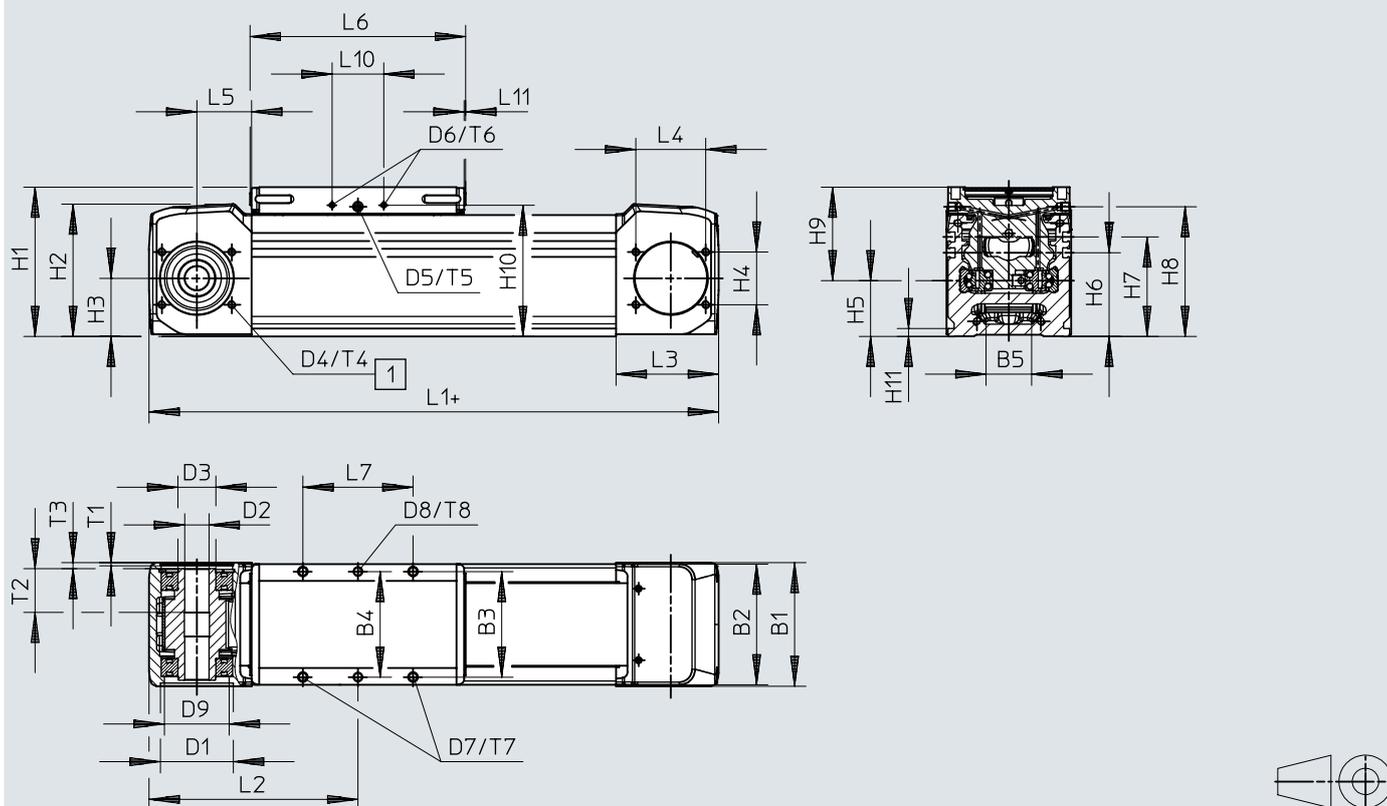
Dimensions – Additional slide

Size		60	80	120
Length L2	[mm]	118	142	162
Min. distance between the slides L3	[mm]	≥ 50	≥ 50	≥ 50

Datasheet

Dimensions – ELGD-TB-...

Download CAD data → www.festo.com



[1] Sealing air connection

+ = plus stroke length + 2x stroke reserve

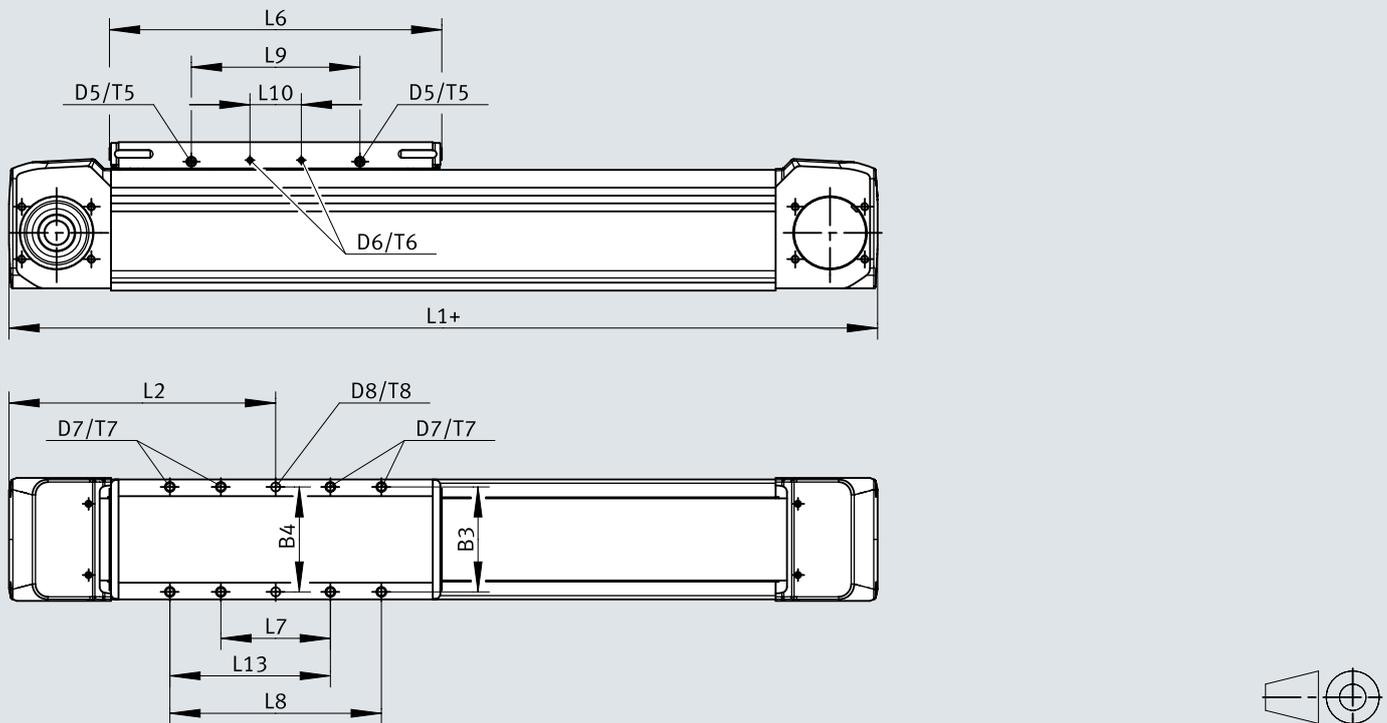
	B1	B2	B3	B4	B5	D1	D2	D3	D4	D5	D6	D7	D8	D9	H1
				±0.03		∅ H7	∅ H7	∅					∅ H7	∅	
ELGD-TB-60	62	60	52.5	52.5	20	48	16	25k5	M6	M6	M3	M5	5	37.3	82
ELGD-TB-80	82	80	70	70	30	48	16	25k5	M5	M6	M3	M6	6	42.7	99
ELGD-TB-120	123	120	107	107	40	80	23	45k6	M8	M6	M3	M6	6	68.7	126.5

	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	L1	L2	L3	L4
												min.		
ELGD-TB-60	71.4	34	26	33	50	–	70	49	71	5.3	251	125.5	68	51
ELGD-TB-80	87.6	38.5	35	37	55.5	66	86	62	87	5.3	275	137.5	67.5	46
ELGD-TB-120	115.7	53.4	59	46.5	81.5	92	113.5	80	113.5	5.3	356	178	100	76

	L5	L6	L7	L10	L11		T1	T2	T3	T4	T5	T6	T7	T8
			±0.1		min.	max.								
ELGD-TB-60	35	118	50	34	1.5	4.5	2.2	26	4.2	12	6	7	16.5	6 ±0.05
ELGD-TB-80	36	142	72.5	34	1	4	2.2	29	4	12	6	7	17.5	8 ±0.05
ELGD-TB-120	50	162	92.5	34	3	6	3.5	29	4	16	6	7	17.5	8 ±0.1

Datasheet

Dimensions – ELGD-TB-...-L (with long slide)

Download CAD data → www.festo.com

+ = plus stroke length + 2x stroke reserve

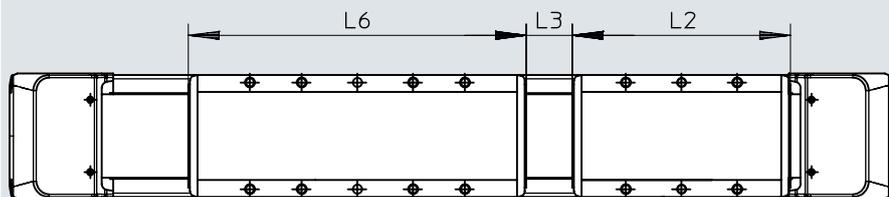
	B3	B4 ±0.03	D5	D6	D7	D8 ∅ H7	L1	L2 min.	L6
ELGD-TB-60-L	52.5	52.5	M6	M3	M5	5	292	146	159
ELGD-TB-80-L	70	70	M6	M3	M6	6	353	176.5	220
ELGD-TB-120-L	107	107	M6	M3	M6	6	457	228.5	263

	L7 ±0.1	L8 ±0.1	L9	L10	L13	T5	T6	T7	T8 ±0.05
ELGD-TB-60-L	50	95	81.2	34	72.5	6	7	16.5	6
ELGD-TB-80-L	72.5	140	111.6	34	106.3	6	7	17.5	8
ELGD-TB-120-L	92.5	132.5	161	34	112.5	6	7	17.5	8

Datasheet

Dimensions – ELGD-TB-...-ZL/-ZR (with additional slide)

Download CAD data → www.festo.com



	L2	L3 (Minimum distance)	L6
ELGD-TB-60	118	50	118
ELGD-TB-80	142	50	142
ELGD-TB-120	162	50	162
ELGD-TB-60-L	118	50	159
ELGD-TB-80-L	142	50	220
ELGD-TB-120L	162	50	263

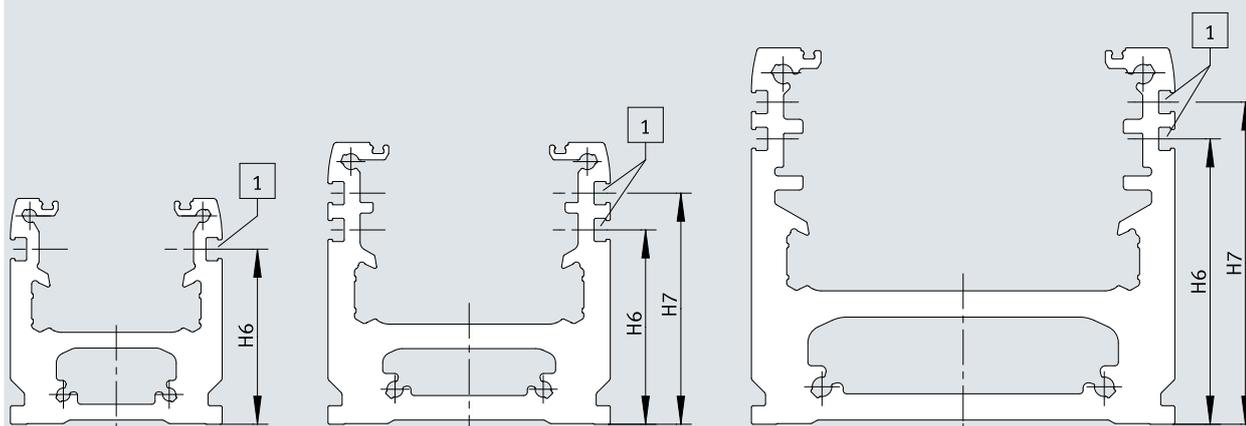
Dimensions – ELGD-TB-...- (profile)

Download CAD data → www.festo.com

ELGD-TB-KF-60

ELGD-TB-KF-80

ELGD-TB-KF-120



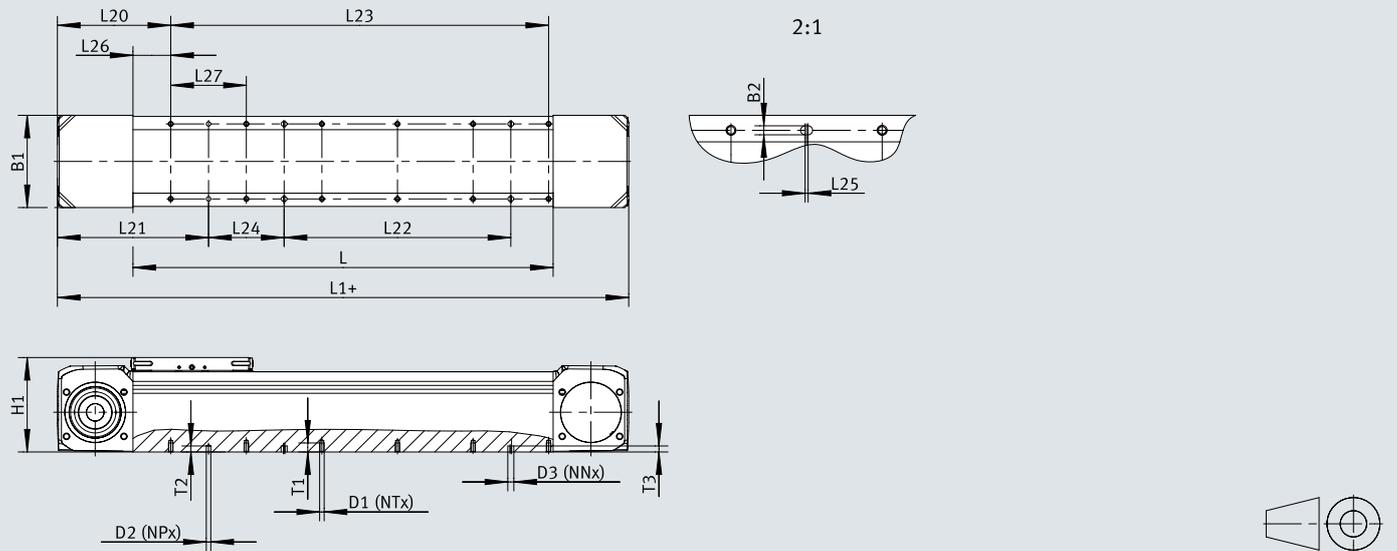
[1] Sensor slot for proximity switch

	H6	H7
ELGD-TB-60	50	–
ELGD-TB-80	55.5	66
ELGD-TB-120	81.5	92

Datasheet

Dimensions - ELGD-TB-...-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-TB-60-...-M	43	6	M5	6	81.4	115	118	168
ELGD-TB-60-...-L-M			156					
ELGD-TB-80-...-M	61	6	M6	6	98.4	140	117.5	167.5
ELGD-TB-80-...-L-M			218					
ELGD-TB-120-...-M	100	6	M6	6	125.9	156	150	200
ELGD-TB-120-...-L-M			257					

	L25	L26	L27	T1	T2	T3
ELGD-TB-60-...-M	2	50	100	10.5	8	8
ELGD-TB-60-...-L-M				12.5		
ELGD-TB-80-...-M	2	50	100	12.5	8	8
ELGD-TB-80-...-L-M				12.5		
ELGD-TB-120-...-M	2	50	100	12.5	8	8
ELGD-TB-120-...-L-M				12.5		

Datasheet

L	D1 ¹⁾		D2 ²⁾	D3 ³⁾		L24
	NT	L23	NP	NN	L22	
<270	4	100	2	–	–	100
≥270	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 D ≤1650	32	1500			1300	

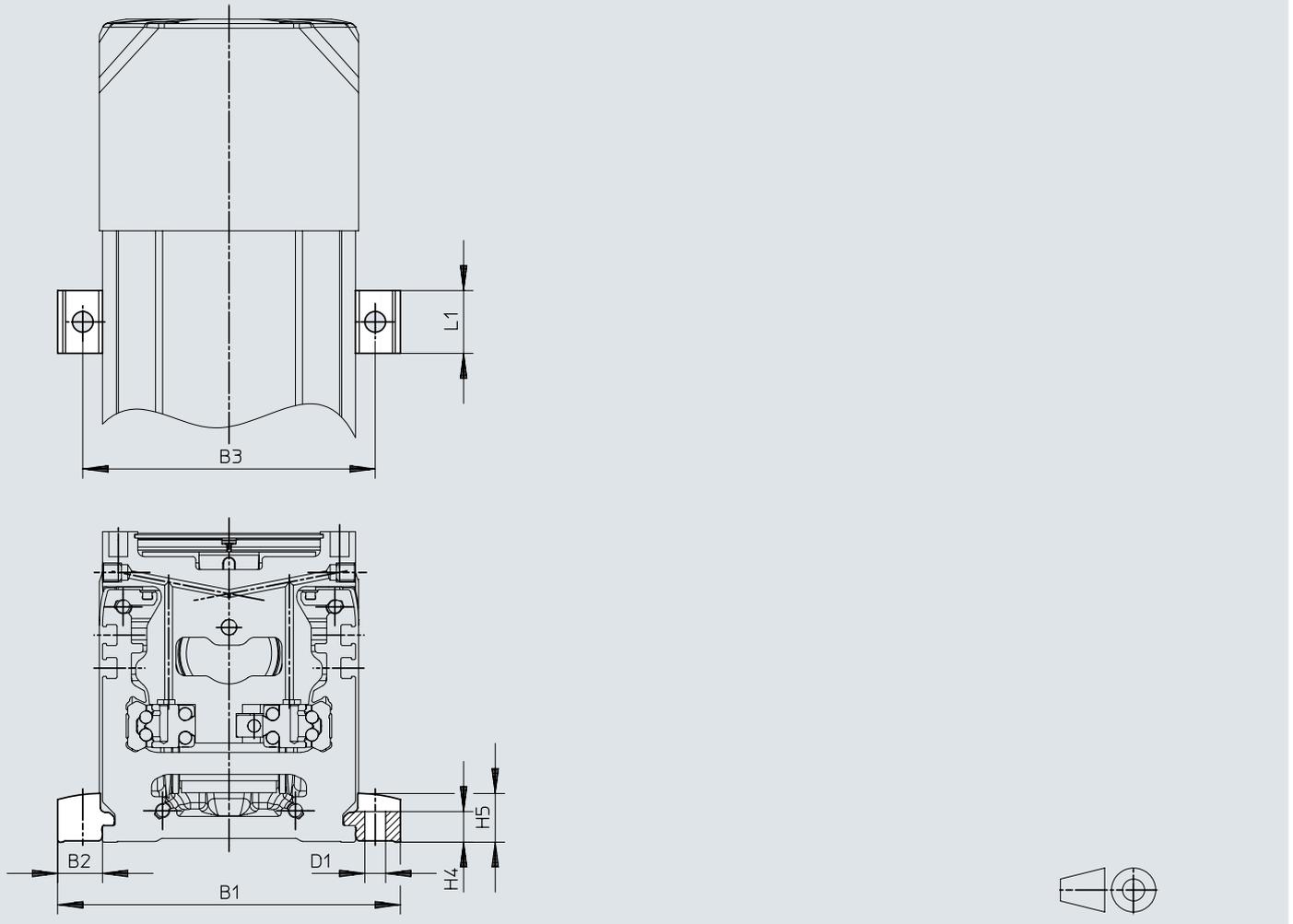
1) Threaded hole

2) Pin hole

3) Slotted hole

Datasheet

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

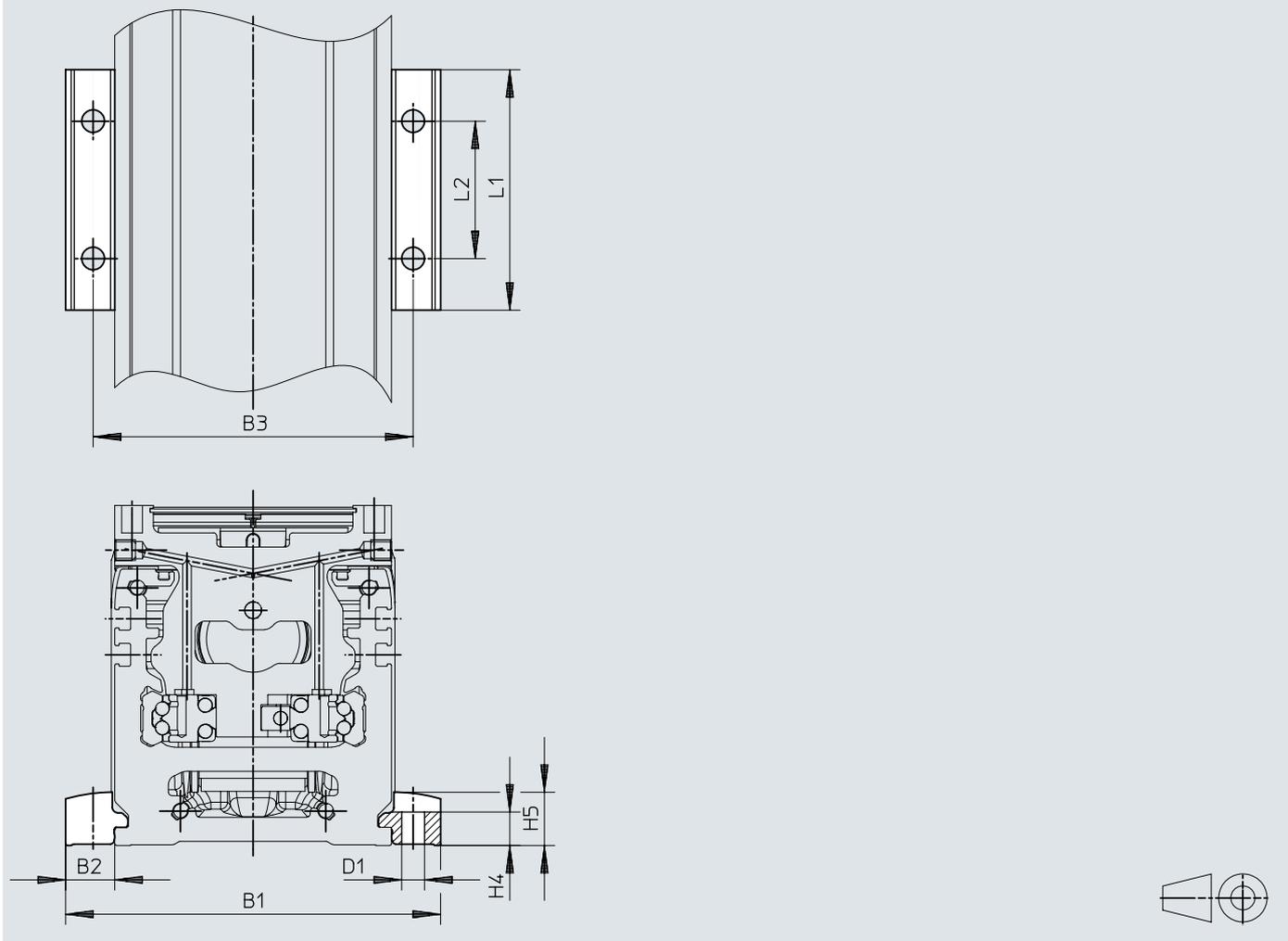
Download CAD data → www.festo.com

		B1	B2	B3	D1 ∅ H13	H4 ±0.1	H5	L1
EAHF-E24-60-P-S	ELGD-TB-60	88.4	14.2	72.5	6.6	10.3	16.5	20
	ELGD-TB-80	108.4	14.2	92.5	6.6	10.3	16.5	20
	ELGD-TB-120	148.4	14.2	132.5	6.6	10.3	16.5	20

Datasheet

Dimensions – Profile mounting EAHF-E24-60-P

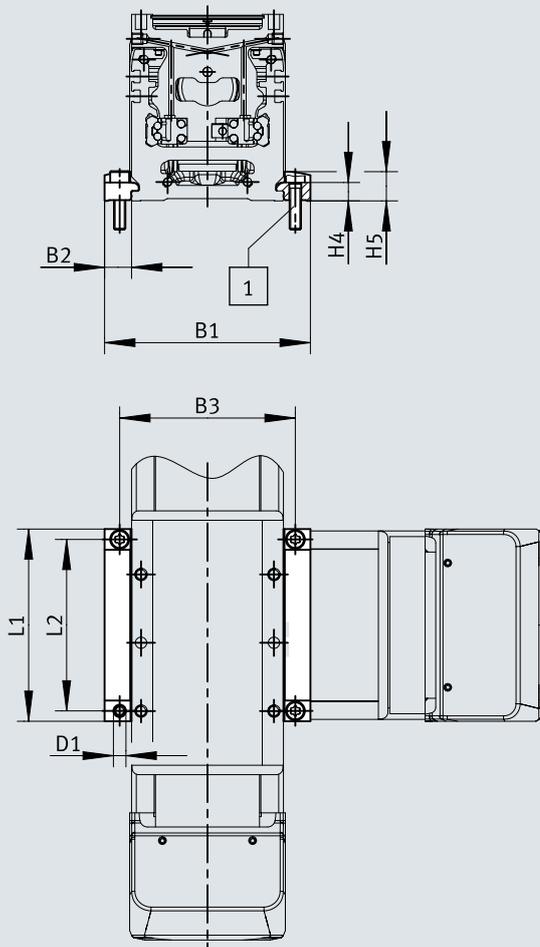
Download CAD data → www.festo.com



		B1	B2	B3	D1 ∅ H13	H4 ±0.1	H5	L1	L2
EAHF-E24-60-P	ELGD-TB-60	88.4	14.2	72.5	6.6	10.3	16.5	70	40
	ELGD-TB-80	108.4	14.2	92.5	6.6	10.3	16.5	70	40
	ELGD-TB-120	148.4	14.2	132.5	6.6	10.3	16.5	70	40

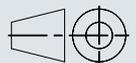
Datasheet

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

Download CAD data → www.festo.com

Note:

The profile mounting EAHF-E24-60-P-D... is designed for mounting axis ELGD on axis ELGD.



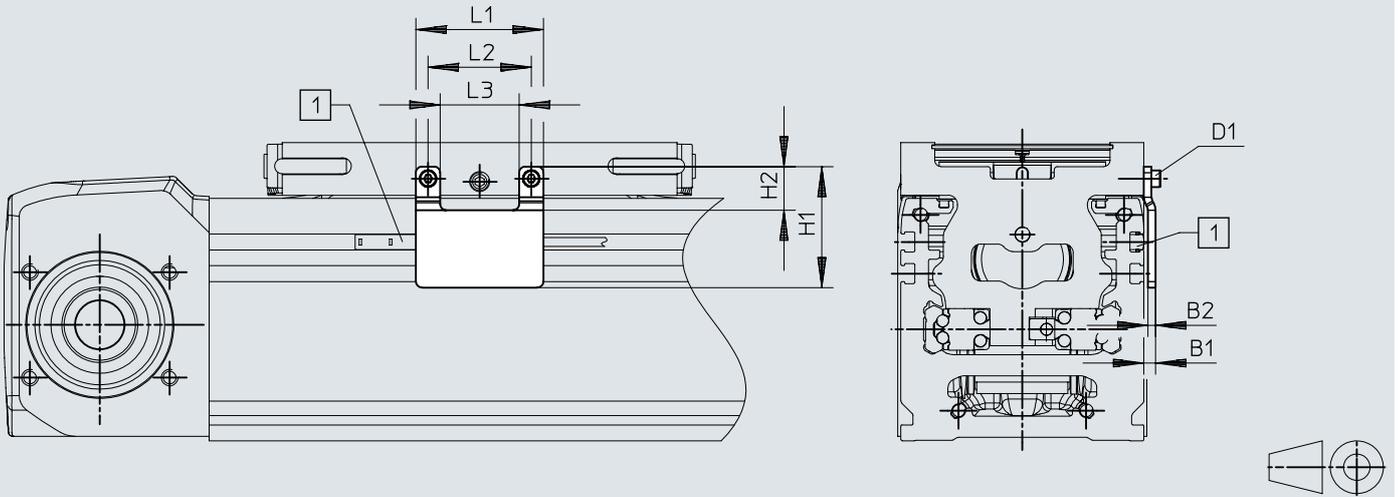
[1] Screws are included in the scope of delivery

		B1	B2	B3	D1 ∅ H13	H4 ±0.1	H5	L1	L2
EAHF-E24-60-P-D5	ELGD-TB-60	88.4	14.2	72.5	5.5	10.3	16.5	62	52.5
EAHF-E24-60-P-D4	ELGD-TB-80	108.4	14.2	92.5	6.6	10.3	16.5	81	70
EAHF-E24-60-P-D7	ELGD-TB-120	148.4	14.2	132.5	6.6	10.3	16.5	120	107

Datasheet

Dimensions – Switch lug EAPM-E24-60-SLS

Download CAD data → www.festo.com



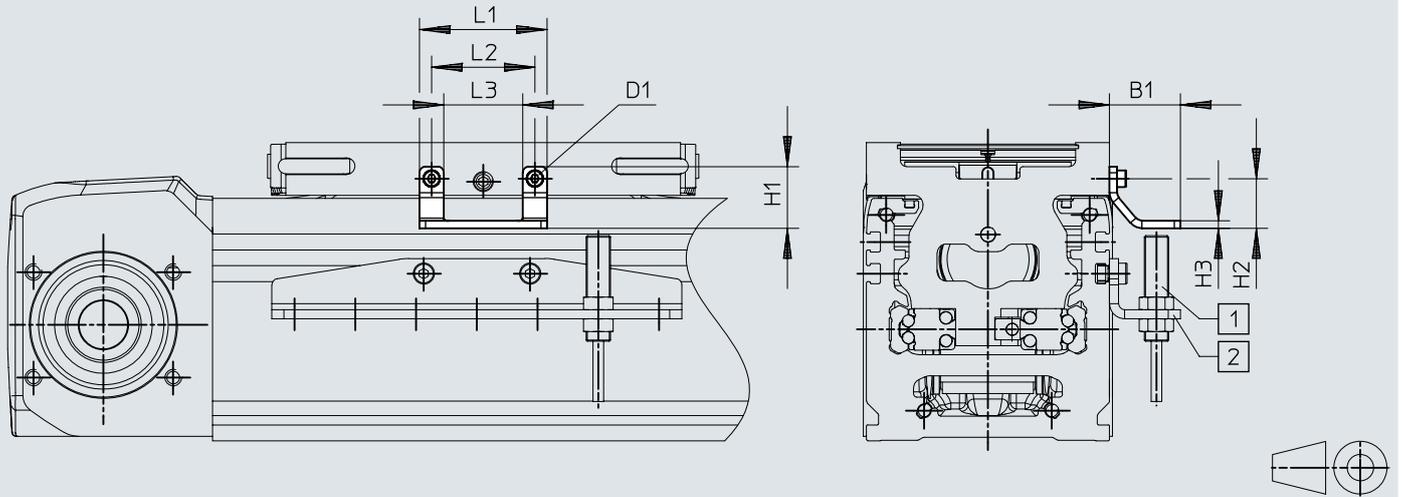
[1] Sensor slot for proximity switch SIES-8M

		B1	B2	D1	H1	H2	L1	L2	L3
EAPM-E24-60-SLS	ELGD-TB-60	3.8	2.5	M3x8	40.2	14.5	42	34	26
	ELGD-TB-80								
	ELGD-TB-120								

Datasheet

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

Download CAD data → www.festo.com



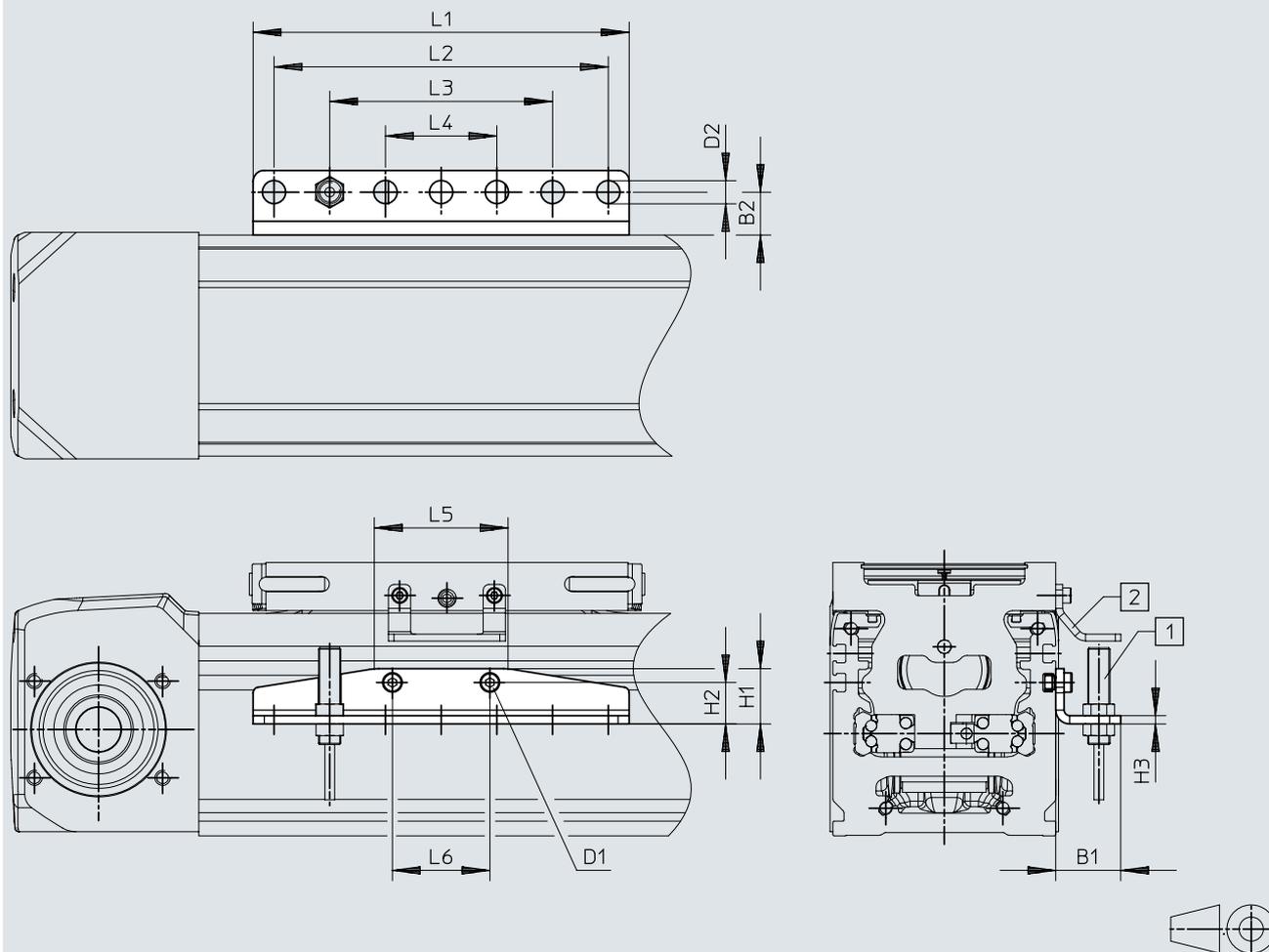
- [1] Proximity switch SIEN-M8
- [2] Sensor bracket EAPM-E24-60-SHE

		B1	D1	H1	H2	H3	L1	L2	L3
EAPM-E24-60-SLE	ELGD-TB-60	23.4	M3	20.5	16.5	2.5	42	34	26
	ELGD-TB-80								
	ELGD-TB-120								

Datasheet

Dimensions – Sensor bracket EAPM-E24-60-SHE

Download CAD data → www.festo.com



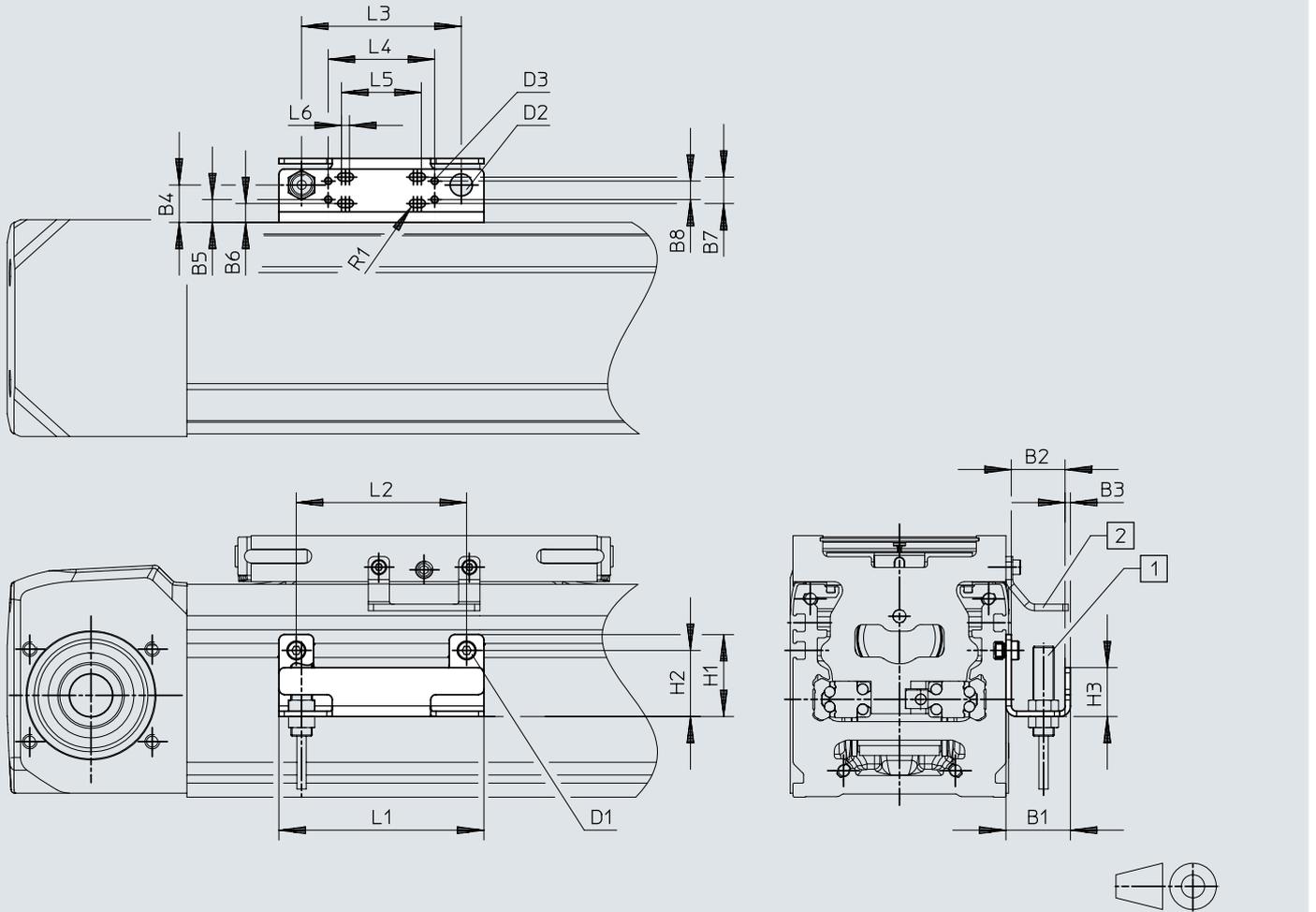
- [1] Proximity switch SIEN-8M
- [2] Switch lug EAPM-E24-60-SLE

		B1	B2	D1	D2 ∅ H13	H1	H2	H3
		±0.3				±0.3		
EAPM-E24-60-SHE	ELGD-TB-60	23.4	15.5	M4x6	8.4	20	15	3
	ELGD-TB-80							
	ELGD-TB-120							
		L1	L2	L3	L4	L5	L6	
		±0.2						
EAPM-E24-60-SHE	ELGD-TB-60	135	120	80	40	48	35	
	ELGD-TB-80							
	ELGD-TB-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-TB-60	24.2	20.2	2	14.1	8.6	7.1	10
	ELGD-TB-80							
	ELGD-TB-120							

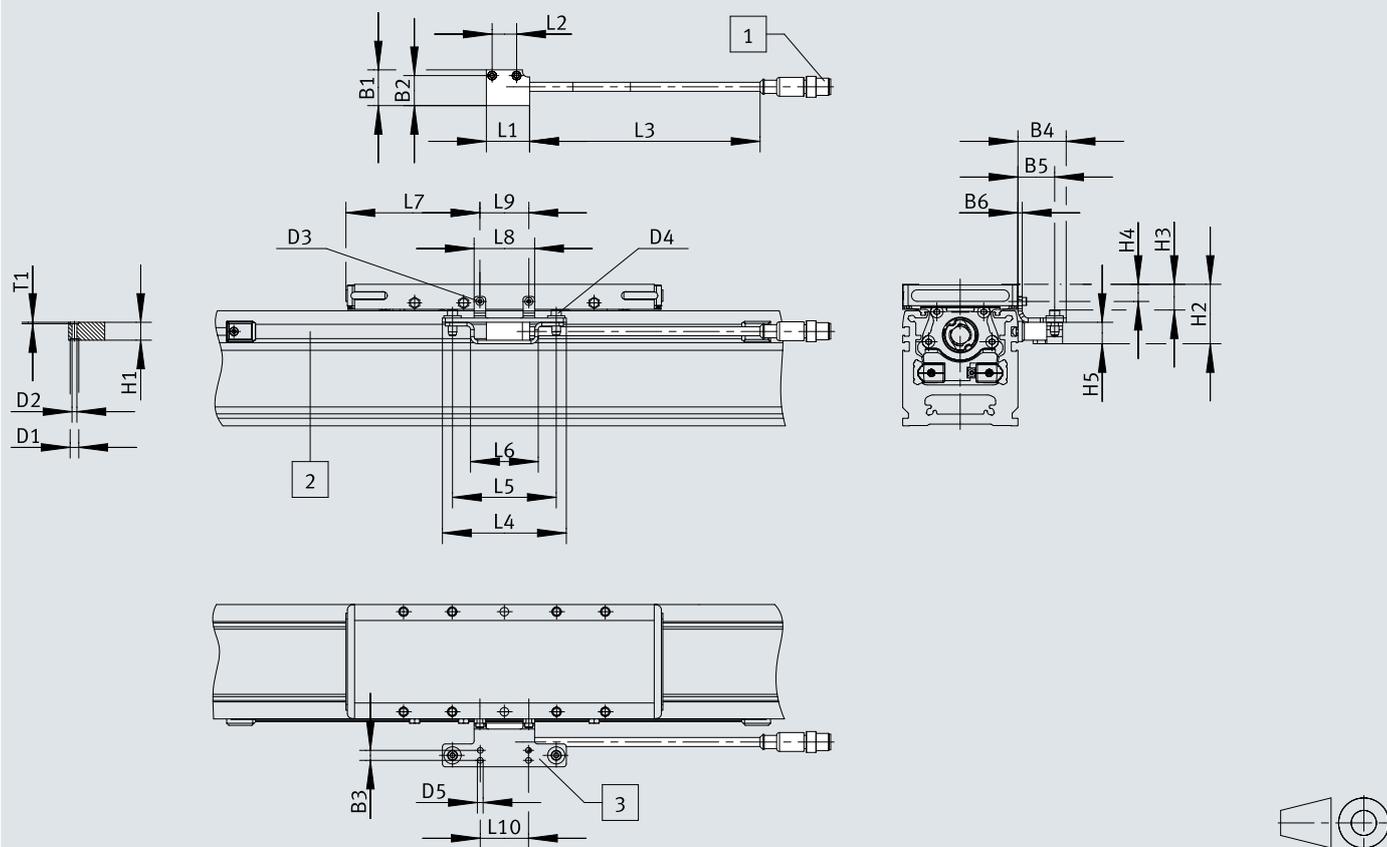
		B8	D1	D2 ∅	D3	H1	H2	H3
EAPM-E24-60-SHO	ELGD-TB-60	7	M3	8.4	M3	31	25	18.5
	ELGD-TB-80							
	ELGD-TB-120							

		L1	L2	L3	L4	L5	L6	R1
EAPM-E24-60-SHO	ELGD-TB-60	77	64	60	40	24	3	1.5
	ELGD-TB-80							
	ELGD-TB-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-TB-60	25	21	7	33.5	25.5	3	6
ELGD-TB-80							
ELGD-TB-120							

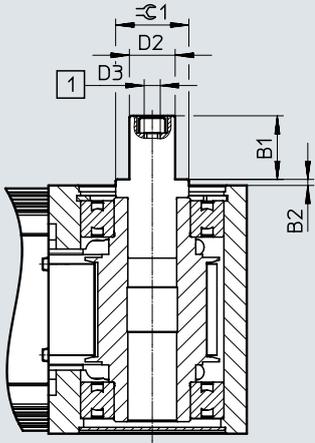
	D2 ø	D3	D4	D5 ø	H1 ±0.1	H2	H3
ELGD-TB-60	3.4	M2x10	M4x14	4	12.5	40.6	17
ELGD-TB-100						41.6	18
ELGD-TB-120						42.6	19

	H4	H5	L1	L2	L3	L4	L5
ELGD-TB-60	11	15	30	17	160	86	72
ELGD-TB-100	12						
ELGD-TB-120	13						

	L6	L7 ELGD-... ELGD-...L	L8	L9	L10	T1
ELGD-TB-60	47	42	62.5	42	34	33.5
ELGD-TB-100		54	93			
ELGD-TB-120		64	114.5			

Datasheet

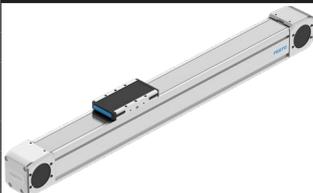
Dimensions – Drive shaft adapter EAMB-...

Download CAD data → www.festo.com

[1] Draw-off thread

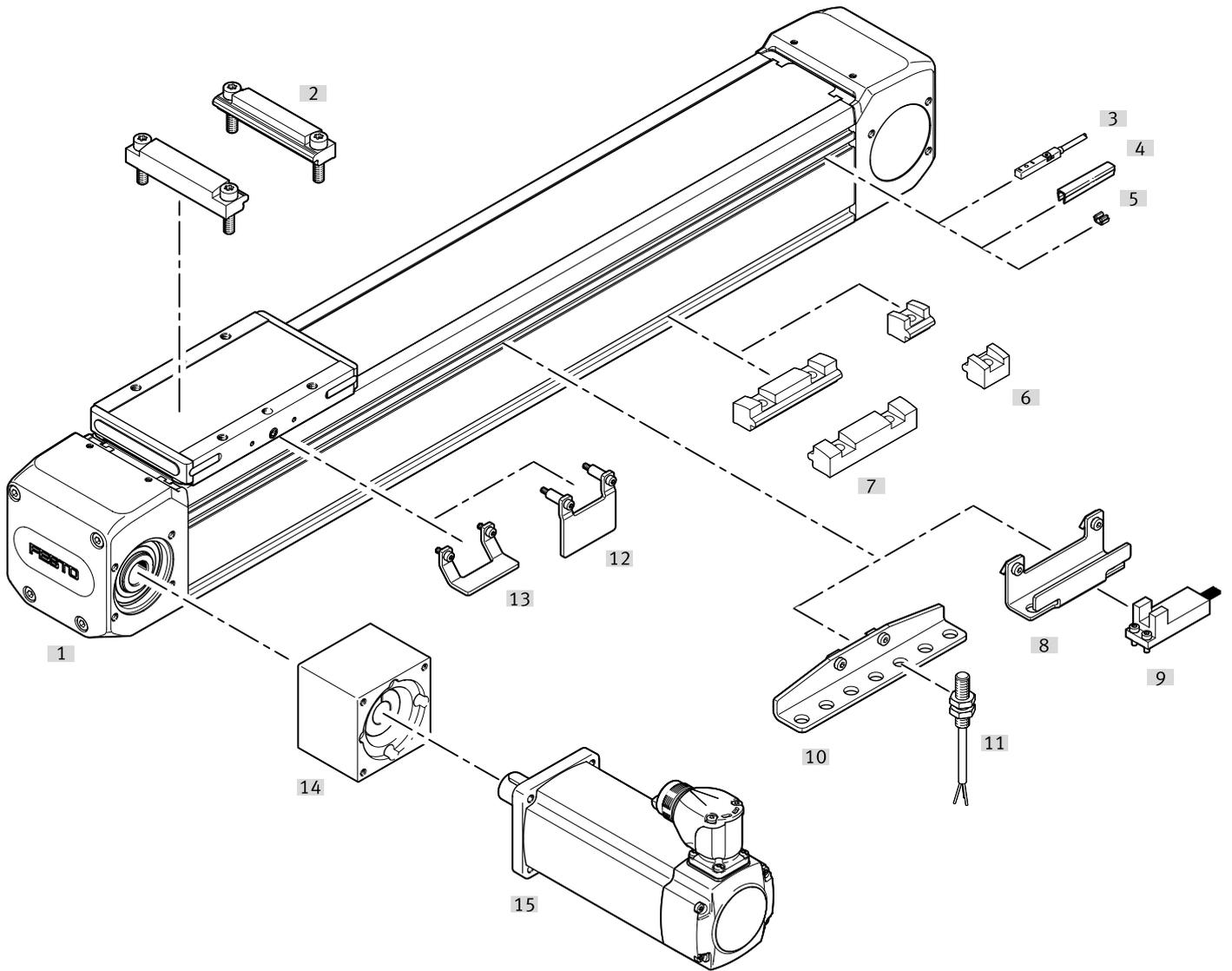
		B1	B2	D2 ø h7	D3	⌀1
EAMB-24-9-15X21-16X20	ELGD-TB-60	21	1.85	15	M6	21
EAMB-24-6-15X21-16X20	ELGD-TB-80	21	2	15	M6	21
EAMB-34-6-25X26-23X27	ELGD-TB-120	26	2	25	M10	30

Datasheet

Ordering data				
	Size	Stroke [mm]	Part no.	Type
	60	200	8192344	ELGD-TB-KF-60-200-0H-PU2
		300	8192345	ELGD-TB-KF-60-300-0H-PU2
		500	8192346	ELGD-TB-KF-60-500-0H-PU2
		600	8192347	ELGD-TB-KF-60-600-0H-PU2
		800	8192348	ELGD-TB-KF-60-800-0H-PU2
		1000	8192349	ELGD-TB-KF-60-1000-0H-PU2
		1200	8192350	ELGD-TB-KF-60-1200-0H-PU2
		1500	8192351	ELGD-TB-KF-60-1500-0H-PU2
		1800	8192352	ELGD-TB-KF-60-1800-0H-PU2
	2000	8192353	ELGD-TB-KF-60-2000-0H-PU2	
	80	200	8192354	ELGD-TB-KF-80-200-0H-PU2
		300	8192355	ELGD-TB-KF-80-300-0H-PU2
		500	8192356	ELGD-TB-KF-80-500-0H-PU2
		600	8192357	ELGD-TB-KF-80-600-0H-PU2
		800	8192358	ELGD-TB-KF-80-800-0H-PU2
		1000	8192359	ELGD-TB-KF-80-1000-0H-PU2
		1200	8192360	ELGD-TB-KF-80-1200-0H-PU2
		1500	8192361	ELGD-TB-KF-80-1500-0H-PU2
		1800	8192362	ELGD-TB-KF-80-1800-0H-PU2
	2000	8192363	ELGD-TB-KF-80-2000-0H-PU2	
	120	200	8192364	ELGD-TB-KF-120-200-0H-PU2
		300	8192365	ELGD-TB-KF-120-300-0H-PU2
		500	8192366	ELGD-TB-KF-120-500-0H-PU2
		600	8192367	ELGD-TB-KF-120-600-0H-PU2
		800	8192368	ELGD-TB-KF-120-800-0H-PU2
		1000	8192369	ELGD-TB-KF-120-1000-0H-PU2
		1200	8192370	ELGD-TB-KF-120-1200-0H-PU2
1500		8192371	ELGD-TB-KF-120-1500-0H-PU2	
1800		8192372	ELGD-TB-KF-120-1800-0H-PU2	
2000	8192373	ELGD-TB-KF-120-2000-0H-PU2		

Ordering data – Modular product system					More information → elgd-tb
	Size	Stroke [mm]	Part no.	Type	
	60	50 ... 8500	8176884	ELGD-TB-KF-60-...	
	80	50 ... 8500	8176885	ELGD-TB-KF-80-...	
	120	50 ... 8500	8176886	ELGD-TB-KF-120-...	

Peripherals overview

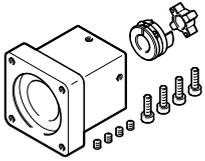


Peripherals overview

Accessories			
	Type	Description	→ Page/Internet
[1]	Toothed belt axis ELGD-TB	Electric drive	elgd-tb
[2]	Profile mounting EAHF-E24-...-D...	For axis/axis mounting with adapter plate	32
[3]	Proximity switch, T-slot SIES-8M	Inductive proximity switch, for T-slot	33
[4]	Slot cover ABP-S	For protection against contamination	34
[5]	Clip SMBK	For mounting the proximity switch cable in the slot	34
[6]	Profile mounting EAHF-E24-...-S	For mounting the axis on the side of the profile	32
[7]	Profile mounting EAHF-E24-...	For mounting the axis on the side of the profile	32
[8]	Sensor bracket EAPM-E24-SHO	For mounting third-party sensors on the axis	33
[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	33
[11]	Proximity switch, M8 SIEN-M8	Inductive proximity switch, round design	34
[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	33
[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	33
[14]	Axial kit EAMM	For axial motor mounting	eamm-a
[15]	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

Accessories

Permitted axis/motor combinations for axial kits

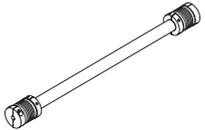


Full information is available via the following link:

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

For axial kits → [eamm-a](#)

Connecting shaft KSK

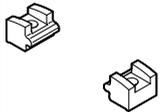


- For synchronising two base axes in gantry systems

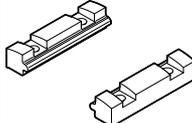
Full information is available via the following link:

Connecting shaft → [ksk](#)

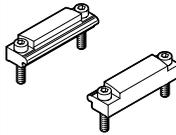
Profile mounting EAHF-E24-...-P-S

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

Profile mounting EAHF-E24-...-P

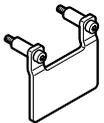
	Description	Suitable for the production of Li-ion batteries	Material	Product weight	Part no.	Type
	For size 60, 80, 120	F1a	Anodised wrought aluminium alloy	71 g	8197132	EAHF-E24-60-P

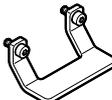
Profile mounting EAHF-E24-...-P-D...

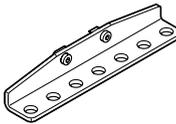
	Description ¹⁾	Suitable for the production of Li-ion batteries	Material	Product weight	Part no.	Type
	ELGD-60 on ELGD-60-L ¹⁾	F1a	Anodised wrought aluminium alloy	87 g	8197131	EAHF-E24-60-P-D5
	ELGD-60 on ELGD-80			119 g	8197129	EAHF-E24-60-P-D4
	ELGD-60 on ELGD-100-L ¹⁾			133 g	8197130	EAHF-E24-60-P-D6
	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

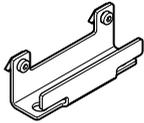
1) With these combinations, the axis is mounted off-centre on the slide (see dimension L13 on the dimensional drawing with long slide).

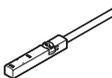
Accessories

Switch lug EAPM-E24-...-SLS						
	Description	Suitable for the production of Li-ion batteries	Material	Product weight	Part no.	Type
	For size 60, 80, 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 60, 80, 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 60, 80, 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 60, 80, 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
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
			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
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
			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

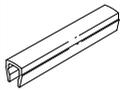
Accessories

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

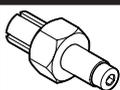
Slot cover ABP-5-S1

	Description	Material	Pack size	Product weight	Part no.	Type
	For size 60, 80, 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 60, 80, 120	10	1g	534254	SMBK-8

Drive shaft adapter EAMB

	Description	Transferable torque	Product weight	Part no.	Type
	For size 60	29Nm	72g	1344642	EAMB-24-9-15X21-16X20
	For size 80	29Nm	68g	558036	EAMB-24-6-15X21-16X20
	For size 120	100 Nm	201	558037	EAMB-34-6-25X26-23X27

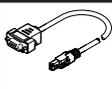
Ordering data – Encoder cables for displacement encoder system, ELGD-...-M3

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