Toothed belt axis units ELGE

FESTO

This product is also available as a modular mechanical system
Toothed belt axis ELGR-TB

Key features

At a glance
Plug and work with the Simplified Motion Series

The simplicity of pneumatics is now combined for the first time with the advantages of electric automation thanks to the Simplified Motion Series. These integrated drives are the perfect solution for all users who are looking for an electric alternative for very simple movement and positioning tasks between two mechanical end positions, but don't want the commissioning process for traditional electric drive systems that can often be quite complex.

There is no need for any software since operation is simply based on the "plug and work" principle. Digital I/O (DIO) and IO-Link are always automatically included – a product with two types of control as standard.

Integrated

The integrated electronics in the drive are at the heart of the Simplified Motion Series.

Easy

For commissioning, simply set all relevant parameters directly on the drive:
• Speed and force
• Reference end position and cushioning
• Manual operation

Standardised

Electrical connection via M12 plug design
• Power (4-pin): power supply for the motor
• Logic (8-pin): control signal, sensor signal and power for the integrated electronics

Connected

Use of extended functions possible via IO-Link:
• Remote configuration of motion parameters
• Copy and backup function for transferring parameters
• Read function for extended process parameters
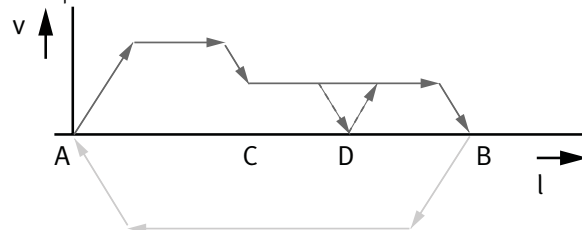• Freely definable intermediate position

The functions of the Simplified Motion Series

Basic profile for movement between two end positions:
with speed control

Extended motion profile for simplified press-fitting and clamping functions:
with speed and force control
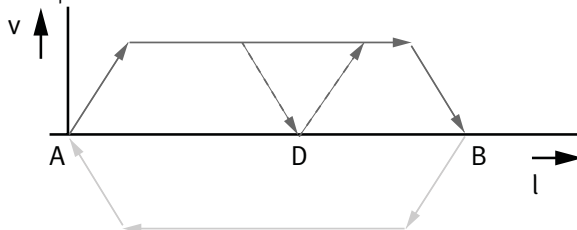
• These drives are designed for simple movements between two end positions.
• Proximity switches are required in order to implement any intermediate positions.
• With the intermediate position that can be freely configured via IO-Link, movements can be stopped at a freely defined point between the end positions, without the need for proximity switches or external stops

Key features

At a glance
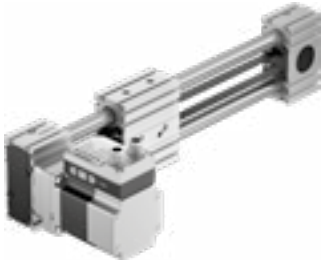
- Without external servo drive: all the necessary electronic components are combined in the integrated drive
- Two control options integrated as standard: digital I/O and IO-Link
- Complete solution for simple movements between mechanical end positions
- Simplified commissioning: all parameters can be manually set directly on the drive
- No special expertise required for commissioning
- End-position feedback similar to that of a conventional proximity switch is integrated as standard
- Choice of motor mounting position on four sides
- Cost-optimised design for tasks that require simpler yet highly cost-efficient solutions with a service life of 5000 km

The products in the Simplified Motion Series

Electric cylinder unit EPCE	Electric cylinder unit EPCS	Electric cylinder unit with parallel motor mounting EPCS	
Mini slide unit EGSS-BS-KF	Mini slide unit with parallel motor mounting EGSS-BS-KF	Spindle axis unit ELGS-BS-KF	Spindle axis unit with parallel motor mounting ELGS-BS-KF
Toothed belt axis unit ELGS-TB-KF	Toothed belt axis unit ELGE	Rotary drive unit ERMS	

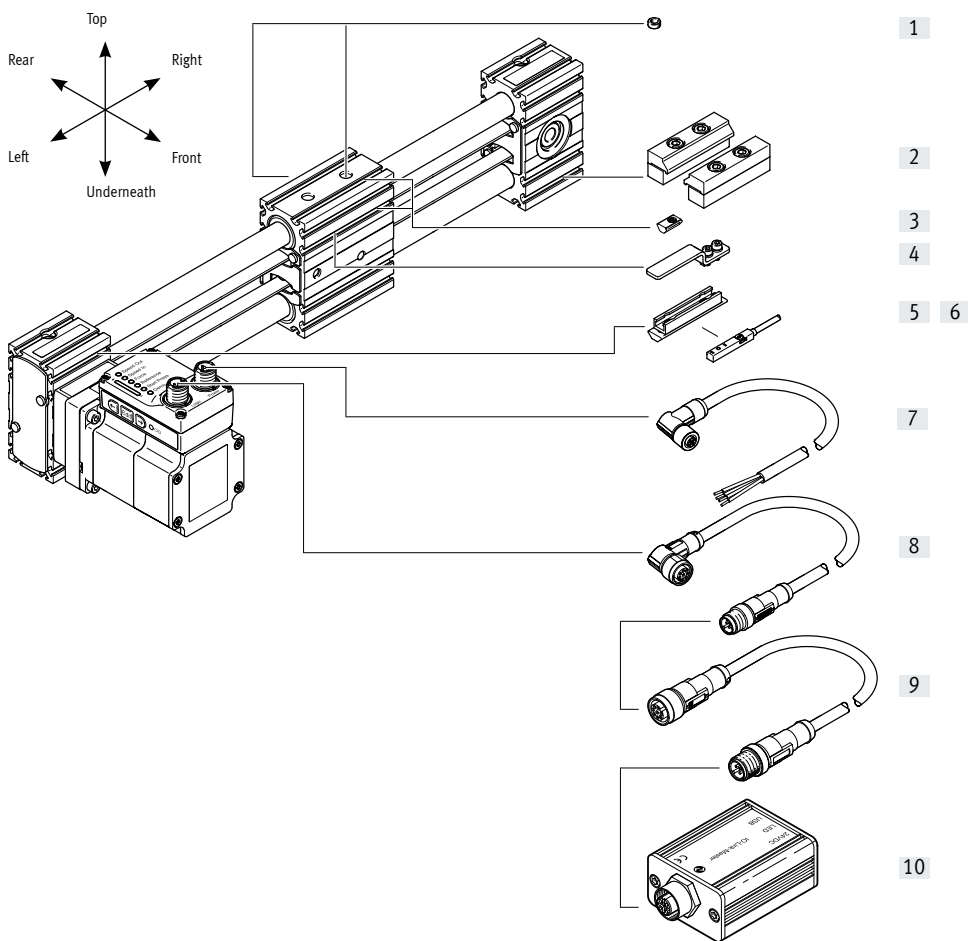## Modular and flexible with motor, motor mounting kit and servo drive

This product is also available within the Optimised Motion Series as toothed belt axis ELGR-TB:
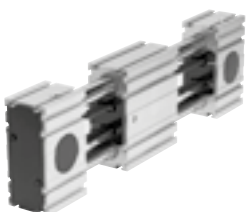
Toothed belt axes for tasks that require simpler yet highly cost-efficient solutions in cost-optimised design with a long service life. Ideal for pick & place tasks and for transporting small loads of less than 15 kg.
- 1 driven slide, freely movable slides can be added as an option
- Extended guide, additional mounting options
- Free choice of flexible motor mounting on 4 sides
- Guide variants: recirculating ball bearing guide for moderate loads or plain-bearing guide for low loads
- Modular: individual combinations with motor, motor mounting kit and servo drive

Peripherals overview

Top
Rear Right
Left Front
Underneath

1

2

3

4

5   6

7

8

9

10

Accessories			
	Type/order code	Description	➔ Page/Internet
[1]	Centring sleeve ZBH	• For centring loads and attachments on the slide • 2 centring sleeves included in the scope of delivery of the axis	21
[2]	Profile mounting MUE	For mounting the axis on the bearing cap	20
[3]	Slot nut NST	For mounting attachments	21
[4]	Switch lug[1] EAPM-L4-SLS	For sensing the slide position	20
[5]	Sensor bracket[1] EAPM-L4-SHS	Adapter for mounting the inductive proximity switches on the axis	20
[6]	Proximity switch, T-slot[1] SIES-8M	• Inductive proximity switch, for T-slot • 1 switch lug and 1 sensor bracket are included in the scope of delivery with the order code SA, SB	21
[7]	Supply cable NEBL-T12	For connecting load and logic supply	22
[8]	Connecting cable NEBC-M12	For connection to a controller	22
[9]	Adapter NEFC-M12G8	• Connection between the motor and the IO-Link master • Only recommended for use with IO-Link port class A master	22
[10]	IO-Link master USB CDSU-1	For straightforward use of the mini slide unit via IO-Link	22

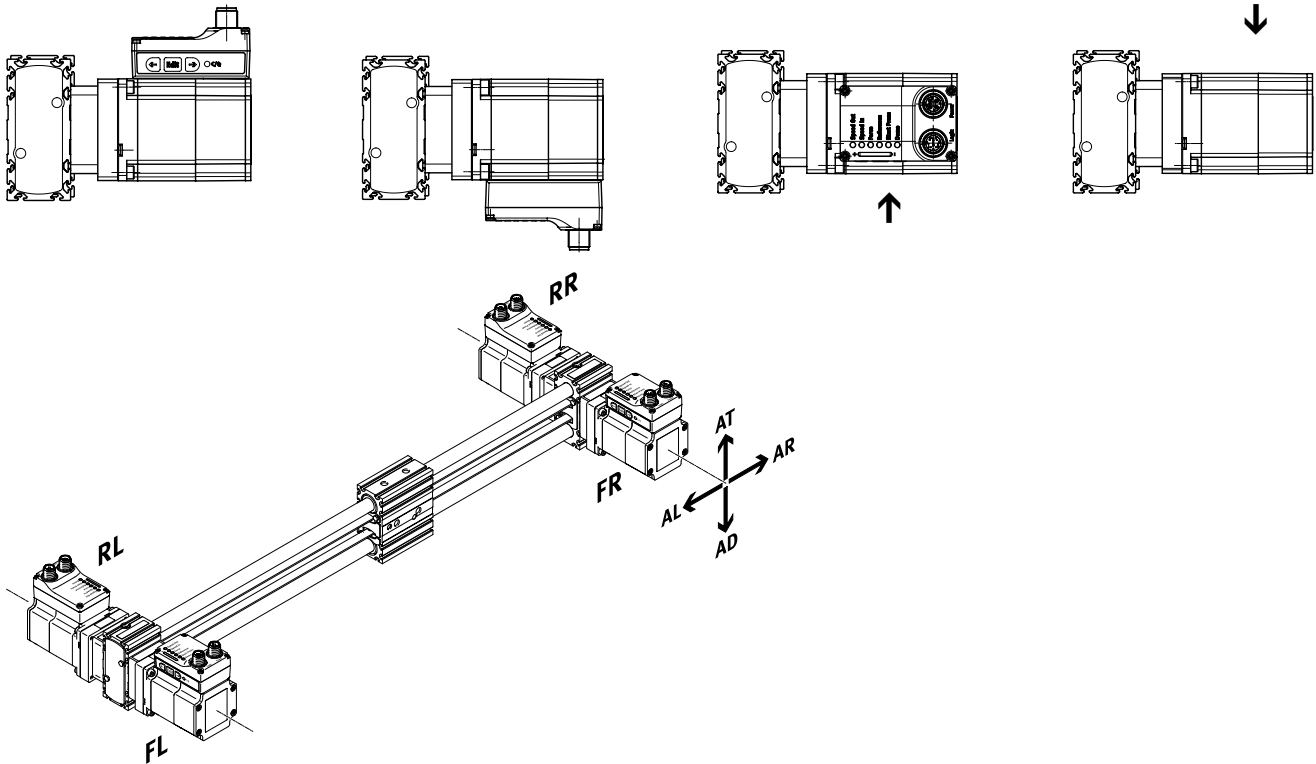1)   Proximity switches are optional and only required in order to sense any intermediate positions.

NEW

Peripherals overview
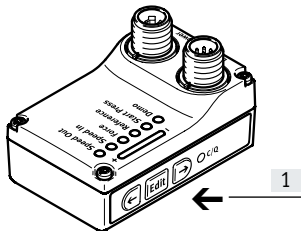
Motor attachment variants

[AT] Top	[AD] Underneath	[AL] Left	[AR] Right

Control elements

[1] Pushbutton actuators for parameterisation and control

Possible combinations with Festo drives

Electric cylinder EPCO on toothed belt axis unit ELGE

Size		Accessories			
[1] EPCO	[2] ELGE	Slot nut	Centring sleeve	Screw	Washer
16	35	NST-3-M3 (x4)	ZBH-7 (x2)	M3x10 (x4)	–

Type codes

001	Series	
ELGE	Gantry axis	

002	Drive system	
TB	Toothed belt	

003	Guide	
	Recirculating ball bearing guide	

004	Size	
35	35	

005	Stroke	
50	50	
100	100	
150	150	
200	200	
250	250	
300	300	
350	350	
400	400	
450	450	
500	500	
550	550	
600	600	
650	650	
700	700	
750	750	
800	800	

006	Stroke reserve	
0H	0 mm	

007	Motor type	
ST	Stepper motor ST	

008	Controller	
M	Integrated	

009	Control panel	
H1	Integrated	

010	Bus protocol/activation	
PLK	PNP and IO-Link®	
NLK	NPN and IO-Link®	

011	End-position sensing	
AA	With integrated end-position sensing	

012	Cable outlet direction	
AT	Top	
AD	Underneath	
AL	Left	
AR	Right	

013	Motor position	
FR	Front right	
FL	Front left	
RR	Rear right	
RL	Rear left	

014	Profile mounting	
...MA	1 ... 2	

015	Proximity sensor, inductive, slot 8, N/O contact, cable 7.5 m	
...SA	0 ... 6	

016	Proximity sensor, inductive, slot 8, N/C contact, cable 7.5 m	
...SB	1 ... 6	

017	Slot nut for mounting slot	
...NM	1 ... 99	

018	Electrical accessories	
	None	
L1	Adapter for operation as IO-Link® device	

019	Operating instructions	
	With operating instructions	
DN	No operating instructions	

Datasheet
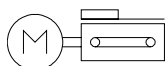
- ⟳ -   Size
           35

- ▌ -   Stroke length
         50 ... 800 mm

General technical data		
Size		35
Design		Electromechanical axis with toothed belt and integrated drive
Motor type		Stepper motor
Guide		Recirculating ball bearing guide
Mounting position		Horizontal
Working stroke	[mm]	50 ... 800
Stroke reserve	[mm]	0
Additional functions		Built-in end-position sensing
		User interface
Display		LED
Homing		Positive fixed stop block
		Negative fixed stop block
Type of mounting		With female thread
		With accessories
		With centring pin, centring sleeve
Max. cable length		
Inputs/outputs	[m]	15
IO-Link operation	[m]	20

Mechanical data		
Size		35
Max. payload	[kg]	2.8
Max. feed force F_x	[N]	50
Speed[1]	[m/s]	1.2
Speed "Speed Press"[2]	[m/s]	0.024
Max. acceleration[2]	[m/s²]	8.5
Repetition accuracy	[mm]	±0.1
Position sensing		Via proximity switch
		Via IO-Link

[1]   It is not possible to reach the maximum speed of 1.2 m/s with strokes < 250 mm.
      Adjustable in increments of 10%

[2]   Unchangeable parameter

Datasheet

Toothed belt		
Size		35

Pitch	[mm]	2
Elongation[1]	[%]	0.094
Effective diameter	[mm]	18.46
Feed constant	[mm/rev]	58

1)   At max. feed force

Electrical data		
Size		35

Motor		
Nominal voltage DC	[V]	24 (±15%)
Nominal current	[A]	5.3
Max. current consumption (load)	[A]	5.3
Max. current consumption (logic)	[mA]	300
Encoder		
Rotor position sensor		Absolute encoder, single turn
Rotor position sensor measuring principle		Magnetic
Rotor position encoder resolution	[bit]	16

Interfaces		
Size		35

Parameterisation interface		
IO-Link		Yes
User interface		Yes
Digital inputs		
Number		2
Switching logic		PNP
		NPN
Characteristics		Not galvanically isolated
		Configurable
Specification		Based on IEC 61131-2, type 1
Operating range	[V]	24
Digital outputs		
Number		2
Switching logic		PNP
		NPN
Rotor position sensor		Absolute encoder, single turn
Characteristics		Not galvanically isolated
		Configurable
Max. current	[mA]	100

Datasheet

Technical data – IO-Link

Size		35
SIO mode support		Yes
Communication mode		COM3 (230.4 kBd)
Connection technology		Plug
Port class		A
No. of ports		1
Process data width OUT	[byte]	2
Process data content OUT	[bit]	1 (Move in)
	[bit]	1 (Move out)
	[bit]	1 (Move Intermediate)
	[bit]	1 (Quit Error)
Process data width IN	[byte]	2
Process data content IN	[bit]	1 (State Device)
	[bit]	1 (State Move)
	[bit]	1 (State in)
	[bit]	1 (State out)
	[bit]	1 (State Intermediate)
Service data content IN	[bit]	32 (Force)
	[bit]	32 (Position)
	[bit]	32 (Speed)
Minimum cycle time	[ms]	1
Data memory required	[kilobyte]	0.5
Protocol version		Device V 1.1

Operating and environmental conditions

Size		35
Insulation class		B
Ambient temperature	[°C]	0 ... +50
Storage temperature	[°C]	−20 ... +60
Note on ambient temperature		Above an ambient temperature of 30°C, the power must be reduced by 2% per K
Temperature monitoring		Switch-off for excessive temperature
		Integrated precise CMOS temperature sensor with analogue output
Relative humidity	[%]	0 ... 90
Protection class		III
Degree of protection		IP20
Duty cycle	[%]	100
CE marking (see declaration of conformity)		To EU EMC Directive for EMCS-ST ➜ festo.com/sp
		To EU RoHS Directive
UKCA marking (see declaration of conformity)		To UK instructions for EMC
		To UK RoHS instructions
KC mark		KC EMC
Certification		RCM
Vibration resistance		Transport application test with severity level 1 to FN 942017-4 and EN 61800-2 and EN 61800-5-1
Shock resistance		Shock test with severity level 1 to FN 942017-5 and EN 61800-2
Maintenance interval		Lifetime lubrication

Datasheet

Weight

Size		35
Basic weight at 0 mm stroke	[g]	2490
Additional weight per 10 mm stroke	[g]	25
Additional weight of moving mass per 10 mm stroke	[g]	0.31

Materials

Sectional view
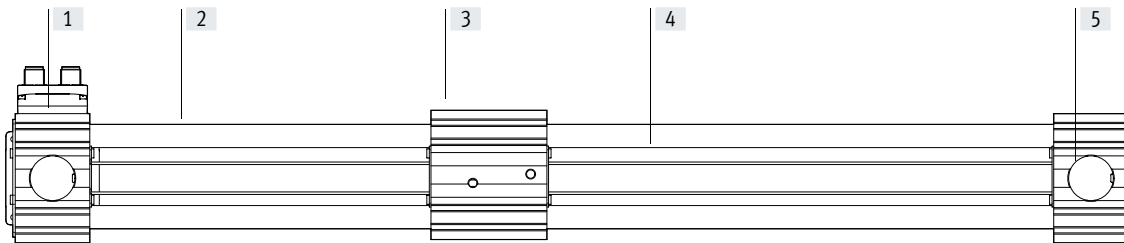
Axis		
[1]	Bearing cap, profile	Anodised wrought aluminium alloy
[2]	Guide rods	Hardened and hard-chromium plated tempered steel
[3]	Slide, profile	Anodised wrought aluminium alloy
[4]	Toothed belt	Polychloroprene with glass cord and nylon coating
[5]	Belt pulley	High-alloy stainless steel
	PWIS conformity	VDMA24364 zone III
	Note on materials	RoHS-compliant

Datasheet

Pin allocation

Power supply	Logic interface

Plug
M12x1, 4-pin, T-coded to EN 61076-2-111

Plug
M12x1, 8-pin, A-coded to EN 61076-2-101
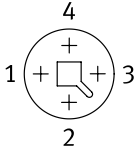
Pin	Function
1	Power voltage supply (24 V DC)
2	Reference potential, power voltage supply (GND)
3	Reserved, do not connect
4	Functional earth (FE)
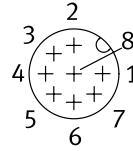
When used with digital I/O

Pin	Function
1	Logic voltage supply (24 V DC)
2	Digital output 1 (State "In")
3	Digital output 2 (State "Out")
4	Reference potential, logic voltage supply (GND)
5	Digital input 1 (Move "In")
6	Digital input 2 (Move "Out")
7	Reserved, do not connect
8	Reference potential, logic voltage supply (GND)

When used with IO-Link

Pin	Function
1	L+ IO-Link power supply (24 V DC)
2	Reserved, do not connect
3	C/Q communication with the IO-Link master
4	L – Reference potential, IO-Link power supply (0 V)
5	Reserved, do not connect
6	Reserved, do not connect
7	Reserved, do not connect
8	L – Reference potential, IO-Link power supply (0 V)

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. These values must not be exceeded during dynamic operation. Special attention must be paid to the deceleration phase.
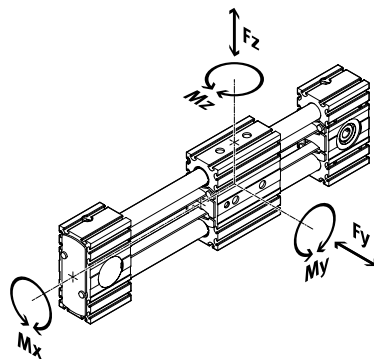
Max. permissible forces and torques for the guide calculation, for a service life of 5000 km

Size		35
$Fy_{max.}$	[N]	50
$Fz_{max.}$	[N]	50
$Mx_{max.}$	[Nm]	2.5
$My_{max.}$	[Nm]	8
$Mz_{max.}$	[Nm]	8

Note

For a guide system to have a service life of 5000 km, the load comparison factor must have a value of fv ≤ 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

If the axis is subjected to two or more of the indicated forces and torques simultaneously, 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 = dynamic value
F_2/M_2 = maximum value

Datasheet

Calculating the service life

The service life of the guide depends on the load. To be able to make a statement as to the service life of the guide, the graph below plots the load comparison factor fv against the service life.

These values are only theoretical. You must consult your local Festo contact for a load comparison factor fv greater than 1.

Load comparison factor fv as a function of service life l

Example:
A user wants to move an x kg load. Using the formula (➔ page 4) gives a value of 1.5 for the load comparison factor fv. According to the graph, the guide would have a service life of approx. 1500 km. Reducing the acceleration reduces the My and Mz values. A load comparison factor fv of 1 now gives a service life of 5000 km.
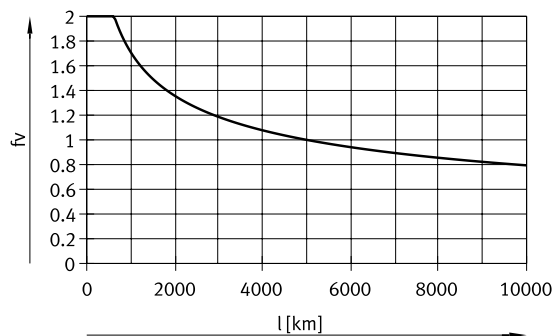
Service life of the motor

The service life of the motor at nominal power is 20000 h.

Datasheet

Sizing example

Application data:
- Payload: 2 kg
- Mounting position: horizontal
- Motor mounting position: axial
- Stroke: 600 mm
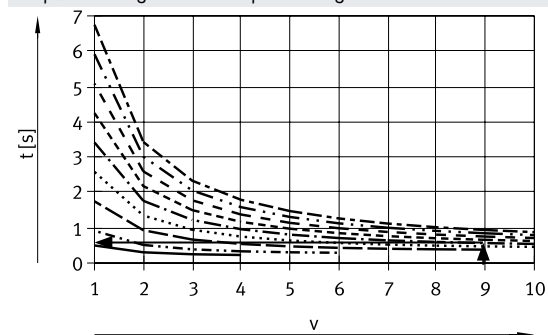- Max. permitted positioning time: 1 s (one direction)

Step 1: Selecting the size from the table ➜ page 7

Mechanical data		
Size		35
Max. payload	[kg]	2.8

Step 2: Selecting the max. speed level v for payload m
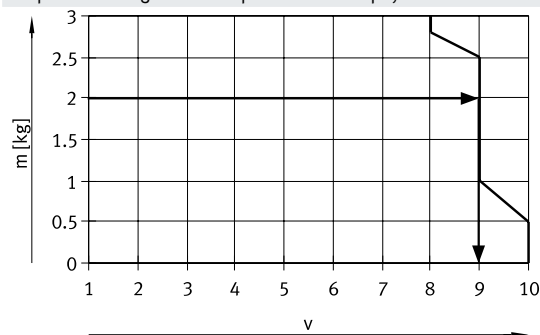
——— Horizontal

Step 3: Reading off the min. positioning time t for stroke l

———	l = 50 mm
—·—·—·—	l = 100 mm
— — —	l = 200 mm
··········	l = 300 mm
—··—··—	l = 400 mm
— — — —	l = 500 mm
— — —	l = 600 mm
— · · —	l = 700 mm
—·—··—	l = 800 mm

➜ Max. speed level for payload: level 9

➜ Min. positioning time for 600 mm at level 9: 0.75 s

Result

The application can be implemented using ELGE-TB-35-600. A minimum positioning time (one direction) of 0.75 s is achieved. Longer positioning times can be selected at any time using a lower speed level.

Datasheet

Mass m as a function of speed level v
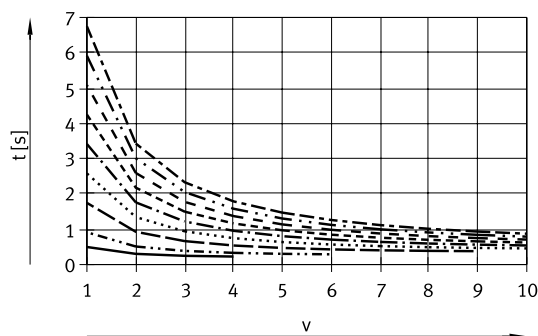### Size 35
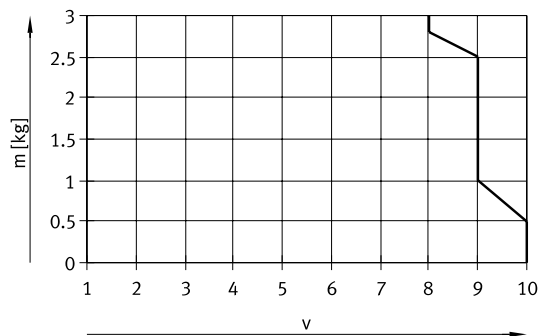
——— Horizontal

Note:
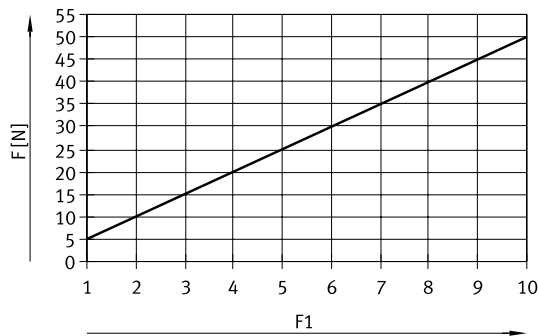The lines represent the maximum values. The lower speed levels can be set at any time.

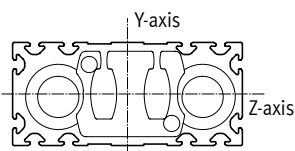## Positioning time t as a function of speed level v and stroke l
Size 35

———	l = 50 mm
–·–··–··–	l = 100 mm
– – –	l = 200 mm
··············	l = 300 mm
–·–·–·	l = 400 mm
– – – –	l = 500 mm
– – –	l = 600 mm
– ·· –	l = 700 mm
–·–·–·	l = 800 mm

Feed force F as a function of force level F1

——— ELGE-TB-35

2nd moments of area

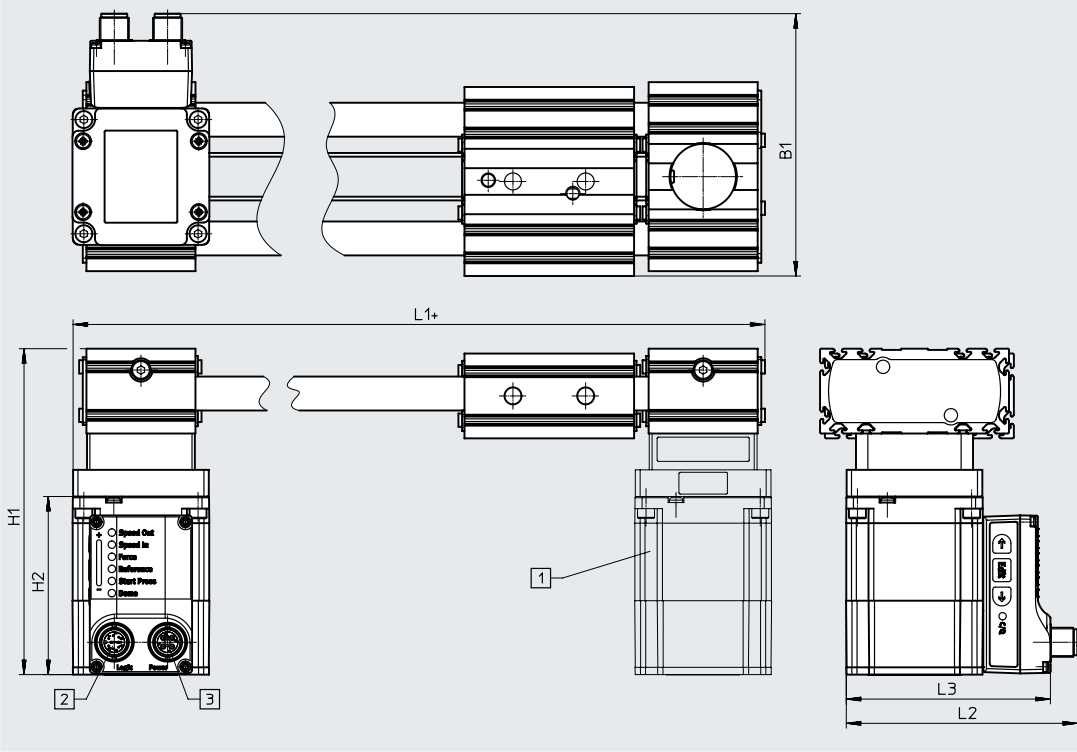| Size		35
Iy	[mm^4]	4.19x10^3
Iz	[mm^4]	3.77x10^3

Recommended deflection limits

Adherence to a maximum deflection of 0.5 mm is recommended so as not to impair the functionality of the axes. Greater deformation can result in increased friction, greater wear and reduced service life.
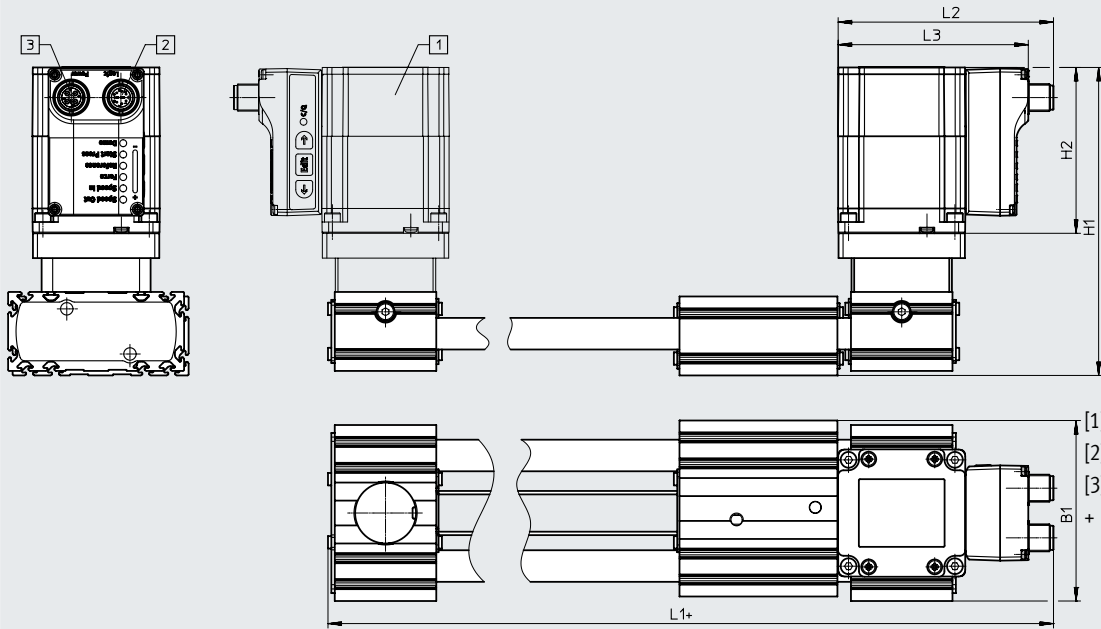
Datasheet

Dimensions – With motor

Download CAD data → www.festo.com

ELGE-...-AT/AD

ELGE-...-AR/AL

[1] Motor
[2] Connection to logic interface
[3] Connection to power supply
+   = plus stroke length
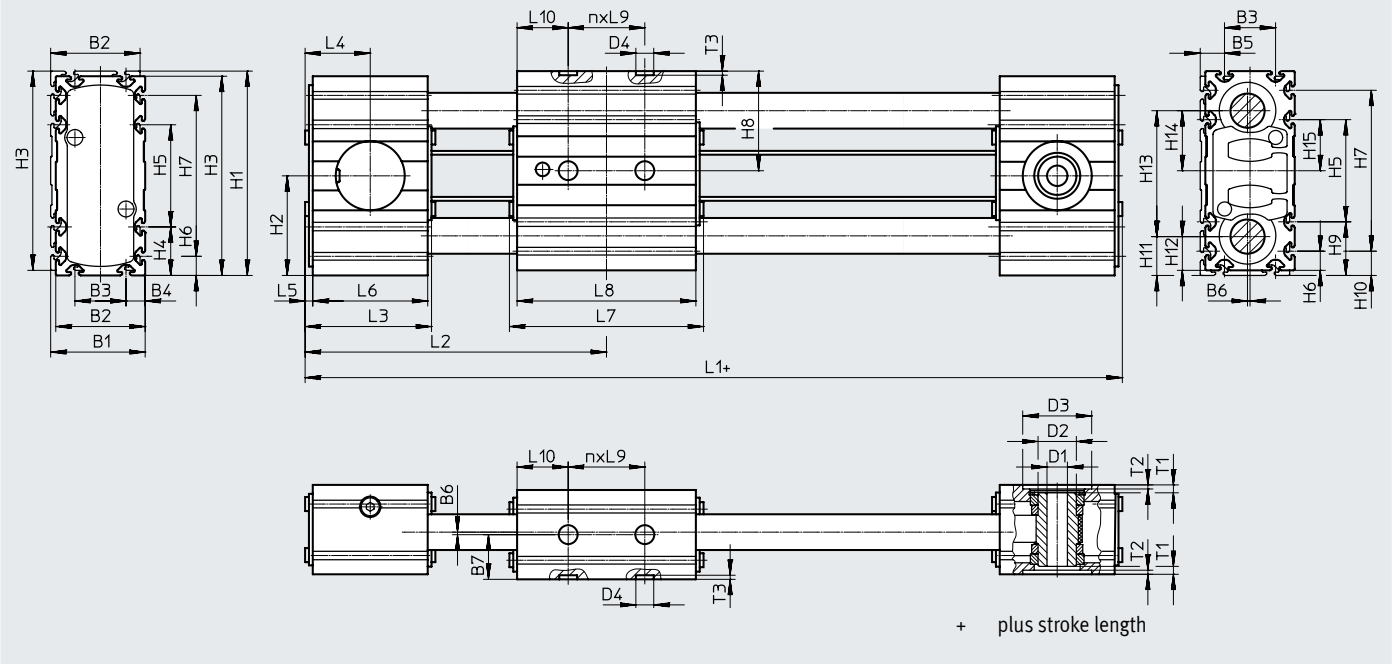
Size	B1	H1	H2	L1	L2	L3
ELGE-...-AT-FL	108.3	134.5	73.5	180.7	95.6	84.3
ELGE-...-AD-FR	108.3	134.5	73.5	180.7	95.6	84.3
ELGE-...-AR-RR	80	136.5	73.5	219.8	95.6	84.3
ELGE-...-AL-RL	80	136.5	73.5	219.8	95.6	84.3

Datasheet

Dimensions

+   plus stroke length

Profile
ELGR-35
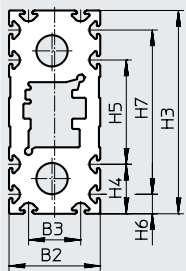
Size	B1	B2	B3	B4	B5	B6	B7	D1 ⌀ H7	D2 ⌀	D3 ⌀ H7	D4 ⌀ H7	H1	H2	H3	H4	H5	H6
35	37	35	20	7.5	9.5	1	17.5	8	15	27	7	80	39	78	19	40	7.5
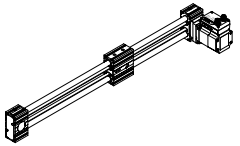
Size	H7	H8	H9	H10	H11	H12	H13	H14	H15	L3	L4	L5	L6	L9	T1	T2	T3 +0.1
35	63	39	21	9.5	15.5	13.5	49	23.5	20	51	25.5	3	45	30	3.1	1.6	1.6

Size	L1	L2	L7	L8	L10	n
35	178	89	76	70	20	1

Ordering data

Ordering data

	Size	Stroke	Part no.	Type
	35	100	**8083931**	**ELGE-TB-35-100-0H-ST-M-H1-PLK-AA-AT-FR**
		200	**8083932**	**ELGE-TB-35-200-0H-ST-M-H1-PLK-AA-AT-FR**
		300	**8083933**	**ELGE-TB-35-300-0H-ST-M-H1-PLK-AA-AT-FR**
		400	**8083934**	**ELGE-TB-35-400-0H-ST-M-H1-PLK-AA-AT-FR**
		500	**8083935**	**ELGE-TB-35-500-0H-ST-M-H1-PLK-AA-AT-FR**
		600	**8083936**	**ELGE-TB-35-600-0H-ST-M-H1-PLK-AA-AT-FR**

Ordering data

Ordering table

Size	35	Conditions	Code	Enter code
Module no.	8083929			
Series	ELGE		**ELGE**	ELGE
Drive system	Toothed belt		**-TB**	-TB
Guide	Recirculating ball bearing guide			
Size	35		**-...**	
Stroke [mm]	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800		**-...**	
Stroke reserve [mm]	0		**-0H**	-0H
Motor type	Stepper motor ST		**-ST**	-ST
Controller	Integrated		**-M**	-M
Operator panel	Integrated		**-H1**	-H1
Bus protocol/control	NPN and IO-Link		**-NLK**	
	PNP and IO-Link		**-PLK**	
End-position sensing	With integrated end-position sensing		**-AA**	-AA
Cable outlet direction	Top		**-AT**	
	Underneath		**-AD**	
	Left		**-AL**	
	Right		**-AR**	
Motor position	Front left		**-FL**	
	Front right		**-FR**	
	Rear left		**-RL**	
	Rear right		**-RR**	
Profile mounting	None			
	1 ... 2		**+...MA**	
Proximity switch (SIES), inductive, slot type 8, N/O contact, cable 7.5 m, incl. switch lug and sensor bracket	None			
	1 ... 6		**...SA**	
Proximity switch (SIES), inductive, slot type 8, N/C contact, cable 7.5 m, incl. switch lug and sensor bracket	None			
	1 ... 6		**...SB**	
Slot nut, mounting slot	None			
	1 ... 99		**...NM**	
Electrical accessories	None			
	Adapter for operation as IO device		**+L1**	
Operating instructions	With operating instructions			
	Without operating instructions		**DN**	

Accessories

Profile mounting MUE
(order code MA)

Material:
Anodised aluminium
RoHS-compliant
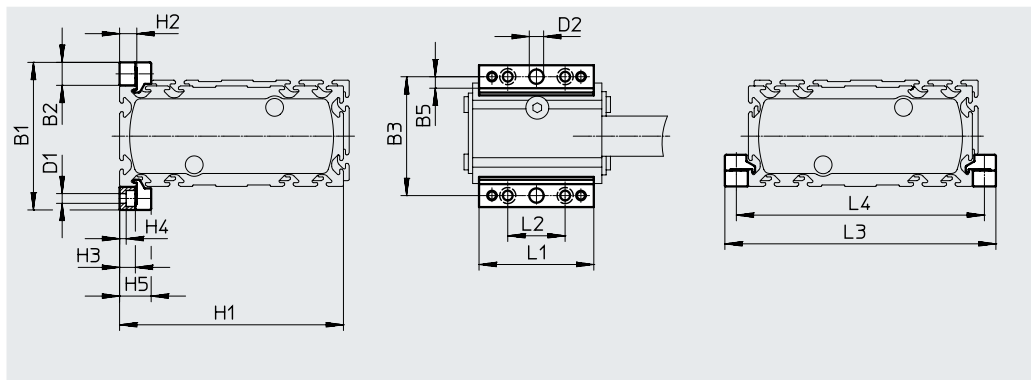
Dimensions and ordering data

For size	B1	B2	B3	B5	D1 ∅	D2 ∅ H7	H1	H2	H3	H4
35	51	8	43	4	3.4	5	78	6	5.5	2.3

For size	H5	L1	L2	L3	L4	Weight [g]	Part no.	Type
35	11	40	20	94	86	20	**558042**	**MUE-50**

Sensor bracket EAPM-...-SHS,
switch lug EAPM-...-SLS
(order code SA/SB)

Material:
Switch lug: Galvanised steel
Sensor bracket: Anodised wrought
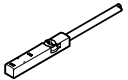aluminium alloy
RoHS-compliant

EAPM-L4-SHS
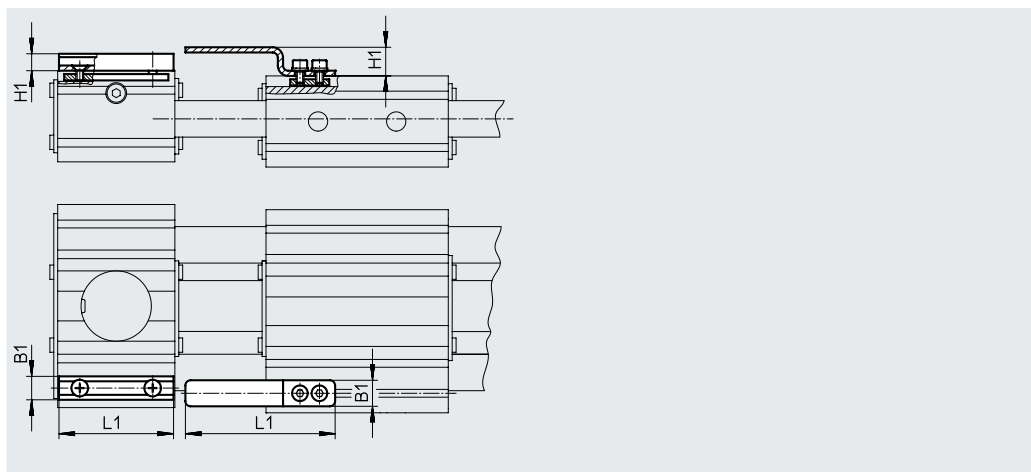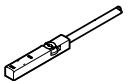
EAPM-L4-SHS

Dimensions and ordering data

For size	B1	H1	L1	Weight [g]	Part no.	Type
Sensor bracket						
35	9	6.5	44	20	**567537**	**EAPM-L4-SHS**
Switch lug						
35	10	11	57.5	15	**567538**	**EAPM-L4-SLS**

Accessories

Ordering data

	For size	Comment	Order code	Part no.	Type	PU[1]
Slot nut NST						
	35	For mounting slot	NM	**558045**	**NST-3-M3**	1
Centring sleeve ZBH[2]						
	35	For slide	–	**8146544**	**ZBH-7-B**	10

1) Packaging unit
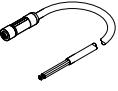2) 2 centring sleeves included in the scope of delivery of the axis

Ordering data – Proximity switches for T-slot, inductive   Datasheets ➔ Internet: sies

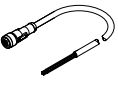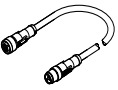|	Type of mounting	Electrical connection	Switching output	Cable length [m]	Order code	Part no.	Type
N/O							
	Inserted in the slot from above, flush with the cylinder profile	Cable, 3-wire	PNP	7.5	SA	**551386**	**SIES-8M-PS-24V-K-7.5-OE**
		Plug M8x1, 3-pin		0.3	–	**551387**	**SIES-8M-PS-24V-K-0.3-M8D**
		Cable, 3-wire	NPN	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	Cable, 3-wire	PNP	7.5	SB	**551391**	**SIES-8M-PO-24V-K-7.5-OE**
		Plug M8x1, 3-pin		0.3	–	**551392**	**SIES-8M-PO-24V-K-0.3-M8D**
		Cable, 3-wire	NPN	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**

Ordering data – Connecting cables   Datasheets ➔ Internet: nebu

	Electrical connection, left	Electrical connection, right	Cable length [m]	Part no.	Type
	Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	**541333**	**NEBU-M8G3-K-2.5-LE3**
			5.0	**541334**	**NEBU-M8G3-K-5-LE3**
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	**541338**	**NEBU-M8W3-K-2.5-LE3**
			5.0	**541341**	**NEBU-M8W3-K-5-LE3**

Note

Proximity switches are optional and only required in order to sense any intermediate positions.
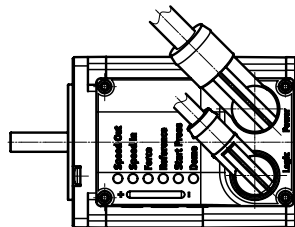
Accessories

Ordering data – Supply cables   Datasheets → Internet: nebl

	Electrical connection, left	Electrical connection, right	Cable length [m]	Part no.	Type
	Angled socket, M12x1, 4-pin	Cable, open end, 4-wire	2	**8080778**	NEBL-T12W4-E-2-N-LE4
			5	**8080779**	NEBL-T12W4-E-5-N-LE4
			10	**8080780**	NEBL-T12W4-E-10-N-LE4
			15	**8080781**	NEBL-T12W4-E-15-N-LE4
	Straight socket, M12x1, 4-pin	Cable, open end, 4-wire	2	**8080790**	NEBL-T12G4-E-2-N-LE4
			5	**8080791**	NEBL-T12G4-E-5-N-LE4
			10	**8080792**	NEBL-T12G4-E-10-N-LE4
			15	**8080793**	NEBL-T12G4-E-15-N-LE4

Ordering data – Connecting cables   Datasheets → Internet: nebc

	Electrical connection, left	Electrical connection, right	Cable length [m]	Part no.	Type
	Angled socket, M12x1, 8-pin	Cable, open end, 8-wire	2	**8094476**	NEBC-M12W8-E-2-N-B-LE8
			5	**8094478**	NEBC-M12W8-E-5-N-B-LE8
			10	**8094481**	NEBC-M12W8-E-10-N-B-LE8
			15	**8094479**	NEBC-M12W8-E-15-N-B-LE8
		Straight plug, M12x1, 8-pin	2	**8080786**	NEBC-M12W8-E-2-N-M12G8
			5	**8080787**	NEBC-M12W8-E-5-N-M12G8
			10	**8080788**	NEBC-M12W8-E-10-N-M12G8
			15	**8080789**	NEBC-M12W8-E-15-N-M12G8
	Straight socket, M12x1, 8-pin	Cable, open end, 8-wire	2	**8094480**	NEBC-M12G8-E-2-N-B-LE8
			5	**8094477**	NEBC-M12G8-E-5-N-B-LE8
			10	**8094482**	NEBC-M12G8-E-10-N-B-LE8
			15	**8094475**	NEBC-M12G8-E-15-N-B-LE8
		Straight plug, M12x1, 8-pin	2	**8080782**	NEBC-M12G8-E-2-N-M12G8
			5	**8080783**	NEBC-M12G8-E-5-N-M12G8
			10	**8080784**	NEBC-M12G8-E-10-N-M12G8
			15	**8080785**	NEBC-M12G8-E-15-N-M12G8

Note

The cables are positioned at a 45°
angle to the axis.

Ordering data – IO-Link master USB   Datasheets → Internet: cdsu

	Description	Cable length [m]	Part no.	Type
	• For using the unit with IO-Link • An external power supply plug is also required (not included in the scope of delivery)	0.3	**8091509**	CDSU-1

Ordering data – Adapter   Datasheets → Internet: nefc

	Electrical connection, left	Electrical connection, right	Cable length [m]	Part no.	Type
	Straight socket, M12x1, 8-pin	• Straight plug, M12x1, 5-pin • Only recommended for use with IO-Link port class A master	0.3	**8080777**	NEFC-M12G8-0.3-M12G5-LK