## Electric cylinder units EPCE

# **FESTO**



## 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.

#### Integrated

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

#### Simple

For commissioning, simply set all relevant parameters directly on the drive:

- · Speed and force
- Reference end position and cushioning
- Manual operation

## **IO**-Link

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.

#### 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

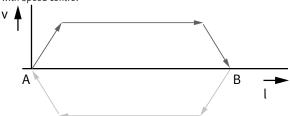
#### Connected

Use of extended functions possible via IO-Link.

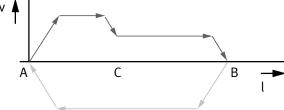
- Motion parameters can be set remotely
- Copy and backup function for transferring parameters
- Read function for extended process parameters

#### 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.
- External, inductive sensing of the piston rod is required in order to implement any intermediate positions.

#### The products in the Simplified Motion Series

Spindle axis unit ELGS-BS-KF



Toothed belt axis unit ELGE



Toothed belt axis unit



Rotary drive unit ERMS



Mini slide unit EGSS-BS-KF



Electric cylinder unit



Electric cylinder unit EPCS

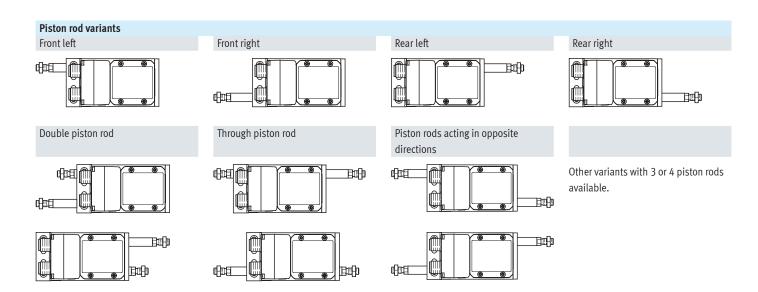


## Key features

#### 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
- Minimal zero stroke and extremely compact design make this product the perfect choice for applications where space is at a premium
- Innovative interpretation of toothed belt technology for maximum dynamic response and minimal positioning times
- Ideal for fast movement in sorting, distribution and testing applications

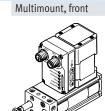


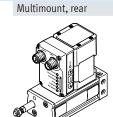
## Peripherals overview

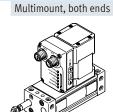
#### **Cover variants**

Standard





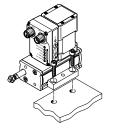




For the variants with multimount cover (EPCE-TB-...-MF / -MB / -MD), lateral female threads with centring diameter and through-holes are also available.

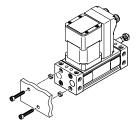
### **Mounting options**

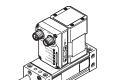
With standard cover variant
At the side via profile mounting





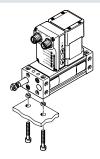
With multimount cover
On the end face via thread



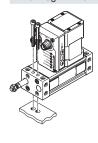


[B] Rear

At the side/underneath via thread

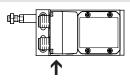


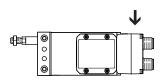
Via through-holes

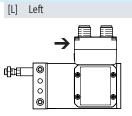


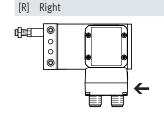
#### Motor mounting variants

Standard







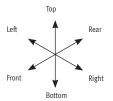


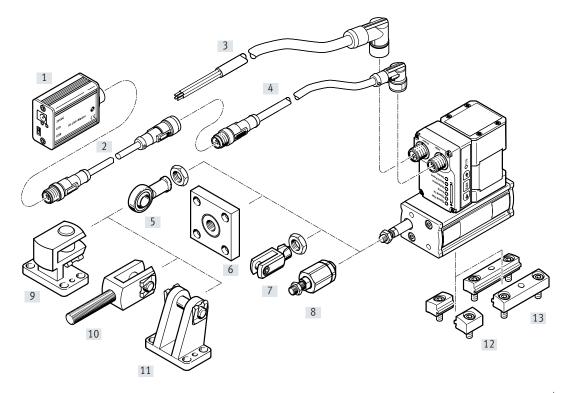
## Control elements



[1] Pushbuttons for parameterisation and control

## Peripherals overview





Access	Accessories				
	Type/order code	Description	→ Page/Internet		
[1]	IO-Link master USB CDSU-1	For straightforward use of the electric cylinder unit with IO-Link	23		
[2]	Adapter NEFC-M12G8	Connection between the motor and the IO-Link master Only for use with IO-Link Port Class A Master (recommended)	23		
[3]	Supply cable NEBL-T12	For connecting load and logic supply	23		
[4]	Connecting cable NEBC-M12	For connection to a controller	23		
[5]	Rod eye SGS	With spherical bearing	22		
[6]	Coupling piece KSG	For compensating radial deviations	22		
[7]	Rod clevis SG	Permits a swivelling movement of the cylinder in one plane	22		
[8]	Self-aligning rod coupler FK	For compensating radial and angular deviations	22		
[9]	Right angle clevis foot LQG	For rod eye SGS	22		
[10]	Rod clevis SGA	For swivel mounting of the cylinder	22		
[11]	Clevis foot LBG	With parallel motor mounting, for spherical bearing			
[12]	Profile mounting EAHF-L2-P-S	For mounting the axis on the side of the profile	20		
[13]	Profile mounting EAHF-L2-P	<ul> <li>For mounting the axis on the side of the profile</li> <li>The profile mounting can be attached to the mounting surface using the drilled hole in the centre</li> </ul>	21		
-	Centring sleeve ZBH	Centring sleeves can be used to centre the electric cylinder unit in combination with the multimount cover	22		

## Type codes

001	Series
EPCE	Toothed belt
002	Drive system
ТВ	Toothed belt
003	Size
45	45
60	60
004	Stroke
5	5
10	10
15	15
20	20
25	25
30	30
35	35
40	40
45	45
50	50
60	60
80	80
005	Piston rod, front left
	None
FL	Piston rod with male thread
006	Piston rod, rear left
	None
BL	Piston rod with male thread
007	Piston rod, front right
	None
FR	Piston rod with male thread
008	Piston rod, rear right
	None

009	Cover variant			
	Standard			
MB	Multimount, rear			
MD	Multimount, both ends			
MF	Multimount, front			
010	Motor type			
ST	Stepper motor ST			
011	Controller			
M	Integrated			
	1			
012	Control panel			
H1	Integrated			
013	Due made sel/s dividies			
	Bus protocol/activation			
PLK	PNP and IO-Link®			
NLK	LK NPN and IO-Link®			
014	End-position sensing			
AA	With integrated end-position sensing			
015	Cable outlet direction			
	Standard			
L	Left			
R	Right			
В	Rear			
016	Electrical accessories			
	None			
L1	Adapter for operation as IO-Link® device			
017	Operating instructions			
	With operating instructions			
DN	Without operating instructions  Without operating instructions			
אוע	Michout operating instructions			

BR

Piston rod with male thread



- Size 45, 60 - - Stroke length

5 ... 80 mm



General technical data			
Size		45	60
Design		Electric cylinder with toothed belt and integrated dri	ive
Motor type		Stepper motor	
Protection against rotation/guide		With plain-bearing guide	
Piston rod end		Male thread	
Piston rod thread		M6	M10x1.25
Mounting position		Any	
Working stroke	[mm]	5, 10, 15, 20, 25, 30, 35, 40, 45, 50	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 80
Stroke reserve	[mm]	0	
Additional functions		Integrated end-position sensing	
		User interface	
Display	·	LED	
Homing		Positive fixed stop block	
		Negative fixed stop block	
Type of mounting		Via female thread	
		Via through-hole (only with multimount cover)	
		With accessories	
		Via centring sleeve (only with multimount cover)	
Max. cable length			
Inputs/outputs	[m]	15	
IO-Link operation	[m]	20	
Reference value, service life	[km]	50 500	50 800
	[cycles]	5 million	5 million

Mechanical data	Mechanical data				
Size		45	60		
Max. payload					
Horizontal	[kg]	5	10		
Vertical	[kg]	2.5	5		
Max. feed force F <sub>x</sub>	[N]	85	150		
Max. speed	[m/s]	0.44	0.6		
Speed press	[m/s]	0.02			
Max. acceleration	$[m/s^2]$	9	9		
Repetition accuracy	[mm]	±0.05	±0.05		
Max. impact energy	[J]	0.003	0.016		
Position sensing		Via IO-Link			

Toothed belt				
Size		45	60	
Pitch	[mm]	2		
Elongation <sup>1)</sup>	[%]	0.310	0.375	
Effective diameter	[mm]	10.18		
Feed constant	[mm/rev]	32		

1) At max. feed force

Electrical data				
Size		45	60	
Motor				
Nominal voltage DC	[V]	24 (±15%)		
Nominal current	[A]	3	5.3	
Max. current consumption (load)	[A]	3	5.3	
Max. current consumption (logic)	[mA]	300		
Encoder				
Rotor position encoder		Absolute encoder, single turn		
Rotor position encoder measuring principle		Magnetic		
Rotor position encoder resolution	[bit]	16		

Interfaces					
Size		45	60		
Parameterisation interface					
IO-Link		Yes			
User interface		Yes			
Digital inputs					
Quantity		2			
Switching logic		PNP			
		NPN			
Characteristics		Not galvanically isolated			
Specification		Based on IEC 61131-2, type 1			
Operating range [V]		24	24		
Digital outputs					
Quantity		2			
Switching logic		PNP			
		NPN			
Rotor position encoder		Absolute encoder, single turn			
Characteristics		Not galvanically isolated			
		Configurable			
Max. current	[mA]	100			

Technical data — IO-Link				
Size		45	60	
SIO mode support		Yes		
Communication mode		COM3 (230.4 kBd)		
Connection technology		Plug		
Port class		A		
Number of ports		1		
Process data width OUT	[byte]	2		
Process data content OUT	[bit]	1 (Move in)		
	[bit]	1 (Move out)		
	[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)		
Service data content IN	[bit]	32 (Force)		
	[bit]	32 (Position)		
	[bit]	32 (Speed)		
Minimum cycle time	[ms]	1		
Data memory required	[kilobyte]	0.5		<u> </u>
Protocol version		Device V 1.1		

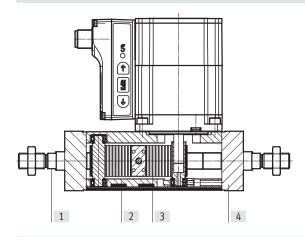
Operating and environmental condition	Operating and environmental conditions				
Size		45 60			
Insulation class		В			
Ambient temperature	[°C]	0+50			
Storage temperature	[°C]	-20 +60			
Note on ambient temperature		Above an ambient temperature of 30°C, the power must be reduced by 2% per K			
Temperature monitoring		Switch-off for excessive temperature			
		Integrated precise CMOS temperature sensor with analogue output			
Relative humidity	[%]	0 90 (non-condensing)			
Protection class					
Degree of protection		IP40			
Duty cycle	[%]	100			
CE marking		To EU EMC Directive			
		To EU RoHS Directive			
KC mark		KCEMC			
Certification		RCM mark			
Vibration resistance		Transport application test with severity class 1 in accordance with FN 942017-4 and EN 60068-2-6			
Shock resistance		Shock test with severity level 1 to FN 942017-5 and EN 60068-2-27			
Maintenance interval		Lifetime lubrication			

Weight	Veight Veight		
Size		45	60
Basic weight with 0 mm stroke	[g]	775/807 <sup>1)</sup>	1350/1397 <sup>1)</sup>
Additional weight per 10 mm stroke	[g]	29	45
Moving mass at 0 mm stroke	[g]	83/871)	188/1971)
Additional moving mass per 10 mm stroke	[g]	4.55	9.75

<sup>1)</sup> With cover variant EPCE-...-MF

### Materials

Sectional view



Axis		
[1]	Piston rod	High-alloy stainless steel
[2]	Housing	Anodised wrought aluminium alloy
[3]	Toothed belt	Polychloroprene with glass fibre
[4]	Cover	Anodised wrought aluminium alloy
	Note on materials	RoHS-compliant
		Contains paint-wetting impairment substances

### Pin allocation

Power supply

Plug

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



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)					

## Logic interface

Plug

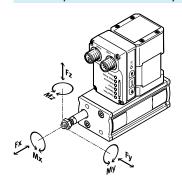
M12x1, 8-pin, A-coded to EN 61076-2-101



When used wit	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 wit	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)						

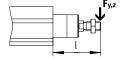
### Maximum permissible loads on the piston rod



If there are two or more forces and torques simultaneously acting on the piston rod, the following equations must be satisfied:

 $F_1/M_1 = dynamic value$ 

 $F_2/M_2 = maximum value$ 

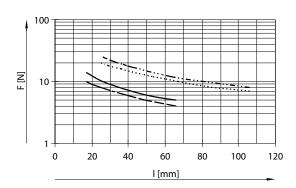


$$f_v = \frac{\left|F_{y1}\right|}{F_{y2}} + \frac{\left|F_{z1}\right|}{F_{z2}} + \frac{\left|M_{y1}\right|}{M_{y2}} + \frac{\left|M_{z1}\right|}{M_{z2}} \leq 1$$

 $|Fx| \le Fx_{max}$ 

 $|Mx| \leq Mx_{max}$ 

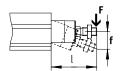
Maximum permissible lateral forces  $Fy_{max}$  and  $Fz_{max}$  on the piston rod as a function of projection l

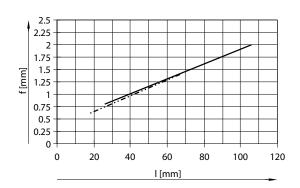


EPCE-TB-45
EPCE-TB-45-M...
EPCE-TB-60
EPCE-TB-60-M...

Size		45	60
Fx <sub>max</sub> (static)	[N]	85	150
Mx <sub>max</sub> (dynamic)	[Nm]	0	
My <sub>max</sub> , Mz <sub>max</sub>	[Nm]	0.9	2.9

## Piston rod displacement f as a function of projection l





EPCE-TB-45
------ EPCE-TB-60

## Sizing example

Application data:

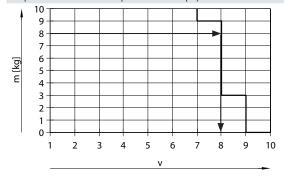
- Payload: 8 kg
- Mounting position: horizontal
- Stroke: 60 mm
- Max. permissible positioning time: 0.5 s (one direction)

Step 1: Selection of the smallest possible size from the table → page 12

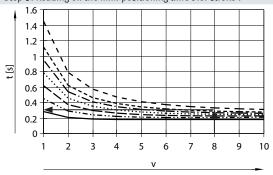
Mechanical data				
Size		45	60	
Max. payload				
Horizontal	[kg]	5	10	
Vertical	[kg]	2.5	5	

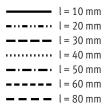
→ Smallest possible size: EPCE-TB-60

Step 2: Selection of max. speed level v for payload m



Step 3: Reading off the min. positioning time t for stroke  $\ensuremath{\mathsf{l}}$ 





→ Min. positioning time for 60 mm at level 8: 0.3 s

## → Max. speed level for payload: level 8

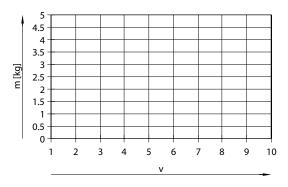
### Result

The application can be implemented using EPCE-TB-60-60. A minimum positioning time (one direction) of 0.3 s is achieved. Longer positioning times can be selected at any time using a lower speed level.

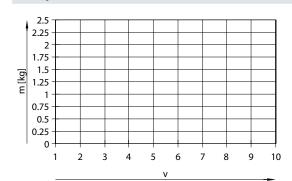
### Mass m as a function of speed level v

Horizontal

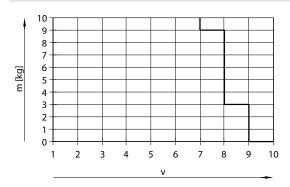
EPCE-45



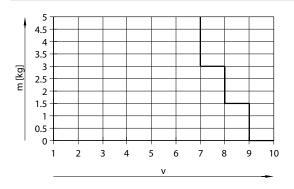
Vertical EPCE-45



EPCE-60



EPCE-60

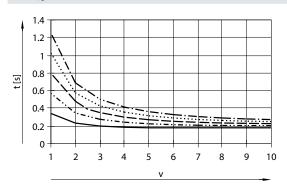


- 🖣 - Note

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

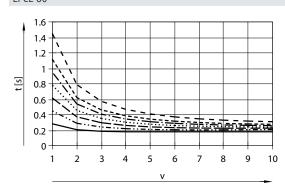
### Positioning time t as a function of speed level v and stroke l

EPCE-45



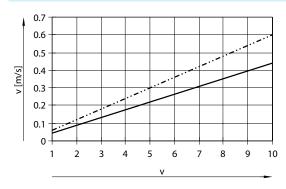
l = 10 mm
l = 20 mm
l = 30 mm
l = 40mm
l = 50 mm

#### EPCE-60



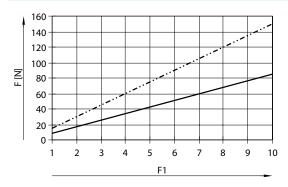
l = 10 mm
l = 20 mm
l = 30 mm
l = 40 mm
l = 50 mm
l = 60 mm
l = 80 mm

## Speed v as a function of speed level v

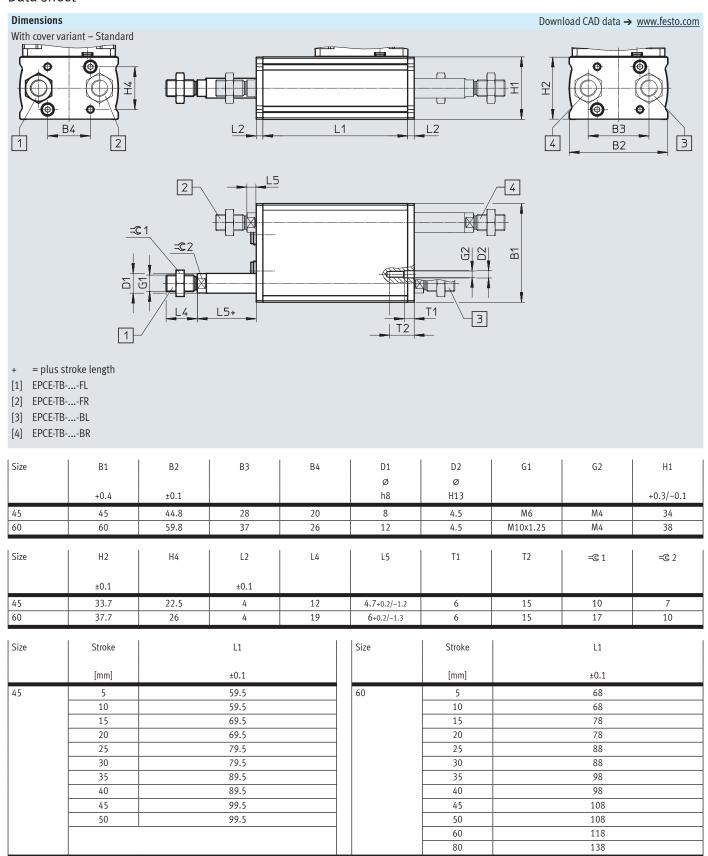


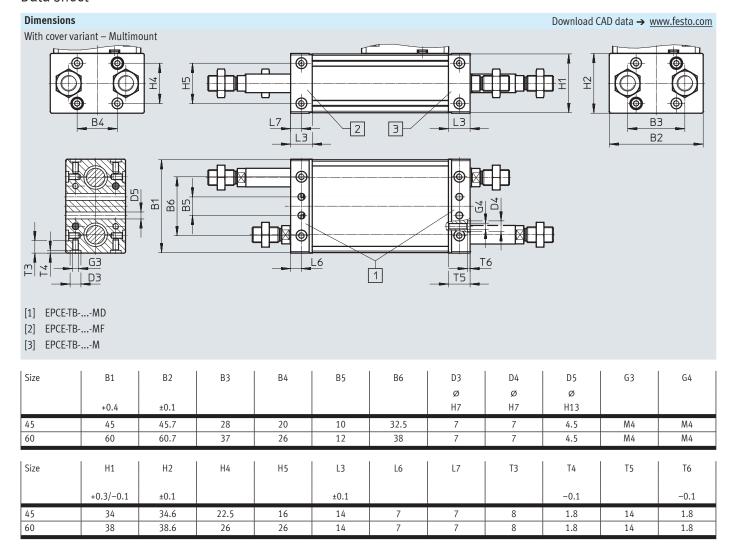
EPCE-TB-45
EPCE-TB-60

#### Feed force F as a function of force level F1



EPCE-TB-45
EPCE-TB-60

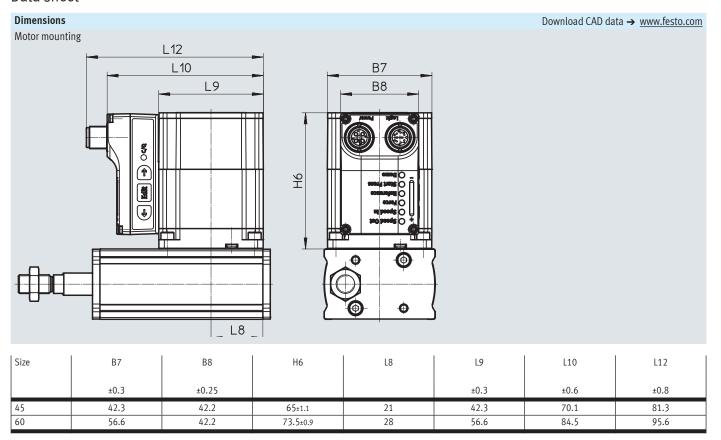




## - 🏺 - Note

For size 60, the through-holes cannot be used with the following combinations:

- Through-hole at the front: not in combination with stroke 5 or 10 mm and motor mounting variant "Standard" (at front)
- Through-hole at the rear: not in combination with motor mounting variant "Rear"



Ordering data							
	Size	Stroke	Part no.	Туре			
	45	Cover variant: Standard					
		10	8101539	EPCE-TB-45-10-FL-ST-M-H1-PLK-AA			
		20	8101540	EPCE-TB-45-20-FL-ST-M-H1-PLK-AA			
		30	8101541	EPCE-TB-45-30-FL-ST-M-H1-PLK-AA			
000000		50	8101542	EPCE-TB-45-50-FL-ST-M-H1-PLK-AA			
		Cover variant: Multimount, front					
		20	8101544	EPCE-TB-45-20-FL-MF-ST-M-H1-PLK-AA			
500		30	8101545	EPCE-TB-45-30-FL-MF-ST-M-H1-PLK-AA			
		50	8101546	EPCE-TB-45-50-FL-MF-ST-M-H1-PLK-AA			
_	60	Cover variant: Standard					
		10	8102163	EPCE-TB-60-10-FL-ST-M-H1-PLK-AA			
		20	8102162	EPCE-TB-60-20-FL-ST-M-H1-PLK-AA			
		30	8102164	EPCE-TB-60-30-FL-ST-M-H1-PLK-AA			
		50	8102170	EPCE-TB-60-50-FL-ST-M-H1-PLK-AA			
		80	8102167	EPCE-TB-60-80-FL-ST-M-H1-PLK-AA			
		Cover variant: Multimount, front					
		10	8102166	EPCE-TB-60-10-FL-MF-ST-M-H1-PLK-AA			
		20	8102169	EPCE-TB-60-20-FL-MF-ST-M-H1-PLK-AA			
		30	8102168	EPCE-TB-60-30-FL-MF-ST-M-H1-PLK-AA			
		50	8102165	EPCE-TB-60-50-FL-MF-ST-M-H1-PLK-AA			
		80	8102171	EPCE-TB-60-80-FL-MF-ST-M-H1-PLK-AA			

Ordering table Size	45	60	Conditions	Code	Enter
					code
Module no.	8103354	8103355			
Series	EPCE			EPCE	EPCE
Drive type	Toothed belt			-TB	-TB
Size	45	60			
Stroke [mm	5, 10, 15, 20, 25, 30, 35, 40, 45, 50	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 80			
Piston rod, front left	None	1	[1]		
	Piston rod with male thread			-FL	
Piston rod, rear left	None		[1]		
	Piston rod with male thread			-BL	İ
Piston rod, front right	None	[1]			
	Piston rod with male thread		-FR		
Piston rod, rear right	None	[1]	-BR		
	Piston rod with male thread				
Cover variant	Standard	[3]	-MB		
		Multimount, rear			
	Multimount, both ends	[2], [3]	-MD		
	Multimount, front	[2]	-MF		
Motor type	Stepper motor ST		-ST	-ST	
Controller	Integrated		-M	-M	
Control panel	Integrated			-H1 -NLK	-H1
Bus protocol/actuation		NPN and IO-Link			
	PNP and IO-Link		-PLK		
End-position detection	With integrated end-position sensing			-AA	-AA
Cable outlet direction	Standard		[2]		
	Rear		[3]	-B	
	Left			-L	
	Right			-R	
Electrical accessories	None				
	Adapter for operation as IO device		+L1		
Operating instructions		With operating instructions			
	Without operating instructions		DN		

- [1] At least one piston rod must be selected.
- [2] For size 45 with stroke 5 mm or 10 mm and cover variant -MF or -MD, not in combination with cable outlet direction "Standard".
  [3] For size 45 and cover variant -MB or -MD, not in combination with cable outlet direction "Rear"

## Note

For size 60, the through-holes cannot be used with the following combinations:

- $\bullet\,$  Through-hole at the front: not in combination with stroke 5 or 10 mm and motor mounting variant "Standard" (at front)
- Through-hole at the rear: not in combination with motor mounting variant

## Accessories

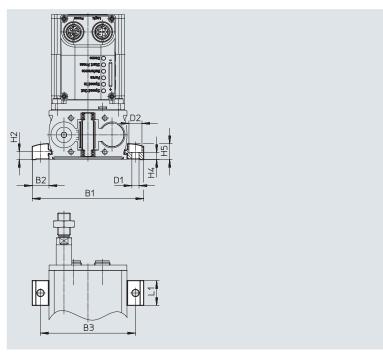
Profile mounting EAHF-L2-...-P-S

Material:

Anodised wrought aluminium alloy RoHS-compliant

• For mounting the cylinder on the side of the profile





Dimensions and ord	Dimensions and ordering data									
For size	B1	B2	B3	D1	D2	H2				
				Ø	Ø					
				H13	H13					
45	70.6	12.8	58	5.5	10	6.1				
60	85.6	12.8	73	5.5	10	6.1				

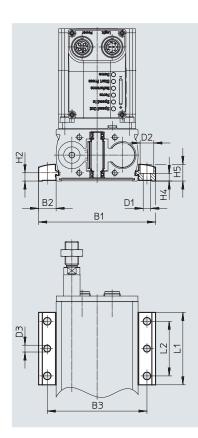
For size	H4 ±0.1	Н5	L1	Weight [g]	Part no.	Туре
45	5.5	12.2	19	6	5184133	EAHF-L2-45-P-S
60	5.5	12.2	19	6	5184133	EAHF-L2-45-P-S

## Accessories

### Profile mounting EAHF-L2-...-P

Material: Anodised wrought aluminium alloy RoHS-compliant For mounting the cylinder on the side of the profile.
 The profile mounting can be attached to the mounting surface using the drilled hole in the centre





Dimensions and ordering data									
For size	B1	B2	B3	D1	D2	D3	H2		
				Ø	Ø	Ø			
				H13	H13				
45	70.6	12.8	58	5.5	10	5	6.1		
60	85.6	12.8	73	5.5	10	5	6.1		

For size	H4	H5	L1	L2	Weight [g]	Part no.	Туре
	±0.1				191		
45	5.5	12.2	53	40	35	4835728	EAHF-L2-45-P
60	5.5	12.2	53	40	35	4835728	EAHF-L2-45-P

PU<sup>1)</sup>

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Data sheets → Internet: clevis foot

Ordering data – Mounting components

## Accessories

Designation	For size	Part no.	Туре	Designation	For size	Part no.	Туре
Right angle clev	vis foot LQG			Clevis foot LBC	j		
	60	31768	LQG-32		60	31761	LBG-32
<b>V.</b> 6.0				669			
Ordering data	– Piston rod attac	hments				Data shee	ets → Internet: piston rod attachment
Designation	For size	Part no.	Туре	Designation	For size	Part no.	Туре
Rod eye SGS				Rod clevis SG			
~ <b>®</b>	45	9254	SGS-M6		45	3110	SG-M6
~ 11 ~	60	9261	SGS-M10x1.25		60	6144	SG-M10x1.25
Self-aligning ro	id coupler FK			Rod clevis SGA			
Jett ditgillig to	45	2061	FK-M6	Rod cicvis 30/	60	32954	SGA-M10x1.25
	60	6140	FK-M10x1.25				-
Coupling piece	KSG						
$\overline{}$	60	32963	KSG-M10x1.25				
0							

Part no.

186717

Туре

ZBH-7

Ordering data – Centring sleeves

Description

(EPCE-TB-...-MF / -MB / -MD)

For centring the electric cylinder unit in combination with multimount cover

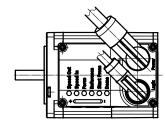
Packaging unit

## Accessories

Ordering data − IO-Link master USB  Data sheets → Internet: cdsu					
	Description		Cable length [m]	Part no.	Туре
	For using the unit with IO-Link     An external power supply plug is additionally required     (not included in the scope of delivery)		0.3	8091509	CDSU-1
Ordering data – Adapter  Data sheets → Internet: nefc					
Ordering data -	Electrical connection, left	Electrical connection, right	Cable length	Part no.	Type
OLD	Straight socket, M12x1, 8-pin	Straight plug, M12x1, 5-pin     Only for use with IO-Link Port Class A     Master (recommended)	0.3	8080777	NEFC-M12G8-0.3-M12G5-LK
Ordering data –	Supply cables  Electrical connection, left	Electrical connection, right	Cable length	Part no.	Data sheets → Internet: nebl
<b>A</b>	Angled socket, M12x1, 4-pin	Cable, open end, 4-wire	5 10	8080778 8080779 8080780	NEBL-T12W4-E-2-N-LE4 NEBL-T12W4-E-5-N-LE4 NEBL-T12W4-E-10-N-LE4
	Straight socket, M12x1, 4-pin	Cable, open end, 4-wire	15 2 5 10 15	8080781 8080790 8080791 8080792 8080793	NEBL-T12W4-E-15-N-LE4 NEBL-T12G4-E-2-N-LE4 NEBL-T12G4-E-5-N-LE4 NEBL-T12G4-E-10-N-LE4 NEBL-T12G4-E-15-N-LE4
Ordering data − Connecting cables  Data sheets → Internet: nebc					
	Electrical connection, left	Electrical connection, right	Cable length [m]	Part no.	Туре
	Angled socket, M12x1, 8-pin	Cable, open end, 8-wire	2 5 10 15	8094476 8094478 8094481 8094479	NEBC-M12W8-E-2-N-B-LE8 NEBC-M12W8-E-5-N-B-LE8 NEBC-M12W8-E-10-N-B-LE8 NEBC-M12W8-E-15-N-B-LE8
		Straight plug, M12x1, 8-pin	2 5 10 15	8080786 8080787 8080788 8080789	NEBC-M12W8-E-2-N-M12G8 NEBC-M12W8-E-5-N-M12G8 NEBC-M12W8-E-10-N-M12G8 NEBC-M12W8-E-15-N-M12G8
	Straight socket, M12x1, 8-pin	Cable, open end, 8-wire	2 5 10 15	8094480 8094477 8094482 8094475	NEBC-M12G8-E-2-N-B-LE8 NEBC-M12G8-E-5-N-B-LE8 NEBC-M12G8-E-10-N-B-LE8 NEBC-M12G8-E-15-N-B-LE8
O Line Control of the		Straight plug, M12x1, 8-pin	2 5 10 15	8080782 8080783 8080784 8080785	NEBC-M12G8-E-2-N-M12G8 NEBC-M12G8-E-5-N-M12G8 NEBC-M12G8-E-10-N-M12G8 NEBC-M12G8-E-15-N-M12G8



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



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