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

OIO-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-I ink.

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

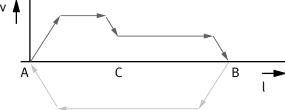
The functions of the Simplified Motion Series

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



speed and force control

Extended motion profile for simplified press-fitting and clamping functions: with



- 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 ELGS-TB-KF



Rotary drive unit ERMS



Mini slide unit EGSS-BS-KF



Electric cylinder unit



Electric cylinder unit

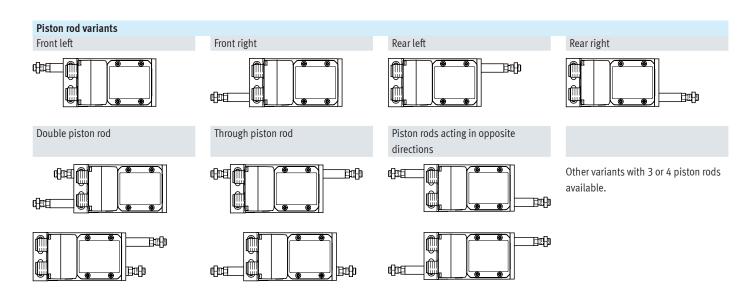


Key features

At a glance



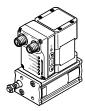
- Without external servo drive: all the necessary electronic components are combined in the integrated drive
- Two control options integrated as standard: digital I/O and IO-Link
- Complete solution for simple movements between mechanical end positions
- Simplified commissioning: all parameters can be 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

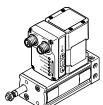
Cover variants

Standard

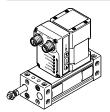








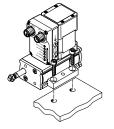
Multimount, both ends

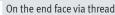


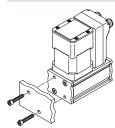
For the variants with multimount cover (EPCE-TB-...-MF / -MB / -MD), lateral female threads with centring diameter and through-holes are also available.

Mounting options

With standard cover variant
At the side via profile mounting

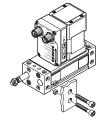


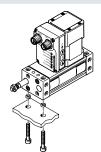




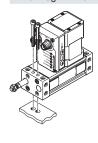
With multimount cover
On the end face via thread

At the side/underneath via thread



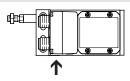


Via through-holes

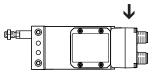


Motor mounting variants

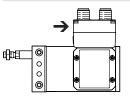
Standard



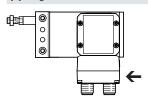








[R] Right

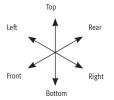


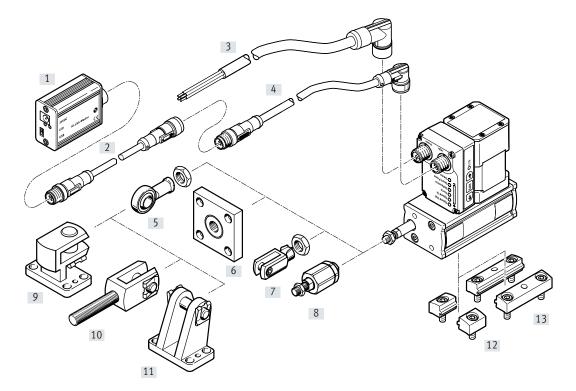
Control elements



[1] Pushbuttons for parameterisation and control

Peripherals overview





Acces	sories		
	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	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	22
[12]	Profile mounting EAHF-L2-P-S	For mounting the axis on the side of the profile	20
[13]	Profile mounting EAHF-L2-P	 For mounting the axis on the side of the profile The profile mounting can be attached to the mounting surface using the drilled hole in the centre 	21
ı	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	
TB	Toothed belt	
	1000.000 2000	
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	

Standard MB Multimount, rear MD Multimount, both ends MF Multimount, front O10 Motor type ST Stepper motor ST O11 Controller M Integrated O12 Control panel H1 Integrated O13 Bus protocol/activation PLK PNP and IO-Link® NLK NPN and IO-Link® O14 End-position sensing AA With integrated end-position sensing O15 Cable outlet direction Standard	
MD Multimount, both ends MF Multimount, front 010 Motor type ST Stepper motor ST 011 Controller M Integrated 012 Control panel H1 Integrated 013 Bus protocol/activation PLK PNP and IO-Link® NLK NPN and IO-Link® 014 End-position sensing AA With integrated end-position sensing	
MF Multimount, front 010 Motor type ST Stepper motor ST 011 Controller M Integrated 012 Control panel H1 Integrated 013 Bus protocol/activation PLK PNP and IO-Link® NLK NPN and IO-Link® 014 End-position sensing AA With integrated end-position sensing 015 Cable outlet direction	
O10 Motor type ST Stepper motor ST O11 Controller M Integrated O12 Control panel H1 Integrated O13 Bus protocol/activation PLK PNP and IO-Link® NLK NPN and IO-Link® O14 End-position sensing AA With integrated end-position sensing O15 Cable outlet direction	
ST Stepper motor ST O11 Controller M Integrated O12 Control panel H1 Integrated O13 Bus protocol/activation PLK PNP and IO-Link® NLK NPN and IO-Link® O14 End-position sensing AA With integrated end-position sensing O15 Cable outlet direction	
ST Stepper motor ST O11 Controller M Integrated O12 Control panel H1 Integrated O13 Bus protocol/activation PLK PNP and IO-Link® NLK NPN and IO-Link® O14 End-position sensing AA With integrated end-position sensing O15 Cable outlet direction	
011 Controller M Integrated 012 Control panel H1 Integrated 013 Bus protocol/activation PLK PNP and IO-Link® NLK NPN and IO-Link® 014 End-position sensing AA With integrated end-position sensing 015 Cable outlet direction	
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D13 Bus protocol/activation	
PLK PNP and IO-Link® NLK NPN and IO-Link® 014 End-position sensing AA With integrated end-position sensing 015 Cable outlet direction	
NLK NPN and IO-Link® O14 End-position sensing AA With integrated end-position sensing O15 Cable outlet direction	
014 End-position sensing AA With integrated end-position sensing 015 Cable outlet direction	
AA With integrated end-position sensing O15 Cable outlet direction	
AA With integrated end-position sensing O15 Cable outlet direction	
015 Cable outlet direction	
Ctandard	
L Left	
R Right	
B Rear	
016 Electrical accessories	
None	
L1 Adapter for operation as IO-Link® device	
Adapter for operation as forthing device	
017 Operating instructions	
With operating instructions	
DN Without 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 drive		
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, running performance	[km]	50 500	50 800	

Mechanical data					
Size		45	60		
Guide value for payload					
Horizontal	[kg]	5	10		
Vertical	[kg]	2.5	5		
Max. feed force F _x	[N]	85	150		
Max. speed	[m/s]	0.44	0.6		
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 ¹⁾	[%]	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	Nominal current [A]		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		
		Configurable		
Specification		Based on IEC 61131-2, type 1		
Operating range [V]		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		
Protocol version		Device V 1.1		

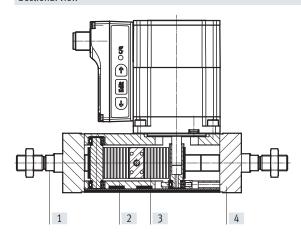
Operating and environmental condition	Operating and environmental conditions					
Size		45	60			
Insulation class		В				
Ambient temperature	[°C]	0 +50				
Storage temperature	[°C]	-20 +60				
Note on ambient temperature		Above an ambient temperature of 30°C, the	oower must be reduced by 2% per K			
Temperature monitoring		Switch-off for excessive temperature	Switch-off for excessive temperature			
		Integrated precise CMOS temperature sensor with analogue output				
Relative humidity [%]		0 90 (non-condensing)				
Protection class						
Degree of protection	Degree of protection		IP40			
Duty cycle	[%]	100	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					
Size		45	60		
Basic weight with 0 mm stroke	[g]	775/807 ¹⁾	1350/1397 ¹⁾		
Additional weight per 10 mm stroke	[g]	29	45		
Moving mass at 0 mm stroke	[g]	83/871)	188/197 ¹⁾		
Additional moving mass per 10 mm stroke	[g]	4.55	9.75		

¹⁾ With cover variant EPCE-...-MF

Materials

Sectional view



1	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

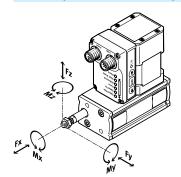
M12x1, 8-pin, A-coded to EN 61076-2-101



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)				

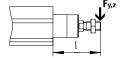
Maximum permissible loads on the piston rod



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

 $F_1/M_1 = dynamic value$

 $F_2/M_2 = maximum value$

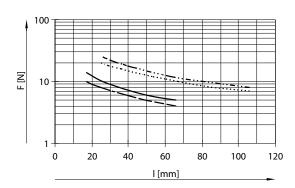


$$f_v = \frac{\left|F_{y1}\right|}{F_{y2}} + \frac{\left|F_{z1}\right|}{F_{z2}} + \frac{\left|M_{y1}\right|}{M_{y2}} + \frac{\left|M_{z1}\right|}{M_{z2}} \leq 1$$

 $|Fx| \le Fx_{max}$

 $|Mx| \leq Mx_{max}$

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



EPCE-TB-45

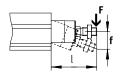
EPCE-TB-45-M...

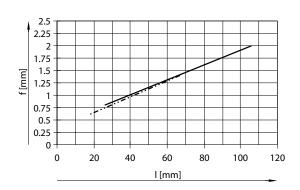
EPCE-TB-60

EPCE-TB-60-M...

Size		45	60
Fx _{max} (static)	[N]	85	150
Mx _{max} (dynamic)	[Nm]	0	
My _{max} , Mz _{max}	[Nm]	0.9	2.9

Piston rod displacement f as a function of stroke length l





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

Sizing example

Application data:

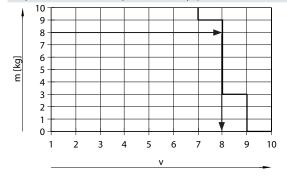
- Payload: 8 kg
- Mounting position: horizontal
- Stroke: 60 mm
- Max. permissible positioning time: 0.5 s (one direction)

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

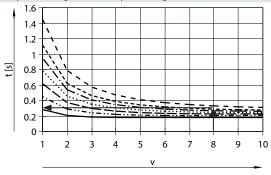
Mechanical data			
Size		45	60
Max. payload			
Horizontal	[kg]	5	10
Vertical	[kg]	2.5	5

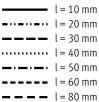
→ Smallest possible size: EPCE-TB-60

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

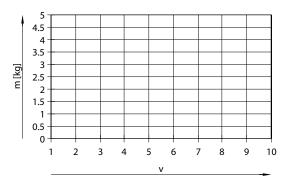
Result

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.

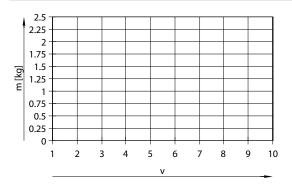
Mass m as a function of speed level v

Horizontal

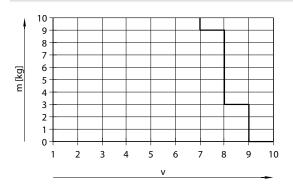
EPCE-45



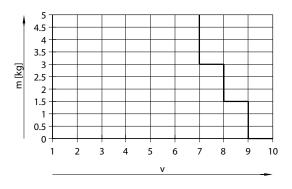
Vertical EPCE-45



EPCE-60



EPCE-60

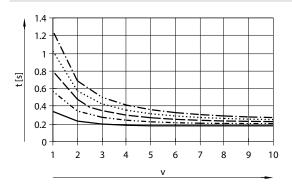


- 🖣 - Note

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

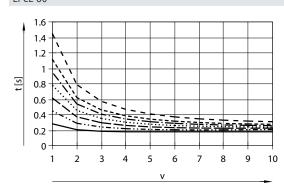
Positioning time t as a function of speed level v and stroke l





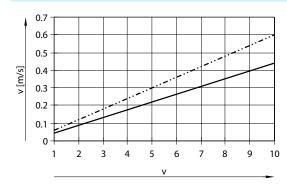
l = 10 mm
l = 20 mm
l = 30 mm
l = 40mm
l = 50 mm

EPCE-60



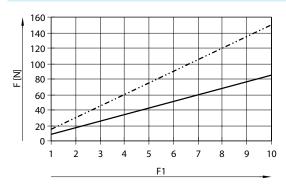
l = 10 mm
l = 20 mm
l = 30 mm
l = 40 mm
l = 50 mm
l = 60 mm
l = 80 mm

Speed v as a function of speed level v

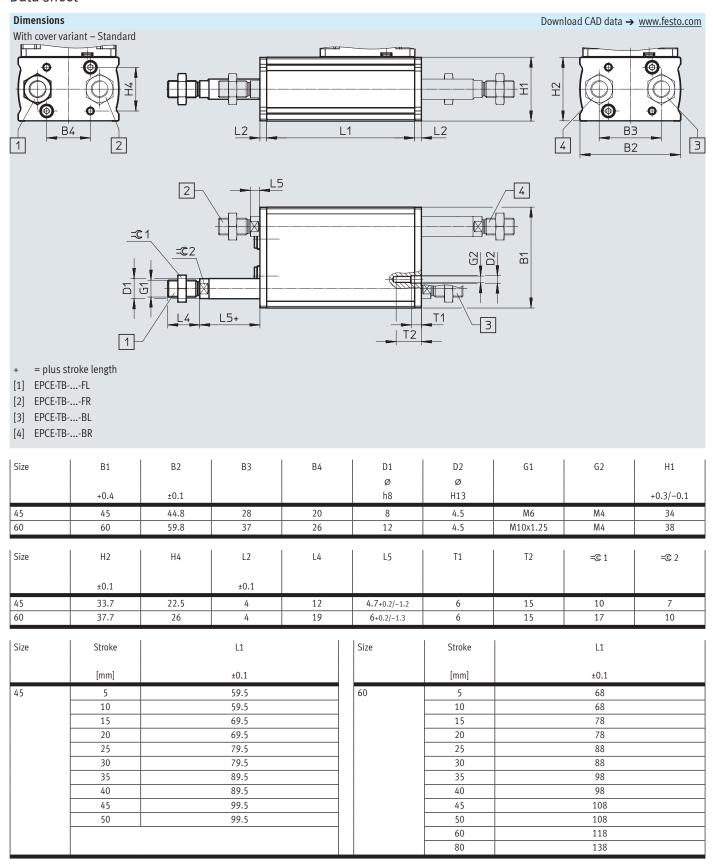


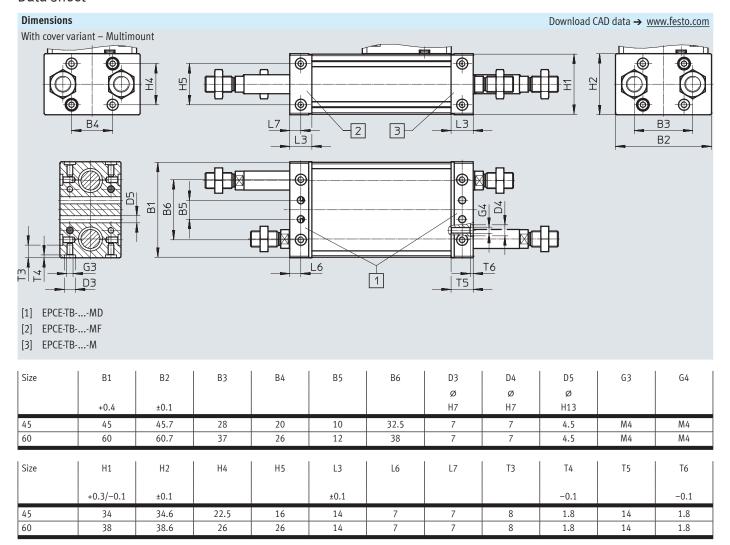
EPCE-TB-45
EPCE-TB-60

Feed force F as a function of force level F1



EPCE-TB-45
EPCE-TB-60

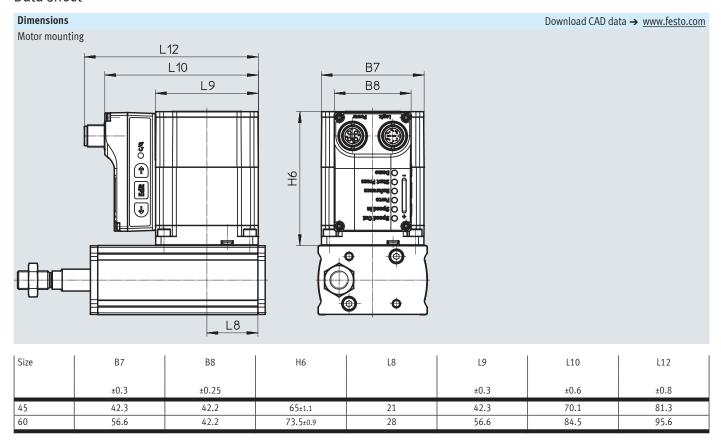






For size 60, the through-holes cannot be used with the following combinations:

- 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			
9	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			
		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			
		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	
Piston rod, front right	None		[1]		
	Piston rod with male thread		-FR		
Piston rod, rear right	None	[1]			
	Piston rod with male thread		-BR		
Cover variant	Standard				
	Multimount, rear	[3]	-MB		
	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
Bus protocol/actuation	NPN and IO-Link		-NLK		
	PNP and IO-Link			-PLK	
End-position detection	With integrated end-position sensing			-AA	-AA
Cable outlet direction	Standard		[2]		
	Rear		[3]	-В	
	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

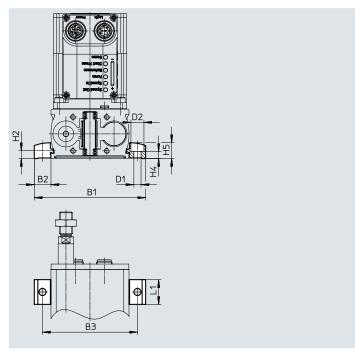
Profile mounting EAHF-L2-...-P-S

Material:

Anodised wrought aluminium alloy RoHS-compliant

• For mounting the cylinder on the side of the profile





Dimensions and 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				

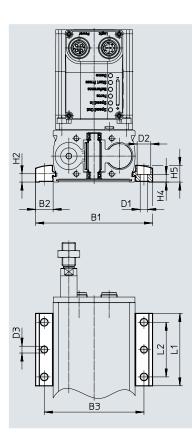
For size	H4 ±0.1	Н5	L1	Weight [g]	Part no.	Туре
45	5.5	12.2	19	6	5184133	EAHF-L2-45-P-S
60	5.5	12.2	19	6	5184133	EAHF-L2-45-P-S

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				101		
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

PU¹⁾

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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	is foot LQG			Clevis foot LBG			
	60	31768	LQG-32		60	31761	LBG-32
				(C)			
	_				_		
	- Piston rod attac	1	Î		i	1	ts → Internet: piston rod attachment
Designation	For size	Part no.	Туре	Designation	For size	Part no.	Туре
Rod eye SGS				Rod clevis SG			
~ (6)	45	9254	SGS-M6		45	3110	SG-M6
	60	9261	SGS-M10x1.25		60	6144	SG-M10x1.25
				46			
Self-aligning roo	d coupler FK			Rod clevis SGA			
Sett diffilling root	45	2061	FK-M6	Nou elevis son	60	32954	SGA-M10x1.25
	60	6140	FK-M10x1.25				-
					-		
Coupling piece I							
0	60	32963	KSG-M10x1.25				

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

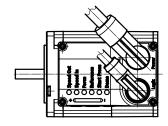
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Accessories

Ordering data –	IO-Link master USB		lanı ı	ls .	Data sheets → Internet: cdsu
	Description		Cable length [m]	Part no.	Type
	For using the unit with IO-Link		0.3	8091509	CDSU-1
	An external power supply plug is additional	ally required			
9:3	(not included in the scope of delivery)				
94					
Ordering data − Adapter Data sheets → Internet: nefc					
	Electrical connection, left	Electrical connection, right	Cable length	Part no.	Туре
	,		[m]		
	Straight socket, M12x1, 8-pin	Straight plug, M12x1, 5-pin	0.3	8080777	NEFC-M12G8-0.3-M12G5-LK
OLD DE LE					
OF THE RESERVE TO THE					
Ordering data –	Supply cables				Data sheets → Internet: nebl
	Electrical connection, left	Electrical connection, right	Cable length	Part no.	Туре
			[m]		
	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 Data sheets → Internet: nebc					
	Electrical connection, left	Electrical connection, right	Cable length	Part no.	Туре
			[m]		
	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
	1	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
- War			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
Winter ()			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
M			10	8080784	NEBC-M12G8-E-10-N-M12G8
			15	8080785	NEBC-M12G8-E-15-N-M12G8



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



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