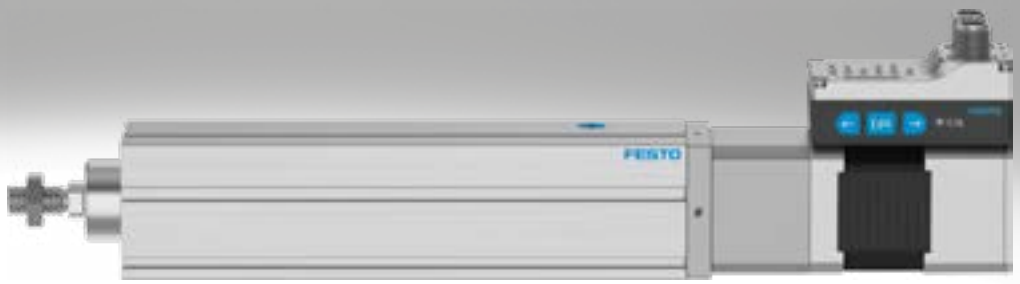
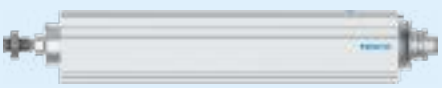
Electric cylinder units EPCS-BS



This product is also available as a modular mechanical system
Electric cylinder EPCC



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

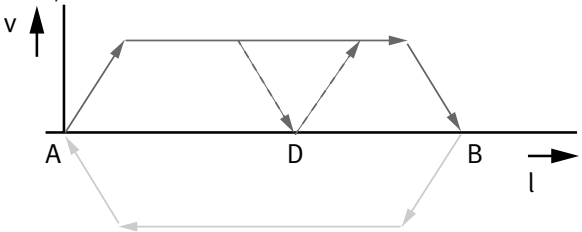
Electrical connection via
M12 plug design
- Power (4-pin): power supply for the motor
- Logic (8-pin): control signal, sensor signal and power for the integrated electronics

Connected

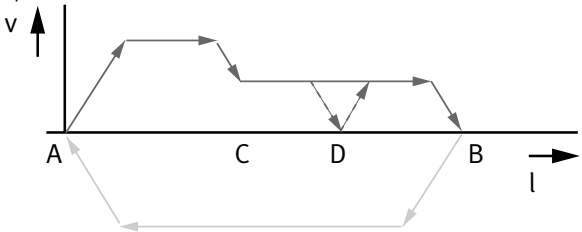
Use of extended functions possible via IO-Link®:
- Remote configuration of motion parameters
- Copy and backup function for transferring parameters
- Read function for extended process parameters
- Freely definable intermediate position
- Firmware update

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 any 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
- Very high-quality ball screw with low internal friction
- Ideal for precise and fast movement in sorting, distribution or clamping applications

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 as a modular mechanical system as electric cylinder EPCC-BS:

When it comes down to flexibility and adaptability, the compact dimensions and different combinations are ideal for making optimal use of the installation space.

- Compact: optimum ratio of installation space to working space
- Unique: "one-size-down" mounting system
- Modular: individual combinations with motor, motor mounting kit and servo drive
- Flexible: wide range of mounting options for optimum machine integration

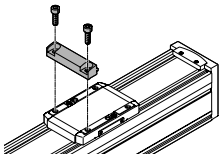
Key features

Combination matrix between axis ELGC-TB/ELGS-TB, ELGC-BS/ELGS-BS, mini slide EGSC-BS/EGSS-BS, electric cylinder EPCC-BS/EPCS-BS and guide axis ELFC

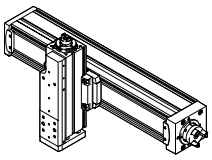
Mounting options with profile mounting and with angle kit

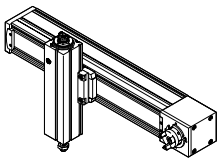
		Assembly axis ELGC-BS/-TB; ELFC; EGSC-BS; EPCC-BS; ELGS-BS/-TB; EGSS-BS, EPCS-BS			
	Size	25	32	45	60
Base axis ELGC-BS/-TB; ELFC; ELGS-BS/-TB	32	■	–	–	–
	45	–	■	–	–
	60	–	–	■	–
	80	–	–	–	■

With profile mounting EAHF-L2-...-P-D...

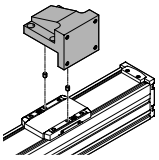


- Mounting option: base axis with one-size-down assembly axis

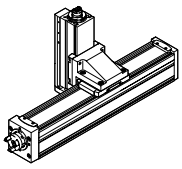


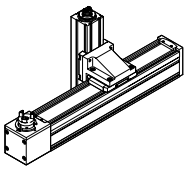


With angle kit EHAA-D-L2-...-AP



- Mounting option: base axis rotated through 90° with one-size-down assembly axis





Key features

Combination matrix between axis ELGC/ELGS-TB, ELGC/ELGS-BS, mini slides EGSC/EGSS-BS, electric cylinder EPCC/EPCS-BS and guide axis ELFC

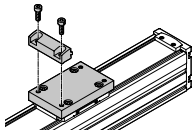
Mounting options with adapter kit or direct fastening

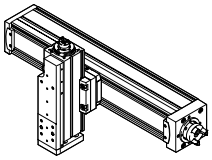
		Assembly axis ELGC-BS/-TB; ELFC; EGSC-BS; EPCC-BS; ELGS-BS/-TB; EGSS-BS, EPCS-BS				
	Size	25	32	45	60	80
Base axis ELGC-BS/-TB; ELFC; ELGS-BS/-TB	32	■		–	–	–
	45	–	■		–	–
	60	–	–	■		–
	80	–	–	–	■	

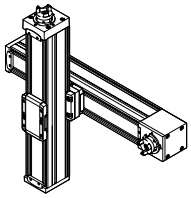
		Assembly axis EGSC-BS; EGSS-BS			
	Size	25	32	45	60
Base axis EGSC-BS; EGSS-BS	25	■	–	–	–
	32	–	■	–	–
	45	–	–	■	–
	60	–	–	–	■

With adapter kit EHAA-D-L2

- Mounting option: base axis with the same size assembly axis
- Mounting option: base axis with height compensation for one-size-down assembly axis
- When motors are mounted using parallel kits, this may lead to interfering contours. In this case, the adapter plate is required for height compensation

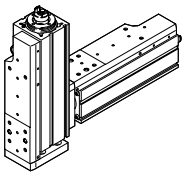






With direct mounting

- Mounting option: base axis with the same size assembly axis

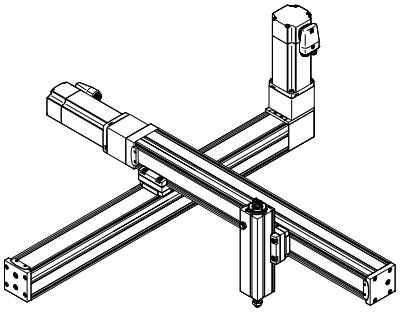


Key features

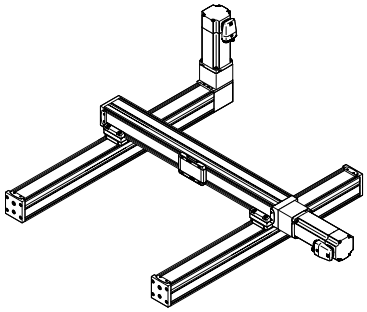
Typical handling systems

The axes ELGC can be combined into very space-saving handling systems that are suitable for assembly systems, test and inspection systems, small parts handling, the electronics industry and desktop applications where compact dimensions are essential. Combining the very compact linear axes ELGC, mini slides EGSC and electric cylinder EPCC offers an optimum ratio of installation space to working space. These feature a common system approach and platform architecture and the connections are largely adapterless.

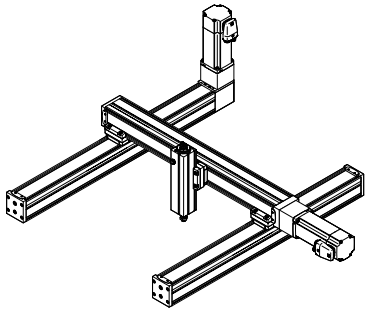
Cantilever system



Planar surface gantry



3-dimensional gantry



Type codes

001	Series	
EPCS	Electric cylinder	

002	Drive system	
BS	Ball screw drive	

003	Size	
32	32	
45	45	
60	60	

004	Stroke [mm]	
25	25	
50	50	
75	75	
100	100	
125	125	
150	150	
175	175	
200	200	
250	250	
300	300	
350	350	
400	400	
500	500	

005	Spindle pitch	
3P	3 mm	
5P	5 mm	
8P	8 mm	
10P	10 mm	
12P	12 mm	

006	Position sensing	
A	For proximity sensor	

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®	

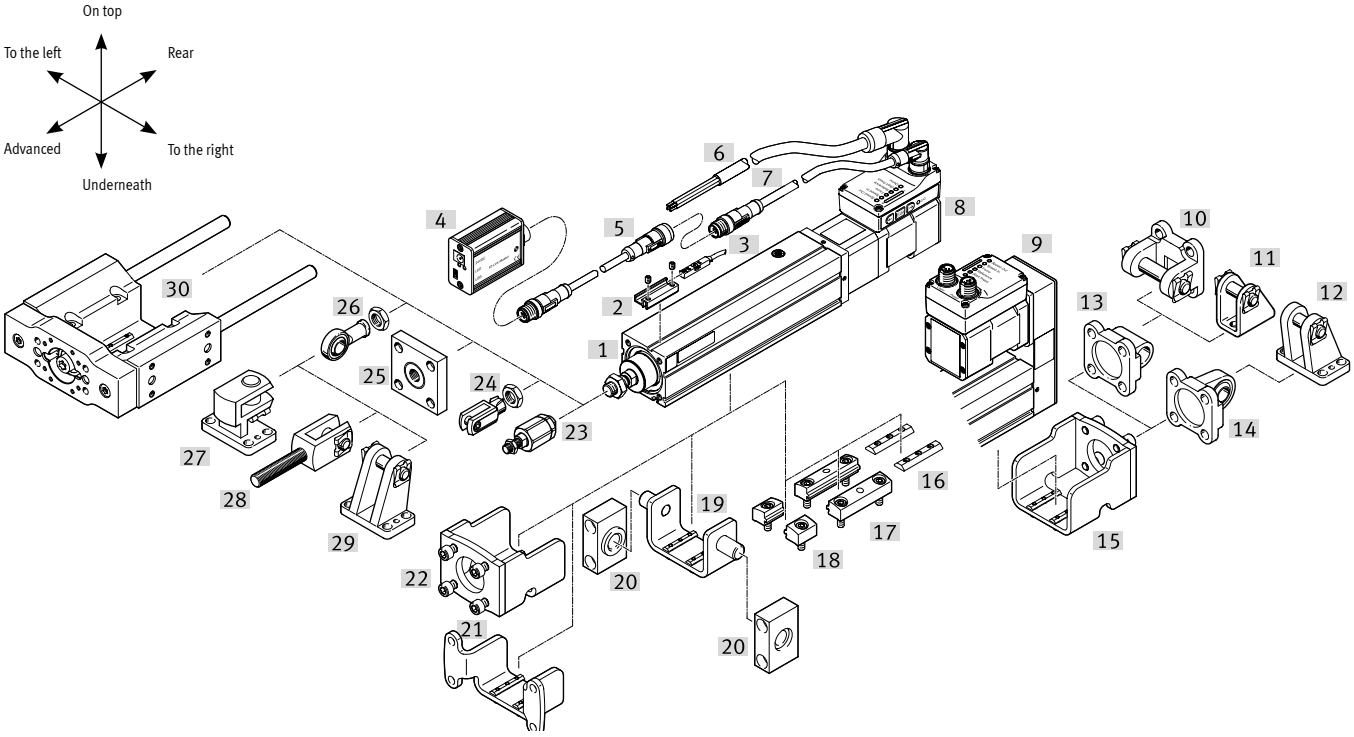
011	End-position sensing	
AA	With integrated end-position sensing	

012	Cable outlet direction	
	Standard	
D	Underneath	
L	Left	
R	Right	

013	Motor attachment position	
	Standard	
PL	Parallel, left	
PR	Parallel, right	
PD	Parallel, bottom	
PT	Parallel, top	

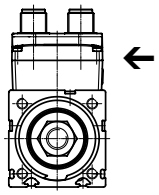
014	Electrical accessories	
	None	
L1	Adapter for operation as IO-Link® device	

Peripherals overview

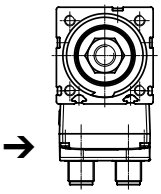


Cable outlet direction

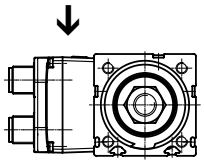
Standard



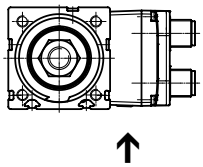
[D] Underneath



[L] Left

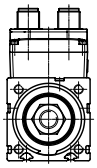


[R] Right

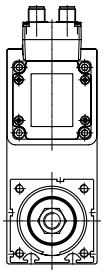


Motor attachment variants

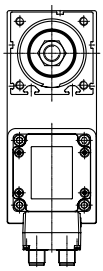
Standard



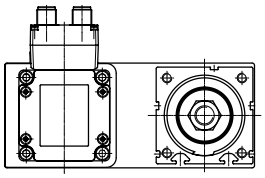
[PT] Top



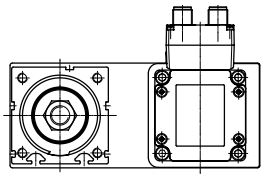
[PD] Underneath



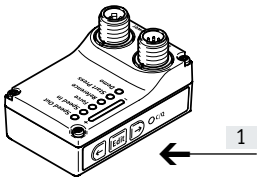
[PL] Left



[PR] Right



Control elements



[1] Pushbutton actuators for parameterisation and control

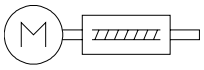
Peripherals overview

Accessories

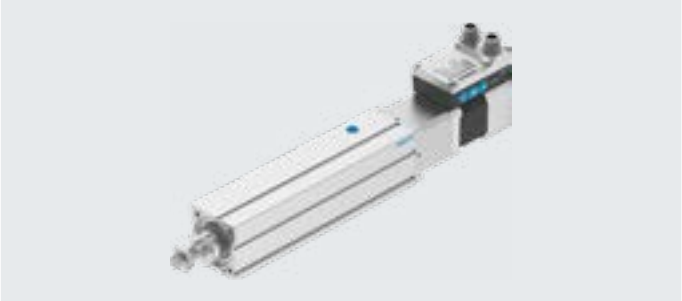
	Type/order code	Description	→ Page/Internet
[1]	Electric cylinder unit EPCS-BS	Electric drive	8
[2]	Sensor bracket[1)] EAPM-L2	For mounting the proximity switches on the axis. The proximity switches can only be mounted using the sensor bracket	40
[3]	Proximity switch[1)] SMT-8M	Magnetic proximity switches, for T-slot	40
[4]	IO-Link master USB CDSU-1	For straightforward use of the electric cylinder unit with IO-Link®	41
[5]	Adapter NEFC-M12G8	Connection between the motor and the IO-Link master	41
[6]	Supply cable NEBL-T12	For connecting load and logic supply	41
[7]	Connecting cable NEBC-M12	For connection to a controller	41
[8]	Axial kit	For axial motor mounting (included in the scope of delivery)	8
[9]	Parallel kit	For parallel motor mounting (included in the scope of delivery)	8
[10]	Swivel flange SNCB	With parallel motor mounting, for spherical bearing	37
[11]	Clevis foot LBN	With parallel motor mounting, for spherical bearing	38
[12]	Clevis foot LBG/LBG-...-R3	With parallel motor mounting, for spherical bearing	38
[13]	Swivel flange SNCL	With parallel motor mounting	36
[14]	Swivel flange SNCS/CRSNCS/SNCS-...-R3	With parallel motor mounting	35
[15]	Adapter kit EAHA-P2	• For mounting the swivel flange and trunnion flange on the front • Can only be mounted on the rear in conjunction with parallel kit EAMM-U	33
[16]	Slot nut ABAN	For mounting the electric cylinder	38
[17]	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	31
[18]	Profile mounting EAHF-L2-P-S	For mounting the axis on the side of the profile	30
[19]	Trunnion support LNZG	For cylinders with trunnion flange mounting	34
[20]	Swivel mounting EAHS-P2	Position freely selectable along the cylinder length	34
[21]	Flange mounting EAHH-P2	• For mounting the electric cylinder via the profile • Position freely selectable along the cylinder length	32
[22]	Adapter kit EAHA-P2	• For mounting the swivel flange and trunnion flange on the front • Can only be mounted on the rear in conjunction with parallel kit EAMM-U	33
[23]	Self-aligning rod coupler FK/CRFK	To compensate for radial and angular deviations	38
[24]	Rod clevis SG/CRSG	Permits a swivelling movement of the cylinder in one plane	38
[25]	Coupling piece KSG	To compensate for radial deviations	38
[26]	Rod eye SGS/CRSGS	With spherical bearing	38
[27]	Right angle clevis foot LQG	For rod eye SGS	38
[28]	Rod clevis SGA	For swivel mounting of the cylinder	38
[29]	Clevis foot LBG/LBG-...-R3	With parallel motor mounting, for spherical bearing	38
[30]	Guide unit EAGF	For protecting electric cylinders against rotation at high torque loads	39

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

Datasheet



- Ø - Size
  32 ... 60
- | - Stroke length
  25 ... 500 mm



General technical data				
Size		32	45	60
Design		Electric cylinder with ball screw		
Motor type		Stepper motor		
Protection against rotation/guide		With plain-bearing guide		
Mounting position		Any		
Piston rod thread		M8	M10x1.25	M12x1.25
Piston rod end		Male thread		
Working stroke	[mm]	25, 50, 75, 100, 125, 150, 175, 200	25, 50, 75, 100, 125, 150, 175, 200, 250, 300	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 500
Stroke reserve	[mm]	0		
Max. angle of rotation of the piston rod	[°]	≤ ±1		
Additional functions		Built-in end-position sensing		
		User interface		
Display		LED		
Homing		Positive fixed stop block		
		Negative fixed stop block		
Type of mounting		Via female thread		
		Via accessories		
Max. cable length				
Inputs/outputs	[m]	15		
IO-Link® operation	[m]	20		

Mechanical data							
Size		32		45		60	
Spindle design		3P	8P	3P	10P	5P	12P
Spindle pitch	[mm/rev]	3	8	3	10	5	12
Spindle diameter	[mm]	8	8	10	10	12	12
Max. payload							
Horizontal	[kg]	24	24	60	40	120	56
Vertical	[kg]	12	9	23	13	46	18
Max. feed force F_x	[N]	150	150	450	250	900	375
Max. radial force[1]	[N]	75	75	180	180	230	230
Repetition accuracy	[mm]	±0.02					
Reversing backlash[2]	[mm]	≤ 0.1					
Position sensing		Via proximity switch					
		Via IO-Link®					
With axial motor mounting							
Max. speed[3]	[m/s]	0.079	0.21	0.074	0.23	0.09	0.22
Speed "Speed Press"[4]	[m/s]	0.01					
Max. acceleration[4]	[m/s²]	1.5	5	1.5	5	1.5	5
With parallel motor mounting							
Max. speed[3]	[m/s]	0.75	0.2	0.07	0.22	0.09	0.21
Speed "Speed Press"[4]	[m/s]	0.01					
Max. acceleration[4]	[m/s²]	0.5	1.5	0.5	1.5	0.5	1.5

1) At the drive shaft
2) When new
3) Adjustable in increments of 10%
4) Unchangeable parameter

Datasheet

Electrical data				
Size		32	45	60
Motor				
Nominal voltage DC	[V]	24 (±15%)		
Nominal current	[A]	3	3	5.3
Max. current consumption (load)	[A]	3	3	5.3
Max. current consumption (logic)	[mA]	300		
Encoder				
Rotor position sensor		Absolute encoder, single turn		
Rotor position sensor measuring principle		Magnetic		
Rotor position sensor resolution	[Bit]	16		

Interfaces				
Size		32	45	60
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		32	45	60
SIO mode support		Yes		
Communication mode		COM3 (230.4 kBd)		
Connection technology		Plug		
Port class		A		
Number of ports		1		
Process data length 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 length 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		

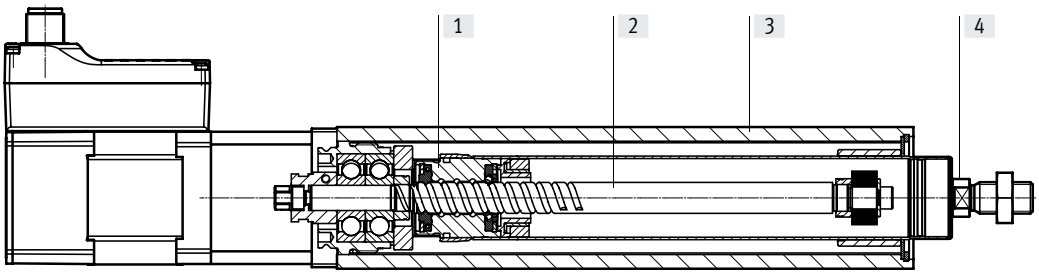
Operating and environmental conditions				
Size		32	45	60
Insulation class		B		
Ambient temperature	[°C]	0 ... +50		
Storage temperature	[°C]	–20 ... +60		
Note on ambient temperature		Above an ambient temperature of 30°C, the power must be reduced by 2% per K		
Temperature monitoring		Switch-off in the event of over-temperature		
		Integrated precise CMOS temperature sensor with analogue output		
Relative humidity	[%]	0 ... 90 (non-condensing)		
Protection class		III		
Degree of protection		IP40		
Duty cycle	[%]	100		
CE marking		To EU EMC Directive for EMCS-ST ➔ festo.com/sp		
		To EU RoHS Directive		
UKCA marking (see declaration of conformity)		To UK EMC regulations		
KC marking		KC EMC		
Certification		RCM		
Vibration resistant		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		
Cleanroom class		Class 9 according to ISO 14644-1		
Maintenance interval		Lifetime lubrication		

Weight				
Size		32	45	60
With axial motor mounting				
Basic weight with 0 mm stroke	[g]	818	1185	2294
Additional weight per 10 mm stroke	[g]	24	41	69
Moving mass with 0 mm stroke	[g]	98	179	305
Additional moving mass per 10 mm stroke	[g]	3.3	4.9	6.5
With parallel motor mounting				
Basic weight with 0 mm stroke	[g]	982	1308	2558
Additional weight per 10 mm stroke	[g]	24	41	69
Moving mass with 0 mm stroke	[g]	98	179	305
Additional moving mass per 10 mm stroke	[g]	3.3	4.9	6.5

Datasheet

Materials

Sectional view



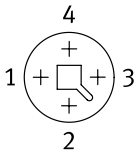
Electric cylinder		
[1]	Spindle nut	Steel
[2]	Spindle	Roller bearing steel
[3]	Housing	Smooth-anodised wrought aluminium alloy
[4]	Piston rod	High-alloy stainless steel
	Note on materials	RoHS-compliant
	LABS (PWIS) conformity	VDMA24364 zone III

Pin allocation

Power supply

Plug

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

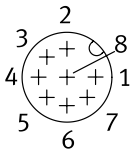


Pin	Function
1	Power voltage supply (24 V DC)
2	Reference potential, power voltage supply (GND)
3	Reserved, do not connect
4	Functional earth (FE)

Logic interface

Plug

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

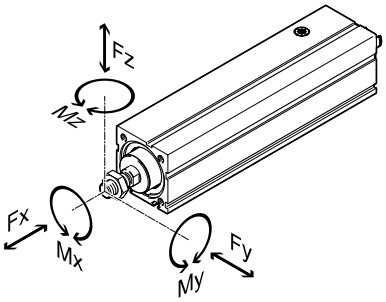


When used with digital I/O	
Pin	Function
1	Logic voltage supply (24 V DC)
2	Digital output 1 (State "In")
3	Digital output 2 (State "Out")
4	Reference potential, logic voltage supply (GND)
5	Digital input 1 (Move "In")
6	Digital input 2 (Move "Out")
7	Reserved, do not connect
8	Reference potential, logic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

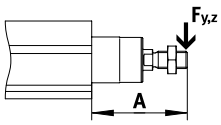
When used with IO-Link®	
Pin	Function
1	L+ IO-Link® power supply (24 V DC)
2	Reserved, do not connect
3	C/Q communication with the IO-Link master
4	L – Reference potential, IO-Link® power supply (0 V)
5	Reserved, do not connect
6	Reserved, do not connect
7	Reserved, do not connect
8	L – Reference potential,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

Datasheet

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

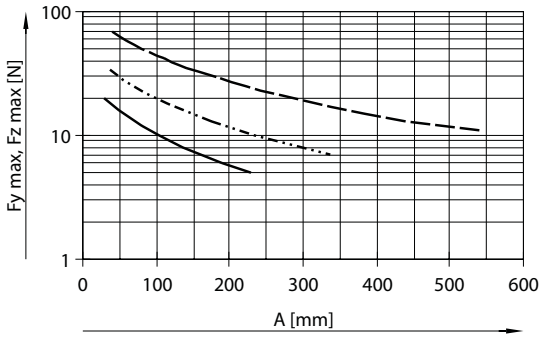


$$f_v = \frac{|F_{y1}|}{F_{y2}} + \frac{|F_{z1}|}{F_{z2}} + \frac{|M_{y1}|}{M_{y2}} + \frac{|M_{z1}|}{M_{z2}} \leq 1$$

$$|Fx| \leq Fx_{max}$$

$$|Mx| \leq Mx_{max}$$

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



EPCS-BS-32
EPCS-BS-45
EPCS-BS-60

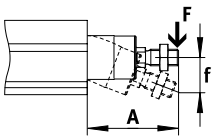
Size		32		45		60	
Spindle design		3P	8P	3P	10P	5P	12P
Fx_{max} (static)	[N]	150	150	450	450	1000	1000
Mx_{max}	[Nm]	0					
My_{max}, Mz_{max}	[Nm]	1.5		2.9		6.4	

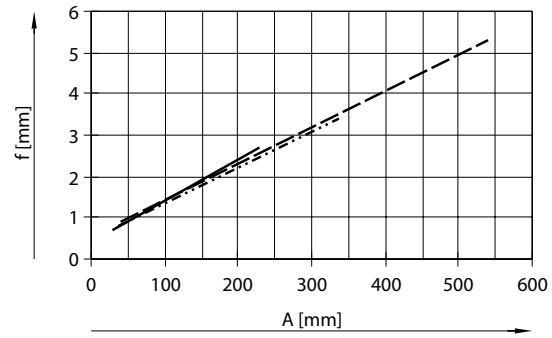
Note

Engineering software
Electric Motion Sizing
➔ www.festo.com/x/electric-motion-sizing

Datasheet

Piston rod deflection f_2 as a function of projection A and lateral force F





EPCS-BS-32 (F_2 = 3.5 N)
EPCS-BS-45 (F_2 = 4.0 N)
EPCS-BS-60 (F_2 = 8.0 N)

$$f_1 = \frac{F_1}{F_2} \cdot f_2$$

f_1 = Piston rod deflection caused by lateral force [mm]
F_1 = Lateral force [N]
F_2 = Standardised lateral force [N] (constant force from graph)
f_2 = Piston rod deflection caused by lateral force [N] (reading from graph)

Example: Electric cylinder EPCS-32-50-8P with a lateral force of 7 N
F_1 = 7 N and $F_{standard}$ = 3.5 N

Value read from graph for EPCS-32 and projection = 50 mm
f_2 = 1 mm

Calculation of deflection caused by lateral force:

$$f_1 = \frac{F_1}{F_2} \cdot f_2 = \frac{3\ N}{1{,}5\ N} \cdot 1\ mm = 2\ mm$$

Datasheet

Calculating the mean feed force F_{xm} with the electric cylinder EPCS

The peak feed force value must not exceed the maximum feed force within a movement cycle. The peak value is generally achieved in vertical operation during the acceleration phase of the upwards stroke. If the maximum feed force is exceeded, this can increase wear and thus shorten the service life of the ball screw. The maximum speed must likewise not be exceeded:

$F_x \leq F_{xmax}$
and
$v_x \leq v_{xmax}$

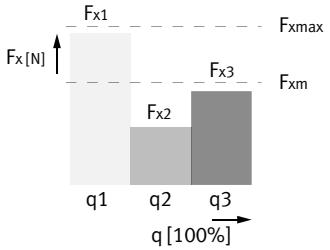
Calculating the mean feed force F_{xm} (to DIN 69051-4)

During operation, the continuous feed force may be briefly exceeded up to the maximum feed force. The continuous feed force must, however, be adhered to when averaged over a movement cycle:

$F_{xm} \leq F_{xcontinuous}$

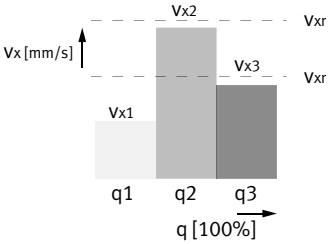
$$F_{xm} = \sqrt[3]{\sum F_x^3 \cdot \frac{v_x}{v_{xm}} \cdot \frac{q}{100}} =$$

$$F_{xm} = \sqrt[3]{F_{x1}^3 \cdot \frac{v_{x1}}{v_{xm}} \cdot \frac{q_1}{100} + F_{x2}^3 \cdot \frac{v_{x2}}{v_{xm}} \cdot \frac{q_2}{100} + F_{x3}^3 \cdot \frac{v_{x3}}{v_{xm}} \cdot \frac{q_3}{100} + \cdots}$$



Mean feed speed (to DIN 69051-4)

$$v_{xm} = \sum v_x \cdot \frac{q}{100} = v_{x1} \cdot \frac{q_1}{100} + v_{x2} \cdot \frac{q_2}{100} + v_{x3} \cdot \frac{q_3}{100} + \cdots$$

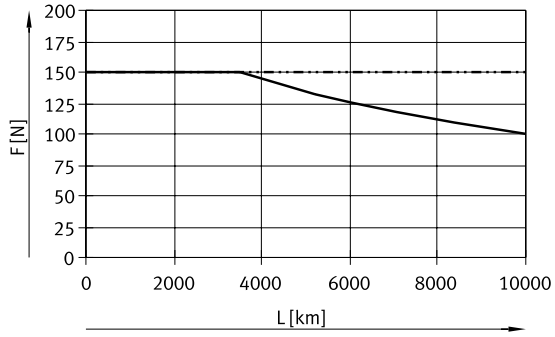


F_x	Feed force
F_{xm}	Mean feed force
$F_{xmax.}$	Max. feed force
$F_{xcontinuous}$	Continuous feed force
q	Time
v_x	Feed speed
v_{xm}	Mean feed speed
$v_{xmax.}$	Max. Feed speed

Datasheet

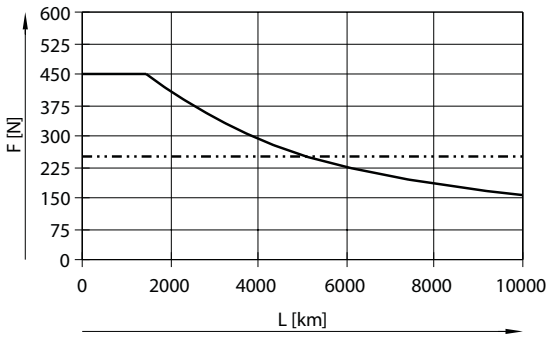
Mean feed force F_{xm} as a function of running performance L, with an operating coefficient f_B of 1.0 at room temperature

Size 32



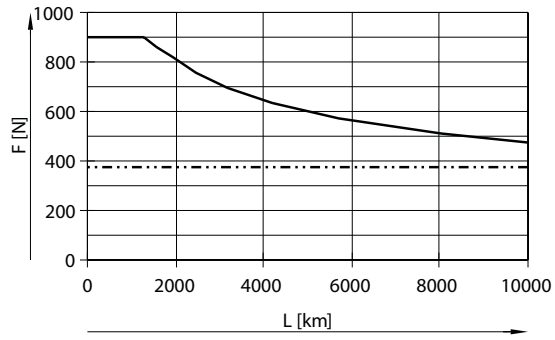
EPCS-BS-32-3P
EPCS-BS-32-8P

Size 45



EPCS-BS-45-3P
EPCS-BS-45-10P

Size 60



EPCS-BS-60-5P
EPCS-BS-60-12P

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

L_1 Actual service life
L Target service life (➔ graphs)
f_B Operating coefficient

Service life taking into account the operating coefficient

Load[1)]	Operating coefficient f_B	Sample application
None	1.0 ... 1.2	Measuring machine
Light	1.2 ... 1.4	Handling, robot technology
Medium	1.4 ... 1.6	Press-in operations
High	1.6 ... 2.0	Construction, agriculture

1) This refers to stress caused by impact, temperature, contamination, shock and vibrations that affect the cylinder or piston rod.

Note

The specifications for running performance are based on experimentally determined and theoretically calculated data (at room temperature). The running performance that can be achieved in practice can deviate considerably from the specified curves under different parameters.

Datasheet

Sizing example

Application data:

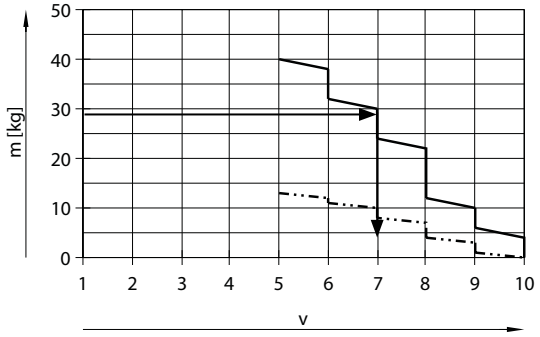
- Payload: 25 kg
- Mounting position: horizontal
- Motor mounting position: axial
- Stroke: 150 mm
- Max. permissible positioning time: 2 s (one direction)

Step 1: Selecting the smallest possible size from the table ➔ page 10

Mechanical data							
Size		32		45		60	
Spindle design		3P	8P	3P	10P	5P	12P
Max. payload							
Horizontal	[kg]	24	24	60	40	120	56
Vertical	[kg]	12	9	23	13	46	18

➔ Smallest possible size: EPCS-BS-45-10P

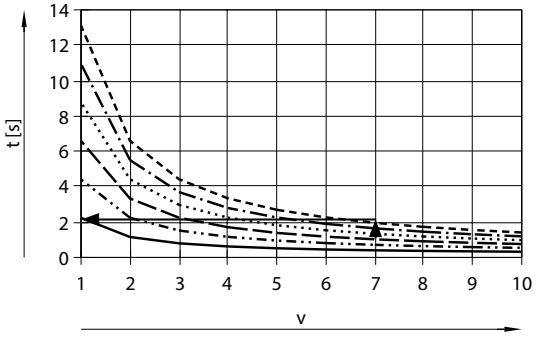
Step 2: Selecting the max. speed level v for payload m



Horizontal
Vertical

➔ Max. speed level for the payload: level 7

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



l = 50 mm
l = 100 mm
l = 150 mm
l = 200 mm
l = 250 mm
l = 300 mm

➔ Min. positioning time for 150 mm at level 7: 1 s

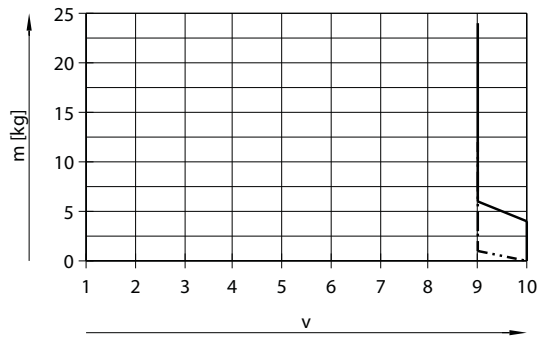
Result

The application can be implemented using EPCS-BS-45-150-10P. A minimum positioning time (one direction) of 1 s is achieved. Longer positioning times can be selected at any time using a lower speed level.

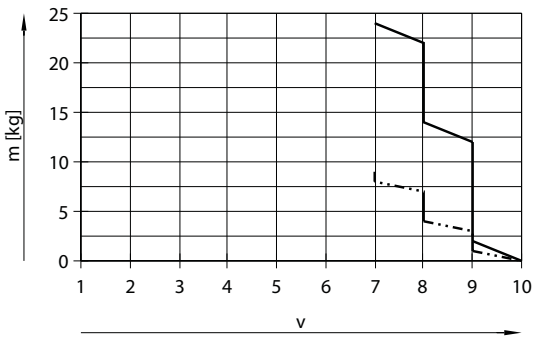
Datasheet

Mass m as a function of speed level v
With axial kit

EPCS-BS-32-3P

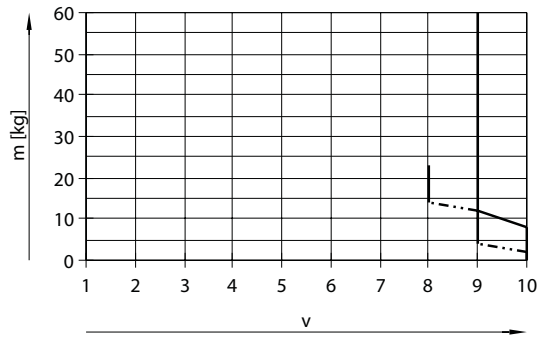


EPCS-BS-32-8P

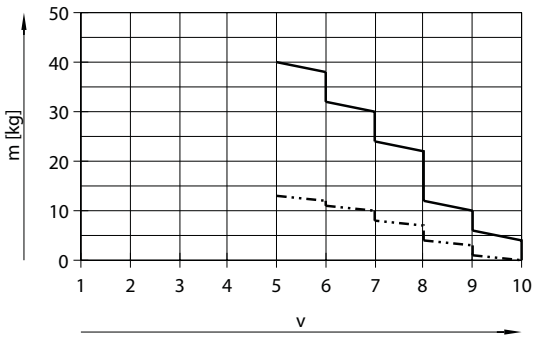


Horizontal
Vertical

EPCS-BS-45-3P

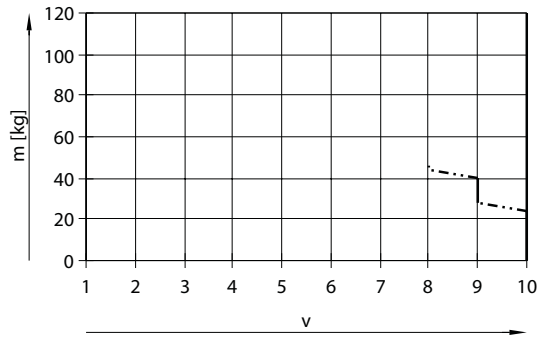


EPCS-BS-45-10P

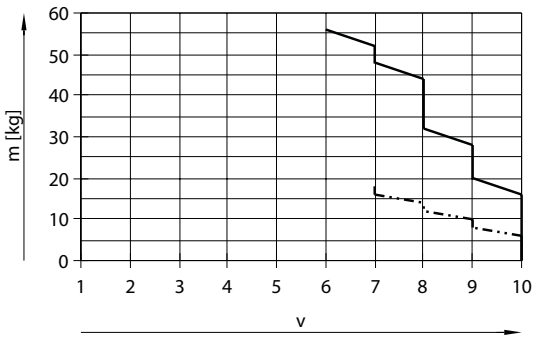


Horizontal
Vertical

EPCS-BS-60-5P



EPCS-BS-60-12P



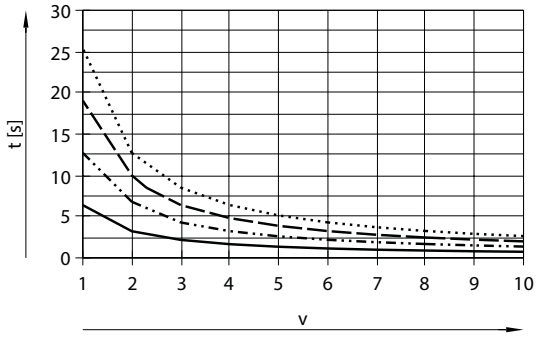
Horizontal
Vertical

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

Datasheet

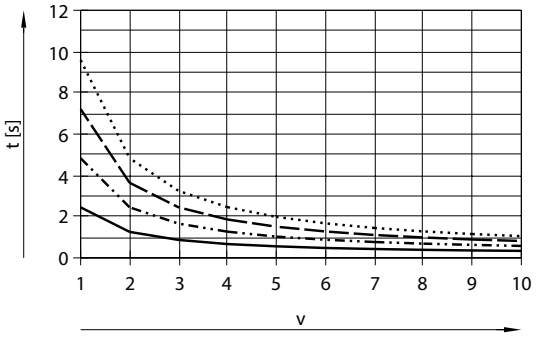
Positioning time t as a function of speed level v and stroke l
With axial kit

EPCS-BS-32-3P



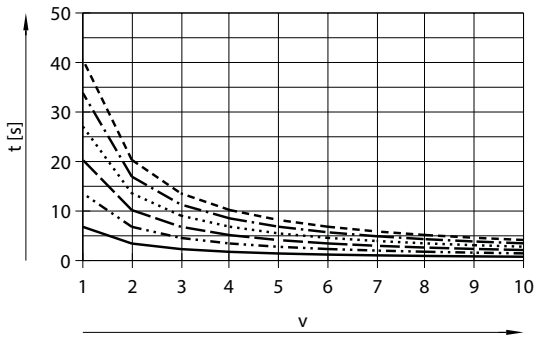
l = 50 mm
l = 100 mm
l = 150 mm
l = 200 mm

EPCS-BS-32-8P



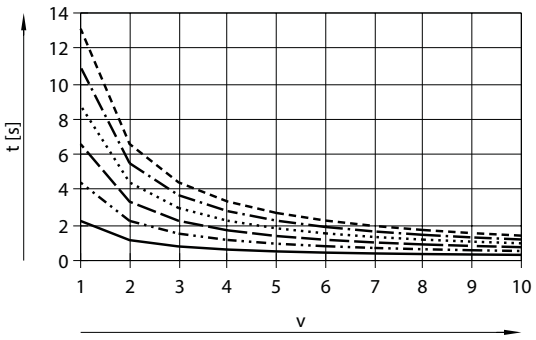
l = 50 mm
l = 100 mm
l = 150 mm
l = 200 mm

EPCS-BS-45-3P



l = 50 mm
l = 100 mm
l = 150 mm
l = 200 mm
l = 250 mm
l = 300 mm

EPCS-BS-45-10P

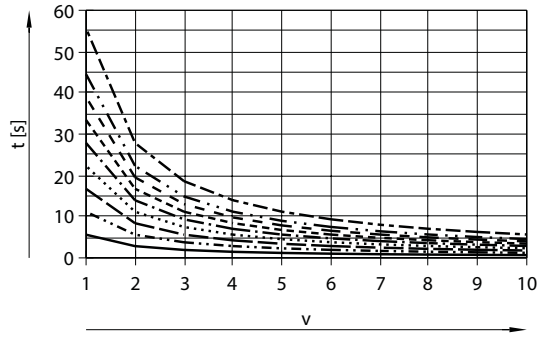


l = 50 mm
l = 100 mm
l = 150 mm
l = 200 mm
l = 250 mm
l = 300 mm

Datasheet

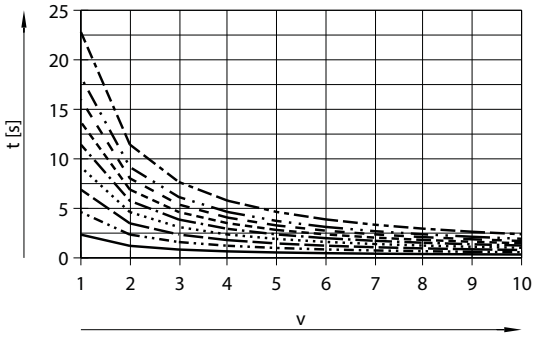
Positioning time t as a function of speed level v and stroke l
With axial kit

EPCS-BS-60-5P



- l = 50 mm
- l = 100 mm
- l = 150 mm
- l = 200 mm
- l = 250 mm
- l = 300 mm
- l = 350 mm
- l = 400 mm
- l = 500 mm

EPCS-BS-60-12P

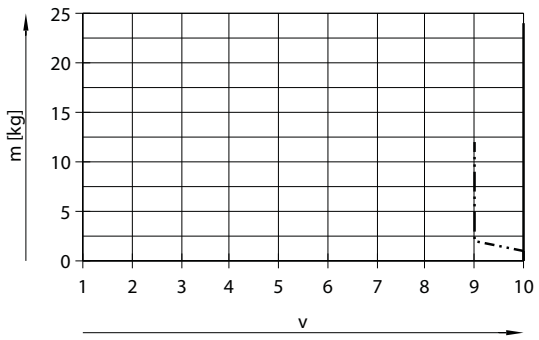


- l = 50 mm
- l = 100 mm
- l = 150 mm
- l = 200 mm
- l = 250 mm
- l = 300 mm
- l = 350 mm
- l = 400 mm
- l = 500 mm

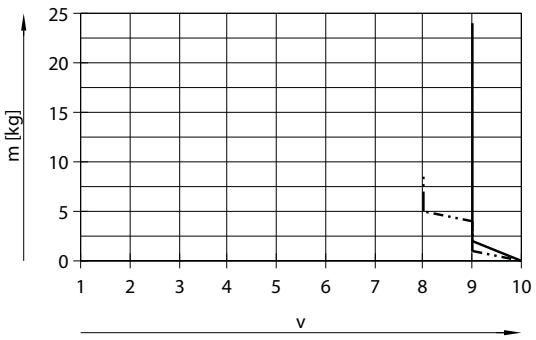
Datasheet

Mass m as a function of speed level v
With parallel kit

EPCS-BS-32-3P

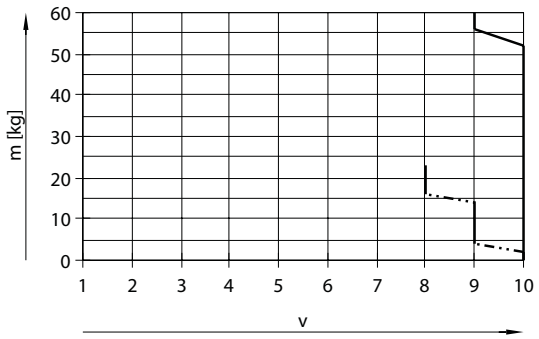


EPCS-BS-32-8P

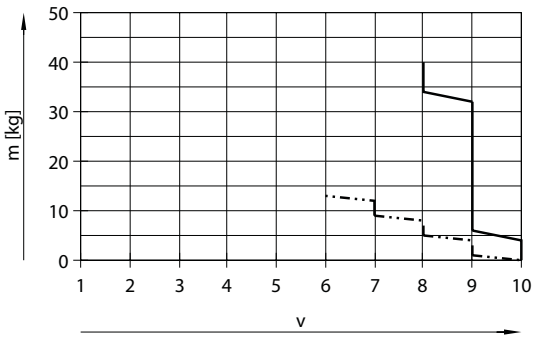


Horizontal
Vertical

EPCS-BS-45-3P

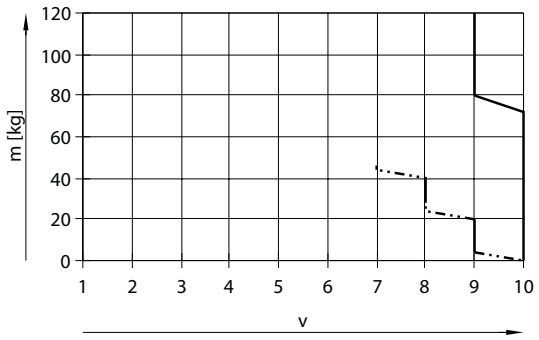


EPCS-BS-45-10P

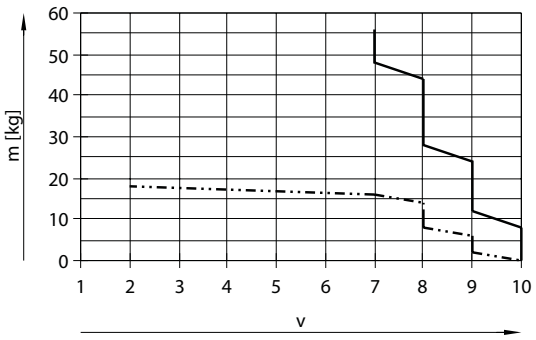


Horizontal
Vertical

EPCS-BS-60-5P



EPCS-BS-60-12P



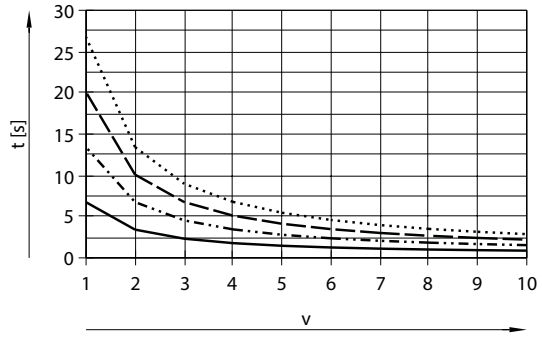
Horizontal
Vertical

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

Datasheet

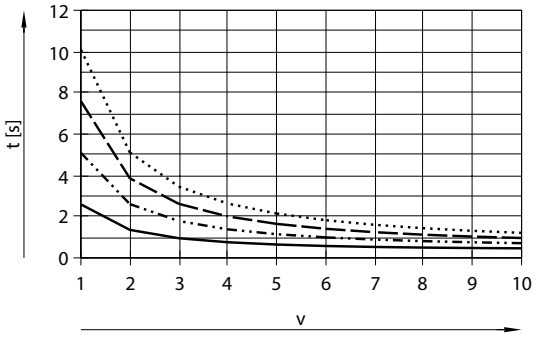
Positioning time t as a function of speed level v and stroke l
With parallel kit

EPCS-BS-32-3P



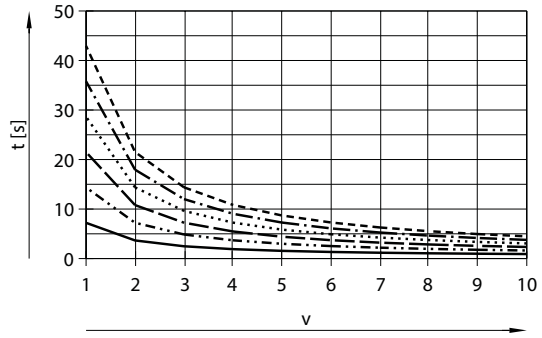
- l = 50 mm
- l = 100 mm
- l = 150 mm
- l = 200 mm

EPCS-BS-32-8P



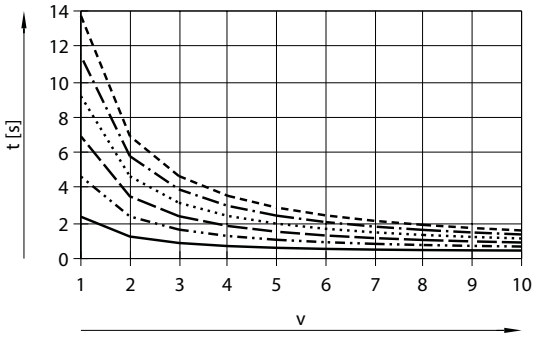
- l = 50 mm
- l = 100 mm
- l = 150 mm
- l = 200 mm

EPCS-BS-45-3P



- l = 50 mm
- l = 100 mm
- l = 150 mm
- l = 200 mm
- l = 250 mm
- l = 300 mm

EPCS-BS-45-10P

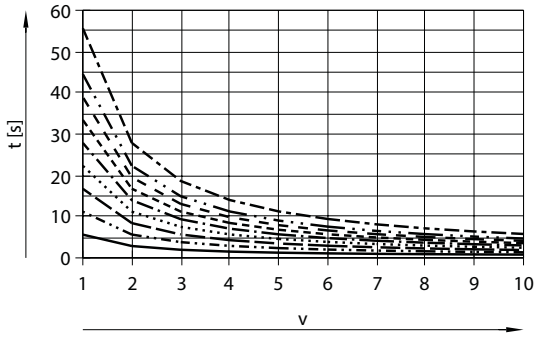


- l = 50 mm
- l = 100 mm
- l = 150 mm
- l = 200 mm
- l = 250 mm
- l = 300 mm

Datasheet

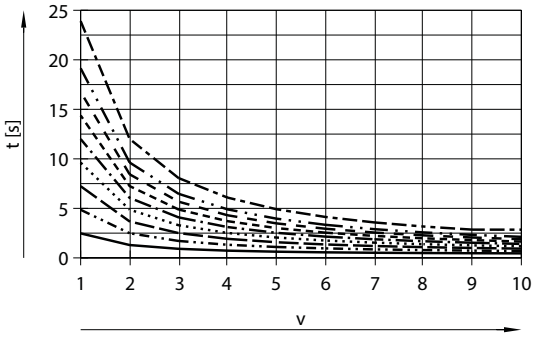
Positioning time t as a function of speed level v and stroke l
With parallel kit

EPCS-BS-60-5P



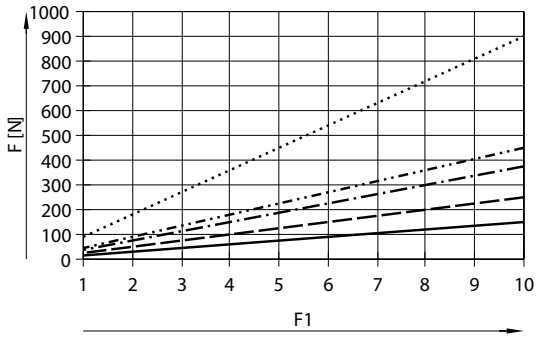
- l = 50 mm
- l = 100 mm
- l = 150 mm
- l = 200 mm
- l = 250 mm
- l = 300 mm
- l = 350 mm
- l = 400 mm
- l = 500 mm

EPCS-BS-60-12P



- l = 50 mm
- l = 100 mm
- l = 150 mm
- l = 200 mm
- l = 250 mm
- l = 300 mm
- l = 350 mm
- l = 400 mm
- l = 500 mm

Feed force F as a function of force level F1

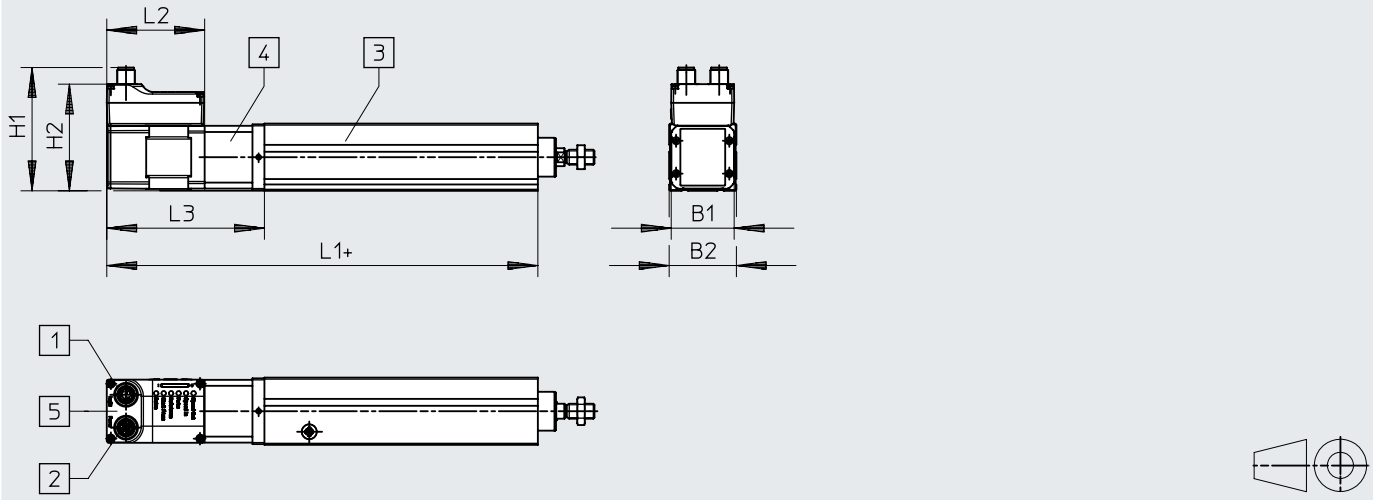


- EPCS-BS-32-3P/-8P
- EPCS-BS-45-3P
- EPCS-BS-45-10P
- EPCS-BS-60-5P
- EPCS-BS-60-12P

Datasheet

Dimensions – With axial motor

Download CAD data ➔ www.festo.com



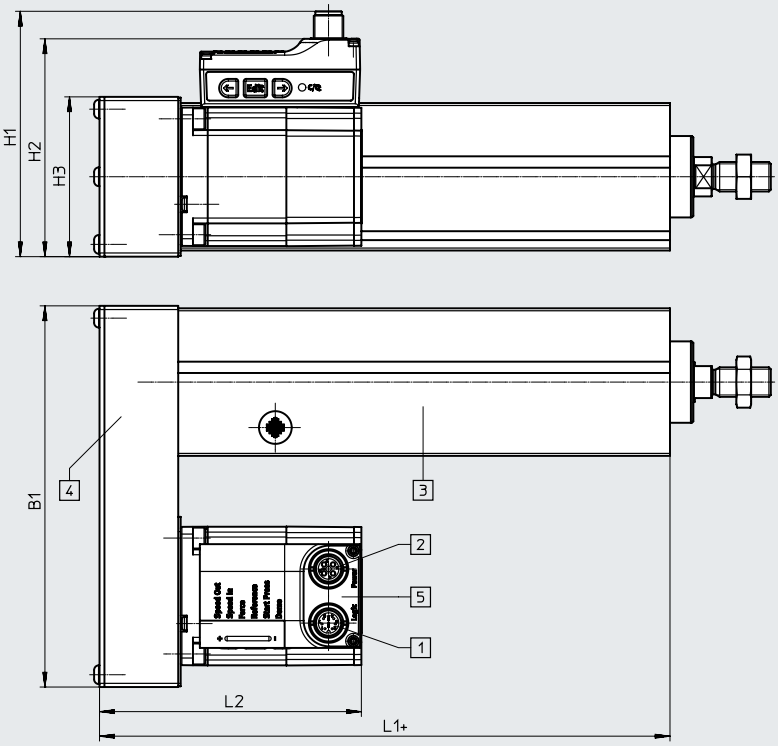
[1] Connection to logic interface
[2] Connection to power supply
[3] Electric cylinder
[4] Axial kit
[5] Motor
\+ plus stroke length

Size	B1	B2	H1	H2	L1	L2	L3
32	42.3	32	81.1	69.9	175.5	65.5	105.5
45	42.3	45	82.6	71.4	188.5	65.5	105.5
60	56.6	60	97.3	86.1	216.5	73.5	116.5

Datasheet

Dimensions – With parallel motor

Download CAD data ➔ www.festo.com



[1] Connection to logic interface
[2] Connection to power supply
[3] Electric cylinder
[4] Parallel kit
[5] Motor
\+ plus stroke length

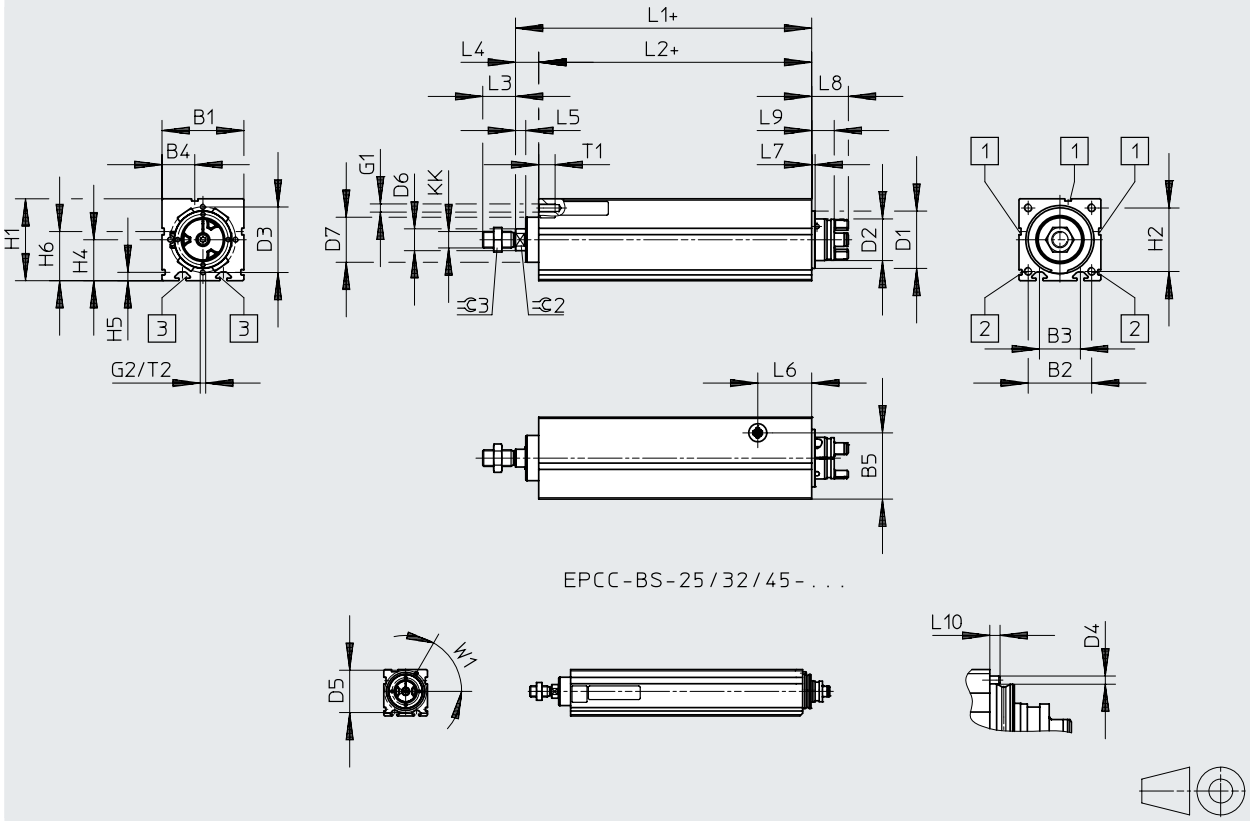
Dimensions for other motor mounting variants ➔ CAD data.

Size	B1	H1	H2	H3	L1	L2
32	111	83	72	45	94	90.7
45	111	83	72	45	107	90.7
60	155	100	90	65	132	107.7

Datasheet

Dimensions – Mechanical system

Download CAD data ➔ www.festo.com



[1] For sensor bracket
[2] For profile mounting
[3] For slot nut mounting
\+ plus stroke length

Note
Spanner flat ⊂2 can be aligned either way.

Size	B1 ±0.15	B2	B3	B4	B5	D1 ø	D2 ø	D3 ø	D4 ø
32	32	24	16	8.1	25.5	25	15.5	–	2
45	45	32.5	24	16.5	35	32	16.3	–	3
60	60	46.5	30	24	48.5	42	31.4	48	–

Size	D5 ø	D6 ø	D7 ø	G1	G2	H1 ±0.15	H2	H4	H5
32	31	10	21.3	M4	–	34	24	–	4.9
45	41	12	26.5	M5	–	45	32.5	–	6.1
60	–	16	33.6	M6	M4	60	46.5	30	6.1

Size	H6 +0.15	KK	L1	L2	L3	L4	L5	L6	L7
32	26	M8	82.9	70	16	12.9	5.2	24.2	6
45	28.5	M10x1.25	99.9	83	20	16.9	5.7	30.5	6
60	36	M12x1.25	116	100	24	16	7.5	39.5	2.5

Size	L8	L9	L10	T1	T2	W1	⊂2	⊂3
32	19.9	14.5	2.5	8	–	60°	9	13
45	19.9	14.5	3	10	–	60°	10	16
60	26.9	16.5	–	12	10	–	13	18

Datasheet

Ordering data

EPCS-BS-32

Stroke [mm]	Part no.	Type	Stroke [mm]	Part no.	Type
Spindle pitch 3 mm/rev			**Spindle pitch 8 mm/rev**		
50	**8118267**	**EPCS-BS-32-50-3P-A-ST-M-H1-PLK-AA**	50	**8118271**	**EPCS-BS-32-50-8P-A-ST-M-H1-PLK-AA**
100	**8118268**	**EPCS-BS-32-100-3P-A-ST-M-H1-PLK-AA**	100	**8118272**	**EPCS-BS-32-100-8P-A-ST-M-H1-PLK-AA**
150	**8118269**	**EPCS-BS-32-150-3P-A-ST-M-H1-PLK-AA**	150	**8118273**	**EPCS-BS-32-150-8P-A-ST-M-H1-PLK-AA**
200	**8118270**	**EPCS-BS-32-200-3P-A-ST-M-H1-PLK-AA**	200	**8118274**	**EPCS-BS-32-200-8P-A-ST-M-H1-PLK-AA**

EPCS-BS-45

Stroke [mm]	Part no.	Type	Stroke [mm]	Part no.	Type
Spindle pitch 3 mm/rev			**Spindle pitch 10 mm/rev**		
50	**8118275**	**EPCS-BS-45-50-3P-A-ST-M-H1-PLK-AA**	50	**8118281**	**EPCS-BS-45-50-10P-A-ST-M-H1-PLK-AA**
100	**8118276**	**EPCS-BS-45-100-3P-A-ST-M-H1-PLK-AA**	100	**8118282**	**EPCS-BS-45-100-10P-A-ST-M-H1-PLK-AA**
150	**8118277**	**EPCS-BS-45-150-3P-A-ST-M-H1-PLK-AA**	150	**8118283**	**EPCS-BS-45-150-10P-A-ST-M-H1-PLK-AA**
200	**8118278**	**EPCS-BS-45-200-3P-A-ST-M-H1-PLK-AA**	200	**8118284**	**EPCS-BS-45-200-10P-A-ST-M-H1-PLK-AA**
250	**8118279**	**EPCS-BS-45-250-3P-A-ST-M-H1-PLK-AA**	250	**8118285**	**EPCS-BS-45-250-10P-A-ST-M-H1-PLK-AA**
300	**8118280**	**EPCS-BS-45-300-3P-A-ST-M-H1-PLK-AA**	300	**8118286**	**EPCS-BS-45-300-10P-A-ST-M-H1-PLK-AA**

EPCS-BS-60

Stroke [mm]	Part no.	Type	Stroke [mm]	Part no.	Type
Spindle pitch 5 mm/rev			**Spindle pitch 12 mm/rev**		
50	**8118287**	**EPCS-BS-60-50-5P-A-ST-M-H1-PLK-AA**	50	**8118296**	**EPCS-BS-60-50-12P-A-ST-M-H1-PLK-AA**
100	**8118288**	**EPCS-BS-60-100-5P-A-ST-M-H1-PLK-AA**	100	**8118297**	**EPCS-BS-60-100-12P-A-ST-M-H1-PLK-AA**
150	**8118289**	**EPCS-BS-60-150-5P-A-ST-M-H1-PLK-AA**	150	**8118298**	**EPCS-BS-60-150-12P-A-ST-M-H1-PLK-AA**
200	**8118290**	**EPCS-BS-60-200-5P-A-ST-M-H1-PLK-AA**	200	**8118299**	**EPCS-BS-60-200-12P-A-ST-M-H1-PLK-AA**
250	**8118291**	**EPCS-BS-60-250-5P-A-ST-M-H1-PLK-AA**	250	**8118300**	**EPCS-BS-60-250-12P-A-ST-M-H1-PLK-AA**
300	**8118292**	**EPCS-BS-60-300-5P-A-ST-M-H1-PLK-AA**	300	**8118301**	**EPCS-BS-60-300-12P-A-ST-M-H1-PLK-AA**
350	**8118293**	**EPCS-BS-60-350-5P-A-ST-M-H1-PLK-AA**	350	**8118302**	**EPCS-BS-60-350-12P-A-ST-M-H1-PLK-AA**
400	**8118294**	**EPCS-BS-60-400-5P-A-ST-M-H1-PLK-AA**	400	**8118303**	**EPCS-BS-60-400-12P-A-ST-M-H1-PLK-AA**
500	**8118295**	**EPCS-BS-60-500-5P-A-ST-M-H1-PLK-AA**	500	**8118304**	**EPCS-BS-60-500-12P-A-ST-M-H1-PLK-AA**

Ordering data – Modular product system

Ordering table

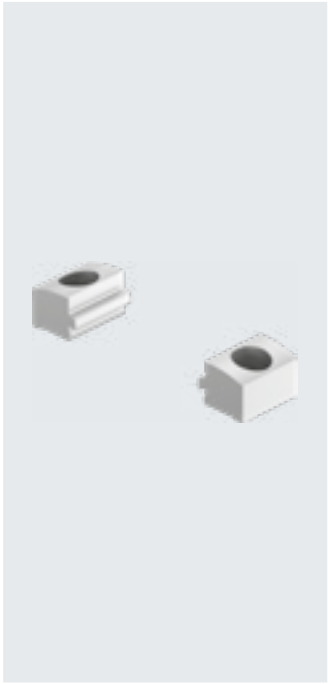
Size	32	45	60	Conditions	Code		Enter code
Module no.	8118264	8118265	8118266				
Series	EPCS				**EPCS**		EPCS
Drive system	Ball screw				**-BS**		-BS
Size	32	45	60		**-...**		
Stroke [mm]	25, 50, 75, 100, 125, 150, 175, 200	25, 50, 75, 100, 125, 150, 175, 200, 250, 300	25, 50, 75, 100, 125, 150, 200, 250, 300, 350, 400, 500		**-...**		
Spindle pitch [mm]	3	3	–		**-...P**		
	–	–	5				
	8	–	–				
	–	10	–				
	–	–	12				
Position sensing	Via proximity switch				**-A**		-A
Motor type	Stepper motor ST				**-ST**		-ST
Controller	Built in				**-M**		-M
Operator panel	Built in				**-H1**		-H1
Bus protocol/activation	NPN and IO-Link®				**-NLK**		
	PNP and IO-Link®				**-PLK**		
End-position detection	With integrated end-position sensing				**-AA**		-AA
Cable outlet direction	Standard			[1]			
	To the left			[2]	**-L**		
	Underneath			[3]	**-D**		
	To the right			[4]	**-R**		
Motor attachment position	Axial (standard)						
	Parallel, left			[5]	**-PL**		
	Parallel, right			[6]	**-PR**		
	Parallel, underneath			[7]	**-PD**		
	Parallel, top			[8]	**-PT**		
Electrical accessories	None						
	Adapter for operation as IO device				**+L1**		

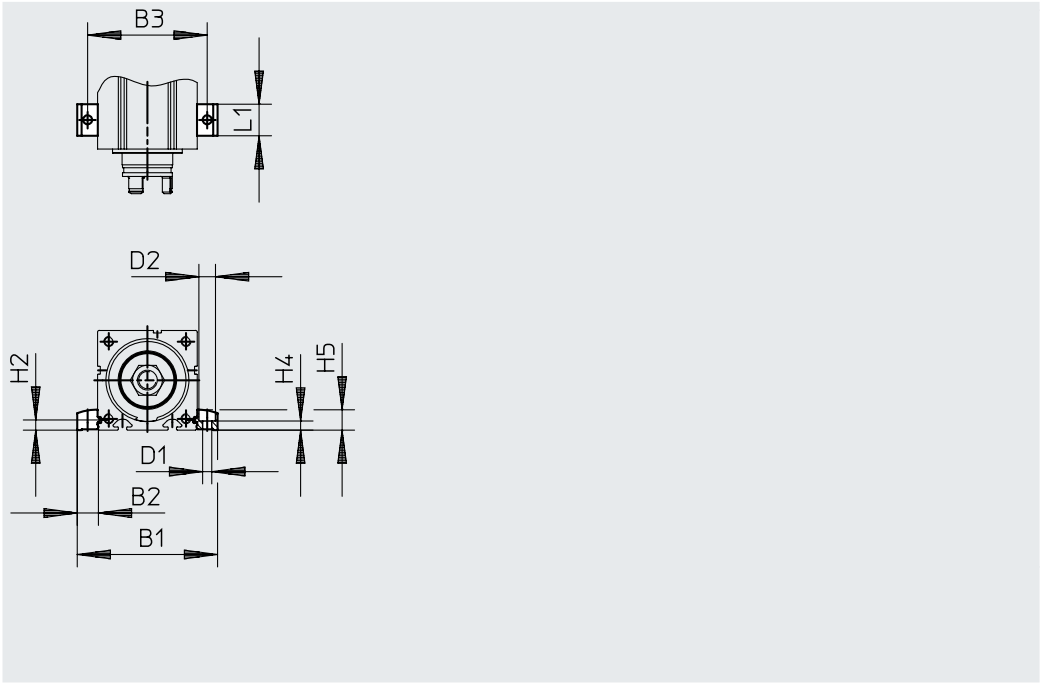
[1] Not with motor mounting position PD
[2] Not with motor mounting position PR
[3] Not with motor mounting position PT
[4] Not with motor mounting position PL
[5] Not in combination with cable outlet direction R
[6] Not in combination with cable outlet direction L
[7] Not in combination with cable outlet direction standard
[8] Not in combination with cable outlet direction D

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

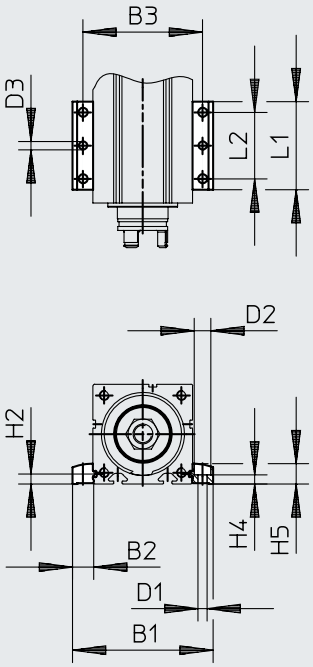
For size	B1	B2	B3	D1 ø H13	D2 ø H13	H2
32	51.4	9.7	42	4.5	8	4.9
45	70.6	12.8	58	5.5	10	6.1
60	85.6	12.8	73	5.5	10	6.1

For size	H4 ±0.1	H5	L1	Weight [g]	Part no.	Type
32	4.2	9	19	4	**5183153**	**EAHF-L2-25-P-S**
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

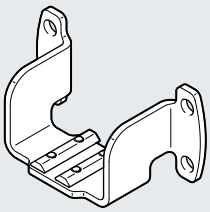
For size	B1	B2	B3	D1 ø H13	D2 ø H13	D3 ø	H2
32	51.4	9.7	42	4.5	8	4	4.9
45	70.6	12.8	58	5.5	10	5	6.1
60	85.6	12.8	73	5.5	10	5	6.1

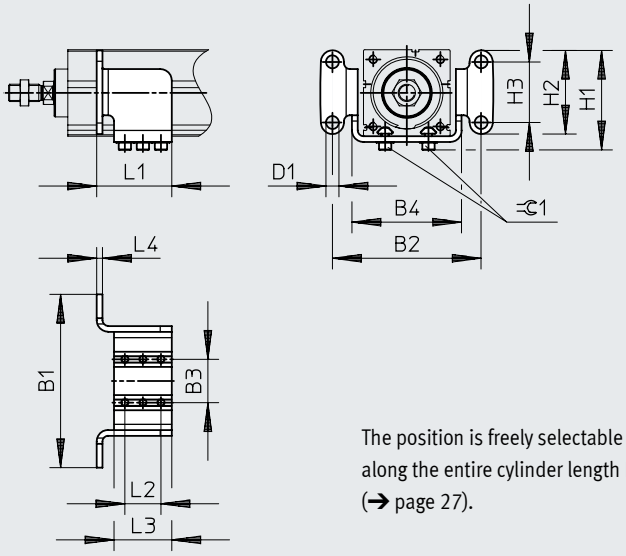
For size	H4 ±0.1	H5	L1	L2	Weight [g]	Part no.	Type
32	4.2	9	53	40	19	**4835684**	**EAHF-L2-25-P**
45	5.5	12.2	53	40	35	**4835728**	**EAHF-L2-45-P**
60	5.5	12.2	53	40	35	**4835728**	**EAHF-L2-45-P**

Accessories

Flange mounting EAHH

Material:
Galvanised steel
RoHS-compliant





The position is freely selectable along the entire cylinder length L2 (➔ page 27).

Dimensions and ordering data

For size	B1	B2	B3 ±0.1	B4	D1 ø	H1	H2	H3	L1
32	70	58	16	42	5.5	39	31	20	38
45	100	85	24	61	6.6	54.5	48	35	42
60	120	103	30	76	9	69	58	42	52

For size	L2	L3	L4	⌯1	CRC[1)]	Weight [g]	Part no.	Type
32	20	30	2.5	2.5	1	80	**5126157**	**EAHH-P2-32**
45	20	30	4	2.5	1	185	**5126669**	**EAHH-P2-45**
60	25	40	4	4	1	320	**5127005**	**EAHH-P2-60**

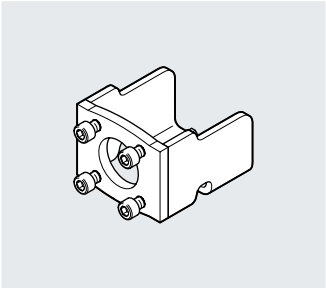
1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts that are covered in the application (e.g. drive trunnions).

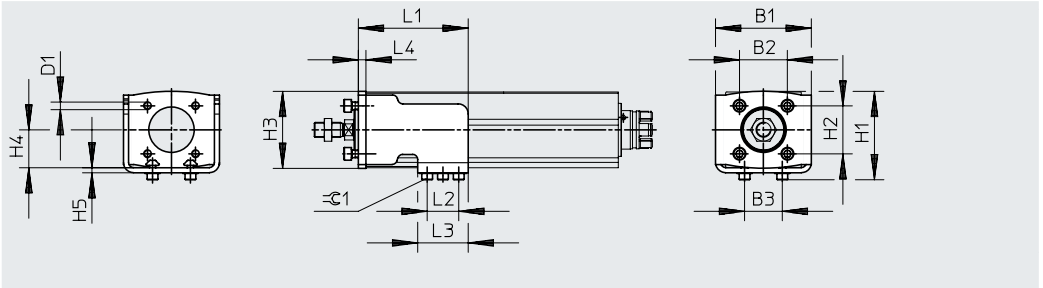
Accessories

Adapter kit EAHA

Material:
Galvanised steel

RoHS-compliant





Dimensions and ordering data

For size	B1	B2 ±0.2	B3 ±0.1	D1	H1	H2 ±0.2	H3	H4	H5
32	53	22	16	M5	42	22	37	18	2.5
45	61	32.5	24	M6	54	32.5	49	22.5	4
60	76	38	30	M6	69.5	38	61	30	4

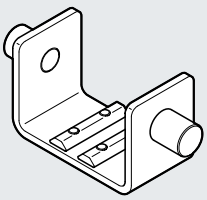
For size	L1	L2	L3	L4	⌀1	CRC[1)]	Weight [g]	Part no.	Type
32	64	20	30	4	2.5	1	165	**5173020**	**EAHA-P2-32**
45	68	20	30	6	2.5	1	340	**5172353**	**EAHA-P2-45**
60	87	25	40	6	4	1	560	**5173082**	**EAHA-P2-60**

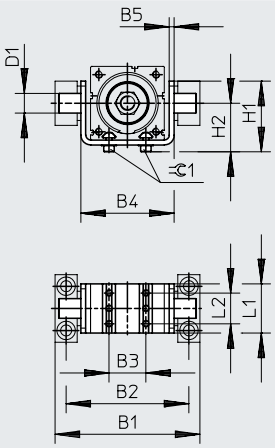
1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts that are covered in the application (e.g. drive trunnions).

Accessories

Swivel mounting EAHS

Material:
Galvanised steel
RoHS-compliant





The position is freely selectable along the entire cylinder length L2 (→ page 27).

Dimensions and ordering data

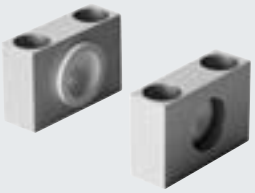
For size	B1	B2	B3 ±0.1	B4	B5	D1 ø e9	H1
32	68	57	16	42	2.5	8	32
45	98	83	24	62	4	12	44.5
60	118	100	30	76	4	16	57

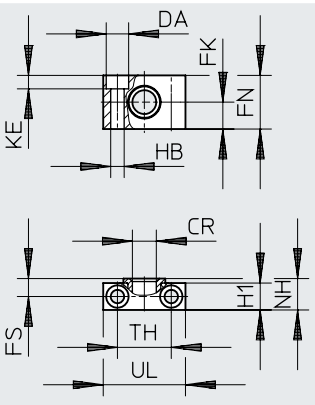
For size	H2	L1	L2	⊂1	CRC[1]	Weight [g]	Part no.	Type
32	23.5	30	20	2.5	1	75	**5125041**	**EAHS-P2-32**
45	29.5	30	20	2.5	1	165	**5125167**	**EAHS-P2-45**
60	39	40	25	4	1	305	**5125281**	**EAHS-P2-60**

1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts that are covered in the application (e.g. drive trunnions).

Trunnion support LNZG

Material:
Trunnion support: Anodised aluminium
Plain bearing: Plastic
Free of copper and PTFE
RoHS-compliant





Dimensions and ordering data

For size	CR ø D11	DA ø H13	FK ø ±0.1	FN	FS	H1	HB ø H13	KE	NH	TH ±0.2	UL	CRC[1]	Weight [g]	Part no.	Type
32	8	8	10	20	7.5	11	4.5	4.6	13	20	30	2	26	**1434912**	**LNZG-16**
45	12	11	15	30	10.5	15	6.6	6.8	18	32	46	2	83	**32959**	**LNZG-32**
60	16	15	18	36	12	18	9	9	21	36	55	2	129	**32960**	**LNZG-4 0/50**

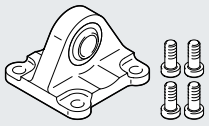
1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements that are in direct contact with a normal industrial environment.

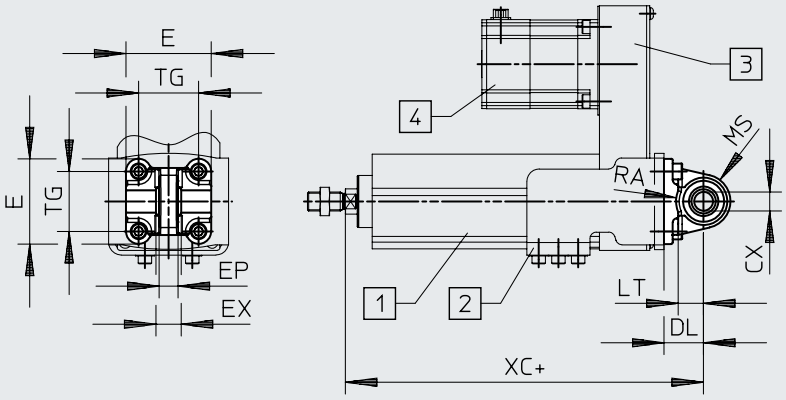
Accessories

Swivel flange SNCS

Material:
Die-cast aluminium

Free of copper and PTFE
RoHS-compliant





[1] Electric cylinder unit EPCS
[2] Adapter kit EAHA
[3] Motor mounting kit EAMM-U
[4] Motor
\+ = plus stroke length

Dimensions and ordering data

For size	CX	DL ±0.2	E	L	EP ±0.2	EX	LT
45	$10^{+0.13}$	22	$45_{+0.2/-0.5}$	3	10.5	14	13
60	$12^{+0.15}$	25	$54_{-0.5}$	3	12	16	16

For size	MS	RA	TG	XC	CRC[1)]	Weight [g]	Part no.	Type
45	15	14.5	32.5	154.9	1	86	**174397**	**SNCS-32**
60	17	17.5	38	182	1	122	**174398**	**SNCS-40**

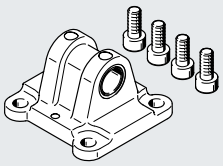
1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts that are covered in the application (e.g. drive trunnions).

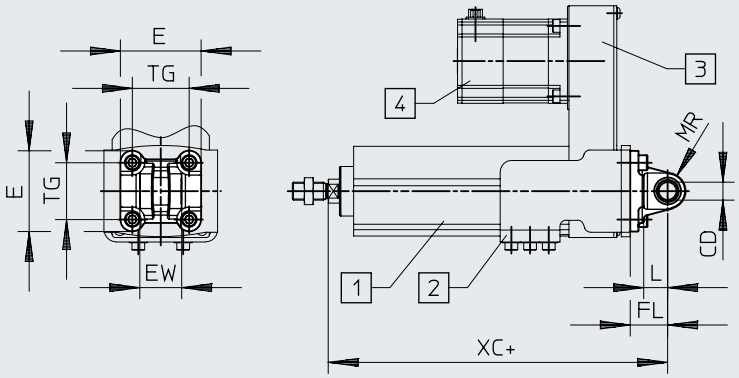
Accessories

Swivel flange SNCL

Material:
Wrought aluminium alloy

Free of copper and PTFE
RoHS-compliant





[1] Electric cylinder unit EPCS
[2] Adapter kit EAHA
[3] Motor mounting kit EAMM-U
[4] Motor
\+ = plus stroke length

Dimensions and ordering data

For size	CD Ø H10	E	EW h12	FL ±0.2	L	LT
25	6	$27.5_{-0.6}$	12_{h12}	16	3	10
32	8	$34.5_{-0.6}$	16_{h12}	20	3	14
45	10	$45_{+0.2/-0.5}$	$26_{-0.2/-0.6}$	22	3	13
60	12	$54_{-0.5}$	$28_{-0.2/-0.6}$	25	3	16

For size	MR	TG	XC	CRC[1)]	Weight [g]	Part no.	Type
25	6	18	115.7	2	21	**537791**	**SNCL-16**
32	8	22	133.9	2	38	**537792**	**SNCL-20**
45	10	32.5	154.9	1	71	**174404**	**SNCL-32**
60	12	38	182	1	95	**174405**	**SNCL-40**

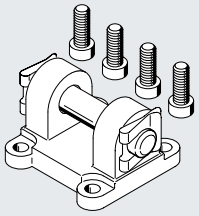
1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts that are covered in the application (e.g. drive trunnions).
Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements that are in direct contact with a normal industrial environment.

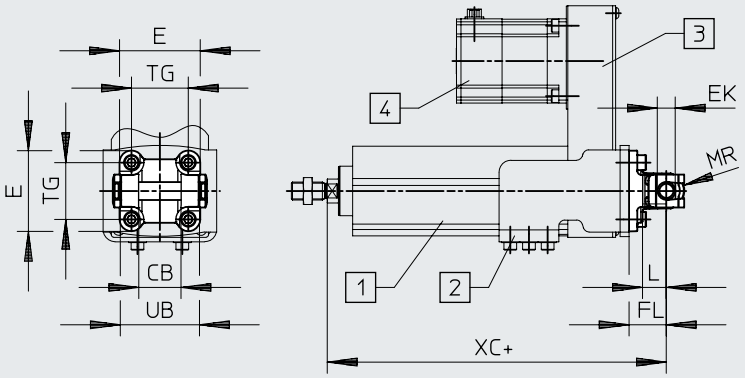
Accessories

Swivel flange SNCB

Material:
Die-cast aluminium

Free of copper and PTFE
RoHS-compliant





[1] Electric cylinder unit EPCS
[2] Adapter kit EAHA
[3] Motor mounting kit EAMM-U
[4] Motor
\+ = plus stroke length

Dimensions and ordering data

For size	CB H14	E	EK Ø H10/e8	FL ±0.2	L	LT	MR –0.5
45	26	$45^{+0.2/-0.5}$	10	22	3	13	8.5
60	28	$54_{-0.5}$	12	25	3	16	12

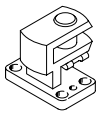
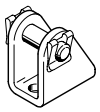
For size	TG	UB h14	XC	CRC[1)]	Weight [g]	Part no.	Type
45	32.5	45	154.9	1	103	**174390**	**SNCB-32**
60	38	52	182	1	155	**174391**	**SNCB-40**

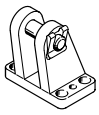
1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts that are covered in the application (e.g. drive trunnions).

Accessories

Ordering data – Mounting components

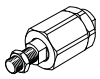
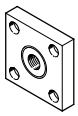
Datasheets → Internet: clevis foot

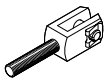
Designation	For size	Part no.	Type
Right angle clevis foot LQG			
	45	**31768**	**LQG-32**
	60	**31769**	**LQG-40**
Clevis foot LBN			
	32	**6059**	**LBN-20/25**

Designation	For size	Part no.	Type
Clevis foot LBG			
	45	**31761**	**LBG-32**
	60	**31762**	**LBG-40**

Ordering data – Piston rod attachments

Datasheets → Internet: piston rod attachment

Designation	For size	Part no.	Type
Rod eye SGS			
	32	**9255**	**SGS-M8**
	45	**9261**	**SGS-M10x1.25**
	60	**9262**	**SGS-M12x1.25**
Self-aligning rod coupler FK			
	32	**2062**	**FK-M8**
	45	**6140**	**FK-M10x1.25**
	60	**6141**	**FK-M12x1.25**
Coupling piece KSG			
	45	**32963**	**KSG-M10x1.25**
	60	**32964**	**KSG-M12x1.25**

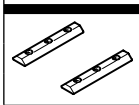
Designation	For size	Part no.	Type
Rod clevis SG			
	32	**3111**	**SG-M8**
	45	**6144**	**SG-M10x1.25**
	60	**6145**	**SG-M12x1.25**
Rod clevis SGA			
	45	**32954**	**SGA-M10x1.25**
	60	**10767**	**SGA-M12x1.25**

Ordering data – Push-in fitting for sealing air connection

	For size	Part no.	Type	PU[1]
	32	**133003**	**QSM-M5-3-I-R**	10
		133004	**QSM-M5-4-I-R**	
	45	**186266**	**QSM-G1/8-4-I**	
		186267	**QSM-G1/8-6-I**	
	60	**186108**	**QS-G1/4-6-I**	
		186110	**QS-G1/4-8-I**	

1) Packaging unit

Ordering data – Slot nut

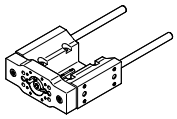
	For size	Description	Part no.	Type	PU[1]
	32, 45	For mounting the electric cylinder unit	**8169987**	**ABAN-3-3M3-30-M-P2**	2
	60		**8169988**	**ABAN-5-3M5-40-M-P2**	

1) Packaging unit

Accessories

Ordering data – Guide units

Datasheets → Internet: eagf

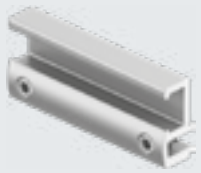


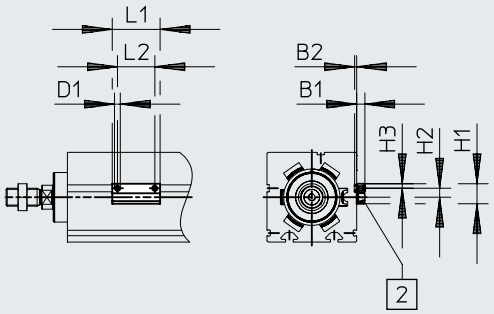
Stroke [mm]	Part no.	Type
For size 32		
50	**8158032**	**EAGF-P2-KF-32-50**
100	**8158029**	**EAGF-P2-KF-32-100**
150	**8158027**	**EAGF-P2-KF-32-150**
200	**8158028**	**EAGF-P2-KF-32-200**
25, 75, 125, 175	**8158030**	**EAGF-P2-KF-32-**
For size 45		
50	**8158131**	**EAGF-P2-KF-45-50**
100	**8158123**	**EAGF-P2-KF-45-100**
150	**8158125**	**EAGF-P2-KF-45-150**
200	**8158127**	**EAGF-P2-KF-45-200**
300	**8158130**	**EAGF-P2-KF-45-300**
25, 75, 125, 175, 250	**8158133**	**EAGF-P2-KF-45-**
For size 60		
100	**8158138**	**EAGF-P2-KF-60-100**
150	**8158140**	**EAGF-P2-KF-60-150**
200	**8158142**	**EAGF-P2-KF-60-200**
300	**8158031**	**EAGF-P2-KF-60-300**
25, 50, 75, 125, 175, 250, 350, 400, 500	**8158150**	**EAGF-P2-KF-60-**

Accessories

Sensor bracket EAPM-L2

Material:
Anodised wrought aluminium alloy
RoHS-compliant





[2] Proximity switch

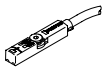
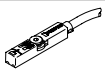
Dimensions and ordering data

For size	B1	B2	D1	H1	H2
32, 45, 60	5.5	1.3	M4	13.4	6

For size	H3	L1	L2	Weight [g]	Part no.	Type
32, 45, 60	3	32	25	4	**4759852**	**EAPM-L2-SH**

Ordering data – Proximity switch for T-slot, magneto-resistive

Datasheets → Internet: smt

	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part no.	Type
N/O						
	Inserted in the slot from above, flush with the cylinder profile, short design	PNP	Cable, 3-core	2.5	**574335**	**SMT-8M-A-PS-24V-E-2.5-OE**
			Plug M8x1, 3-pin	0.3	**574334**	**SMT-8M-A-PS-24V-E-0.3-M8D**
		NPN	Cable, 3-core	2.5	**574338**	**SMT-8M-A-NS-24V-E-2.5-OE**
			Plug M8x1, 3-pin	0.3	**574339**	**SMT-8M-A-NS-24V-E-0.3-M8D**
N/C						
	Inserted in the slot from above, flush with the cylinder profile, short design	PNP	Cable, 3-core	7.5	**574340**	**SMT-8M-A-PO-24V-E-7.5-OE**
		NPN		2.5	**8138000**	**SMT-8M-A-NO-24V-E-2.5-OE**
				7.5	**8138001**	**SMT-8M-A-NO-24V-E-7.5-OE**

Ordering data – Connecting cables

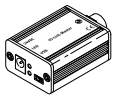
Datasheets → Internet: nebu

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

Accessories

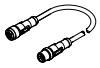
Ordering data – IO-Link master USB

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**

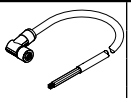
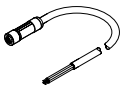
Ordering data – Adapter

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	0.3	**8080777**	**NEFC-M12G8-0.3-M12G5-LK**

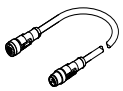
Ordering data – Supply cables

Datasheets → Internet: nebl

	Electrical connection, left	Electrical connection, right	Cable length [m]	Part no.	Type
	Angled socket, M12x1, 4-pin	Cable, open end, 4-core	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-core	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-core	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-core	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.