

FESTO

Features

At a glance

General remarks

- A gantry that is characterised by high functionality in compact installation spaces
- The drive concept provides a low moving mass.
- Perfectly matching drive and controller package
- The kinematics are actuated via 2 stepper motors with integrated optical encoder (closed loop) and one matching two-axis controller
- Can be actuated using two operating modes:
 - Direct mode via Ethernet and CAN
 - Record selection via digital I/O,
 Ethernet and CAN
- EXCM-30/-40 permits flexible motor mounting

Sample applications

- Feeding, pressing, joining components
- Dispensing liquid media
- Mounting electronic components

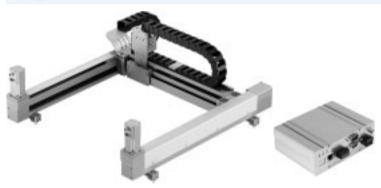
EXCM-10



EXCM-30



EXCM-40

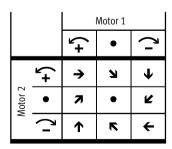


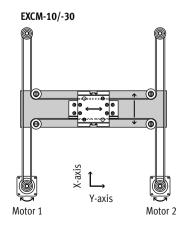
Operating principle

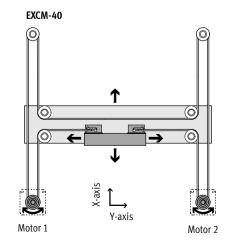
A slide is moved in a two-dimensional space (X-axis/Y-axis) via a toothed belt. The system is powered via 2 fixed motors in position-controlled

operation (closed loop). The motors are coupled to the toothed belt. The belt is guided via guide pulleys so that

the slide can move to any position in a working space when the motors are actuated accordingly.







Key features



Planar surface gantry					
Туре		EXCM-10 EXCM-30		EXCM-40	
Guide		Plain-bearing guide	Recirculating ball bearing guide	Recirculating ball bearing guide	
Stroke of the					
X-axis	[mm]	150, 260, 300, 360, 460, 700	100, 150, 200, 300, 400, 500	-	
		-	90 700	200 2000	
Y-axis	[mm]	110	110, 160, 210, 260, 310, 360,	-	
			410, 460, 510		
		-	110 510	200 1000	
Rated load for max. dynamic response ¹⁾	[kg]	0.5	2/3 ²⁾	4	
Repetition accuracy	[mm]	±0.1	±0.05	±0.1	
Mounting position		Horizontal	Any	Horizontal	
Controller		Attached	Separate	Separate	
Further technical data		→ 6	→ 12	→ 28	

¹⁾ Rated load = tool load (attachment components) + payload

²⁾ Vertical/horizontal mounting position

Controller					
For planar surface gantry		EXCM-10	EXCM-30	EXCM-40	
Can be ordered through modular prod	uct system EX	CME			
Load voltage	[V DC]	24		-	
Nominal current	[A]	2.8	6	-	
Switching logic		NPN		-	
Safety function to EN 61800-5-2		-		-	
Configuration support		FCT (Festo Configuration Tool) with	olug-in EXCM	-	
Technical data		→ 47		-	
Can be ordered through modular prod	uct system EX	^MDF			
Load voltage	[V DC]	_	48 or 24		
Nominal current					
	[A]	-	10		
Switching logic		_	PNP		
Safety function to EN 61800-5-2		-	Safe torque off (STO)		
Configuration support		- FCT (Festo Configuration Tool) with plug-in CMXH			
Technical data		-	→ Internet: cmxh		

FCT software - Festo Configuration Tool

Software platform for electric drives from Festo



- All drives in a system can be managed and saved in a common project
- Project and data management for all supported type of equipment
- Easy to use thanks to graphically supported parameter entry
- Universal mode of operation for all drives
- Work offline at your desk or online at the machine

Record table



- 31 records ensure flexible positioning
- The following parameters can be set flexibly for each application:
 - Position
 - Speed
 - Acceleration
 - Return (only with controller CMXH)
- Absolute or relative positioning values can be used
- Complete performance test

Planar surface gantries EXCM Key features

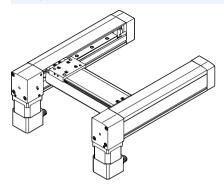


Further technical data → 12

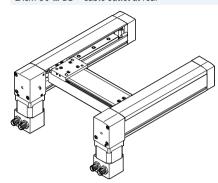
EXCM-30 - Motor mounting variants

Underneath

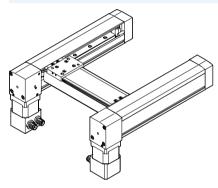
EXCM-30-...-B1 – Cable outlet at front



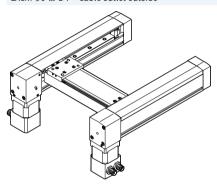
EXCM-30-...-B2 - Cable outlet at rear



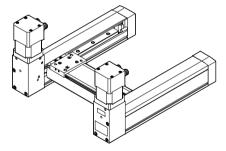
EXCM-30-...-B3 - Cable outlet inside



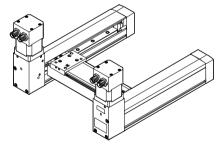
EXCM-30-...-B4 - Cable outlet outside



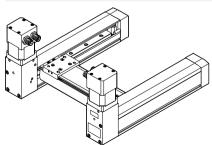
EXCM-30-...-T1 – Cable outlet at front



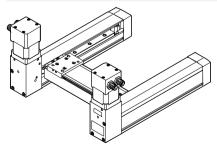
EXCM-30-...-T2 – Cable outlet at rear



EXCM-30-...-T3 - Cable outlet inside



EXCM-30-...-T4 - Cable outlet outside



Planar surface gantries EXCMKey features

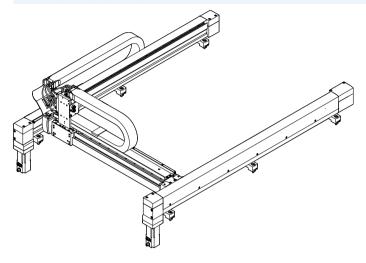
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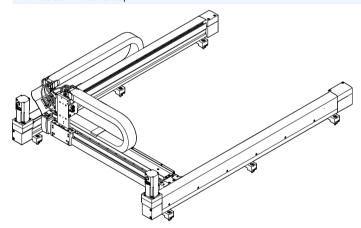
EXCM-40 – Motor mounting variants

EXCM-40-...-B – Motor underneath

Further technical data → 28

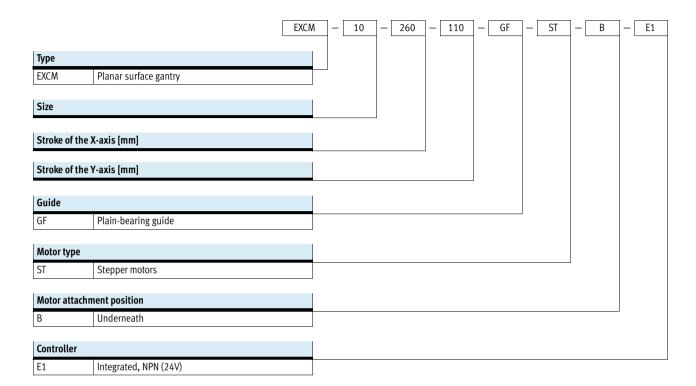


EXCM-40-...-T – Motor on top



Planar surface gantries EXCM-10 Type codes

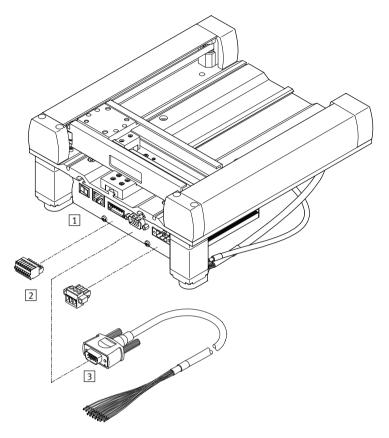






Planar surface gantries EXCM-10 Peripherals overview





Accessories							
Туре	Description	→ Page/Internet					
1 Drive package comprising controller, motor, motor cable	Included in the scope of delivery of the planar surface gantry	11					
3 Control cable NEBC-S1H15	For I/O interface to any controller	57					
2 Plug connector	Included in the scope of delivery of the planar surface gantry	-					





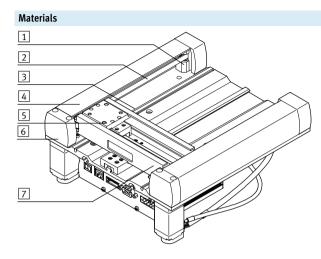
General technical data		
Design		Planar surface gantry
Guide		Plain-bearing guide
Stroke of the		
X-axis	[mm]	150, 260, 300, 360, 460, 700
Y-axis	[mm]	110
Rated load for max. dynamic response ¹⁾	[kg]	0.5
Nominal torque of motor	[Nm]	0.127
Motor holding torque	[Nm]	0.127
Max. acceleration	$[m/s^2]$	3
Max. speed	[m/s]	0.3
Repeat accuracy	[mm]	±0.1
Mounting position		Horizontal
Type of mounting		Via through-hole and screw

¹⁾ Rated load = tool load (attachment components) + payload

Operating and environmental conditions					
Degree of protection		IP20			
Ambient temperature	[°C]	+10 +45			
Storage temperature	[°C]	-10 +60			
Relative humidity	[%]	0 90 (non-condensing)			
Noise level	[dB(A)]	38			
Duty cycle	[%]	100			
CE marking (see declaration of co	onformity)	To EC Machinery Directive			

Planar surface gantries EXCM-10 Technical data



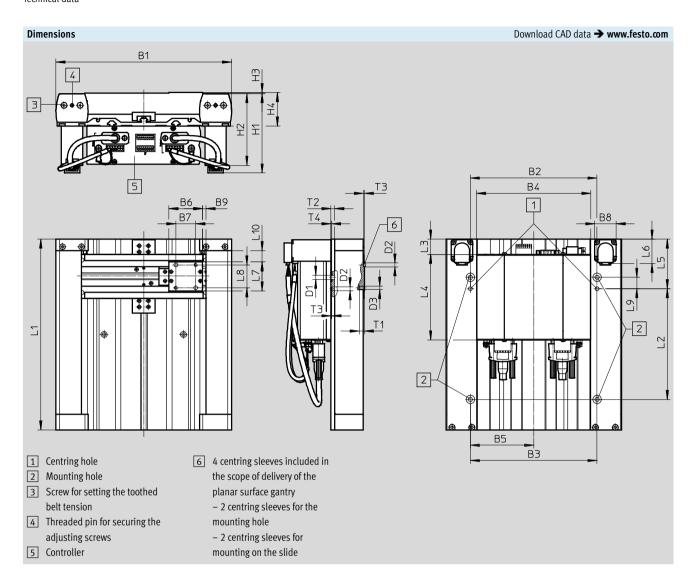


Mat	erials	
1	Guide pulley	Aluminium
2	Toothed belt	Polychloroprene with glass cord
3	Base plate	Aluminium
4	Cover	
	X-axis	Polymer
	Y-axis	Polymer
5	Slides	Aluminium
6	End cap	Aluminium
7	Y-traverse	Aluminium
-	Guide	Aluminium
	Ball bearings	Steel
	Note on materials	RoHS compliant
		Contains paint-wetting impairment substances

Weight [g]	Weight [g]					
Product weigh	Product weight with stroke (with motors and controller)					
X-axis	Y-axis					
150	110	3300				
260	110	3800				
300	110	4000				
360	110	4200				
460	110	4700				
700	110	5700				

Planar surface gantries EXCM-10 Technical data





Planar surface gantries EXCM-10 Technical data



Туре	B1	B2	В3	B4		B5	В	36	B7	B8	В9
		±0.03	±0.2			±0.2			±0.03		
EXCM-10	230	166	166	149	9	83	4	4	26	28	4.7
Туре	D1	D2	D3	H1		H2	H	13	H4	L3	L4
	Ø	Ø									
		H7		+1.35/-	1.15				±1		
EXCM-10	5.5	5	M4	103	.7	93.2	1	.6	44.8	0 50	112
Туре	L5	L6	L7	L8	L9	L1	0	T1	T2	T3	T4
	±0.1			±0.03	±0.1					+0.3	
EXCM-10	65	32	38	30	15	14.	.8	6.7	5	1.2	1

Stroke-dependent dimensio	Stroke-dependent dimensions						
Туре	L1	L2					
	+0.4	±0.2					
EXCM-10-150-110	250	145					
EXCM-10-260-110	360	255					
EXCM-10-300-110	400	295					
EXCM-10-360-110	460	355					
EXCM-10-460-110	560	455					
EXCM-10-700-110	800	695					

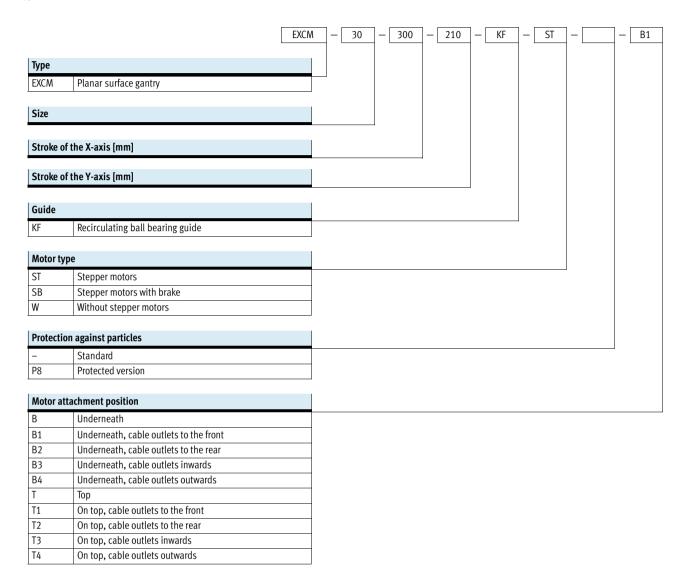
Ordering data			
EXCM-10	Stroke (X-axis) [mm]	Part No.	Туре
	150	1801920	EXCM-10-150-110-GF-ST-B-E1
	260	1801915	EXCM-10-260-110-GF-ST-B-E1
	300	1801917	EXCM-10-300-110-GF-ST-B-E1
	360	1801918	EXCM-10-360-110-GF-ST-B-E1
	460	1801916	EXCM-10-460-110-GF-ST-B-E1
	700	1801919	EXCM-10-700-110-GF-ST-B-E1

- New Key feature P8

Planar surface gantries EXCM-30

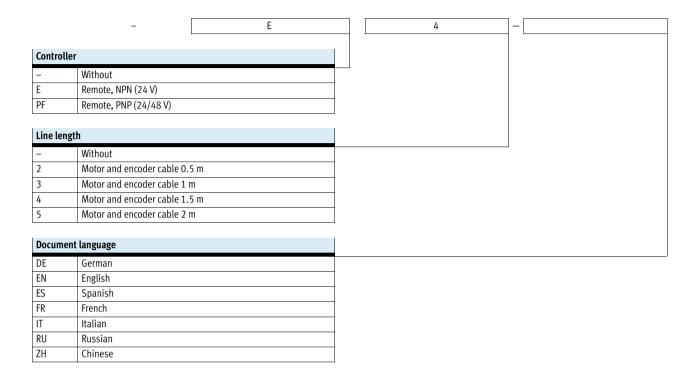
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Type codes



Planar surface gantries EXCM-30 Type code





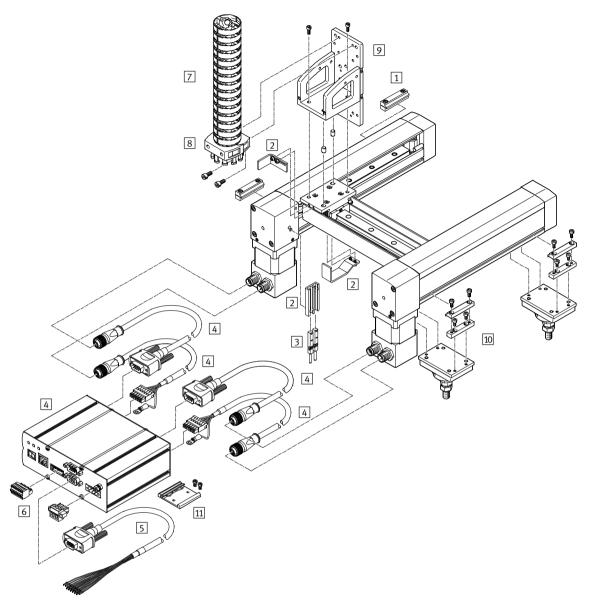


·O· New Key feature P8

Planar surface gantries EXCM-30

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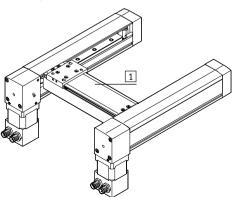
Peripherals overview



Variants and accessories

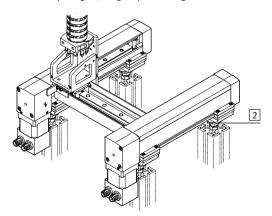
1 With protection against particles EXCM-...-P8

The cover protects the guide of the Y-axis against contamination.



2 With adjusting kit EADC-E11

With the adjusting kit, the gantry can be aligned after installation.



Planar surface gantries EXCM-30 Peripherals overview



Accessories		
Туре	Description	→ Page/Internet
1 Profile mounting	Included in the scope of delivery of the planar surface gantry:	50
MUE	• X-stroke < 500 mm: 2 pairs	
	• X-stroke ≥ 500 mm: 3 pairs	
2 Sensor mounting	For homing in combination with third-party motors	52
EAPR		
3 Proximity sensor		56
SIES-8M		
4 Drive package comprising controller	Available with or without drive package	26
motor, motor cable		
5 Control cable	For the I/O interface to any controller	57
NEBC-S1H15		
6 Plug connector	Included in the scope of delivery of the drive package	-
7 Energy chain	For the cable routing of the Z-axis	53
EADH-U-3D		
8 Connection set	Holder for mounting the energy chain	53
	Included in the scope of delivery:	
	• 2 connectors	
	• 4 socket head screws M4x10	
9 Mounting kit	Mounting kit for the energy chain and a Z-axis, like EGSL, DGSL, EGSK	51
EAHT-E9	Stroke reduction in combination with mounting kit EAHT → 21	
10 Adjusting kit	Height-adjustable mounting kit	50
EADC-E11		
11 H-rail mounting	For mounting the controller to an H-rail to EN 50022	49
CAFM-D3		



- Note

Homing is always carried out using the mechanical stop in combination with the drive package from Festo; the

sensor mounting and proximity sensor are not required in this case.



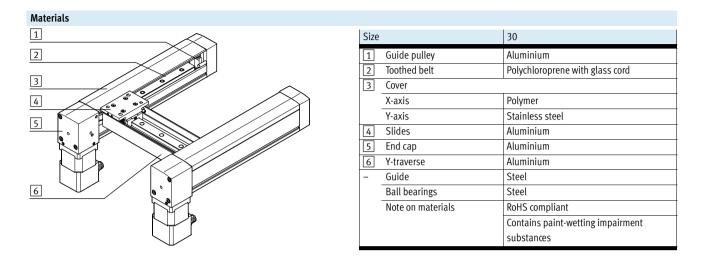
General technical data		
Design		Planar surface gantry
Guide		Recirculating ball bearing guide
Stroke of the		
X-axis	[mm]	100, 150, 200, 300, 400, 500
		90 700
Y-axis	[mm]	110, 160, 210, 260, 310, 360, 410, 460, 510
		110 510
Rated load for max. dynamic response ¹⁾	[kg]	2/3 ²⁾
Max. process force ³⁾	[N]	100
Max. torque		→ 18
Max. no-load torque		→ 18
Nominal torque of motor	[Nm]	0.5
Motor holding torque	[Nm]	0.5
Max. acceleration		
EXCME	[m/s ²]	10
EXCMPF	[m/s ²]	20/10 ⁴⁾
Max. speed		
EXCME	[m/s]	0.5
EXCMSBPF	[m/s]	0.5
EXCMSTPF	[m/s]	1.0/0.5 ⁴⁾
Repeat accuracy	[mm]	±0.05
Mounting position		Any ⁵⁾
Type of mounting		
Planar surface gantry		With profile mounting
Controller		Via H-rail, on base plate

- 1) Rated load = tool load (attachment components) + payload
 2) Vertical/horizontal mounting position. Applies to EXCM-...-E with stroke of the Y-axis of 360 mm → 17
 3) Perpendicular to working plane, at standstill
 4) In case of a load supply of 48 V/24 V
 5) Motors with brake must be used in the case of vertical installation

Operating and environmental conditi	Operating and environmental conditions							
Degree of protection		IP20						
Ambient temperature	[°C]	+10 +45						
Storage temperature	[°C]	-10 +60						
Relative humidity	[%]	0 90 (non-condensing)						
Noise level	[dB(A)]	52						
Duty cycle	[%]	100						
CE marking (see declaration of conform	nity)	To EU Machinery Directive						



Technical data



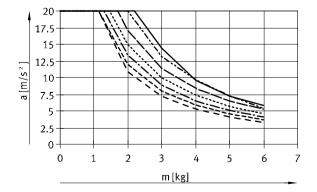
Weight [kg]	
Product weight with 0 mm stroke (witho	t rated load, motors and controllers)
EXCM	1.73
EXCMP8	1.80
Y-axis (without slide)	0.34/0.4 ¹⁾
Additional weight per 50 mm stroke	
X-axis	0.237
Y-axis	0.120/0.132 ¹⁾
Weight	
2 motors	0.9
2 motors with brake	1.5
Controller	0.65

¹⁾ Standard/with protection against particles P8

Acceleration a as a function of the payload \boldsymbol{m} and stroke of the Y-axis

The following data applies to a horizontal mounting position and refers to the service life of the mechanical system of 3,500 km. For vertical installation positions, please get in touch with your local contact at Festo.

The centre of gravity of the slide is at the height of the slide in the Z-direction and in the centre of the slide in the X-/Y-directions.



Stroke, Y-axis = 110/160/210 mm
Stroke, Y-axis = 260 mm
Stroke, Y-axis = 310 mm
Stroke, Y-axis = 360 mm
Stroke, Y-axis = 410 mm
Stroke, Y-axis = 460 mm
Stroke, Y-axis = 510 mm

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Technical data

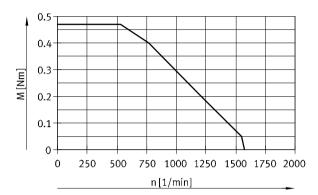
Torque M as a function of rotational speed n

Typical motor characteristic curve with nominal voltage and optimal controller.

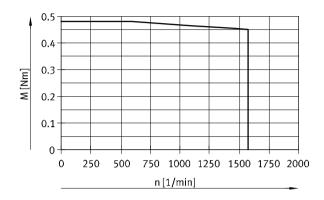
In combination with:

EXCM-...-ST-...-E or EXCM-...-ST-...-PF (at 24 V)

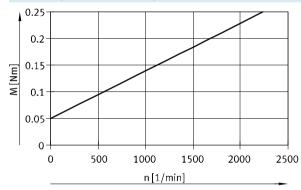
EXCM-...-SB-...-PF (at 48 V)



In combination with: EXCM-...-ST-...-PF (at 48 V)



No-load torque M as a function of speed n



Characteristic load values

The centre of gravity of the slide is at the height of the slide in the Z-direction and in the centre of the slide in the X-/Y-directions.

The system is subject to the greatest load in the case of 45° travel.

The following data apply in this case:

Formula for calculating the required torque M and the required rotational speed n

$$M_{45^{\circ}} = a \times (4.28 \times m_L + 2.14 \times m_{Av} + 23.38 \times J_m + 0.56) \times 10^{-3} + M_R$$

 $n_{45^{\circ}} = 2232 \times v$

 $a = acceleration [m/s^2]$

v = speed [m/s]

 $m_{Ay} = product weight of the Y-axis [kg]$

→ 17

m_L = attachment component (Z-axis) [kg] with payload

 $J_m = moment of inertia of motor [kgcm²]$

→ table below

M_R = no-load torque [Nm]

→ 18

n_{45°} = rotational speed at 45° travel [rpm]

Combination of planar surface gantry wit	h stepper motor for X-/Y-axis	
Planar surface gantry	Motor	Moment of inertia of the motor
		[kgcm ²]
EXCM-30ST	EMMS-ST-42	0.082
EXCM-30SB	EMMS-ST-42	0.095

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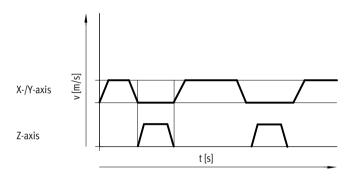
Technical data

Sample calculation

Given:

Planar surface gantry EXCM-30-700-410-KF-ST-...-E

 $a_{max} = 10 \text{ m/s}^2$ $v_{max} = 0.35 \text{ m/s}$ Payload = 2 kg



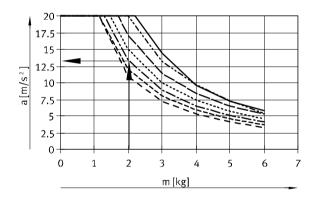
Calculation:

1. What is the max. acceleration permitted by the mechanical system?

Moving mass m_L at the Y-axis:

 $m_L = 2 \text{ kg}$

Stroke of the Y-axis: 410 mm



Stroke, Y-axis = 110/160/210 mm

----- Stroke, Y-axis = 260 mm

——— Stroke, Y-axis = 310 mm

----- Stroke, Y-axis = 360 mm

----- Stroke, Y-axis = 410 mm
----- Stroke, Y-axis = 460 mm

- - - - Stroke, Y-axis = 510 mm

Result:

In case of a moving mass m_L of 2 kg the maximum permissible acceleration is 13 m/s². The required acceleration of 10 m/s² is therefore permissible.



Note

The following information applies to a horizontal mounting position. For vertical installation positions, please get in touch with your local contact at Festo.

The centre of gravity of the slide is at the height of the slide in the Z-direction and in the centre of the slide in the X-/Y-directions.

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Technical data

Sample calculation

2. Is the attached motor sufficient for this load?

Given:

 $M_{45^{\circ}} = a \times (4.28 \times m_L + 2.14 \times m_{AV} + 23.38 \times J_m + 0.56) \times 10^{-3} + M_R$ $a_{max} = 10 \text{ m/s}^2$ = 0.35 m/s v_{max} $n_{45^{\circ}} = 2232 \times v$

 m_{Av} = 1.32 kg

 m_{L} = 2 kg

 $= 0.082 \text{ kgcm}^2$ J_{m}

speed [m/s] m_{Av} = product weight of the Y-axis [kg]

acceleration $[m/s^2]$

→ 17

 $m_1 = payload$



moment of inertia of motor [kgcm²]

→ 18

→ 18

no-load torque [Nm]

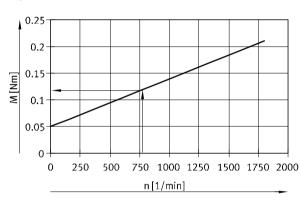
 $n_{45^{\circ}}$ = rotational speed at 45° travel [rpm]

Note

These requirements for the dynamic response apply to 45° travel. For travel only in the X- or Y-direction, the dynamic values may be higher.

Determination of M_R:

$$n_{45^{\circ}} = 2232 \times 0,35 \text{ m/s} = 781,2 \text{ 1/min}$$

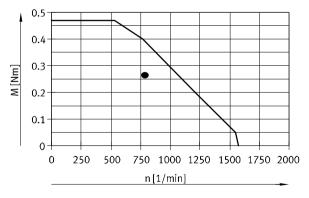


No-load torque: ____ EXCM-30

= 0.12 Nm M_{R}

$$\begin{split} M_{45^{\circ}} &= a \times (4.28 \times m_L + 2.14 \times m_{Ay} + 23.38 \times J_m + 0.56) \times 10^{-3} + M_R \\ M_{45^{\circ}} &= 10 \ \frac{m}{s^2} \times (4.28 \times 2 \ kg + 2.14 \times 1.32 \ kg + 23.38 \times 0.082 \ kgcm^2 + 0.56) \times 10^{-3} + 0.12 \ Nm = 0.26 \ Nm \end{split}$$

Result:



The value for the torque lies below the motor characteristic curve. The design is thus acceptable.

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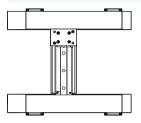
Technical data

Minimum number of profile mountings

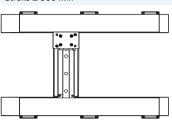
Different numbers of profile mountings must be used as a function of the mounting position and stroke of the X-axis.

Horizontal mounting position

Stroke < 500 mm

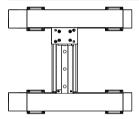




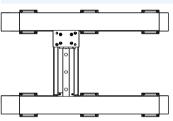


Vertical mounting position

Stroke < 500 mm







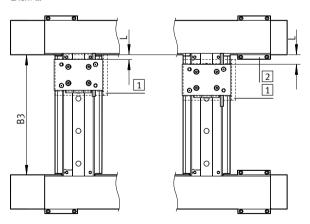
Stroke of the X-axis	Number of profile mountings	
[mm]	Horizontal mounting position	Vertical mounting position
100 499	2 per profile, inside or outside	4 per profile, inside and outside
500 700	3 per profile, inside or outside	6 per profile, inside and outside

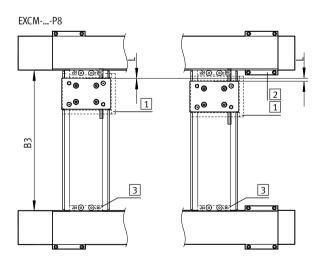
Stroke reduction in combination with mounting kit EAHT-E9

The reduction is influenced by the following factors:

- 1 The mounting kit EAHT-E9 is wider than the slide of the Y-axis.
- 2 Through the adjusting kit EADC-E11 or profile mounting MUE mounted on the inside of the X-axis
- 3 Through an additional mounting surface for the cover in combination with EXCM-...-P8 (with protection against particles)

EXCM-...

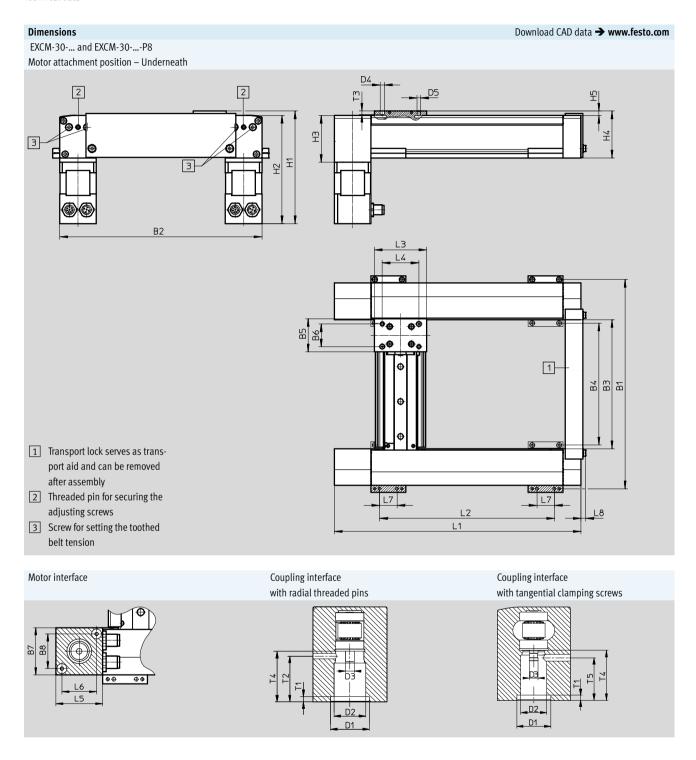




	B3 (→ as o	of page 22)	L				
	For EXCM	For EXCMP8	For EXCM	For EXCMP8			
With mounting kit EAHT-E9			2x 8 mm	No stroke reduction			
With mounting kit EAHT-E9 and adjust-	38 + stroke	63 + stroke	2x 16 mm	2x 4 mm			
ing kits EADC-E11/profile mounting	56 + Struke	05 + Stioke					
MUE							

-⊙- New **Key feature P8**

Planar surface gantries EXCM-30 Technical data



-O- New **Key feature P8**

Planar surface gantries EXCM-30 Technical data

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Туре	B5	В6	B7	B8	D1	D2	D3	D4	D5
					Ø	Ø	Ø	Ø	
		±0.03		±0.1	H7		F8	Н8	
EXCM-30	38	26	42	31	22	16	5	5	M4
EXCM-30P8	38	26	42	31	22	16	5	5	M4
Туре		H1		H2	Н3	H4	H5	L3	L4
	EXCMST	EXCMSB	EXCMST	EXCMSB					
			±0.7						±0.03
EXCM-30	129.2	186.2	124.2	181.2	53.8	54	5	60	42
EXCM-30P8	131.2	188.2	124.2	181.2	53.8	56	7	60	42
Туре	L5	L6	L7	L8	T1	T2	T3	T4	T5
		±0.1							
EXCM-30	42	31	20	5.6	3	26	3.7	28.7	24.5
FXCM-30P8	42	31	20	5.6	3	26	3.7	28.7	24.5

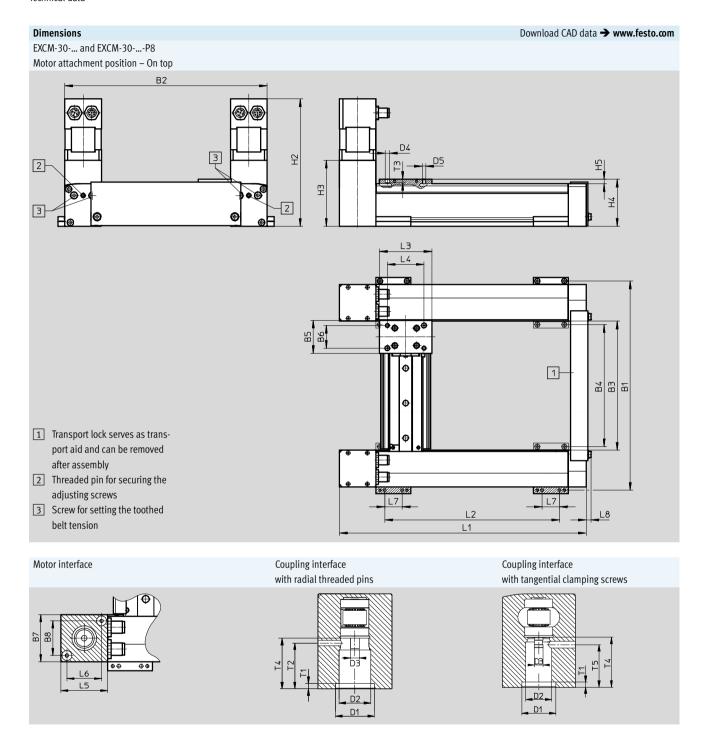
Stroke-dependent dimensions

Stroke-dependent un	IICIISIUIIS	
Stroke of the X-axis	L1	L2
		±0.2
100	233	150.5
150	283	200.5
200	333	250.5
300	433	350.5
400	533	450.5
500	633	550.5
90 700	133 + stroke	50.5 + stroke

Stroke of the Y-axis	ke of the Y-axis B1 EXCM-30		В	2	В	3	B4 EXCM-30	
			EXCM-	30	EXCM-	30		
		P8		P8		P8		P8
110	240	265	232	257	148	173	140	165
160	290	315	282	307	198	223	190	215
210	340	365	332	357	248	273	240	265
260	390	415	382	407	298	323	290	315
310	440	465	432	457	348	373	340	365
360	490	515	482	507	398	423	390	415
410	540	565	532	557	448	473	440	465
460	590	615	582	607	498	523	490	515
510	640	665	632	657	548	573	540	565
110 510	130 + stroke	155 + stroke	122 + stroke	147 + stroke	38 + stroke	63 + stroke	30 + stroke	55 + stroke

-⊙- New **Key feature P8**

Planar surface gantries EXCM-30 Technical data



-O- New **Key feature P8**

Planar surface gantries EXCM-30 Technical data

FESTO

Туре	B5	В6	B7	B8	3	D1		[)2	D3		D4
						Ø		9	Ø	Ø		Ø
		±0.03		±0.	1	H7	,			F8		H8
EXCM-30	38	26	42	31		22		1	16	5		5
EXCM-30P8	38	26	42	31		22		1	16	5		5
Туре	D5		H2	H3	3	H4	ļ	ŀ	15	L3		L4
		EXCMST	EXCMSE	3								
		±1										±0.03
EXCM-30	M4	146.2	203.2	75.	6	54			5	60		42
EXCM-30P8	M4	146.2	203.2	75.	6	56	1		7	60		42
Туре	L5	L6	L7	L8	T1		T2		T3	T4	ı	T5
		±0.1										
EXCM-30	42	31	20	5.6	3		26		3.7	28.	.7	24.5
EXCM-30P8	42	31	20	5.6	3		26		3.7	28.	.7	24.5

Stroke-dependent dimensions

Stroke dependent din	ICIISIOIIS	
Stroke of the X-axis	L1	L2
		±0.2
100	233	150.5
150	283	200.5
200	333	250.5
300	433	350.5
400	533	450.5
500	633	550.5
90 700	133 + stroke	50.5 + stroke

Stroke of the Y-axis	ke of the Y-axis B1 EXCM-30		В	2	В	3	B4 EXCM-30	
			EXCM-	30	EXCM-	30		
		P8		P8		P8		P8
110	240	265	232	257	148	173	140	165
160	290	315	282	307	198	223	190	215
210	340	365	332	357	248	273	240	265
260	390	415	382	407	298	323	290	315
310	440	465	432	457	348	373	340	365
360	490	515	482	507	398	423	390	415
410	540	565	532	557	448	473	440	465
460	590	615	582	607	498	523	490	515
510	640	665	632	657	548	573	540	565
110 510	130 + stroke	155 + stroke	122 + stroke	147 + stroke	38 + stroke	63 + stroke	30 + stroke	55 + stroke

-O- New **Key feature P8**

Planar surface gantries EXCM-30 Ordering data – Modular product system

ze		30	Condi- tions	Code	Entry code
Module no.		2226101			
Product type		EXCM series M		EXCM	EXCM
Size		30		-30	30
Stroke of the X-axis	[mm]	100		-100	
	[mm]	150		-150	
	[mm]	200		-200	
	[mm]	300		-300	
	[mm]	400		-400	
	[mm]	500		-500	
	[mm]	90 700			
Stroke of the Y-axis	[mm]	110		-110	
	[mm]	160		-160	
	[mm]	210		-210	
	[mm]	260		-260	
	[mm]	310		-310	
	[mm]	360		-360	
	[mm]	410		-410	
	[mm]	460		-460	
	[mm]	510		-510	
	[mm]	110 510			
Guide		Recirculating ball bearing guide		-KF	KF
Motor type		Stepper motors		-ST	
		Stepper motors with brake		-SB	
		Without stepper motors	1	-W	
Protection against particles		Standard			
		Protected version		-P8	
Motor attachment position		Underneath	2	-B	
		Underneath, cable outlets to the front		-B1	
		Underneath, cable outlets to the rear		-B2	
		Underneath, cable outlets inwards		-B3	
		Underneath, cable outlets outside		-B4	
		Тор	2	-T	
		On top, cable outlets to the front		-T1	
		On top, cable outlets to the rear		-T2	
		On top, cable outlets inwards		-T3	
		On top, cable outlets outside		-T4	

1 W	In combination with	"Without stepper motors"	W, controllers E and PF	are not required
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² **B, T** Not in combination with stepper motors ST and SB. Option if third-party motors are mounted



Planar surface gantries EXCM-30 Ordering data – Modular product system

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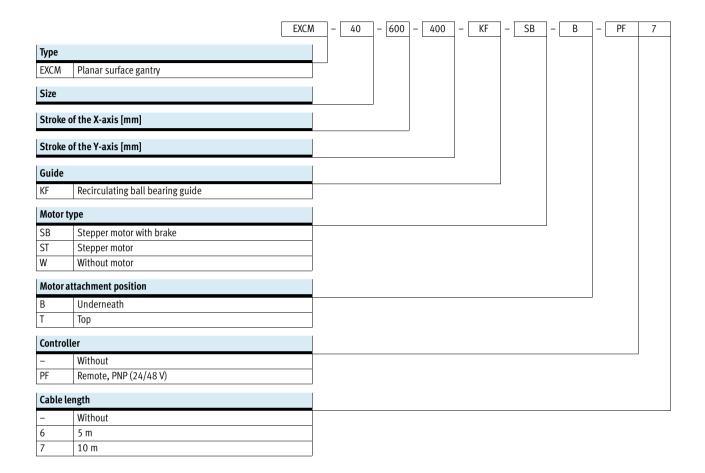
Ordering table				
Size	30	Condi- tions	Code	Entry code
O Controller	Without			
	Remote, NPN (24 V)		-E	
	Remote, PNP (24/48 V)		-PF	
Cable length	Without			
	Motor and encoder cable 0.5 m	3	2	
	Motor and encoder cable 1 m	3	3	
	Motor and encoder cable 1.5 m	3	4	
	Motor and encoder cable 2 m	3	5	
M Document language	German		-DE	
	English		-EN	
	Spanish		-ES	
	French		-FR	
	Italian		-IT	
	Russian		-RU	
	Chinese		-ZH	

3 2, 3, 4, 5 Mandatory in combination with controllers E and PF

Tra	nsfer order code			
-		-	-	



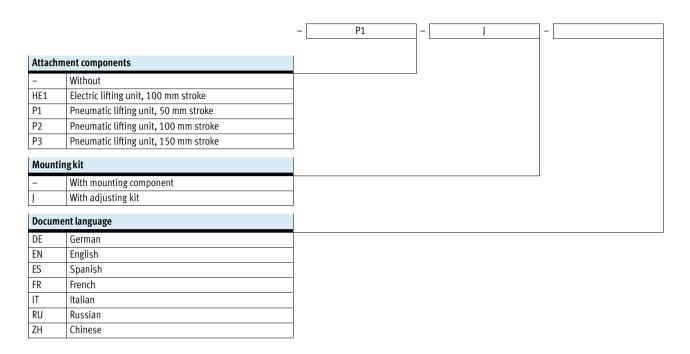
Planar surface gantries EXCM-40 Type codes





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Type codes





Key features

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Selection of attachment components

The following variants for the Z-axis can optionally be ordered using the modular product system → 46:

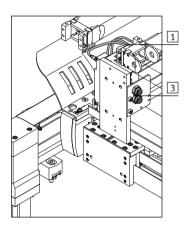
- Without attachment component
- With pneumatic attachment component (mini slide DGSL)
- With electric attachment component (mini slide EGSL)

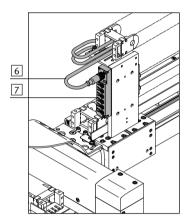
The drives are fully connected on delivery. Cables and tubes are routed as far as the output of the energy chain (X-axis).

EXCM-... (without attachment component)

The following are pre-installed:

- 2 supply ports for e.g. Z-axis
- Multi-pin plug distributor for bundling signals:
 - E.g. proximity sensor



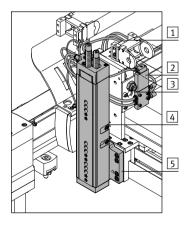


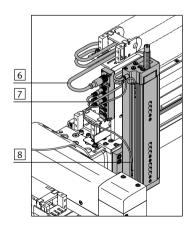
Co	mponents	Number of components
1 Tubing		2
3	Bulkhead fitting	2
6	Plug socket with cable	1
7	Multi-pin plug distributor (6-way)	1
-	Earthing cable	2

EXCM- ... -P... (pneumatic attachment component)

The following are pre-installed:

- Solenoid valve for controlling the drive
- 1 supply port for e.g. gripper
- Proximity sensor for end position sensing
- Multi-pin plug distributor for bundling signals:
 - For mini slide DGSL:
 - 2 proximity sensors
 - 1 solenoid valve
 - 3 ports are available





Com	ponents	Number of components
1	Tubing	2
2	Solenoid valve	1
3	Bulkhead fitting	1
4	Mini slide DGSLY3A ¹	1
5	Adapter plate	1
6	Plug socket with cable	1
7	Multi-pin plug distributor (6-way)	1
8	Proximity sensor	2
-	Earthing cable	2

 For EXCM-40, the mini slide DGSL-16 is used with progressive shock absorbers. Further information → Internet: dgsl



Planar surface gantries EXCM-40 Key features

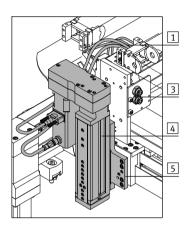
FESTO

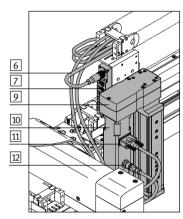
Selection of attachment components

EXCM-...-HE1 (electric attachment component)

The following are pre-installed:

- 2 supply ports for e.g. gripper
- Multi-pin plug distributor for bundling signals:
 - E.g. proximity sensor



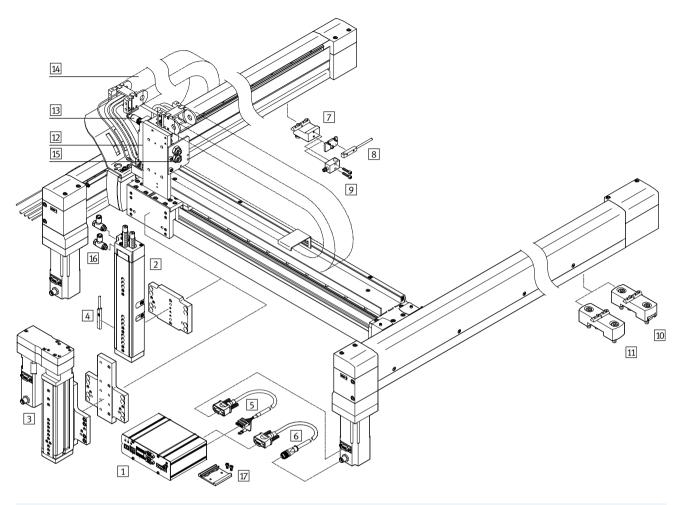


Components	Number of components	
1 Tubing	2	
3 Bulkhead fitting	2	
4 Mini slide EGSL ¹⁾	1	
5 Adapter plate	1	
6 Plug socket with cable	1	
7 Multi-pin plug distributor (6-way)	1	
9 Parallel kit	1	
10 Motor	1	
11 Motor cable	1	
12 Encoder cable	1	
 Earthing cable 	2	

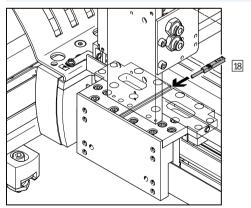
For EXCM-40, the mini slide EGSL-45 is used with a lead of 10 mm. Further information → Internet: egsl



Planar surface gantries EXCM-40 Peripherals overview



Proximity sensor for sensing the position of the slide on the Y-axis





Planar surface gantries EXCM-40 Peripherals overview

Attachments and accessories				
Туре		Description	→ Page/Internet	
1	Controller CMXH	For controlling the planar surface gantry	cmxh	
2	Mini slides P1, P2, P3	Pneumatic attachment component (mini slide DGSL) for the Z-axis	46	
3	Mini slides HE1	Electric attachment component (mini slide EGSL) with motor cable NEBM and encoder cable NEBM for the Z-axis	46	
4	Proximity sensor	For position sensing on the Z-axis	56	
_	SME-10M/SIES-8M	• Included in the scope of delivery of the planar surface gantry EXCMP		
5	Motor cable	Connecting cable between motor and controller CMXH-ST2	46	
	NEBM	Included in the scope of delivery of the planar surface gantry EXCMST/-SB		
6	Encoder cable	Connecting cable between encoder and controller CMXH-ST2	46	
	NEBM	 Included in the scope of delivery of the planar surface gantry EXCMST/-SB 		
7	Sensor mounting	 For mounting the proximity sensors SIES-Q8B, SIES-V3B on the X-axis 	55	
	EAPR	Not included in the scope of delivery of the planar surface gantry		
8	Proximity sensor	For position sensing on the X-axis	56	
	SIES-Q8B	Not included in the scope of delivery of the planar surface gantry		
9	Proximity sensor	For position sensing on the X-axis	56	
	SIES-V3B	Not included in the scope of delivery of the planar surface gantry		
0	Adjusting kit	Height-adjustable mounting kit for the planar surface gantry	54	
	EADC-12	• Included in the scope of delivery of the planar surface gantry. If no adjusting kit is selected in		
		the modular product system, the mounting kit will automatically be delivered		
11	Mounting kit EAHM-E12	Non-height-adjustable mounting kit for the planar surface gantry	54	
12	Multi-pin plug distributor	For connecting up to 6 inputs/outputs	nedu	
_	NEDU	 Included in the scope of delivery of the planar surface gantry 		
13	Plug socket with cable	Connecting cable between multi-pin plug distributor NEDU and the controller	sim	
_	SIM	 Included in the scope of delivery of the planar surface gantry 		
14	Energy chain	• For EXCM-40: type IGUS 2500.03.075.0	-	
15	Plastic tubing	Two pieces of tubing are connected to the bulkhead fittings and routed in the energy chains at	pun	
	PUN-H-6x1	delivery (for pneumatic Z-axis, one tube on the valve and one on the bulkhead fitting)		
16	One-way flow control valve	For speed regulation	46	
	GRLA	 Included in the scope of delivery of the planar surface gantry EXCHP 		
17	H-rail mounting CAFM-D3	For mounting the controller to an H-rail to EN 50022	49	
18	Proximity sensor	For position sensing on the Y-axis	56	
_	SIES-8M	Not included in the scope of delivery of the planar surface gantry		
-	Motor cable	Connecting cable between the motor on the Z-axis and the motor controller CMMS-ST	57	
	NEBM-S1G9	The motor controller and connecting cable are included in the scope of delivery of the planar surface gantry EXCMHE1		
	Encoder cable	Connecting cable between the encoder on the Z-axis and the motor controller CMMS-ST	57	
	NEBM-M12G8	The motor controller and connecting cable are included in the scope of delivery of the planar	<i>,</i>	
	NEDM MIZOU	surface gantry EXCMHE1		
		Surface Sailty Liveniting that		



Planar surface gantries EXCM-40 Technical data





General technical data			
Size		40	
Design		Planar surface gantry	
Guide		Recirculating ball bearing guide	
Stroke of the			
X-axis	[mm]	200 2000	
Y-axis	[mm]	200 1000	
Z-axis	[mm]	50, 100, 150	
EXCMHE1	[mm]	100	
EXCMP1	[mm]	50	
EXCMP2	[mm]	100	
EXCMP3	[mm]	150	
Rated load for max. dynamic response ¹⁾	[kg]	4	
Process force in Z direction	[N]	450	
Max. torque ²⁾		→ 37	
Max. no-load torque ²⁾³⁾		→ 37	
Max. acceleration ⁴⁾			
With motor and controller	[m/s ²]	→ 37	
Purely mechanical system	$[m/s^2]$	20	
Max. speed ⁴⁾			
With motor and controller	[m/s]	1	
Purely mechanical system	[m/s]	2	
Repetition accuracy	[mm]	±0.1	
Mounting position		Horizontal	
Type of mounting		Mounting kit, adjusting kit	

- Rated load = tool load (attachment component (Z-axis) + gripper, for example) + payload
 These values must also be complied with during installation of third-party motors
 At v=0.2 m/s and 45° travel.

- These data apply only under ideal conditions.
 For a precise configuration, please consult a sales engineer from Festo. Further information → 37

Operating and environmental conditions		
Size		40
Degree of protection		IP40
Ambient temperature ¹⁾	[°C]	+10 +50
Storage temperature	[°C]	-10 +60
Relative humidity	[%]	0 90 (non-condensing)
Noise level	[dB(A)]	65
Duty cycle	[%]	100
CE marking (see declaration of conformity)		To EC Machinery Directive

1) Note operating range of proximity sensors and motors



Planar surface gantries EXCM-40 Technical data

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Materials 4

Size		40
1	Drive and end caps	Aluminium
2	Profiles of the X-axis	Aluminium
3	Profile of the Y-axis	Aluminium
4	Cover	
	X-axis	Aluminium
	Y-axis	Aluminium
5	Slides	Aluminium
-	Coupling	Aluminium with elastomer ring gear
	Guide	Steel
	Drive pinion	Steel
	Ball bearings	Steel
	Toothed belt	PU with steel cord
	Note on materials	RoHS compliant
		Contains paint-wetting impairment substances



Planar surface gantries EXCM-40 Technical data

Weight [kg]					
Size	40				
Product weight with 0 mm stroke (without rated load, motors,	axial kits, mounting kits)				
EXCMW-T	16.7				
EXCMW-B	17.5				
X-axis (2x)	8.5				
Y-axis (without slide)	6.2				
Additional weight per 100 mm stroke					
X-axis	1.75				
Y-axis	0.89				
Axial kit ¹⁾					
For EMMS-ST-57-M	0.54				
Motor ¹⁾	Motor ¹⁾				
EXCMST (without brake)	1.2				
EXCMSB (with brake)	1.38				
Attachment component (Z-axis)					
Electrical					
EXCMHE1	3.3				
Pneumatic					
EXCMP1	1.8				
EXCMP2	2.4				
EXCMP3	2.7				
Mounting kit for X-axis					
Adjusting kit ¹⁾	0.78				
Mounting kit ¹⁾	0.33				

¹⁾ Weight per component



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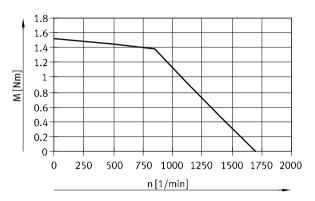
Planar surface gantries EXCM-40

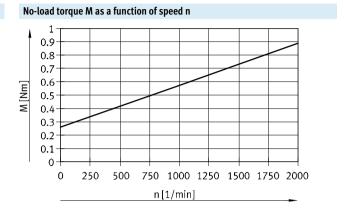
Technical data

Torque M as a function of rotational speed n

Typical motor characteristic curve with nominal voltage and optimal controller. In conjunction with:

EXCM-...-ST-...-PF or EXCM-...-SB-...-PF





Characteristic load values

The centre of gravity of the slide is at the height of the slide in the Z-direction and in the centre of the slide in the X-/Y-directions.

The system is subject to the greatest load in the case of 45° travel.

The following data apply in this case:

Formula for calculating the required torque \boldsymbol{M} and the required rotational speed \boldsymbol{n}

$$M_{45^{\circ}} = a \times (9.79 \times m_L + 4.89 \times m_{Ay} + 10.21 \times J_m + 19.58) \times 10^{-3} + M_R$$

$$n_{45^{\circ}} = 975 \times v$$

 $a = acceleration [m/s^2]$

v = speed [m/s]

m_{Av} = product weight of the Y-axis [kg]

→ 36

m_L = attachment component (Z-axis) [kg] with payload

 $J_m = moment of inertia of the motor [kgcm²]$

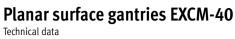
→ table below

 $M_R = no-load torque [Nm]$

→ 37

n_{45°} = rotational speed at 45° travel [rpm]

Combination of planar surface gantry with servo motor for X-/Y-axis					
Planar surface gantry	Motor Moment of inertia of motor [kgcm ²]				
EXCM-40ST	EMMS-ST-57-M-SE-G2	0.48			
EXCM-40SB	EMMS-ST-57-M-SEB-G2	0.5			



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Sample calculation

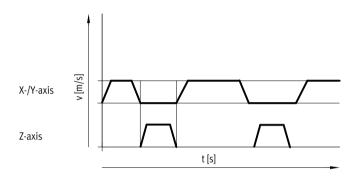
Given:

Planar surface gantry EXCM-40-1000-500-KF-SB-B-PF7-HE1-... with attached motor EMMS-ST-57-M-SEB-G2

 $a_{max} = 2 \text{ m/s}^2$ $v_{max} = 0.5 \text{ m/s}$

Payload = 0.5 kg

Attachment component Z-axis: EGSL-BS-45-100-10P



Is the attached motor sufficient for this load?

Given:

 $a_{max} = 2 \text{ m/s}^2$

 $v_{max} = 0.5 \text{ m/s}$

 m_{Ay} = 10.65 kg

 $m_{\text{\tiny L}}$ = 3.80 kg

 $= 0.5 \text{ kgcm}^2$ J_{m}

$$M_{45^{\circ}} = a \times (9.79 \times m_L + 4.89 \times m_{AV} + 10.21 \times J_m + 19.58) \times 10^{-3} + M_R$$

 $n_{45^{\circ}} = 975 \times v$

acceleration [m/s²]

→ 34

speed [m/s]

m_{Ay} = product weight of the Y-axis [kg]

→ 36

m_L = attachment component (Z-axis) [kg] with payload

moment of inertia of the motor [kgcm²]

→ 37

no-load torque [Nm]

→ 37

 $n_{45^{\circ}}$ = rotational speed at 45° travel [rpm]

Note

These requirements for the dynamic response apply to 45° travel. For travel only in the X- or Y-direction, the dynamic values may be higher.



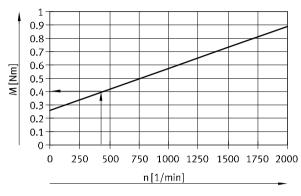
Planar surface gantries EXCM-40 Technical data

FESTO

Sample calculation

Determination of M_R:

$$n_{45^{\circ}} = 975 \times 0.5 \text{ m/s} = 487.5 \text{ 1/min}$$



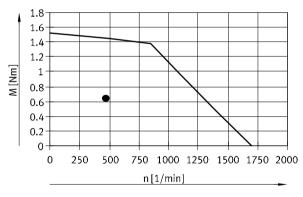
No-load torque: _____ EXCM-40

 $M_R = 0.4 \text{ Nm}$

$${
m M}_{45^{\circ}} = {
m a} imes (9.79 imes {
m m}_{
m L} + 4.89 imes {
m m}_{
m Ay} + 10.21 imes {
m J}_{
m m} + 19.58) imes 10^{-3} + {
m M}_{
m R}$$

$$\rm M_{45^{\circ}} = 2~\frac{m}{s^2} \times (9.79 \times 3.80~kg + 4.89 \times 10.65~kg + 10.21 \times 0.5~kgcm^2 + 19.58) \times 10^{-3} + 0.4~Nm = 0.63~Nm$$

Result:



The value for the torque lies below the motor characteristic curve. The design is thus acceptable.



Planar surface gantries EXCM-40 Technical data

FESTO

Minimum number of profile mountings

Irrespective of the mounting position,

the stroke of the X-axis.

a different number of profile mount-

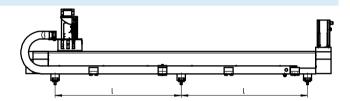
The item is delivered with the required

ings needs to be used depending on number attached.

Stroke of the X-axis [mm]	Number of profile mountings per axis
200 499	2
500 899	2
900 1799	3
1800 2000	4

Distances between the profile mountings

The profile mountings must be evenly spaced by distance l.



Distance
$$l = \frac{Stroke + 141}{n - 1}$$

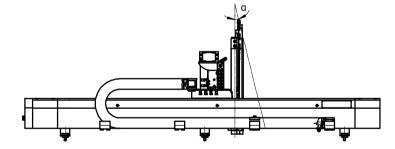
n = number of profile mountings per axis

Mounting position of the Z-axis

Owing to manufacturing tolerances and the backlash in the guides, the angle between the X- and Z-axes may not be exactly 90° in certain circumstances.

Max. deviation:

 $\alpha = \pm 1.1^{\circ}$



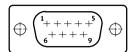


Planar surface gantries EXCM-40 Technical data

FESTO

Pin allocations

Motors on the X-/Y- and Z-axes Motor





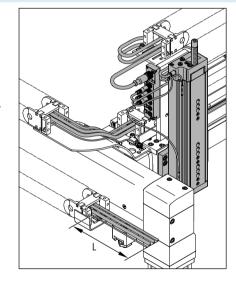
PIN	Function
1	String A
2	String A/
3	String B
4	String B/
5	n.c.
6	n.c.
7	Brake (24 V)
8	Brake (0 V)
9	-

PIN	Function
1	Signal trace A
2	Signal trace A/
3	Signal trace B
4	Signal trace B/
5	0 V
6	Signal trace N
7	Signal trace N/
8	5 V

Selection of cable lengths

2 cable lengths (5 m or 10 m) can be selected using the modular product system → 46. This specification relates to the output of the energy chain at the X-axis (dimension L) and describes the minimum length by which the cables and tubing protrude. The selected length applies to the following components:

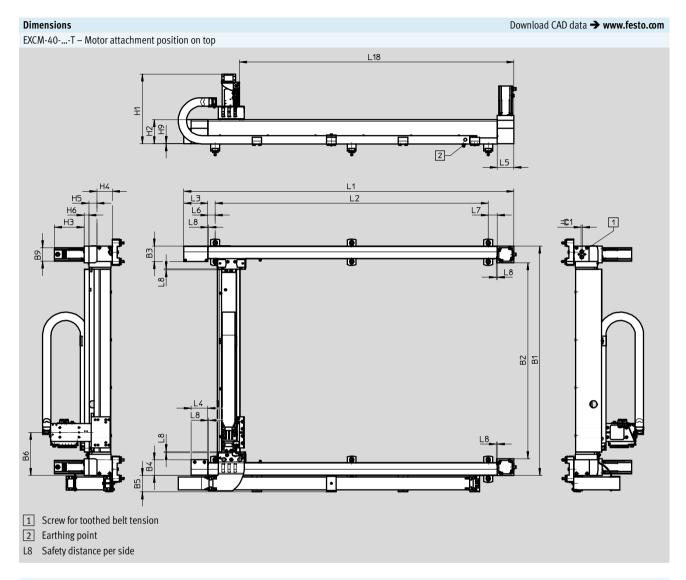
- Tubing
- Plug sockets with cable
- Motor cables
- Encoder cables
- Earthing cables

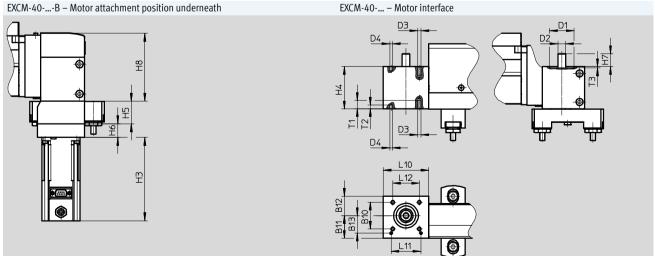




Planar surface gantries EXCM-40 Technical data

FESTO



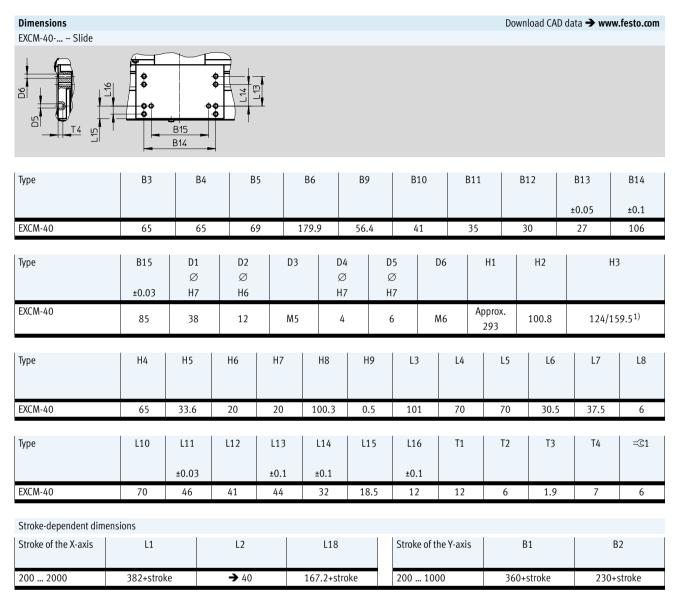




Planar surface gantries EXCM-40

FESTO

Technical data



¹⁾ With brake



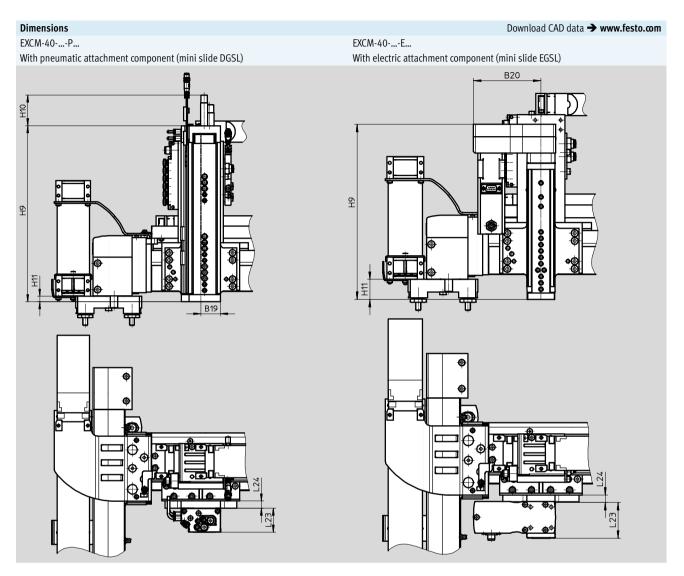
Depending on the stroke of the X-axis, a varying number of profile mountings is required. The distance between the profile mountings must always be the same (\rightarrow 40).

The tension of the toothed belt must be set before commissioning. The tools required to do this (e.g. frequency meter) are not included in the scope of delivery.



Planar surface gantries EXCM-40 Technical data

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Туре	B19	B20	Н9	H10	H11	L23	L24
				max.			
With pneumatic attachmen	nt component (mini s	slide DGSL)					
EXCM-40P1			164.6				
EXCM-40P2	33	-	243.6	51.9	9.1	40±0.08	12
EXCM-40P3			293.6				
With electric attachment component (mini slide EGSL)							
EXCM-40E1	-	106	275	-	31.5	56	12

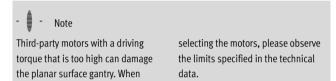


Planar surface gantries EXCM-40 Technical data

FESTO

Allocation of planar surface gantry to servo motor for X-/Y-axis					
Planar surface gantry Motor					
EXCM-40ST	EMMS-ST-57-M-SE-G2				
EXCM-40SB EMMS-ST-57-M-SEB-G2					

Allocation of planar surface gantry to servo motor for Z-axis						
Planar surface gantry	Planar surface gantry Motor					
EXCM-40HE1 EMMS-ST-42-S-SEB-G2						



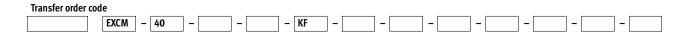


Planar surface gantries EXCM-40 Ordering data – Modular product system



Or	dering table				
Siz	ze	40	Conditions	Code	Entry code
M	Module no.	3741955			
	Product type	EXCM series M		EXCM	EXCM
	Size	40		-40	-40
	Stroke of the X-axis [mm	200 2000			
	Stroke of the Y-axis [mm				
	Guide	Recirculating ball bearing guide		-KF	-KF
	Motor type	Stepper motor with brake		-SB	
		Stepper motor		-ST	
		Without motor		-W	
	Motor attachment position	Underneath		-B	
		Тор		-T	
0	Controller	Without			
		Remote, PNP (24/48 V)		-PF	
	Cable length	Without			
		5 m		6	
		10 m		7	
	Attachment components	None			
		Electric lifting unit, 100 mm stroke		-HE1	
		Pneumatic lifting unit, 50 mm stroke		-P1	
		Pneumatic lifting unit, 100 mm stroke		-P2	
		Pneumatic lifting unit, 150 mm stroke		-P3	
	Mounting kit	With mounting kit			
		With adjusting kit		-J	
M	Document language	German		-DE	
		English		-EN	
		Spanish		-ES	
		French		-FR	
		Italian		-IT	
		Russian		-RU	
		Swedish		-SV	
		Chinese		-ZH	

- 🛊	-	Note
In cor	nbir	nation with key feature W
(with	out r	motor), the EXCM planar
surfa	ce ga	antry is provided without
a cou	plin	g housing and without
a con	nlin	σ



Planar surface gantries EXCM Controller – Technical data

FESTO

Controller EXCM-...-E...

For sizes 10 and 30

Configuration support via FCT plug-in EXCM Technical data → table below

Controller EXCM-...-PF... Configuration support via FCT plug-in CMXH Technical data → Internet: cmxh



Technical data – Controller	
Operational principle	Cascade controller P position controller, PI speed controller, PI current regulator;
	Current regulation inside the cascade controller
	PWM MOSFET power output stage
Operating mode	Direct operation
	Set selection
Rotary position encoder	Optical encoder, 2000 steps/rev.
Status display	7-segment display
	LED
Encoder interface input	RS422
Adjustable current reduction	Via software
Nominal current setting	Via software
Step adjustment	Via software
Braking resistor $[\Omega]$	15
Mains filter	Integrated

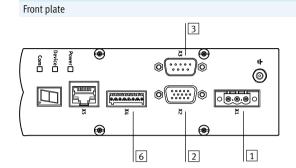
Electrical data – Controller				
For EXCM size		10	30	
Load supply				
Nominal voltage	[V DC]	24 ±15%		
Nominal current	[A]	2.8	6	
Maximum peak current	[A]	8		
Logic supply				
Nominal voltage [V DC]		24 ±15%		
Maximum peak current	[A]	0.3		
Maximum peak current per digital output	[A]	0.1		
Characteristics of digital logic outputs		Not galvanically isolated		
Characteristics of logic inputs		Galvanically connected to logic potential		
Logic input specification		Based on IEC 61131-2		
Switching logic		NPN (negative switching)		
Protective function		I ² t monitoring, following error monitoring, software end-position detection,		
		voltage failure detection, current monitoring, temperature monitoring		

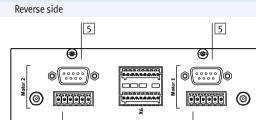
Technical data – Fieldbus interface					
Interfaces	1/0	CANopen	Ethernet		
Number of digital logic outputs	5				
Number of digital logic inputs	9				
Operating range of logic inputs [V DC]	8 30				
Process interfacing	31 records				
Communication profile	-	FHPP	FHPP (via TCP/IP – CVE)		
Max. fieldbus transmission rate [Mbit/s]	-	1	100		
Bus connection	Bushing, 15-pin, Sub-D	Plug connector, 9-pin, Sub-D	RJ45		

Planar surface gantries EXCM Controller – Technical data

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1 X1 Power supply

PIN	Function	
1	+24 V logic	Logic supply
2	+24 V load	Load supply
3	0 V	Reference potential

2 X2 I/O interface

®

4

PIN	Function	
1	+24 V Ready	Ready for communication
2	ln 1	Positioning record bit 1
3	In 2	Positioning record bit 2
4	In 3	Positioning record bit 3
5	In 4	Positioning record bit 4
6	In 5	Positioning record bit 5
7	In 6	Not used
8	Start	Move to the right
9	Enable	Enable input
10	Reset	Reset input
11	Ready	Ready output
12	Fault	Fault output
13	Acknowledge	Acknowledge output
14	MC	Motion complete
15	0 V	Reference potential

4

3 X3 CAN interface

PIN	Function	
1	n.c.	
2	CAN_L	CAN low
3	GND	Reference potential
4	n.c.	
5	Screening	
6	n.c.	
7	CAN_H	CAN high
8	n.c.	
9	n.c.	

4 Motor connection – supply

PIN	Function	
1	Α	String A
2	A/	String A/
3	В	String B
4	B/	String B/
5	BR+	24 V brake connection
6	BR-	0 V brake connection

5 Motor connection – encoder

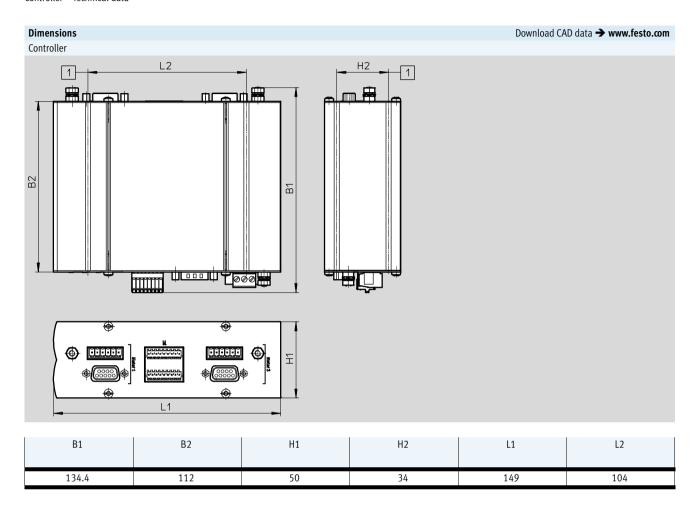
PIN	Function	
1	0	
2	В	
3	N	
4	0 V	Reference potential for encoder
5	5 V	Auxiliary supply for encoder
6	A/	
7	B/	
8	N/	
9	n.c.	

6 X4 Emergency stop interface

PIN	Function	
1	+24 V logic	Logic supply
2	TO	Interrupt motor voltage (at 0 V)
3	ES	Trigger braking ramp (at 0 V)
4	RB	Release brake (at 24 V)
5	FAULT	Fault
6	DIAG1	
7	DIAG2	
8	0 V	Reference potential
	*	

Planar surface gantries EXCM Controller – Technical data

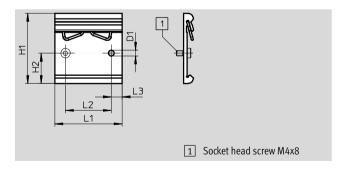
FESTO



H-rail mounting CAFM

for H-rail to EN 50022

Materials: Anodised aluminium RoHS-compliant



Dimensions and	Dimensions and ordering data												
D1	H1	H2	L1	L2	L3	Weight	Part No.	Туре					
Ø						[g]							
4.2	52	22.5	50	34	8	29	4135048	CAFM-D3-H					

FESTO

Profile mounting MUE

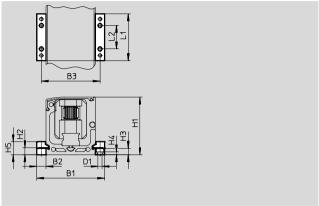
For size 30

Materials: Anodised aluminium RoHS-compliant

For mounting the planar surface gantry (scope of delivery: 1 pair)

Included in the scope of delivery of the planar surface gantry: X-stroke < 500 mm: 2 pairs X-stroke ≥ 500 mm: 3 pairs





Dimensions and ordering data													
For size	B1	B2	В3	D1	H1	H2	H3						
				Ø									
30	58	8	50	3.4	49	6	5.5						

For size	H4	H5	L1	L2	Weight [g]	Part No.	Туре
30	2.3	11	40	20	20	558042	MUE-50

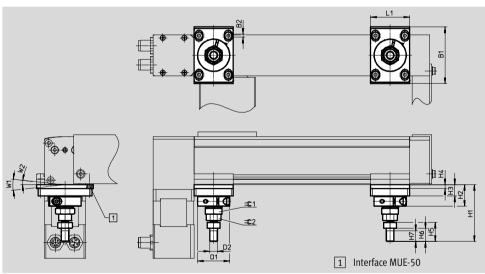
Adjusting kit EADC-E11

For size 30

Materials: Anodised aluminium RoHS compliant

For mounting and aligning the planar surface gantry. The kit is height adjustable.





Dimensions and o	Dimensions and ordering data													
For size	B1	B2	D1	D2	H1	H2	Н3	H4	H5	Н6	H7			
			Ø		+12/-2									
30	58	3	33	M8	58	22	11.5	4	19.5	13.5	11			

For size	L1	W1	W2	=©1	=©2	Weight [g]	Part No.	Туре
30	40	12°	6°	17	13	160	4706964	EADC-E11-30

FESTO

Mounting kit EAHT-E9

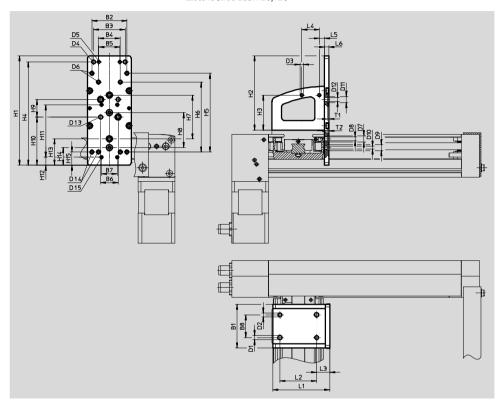
For size 30

Materials: Anodised aluminium RoHS-compliant

Prepared hole pattern for:

- Mini slides EGSL-35
- Mini slides DGSL-8/-10/-12
- Electric slide EGSK-20/-26





Dimensions an	d ordering data									
For size	B1	B2	В3	B4	B5	B6	B7	D1 ∅ H7	D2 Ø	D3
30	50	40	36	25	24	20	18	5	4.5	M4
For size	D4	D5	D6	D7 ∅ H7	D8	D9 ∅ H7	D10	D11 Ø H7	D12 Ø	D13 Ø
30	M5	M4	M4	7	M5	7	M4	7	4.5	4.5
For size	D14	D15	H1	H2	Н3	H4 ±0.2	H5	Н6	H7	Н8
30	M4	M3	125	85	40	118	90	80	50	40
For size	Н9	H10	H11	H12	H13	H14	H15	L1	L2	L3
30	20	55	60	9	30	20	15	65	42	15
For size	L4	L5	L6	T1 ±0.1	T2 ±0.1	Weight [g]	Part No	o. Type		
30	20	6	5	1.6	1.6	165	40700	88 EAHT-ES	9-FB-3D-30	

FESTO

Sensor mounting EAPR

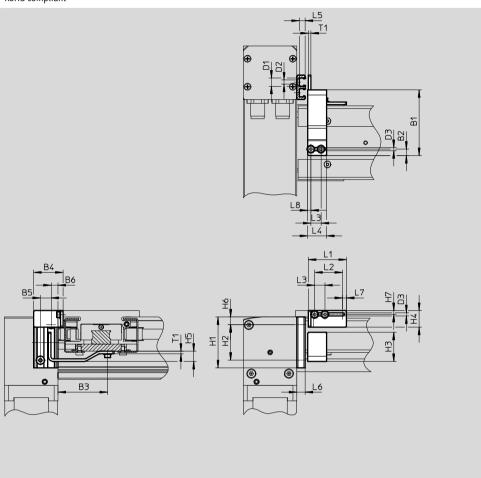
For size 30

Materials:

Holder: Wrought aluminium alloy

Switch lug: Steel RoHS compliant



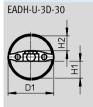


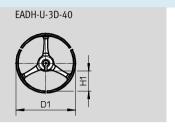
Dimensions an	d ordering data									
For size	B1	B2	В3	B4	B5	В6	D1 Ø	D2 Ø	D3 Ø	H1
30	51.5	5	39	23	8.4	5.3	6.5	3.4	2.6	40
For size	H2	Н3	H4	H5	Н6	H7	L1	L2	L3	L4
30	28	23	13	8	6	3	30	22	8	15
For size	L5	L6	L	7	L8	T1	Weight [g]	Part No.	Туре	
30	4.5	6.5		3	2.5	2	330	2319236	EAPR-E11-	30



Energy chain and connection kit for size 30

Ordering data – Energy chain





Туре		D1 ∅	H1	H2
	EADH-U-3D-30 EADH-U-3D-40	34.5 45	12.5 15	11 -

For size	Max. bending radius	Length	Weight	Part No.	Type
	[mm]	[mm]	[g]		
20	F.0	A 500	7.5	005000	FARIL II OR OO
30	50	Approx. 500	/5	8059999	EADH-U-3D-30

Ordering data - Connection	kit			
	For energy chain	Description	Part No.	Туре
888	EADH-U-3D-30 EADH-U-3D-40	For mounting the energy chain. Included in the scope of delivery: 2 connectors 4 socket head screws M4x10	8060325 8060326	EAHT-AE-3D-30 EAHT-AE-3D-40

FESTO

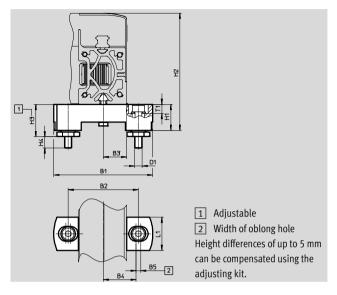
Adjusting kit EADC-E12

For size 40

Materials: Anodised aluminium RoHS compliant

For mounting and aligning the planar surface gantry. The kit is height adjustable.





Dimensions and ordering data										
For size	B1	B2	В3	B4	B5	D1	H1	H2		
				±0.2						
40	110	78	26	36.5	5	M8	29	129.8		

For size	Н3		H4	L1	T1	Weight	Part No.	Туре
	Min.	max.	max.		±0.1	[g]		
40	34.8	39.8	14	37	10	800	8029165	EADC-E12-40

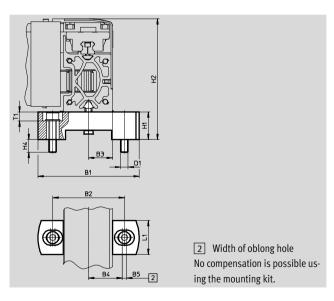
Mounting kit EAHM-E12

For size 40

Materials: Anodised aluminium RoHS compliant

For mounting of the planar surface gantry. The kit is not height adjustable.





Dimensions and ordering data										
For size	B1	B2	В3	B4	B5	D1	H1			
				±0.2			±0.2			
40	110	78	26	36.5	5	M8	30			

For size	H2	H4	L1	T1	Weight	Part No.	Туре
		max.		±0.1	[g]		
40	131.3	14	37	10	330	3489340	EAHM-E12-K-40

FESTO

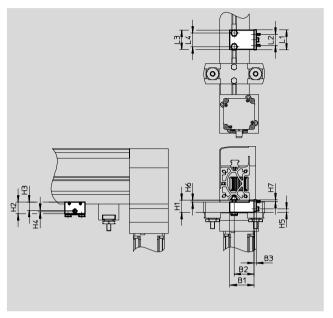
Sensor mounting EAPR

For size 40

Materials: Switch lug: Steel Sensor bracket: Wrought aluminium alloy RoHS-compliant

For proximity sensor SIES-V3B and SIES-Q8B (for sensing the slide position on the X-axis)





Dimensions and ordering data										
For size	B1	B2	В3	H1	H2	Н3	H4	H5	Н6	H7
						±0.1			-0.1	-0.2
40	44	36.3	4	21.8	21	15	2.5	6.1	3.1	3

For size	L1	L2	L3	L4	. ,	Part No.	Туре
					[g]		
40	36	20	35	25	120	2536353	EAPR-E12-40

Proximity sensors for size 30

Ordering data	- Proximity sensor for T-slot, induct	ive				Technical data → Internet: sies
	Type of mounting	Electrical connection	Switching output	Cable length [m]	Part No.	Туре
N/O contact						
1	Insertable in the slot from above,	Cable, 3-wire	PNP	7.5	551386	SIES-8M-PS-24V-K-7,5-0E
ST WILL	flush with the cylinder profile	Plug connector M8x1, 3-pin		0.3	551387	SIES-8M-PS-24V-K-0,3-M8D
		Cable, 3-wire	NPN	7.5	551396	SIES-8M-NS-24V-K-7,5-0E
		Plug connector M8x1, 3-pin		0.3	551397	SIES-8M-NS-24V-K-0,3-M8D
N/C contact						
1	Insertable in the slot from above,	Cable, 3-wire	PNP	7.5	551391	SIES-8M-PO-24V-K-7,5-OE
ST. WILL	flush with the cylinder profile	Plug connector M8x1, 3-pin		0.3	551392	SIES-8M-PO-24V-K-0,3-M8D
		Cable, 3-wire	NPN	7.5	551401	SIES-8M-NO-24V-K-7,5-OE
		Plug connector M8x1, 3-pin		0.3	551402	SIES-8M-NO-24V-K-0,3-M8D

Proximity sensors for size 40

Permissible proximity sensor for sensing the position of the slide on the Y-axis

Ordering data	Ordering data − Proximity sensors for T-slot, inductive Technical data → Internet:										
	Type of mounting	Electrical connection	Switching output	Cable length [m]	Part No.	Туре					
SET SA	Inserted in the slot from above, flush with the cylinder profile	Plug connector M8x1, 3-pin	PNP, N/O contact	0.3	551387	SIES-8M-PS-24V-K-0,3-M8D					

Permissible proximity sensors for sensing the positions on the Z-axis

Ordering data	Ordering data − Proximity sensors for T-slot Technical data → Internet: sm					
	Type of mounting	Electrical connection	Switching	Cable length	Part No.	Туре
			output	[m]		
With mini slide DGSL (magneto-resistive)						
	Inserted in the slot from above, flush	Plug connector M8x1,	PNP, N/O	0.3	551367	SME-10M-DS-24V-E-0,3-L-M8D
ST WEST	with the cylinder profile	3-pin	contact			
	<u> </u>					
With mini slide EGSL (inductive)						
	Inserted in the slot from above, flush	Plug connector M8x1,	PNP, N/O	0.3	551387	SIES-8M-PS-24V-K-0,3-M8D
CET SA	with the cylinder profile	3-pin	contact			
	1					

Permissible proximity sensors in combination with sensor mounting EAPR-E12

Ordering data	Ordering data − Proximity sensors Technical data → Internet: sies					
	Type of mounting	Electrical connection	Switching output	Part No.	Туре	
N/O contact	N/O contact					
	Screwed on	Plug connector M8x1, 3-pin	PNP	150491	SIES-V3B-PS-S-L	
N/C contact						
En 8	Screwed on	Cable, 3-wire	NPN	174550	SIES-Q8B-NO-K-L	



Ordering data						
	Description	Cable length [m]	Part No.	Туре		
Control cable NEBC						
	For the I/O interface to any controller	1	2307459	NEBC-S1H15-E-1.0-N-LE15		
		2.5	2052917	NEBC-S1H15-E-2.5-N-LE15		
		5	2052918	NEBC-S1H15-E-5.0-N-LE15		
		10	2052919	NEBC-S1H15-E-10.0-N-LE15		

Cables for Z-axis for size 40

Ordering data						
	Description	Cable length [m]	Part No.	Туре		
Motor cable NEBM						
	- Min. bending radius: 62 mm	10	1450372	NEBM-S1G9-E-10-Q5-LE6		
	Suitable for use with energy chainsAmbient temp.:−40 +80 °C					
Encoder cable NEBM						
	- Min. bending radius: 51 mm	10	550749	NEBM-M12G8-E-10-S1G9		
	 Suitable for use with energy chains 	15	550750	NEBM-M12G8-E-15-S1G9		
	- Ambient temp.:					
	−40 +70 °C					