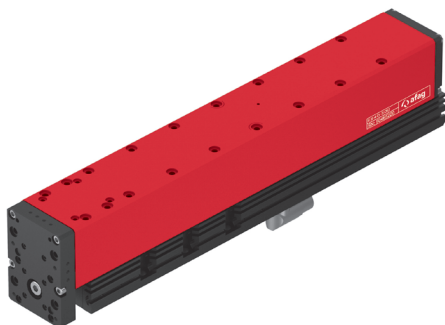
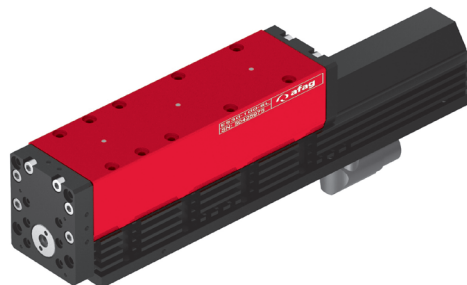
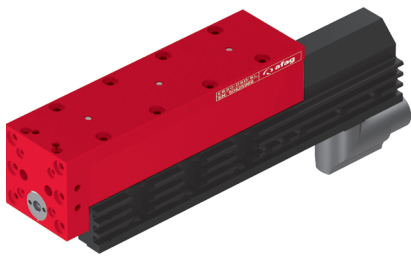


# Electro slides ES

ES12 - ES40



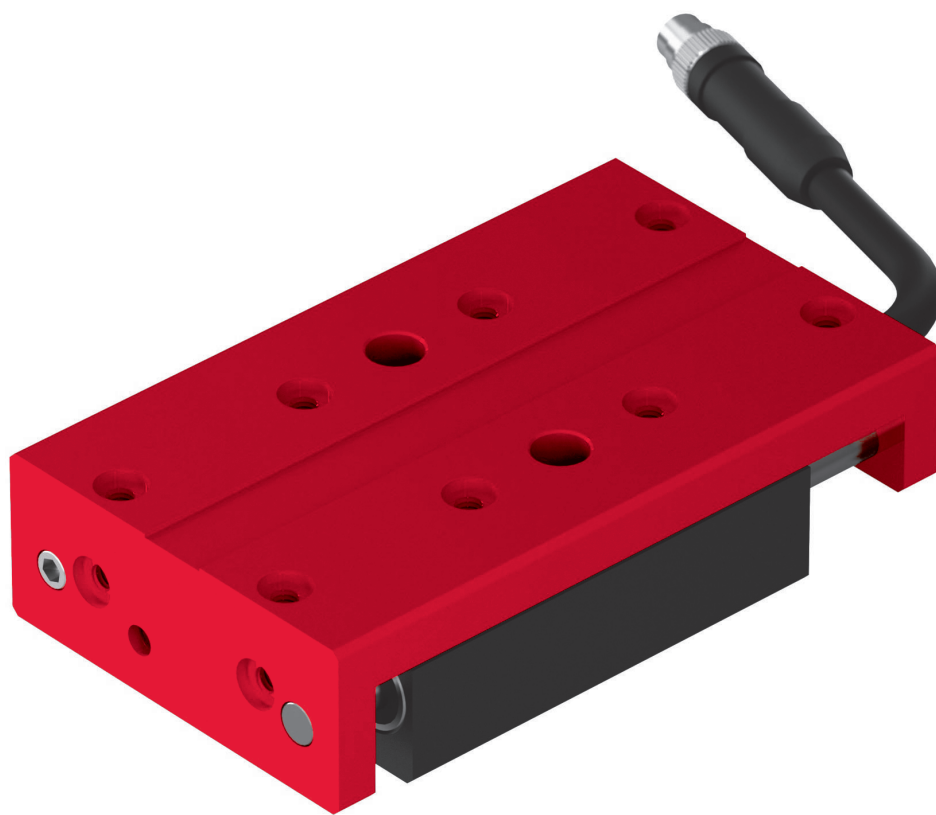
## Table of contents: ES

<b>Electro slides ES</b>	<b>Page</b>
ES12	141
ES20	147
ES30	155
ES40	165
ES40-HP	173
Accessories ES	181



# Electro slides ES

ES12



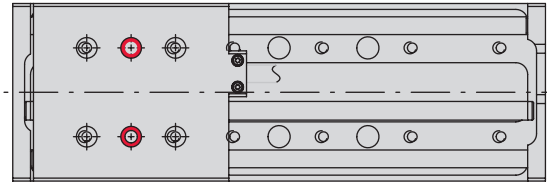
- Compact electrical slide
- Freely programmable
- Modular

# Dimensions and dimension drawings

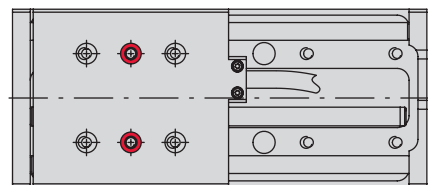
ES12

Type	ES12-20	ES12-60	ES12-100
A	100 mm	140 mm	180 mm
B	3x30 mm	4x30 mm	5x30 mm

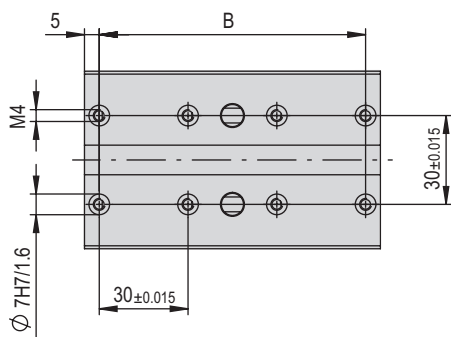
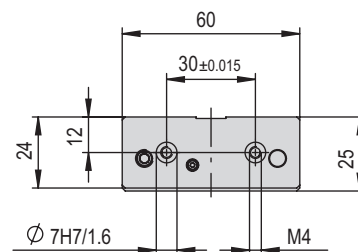
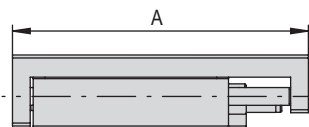
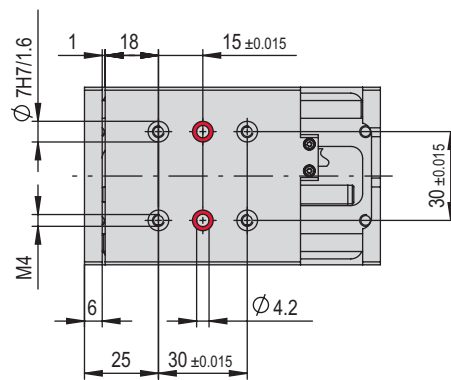
ES-12-100




ES-12-60



ES-12-20



 Bores can be screwed through



ES12	
Attachment grid	30 x 30 mm
Attachment thread	M4
Attachment thread alternative	M3
Operating temperature	10 - 40 °C
Storage temperature	10 - 40 °C
Humidity	< 90 %

Type	ES12-20	ES12-60	ES12-100
<b>Order number</b>	<b>50433802</b>	<b>50433803</b>	<b>50433804</b>
Stroke H	20 mm	60 mm	100 mm
Net weight	0.331 kg	0.368 kg	0.403 kg
Moving weight	0.126 kg	0.163 kg	0.199 kg
Nominal voltage	< 75 VDC	< 75 VDC	< 75 VDC
Drive	Linear motor, electric		
Protection type	IP 30	IP 30	IP 30
Peak force Fx	10.7 N	10.7 N	10.7 N
Force constant	6.43 N/A	6.43 N/A	6.43 N/A
Permanent force	3.6 N	3.6 N	3.6 N
Peak force	10.7 N	10.7 N	10.7 N
Repeat accuracy	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm
Mounting position	↔	↔	↔

Cleanroom class ISO 14644-1, class ISO 7

\*Vertical installation upon request

### Included in the delivery

(Catalogue HT accessories)

- 2x Centering bushing Ø7x3
- 4x Mounting screw M4x22

### Accessories

(Catalogue HT accessories)

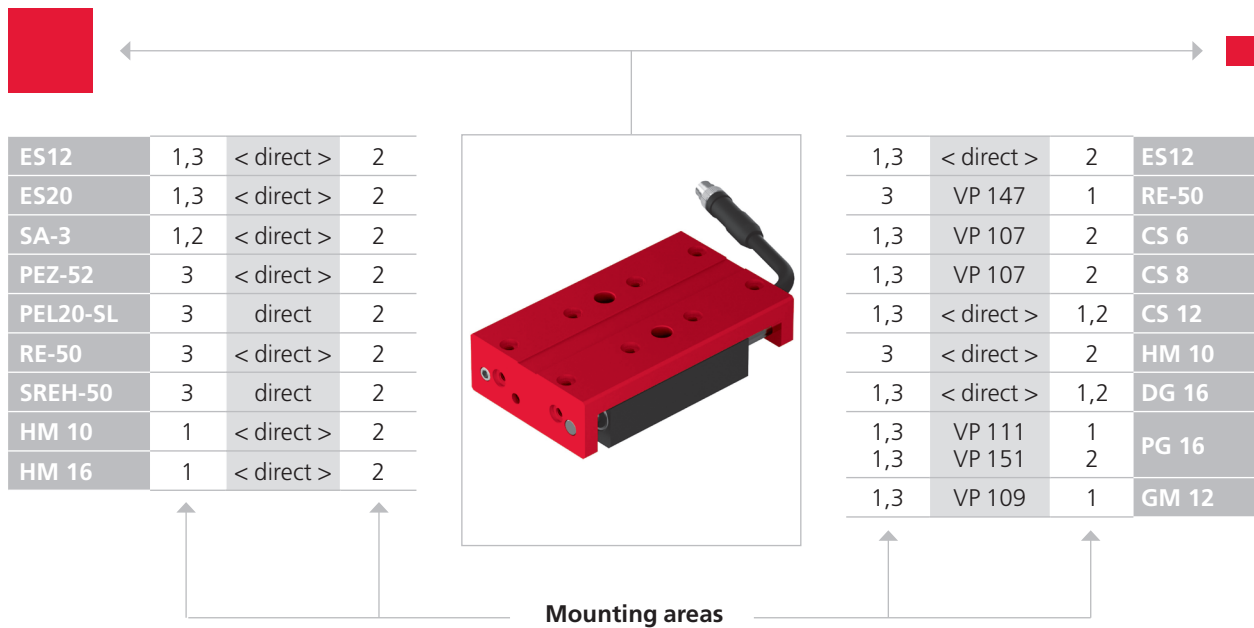
- Adapter ES8/12 LinMot
- Motor cable-M16
- Controller C1xxx-1S
- Plug kit for C1xxx-1S
- USB-RS232 Converter for controllers

### Alternative accessories

(Catalogue HT accessories)

- Additional motor cables
- Additional controllers

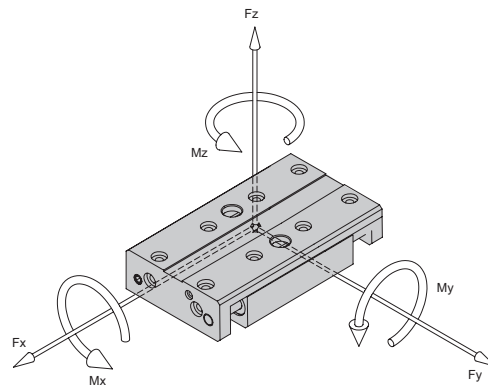
Warranty: 24 months following commissioning, but a maximum of 27 months following delivery



CS, ES	LM	HM	SA	UG, GM, SG, DG, PG, GE, SGE
PMP, PMP-c	PEZ, PDZ	PEL, PDL	RM, RE	CR, RM 32, RE, SREH, RA

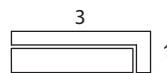
Note that there might be different mounting positions from one module to another one.  
 The required connection elements and the range of support columns are depicted in the catalogue HT accessories.

Type	ES12-20	ES12-60	ES12-100
Max. static torque Mx	10 Nm	10 Nm	10 Nm
Max. static torque My	10 Nm	10 Nm	10 Nm
Max. static torque Mz	10 Nm	10 Nm	10 Nm
Max. dynamic torque Mx	0.5 Nm	0.5 Nm	0.5 Nm
Max. dynamic torque My	0.5 Nm	0.5 Nm	0.5 Nm
Max. dynamic torque Mz	0.5 Nm	0.5 Nm	0.5 Nm
Peak force Fx	10.7 N	10.7 N	10.7 N



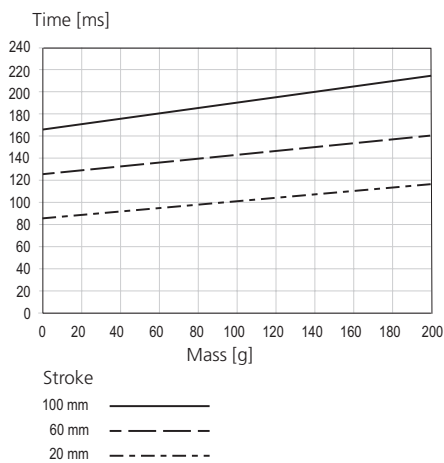
Maximum payload/type	ES12-20	ES12-60	ES12-100
Installation position (horizontal) for mounting side 1/3	0.2 kg	0.2 kg	0.2 kg

Assembly sides module mounting horizontal:



## Operation time diagrams

### Operation time ES12

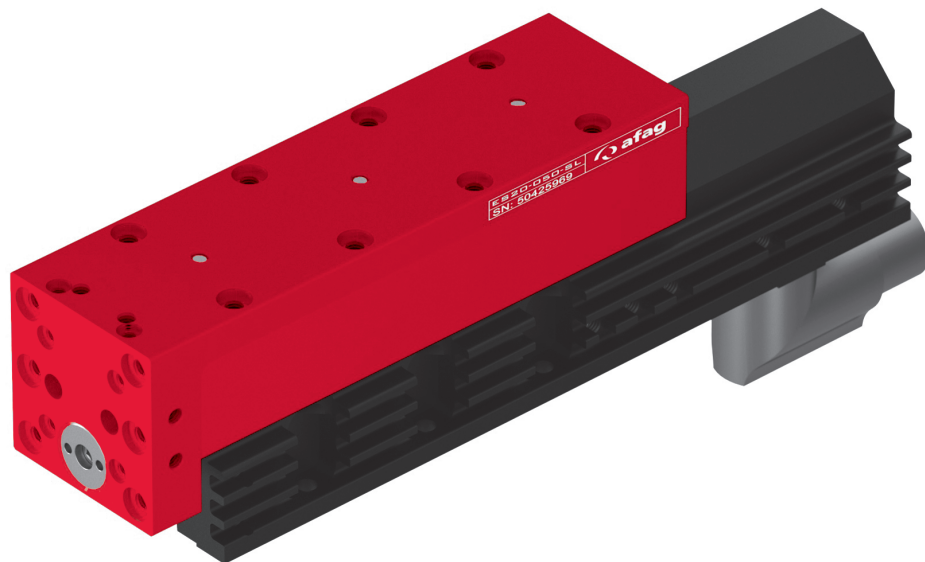






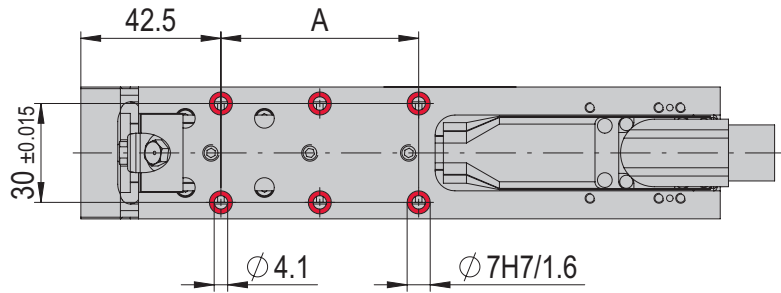
# Electro slides ES

## ES20

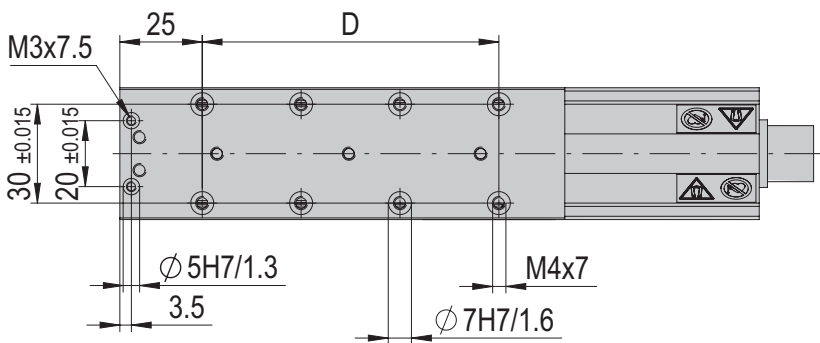
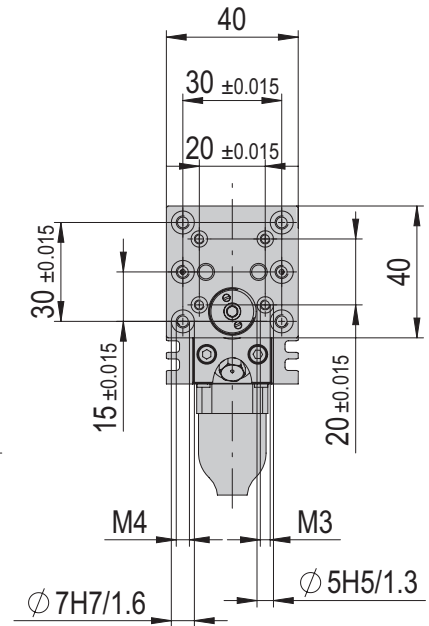
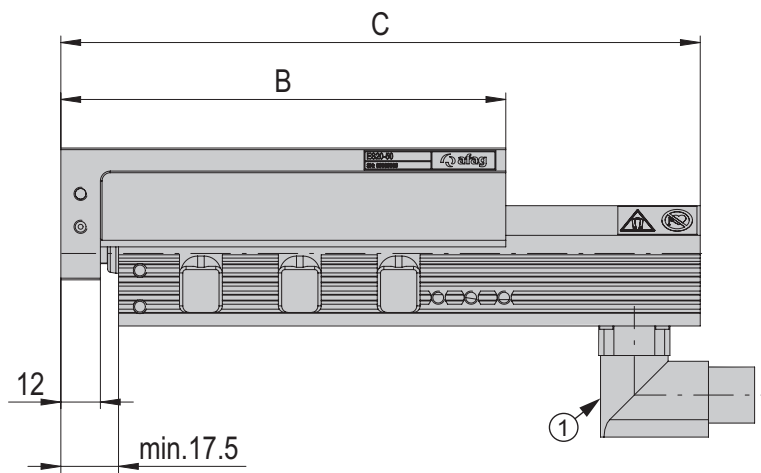


- Extremely light-weight linear motor axis
- Freely programmable
- High dynamics up to  $120 \text{ m/s}^2$  acceleration

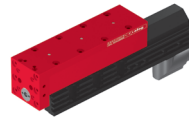
Type	ES20-50-SL	ES20-100-SL	ES20-200	ES20-300
A	2 x 30 mm	4 x 30 mm	4 x 30 mm	4 x 30 mm
B	135 mm	185 mm	343 mm	443 mm
C	194 mm	287.5 mm	367.5 mm	497.5 mm
D	3 x 30 mm	5 x 30 mm	10 x 30 mm	13 x 30 mm



① Stecker 270° drehbar  
270° rotatable connector



⊕ Bores can be screwed through



ES20	
Attachment grid	30 x 30 mm
Attachment thread	M4
Attachment thread alternative	M3
Operating temperature	0 - 50 °C
Storage temperature	0 - 50 °C
Humidity	< 90 %

Type	ES20-50-SL	ES20-100-SL	ES20-200	ES20-300
<b>Order number</b>	<b>50425969</b>	<b>50425970</b>	<b>50425971</b>	<b>50425972</b>
Stroke H	50 mm	100 mm	200 mm	300 mm
Net weight	1.1 kg	1.5 kg	2.1 kg	2.5 kg
Moving weight	0.5 kg	0.7 kg	1.1 kg	1.4 kg
Nominal voltage	72 VDC	72 VDC	72 VDC	72 VDC
Drive	Linear motor, electric			
Protection type	IP 30	IP 30	IP 30	IP 30
Max. speed v	6.8 m/s	4.8 m/s	4.8 m/s	4.8 m/s
Peak force Fx	67 N	137 N	137 N	137 N
Constant force Fx	15 N	31 N	31 N	31 N
Force constant	9 N/A	12.5 N/A	12.5 N/A	12.5 N/A
Repeat accuracy	+/- 0.05 mm	+/- 0.05 mm	+/- 0.05 mm	+/- 0.05 mm
- with external position measuring system	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm
Mounting position				

Note: Note: For vertical installation, a weight compensation via MagSpring or compensation spring (ES20-50-SL) is required. This compensates the load mass for vertically installed axes. Furthermore, the peripherals and the workpiece are also prevented from falling when the electric slide is in a deenergised state.  
Cleanroom class ISO 14644-1, class ISO 7

### Included in the delivery

(Catalogue HT accessories)

- 2x Centering bushing Ø7x3
- 4x Mounting screw M4x12
- 4x Spring ring M4

### Accessories

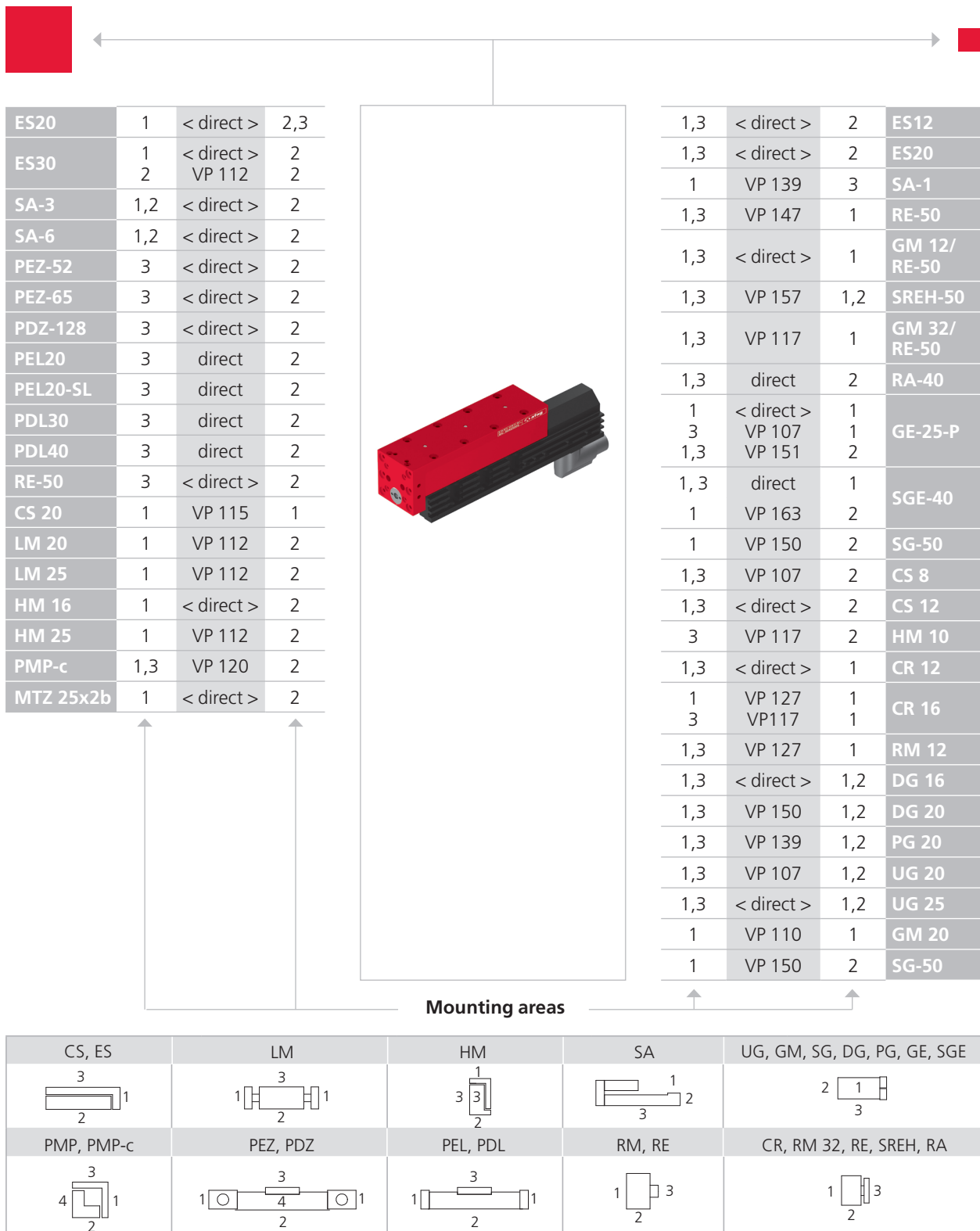
- MagSpring side/front[p. 192-196]
  - Compensation spring ES20-50-SL[p. 203]
  - External position measuring system ES20[p. 204]
- (Catalogue HT accessories)
- Centering bushing Ø5x2.5
  - Motor cable-M16
  - Controller C1xxx-1S
  - Plug kit for C1xxx-1S
  - USB-RS232 Converter for controllers
  - Power supply S01-72/500, 1-phase
  - MTZ 25x2b Double centric mounting module

### Alternative accessories

(Catalogue HT accessories)

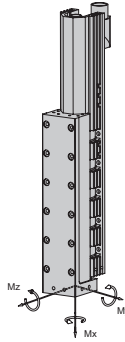
- Additional motor cables
- Additional controllers
- Additional power supplies
- Additional mounting modules

Warranty: 24 months following commissioning, but a maximum of 27 months following delivery



Note that there might be different mounting positions from one module to another one.  
The required connection elements and the range of support columns are depicted in the catalogue HT accessories.

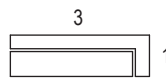
Type	ES20-50-SL	ES20-100-SL	ES20-200	ES20-300
Max. dynamic torque $M_x$	5 Nm	5 Nm	5 Nm	5 Nm
Max. dynamic torque $M_y$	25 Nm	25 Nm	50 Nm	50 Nm
Max. dynamic torque $M_z$	25 Nm	25 Nm	50 Nm	50 Nm
Peak force $F_x$	67 N	137 N	137 N	137 N



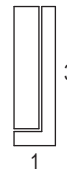
Maximum payload/type	ES20-50-SL	ES20-100-SL	ES20-200	ES20-300
Installation position (horizontal) for mounting side 1/3	4 kg	4 kg	3 kg	2 kg
Installation position (vertical) for mounting side 1/3	4 kg	4 kg	3 kg	2 kg

Assembly sides module mounting

horizontal:

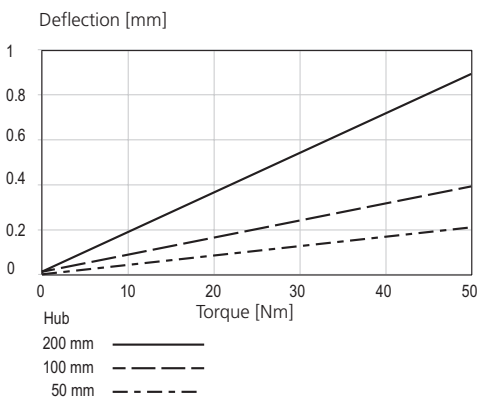


vertical:

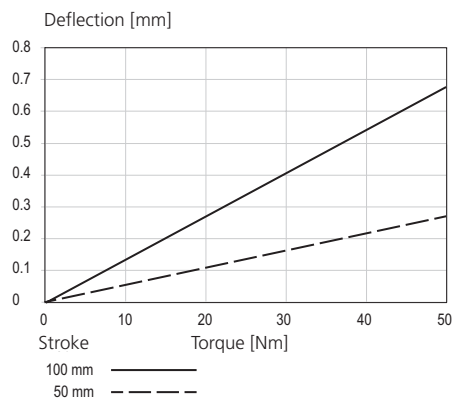


## Diagrams

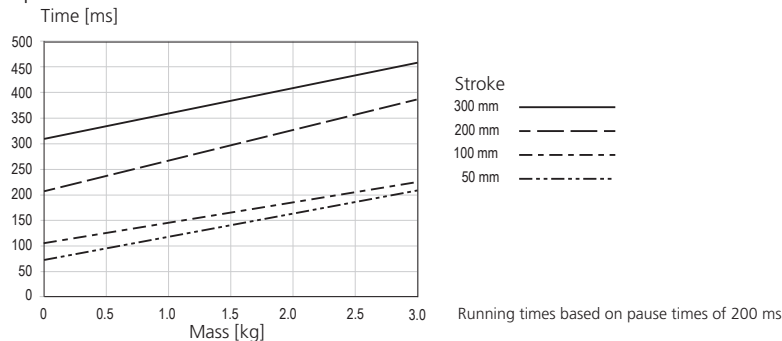
Deflection ES20



Deflection ES20-SL



Operation time ES20

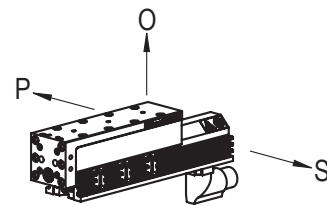


Order form	ES20	XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX	X	X
		Electric slide	Compensation spring	MagSpring	External position measuring system	Position MagSpring	External position measuring system

### Coordinate system

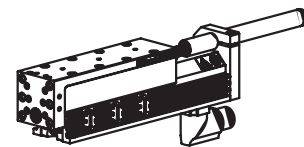
The coordinate system allows you to define the position of the MagSpring as well as that of the external position measuring system.

- P = left
- O = top
- S = right



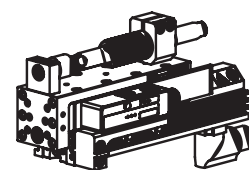
### Ordering example 1 with compensation spring

ES20	50425969	50427546	X	X	X	X
------	----------	----------	---	---	---	---



### Ordering example 2 with MagSpring and external position measuring system

ES20	50425969	X	50427554	50427547	O	S
------	----------	---	----------	----------	---	---



### Ordering process

- Select the desired electric slide, compensation spring (only for ES20-50SL), external position measuring system and external MagSpring from the order key.
- Enter the corresponding red order numbers in the order form in the place of the cross.
- Determine the desired position of the MagSpring and the external position measuring system.
- Enter the corresponding letters from the coordinate system in the order form in the place of the cross.

### Compensation spring

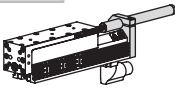
- The compensation spring can only be used for the ES20-50-SL. It serves as an inexpensive alternative to the MagSpring.

### MagSpring

- The MagSpring serves to balance the weight forces in a vertical installation position.
- The dimensioning of the MagSpring must match the moving weight in the vertical installation position.

### External position measuring system

- The external position measuring system must be ordered in accordance with the module length.

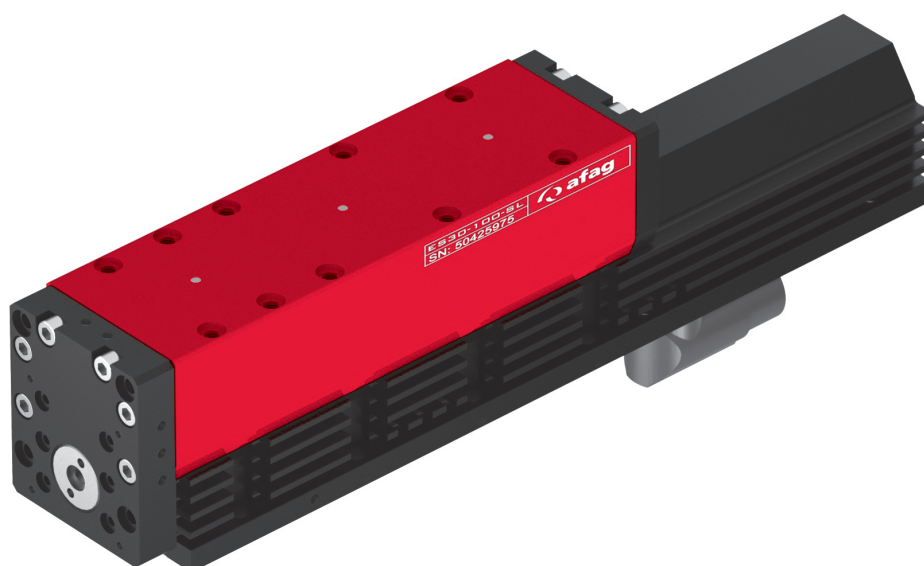
Electro slide	ES20	XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX	X	X
	ES20-50-SL	50425969	Compensation spring 50427546	MagSpring side (s)	MagSpring front (v)	External position measuring system	Position MagSpring
	ES20-100-SL	50425970					
	ES20-200	50425971					
	ES20-300	50425972					
Compensation spring	Compensation spring ES20-50-SL 						
	Without compensation spring		X				
MagSpring for ES20-50	MagSpring ES20 s/v 11N			50427548	50427554		
	MagSpring ES20 s/v 17N			50427549	50427555		
	MagSpring ES20 s/v 22N			50427550	50427556		
	MagSpring ES20 s/v 40N			50427551	50427557		
	MagSpring ES20 s/v 50N			50427552	50427558		
	MagSpring ES20 s/v 60N			50427553	50427559		
MagSpring for ES20-100	MagSpring ES20 s/v 11N			50427561	50427567		
	MagSpring ES20 s/v 17N			50427562	50427568		
	MagSpring ES20 s/v 22N			50427563	50427569		
	MagSpring ES20 s/v 40N			50427564	50427570		
	MagSpring ES20 s/v 50N			50427565	50427571		
	MagSpring ES20 s/v 60N			50427566	50427572		
MagSpring for ES20-200	MagSpring ES20 s/v 11N			50427574	50427580		
	MagSpring ES20 s/v 17N			50427575	50427581		
	MagSpring ES20 s/v 22N			50427576	50427582		
	MagSpring ES20 s/v 40N			50427577	50427583		
	MagSpring ES20 s/v 50N			50427578	50427584		
	MagSpring ES20 s/v 60N			50427579	50427585		
MagSpring for ES20-300	MagSpring ES20 s/v 11N			50427587	50427593		
	MagSpring ES20 s/v 17N			50427588	50427594		
	MagSpring ES20 s/v 22N			50427589	50427595		
	MagSpring ES20 s/v 40N			50427590	50427596		
	MagSpring ES20 s/v 50N			50427591	50427597		
	MagSpring ES20 s/v 60N			50427592	50427598		
External position measuring system	Without MagSpring					X	
	External position measuring system ES20 050mm						50427547
	External position measuring system ES20 100mm						50427560
	External position measuring system ES20 200mm						50427573
	External position measuring system ES20 300mm						50427586
Mounting	Position MagSpring						P O S
	Position external position measuring system						P S





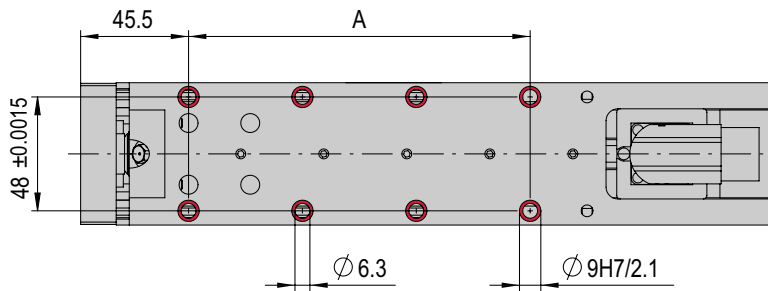
# Electro slides ES

## ES30

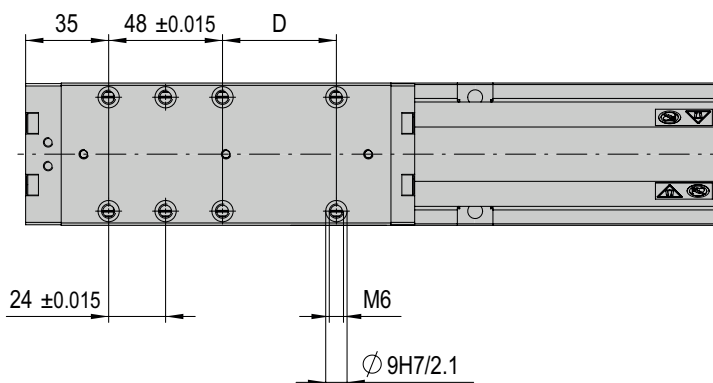
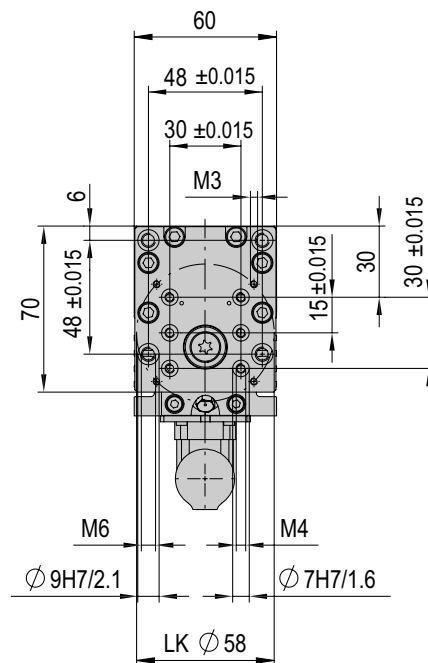
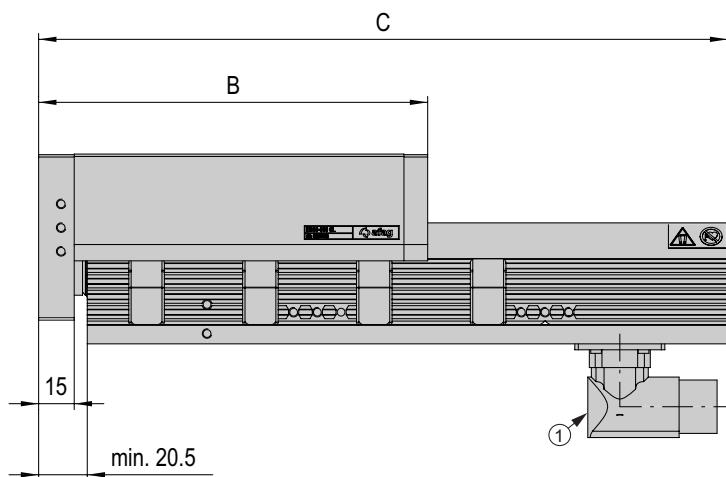


- Rigid linear motor axis
- Freely programmable
- Cantilever axis with large stroke

Type	ES30-50-SL	ES30-100-SL	ES30-100	ES30-200-SL	ES30-200	ES30-300	ES30-400	ES30-500
A	3 x 48 mm	3 x 48 mm	3 x 48 mm	3 x 48 mm	3 x 48 mm	3 x 48 mm	3 x 48 mm	3 x 48 mm
B	164 mm	214 mm	326 mm	314 mm	426 mm	526 mm	626 mm	726 mm
C	290.5 mm	330.5 mm	330.5 mm	430.5 mm	430.5 mm	530.5 mm	630.5 mm	730.5 mm
D	1 x 48 mm	2 x 48 mm	4 x 48 mm	4 x 48 mm	6 x 48 mm	8 x 48 mm	10 x 48 mm	12 x 48 mm



① Stecker 270° drehbar  
270° rotatable connector



⊕ Bores can be screwed through



ES30	
Attachment grid	48 x 48 mm
Attachment thread	M6
Operating temperature	0 - 50 °C
Storage temperature	0 - 50 °C
Humidity	< 90 %

Type	ES30-50-SL	ES30-100-SL	ES30-100	ES30-200-SL	ES30-200	ES30-300	ES30-400	ES30-500
<b>Order number</b>	<b>50425973</b>	<b>50425974</b>	<b>50425975</b>	<b>50425976</b>	<b>50425977</b>	<b>50425978</b>	<b>50425979</b>	<b>50425980</b>
Stroke H	50 mm	100 mm	100 mm	200 mm	200 mm	300 mm	400 mm	500 mm
Net weight	3.1 kg	3.5 kg	4.1 kg	4.3 kg	4.9 kg	5.7 kg	6.5 kg	7.2 kg
Moving weight	1.3 kg	1.6 kg	1.85 kg	2.2 kg	2.6 kg	3.2 kg	3.8 kg	4.4 kg
Nominal voltage	72 VDC	72 VDC	72 VDC	72 VDC	72 VDC	72 VDC	72 VDC	72 VDC
Drive	Linear motor, electric							
Protection type	IP 30	IP 30	IP 30	IP 30	IP 30	IP 30	IP 30	IP 30
Max. speed v	3.2 m/s	3.2 m/s	3.2 m/s	3.2 m/s	3.2 m/s	3.2 m/s	3.2 m/s	3.2 m/s
Peak force Fx	255 N	255 N	255 N	255 N	255 N	255 N	255 N	255 N
Constant force Fx	51 N	51 N	51 N	51 N	51 N	51 N	51 N	51 N
Force constant	17 N/A	17 N/A	17 N/A	17 N/A	17 N/A	17 N/A	17 N/A	17 N/A
Repeat accuracy	+/- 0.05 mm	+/- 0.05 mm	+/- 0.05 mm	+/- 0.05 mm	+/- 0.05 mm	+/- 0.05 mm	+/- 0.05 mm	+/- 0.05 mm
- with external position measuring system	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm
Mounting position								

Note: For vertical installation, a weight compensation via MagSpring or pneumatic weight balancing is required. If the weight compensation is not carried out, the slide will fall below when in a deenergised state. Furthermore, the operation time from the operation time diagram cannot be achieved.  
Cleanroom class ISO 14644-1, class ISO 7

**Included in the delivery**  
(Catalogue HT accessories)

- 2x Centering bushing Ø9x4
- 4x Mounting screw M6x20


**Accessories**

- MagSpring side/front [p. 198-202]
- External position measuring system ES30 [p. 204] (Catalogue HT accessories)
- Motor cable-M23
- Controller C 1xxx-1S
- Plug kit for C 1xxx-1S
- USB-RS232 Converter for controllers
- Power supply S01-72/1000, 3-phase
- MTZ 45x2b Double centric mounting module

**Alternative accessories**  
(Catalogue HT accessories)

- Additional motor cables
- Additional controllers
- Additional power supplies
- Additional mounting modules

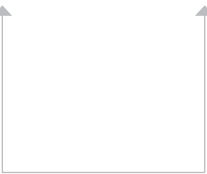
Warranty: 24 months following commissioning, but a maximum of 27 months following delivery



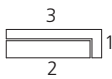
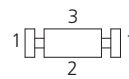


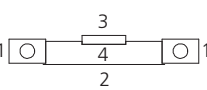
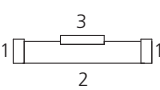
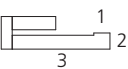



  

ES30	3	< direct >	2
ES40	1,3	< direct >	2
ES40-HP	1,3	< direct >	2
PEZ-65	3	< direct >	2
PEZ-80	3	< direct >	2
PDZ-128	3	< direct >	2
PDZ-160	3	< direct >	2
PEL20	3	< direct >	2
PDL30	3	< direct >	2
PDL40	3	< direct >	2
PDL40-HP	3	< direct >	2
RE-75	3	< direct >	2
HM 16	1	< direct >	2
HM 25	1	< direct >	2
PMP	1,3	< direct >	2
MT 45x2c	1	< direct >	2
MTZ 45x2b	1	< direct >	2




**Mounting areas**

CS, ES	LM	HM
		
PMP, PMP-c	PEZ, PDZ	PEL, PDL
		
SA	UG, GM, SG, DG, PG, GE, SGE	
		
RM, RE	CR, RM 32, RE, SREH, RA	
		

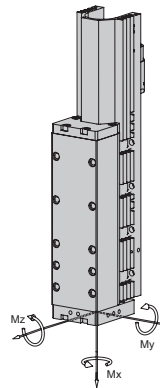
1	< direct >	2	ES20
3	VP 112	2	
3	< direct >	2	ES30
1	VP 146	3	SA-3
1,3	VP 112	1	RE-50
1,3	VP 148	1	RE-75
1,3	VP 157	1	SREH-50
1,3	VP 159	2	
1	< direct >	1	EG-20/ GM20
3	VP 112	1	
1	< direct >	1	GM 12/ RE-50
3	VP 112	1	
1	< direct >	1	GM 20/ RE-50
3	VP 112	1	
1	VP 117	1	GM 32/ RE-50
3	< direct >	1	
1, 3	< direct >	1	GM 32/ RE-75
1	direct	2	RA-40
3	VP 112	2	
1	direct	1	SGE-40
1	VP 163	2	
1	VP 112	1	
1	VP 150	2	SG-50
1	< direct >	2	CS 12
3	VP 112	2	
1	< direct >	2	CS 16
3	VP 112	2	
1,3	< direct >	2	CS 20
3	VP 112	2	HM 10
3	< direct >	2	HM 16
1	< direct >	1	CR 12
3	VP112	1	
1,3	< direct >	1	CR 16
1,3	< direct >	1	CR 20
1,3	VS 506	1	RM 12
1,3	VS 507	1	RM 16
1,3	VP 150	1,2	DG 20
1	< direct >	1,2	UG 20
3	VP 115	1	UG 25
3	VP 112	2	
1,3	< direct >	1	GM 32



**Mounting areas**

Note that there might be different mounting positions from one module to another one. The required connection elements and the range of support columns are depicted in the catalogue HT accessories.

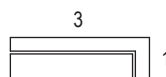
Type	ES30-50-SL	ES30-100-SL	ES30-100	ES30-200-SL	ES30-200	ES30-300	ES30-400	ES30-500
Max. dynamic torque Mx	30 Nm	30 Nm	30 Nm	30 Nm	30 Nm	30 Nm	30 Nm	30 Nm
Max. dynamic torque My	40 Nm	40 Nm	80 Nm	40 Nm	80 Nm	80 Nm	80 Nm	80 Nm
Max. dynamic torque Mz	40 Nm	40 Nm	80 Nm	40 Nm	80 Nm	80 Nm	80 Nm	80 Nm
Peak force Fx	255 N	255 N	255 N	255 N	255 N	255 N	255 N	255 N



Maximum payload/type	ES30-50-SL	ES30-100-SL	ES30-100	ES30-200-SL	ES30-200	ES30-300	ES30-400	ES30-500
Installation position (horizontal) for mounting side 1/3	10 kg	10 kg	10 kg	8 kg	8 kg	6 kg	5 kg	4 kg
Installation position (vertical) for mounting side 1/3	10 kg	10 kg	10 kg	8 kg	8 kg	6 kg	5 kg	4 kg

Assembly sides module mounting

horizontal:

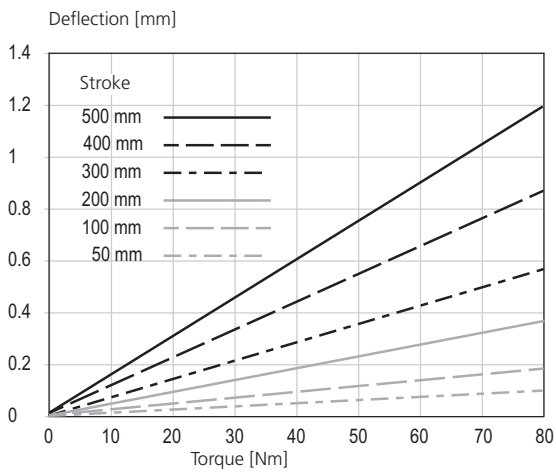


vertical:

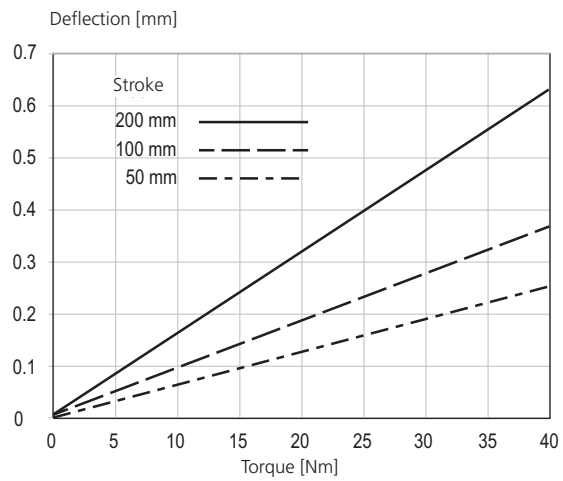


## Diagrams

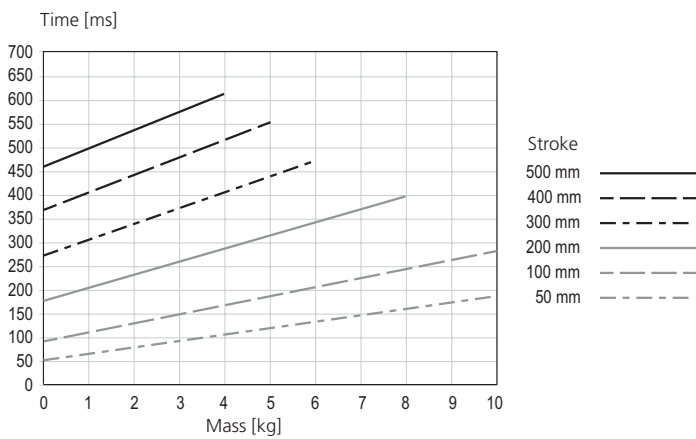
### Deflection ES30



### Deflection ES30-SL



### Operation time ES30



Running times based on pause times of 200 ms



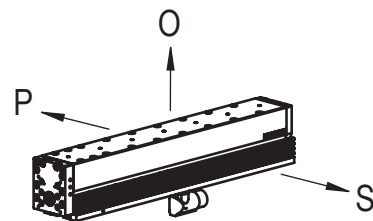


Order form	ES30	XXXXXXXX	XXXXXXXX	XXXXXXXX	X	X
		Electric slide	MagSpring	External position measuring system	Position MagSpring	Position external position measuring system

### Coordinate system

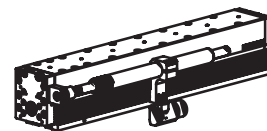
The coordinate system allows you to define the position of the MagSpring as well as that of the external position measuring system.

- P = left
- O = top
- S = right



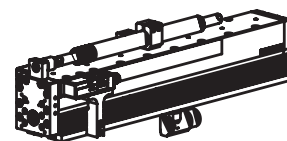
### Ordering example 1 with MagSpring

ES30	50425977	50429231	X	S	X
------	----------	----------	---	---	---



### Ordering example 2 with MagSpring and external position measuring system

ES30	50425977	50429237	50429230	O	S
------	----------	----------	----------	---	---



### Ordering process

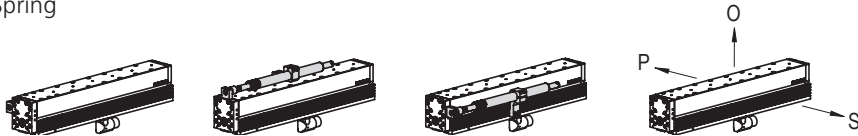
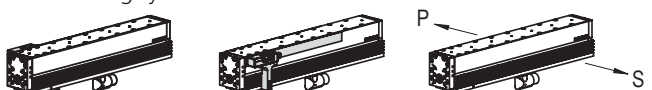
- Select the desired electric slide, external position measuring system and MagSpring from the order key.
- Enter the corresponding red order numbers in the order form in the place of the cross.
- Determine the desired position of the MagSpring and the external position measuring system.
- Enter the corresponding letters from the coordinate system in the order form in the place of the cross.

### MagSpring

- The MagSpring serves to balance the weight forces in a vertical installation position.
- The dimensioning of the MagSpring must match the moving weight in the vertical installation position.

### External position measuring system

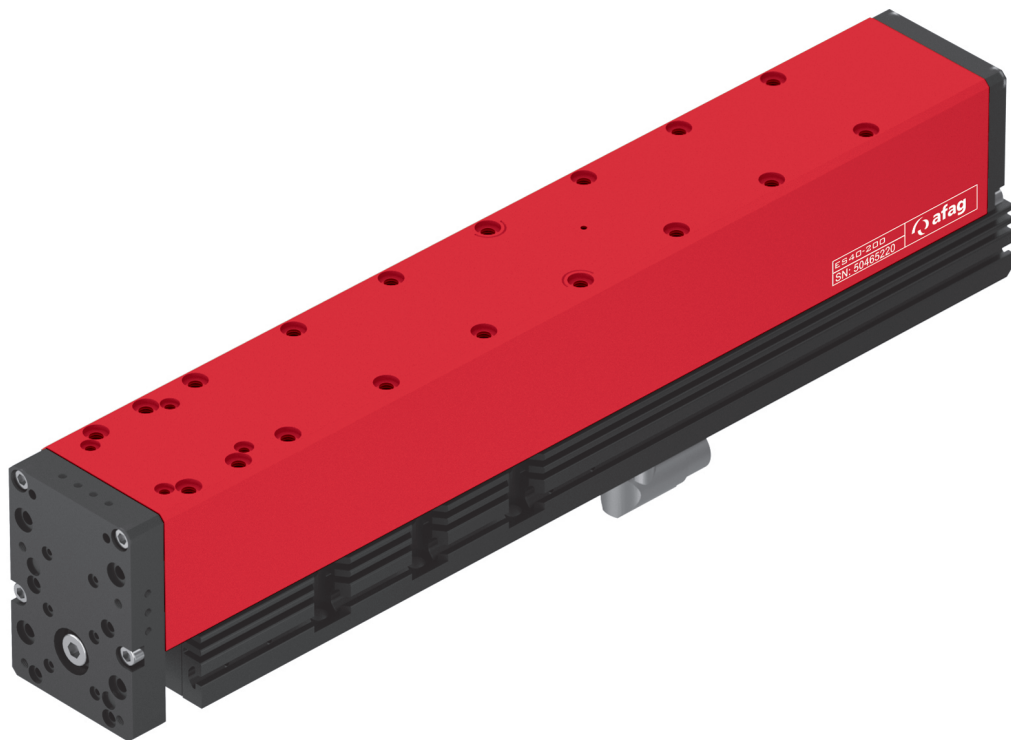
- The external position measuring system must be ordered in accordance with the module length.

Electro slide	ES30	XXXXXXXX	XXXXXXXX		XXXXXXXX	X	X
	ES30-50-SL	50425973	MagSpring side (s)	MagSpring front (v)	External position measuring system	Position MagSpring	Position external position measuring system
	ES30-100-SL	50425974					
	ES30-100	50425975					
	ES30-200-SL	50425976					
	ES30-200	50425977					
	ES30-300	50425978					
	ES30-400	50425979					
	ES30-500	50425980					
MagSpring for ES30-50	MagSpring ES30 s/v 11N	50429205					
	MagSpring ES30 s/v 17N	50429206	50429212				
	MagSpring ES30 s/v 22N	50429207	50429213				
	MagSpring ES30 s/v 40N	50429208	50429214				
	MagSpring ES30 s/v 50N	50429209	50429215				
	MagSpring ES30 s/v 60N	50429210	50429216				
MagSpring for ES30-100	MagSpring ES30 s/v 11N	50429218	50429224				
	MagSpring ES30 s/v 17N	50429219	50429225				
	MagSpring ES30 s/v 22N	50429220	50429226				
	MagSpring ES30 s/v 40N	50429221	50429227				
	MagSpring ES30 s/v 50N	50429222	50429228				
	MagSpring ES30 s/v 60N	50429223	50429229				
MagSpring for ES30-200	MagSpring ES30 s/v 11N	50429231	50429237				
	MagSpring ES30 s/v 17N	50429232	50429238				
	MagSpring ES30 s/v 22N	50429233	50429239				
	MagSpring ES30 s/v 40N	50429234	50429240				
	MagSpring ES30 s/v 50N	50429235	50429241				
	MagSpring ES30 s/v 60N	50429236	50429242				
MagSpring for ES30-300	MagSpring ES30 s/v 11N	50429244	50429250				
	MagSpring ES30 s/v 17N	50429245	50429251				
	MagSpring ES30 s/v 22N	50429246	50429252				
	MagSpring ES30 s/v 40N	50429247	50429253				
	MagSpring ES30 s/v 50N	50429248	50429254				
	MagSpring ES30 s/v 60N	50429249	50429255				
	Without MagSpring	X					
External position measuring system	External position measuring system ES30 050mm	50429204					
	External position measuring system ES30 100mm	50429217					
	External position measuring system ES30 200mm	50429230					
	External position measuring system ES30 300mm	50429243					
	External position measuring system ES30 400mm	50429256					
	External position measuring system ES30 500mm	50429257					
	Without external position measuring system	X					
Mounting	Position MagSpring						
	Position external position measuring system						



# Electro slides ES40

## ES40

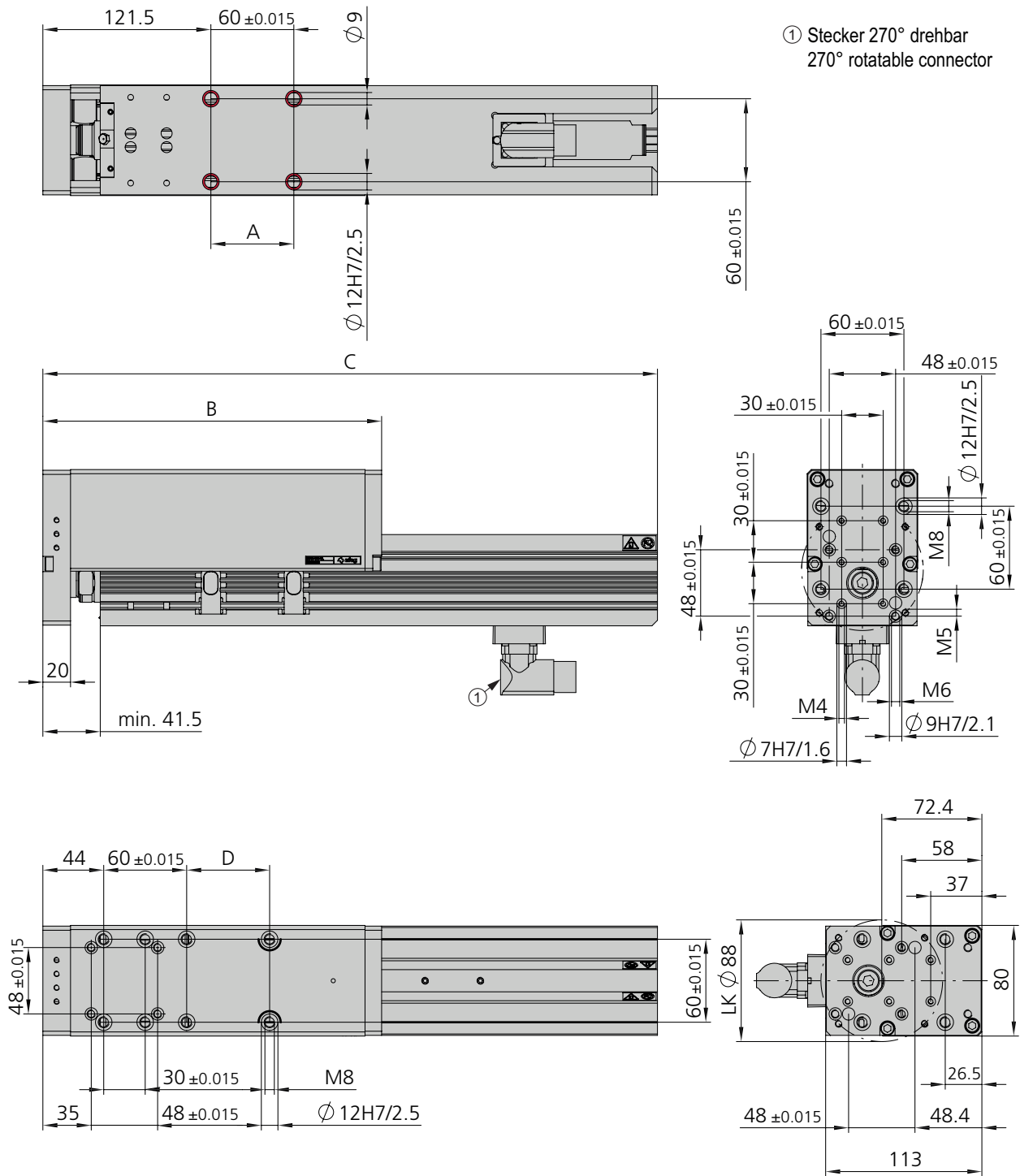


- Powerful cantilever axis
- Freely programmable
- High dynamics

# Dimensions and dimension drawings

ES40

Type	ES40-100-SL	ES40-100	ES40-200	ES40-300	ES40-400	ES40-500
A	1 x 60 mm	2 x 60 mm	2 x 60 mm	2 x 60 mm	2 x 60 mm	3 x 60 mm
B	245 mm	445 mm	545 mm	645 mm	745 mm	904 mm
C	444.5 mm	451.5 mm	551.5 mm	651.5 mm	751.5 mm	910.5 mm
D	2 x 60 mm	6 x 60 mm	7 x 60 mm	9 x 60 mm	11 x 60 mm	13 x 60 mm



Bores can be screwed through



ES40	
Attachment grid	60 x 60 mm
Attachment thread	M8
Operating temperature	0 - 50 °C
Storage temperature	0 - 50 °C
Humidity	< 90 %

Type	ES40-100-SL	ES40-100	ES40-200	ES40-300	ES40-400	ES40-500
<b>Order number</b>	<b>50465218</b>	<b>50465219</b>	<b>50465220</b>	<b>50465221</b>	<b>50465222</b>	<b>50465223</b>
Stroke H	100 mm	100 mm	200 mm	300 mm	400 mm	500 mm
Net weight	8.23 kg	10.08 kg	11.65 kg	13.35 kg	14.91 kg	17.11 kg
Moving weight	3.84 kg	5.33 kg	6.48 kg	7.67 kg	8.91 kg	10.5 kg
Max. speed	2 m/s	2 m/s	2 m/s	2 m/s	2 m/s	1.8 m/s
Nominal voltage	72 VDC	72 VDC	72 VDC	72 VDC	72 VDC	72 VDC
Drive	Linear motor, electric					
Protection type	IP 30	IP 30	IP 30	IP 30	IP 30	IP 30
Peak force Fx	550 N	550 N	550 N	550 N	550 N	550 N
Constant force Fx	145 N	145 N	145 N	145 N	145 N	145 N
Force constant	22 N/A	22 N/A	22 N/A	22 N/A	22 N/A	22 N/A
Repeat accuracy	+/- 0.05 mm	+/- 0.05 mm	+/- 0.05 mm	+/- 0.05 mm	+/- 0.05 mm	+/- 0.05 mm
- with external position measuring system	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm
Mounting position	✦	✦	✦	✦	✦	✦

Note: For vertical installation, a weight compensation via MagSpring or pneumatic weight balancing is required. If the weight compensation is not carried out, the slide will fall below when in a deenergised state. Furthermore, the operation time from the operation time diagram cannot be achieved.  
Cleanroom class ISO 14644-1, class ISO 7

### Included in the delivery

(Catalogue HT accessories)

- 2x Centering bushing Ø12x4.8
- 4x Mounting screw M8x25

### Accessories

(Product-specific accessories)

- MagSpring side/front
- External position measuring system ES40

(Catalogue HT accessories)

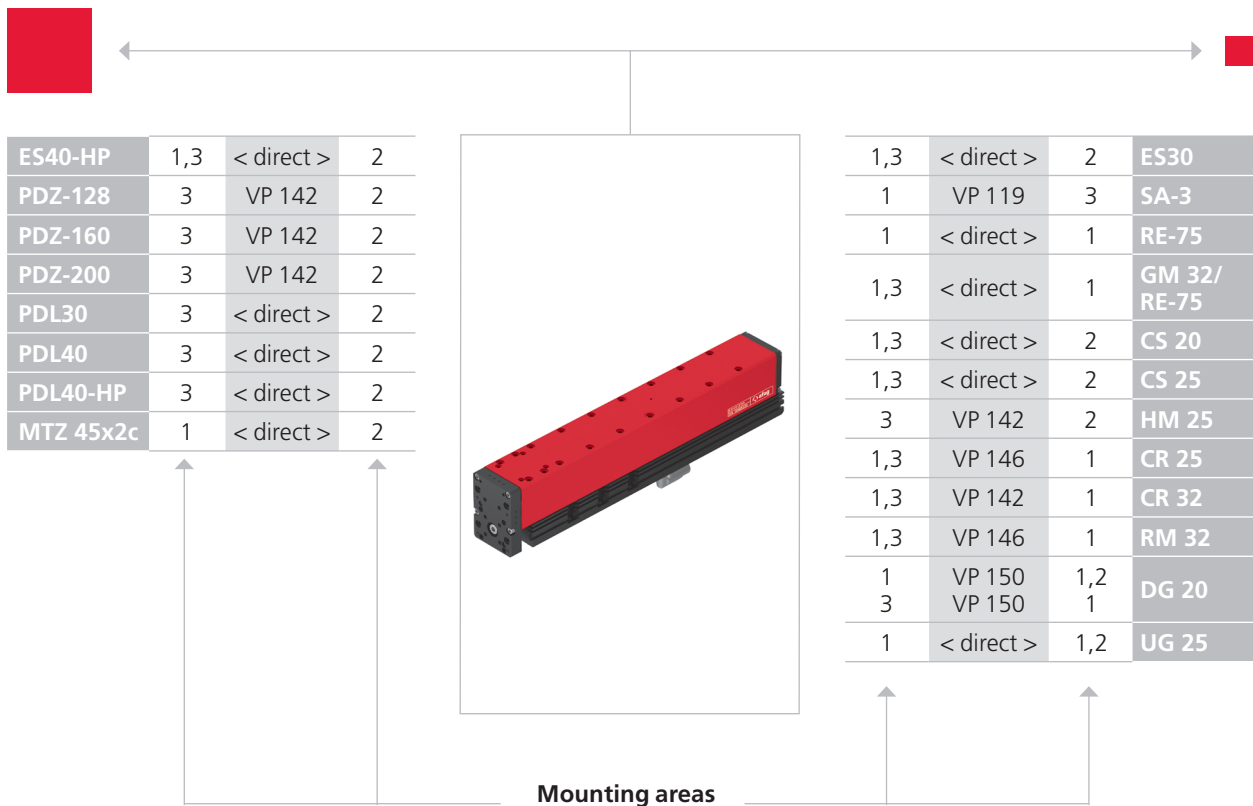
- Motor cable-M17
- Controller C1xxx-1S
- Plug kit for C1xxx-1S
- USB-RS232 Converter for controllers
- Power supply T01-72/1500 Multi, 3-phase
- Double module support centric MTZ 45x2c

### Alternative accessories

(Catalogue HT accessories)

- Additional motor cables
- Additional controllers
- Additional power supplies

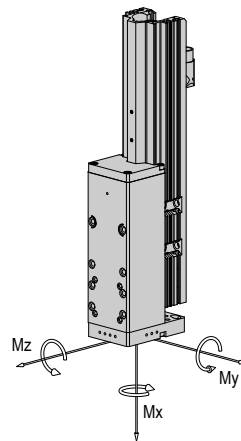
Warranty: 24 months following commissioning, but a maximum of 27 months following delivery



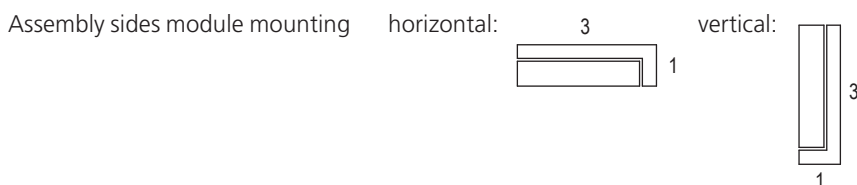
CS, ES	LM	HM	SA	UG, GM, SG, DG, PG, GE, SGE
PMP, PMP-c	PEZ, PDZ	PEL, PDL	RM, RE	CR, RM 32, RE, SREH, RA

Note that there might be different mounting positions from one module to another one. The required connection elements and the range of support columns are depicted in the catalogue HT accessories.

Type	ES40-100-SL	ES40-100	ES40-200	ES40-300	ES40-400	ES40-500
Max. dynamic torque Mx	35 Nm	45 Nm	45 Nm	45 Nm	45 Nm	45 Nm
Max. dynamic torque My	80 Nm	180 Nm	180 Nm	180 Nm	180 Nm	200 Nm
Max. dynamic torque Mz	80 Nm	180 Nm	180 Nm	180 Nm	180 Nm	200 Nm

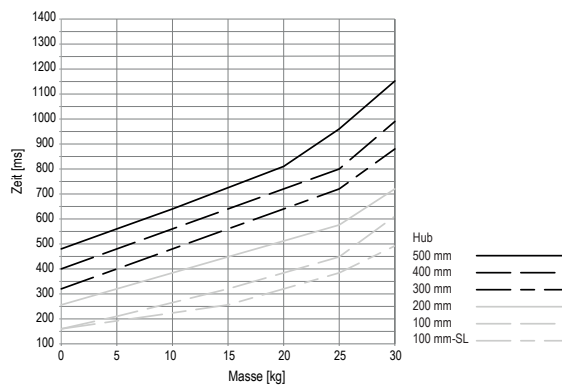


Maximum payload/type	ES40-100-SL	ES40-100	ES40-200	ES40-300	ES40-400	ES40-500
Installation position (horizontal) for mounting side 1/3	25 kg	30 kg	30 kg	30 kg	30 kg	30 kg
Installation position (vertical) for mounting side 1/3	8 kg	6 kg	5 kg	4 kg		



## Diagrams ES40

Operation time ES40

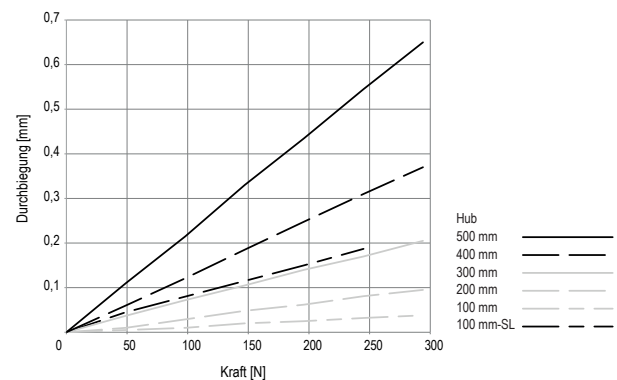


Die Fahrzeiten wurden unter den nachfolgenden Bedingungen gemessen:

- horizontal
- Umgebungstemperatur 20 °C
- Servoregler C1150-1S-PN
- Motorspannung 72 VDC
- Motorkabel-M17-8m-0-1-1

The times refer to break times of 200 ms.

Deflection ES40



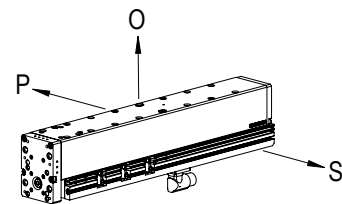


Order form	ES40	XXXXXXXX	XXXXXXXX	XXXXXXXX	X	X
		Electric slide	MagSpring	External position measuring system	Position MagSpring	Position external position measuring system

### Coordinate system

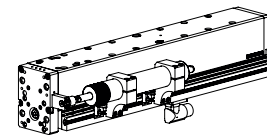
The coordinate system allows you to define the position of the MagSpring as well as that of the external position measuring system.

- P = left
- O = top
- S = right



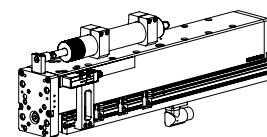
### Ordering example 1 with MagSpring

ES40	50465220	50470232	X	S	X
------	----------	----------	---	---	---



### Ordering example 2 with MagSpring and external position measuring system

ES40	50465220	50470235	50470245	O	S
------	----------	----------	----------	---	---



### Ordering process

- Select the desired electric slide, external position measuring system and MagSpring from the order key.
- Enter the corresponding red order numbers in the order form in the place of the cross.
- Determine the desired position of the MagSpring and the external position measuring system.
- Enter the corresponding letters from the coordinate system in the order form in the place of the cross.

### MagSpring

- The MagSpring serves to balance the weight forces in a vertical installation position.
- The dimensioning of the MagSpring must match the moving weight in the vertical installation position.

### External position measuring system

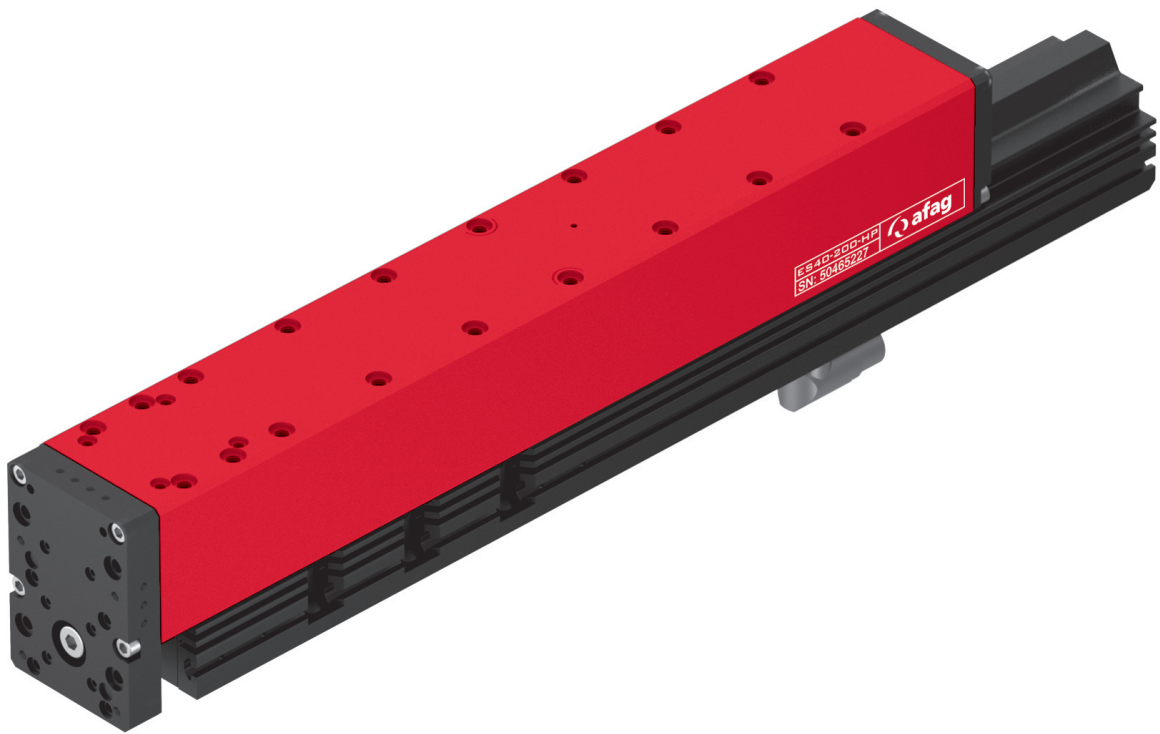
- The external position measuring system must be ordered in accordance with the module length.

Electro slide	ES40	XXXXXXXX	XXXXXXXX		XXXXXXXX	X	X
	ES40-100-SL	50465218	MagSpring side (s)	MagSpring front (v)	External position measuring system	Position MagSpring	Position external position measuring system
	ES40-100	50465219					
	ES40-200	50465220					
	ES40-300	50465221					
	ES40-400	50465222					
	ES40-500	50465223					
MagSpring for ES40-100	MagSpring ES40 s/v 40N	50470226					
	MagSpring ES40 s/v 50N	50470227	50470230				
	MagSpring ES40 s/v 60N	50470228	50470231				
MagSpring for ES40-200	MagSpring ES40 s/v 40N	50470232	50470235				
	MagSpring ES40 s/v 50N	50470233	50470236				
	MagSpring ES40 s/v 60N	50470234	50470237				
MagSpring for ES40-300	MagSpring ES40 s/v 40N	50470238	50470241				
	MagSpring ES40 s/v 50N	50470239	50470242				
	MagSpring ES40 s/v 60N	50470240	50470243				
	Without MagSpring			X			
External position measuring system	External position measuring system ES40 100mm			50470244			
	External position measuring system ES40 200mm			50470245			
	External position measuring system ES40 300mm			50470246			
	External position measuring system ES40 400mm			50470247			
	External position measuring system ES40 500mm			50470248			
	Without external position measuring system			X			
Mounting	Position MagSpring					POS	
	Position external position measuring system					PS	



# Electro slides ES40-HP

## ES40-HP

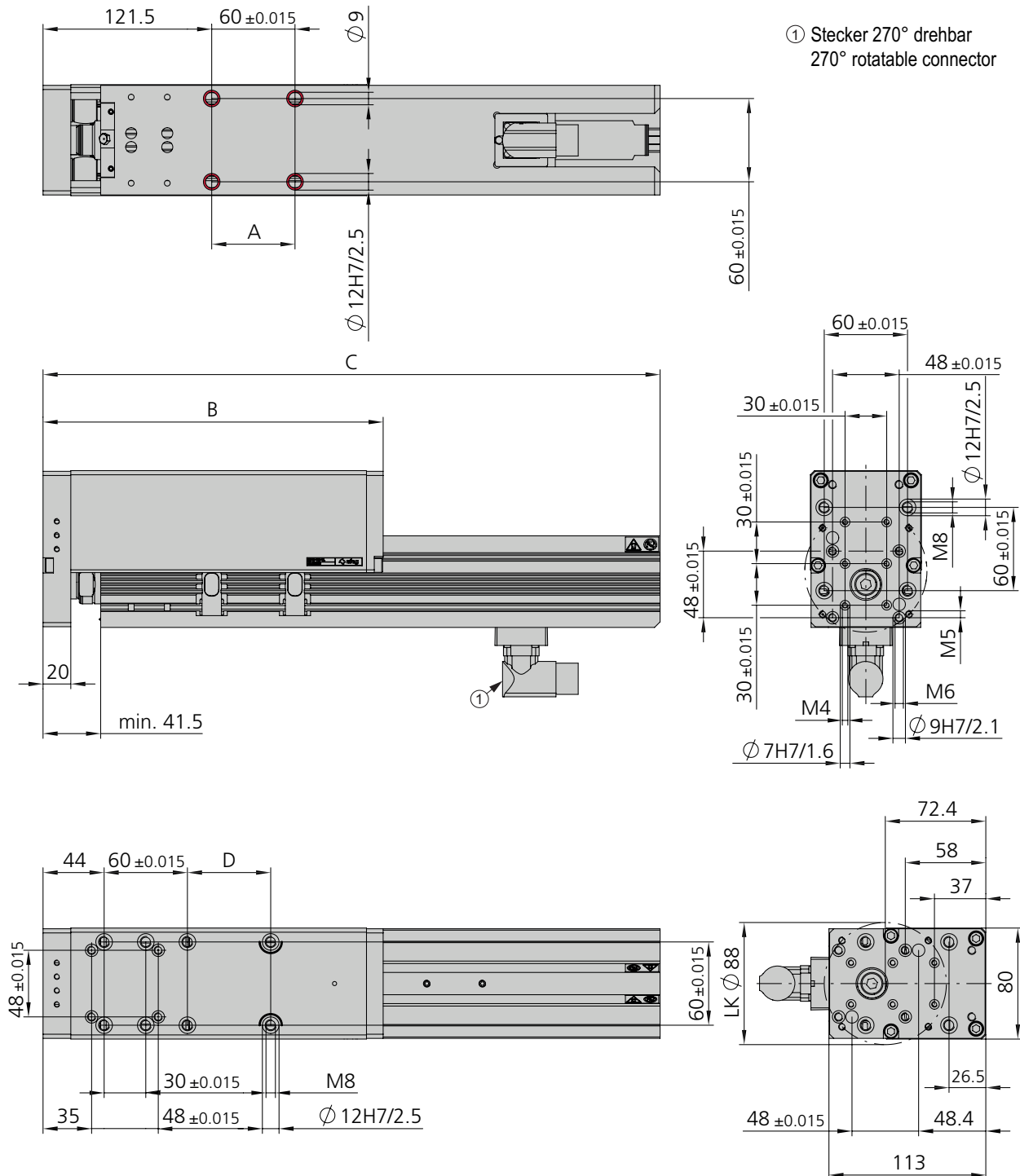


- The strongest gantry axis of its kind
- Freely programmable
- For press-in tasks up to 1000 N

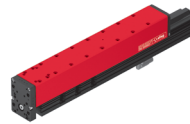
# Dimensions and dimension drawings

## ES40-HP

Type	ES40-100-HP-SL	ES40-100-HP	ES40-200-HP	ES40-300-HP	ES40-400-HP	ES40-500-HP
A	1 x 60 mm	2 x 60 mm	2 x 60 mm	2 x 60 mm	2 x 60 mm	3 x 60 mm
B	245 mm	445 mm	545 mm	645 mm	745 mm	1024 mm
C	534.5 mm	534.5 mm	654.5 mm	744.5 mm	834.5 mm	1031.5 mm
D	2 x 60 mm	6 x 60 mm	7 x 60 mm	9 x 60 mm	11 x 60 mm	15 x 60 mm



Bores can be screwed through



ES40-HP	
Attachment grid	60 x 60 mm
Attachment thread	M8
Operating temperature	0 - 50 °C
Storage temperature	0 - 50 °C
Humidity	< 90 %

Type	ES40-100-HP-SL	ES40-100-HP	ES40-200-HP	ES40-300-HP	ES40-400-HP	ES40-500-HP
<b>Order number</b>	<b>50465225</b>	<b>50465226</b>	<b>50465227</b>	<b>50465228</b>	<b>50465229</b>	<b>50465230</b>
Stroke H	100 mm	100 mm	200 mm	300 mm	400 mm	500 mm
Net weight	10.08 kg	11.9 kg	13.7 kg	15.21 kg	16.73 kg	18.91 kg
Moving weight	4.27 kg	5.75 kg	7.04 kg	8.18 kg	9.34 kg	11.06 kg
Max. speed	2 m/s	2 m/s	1.8 m/s	1.8 m/s	1.8 m/s	1.7 m/s
Nominal voltage	72 VDC	72 VDC	72 VDC	72 VDC	72 VDC	72 VDC
Drive	Linear motor, electric					
Protection type	IP 30	IP 30	IP 30	IP 30	IP 30	IP 30
Peak force Fx	1024 N	1024 N	1024 N	1024 N	1024 N	1024 N
Constant force Fx	203 N	203 N	203 N	203 N	203 N	203 N
Force constant	32 N/A	32 N/A	32 N/A	32 N/A	32 N/A	32 N/A
Repeat accuracy	+/- 0.05 mm	+/- 0.05 mm	+/- 0.05 mm	+/- 0.05 mm	+/- 0.05 mm	+/- 0.05 mm
- with external position measuring system	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm
Mounting position	✦	✦	✦	✦	✦	✦

Note: For vertical installation, a weight compensation via MagSpring or pneumatic weight balancing is required. If the weight compensation is not carried out, the slide will fall below when in a deenergised state. Furthermore, the operation time from the operation time diagram cannot be achieved.  
Cleanroom class ISO 14644-1, class ISO 7

### Included in the delivery

(Catalogue HT accessories)

- 2x Centering bushing Ø12x4.8
- 4x Mounting screw M8x25

### Accessories

(Product-specific accessories)

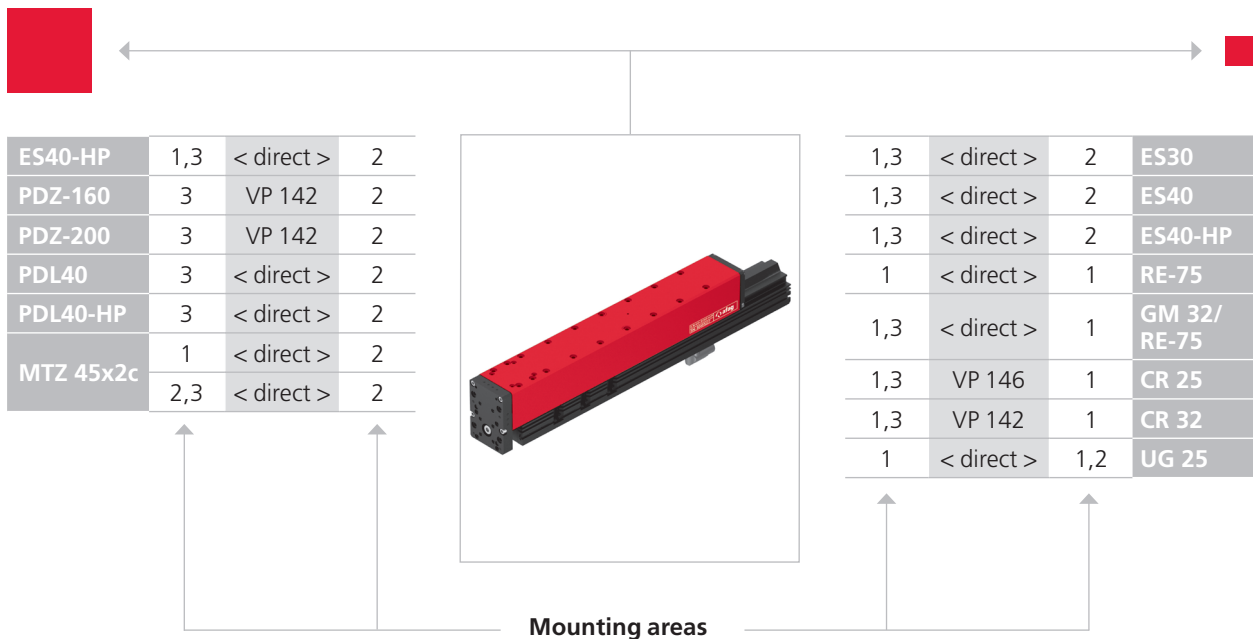
- MagSpring side/front
- External position measuring system ES40 (Catalogue HT accessories)
- Motor cable-M17
- Controller C1xxx-1S
- Plug kit for C1xxx-1S
- USB-RS232 Converter for controllers
- Power supply T01-72/1500 Multi, 3-phase
- Double module support centric MTZ 45x2c

### Alternative accessories

(Catalogue HT accessories)

- Additional motor cables
- Additional controllers
- Additional power supplies

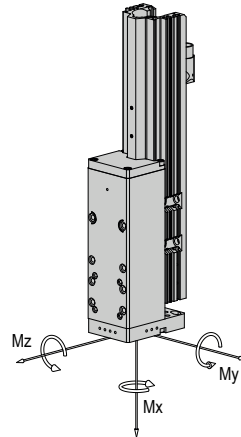
Warranty: 24 months following commissioning, but a maximum of 27 months following delivery



CS, ES	LM	HM	SA	UG, GM, SG, DG, PG, GE, SGE
PMP, PMP-c	PEZ, PDZ	PEL, PDL	RM, RE	CR, RM 32, RE, SREH, RA

Note that there might be different mounting positions from one module to another one. The required connection elements and the range of support columns are depicted in the catalogue HT accessories.

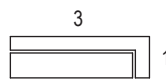
Type	ES40-100-HP-SL	ES40-100-HP	ES40-200-HP	ES40-300-HP	ES40-400-HP	ES40-500-HP
Max. dynamic torque Mx	40 Nm	45 Nm	45 Nm	45 Nm	45 Nm	45 Nm
Max. dynamic torque My	80 Nm	180 Nm	180 Nm	180 Nm	180 Nm	200 Nm
Max. dynamic torque Mz	80 Nm	180 Nm	180 Nm	180 Nm	180 Nm	200 Nm



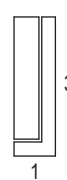
Maximum payload/type	ES40-100-HP-SL	ES40-100-HP	ES40-200-HP	ES40-300-HP	ES40-400-HP	ES40-500-HP
Installation position (horizontal) for mounting side 1/3	25 kg	30 kg	30 kg	30 kg	30 kg	30 kg
Installation position (vertical) for mounting side 1/3	7 kg	6 kg	4 kg	3 kg		

Assembly sides module mounting

horizontal:

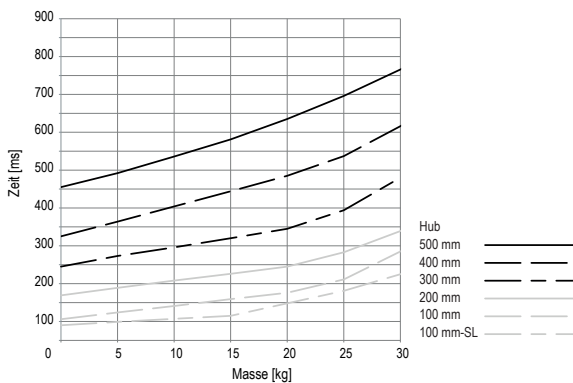


vertical:



## Diagrams ES40-HP

Operation time ES40-HP

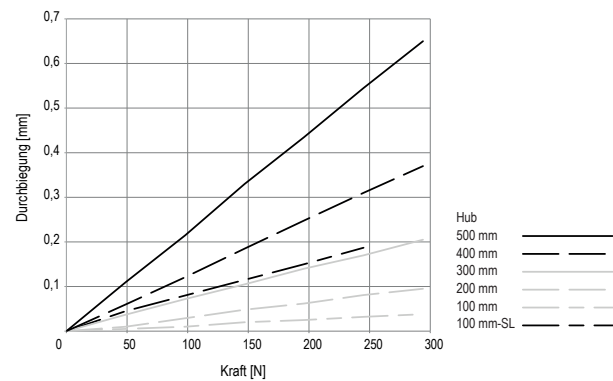


Die Fahrzeiten wurden unter den nachfolgenden Bedingungen gemessen:

- horizontal
- Umgebungstemperatur 20 °C
- Servoregler **E1250-1S-PN (32A)**
- Motorspannung 72 VDC
- Motorkabel-M17-8m-0-1-1

The times refer to break times of 200 ms.

Deflection ES40-HP



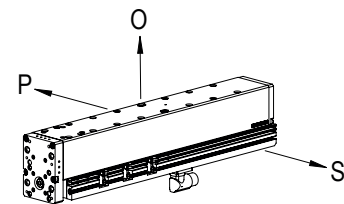


Order form	ES40-HP	XXXXXXXX	XXXXXXXX	XXXXXXXX	X	X
		Electric slide	MagSpring	External position measuring system	Position MagSpring	Position external position measuring system

### Coordinate system

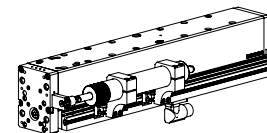
The coordinate system allows you to define the position of the MagSpring as well as that of the external position measuring system.

- P = left
- O = top
- S = right



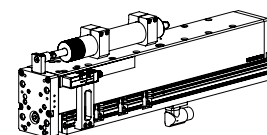
### Ordering example 1 with MagSpring

ES40-HP	50465227	50470232	X	S	X
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### Ordering example 2 with MagSpring and external position measuring system

ES40-HP	50465227	50470235	50470245	O	S
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### Ordering process

- Select the desired electric slide, external position measuring system and MagSpring from the order key.
- Enter the corresponding red order numbers in the order form in the place of the cross.
- Determine the desired position of the MagSpring and the external position measuring system.
- Enter the corresponding letters from the coordinate system in the order form in the place of the cross.

### MagSpring

- The MagSpring serves to balance the weight forces in a vertical installation position.
- The dimensioning of the MagSpring must match the moving weight in the vertical installation position.

### External position measuring system

- The external position measuring system must be ordered in accordance with the module length.

Electro slide	ES40-HP	xxxxxxx	xxxxxxx		xxxxxxx	x	x
	ES40-100-HP-SL	50465225	MagSpring side (s)	MagSpring front (v)	External position measuring system	Position MagSpring	Position external position measuring system
	ES40-100-HP	50465226					
	ES40-200-HP	50465227					
	ES40-300-HP	50465228					
	ES40-400-HP	50465229					
	ES40-500-HP	50465230					
MagSpring for ES40-100-HP							
	MagSpring ES40 s/v 40N	50470226	50470229				
	MagSpring ES40 s/v 50N	50470227	50470230				
	MagSpring ES40 s/v 60N	50470228	50470231				
MagSpring for ES40-200-HP							
	MagSpring ES40 s/v 40N	50470232	50470235				
	MagSpring ES40 s/v 50N	50470233	50470236				
	MagSpring ES40 s/v 60N	50470234	50470237				
MagSpring for ES40-300-HP							
	MagSpring ES40 s/v 40N	50470238	50470241				
	MagSpring ES40 s/v 50N	50470239	50470242				
	MagSpring ES40 s/v 60N	50470240	50470243				
	Without MagSpring			x			
External position measuring system	External position measuring system ES40 100mm				50470244		
	External position measuring system ES40 200mm				50470245		
	External position measuring system ES40 300mm				50470246		
	External position measuring system ES40 400mm				50470247		
	External position measuring system ES40 500mm				50470248		
	Without external position measuring system						x
Mounting	Position MagSpring						POS
	Position external position measuring system						PS



The MagSpring is a passive component which supplies a constant force via a specific stroke range based on permanent magnets. This balances the load mass for vertically installed axes. Furthermore, the peripherals and the workpiece are also prevented from falling when the electric slide is in a deenergised state.

The MagSpring and holder are provided in accordance with the ES electric slides ES20, ES30 and ES40. This can be mounted on the left, right or front side of the axis.

Advantages:

- Constant force over the entire stroke range
- Overstretching of the spring is impossible
- Energy-efficient weight compensation

## MagSpring ES20-50-SL

Description	Order number
MagSpring ES20 s 11N 050mm	<b>50427548</b>
MagSpring ES20 s 17N 050mm	<b>50427549</b>
MagSpring ES20 s 22N 050mm	<b>50427550</b>
MagSpring ES20 v 11N 050mm	<b>50427554</b>
MagSpring ES20 v 17N 050mm	<b>50427555</b>
MagSpring ES20 v 22N 050mm	<b>50427556</b>
MagSpring ES20 s 40N 050mm	<b>50427551</b>
MagSpring ES20 s 50N 050mm	<b>50427552</b>
MagSpring ES20 s 60N 050mm	<b>50427553</b>
MagSpring ES20 v 40N 050mm	<b>50427557</b>
MagSpring ES20 v 50N 050mm	<b>50427558</b>
MagSpring ES20 v 60N 050mm	<b>50427559</b>

## MagSpring ES20-100-SL

Description	Order number
MagSpring ES20 s 11N 100mm	<b>50427561</b>
MagSpring ES20 s 17N 100mm	<b>50427562</b>
MagSpring ES20 s 22N 100mm	<b>50427563</b>
MagSpring ES20 v 11N 100mm	<b>50427567</b>
MagSpring ES20 v 17N 100mm	<b>50427568</b>
MagSpring ES20 v 22N 100mm	<b>50427569</b>
MagSpring ES20 s 40N 100mm	<b>50427564</b>
MagSpring ES20 s 50N 100mm	<b>50427565</b>
MagSpring ES20 s 60N 100mm	<b>50427566</b>
MagSpring ES20 v 40N 100mm	<b>50427570</b>
MagSpring ES20 v 50N 100mm	<b>50427571</b>
MagSpring ES20 v 60N 100mm	<b>50427572</b>

## MagSpring ES20-200

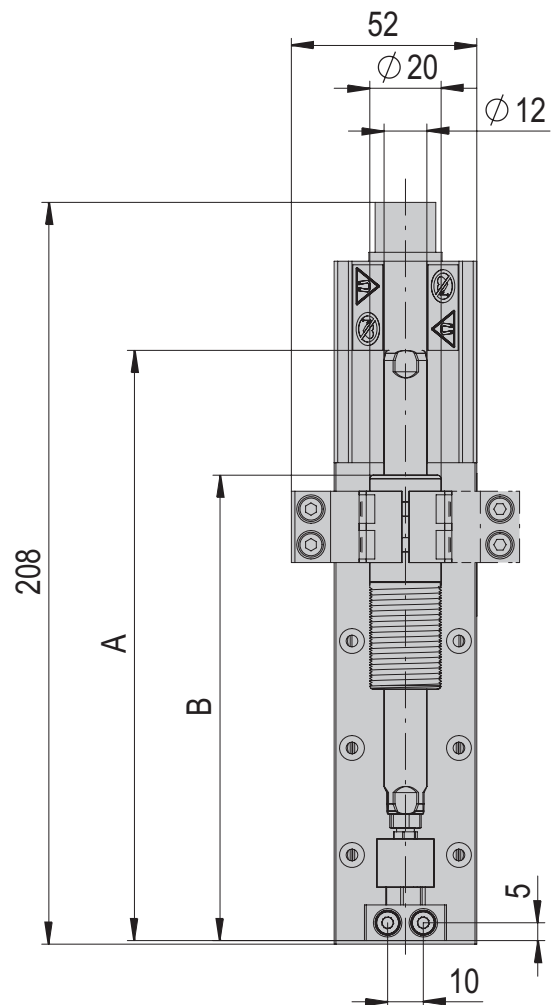
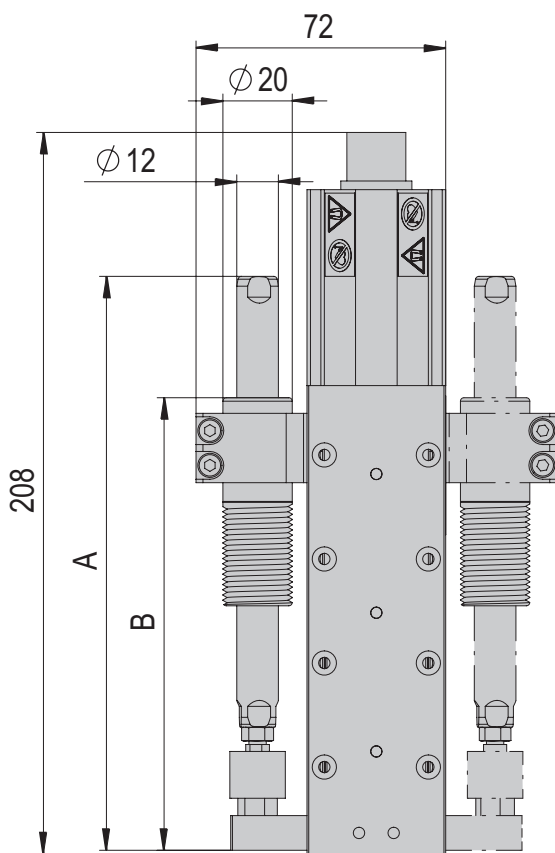
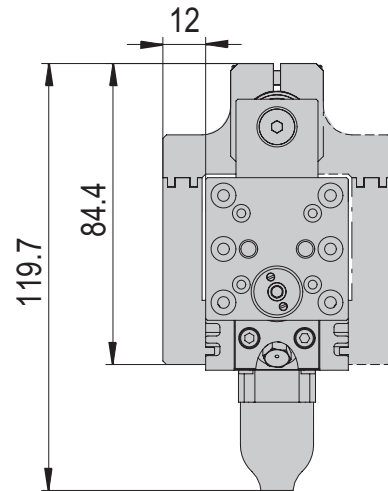
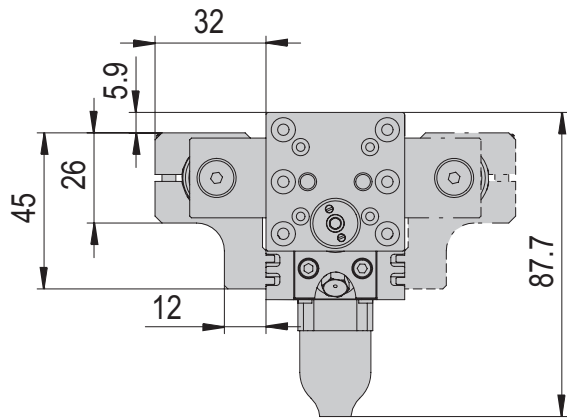
Description	Order number
MagSpring ES20 s 11N 200mm	<b>50427574</b>
MagSpring ES20 s 17N 200mm	<b>50427575</b>
MagSpring ES20 s 22N 200mm	<b>50427576</b>
MagSpring ES20 v 11N 200mm	<b>50427580</b>
MagSpring ES20 v 17N 200mm	<b>50427581</b>
MagSpring ES20 v 22N 200mm	<b>50427582</b>
MagSpring ES20 s 40N 200mm	<b>50427577</b>
MagSpring ES20 s 50N 200mm	<b>50427578</b>
MagSpring ES20 s 60N 200mm	<b>50427579</b>
MagSpring ES20 v 40N 200mm	<b>50427583</b>
MagSpring ES20 v 50N 200mm	<b>50427584</b>
MagSpring ES20 v 60N 200mm	<b>50427585</b>

## MagSpring ES20-300

Description	Order number
MagSpring ES20 s 11N 300mm	<b>50427587</b>
MagSpring ES20 s 17N 300mm	<b>50427588</b>
MagSpring ES20 s 22N 300mm	<b>50427589</b>
MagSpring ES20 v 11N 300mm	<b>50427593</b>
MagSpring ES20 v 17N 300mm	<b>50427594</b>
MagSpring ES20 v 22N 300mm	<b>50427595</b>
MagSpring ES20 s 40N 300mm	<b>50427590</b>
MagSpring ES20 s 50N 300mm	<b>50427591</b>
MagSpring ES20 s 60N 300mm	<b>50427592</b>
MagSpring ES20 v 40N 300mm	<b>50427596</b>
MagSpring ES20 v 50N 300mm	<b>50427597</b>
MagSpring ES20 v 60N 300mm	<b>50427598</b>

MagSpring side	ES20-50-SL	ES20-100-SL	ES20-200	ES20-300
A	165 mm	245 mm	325 mm	405 mm
B	130 mm	210 mm	290 mm	370 mm

MagSpring front	ES20-50-SL	ES20-100-SL	ES20-200	ES20-300
	165 mm	245 mm	325 mm	405 mm
	130 mm	210 mm	290 mm	370 mm



MagSpring ES20-50-SL	side			front		
<b>Order number</b>	<b>50427548</b>	<b>50427549</b>	<b>50427550</b>	<b>50427554</b>	<b>50427555</b>	<b>50427556</b>
Stroke H	50 mm	50 mm	50 mm	50 mm	50 mm	50 mm
Net weight	0.235 kg	0.235 kg	0.235 kg	0.265 kg	0.265 kg	0.265 kg
Permanent force	11 N	17 N	22 N	11 N	17 N	22 N

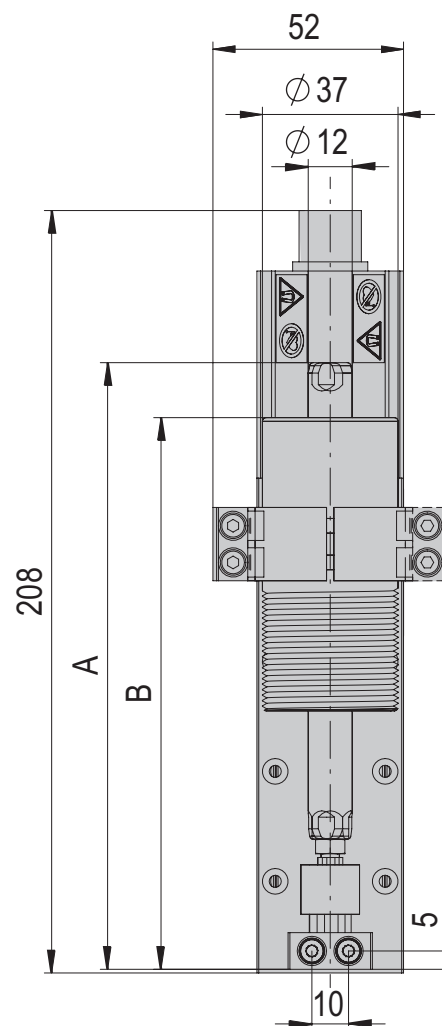
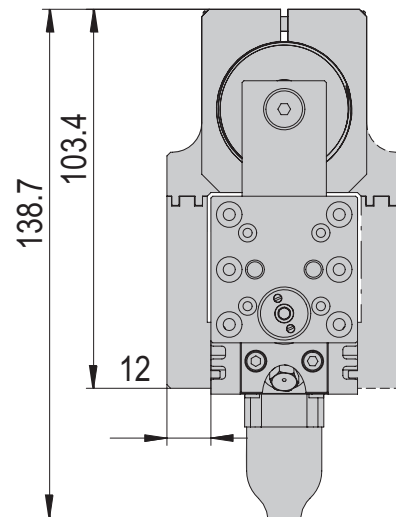
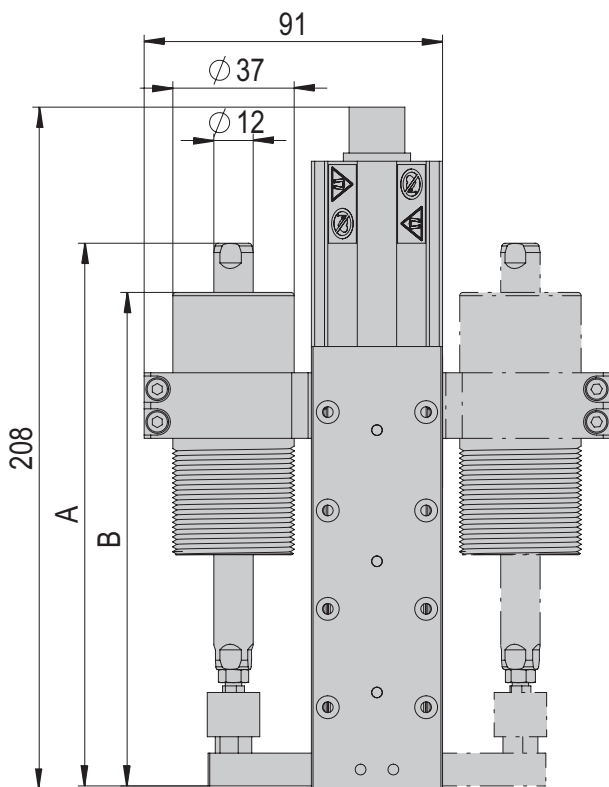
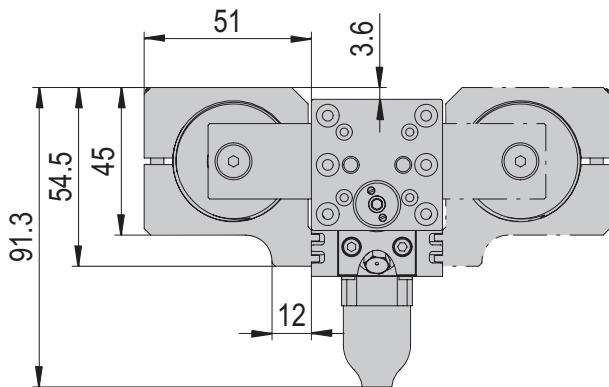
MagSpring ES20-100-SL	side			front		
<b>Order number</b>	<b>50427561</b>	<b>50427562</b>	<b>50427563</b>	<b>50427567</b>	<b>50427568</b>	<b>50427569</b>
Stroke H	100 mm	100 mm	100 mm	100 mm	100 mm	100 mm
Net weight	0.42 kg	0.42 kg	0.42 kg	0.45 kg	0.45 kg	0.45 kg
Permanent force	11 N	17 N	22 N	11 N	17 N	22 N

MagSpring ES20-200	side			front		
<b>Order number</b>	<b>50427574</b>	<b>50427575</b>	<b>50427576</b>	<b>50427580</b>	<b>50427581</b>	<b>50427582</b>
Stroke H	200 mm	200 mm	200 mm	200 mm	200 mm	200 mm
Net weight	0.59 kg	0.59 kg	0.59 kg	0.62 kg	0.62 kg	0.62 kg
Permanent force	11 N	17 N	22 N	11 N	17 N	22 N

MagSpring ES20-300	side			front		
<b>Order number</b>	<b>50427587</b>	<b>50427588</b>	<b>50427589</b>	<b>50427593</b>	<b>50427594</b>	<b>50427595</b>
Stroke H	290 mm	290 mm	290 mm	290 mm	290 mm	290 mm
Net weight	0.753 kg	0.753 kg	0.753 kg	0.783 kg	0.783 kg	0.783 kg
Permanent force	11 N	17 N	22 N	11 N	17 N	22 N

MagSpring side	ES20-50-SL	ES20-100-SL	ES20-200	ES20-300
A	165 mm	245 mm	325 mm	405 mm
B	150 mm	210 mm	300 mm	375 mm

MagSpring front	ES20-50-SL	ES20-100-SL	ES20-200	ES20-300
A	165 mm	245 mm	325 mm	405 mm
B	150 mm	225 mm	300 mm	375 mm



MagSpring ES20-50-SL	side			front		
<b>Order number</b>	<b>50427551</b>	<b>50427552</b>	<b>50427553</b>	<b>50427557</b>	<b>50427558</b>	<b>50427559</b>
Stroke H	50 mm	50 mm	50 mm	50 mm	50 mm	50 mm
Net weight	0.632 kg	0.632 kg	0.632 kg	0.662 kg	0.662 kg	0.662 kg
Permanent force	40 N	50 N	60 N	40 N	50 N	60 N

MagSpring ES20-100-SL	side			front		
<b>Order number</b>	<b>50427564</b>	<b>50427565</b>	<b>50427566</b>	<b>50427570</b>	<b>50427571</b>	<b>50427572</b>
Stroke H	100 mm	100 mm	100 mm	100 mm	100 mm	100 mm
Net weight	1.152 kg	1.152 kg	1.152 kg	1.182 kg	1.182 kg	1.182 kg
Permanent force	40 N	50 N	60 N	40 N	50 N	60 N

MagSpring ES20-200	side			front		
<b>Order number</b>	<b>50427577</b>	<b>50427578</b>	<b>50427579</b>	<b>50427583</b>	<b>50427584</b>	<b>50427585</b>
Stroke H	200 mm	200 mm	200 mm	200 mm	200 mm	200 mm
Net weight	1.657 kg	1.657 kg	1.657 kg	1.687 kg	1.687 kg	1.687 kg
Permanent force	40 N	50 N	60 N	40 N	50 N	60 N

MagSpring ES20-300	side			front		
<b>Order number</b>	<b>50427590</b>	<b>50427591</b>	<b>50427592</b>	<b>50427596</b>	<b>50427597</b>	<b>50427598</b>
Stroke H	275 mm	275 mm	275 mm	275 mm	275 mm	275 mm
Net weight	2.197 kg	2.197 kg	2.197 kg	2.227 kg	2.227 kg	2.227 kg
Permanent force	40 N	50 N	60 N	40 N	50 N	60 N





The MagSpring is a passive component which supplies a constant force via a specific stroke range based on permanent magnets. This balances the load mass for vertically installed axes. Furthermore, the peripherals and the workpiece are also prevented from falling when the electric slide is in a deenergised state.

The MagSpring and holder are provided in accordance with the ES electric slides ES20, ES30 and ES40. This can be mounted on the left, right or front side of the axis.

Advantages:

- Constant force over the entire stroke range
- Overstretching of the spring is impossible
- Energy-efficient weight compensation»

## MagSpring ES30-50/-SL

Description	Order number
MagSpring ES30 s 11N 050mm	<b>50429205</b>
MagSpring ES30 s 17N 050mm	<b>50429206</b>
MagSpring ES30 s 22N 050mm	<b>50429207</b>
MagSpring ES30 v 11N 050mm	<b>50429211</b>
MagSpring ES30 v 17N 050mm	<b>50429212</b>
MagSpring ES30 v 22N 050mm	<b>50429213</b>
MagSpring ES30 s 40N 050mm	<b>50429208</b>
MagSpring ES30 s 50N 050mm	<b>50429209</b>
MagSpring ES30 s 60N 050mm	<b>50429210</b>
MagSpring ES30 v 40N 050mm	<b>50429214</b>
MagSpring ES30 v 50N 050mm	<b>50429215</b>
MagSpring ES30 v 60N 050mm	<b>50429216</b>

## MagSpring ES30-100/-SL

Description	Order number
MagSpring ES30 s 11N 100mm	<b>50429218</b>
MagSpring ES30 s 17N 100mm	<b>50429219</b>
MagSpring ES30 s 22N 100mm	<b>50429220</b>
MagSpring ES30 v 11N 100mm	<b>50429224</b>
MagSpring ES30 v 17N 100mm	<b>50429225</b>
MagSpring ES30 v 22N 100mm	<b>50429226</b>
MagSpring ES30 s 40N 100mm	<b>50429221</b>
MagSpring ES30 s 50N 100mm	<b>50429222</b>
MagSpring ES30 s 60N 100mm	<b>50429223</b>
MagSpring ES30 v 40N 100mm	<b>50429227</b>
MagSpring ES30 v 50N 100mm	<b>50429228</b>
MagSpring ES30 v 60N 100mm	<b>50429229</b>

## MagSpring ES30-200/-SL

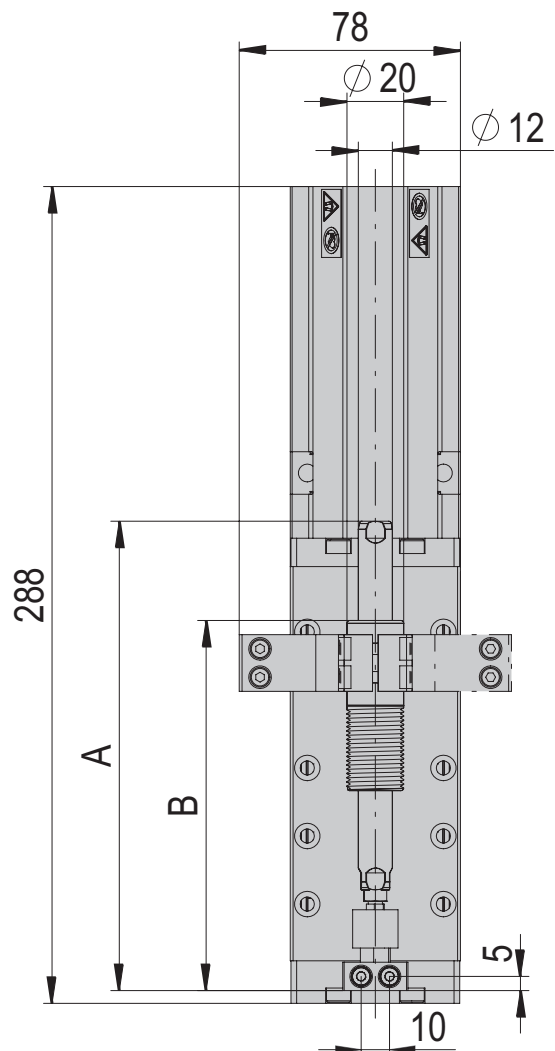
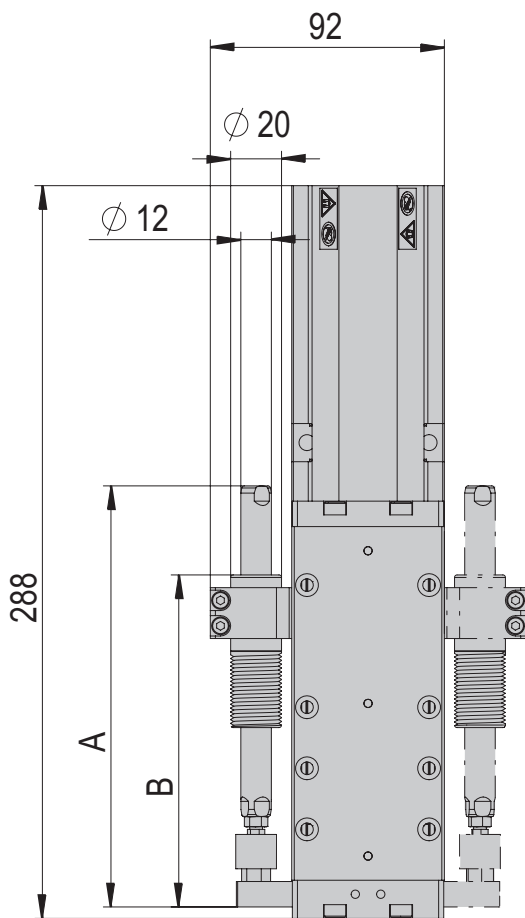
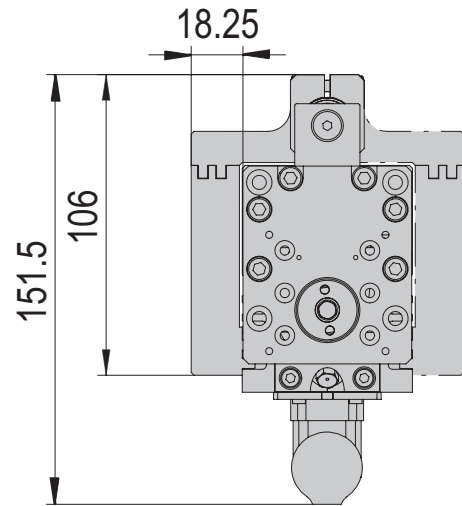
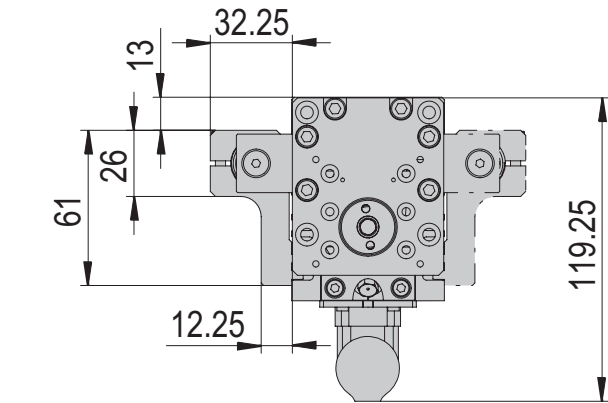
Description	Order number
MagSpring ES30 s 11N 200mm	<b>50429231</b>
MagSpring ES30 s 17N 200mm	<b>50429232</b>
MagSpring ES30 s 22N 200mm	<b>50429233</b>
MagSpring ES30 v 11N 200mm	<b>50429237</b>
MagSpring ES30 v 17N 200mm	<b>50429238</b>
MagSpring ES30 v 22N 200mm	<b>50429239</b>
MagSpring ES30 s 40N 200mm	<b>50429234</b>
MagSpring ES30 s 50N 200mm	<b>50429235</b>
MagSpring ES30 s 60N 200mm	<b>50429236</b>
MagSpring ES30 v 40N 200mm	<b>50429240</b>
MagSpring ES30 v 50N 200mm	<b>50429241</b>
MagSpring ES30 v 60N 200mm	<b>50429242</b>

## MagSpring ES30-300

Description	Order number
MagSpring ES30 s 11N 300mm	<b>50429244</b>
MagSpring ES30 s 17N 300mm	<b>50429245</b>
MagSpring ES30 s 22N 300mm	<b>50429246</b>
MagSpring ES30 v 11N 300mm	<b>50429250</b>
MagSpring ES30 v 17N 300mm	<b>50429251</b>
MagSpring ES30 v 22N 300mm	<b>50429252</b>
MagSpring ES30 s 40N 300mm	<b>50429247</b>
MagSpring ES30 s 50N 300mm	<b>50429248</b>
MagSpring ES30 s 60N 300mm	<b>50429249</b>
MagSpring ES30 v 40N 300mm	<b>50429253</b>
MagSpring ES30 v 50N 300mm	<b>50429254</b>
MagSpring ES30 v 60N 300mm	<b>50429255</b>

MagSpring side	ES30-50-SL	ES30-100/-SL	ES30-200/-SL	ES30-300
A	165 mm	245 mm	325 mm	405 mm
B	130 mm	210 mm	290 mm	370 mm

MagSpring front	ES30-50-SL	ES30-100/-SL	ES30-200/-SL	ES30-300
	165 mm	245 mm	325 mm	405 mm
	130 mm	210 mm	290 mm	370 mm



MagSpring ES30-50-SL	side			front		
<b>Order number</b>	<b>50429205</b>	<b>50429206</b>	<b>50429207</b>	<b>50429211</b>	<b>50429212</b>	<b>50429213</b>
Stroke H	50 mm	50 mm	50 mm	50 mm	50 mm	50 mm
Net weight	0.243 kg	0.243 kg	0.243 kg	0.315 kg	0.315 kg	0.315 kg
Permanent force	11 N	17 N	22 N	11 N	17 N	22 N

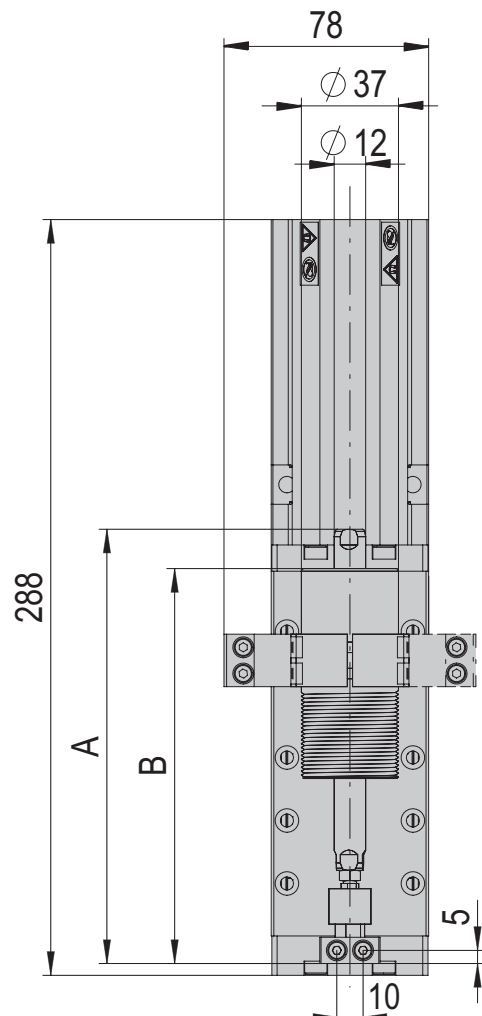
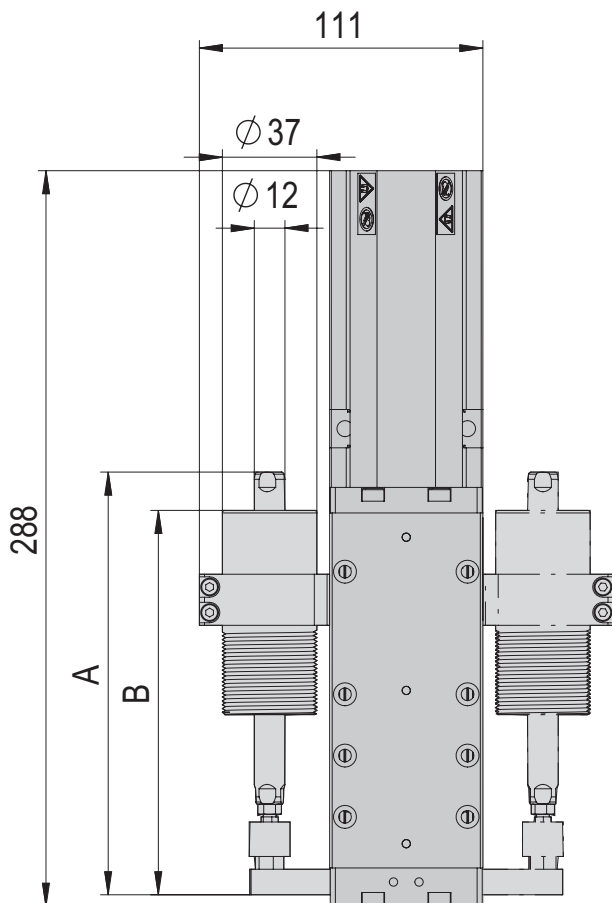
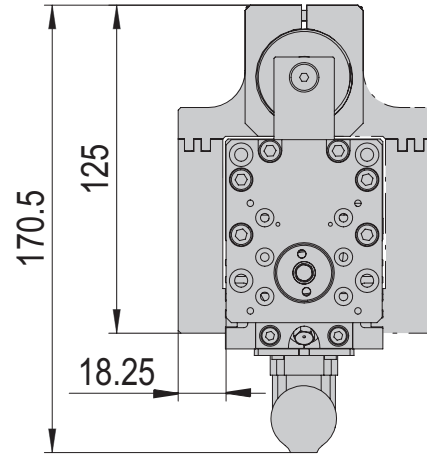
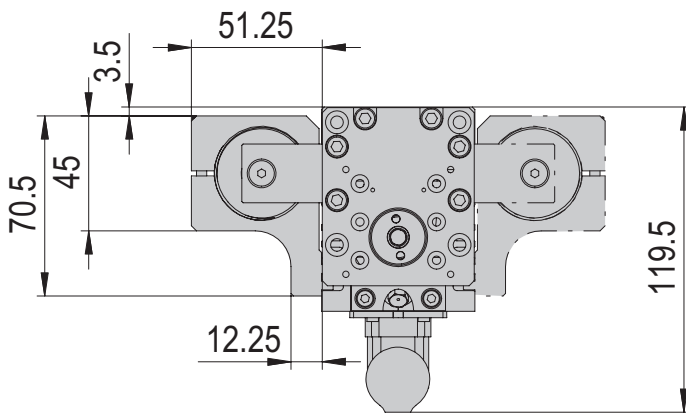
MagSpring ES30-100/-SL	side			front		
<b>Order number</b>	<b>50429218</b>	<b>50429219</b>	<b>50429220</b>	<b>50429224</b>	<b>50429225</b>	<b>50429226</b>
Stroke H	100 mm	100 mm	100 mm	100 mm	100 mm	100 mm
Net weight	0.428 kg	0.428 kg	0.428 kg	0.5 kg	0.5 kg	0.5 kg
Permanent force	11 N	17 N	22 N	11 N	17 N	22 N

MagSpring ES30-200/-SL	side			front		
<b>Order number</b>	<b>50429231</b>	<b>50429232</b>	<b>50429233</b>	<b>50429237</b>	<b>50429238</b>	<b>50429239</b>
Stroke H	200 mm	200 mm	200 mm	200 mm	200 mm	200 mm
Net weight	0.598 kg	0.598 kg	0.598 kg	0.67 kg	0.67 kg	0.67 kg
Permanent force	11 N	17 N	22 N	11 N	17 N	22 N

MagSpring ES30-300	side			front		
<b>Order number</b>	<b>50429244</b>	<b>50429245</b>	<b>50429246</b>	<b>50429250</b>	<b>50429251</b>	<b>50429252</b>
Stroke H	290 mm	290 mm	290 mm	290 mm	290 mm	290 mm
Net weight	0.761 kg	0.761 kg	0.761 kg	0.833 kg	0.833 kg	0.833 kg
Permanent force	11 N	17 N	22 N	11 N	17 N	22 N

MagSpring side	ES30-50-SL	ES30-100/-SL	ES30-200/-SL	ES30-300
A	165 mm	245 mm	325 mm	405 mm
B	150 mm	225 mm	300 mm	375 mm

MagSpring side	ES30-50-SL	ES30-100/-SL	ES30-200/-SL	ES30-300
	165 mm	245 mm	325 mm	405 mm
	150 mm	225 mm	300 mm	375 mm



MagSpring ES30-50-SL	side			front		
<b>Order number</b>	<b>50429208</b>	<b>50429209</b>	<b>50429210</b>	<b>50429214</b>	<b>50429215</b>	<b>50429216</b>
Stroke H	50 mm	50 mm	50 mm	50 mm	50 mm	50 mm
Net weight	0.646 kg	0.646 kg	0.646 kg	0.718 kg	0.718 kg	0.718 kg
Permanent force	40 N	50 N	60 N	40 N	50 N	60 N

MagSpring ES30-100/-SL	side			front		
<b>Order number</b>	<b>50429221</b>	<b>50429222</b>	<b>50429223</b>	<b>50429227</b>	<b>50429228</b>	<b>50429229</b>
Stroke H	100 mm	100 mm	100 mm	100 mm	100 mm	100 mm
Net weight	1.166 kg	1.166 kg	1.166 kg	1.238 kg	1.238 kg	1.238 kg
Permanent force	40 N	50 N	60 N	40 N	50 N	60 N

MagSpring ES30-200/-SL	side			front		
<b>Order number</b>	<b>50429234</b>	<b>50429235</b>	<b>50429236</b>	<b>50429240</b>	<b>50429241</b>	<b>50429242</b>
Stroke H	200 mm	200 mm	200 mm	200 mm	200 mm	200 mm
Net weight	1.671 kg	1.671 kg	1.671 kg	1.743 kg	1.743 kg	1.743 kg
Permanent force	40 N	50 N	60 N	40 N	50 N	60 N

MagSpring ES30-300	side			front		
<b>Order number</b>	<b>50429247</b>	<b>50429248</b>	<b>50429249</b>	<b>50429253</b>	<b>50429254</b>	<b>50429255</b>
Stroke H	275 mm	275 mm	275 mm	275 mm	275 mm	275 mm
Net weight	2.211 kg	2.211 kg	2.211 kg	2.283 kg	2.283 kg	2.283 kg
Permanent force	40 N	50 N	60 N	40 N	50 N	60 N

The MagSpring is a passive component which supplies a constant force via a specific stroke range based on permanent magnets. This balances the load mass for vertically installed axes. Furthermore, the peripherals and the workpiece are also prevented from falling when the electric slide is in a deenergised state.

The MagSpring and holder are provided in accordance with the ES electric slides ES20, ES30 and ES40. This can be mounted on the left, right or front side of the axis.

Advantages:

- Constant force over the entire stroke range
- Overstretching of the spring is impossible
- Energy-efficient weight compensation

### MagSpring ES40-100/-HP/-SL

Description	Order number
MagSpring ES40 s 40N 100mm	<b>50470226</b>
MagSpring ES40 s 50N 100mm	<b>50470227</b>
MagSpring ES40 s 60N 100mm	<b>50470228</b>
MagSpring ES40 v 40N 100mm	<b>50470229</b>
MagSpring ES40 v 50N 100mm	<b>50470230</b>
MagSpring ES40 v 60N 100mm	<b>50470231</b>

### MagSpring E40-200/-HP

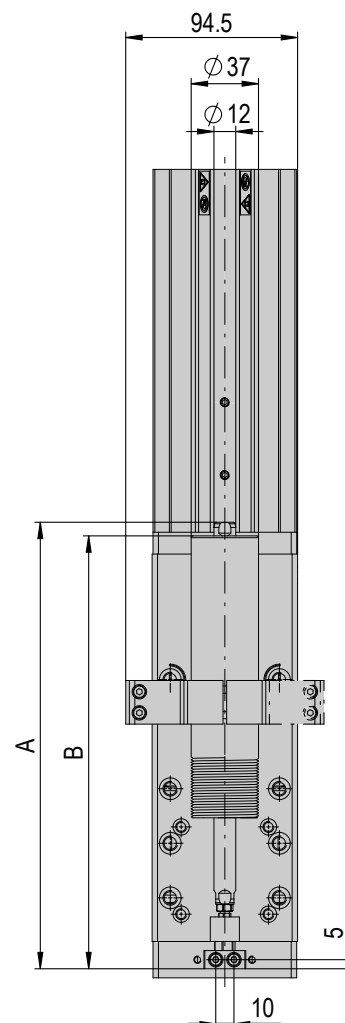
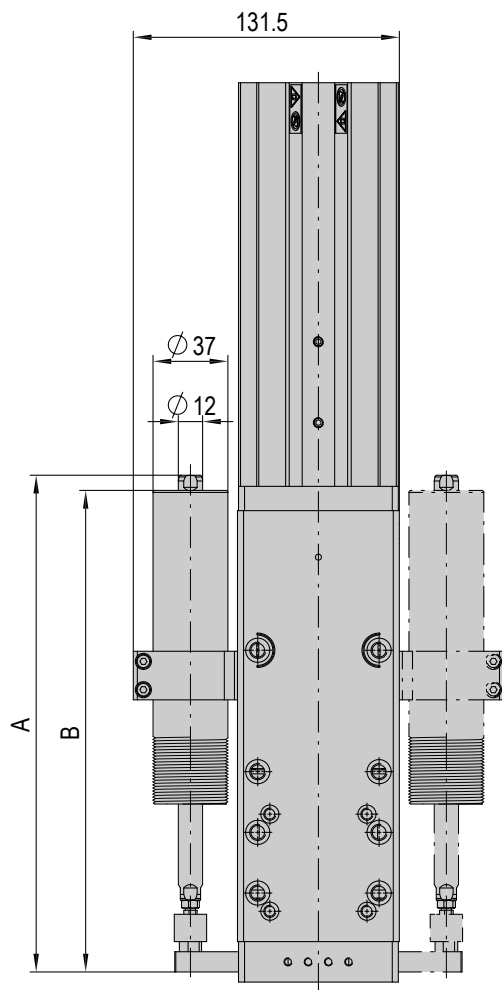
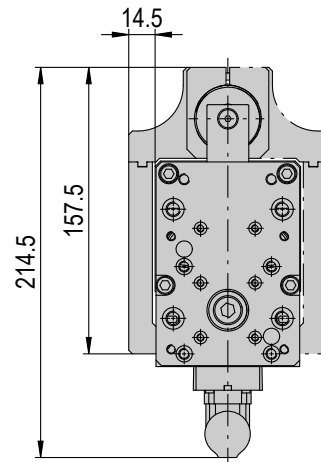
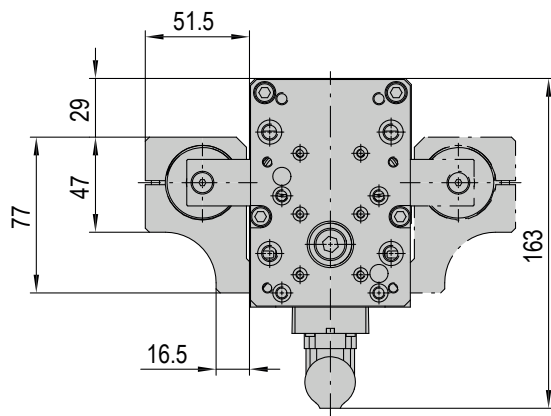
Description	Order number
MagSpring ES40 s 40N 200mm	<b>50470232</b>
MagSpring ES40 s 50N 200mm	<b>50470233</b>
MagSpring ES40 s 60N 200mm	<b>50470234</b>
MagSpring ES40 v 40N 200mm	<b>50470235</b>
MagSpring ES40 v 50N 200mm	<b>50470236</b>
MagSpring ES40 v 60N 200mm	<b>50470237</b>

### MagSpring ES40-300/-HP

Description	Order number
MagSpring ES40 s 40N 300mm	<b>50470238</b>
MagSpring ES40 s 50N 300mm	<b>50470239</b>
MagSpring ES40 s 60N 300mm	<b>50470240</b>
MagSpring ES40 v 40N 300mm	<b>50470241</b>
MagSpring ES40 v 50N 300mm	<b>50470242</b>
MagSpring ES40 v 60N 300mm	<b>50470243</b>

MagSpring side	ES40-100/-SL/-HP	ES40-200/-HP	ES40-300/-HP
A	245.5 mm	325.5 mm	405.5 mm
B	238 mm	300.5 mm	363 mm

MagSpring front	ES40-100/-SL/-HP	ES40-200/-HP	ES40-300/-HP
A	245.5 mm	325.5 mm	405.5 mm
B	238 mm	300.5 mm	363 mm





Magspring ES40-100	side			front		
<b>Order number</b>	<b>50470226</b>	<b>50470227</b>	<b>50470228</b>	<b>50470229</b>	<b>50470230</b>	<b>50470231</b>
Stroke H	100 mm	100 mm	100 mm	100 mm	100 mm	100 mm
Net weight	1.205 kg	1.205 kg	1.205 kg	1.295 kg	1.295 kg	1.295 kg
Permanent force	40 N	50 N	60 N	40 N	50 N	60 N

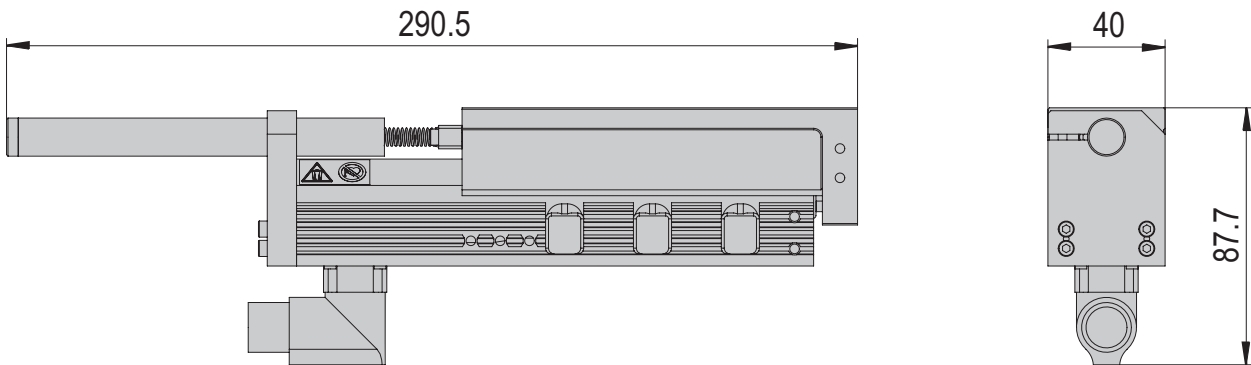
Magspring ES40-200	side			front		
<b>Order number</b>	<b>50470232</b>	<b>50470233</b>	<b>50470234</b>	<b>50470235</b>	<b>50470236</b>	<b>50470237</b>
Stroke H	200 mm	200 mm	200 mm	200 mm	200 mm	200 mm
Net weight	1.842 kg	1.842 kg	1.842 kg	2.02 kg	2.02 kg	2.02 kg
Permanent force	40 N	50 N	60 N	40 N	50 N	60 N

Magspring ES40-300	side			front		
<b>Order number</b>	<b>50470238</b>	<b>50470239</b>	<b>50470240</b>	<b>50470241</b>	<b>50470242</b>	<b>50470243</b>
Stroke H	275 mm	275 mm	275 mm	275 mm	275 mm	275 mm
Net weight	2.382 kg	2.382 kg	2.382 kg	2.56 kg	2.56 kg	2.56 kg
Permanent force	40 N	50 N	60 N	40 N	50 N	60 N

# Accessories ES

## Compensation spring ES20-50-SL

<b>Order number</b>	<b>50427546</b>
Net weight	0.079 kg
Peak force	11 N



Note: Note: The compensation spring is only available for the module ES20-50-SL

### Included in the delivery (Catalogue HT accessories)

- 1x Mounting screw M3x12
- 2x Mounting screw M3x14
- 4x Mounting screw M3x16

**External position measuring system for ES20, ES30 and ES40**

The contact-free, absolute, magnetic-based position measuring system with integrated analysis electronics is used wherever the axes cannot be securely referenced. In addition, a high positional accuracy and smooth movements are also achieved. The system consists of a sensor and a strip on which magnetic information is stored. Both components are fixed to the module.

The motor's internal position sensor achieves a repeat accuracy of  $\pm 0.05$  mm and an absolute accuracy deviation of between 0.1% and 0.4% (depending on the drive unit). If this does not suffice, we recommend an external position measuring system.

Advantages:

- Referencing not necessary
- High absolute accuracy
- Smooth movements
- Minimization of control noises

**Order numbers for ES20:**

Description	Order number
External position measuring system ES20 050mm	<b>50427547</b>
External position measuring system ES20 100mm	<b>50427560</b>
External position measuring system ES20 200mm	<b>50427573</b>
External position measuring system ES20 300mm	<b>50427586</b>

**Order numbers for ES30:**

Description	Order number
External position measuring system ES30 050mm	<b>50429204</b>
External position measuring system ES30 100mm	<b>50429217</b>
External position measuring system ES30 200mm	<b>50429230</b>
External position measuring system ES30 300mm	<b>50429243</b>
External position measuring system ES30 400mm	<b>50429256</b>
External position measuring system ES30 500mm	<b>50429257</b>

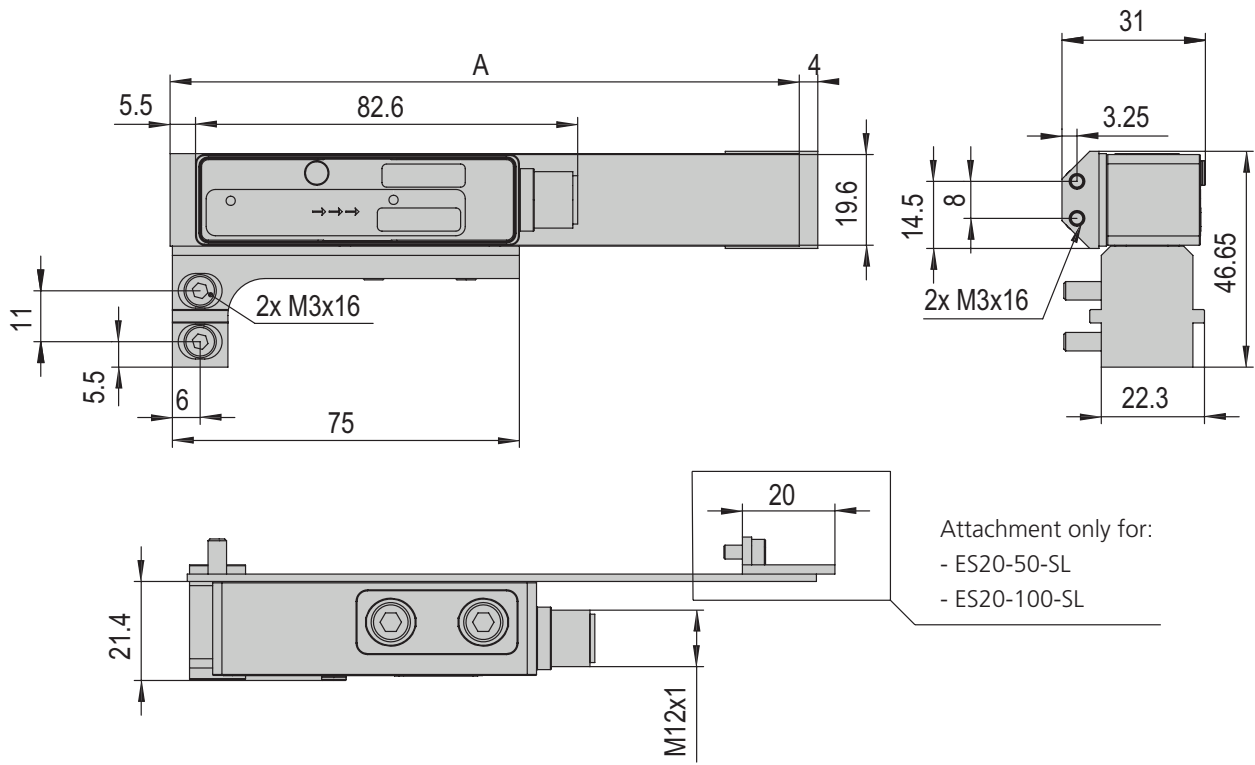
**Order numbers for ES40:**

Description	Order number
External position measuring system ES40 100mm	<b>50470244</b>
External position measuring system ES40 200mm	<b>50470245</b>
External position measuring system ES40 300mm	<b>50470246</b>
External position measuring system ES40 400mm	<b>50470247</b>
External position measuring system ES40 500mm	<b>50470248</b>

# Accessories ES

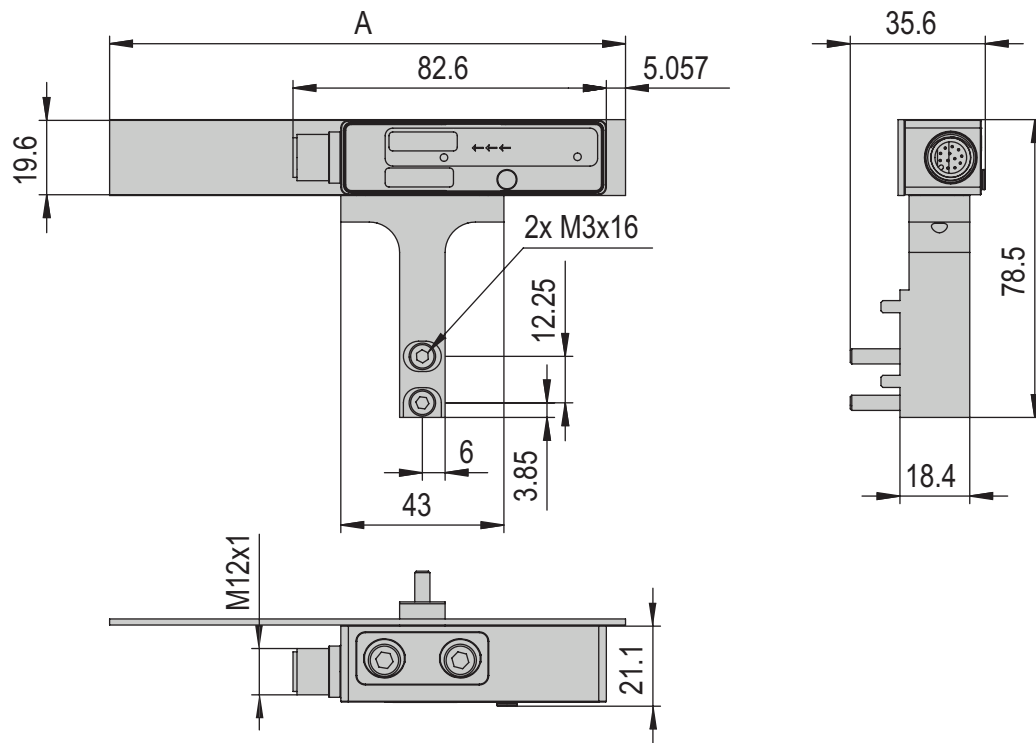
External position measuring system ES20	50	100	200	300
<b>Order number</b>	<b>50427547</b>	<b>50427560</b>	<b>50427573</b>	<b>50427586</b>
Net weight	0.143 kg	0.149 kg	0.158 kg	0.17 kg
Repeat accuracy	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm
A	136 mm	186 mm	286 mm	386 mm

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# Accessories ES

External position measuring system ES30	50	100	200	300	400	500
<b>Order number</b>	<b>50429204</b>	<b>50429217</b>	<b>50429230</b>	<b>50429243</b>	<b>50429256</b>	<b>50429257</b>
Net weight	0.144 kg	0.15 kg	0.163 kg	0.175 kg	0.188 kg	0.2 kg
Repeat accuracy	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm
A	136 mm	186 mm	286 mm	386 mm	486 mm	586 mm



External position measuring system ES40/-HP/-SL	100	200	300	400	500
<b>Order number</b>	<b>50470244</b>	<b>50470245</b>	<b>50470246</b>	<b>50470247</b>	<b>50470248</b>
Net weight	0.172 kg	0.185 kg	0.197 kg	0.21 kg	0.222 kg
Repeat accuracy	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm	+/- 0.02 mm
A	186 mm	286 mm	386 mm	486 mm	586 mm

