



- Multi-axis and drive combinations
- Recirculating ball bearing guide
- Individualised position sensing and end-position cushioning

Linear drives SLM, with guided slide

Key features

FESTO

Version

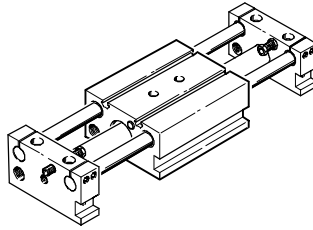
The linear drive SLM is a combination of a slide unit and a rodless linear drive. The drive moves the slide. The

transmission of movement is accomplished via a magnetic coupling. The modular system allows

for individualised end-position cushioning and end-position sensing solutions.

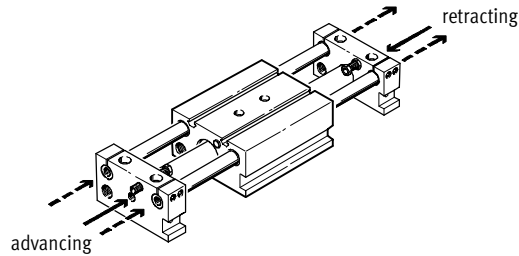
Basic unit

SLM-...-G



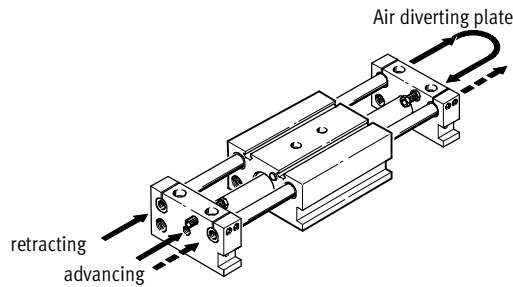
SLM-...-GL

with hollow guide rods



SLM-...-GU

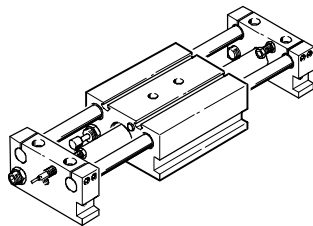
with hollow guide rods, air diverting plate and supply port on one side



Standard unit

SLM-...-S

with two self-adjusting shock absorbers and two inductive proximity sensors with PNP output



Linear drives SLM, with guided slide

Key features

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Multi-axis combinations

The linear drive SLM can be combined with the linear unit SLE to produce a range of 2-axis or 3-axis systems.

These multi-axis configurations are formed by screwing the units together, either directly or using an adapter plate. A linear unit SLE can be combined with another linear unit SLE using either method, however direct

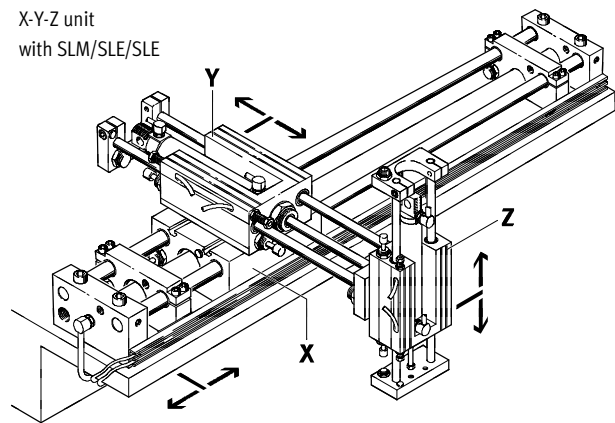
mounting is almost always required for a linear drive SLM and linear unit SLE. The centring pins and sleeves required to secure the units together are included in the scope of delivery.

Linear unit SLE
→ 1 / 6.2-108

X	Y	Z
2 axes		
SLM-12	SLE-10	–
SLM-16 ¹⁾	SLE-10	–
SLM-20	SLE-16	–
SLM-25 ²⁾	SLE-16	–
SLM-32	SLE-20 or SLE-25	–
SLM-40	SLE-32	–
3 axes		
SLM-20	SLE-16	SLE-10
SLM-25 ²⁾	SLE-16	SLE-10
SLM-32	SLE-20 or SLE-25	SLE-16
SLM-40	SLE-32	SLE-20 or SLE-25

- 1) An adapter plate SLEP-10 (→ 1 / 3.2-28) is required for mounting (direct mounting is not possible).
2) An adapter plate SLEP-16 (→ 1 / 3.2-28) is required for mounting (direct mounting is not possible).

X-Y-Z unit
with SLM/SLE/SLE



Rodless cylinders
Magnetically coupled

3.2

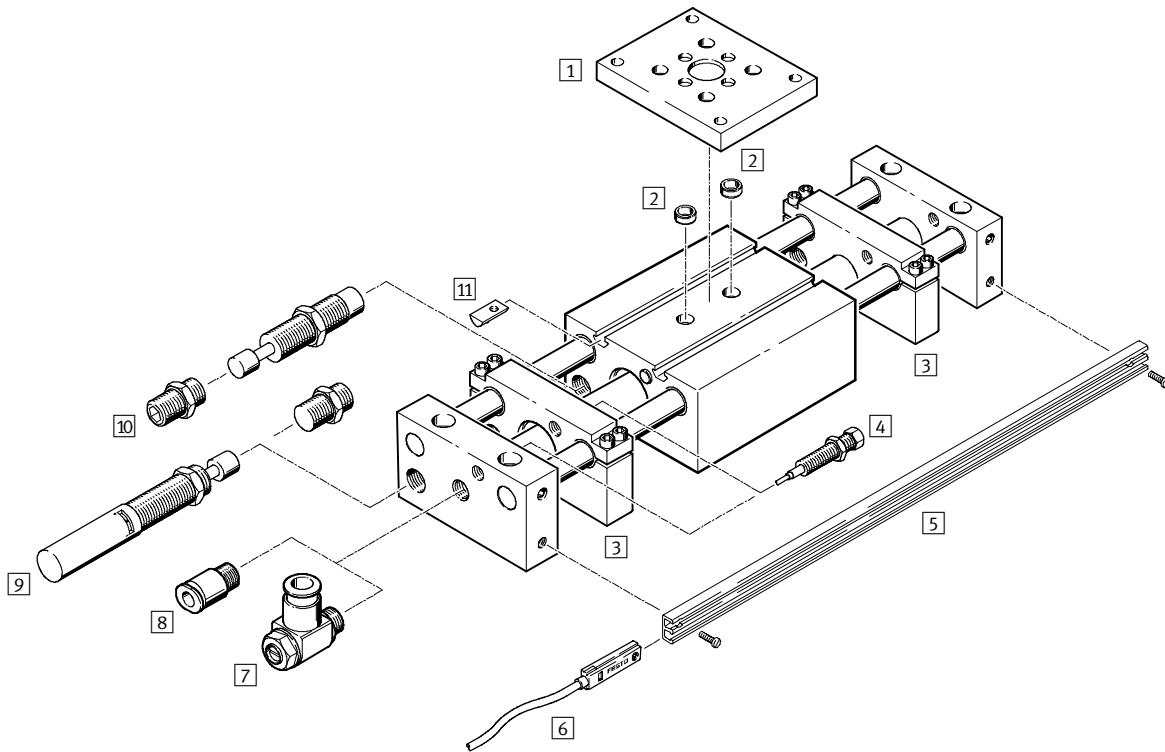
Linear drives SLM, with guided slide

Peripherals overview

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Rodless cylinders
Magnetically coupled

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Linear drives SLM, with guided slide

Peripherals overview

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Accessories		
	Brief description	→ Page
1 Adapter plate SLEP	For multi-axis combinations	1 / 3.2-28
2 Centring sleeve ZBH	For centring loads and attachments on the slide	1 / 3.2-29
3 Stop plate SLM-...-KF-A	For variable stroke adjustment	1 / 3.2-29
4 Switching stop with proximity sensor SL-...-SIE-PS/SL-...-SIE-NS	Can be integrated in the end or stop plate	1 / 3.2-28
5 Mounting rail SLZS/SLMS	For mounting proximity sensors SME/SMT-8	1 / 3.2-29
6 Proximity sensor SME/SMT-8	Can be integrated in the mounting rail SLZS/SLMS	1 / 3.2-29
7 One-way flow control valve GRLA	For speed regulation	1 / 3.2-30
8 Push-in fitting QS	For connecting compressed air tubing with standard O.D.	Volume 3
9 Shock absorber kit, adjustable SLZ-...-KF-A	For slowing higher speeds to a stop.	1 / 3.2-27
10 Shock absorber kit, self-adjusting SLZ-...-YSR-C	For slowing higher speeds to a stop.	1 / 3.2-27
11 Slot nut NST	For mounting loads and attachments on the slide	1 / 3.2-29

Rodless cylinders
Magnetically coupled

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Linear drives SLM, with guided slide

Type code

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Rodless cylinders
Magnetically coupled

3.2

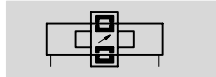
		SLM	-	25	-	125	-	KF	-	A	-	G	-	CV	-	CH	-	PV	-	PH	-	HV	-	HH	-	E	-	4I	
Type																													
Double-acting																													
SLM	Linear drive																												
Piston Ø [mm]																													
Stroke [mm]																													
Guide																													
KF	Recirculating ball bearing guide																												
Position sensing																													
A	Via proximity sensor																												
Version																													
Standard unit																													
S	= G – CV – CH – PV – PH																												
Basic unit																													
G	Pneumatic drive																												
GL	Pneumatic drive and hollow guide rods																												
GU	Pneumatic drive, hollow guide rods and air diverting plate																												
Shock absorber kit at front																													
CV	Self-adjusting																												
YV	Adjustable																												
Shock absorber kit at rear																													
CH	Self-adjusting																												
YH	Adjustable																												
Switching stop at front																													
PV	With proximity sensor, PNP																												
NV	With proximity sensor, NPN																												
Switching stop at rear																													
PH	With proximity sensor, PNP																												
NH	With proximity sensor, NPN																												
Stroke adjustment at front																													
HV	Stop plate at front																												
Stroke adjustment at rear																													
HH	Stop plate at rear																												
Mounting rail																													
E	Mounting rail																												
Accessories																													
...I	Slot nut, 1 ... 10 pieces																												

Linear drives SLM, with guided slide

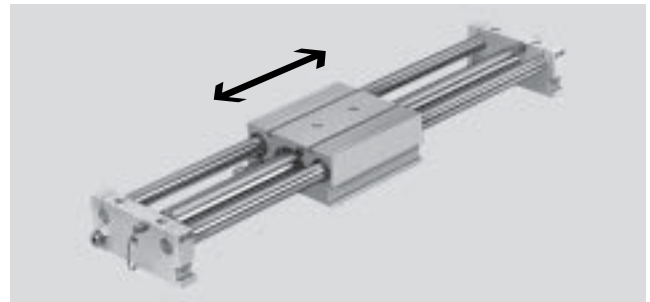
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Technical data

Function



[www.festo.com/en/
Spare_parts_service](http://www.festo.com/en/Spare_parts_service)



- Ø - Diameter
12 ... 40 mm
- I - Stroke length
10 ... 1500 mm

General technical data						
Piston Ø	12	16	20	25	32	40
Stroke [mm]	10 ... 500	10 ... 800		10 ... 1500		
Pneumatic connection	M5		G1/8		G1/4	
Mode of operation	Double-acting					
Constructional design	Slide unit					
	Rodless linear drive					
End-position cushioning via shock absorber	Self-adjusting at both ends					
	–	–	Adjustable at both ends			
Position sensing	Via proximity sensor					
Type of mounting	Via through-holes					
	Via female thread					
Mounting position	Any					
Protection against torsion/guide	Guide rods with slide/ball bearing guide					

Operating and environmental conditions						
Piston Ø	12	16	20	25	32	40
Operating medium	Filtered compressed air, lubricated or unlubricated					
Operating pressure [bar]	≤7					
Ambient temperature ¹⁾ [°C]	-20 ... +60					

1) Note operating range of proximity sensors.

Forces [N]						
Piston Ø	12	16	20	25	32	40
Theoretical force at 6 bar, advancing	68	121	188	295	483	754
Theoretical force at 6 bar, retracting	68	121	188	295	483	754
Breakaway force of the magnetic coupling	100	160	270	400	680	1050

Rodless cylinders
Magnetically coupled

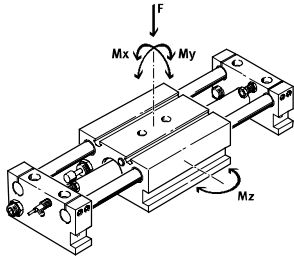
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Linear drives SLM, with guided slide

Technical data

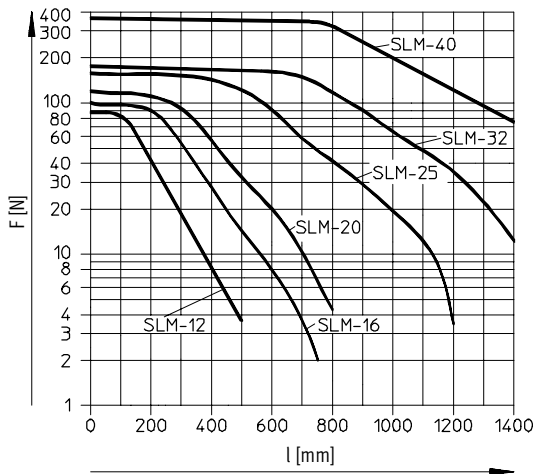
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Permissible dynamic load

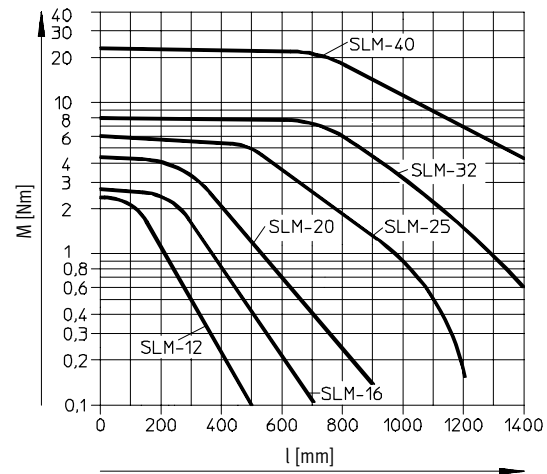


$$\begin{aligned} F &= \text{Load} \\ M &\geq M_x \\ M &\geq M_y \\ M &\geq M_z \end{aligned}$$

Permissible effective load F as a function of the stroke l



Permissible torque M as a function of the stroke l

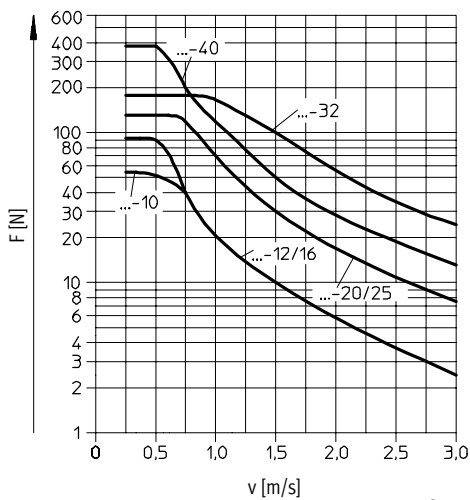


Permissible shock absorber load F as a function of the impact velocity v

with horizontal installation

$$F \geq m_L \times g$$

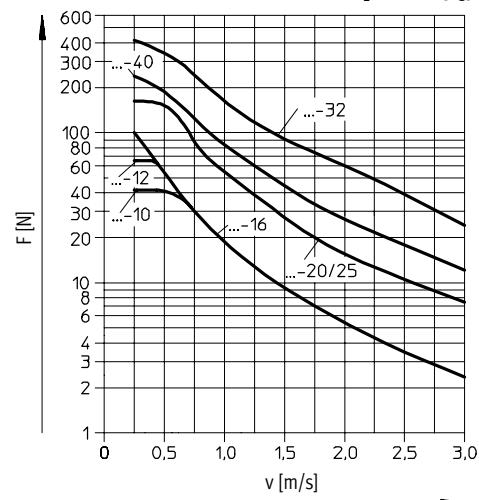
$$\begin{aligned} g &= 9.81 \text{ N/mm}^2 \\ m_L &= \text{Load [kg]} \end{aligned}$$



with vertical installation

$$F \geq (m_L + m_E) \times g$$

$$\begin{aligned} g &= 9.81 \text{ N/mm}^2 \\ m_E &= \text{Moving load (dead weight) [kg]} \\ m_L &= \text{Load [kg]} \end{aligned}$$



Linear drives SLM, with guided slide

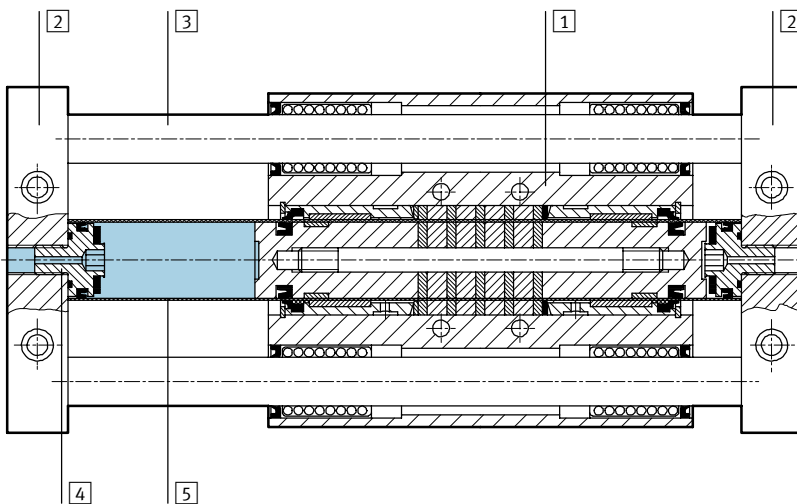
Technical data

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Weights [g]						
Piston Ø	12	16	20	25	32	40
Basic weight with 0 mm stroke	1110	1730	2620	3800	6400	9550
Additional weight per 10 mm stroke	10	15	21	36	55	85
Moving load	620	1080	1400	2150	3150	5080

Materials

Sectional view



Linear drive	
1 Slide	Wrought aluminium alloy
2 End plate	Wrought aluminium alloy
3 Guide rod	Steel
4 Cylinder barrel attachment	Wrought aluminium alloy
5 Cylinder barrel	High-alloy stainless steel
– Stop plate	Wrought aluminium alloy
– Seals	Nitrile rubber

Rodless cylinders
Magnetically coupled

3.2

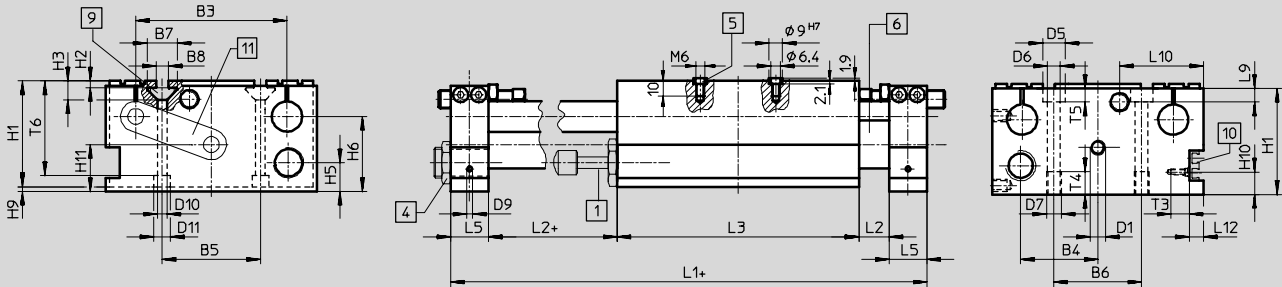
Linear drives SLM, with guided slide

Technical data

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Dimensions

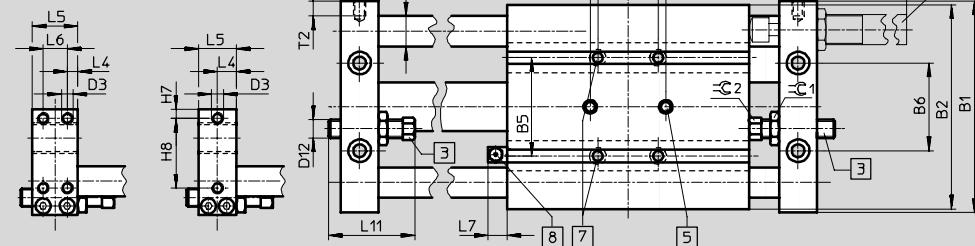
Download CAD data → www.festo.com/en/engineering



View A

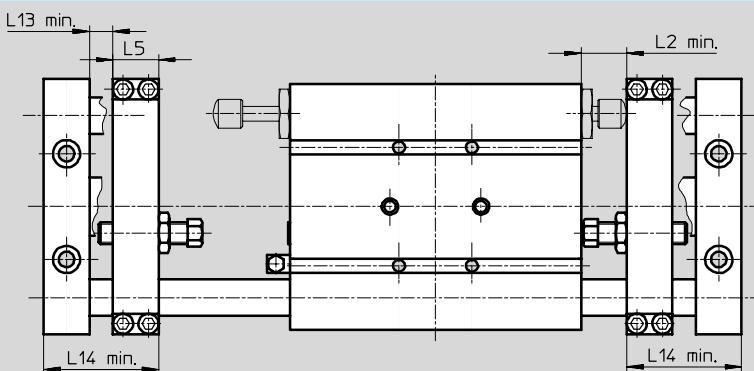
SLM-40

SLM-12 ... 32



- | | | | |
|---|--|--------------------------------|---|
| 1 Self-adjusting shock absorber, for front and rear mounting | 3 Switching stop with proximity sensor, PNP/NPN, for front and rear mounting | 6 Pneumatic linear drive | 10 Mounting rail for proximity sensor SME/SMT-8 |
| 2 Adjustable shock absorber, for front and rear mounting on the end plate | 4 Shock absorber stop | 7 Mounting thread/through-hole | 11 Air diverting plate |
| | 5 Centring sleeves (2 included in scope of delivery) | 8 Lubrication nipple | + = plus stroke length |
| | | 9 Slot nut | |

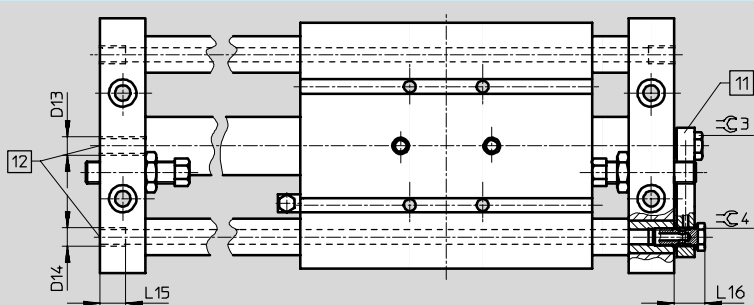
with stop plate



Note

In the case of stroke settings with stop plates front and/or rear, the stroke is reduced by L5 and L13 min at each end.

with hollow guide rod and air diverting plate



- | |
|------------------------|
| 11 Air diverting plate |
| 12 Supply port |

Linear drives SLM, with guided slide

Technical data

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Ø	B1	B2	B3	B4	B5	B6	B7	B8	D1	D3	D4 Ø h6	D5 Ø	D6 Ø	D7	D9
[mm]															
12	74	71	52	26.5	26	35	11.6	5	M5	M5	8	10	5.3	M6	M4
16	84	80	58	31	32	40	11.6	5	M5	M5	10	10	5.3	M6	M4
20	100	96	72	36.5	40	47	11.6	5	G $\frac{1}{8}$	M6	12	11	6.8	M8	M4
25	114	110	80	39.5	45	48	11.6	5	G $\frac{1}{8}$	M6	16	10.5	6.8	M8	M4
32	140	135	100	51	65	58	20	8	G $\frac{1}{8}$	M8	20	15	8.5	M10	M4
40	166	160	118	63	75	78	20	8	G $\frac{1}{4}$	M6	25	15	8.5	M10	M4

Ø	D10 Ø	D11 Ø	D12	D13	D14	H1	H2	H3	H4	H5	H6	H7	H8	H9
[mm]														
12	5.3	9	M6x0.75	M5	–	38	1.8	6.4	77	11.5	27	3.5	31	2
16	5.5	10	M6x0.75	M5	M5	40	1.8	6.4	77	12	28.5	4.5	31	2
20	5.5	10	M8x1	G $\frac{1}{8}$	M5	50	1.8	6.4	128	16	36	5	40	2
25	5.5	10	M8x1	G $\frac{1}{8}$	G $\frac{1}{8}$	55	1.8	6.4	128	14	36.5	5	34	2
32	6.6	11	M12x1	G $\frac{1}{8}$	G $\frac{1}{8}$	70	4.5	12.5	160	19	49.5	6	46	3
40	6.6	11	M12x1	G $\frac{1}{4}$	G $\frac{1}{4}$	75	4.5	12.5	160	19	51	5.5	51.5	3

Ø	H10	H11	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11
[mm]													
12	16	15.5	139	12	85	7.5	15	–	11	19	6.5	37	33
16	16	19	154	12	100	7.5	15	–	11	32	6	31.5	33
20	16	22	192	16	120	10	20	–	12.5	26	8	44	45
25	16	25	212	16	140	10	20	–	12.5	26	8	45	45
32	14.8	31	250	20	160	12.5	25	–	12.5	40	9	55.5	57
40	15.8	36.5	270	20	180	6.5	25	12	12.5	50	9	61.5	57

Ø	L12	L13	L14	L15	L16	T2	T3	T4	T5	T6	≈C1	≈C2	≈C3	≈C4
[mm]														
12	–	7	37	–	–	7	12	10	5.7	30.5	10	8	–	–
16	–	7	37	8	12.5	6.5	12	10	5.7	34.3	10	8	13	–
20	–	10	50	8	19.5	9	12	12	6.8	44	13	11	13	8
25	–	10	50	10	19.5	9	12	12	6.8	49.3	13	11	13	–
32	9.5	13	63	14	15.5	10	12	15	9	62.5	19	13	13	–
40	10	13	63	15	17	10	12	16	9	61	19	13	17	–

Rodless cylinders
Magnetically coupled

3.2

Linear drives SLM, with guided slide

Ordering data – Modular products

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Rodless cylinders
Magnetically coupled

3.2

Mandatory data							→
Module No.	Drive function	Size	Stroke	Guide	Position sensing	Basic unit	
32 781	SLM	12	10 ... 1500	KF	A	G	
32 782		16				GL	
32 783		20				GU	
32 784		25					
32 785		32					
32 786		40					
Ordering example							
32 784	SLM	- 25	- 900	- KF	- A	- GU	

Ordering table												
Size		12	16	20	25	32	40	Condi- tions	Code		Enter code	
M ↓	Module No.	32 781	32 782	32 783	32 784	32 785	32 786					
	Drive function	Linear unit							SLM		SLM	
	Size [mm]	12	16	20	25	32	40		-...			
	Stroke [mm]	10 ... 500	10 ... 800			10 ... 1500			-...			
	Guide	Via ball bearings							-KF		-KF	
	Position sensing	Via proximity sensor							-A		-A	
	Basic unit	Linear unit with pneumatic drive							-G			
		–	Linear unit with pneumatic drive and hollow guide rods							-GL		
		–	Linear unit with pneumatic drive, hollow guide rods and air diverting plate							-GU		

Transfer order code

	SLM	-		-		-	KF	-		-	A	-		-
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Linear drives SLM, with guided slide

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Ordering data – Modular products

Options							
Shock absorber at front	Shock absorber at rear	Sensor at front	Sensor at rear	Stroke adjustment at front	Stroke adjustment at rear	Mounting rail	Slot nut
CV YV	CH YH	PV NV	PH NH	HV	HH	E	...I
CV	- CH	- PV	- PH	- HV	- HH	- E	- 4I

Ordering table										
Size	12	16	20	25	32	40	Condi- tions	Code		Enter code
0 Shock absorber at front	Self-adjusting shock absorber, with stop at front							-CV		
	Adjustable shock absorber, with stop at front							-YV		
	at rear							-CH		
	Adjustable shock absorber, with stop at rear							-YH		
	Sensor (bonded) at front							-PV		
	Inductive sensor with 2.5 m cable, PNP, with stop sleeve at front							-NV		
	at rear							-PH		
	Inductive sensor with 2.5 m cable, NPN, with stop sleeve at rear							-NH		
Stroke adjustment	at front						1	-HV		
	at rear						2	-HH		
Mounting rail	Mounting rail							-E		
Slot nut	1 ... 10							...I		

- 1 HV Not in combination with YV
 2 HH Not in combination with YH

Transfer order code

	-		-		-		-		-	
--	---	--	---	--	---	--	---	--	---	--

Rodless cylinders
Magnetically coupled

3.2

Linear drives SLM, with guided slide

Ordering data – Modular products, package solution

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Rodless cylinders
Magnetically coupled

3.2

Mandatory data						
Module No.	Drive function	Size	Stroke	Guide	Position sensing	Standard unit
32 781	SLM	12	10 ... 1500	KF	A	S
32 782		16				
32 783		20				
32 784		25				
32 785		32				
32 786		40				
Ordering example						
32 782	SLM	- 16	- 750	- KF	- A	- S

Ordering table									
Size	12	16	20	25	32	40	Condi- tions	Code	Enter code
M Module No.	32 781	32 782	32 783	32 784	32 785	32 786			
Drive function	Linear unit							SLM	SLM
Size [mm]	12	16	20	25	32	40		-...	
Stroke [mm]	10 ... 500	10 ... 800		10 ... 1500				-...	
Guide	Via ball bearings							-KF	-KF
Position sensing	Via proximity sensor							-A	-A
Standard unit	Package solution S = G-CV-CH-PV-PH							-S	-S

Transfer order code

	SLM	-		-		-	KF	-	A	-	S
--	-----	---	--	---	--	---	----	---	---	---	---

Linear drives SLM, with guided slide

Accessories

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Shock absorber kit

SLZ-...-YSR-C, self-adjusting

(order code CV, CH)

Material:

YSR-8-8-C: Nickel-plated brass

YSR-12-12-C, YSR-16-20-C:

Galvanised steel

Free of copper, PTFE and silicone



Ordering data			
For Ø [mm]	including shock absorber Technical data → 1 / 9.0-2	Part No.	Type
12, 16	YSR-8-8-C	115 315	SLZ-16-YSR-C
20, 25	YSR-12-12-C	115 316	SLZ-25-YSR-C
32, 40	YSR-16-20-C	115 317	SLZ-32-YSR-C

Shock absorber kit

SLZ-...-KF-A, adjustable

(order code YV, YH)

Material:

Galvanised steel



Ordering data			
For Ø [mm]	including shock absorber Technical data → 1 / 9.0-2	Part No.	Type
20, 25	YSR-12-12	114 032	SLZ-25-KF-A
32, 40	YSR-16-20	114 033	SLZ-32-KF-A

Rodless cylinders
Magnetically coupled

3.2

Linear drives SLM, with guided slide

Accessories

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Switching stop SL-...-SIE-PS

(order code PV, PH)

Kit with inductive proximity sensor
PNP

Switching stop SL-...-SIE-NS

(order code NV, NH)

Kit with inductive proximity sensor
NPN

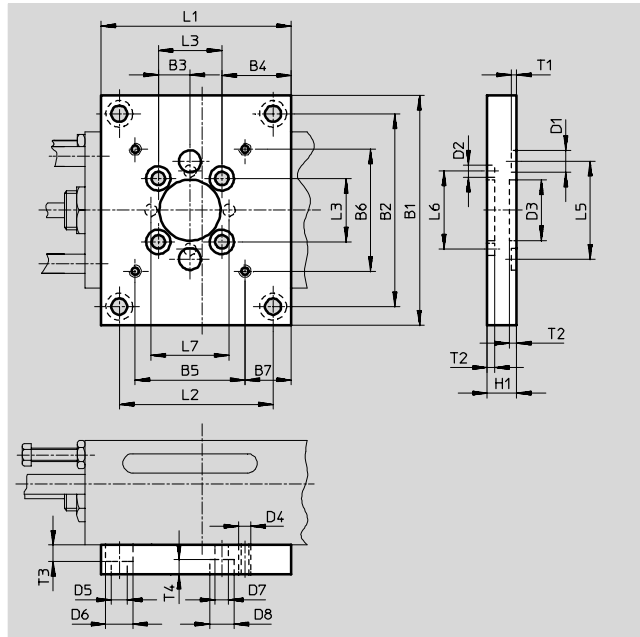
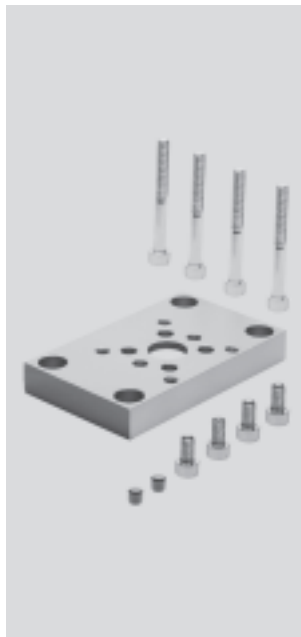


Ordering data				
For Ø [mm]	Switch output	Including proximity sensor Technical data → Volume 4	Part No.	Type
12, 16	PNP	SIEN-4B-PS-K-L	116 251	SL-10/16-SIE-PS
	NPN	SIEN-4B-NS-K-L	116 252	SL-10/16-SIE-NS
20, 25	PNP	SIEN-4B-PS-K-L	116 253	SL-20/25-SIE-PS
	NPN	SIEN-4B-NS-K-L	116 254	SL-20/25-SIE-NS
32, 40	PNP	SIEN-6,5B-PS-K-L	117 525	SL-32/50-SIE-PS
	NPN	SIEN-6,5B-NS-K-L	117 526	SL-32/50-SIE-NS

Adapter plate SLEP

Material:

Wrought aluminium alloy



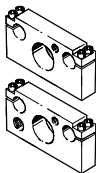
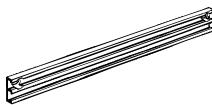
Dimensions and ordering data																		
For Ø [mm]	B1	B2	B3	B4	B5	B6	B7	D1 Ø H7	D2 Ø H7	D3 Ø G7	D4	D5 Ø	D6 Ø	D7 Ø	D8 Ø	H1	L1	L2
16	82	68	9.5	20	32	32	13.5	9	5	14	M5	5.5	10	5.5	10	12	50	36
25	94	79	13	23.5	45	26	14	9	5	25	M5	6.6	11	5.5	10	12	73	58

For Ø [mm]	L3	L5	L6	L7	T1	T2	T3	T4	Weight [g]	Part No.	Type
16	19	40	28	–	2.1	3	5.7	6.7	122	150 909	SLEP-10
25	26	40	32	32	2.1	3	6.8	6.7	205	150 910	SLEP-16

Linear drives SLM, with guided slide

FESTO

Accessories

Ordering data – Accessories						
	For Ø [mm]	Material	Order code	Part No.	Type	PU ¹⁾
Stop plate SLM-...-KF-A						
	12	Wrought aluminium alloy	HV, HH	119 527	SLM-12-...-KF-A	1
	16			119 528	SLM-16-...-KF-A	1
	20			119 529	SLM-20-...-KF-A	1
	25			119 530	SLM-25-...-KF-A	1
	32			119 531	SLM-32-...-KF-A	1
	40			119 532	SLM-40-...-KF-A	1
Mounting rail SLZS/SLMS for proximity sensor						
	12	Wrought aluminium alloy	E	150 916	SLZS-16-...-...	1
	16			152 744	SLMS-16-...-...	1
	20			150 917	SLZS-25-...-...	1
	25			152 745	SLMS-25-...-...	1
	32			150 918	SLZS-32-...-...	1
	40			150 919	SLZS-40-...-...	1
Slot nut NST						
	12 ... 25	Non-alloyed tempered steel	I	150 914	NST-5-M5	1
	32, 40	Free of copper, PTFE and silicone		150 915	NST-8-M6	1
Centring sleeve ZBH						
	16 ... 40	Stainless steel	–	150 927	ZBH-9	10
		Free of copper, PTFE and silicone				

1) Packaging unit quantity

Ordering data – Proximity sensors for slot type 8, magneto-resistive							Technical data ➔ 1 / 10.2-13	
	Mounting	Switch output	Electrical connection			Cable length [m]	Part No.	Type
			Cable	Plug M8	Plug M12			
Normally open contact								
	Insertable from above	PNP	3-wire	–	–	2.5	525 898	SMT-8F-PS-24V-K2,5-OE
		NPN	3-wire	–	–	2.5	525 909	SMT-8F-NS-24V-K2,5-OE
		–	2-wire	–	–	2.5	525 908	SMT-8F-ZS-24V-K2,5-OE
		PNP	–	3-pin	–	0.3	525 899	SMT-8F-PS-24V-K0,3-M8D
		NPN	–	3-pin	–	0.3	525 910	SMT-8F-NS-24V-K0,3-M8D
		PNP	–	–	3-pin	0.3	525 900	SMT-8F-PS-24V-K0,3-M12
	Insertable from end	PNP	3-wire	–	–	2.5	175 436	SMT-8-PS-K-LED-24-B
			–	3-pin	–	0.3	175 484	SMT-8-PS-S-LED-24-B
Normally closed contact								
	Insertable from above	PNP	3-wire	–	–	7.5	525 911	SMT-8F-PO-24V-K7,5-OE

Core Range

Linear drives SLM, with guided slide

Accessories

FESTO

Ordering data – Proximity sensors for slot type 8, magnetic reed						Technical data → 1 / 10.2-18	
	Mounting	Electrical connection		Cable length [m]	Part No.	Type	
		Cable	Plug M8				
Normally open contact							
	Insertable from above	3-wire	–	2.5	525 895	SME-8F-DS-24V-K2,5-OE	
				5.0	525 897	SME-8F-DS-24V-K5,0-OE	
		2-wire	–	2.5	525 907	SME-8F-ZS-24V-K2,5-OE	
				0.3	525 896	SME-8F-DS-24V-K0,3-M8D	
	Insertable from end	3-wire	–	2.5	150 855	SME-8-K-LED-24	
		–	3-pin	0.3	150 857	SME-8-S-LED-24	
Normally closed contact							
	Insertable from above	3-wire	–	7.5	525 906	SME-8F-DO-24V-K7,5-OE	

Ordering data – Plug sockets						Technical data ➔ 7 / 1.1-104	
	Mounting	Switch output		Connection	Cable length [m]	Part No.	Type
		PNP	NPN				
Straight socket							
	M8 locknut			3-pin	2.5	159 420	SIM-M8-3GD-2,5-PU
					5	159 421	SIM-M8-3GD-5-PU
	M12 locknut			3-pin	2.5	159 428	SIM-M12-3GD-2,5-PU
					5	159 429	SIM-M12-3GD-5-PU
Angled socket							
	M8 locknut			3-pin	2.5	159 422	SIM-M8-3WD-2,5-PU
					5	159 423	SIM-M8-3WD-5-PU
	M12 locknut			3-pin	2.5	159 430	SIM-M12-3WD-2,5-PU
					5	159 431	SIM-M12-3WD-5-PU

Ordering data – Slot cover for slot type 8					Part No.	Type
	Mounting	Length [m]				
	Insertable from above	2x 0.5			151 680	ABP-5-S

Ordering data – One-way flow control valves					Technical data → Volume 2	
	Connection		Material	Part No.	Type	
	Thread	For tubing OD				
	M5	3	Metal design	193 137	GRLA-M5-QS-3-D	
		4		193 138	GRLA-M5-QS-4-D	
		6		193 139	GRLA-M5-QS-6-D	
	G1/8	3		193 142	GRLA-1/8-QS-3-D	
		4		193 143	GRLA-1/8-QS-4-D	
		6		193 144	GRLA-1/8-QS-6-D	
		8		193 145	GRLA-1/8-QS-8-D	
	G1/4	6		193 146	GRLA-1/4-QS-6-D	
		8		193 147	GRLA-1/4-QS-8-D	
		10		193 148	GRLA-1/4-QS-10-D	

 Core Range