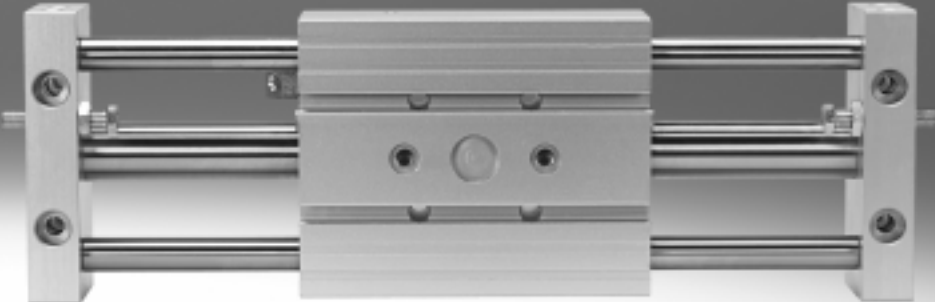


Linear drives SLM, with guided slide



Linear drives SLM, with guided slide

Key features

FESTO

Version

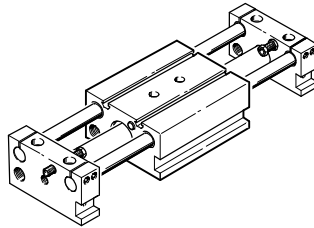
The linear drive SLM is a combination of a slide unit and a rodless linear drive. The drive moves the slide. The

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

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

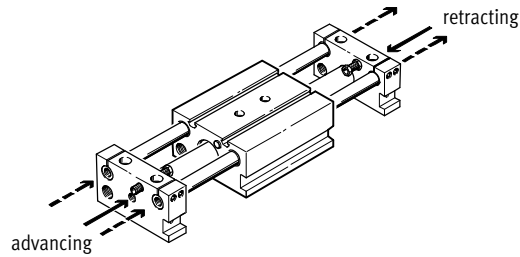
Basic unit

SLM-...-G



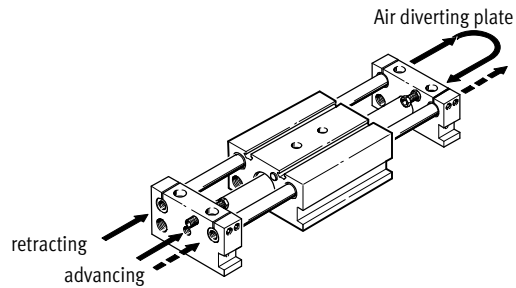
SLM-...-GL

with hollow guide rods



SLM-...-GU

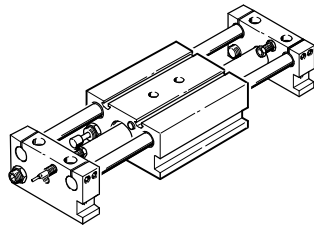
with hollow guide rods, air diverting plate and supply port on one side



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

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.

→ www.festo.com

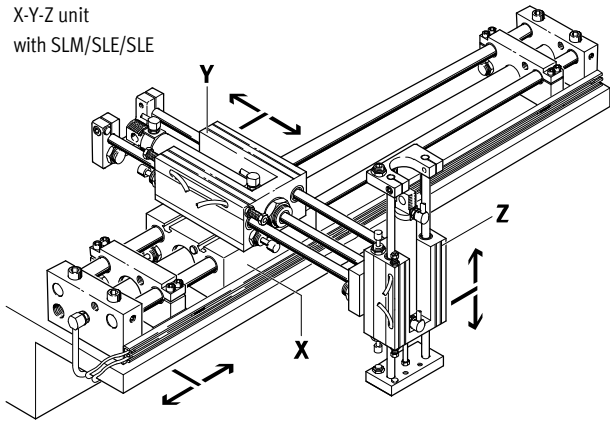
The units are bolted together directly for multi-axis operation.

The centring pins and sleeves required to secure the units together are included in the scope of delivery.

Linear unit SLE

→ Internet: sle

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

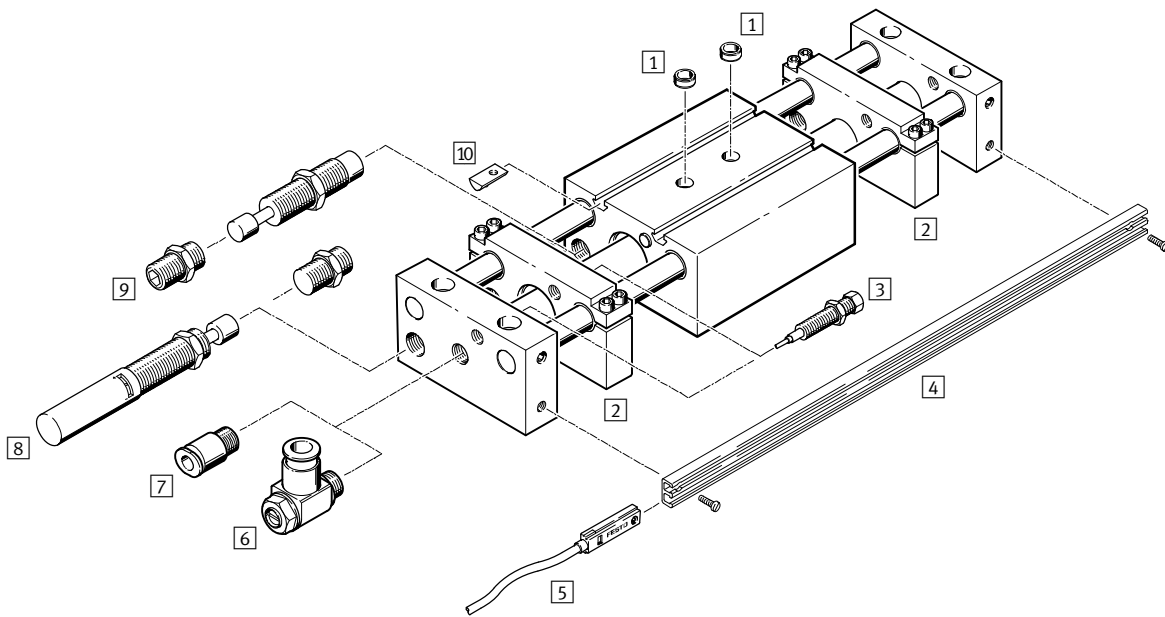


X	Y	Z
2 axes		
SLM-12	SLE-10	-
SLM-20	SLE-16	-
SLM-32	SLE-20 or SLE-25	-
SLM-40	SLE-32	-
3 axes		
SLM-20	SLE-16	SLE-10
SLM-32	SLE-20 or SLE-25	SLE-16
SLM-40	SLE-32	SLE-20 or SLE-25

Linear drives SLM, with guided slide

Peripherals overview

FESTO



Linear drives SLM, with guided slide

Peripherals overview

Accessories		
Type/Order code	Description	→ Page/Internet
1 Centring sleeve ZBH	For centring loads and attachments on the slide	16
2 Stop plate SLM-...-KF-A	For variable stroke adjustment	16
3 Switching stop with proximity sensor SL-...-SIE-PS/SL-...-SIE-NS	Can be integrated in the end or stop plate	15
4 Mounting rail SLZS/SLMS	For mounting proximity sensors SME/SMT-8	16
5 Proximity sensor SME/SMT-8	Can be integrated in the mounting rail SLZS/SLMS	16
6 One-way flow control valve GRLA	For speed regulation	17
7 Push-in fitting QS	For connecting compressed air tubing with standard O.D.	qs
8 Shock absorber kit, adjustable SLZ-...-KF-A	For slowing higher speeds to a stop	15
9 Shock absorber kit, self-adjusting SLZ-...-YSR-C	For slowing higher speeds to a stop	15
10 Slot nut NST	For mounting loads and attachments on the slide	16

Linear drives SLM, with guided slide

Type code

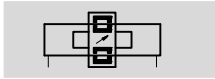
SLM - 25 - 125 - KF - A - G - CV - CH - PV - PH - HV - HH - E - 4I

Type	
Double-acting	
SLM	Linear drive
Piston Ø [mm]	
25	
Stroke [mm]	
125	
Guide	
KF	Recirculating ball bearing guide
Position sensing	
A	For proximity sensing
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

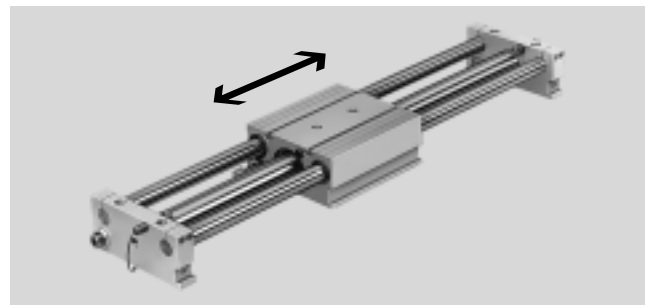
Linear drives SLM, with guided slide



Technical data

Function



 www.festo.com



-  - Diameter
12 ... 40 mm
-  - 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	For proximity sensing					
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	Compressed air in accordance with ISO 8573-1:2010 [7:-:-]					
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)					
Operating pressure [bar]	≤7					
Ambient temperature ¹⁾ [°C]	-20 ... +60					

1) Note operating range of proximity sensors.

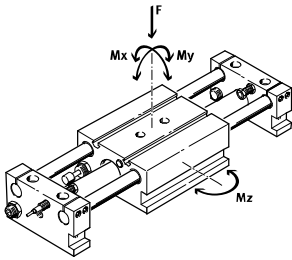
Forces [N]						
Piston Ø	12	16	20	25	32	40
Theoretical force at 6 bar, advancing	68	121	188	295	483	754
Theoretical force at 6 bar, retracting	68	121	188	295	483	754
Breakaway force of the magnetic coupling	100	160	270	400	680	1050

Linear drives SLM, with guided slide

Technical data

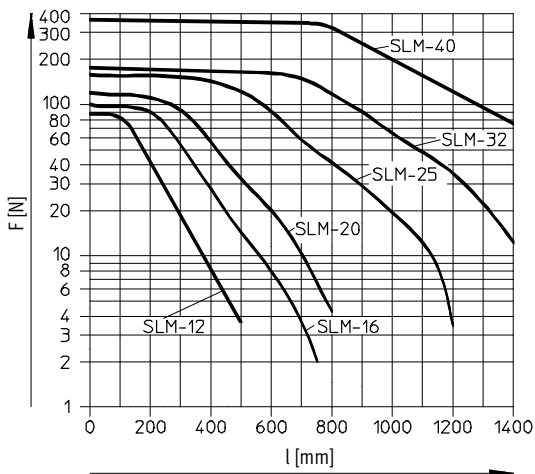


Permissible dynamic load

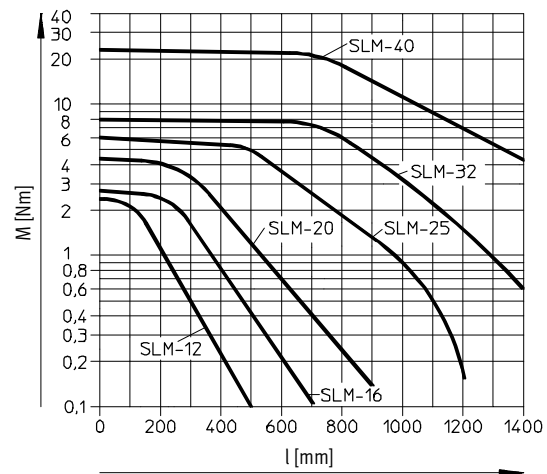


F = Load
 $M \geq M_x$
 $M \geq M_y$
 $M \geq M_z$

Permissible effective load F as a function of the stroke l



Permissible torque M as a function of the stroke l



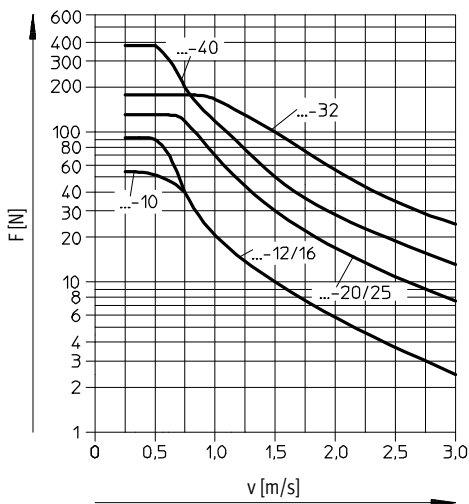
Permissible shock absorber load F as a function of the impact velocity v

with horizontal installation

$$F \geq m_L \times g$$

$$g = 9.81 \text{ N/mm}^2$$

$$m_L = \text{Load [kg]}$$



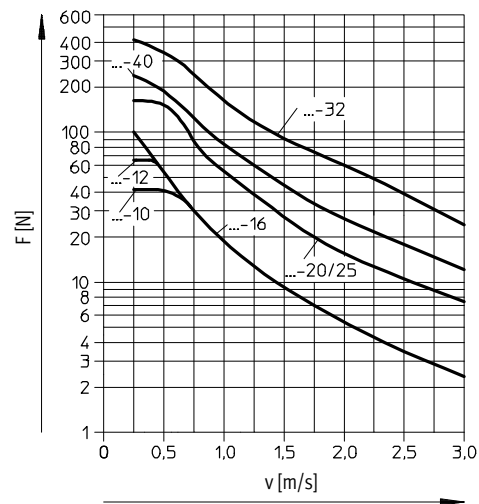
with vertical installation

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

$$g = 9.81 \text{ N/mm}^2$$

$$m_E = \text{Moving load (dead weight) [kg]}$$

$$m_L = \text{Load [kg]}$$



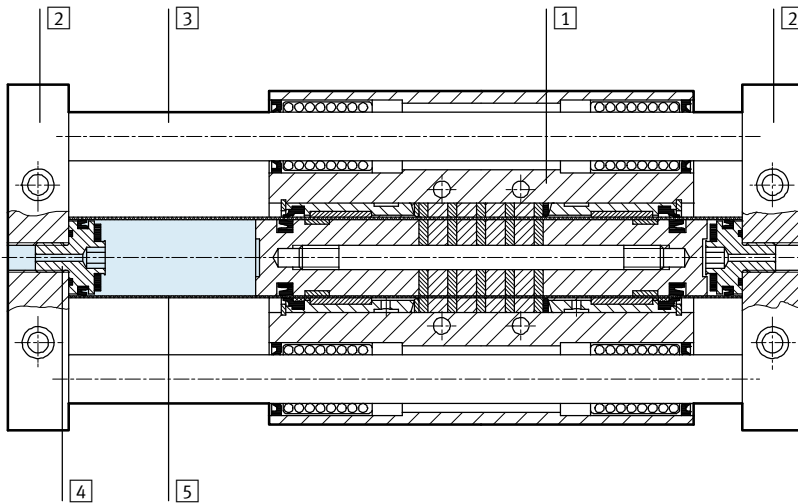
Linear drives SLM, with guided slide

Technical data

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

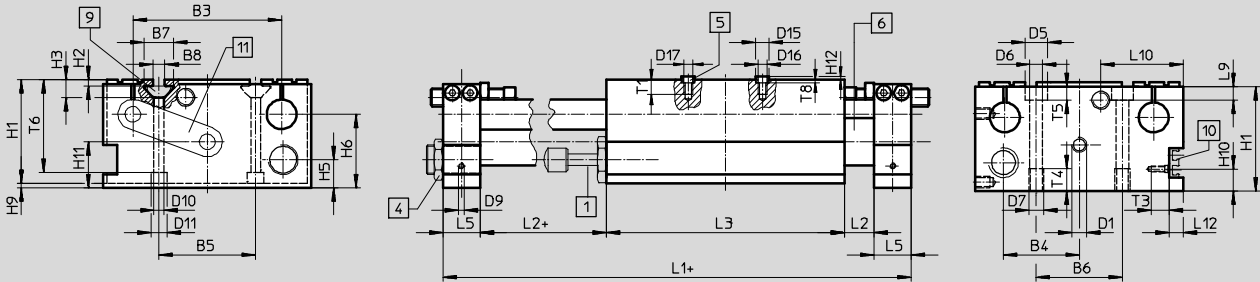
Linear drives SLM, with guided slide

Technical data

FESTO

Dimensions

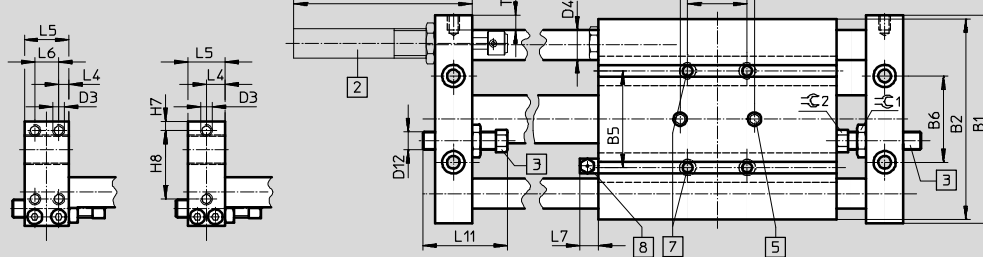
Download CAD data → www.festo.com



View A

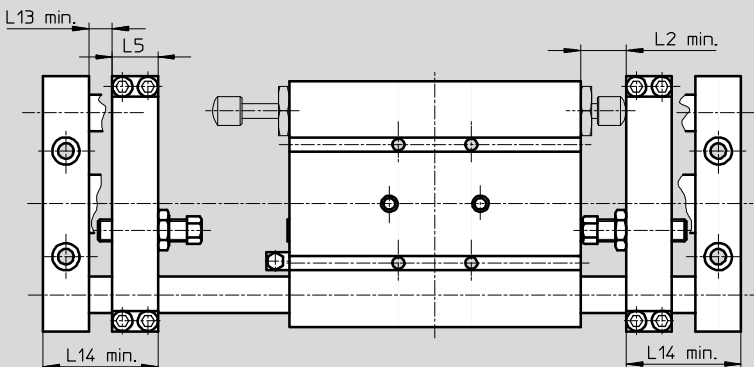
SLM-40

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 |

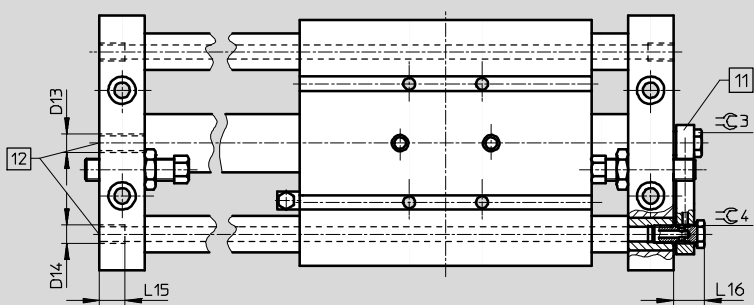
with stop plate



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

∅	B1	B2	B3	B4	B5	B6	B7	B8	D1	D3	D4	D5	D6	D7	D9	D10
[mm]			±0.03		±0.2	±0.2					∅ h6	∅	∅			∅
12	74	71	52	26.5	26	35	11.6	5	M5	M5	8	10	5.3	M6	M4	5.3
16	84	80	58	31	32	40	11.6	5	M5	M5	10	10	5.3	M6	M4	5.5
20	100	96	72	36.5	40	47	11.6	5	G1/8	M6	12	11	6.8	M8	M4	5.5
25	114	110	80	39.5	45	48	11.6	5	G1/8	M6	16	10.5	6.8	M8	M4	5.5
32	140	135	100	51	65	58	20	8	G1/8	M8	20	15	8.5	M10	M4	6.6
40	166	160	118	63	75	78	20	8	G1/4	M6	25	15	8.5	M10	M4	6.6

∅	D11	D12	D13	D14	D15	D16	D17	H1	H2	H3	H5	H6	H7	H8	H9
[mm]	∅				∅ H7	∅								±0.2	
12	9	M6x0.75	M5	-	9	6.4	M6	38	1.8	6.4	11.5	27	3.5	31	2
16	10	M6x0.75	M5	M5	9	6.4	M6	40	1.8	6.4	12	28.5	4.5	31	2
20	10	M8x1	G1/8	M5	9	6.4	M6	50	1.8	6.4	16	36	5	40	2
25	10	M8x1	G1/8	G1/8	9	6.4	M6	55	1.8	6.4	14	36.5	5	34	2
32	11	M12x1	G1/8	G1/8	9	6.4	M6	70	4.5	12.5	19	49.5	6	46	3
40	11	M12x1	G1/4	G1/4	9	6.4	M6	75	4.5	12.5	19	51	5.5	51.5	3

∅	H10	H11	H12	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13
[mm]											±0.2					
12	16	15.5	1.9	139	12	85	7.5	15	-	11	19	6.5	37	33	-	7
16	16	19	1.9	154	12	100	7.5	15	-	11	32	6	31.5	33	-	7
20	16	22	1.9	192	16	120	10	20	-	12.5	26	8	44	45	-	10
25	16	25	1.9	212	16	140	10	20	-	12.5	26	8	45	45	-	10
32	14.8	31	1.9	250	20	160	12.5	25	-	12.5	40	9	55.5	57	9.5	13
40	15.8	36.5	1.9	270	20	180	6.5	25	12	12.5	50	9	61.5	57	10	13

∅	L14	L15	L16	L17 ¹⁾	L18	T1	T2	T3	T4	T5	T6	T8	≈C1	≈C2	≈C3	≈C4
[mm]												±0.2				
12	37	-	-	40	-	10	7	12	10	5.7	30.5	2.1	10	8	-	-
16	37	8	12.5	40	-	10	6.5	12	10	5.7	34.3	2.1	10	8	13	-
20	50	8	19.5	40	97	10	9	12	12	6.8	44	2.1	13	11	13	8
25	50	10	19.5	40	97	10	9	12	12	6.8	49.3	2.1	13	11	13	-
32	63	14	15.5	40	115	10	10	12	15	9	62.5	2.1	19	13	13	-
40	63	15	17	40	115	10	10	12	16	9	61	2.1	19	13	17	-

1) Tolerance for centring hole: ±0.03 mm
Tolerance for thread: ±0.1 mm

Linear drives SLM, with guided slide

Ordering data – Modular products

Ordering table									
Size	12	16	20	25	32	40	Condi- tions	Code	Enter code
M Module No.	32781	32782	32783	32784	32785	32786			
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	For proximity sensing							-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	

- M** Mandatory data
- O** Options

Transfer order code

Linear drives SLM, with guided slide

Ordering data – Modular products

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	Self-adjusting shock absorber, with stop at rear					-CH	
			-	-	Adjustable shock absorber, with stop at rear			-YH	
	Sensor (bonded)	at front	Inductive sensor with 2.5 m cable, PNP, with stop sleeve at front					-PV	
Inductive sensor with 2.5 m cable, NPN, with stop sleeve at front					-NV				
		at rear	Inductive sensor with 2.5 m cable, PNP, with stop sleeve at rear					-PH	
Inductive sensor with 2.5 m cable, NPN, with stop sleeve at rear					-NH				
	Stroke adjustment	at front	Stop plate at front				1	-HV	
		at rear	Stop plate 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

M Mandatory data
O Options

Transfer order code

- - - - - - -

Linear drives SLM, with guided slide

Ordering data – Modular products, package solution

Ordering table									
Size	12	16	20	25	32	40	Condi- tions	Code	Enter code
M Module No.	32781	32782	32783	32784	32785	32786			
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	For proximity sensing							-A	-A
Standard unit	Package solution S = G-CV-CH-PV-PH							-S	-S

- M** Mandatory data
- O** Options

Transfer order code

Linear drives SLM, with guided slide

Accessories

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 and PTFE



Ordering data			
For Ø [mm]	Including shock absorber Technical data → Internet: ysr	Part No.	Type
12, 16	YSR-8-8-C	115315	SLZ-16-YSR-C
20, 25	YSR-12-12-C	115316	SLZ-25-YSR-C
32, 40	YSR-16-20-C	115317	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 → Internet: dysr	Part No.	Type
20, 25	DYSR-12-12-Y5	114032	SLZ-25-KF-A
32, 40	DYSR-16-20-Y5	114033	SLZ-32-KF-A

Switching stop SL-...-SIE-PS
 (order code PV, PH)
 Kit with inductive proximity sensor
 PNP

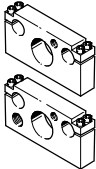
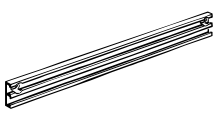


Switching stop SL-...-SIE-NS
 (order code NV, NH)
 Kit with inductive proximity sensor
 NPN



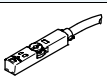
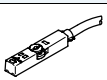
Ordering data				
For Ø [mm]	Switch output	Including proximity sensor Technical data → Internet: sien	Part No.	Type
12, 16	PNP	SIEN-4B-PS-K-L	116251	SL-10/16-SIE-PS
	NPN	SIEN-4B-NS-K-L	116252	SL-10/16-SIE-NS
20, 25	PNP	SIEN-4B-PS-K-L	116253	SL-20/25-SIE-PS
	NPN	SIEN-4B-NS-K-L	116254	SL-20/25-SIE-NS
32, 40	PNP	SIEN-6,5B-PS-K-L	117525	SL-32/50-SIE-PS
	NPN	SIEN-6,5B-NS-K-L	117526	SL-32/50-SIE-NS

Linear drives SLM, with guided slide

Accessories

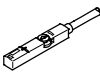


Ordering data – Accessories						
	For Ø [mm]	Material	Order code	Part No.	Type	PU ¹⁾
Stop plate SLM-...-KF-A						
	12	Wrought aluminium alloy	HV, HH	119527	SLM-12-...-KF-A	1
	16			119528	SLM-16-...-KF-A	1
	20			119529	SLM-20-...-KF-A	1
	25			119530	SLM-25-...-KF-A	1
	32			119531	SLM-32-...-KF-A	1
	40			119532	SLM-40-...-KF-A	1
	Mounting rail SLZS/SLMS for proximity sensor					
	12	Wrought aluminium alloy	E	150916	SLZS-16-...-...	1
	16			152744	SLMS-16-...-...	1
	20			150917	SLZS-25-...-...	1
	25			152745	SLMS-25-...-...	1
	32			150918	SLZS-32-...-...	1
	40			150919	SLZS-40-...-...	1
	Slot nut NST Technical data → Internet: nst					
	12 ... 25	Non-alloyed tempered steel	I	150914	NST-5-M5	1
	32, 40	Free of copper and PTFE		150915	NST-8-M6	1
Centring sleeve ZBH Technical data → Internet: zbh						
	16 ... 40	Stainless steel Free of copper and PTFE	-	150927	ZBH-9	10



1) Packaging unit quantity


Ordering data – Proximity sensors for T-slot, magneto-resistive						Technical data → Internet: smt
	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot from above, flush with cylinder profile, short design	PNP	Cable, 3-wire	2.5	574335	SMT-8M-A-PS-24V-E-2,5-OE
			Plug M8x1, 3-pin	0.3	574334	SMT-8M-A-PS-24V-E-0,3-M8D
			Plug M12x1, 3-pin	0.3	574337	SMT-8M-A-PS-24V-E-0,3-M12
		NPN	Cable, 3-wire	2.5	574338	SMT-8M-A-NS-24V-E-2,5-OE
			Plug M8x1, 3-pin	0.3	574339	SMT-8M-A-NS-24V-E-0,3-M8D
N/C contact						
	Insertable in the slot from above, flush with cylinder profile, short design	PNP	Cable, 3-wire	7.5	574340	SMT-8M-A-PO-24V-E-7,5-OE


Linear drives SLM, with guided slide

Accessories

Ordering data – Proximity sensors for T-slot, magnetic reed						Technical data → Internet: smt	
	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type	
N/O contact							
	Insertable in the slot from above, flush with cylinder profile	Contacting	Cable, 3-wire	2.5	543862	SME-8M-DS-24V-K-2,5-OE	
				5.0	543863	SME-8M-DS-24V-K-5,0-OE	
			Plug M8x1, 3-pin	2.5	543872	SME-8M-ZS-24V-K-2,5-OE	
				0.3	543861	SME-8M-DS-24V-K-0,3-M8D	
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	150855	SME-8-K-LED-24	
				0.3	150857	SME-8-S-LED-24	
N/C contact							
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	7.5	160251	SME-8-O-K-LED-24	

Ordering data – Connecting cables					Technical data → Internet: nebu	
	Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type	
	Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541333	NEBU-M8G3-K-2.5-LE3	
			5	541334	NEBU-M8G3-K-5-LE3	
	Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541363	NEBU-M12G5-K-2.5-LE3	
			5	541364	NEBU-M12G5-K-5-LE3	
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541338	NEBU-M8W3-K-2.5-LE3	
			5	541341	NEBU-M8W3-K-5-LE3	
	Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541367	NEBU-M12W5-K-2.5-LE3	
			5	541370	NEBU-M12W5-K-5-LE3	

Ordering data – Slot cover for T-slot				
	Mounting	Length [m]	Part No.	Type
	Insertable from above	2x 0.5	151680	ABP-5-S

Ordering data – One-way flow control valves				Technical data → Internet: grla	
	Connection		Material	Part No.	Type
	Thread	For tubing OD			
	M5	3	Metal design	193137	GRLA-M5-QS-3-D
		4		193138	GRLA-M5-QS-4-D
		6		193139	GRLA-M5-QS-6-D
	G1/8	3		193142	GRLA-1/8-QS-3-D
		4		193143	GRLA-1/8-QS-4-D
		6		193144	GRLA-1/8-QS-6-D
		8		193145	GRLA-1/8-QS-8-D
	G1/4	6		193146	GRLA-1/4-QS-6-D
		8		193147	GRLA-1/4-QS-8-D
		10		193148	GRLA-1/4-QS-10-D