

Linear actuators DLP, Copac






Linear actuators DLP, Copac

Key features and type codes



General

-  - Diameter
80 ... 320 mm
-  - Stroke length
40 ... 2,000 mm
-  - Force
2,800 ... 47,500 N

Festo Copac linear valve actuators are ideally suited for use in water, sewage, industrial process water and sileage technology, as well as the paper and bulk goods industry. A clean solution for shut-off, safety and control slide valves. The Copac linear actuator acts directly upon the slide plate and facilitates accurate advancing to various positions.

- Fast or slow valve actuation
 - Position sensing
 - Internal air channels eliminate protruding tubing and attachments, and thus also harmful accumulation of contaminants
 - Suitable for manual on-site use, as well as automatic operation
 - Opening and closing actuated via flange-mounted solenoid valve with port pattern to Namur, or via valve terminals with a choice of 30 different fieldbus protocols
 - Sturdy and reliable, even in aggressive environments
- Highly corrosion resistant
 - Mounting port pattern to DIN 3358/ISO 5210 for direct mounting
 - Port pattern to Namur VDI/VDE 3845 for attaching solenoid valves

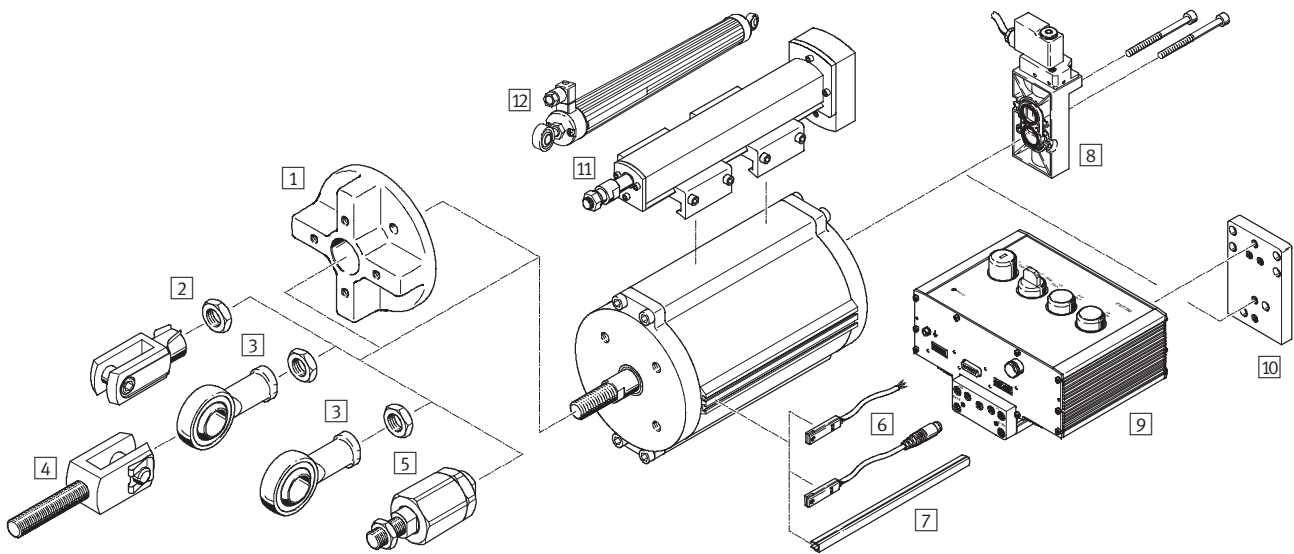


		DLP	–	100	–	125	–	A
Type								
DLP	Double-acting linear actuator							
Piston Ø [mm]								
Stroke [mm]								
Position sensing								
A	Via proximity sensor							

Linear actuators DLP, Copac

Peripherals overview

FESTO



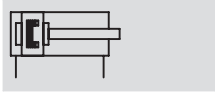
Mounting attachments and accessories		Brief description	DLP-80/100	DLP-125/160	DLP-200 ... 320	→ Page/Internet
1	Adapter DAPZ-FA	For mounting on slide valve armature with ISO 5211 interface	■	■	■	9
2	Rod clevis SG	Enables simple connection between the piston rod and the slide plate	■	■	■	9
	Rod clevis, stainless steel CRSG		■	■	-	9
3	Rod eye SGS	With spherical bearing	■	■	■	9
	Rod eye, stainless steel CRSGS		■	■	-	9
4	Rod clevis SGA	With male thread	■	■	■	9
5	Self-aligning rod coupler FK	For compensating radial and angular deviations	■	■	■	9
6	Proximity sensor SMT-8F-I	Magneto-inductive, Namur, EU-compliant to directive 94/9/EC (ATEX)	■	■	■	10
	Proximity sensor SMT-8	Magneto-resistive, can be integrated in the cylinder profile barrel	■	■	■	10
	Proximity sensor SME-8	Magnetic reed, can be integrated in the cylinder profile barrel	■	■	■	11
7	Slot cover ABP-5-S	To keep dirt away from the sensor cable and slots	■	■	■	12
8	Solenoid valve	Namur port pattern, not with 9 or 11	■	■	■	solenoid valve
9	Local controller DLP-VSE	Manual control device, not with 8 or 11	■	■	■	dlp-vse
10	Sub-base DLP-VSE-OBEN-NAMUR	Mounting of local controller on the Namur interface	■	■	■	dlp-vse
11	Measuring unit ASDLP	Conversion of linear movement to rotary movement, not with 8 or 9	■	■	-	asdlp
12	Displacement encoder MLO-POT	Conversion of linear movement to voltage signal. The maximum stroke is 700 mm.	■	■	■	mlo-pot

Linear actuators DLP, Copac

Technical data

FESTO

Function



⌀ - Diameter
80 ... 320 mm

- | - Stroke length
40 ... 2,000 mm

- ≡ - Force
2,800 ... 47,500 N



General technical data							
Piston ⌀	80	100	125	160	200	250	320
Pneumatic connection	G $\frac{1}{4}$						
Design	Piston cylinder, double-acting						
Cushioning	None						
Stroke reserve [mm]	2				4		
Assembly position	Any						
Position sensing	Via proximity sensor						

Operating and environmental conditions	
Operating pressure ¹⁾ [bar]	2 ... 10
Operating medium	Filtered compressed air, lubricated or unlubricated Other media upon request
Ambient temperature ²⁾³⁾ [°C]	-20 ... +80
Corrosion resistance class CRC ⁴⁾	3
CE marking (see declaration of conformity) → www.festo.com	Explosion protection directive 94/9/EC - ATEX
ATEX specification	II 2 GD c T4 T120°C
ATEX ambient temperature ³⁾	-20°C ≤ Ta ≤ +60°C

1) Depending upon the counter force of the valve slide, a higher minimum pressure may be required to actuate the overall system

2) Further temperature ranges upon request

3) Note operating range of proximity sensors

4) Corrosion resistance class 3 according to Festo standard 940 070

Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface

Linear actuators DLP, Copac

Technical data

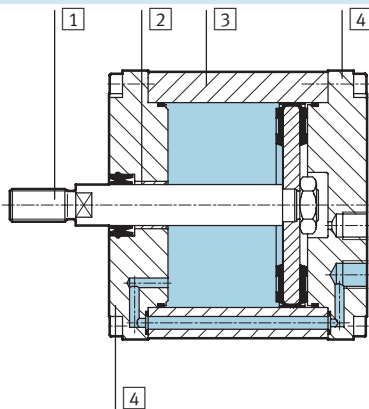
FESTO

Forces [N] and air consumption [NI]							
Piston \varnothing	80	100	125	160	200	250	320
Theoretical force at 6 bar, advancing	3,016	4,712	7,363	12,064	18,850	29,452	48,255
Theoretical force at 6 bar, retracting	2,827	4,524	6,881	11,581	18,080	28,698	47,501
Theoretical air consumption at 6 bar and 10 mm stroke, pushing	0.35	0.55	0.86	1.41	2.12	3.44	5.63
Theoretical air consumption at 6 bar and 10 mm stroke, pulling	0.33	0.53	0.80	1.35	2.11	3.35	5.54

Weights [g]							
Piston \varnothing	80	100	125	160	200	250	320
Basic weight with 0 mm stroke	1,843	2,801	4,855	5,854	12,831	21,117	33,907
Additional weight per 10 mm stroke	68	80	145	159	187	325	399

Materials

Sectional view



Linear actuator		
1	Piston rod	High-alloy rolled steel
2	Rod bearing	Smooth composite material
3	Cylinder barrel \varnothing 80 ... 200	Smooth anodised aluminium
	\varnothing 250, 320	Stainless steel
4	Cylinder cap	Extruded aluminium
-	Seals	Polyurethane, nitrile rubber

Linear actuators DLP, Copac

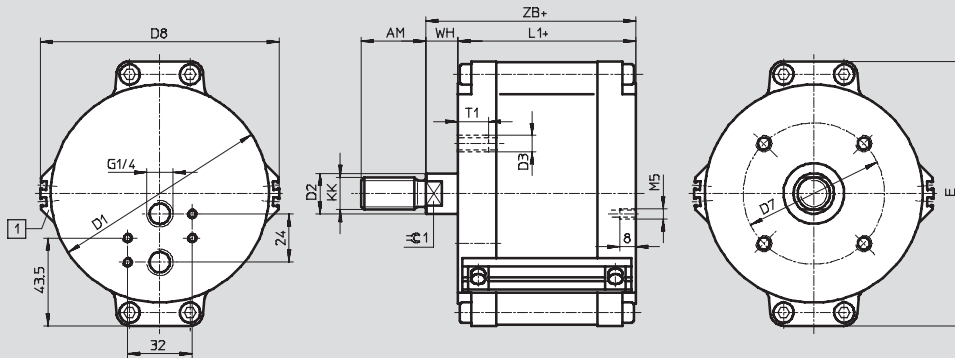
Technical data

FESTO

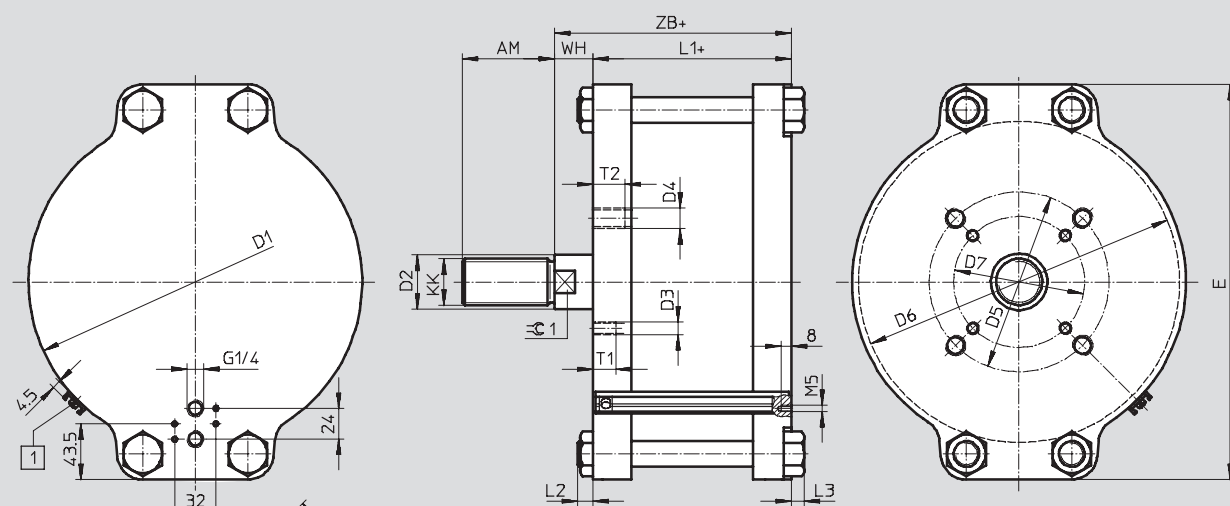
Dimensions

Download CAD data → www.festo.com

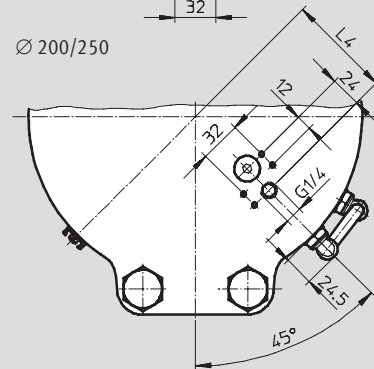
Ø 80 ... 160



Ø 200 ... 320



Ø 200/250



1 Mounting slots for proximity sensor SME/SMT-8 + = plus stroke length

Linear actuators DLP, Copac


Technical data


∅ [mm]	AM -2	D1 ∅	D2 ∅	D3	D4	D5	D6 ∅ min.	D7 ∅	D8 ∅	E
DLP-80-...-A	32	87	20	M8	-	-	-	70	99	108
DLP-100-...-A	32	108	20	M8	-	-	-	70	119	131
DLP-125-...-A	54	135	32	M10	-	-	-	102	147	163
DLP-160-...-A	54	170	32	M10	-	-	-	102	182	199
DLP-200-...-A	72	216	40	M10	M16	140	210	102	-	271
DLP-250-...-A	72	260	40	M10	M16	140	244	102	-	308
DLP-320-...-A	72	332	40	M10	M16	140	324	102	-	378

∅ [mm]	KK	L1	L2 min.	L3 min.	L4	T1	T2 min.	WH	ZB	⊕C1
DLP-80-...-A	M16x1.5	100 +1.4/-0.4			-	15		16	116	16
DLP-100-...-A	M16x1.5	104 +1.4/-0.4			-	15		16	120	16
DLP-125-...-A	M27x2	114 +1.6/-0.6	-	-	-	18	-	24	138	27
DLP-160-...-A	M27x2	114 +1.6/-0.6	-	-	-	18	-	24	138	27
DLP-200-...-A	M36x2	150 +0.8/-1.0	-	10	81	20	24	30 ±1.4	180 ±1	36
DLP-250-...-A	M36x2	152 +0.8/-1.4	-	25	94	20	25	30 +1.8/-1.4	182 ±1	36
DLP-320-...-A	M36x2	159 +0.8/-1.4	12	-	-	20	25	30 +1.8/-1.6	189 +0.8/-1.2	36

Linear actuators DLP, Copac

Technical data

Ordering data				
Version	Piston \varnothing [mm]	Stroke [mm]	Part No.	Type
With position sensing				
	80	40 ... 2,000	187 479	DLP-80-...-A
	100	50 ... 2,000	187 480	DLP-100-...-A
	125	50 ... 2,000	187 481	DLP-125-...-A
	160	100 ... 2,000	187 482	DLP-160-...-A
	250	100 ... 2,000	187 483	DLP-250-...-A
	320	150 ... 2,000	187 484	DLP-320-...-A

-  - Note

Stroke length of the actuator

Generally, the stroke length of the Copac linear actuator corresponds to the nominal diameter of the process valve. The system tolerances may lead to a greater stroke range than the specified nominal stroke range of

the linear actuator. The zero point is set with an adjustable rod clevis. This ensures that the end position of the valve slide is reached and the zero position of the system is fixed.

Linear actuators DLP, Copac

Accessories

Adapter DAPZ-FA

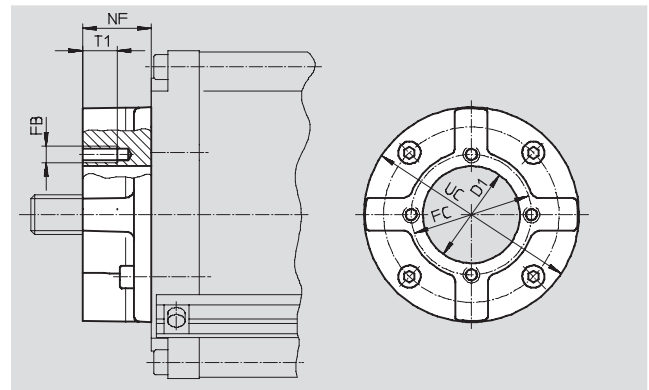
Based on ISO 5211 standard

Scope of delivery:

- 1 flange adapter,
- 4 socket head screws DIN 912

Material:

- Wrought aluminium alloy
- Galvanised steel
- Free of copper, PTFE and silicone



Dimensions and ordering data											
For Ø	Size	D1	FB	FC	NF	T1	UC	CRC ¹⁾	Weight	Part No.	Type
[mm]		∅ +1		∅			∅ +1		[g]		
80, 100	F07/F07	30	M8	70	40	20	125	3	679	536 587	DAPZ-FA-F07/F07
	F07/F10	30	M10	102	40	22	125	3	670	536 588	DAPZ-FA-F07/F10
125, 160,	F10/F07	55	M8	70	40	20	125	3	667	536 589	DAPZ-FA-F10/F07
	F10/F10	55	M10	102	45	22	125	3	707	536 590	DAPZ-FA-F10/F10
200, 250,	F10/F14	55	M16	140	65	25	175	3	1,884	536 591	DAPZ-FA-F10/F14
320	F14/F14	70	M16	140	65	25	175	3	2,130	536 592	DAPZ-FA-F14/F14

1) Corrosion resistance class 3 according to Festo standard 940 070
Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.


Ordering data – Piston rod attachments				Technical data → Internet: piston-rod attachment			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
Rod eye SGS				Rod clevis SG			
	80, 100	9 263	SGS-M16x1,5		80, 100	6 146	SG-M16x1,5
	125, 160	10 774	SGS-M27x2		125, 160	14 987	SG-M27x2-B
	200, 250, 320	10 775	SGS-M36x2		200, 250, 320	9 581	SG-M36x2
Rod clevis SGA				Self-aligning rod coupler FK			
	80, 100	10 768	SGA-M16x1,5		80, 100	6 142	FK-M16x1,5
	125, 160	10 770	SGA-M27x2		125, 160	10 485	FK-M27x2
	200, 250, 320	10 771	SGA-M36x2		200, 250, 320	10 746	FK-M36x2


Ordering data – Corrosion resistant piston rod attachments				Technical data → Internet: crsg			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
Rod clevis CRSG				Rod eye CRSGS			
	80, 100	13 571	CRSG-M16x1,5		80, 100	195 584	CRSGS-M16x1,5
	125, 160	185 361	CRSG-M27x2		125, 160	195 586	CRSGS-M27x2

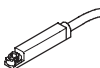
Linear actuators DLP, Copac

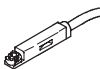
Accessories

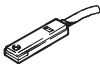
FESTO

Ordering data – Displacement encoder		Technical data → Internet: mlo	
	Stroke [mm]	Part No.	Type
	100	192 213	MLO-POT-100-LWG
	150	192 214	MLO-POT-150-LWG
	225	152 645	MLO-POT-225-LWG
	300	152 646	MLO-POT-300-LWG
	360	152 647	MLO-POT-360-LWG
	450	152 648	MLO-POT-450-LWG
	600	152 650	MLO-POT-600-LWG
	750	152 651	MLO-POT-750-LWG

Ordering data – Plug socket for displacement encoder			Technical data → Internet: sd-4	
	PIN	Pin allocation	Part No.	Type
	1	Power supply	194 332	SD-4-WD-7
	2	Signal		
	3	0 V		
	4	PE (yellow), screen		

Ordering data – Proximity sensors for T-slot				Technical data → Internet: smt-8f	
	Switch output	Electrical connection	Cable length	Part No.	Type
	Namur	Cable, 2-wire	5.0	536 956	SMT-8F-I-8,2V-K5,0-OE-EX

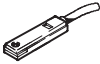
Ordering data – Proximity sensors for T-slot					Technical data → Internet: smt-8f		
	Switch output	Electrical connection			Cable length [m]	Part No.	Type
		Cable	Cable with plug				
			M5x0.5	M8x1	M12x1		
	N/O contact						
	Two-wire	2-wire	–	–	–	2.5	525 908 SMT-8F-ZS-24V-K2,5-OE-EX

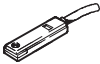
Ordering data – Proximity sensors for T-slot, magneto-resistiv					Technical data → Internet: smt-8	
	Switch output	Electrical connection		Cable length [m]	Part No.	Type
		Cable	Plug M8x1			
	N/O contact					
	PNP	3-wire	–	–	2.5	175 436 SMT-8-PS-K-LED-24-B
			–	3-pin	5.0	175 434 SMT-8-PS-K5-LED-24-B
	NPN	3-wire	–	–	0.3	175 484 SMT-8-PS-S-LED-24-B
			–	3-pin	2.5	171 180 SMT-8-NS-K-LED-24-B
	–	–	–	–	0.3	171 181 SMT-8-NS-S-LED-24-B

Linear actuators DLP, Copac

Accessories

FESTO




Ordering data – Proximity sensors for T-slot				Technical data → Internet: crsmt	
	Switch output	Electrical connection	Cable length	Part No.	Type
	N/O contact				
	PNP	Cable, 3-wire	2.5	525 563	CRSMT-8-PS-K2,5-LED-24
			5.0	525 564	CRSMT-8-PS-K5-LED-24


Ordering data – Proximity sensors for T-slot, magnetic reed				Technical data → Internet: sme		
	Electrical connection		Cable length	Part No.	Type	
	Cable	Cable with plug M8x1	[m]			
	N/O contact					
	Operating voltage range 0 ... 30 V AC/DC					
	3-wire	–	–	2.5	150 855	SME-8-K-LED-24
				5.0	175 404	SME-8-K5-LED-24
				7.5	530 491	SME-8-K-7,5-LED-24
	–	3-pin	–	0.3	150 857	SME-8-S-LED-24
	2-wire	–	–	2.5	171 169	SME-8-ZS-KL-LED-24
	Heat resistant up to 120 °C					
	2-wire	–	–	2.5	161 756	SME-8-K-24-S6
	Operating voltage range 3 ... 250 V AC/DC					
	2-wire	–	–	2.5	152 820	SME-8-K-LED-230
	Operating voltage range 5 ... 250 V AC/DC					
	2-wire	–	–	2.5	538 816	SME-8-ZS-230V-K2,5Q-OE
				5.0	538 817	SME-8-ZS-230V-K5,0Q-OE
	N/C contact					
3-wire	–	–	7.5	160 251	SME-8-O-K-LED-24	


Linear actuators DLP, Copac


Accessories

FESTO

Ordering data – Connecting cables M8x1					Technical data → Internet: nebu	
	Electrical connection, left	Electrical connection, right	Switch output	Cable length [m]	Part No.	Type
Basic version						
	Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	–	2.5	541 333	NEBU-M8G3-K-2.5-LE3
				5	541 334	NEBU-M8G3-K-5-LE3
				10	541 332	NEBU-M8G3-K-10-LE3
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	–	2.5	541 338	NEBU-M8W3-K-2.5-LE3
				5	541 341	NEBU-M8W3-K-5-LE3
				10	541 335	NEBU-M8W3-K-10-LE3
With switching status display						
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	PNP	2.5	541 337	NEBU-M8W5P-K-2.5-LE3
				5	541 340	NEBU-M8W5P-K-5-LE3
			NPN	2.5	541 336	NEBU-M8W5N-K-2.5-LE3
				5	541 339	NEBU-M8W5N-K-5-LE3

Ordering data – Slot cover for T-slot			
	Assembly	Length [m]	Part No. Type
	insertable from above	2x 0.5	151 680 ABP-5-S

Ordering data – Cable clip SMBK-8		
		Part No. Type
	For fixing the cable in the sensor slot	534 254 SMBK-8

Ordering data – Inscription labels					
	Material	Use	Dimensions [mm]	Part No. Type	PU ¹⁾
	Polycarbonate	For insertion in the inscription label holder	23x4	541 598 ASLR-L-423	34

1) Packaging unit in quantity per frame.