

Linear actuators DLP, Copac






# Linear actuators DLP, Copac

Key features and type codes



## General

-  Diameter  
80 ... 320 mm
-  Stroke length  
40 ... 600 mm, additional stroke lengths upon request
-  Force  
2,800 ... 48,000 N

Festo Copac linear valve actuators are ideally suited for use in water, sewage, industrial process water and silage 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.

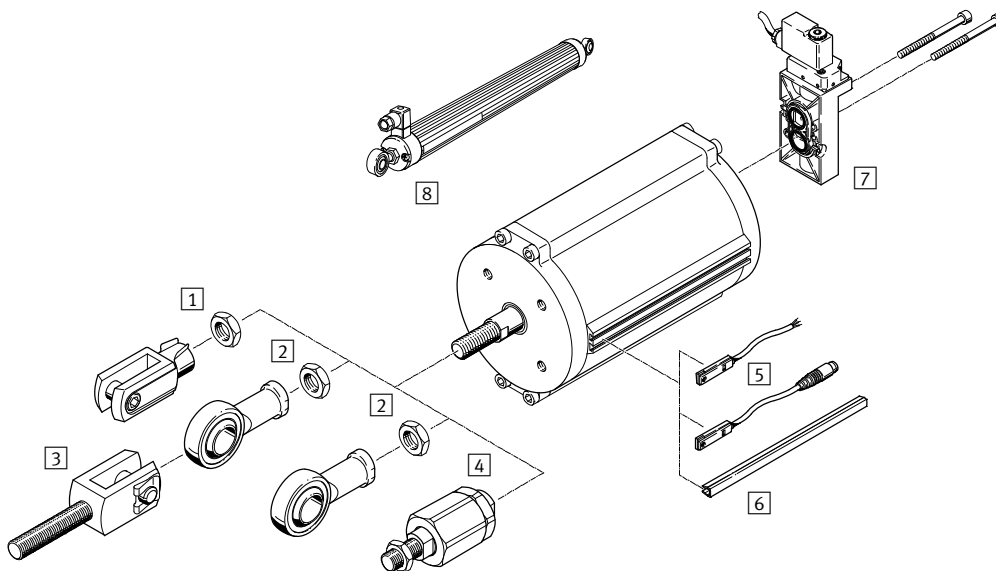
- Fast or slow valve actuation
- Position sensing
- Internal air channels eliminate protruding tubing and attachments, and thus also harmful accumulation of contaminants
- Suitable for manual on-site use, as well as automatic operation
- Opening and closing actuated via flange-mounted solenoid valve 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
<b>Type</b>								
DLP	Double-acting linear actuator							
<b>Piston Ø [mm]</b>								
<b>Stroke [mm]</b>								
<b>Position sensing</b>								
A	Via proximity sensor							

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Peripherals overview



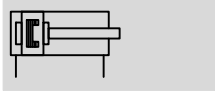
Mounting attachments and accessories					
	Brief description	DLP-80/100	DLP-125/160	DLP-200 ... 320	→ Page/Internet
1	Rod clevis SG	■	■	■	9
	Rod clevis, stainless steel CRSG	■	■	-	9
2	Rod eye SGS	■	■	■	9
	Rod eye, stainless steel CRSGS	■	■	-	9
3	Rod clevis SGA	■	■	■	9
4	Self-aligning rod coupler FK/CRFK	■	■	■	9
5	Proximity sensor SMT-8F-I	■	■	■	10
	Proximity sensor SMT-8	■	■	■	10
	Proximity sensor SME-8	■	■	■	10
6	Slot cover ABP-5-S	■	■	■	11
7	Solenoid valve	■	■	■	solenoid valve
8	Displacement encoder MLO-POT	■	■	■	9


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Technical data


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Function



-  - Diameter  
80 ... 320 mm

-  - Stroke length  
40 ... 600 mm, additional  
stroke lengths upon request

-  - Force  
2,800 ... 48,000 N



General technical data							
Piston $\varnothing$	80	100	125	160	200	250	320
Pneumatic connection	G $\frac{1}{4}$						
Based on standard	DIN 3358						
Valve connection conforms to	VDI/VDE 3845 (NAMUR)						
Design	Piston cylinder, double-acting						
Cushioning	None						
Stroke reserve [mm]	2				4		
Assembly position	Any						
Position sensing	Via proximity sensor						
Efficiency actuator [%]	95						

Operating and environmental conditions		
Operating pressure <sup>1)</sup> [bar]	2 ... 8	
Nominal operating pressure [bar]	6	
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]	
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)	
Ambient temperature <sup>2)3)</sup> [°C]	-20 ... +80	
Corrosion resistance class CRC <sup>4)</sup>	3	
CE marking (see declaration of conformity) → <a href="http://www.festo.com">www.festo.com</a>	To EU Explosion Protection Directive (ATEX)	
ATEX category gas	II 2G	
Ex-ignition protection type gas	c T4	
ATEX category dust	II 2D	
EX-ignition protection type dust	c 120°C	
ATEX ambient temperature <sup>3)</sup>	-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

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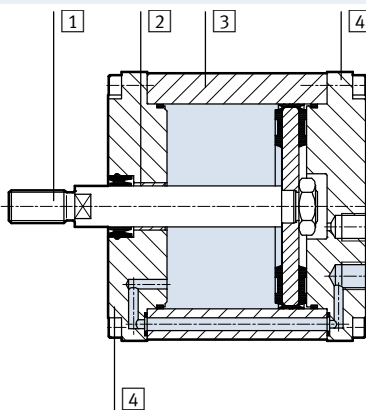
Technical data

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
Moving load with 0 mm stroke	624	997	1,809	2,183	4,691	6,650	11,040
Additional moving load per 10 mm stroke	25	25	63	63	99	99	99

## 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

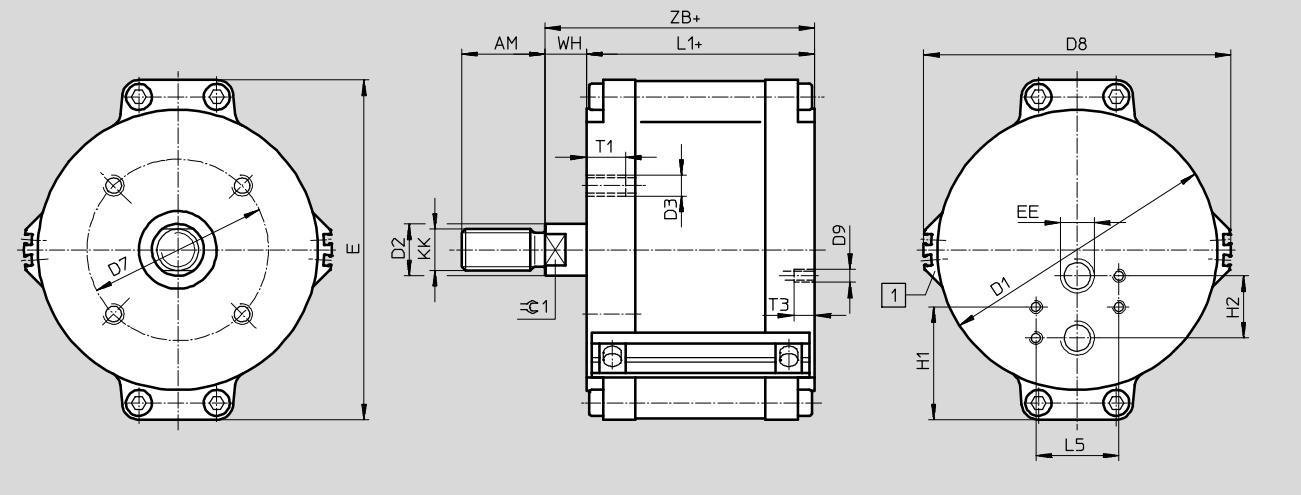
Technical data



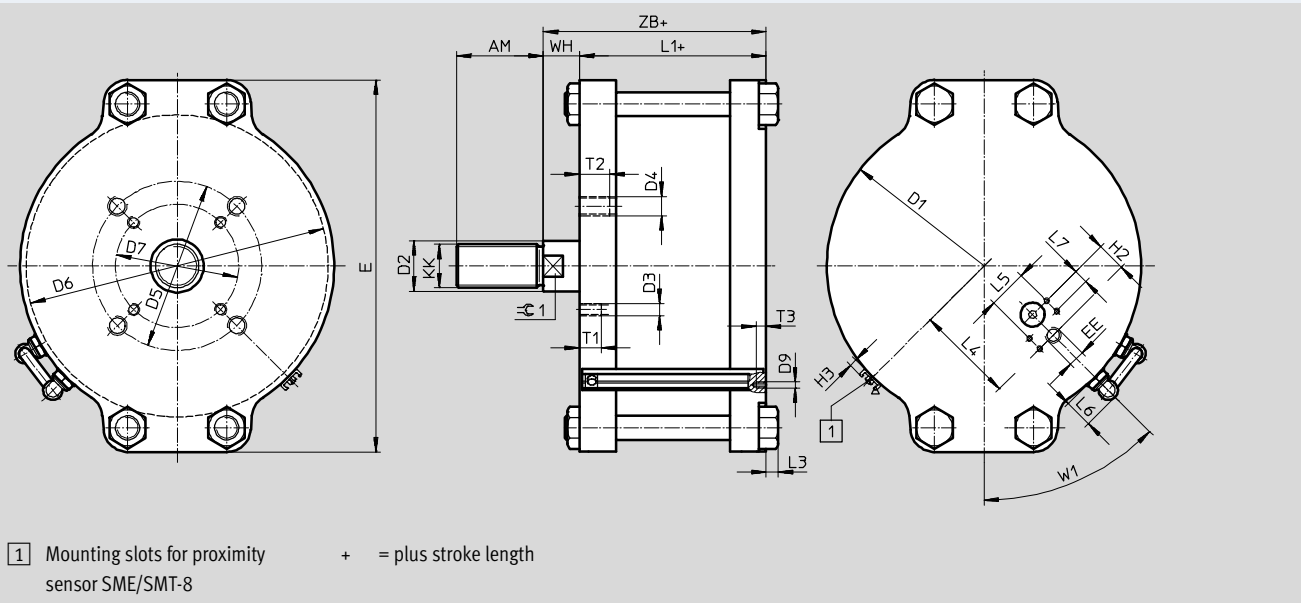
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

∅ 80 ... 160



∅ 200 ... 320



1 Mounting slots for proximity sensor SME/SMT-8

+ = plus stroke length

# Linear actuators DLP, Copac

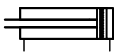
Technical data


∅ [mm]	AM	D1 ∅	D2 ∅	D3 ∅	D4 ∅	D5 ∅	D6 ∅	D7 ∅	D8 ∅	D9 ∅	E	EE	H1	H2	H3
	-2														
DLP-80-...-A	32	87	20	M8	-	-	-	70	99	M5	108	G $\frac{1}{4}$	43.5	24	-
DLP-100-...-A	32	108	20	M8	-	-	-	70	119	M5	131	G $\frac{1}{4}$	43.5	24	-
DLP-125-...-A	54	135	32	M10	-	-	-	102	147	M5	163	G $\frac{1}{4}$	43.5	24	-
DLP-160-...-A	54	170	32	M10	-	-	-	102	182	M5	199	G $\frac{1}{4}$	43.5	24	-
DLP-200-...-A	72	216	40	M10	M16	140	210	102	-	M5	271	G $\frac{1}{4}$	43.5	24	4.5
DLP-250-...-A	72	260	40	M10	M16	140	244	102	-	M5	308	G $\frac{1}{4}$	43.5	24	4.5
DLP-320-...-A	72	332	40	M10	M16	140	324	102	-	M5	378	G $\frac{1}{4}$	43.5	24	4.5

∅ [mm]	KK	L1	L3	L4	L5	L6	L7	T1	T2	T3	W1	WH	ZB	≅G1
DLP-80-...-A	M16x1.5	100 +1.4/-0.4	-	-	32	-	-	15	-	8	45°	16 +0.6/-1.8	116 +0.6/-0.8	16
DLP-100-...-A	M16x1.5	104 +1.4/-0.4	-	-	32	-	-	15	-	8	45°	16 +0.6/-1.8	120 +0.6/-0.8	16
DLP-125-...-A	M27x2	114 +1.6/-0.6	-	-	32	-	-	18	-	8	45°	24 +0.8/-1.8	138 +0.8/-1.0	27
DLP-160-...-A	M27x2	114 +1.6/-0.6	-	-	32	-	-	18	-	8	45°	24 +1.2/-1.8	138 +1.2/-0.8	27
DLP-200-...-A	M36x2	150 +0.8/-1.0	10	81	32	24.5	12	20	24	8	45°	30 ±1.4	180 ±1	36
DLP-250-...-A	M36x2	152 +0.8/-1.4	25	94	32	24.5	12	20	25	8	45°	30 +1.8/-1.4	182 ±1	36
DLP-320-...-A	M36x2	159 +0.8/-1.4	-	130	32	24.5	12	20	25	8	45°	30 +1.8/-1.6	189 +0.8/-1.2	36

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Technical data

Ordering data				
Version	Piston $\varnothing$ [mm]	Stroke [mm]	Part No.	Type
With position sensing				
	80	40 ... 500	<b>187 479</b>	<b>DLP-80-...-A</b>
	100	50 ... 500	<b>187 480</b>	<b>DLP-100-...-A</b>
	125	50 ... 500	<b>187 481</b>	<b>DLP-125-...-A</b>
	160	100 ... 500	<b>187 482</b>	<b>DLP-160-...-A</b>
	200	100 ... 600	<b>542 711</b>	<b>DLP-200-...-A</b>
	250	100 ... 600	<b>187 483</b>	<b>DLP-250-...-A</b>
	320	150 ... 600	<b>187 484</b>	<b>DLP-320-...-A</b>

 - 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.





Additional stroke lengths upon request







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
Accessories

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Ordering data – Piston rod attachments				Technical data → Internet: piston rod attachment			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
<b>Rod eye SGS</b>				<b>Rod clevis SG</b>			
	80, 100	<b>9263</b>	<b>SGS-M16x1,5</b>		80, 100	<b>6146</b>	<b>SG-M16x1,5</b>
	125, 160	<b>10774</b>	<b>SGS-M27x2</b>		125, 160	<b>14987</b>	<b>SG-M27x2-B</b>
	200, 250, 320	<b>10775</b>	<b>SGS-M36x2</b>		200, 250, 320	<b>9581</b>	<b>SG-M36x2</b>
<b>Rod clevis SGA</b>				<b>Self-aligning rod coupler FK</b>			
	80, 100	<b>10768</b>	<b>SGA-M16x1,5</b>		80, 100	<b>6142</b>	<b>FK-M16x1,5</b>
	125, 160	<b>10770</b>	<b>SGA-M27x2</b>		125, 160	<b>10485</b>	<b>FK-M27x2</b>
	200, 250, 320	<b>10771</b>	<b>SGA-M36x2</b>		200, 250, 320	<b>10746</b>	<b>FK-M36x2</b>

Ordering data – Piston rod attachments, corrosion-resistant				Technical data → Internet: crsg			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
<b>Rod eye CRSG</b>				<b>Rod clevis CRSGS</b>			
	80, 100	<b>13571</b>	<b>CRSG-M16x1,5</b>		80, 100	<b>195584</b>	<b>CRSGS-M16x1,5</b>
	125, 160	<b>185361</b>	<b>CRSG-M27x2</b>		125, 160	<b>195586</b>	<b>CRSGS-M27x2</b>
<b>Self-aligning rod coupler CRFK</b>							
	80	<b>2490673</b>	<b>CRFK-M16x1,5</b>				
	100						

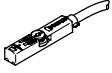
Ordering data – Displacement encoders			Technical data → Internet: mlo	
	Stroke [mm]	Part No.	Type	
	100	<b>192213</b>	<b>MLO-POT-100-LWG</b>	
	150	<b>192214</b>	<b>MLO-POT-150-LWG</b>	
	225	<b>152645</b>	<b>MLO-POT-225-LWG</b>	
	300	<b>152646</b>	<b>MLO-POT-300-LWG</b>	
	360	<b>152647</b>	<b>MLO-POT-360-LWG</b>	
	450	<b>152648</b>	<b>MLO-POT-450-LWG</b>	
	600	<b>152650</b>	<b>MLO-POT-600-LWG</b>	
	750	<b>152651</b>	<b>MLO-POT-750-LWG</b>	

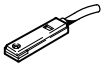
Ordering data – Plug socket for displacement encoder			Technical data → Internet: sd-4	
	Pin	Pin allocation	Part No.	Type
	1	Power supply	<b>194332</b>	<b>SD-4-WD-7</b>
	2	Signal		
	3	0 V		
	4	PE (yellow), screened		

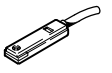
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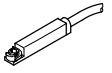
Accessories

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Ordering data – Proximity sensor for T-slot, magneto-resistive				Technical data → Internet: smt-8		
	Switching output	Electrical connection		Cable length [m]	Part No.	Type
		Cable	Plug M8x1			
	N/O contact					
	PNP	3-wire	–	2.5	574335	SMT-8M-A-PS-24V-E-2,5-OE
				5.0	574336	SMT-8M-A-PS-24V-E-5,0-OE
		–	3-pin	0.3	574334	SMT-8M-A-PS-24V-E-0,3-M8D
	NPN	3-wire	–	2.5	574338	SMT-8M-A-PS-24V-E-2,5-OE
				0.3	574339	SMT-8M-A-PS-24V-E-0,3-M8D

Ordering data – Proximity sensor for T-slot				Technical data → Internet: crsmt	
	Switching output	Electrical connection	Cable length [m]	Part No.	Type
	N/O contact				
	PNP	Cable, 3-wire	2.5	525563	CRSMT-8-PS-K2,5-LED-24
			5.0	525564	CRSMT-8-PS-K5-LED-24




Ordering data – Proximity sensor for T-slot, magnetic reed				Technical data → Internet: sme		
	Connection technology		Cable length [m]	Part No.	Type	
	Cable	Cable with plug M8x1				
	N/O contact					
	Operating voltage range 0 ... 30 V AC/DC					
	3-wire	–	–	2.5	150855	SME-8-K-LED-24
				5.0	175404	SME-8-K5-LED-24
				7.5	530491	SME-8-K-7,5-LED-24
	–	3-pin	0.3	150857	SME-8-S-LED-24	
	2-wire	–	2.5	171169	SME-8-ZS-KL-LED-24	
	Heat-resistant up to 120 °C					
	2-wire	–	2.5	161756	SME-8-K-24-S6	
	Operating voltage range 3 ... 250 V AC/DC					
	2-wire	–	2.5	152820	SME-8-K-LED-230	
	N/C contact					
	3-wire	–	7.5	160251	SME-8-0-K-LED-24	


Ordering data – Ex proximity sensors for T-slot				Technical data → Internet: smt	
	Switching output	Electrical connection	Cable length [m]	Part No.	Type
	NAMUR	Cable, 2-wire	5.0	536956	SMT-8F-I-8,2V-K5,0-OE-EX

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
Accessories

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Ordering data – Connecting cable M8x1					Technical data → Internet: nebu	
	Electrical connection, left	Electrical connection, right	Switching output	Cable length [m]	Part No.	Type
<b>Basic version</b>						
	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
				10	541332	NEBU-M8G3-K-10-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
				10	541335	NEBU-M8W3-K-10-LE3
<b>With switching status display</b>						
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	PNP	2.5	541337	NEBU-M8W5P-K-2.5-LE3
				5	541340	NEBU-M8W5P-K-5-LE3
			NPN	2.5	541336	NEBU-M8W5N-K-2.5-LE3
				5	541339	NEBU-M8W5N-K-5-LE3

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

Ordering data – Cable clip SMBK-8		
		Part No. Type
	For fixing the cable in the sensor slot	534254 SMBK-8

Ordering data – Inscription labels						
	Material	Usage	Dimensions [mm]	Part No.	Type	PU <sup>1)</sup>
	Polycarbonate	For insertion in the inscription label holder	23x4	541598	ASLR-L-423	34

1) Packaging unit per frame

## Product Range and Company Overview

### A Complete Suite and Company Overview

Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.



**Custom Automation Components**  
Complete custom engineered solutions



**Custom Control Cabinets**  
Comprehensive engineering support and on-site services



**Complete Systems**  
Shipment, stocking and storage services

### The Broadest Range of Automation Components

With a comprehensive line of more than 30,000 automation components, Festo is capable of solving the most complex automation requirements.



**Electromechanical**  
Electromechanical actuators, motors, controllers & drivers



**Pneumatics**  
Pneumatic linear and rotary actuators, valves, and air supply



**PLCs and I/O Devices**  
PLC's, operator interfaces, sensors and I/O devices

### Supporting Advanced Automation... As No One Else Can!

Festo is a leading global manufacturer of pneumatic and electromechanical systems, components and controls for industrial automation, with more than 16,000 employees in 60 national headquarters serving more than 180 countries. For more than 80 years, Festo has continuously elevated the state of manufacturing with innovations and optimized motion control solutions that deliver higher performing, more profitable automated manufacturing and processing equipment. Our dedication to the advancement of automation extends beyond technology to the education and development of current and future automation and robotics designers with simulation tools, teaching programs, and on-site services.

### Quality Assurance, ISO 9001 and ISO 14001 Certifications

Festo Corporation is committed to supply all Festo products and services that will meet or exceed our customers' requirements in product quality, delivery, customer service and satisfaction.

To meet this commitment, we strive to ensure a consistent, integrated, and systematic approach to management that will meet or exceed the requirements of the ISO 9001 standard for Quality Management and the ISO 14001 standard for Environmental Management.

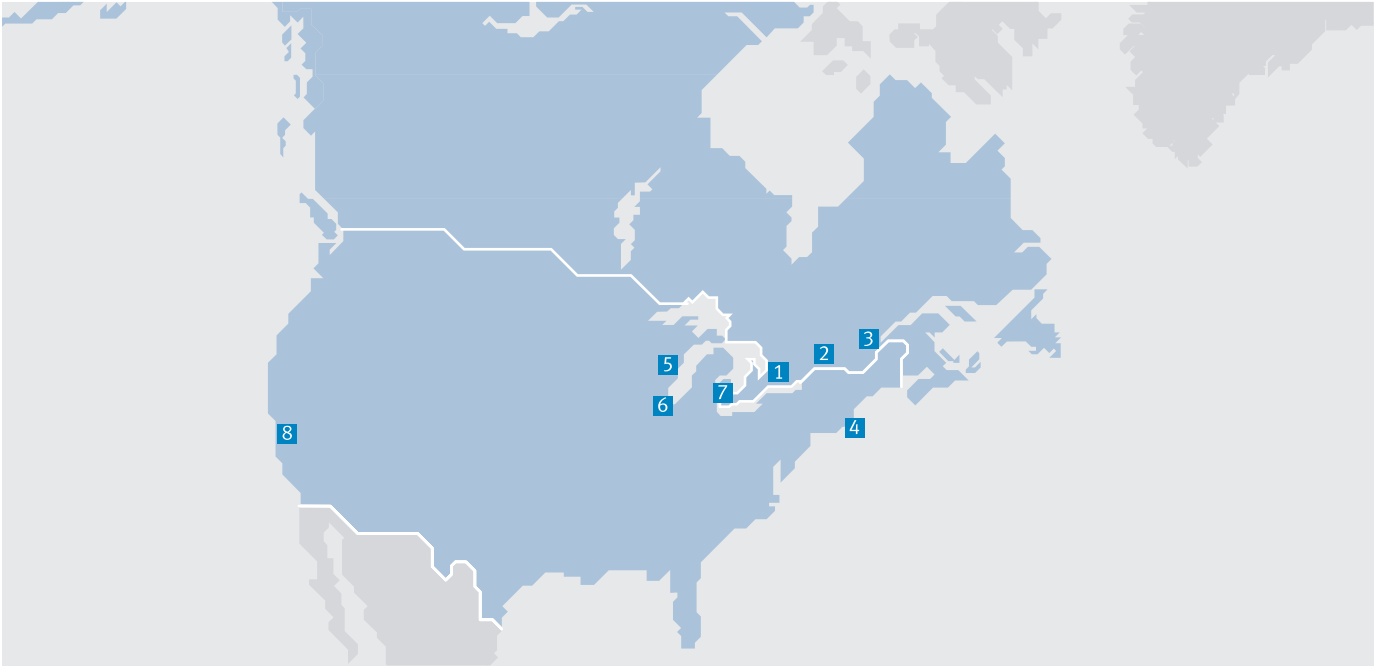


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Printed on recycled paper at New Horizon Graphic, Inc., FSC certified as an environmental friendly printing plant.

# Festo North America



**1 Festo Canada  
Headquarters  
Festo Inc.**  
5300 Explorer Drive  
Mississauga, ON  
L4W 5G4

**2 Montréal**  
5600, Trans-Canada  
Pointe-Claire, QC  
H9R 1B6

**3 Québec City**  
2930, rue Watt#117  
Québec, QC  
G1X 4G3



**4 Festo United States  
Headquarters  
Festo Corporation**  
395 Moreland Road  
Hauppauge, NY  
11788

**5 Appleton**  
North 922 Tower View Drive, Suite N  
Greenville, WI  
54942

**7 Detroit**  
1441 West Long Lake Road  
Troy, MI  
48098

**6 Chicago**  
85 W Algonquin - Suite 340  
Arlington Heights, IL  
60005

**8 Silicon Valley**  
4935 Southfront Road, Suite F  
Livermore, CA  
94550

## Festo Regional Contact Center

### Canadian Customers

Commercial Support:  
Tel: 1 877 GO FESTO (1 877 463 3786)  
Fax: 1 877 FX FESTO (1 877 393 3786)  
Email: festo.canada@ca.festo.com

### Technical Support:

Tel: 1 866 GO FESTO (1 866 463 3786)  
Fax: 1 877 FX FESTO (1 877 393 3786)  
Email: technical.support@ca.festo.com

### USA Customers

Commercial Support:  
Tel: 1 800 99 FESTO (1 800 993 3786)  
Fax: 1 800 96 FESTO (1 800 963 3786)  
Email: customer.service@us.festo.com

### Technical Support:

Tel: 1 866 GO FESTO (1 866 463 3786)  
Fax: 1 800 96 FESTO (1 800 963 3786)  
Email: product.support@us.festo.com