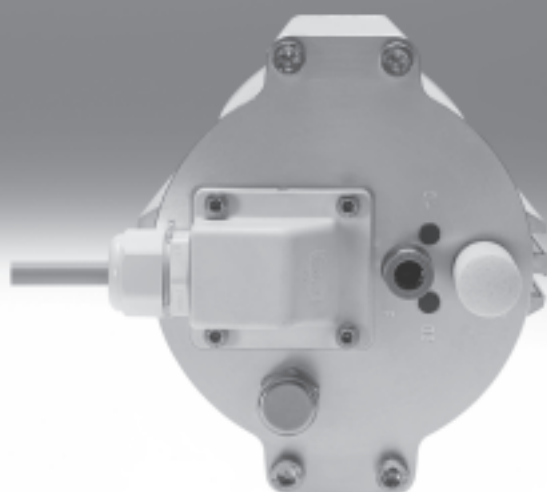


Linear actuators DFPI

FESTO



Linear actuators DFPI

Key features

FESTO

General information

- Linear actuator for actuating process valves such as gate valves and shut-off valves in process automation systems
- Linear actuator with integrated displacement encoder (potentiometer)
- Product versions with integrated positioner and valve block available (DFPI-...-C1V-...). With this product version, the integrated positioner checks the position of the piston rod within the available stroke range. This actuator has a factory-defined safety position that is assumed if the operating voltage or the analogue setpoint value fails. Positions are specified via an analogue setpoint signal (4 ... 20 mA), for example via a master PLC/IPC or manually on-site via an external setpoint generator. Position feedback is provided via an analogue feedback signal from 4 ... 20 mA. The feedback signal increases reliability and simplifies diagnostics for the user. The travel speed can be influenced using the integrated flow control screws
- With the P-connection type, the electrical and pneumatic connections are well protected from outside mechanical influences by a sturdy flanged socket
- With the ND2P-E-P variant, the displacement encoder supplies an analogue signal proportional to the displacement in the form of a voltage (voltage divider) that can then, for example, be processed further in an external positioner

Sturdy

- Sturdy and compact housing with high degree of IP protection
- Ideal for exterior use thanks to high corrosion resistance
- Product designs with integrated positioner have a pressure compensation component that prevents the formation of condensate inside the housing in the event of temperature fluctuations and thus protects the internal electronics from damage

Simple

- Easy integration into an existing control architecture
- Commissioning of product designs with integrated positioner is as fast and easy as for product designs without integrated controller thanks to self-initialisation

Individual

- Product variants with and without positioner and valve block available
- Proximity sensors can be installed in the available slots if necessary for additional binary sensing of positions

Versatile

Suitable for use in:

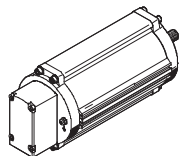
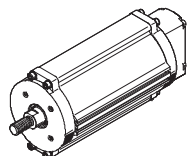
- water technology
- sewage treatment systems
- service water systems
- process water systems
- silo and bulk goods systems

Linear actuators DFPI

Key features

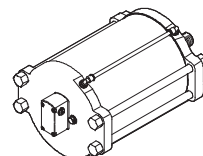
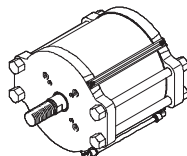
Variant ND2P-E-P-G2

Piston Ø 100 ... 160



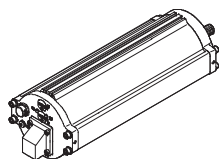
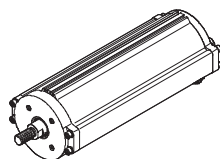
DFPI with integrated displacement encoder

Piston Ø 200 ... 320



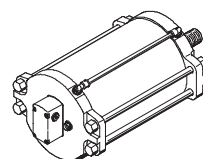
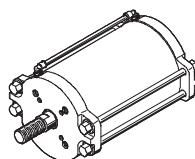
Variant ND2P-C1V-A

Piston Ø 100 ... 160



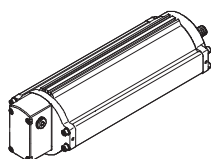
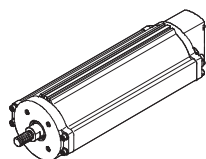
DFPI with integrated displacement encoder, positioner and valve block

Piston Ø 200 ... 320



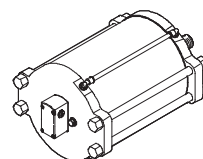
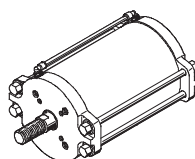
Variant ND2P-C1V-P-A

Piston Ø 100 ... 160



DFPI with integrated displacement encoder, positioner and valve block, with protected pneumatic connections

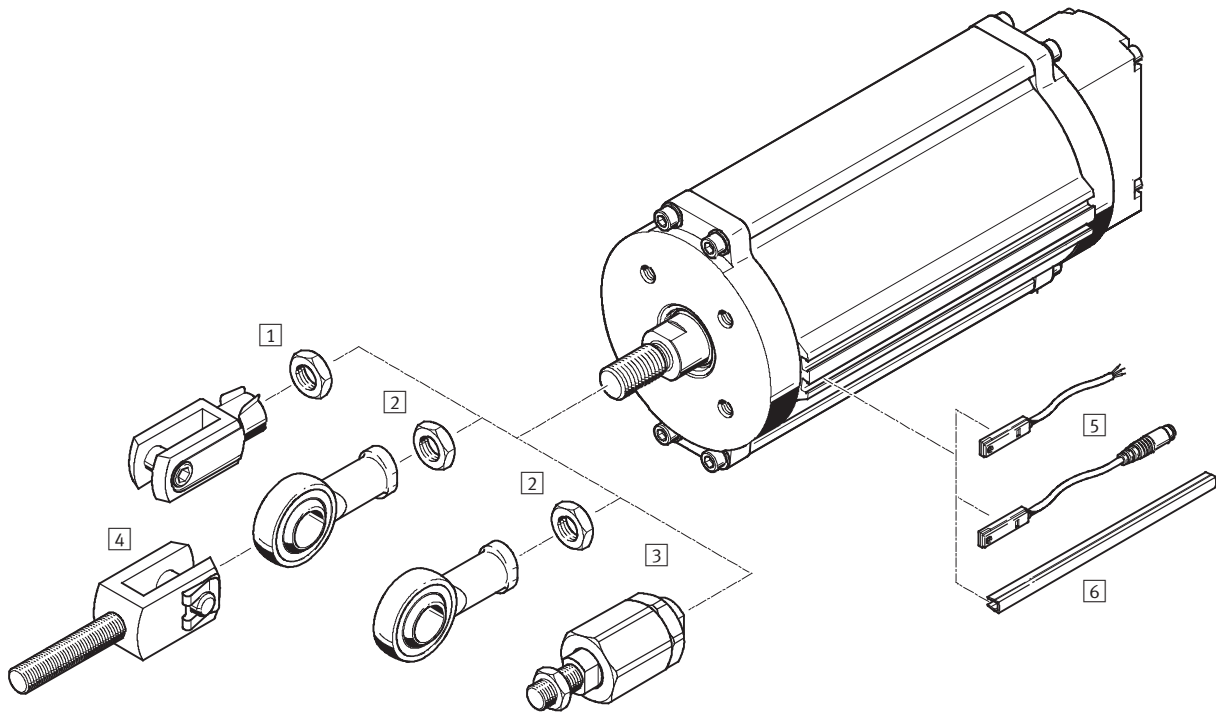
Piston Ø 200 ... 320



Linear actuators DFPI-ND2P-E-P-G2

Peripherals overview – DFPI with integrated displacement encoder

FESTO

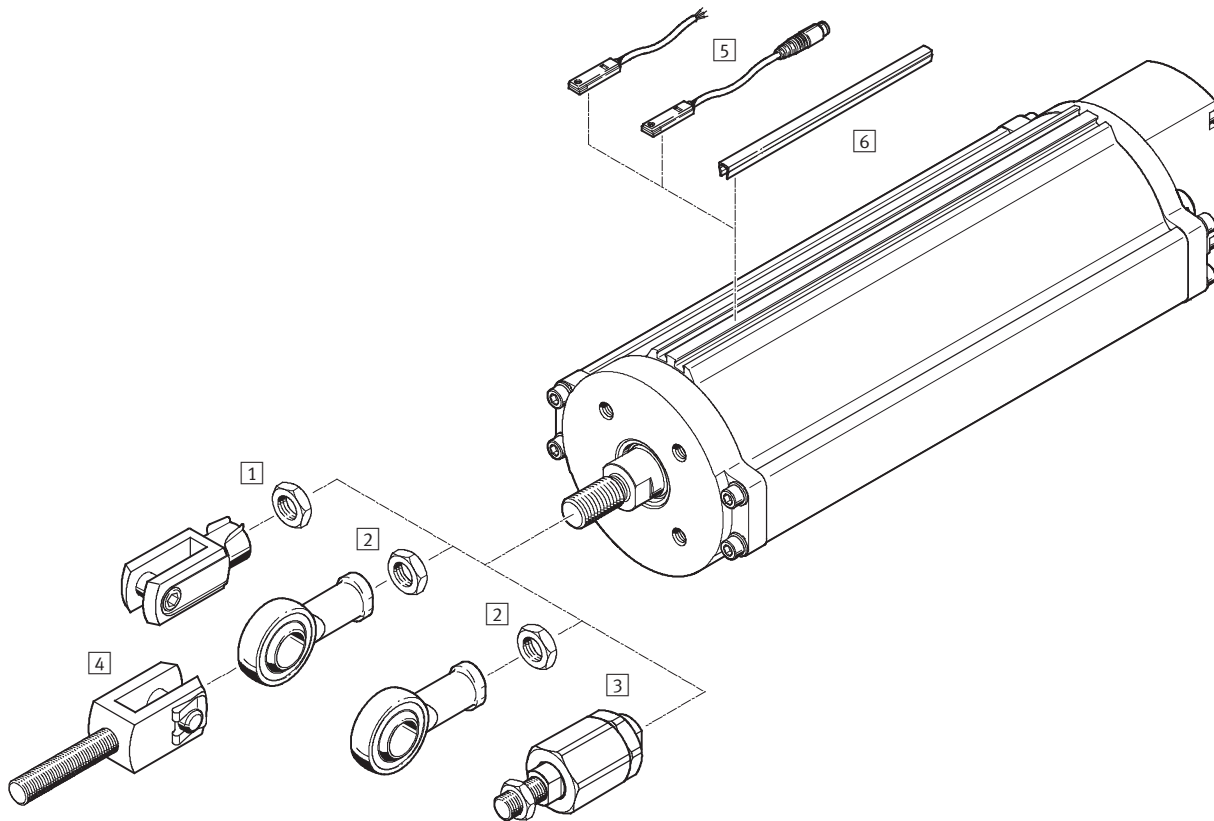


Mounting components and accessories		
	Brief description	→ Page/Internet
1	Rod clevis SG	22
	Rod clevis, stainless steel CRSG	22
2	Rod eye SGS	22
	Rod eye, stainless steel CRSGS	22
3	Rod clevis SGA	22
4	Self-aligning rod coupler FK	22
5	Proximity sensor SMT-8F-I	22
	Proximity sensor SMT-8	22
	Proximity sensor SME-8	23
6	Slot cover ABP-5-S	23

Linear actuators DFPI-ND2P-C1V-...-A

FESTO

Peripherals overview – DFPI with integrated displacement encoder, positioner and valve block



Mounting components and accessories			
		Brief description	➔ Page/Internet
1	Rod clevis SG	Enables a simple connection between the piston rod and slide plate	22
	Rod clevis, stainless steel CRSG		22
2	Rod eye SGS	With spherical bearing	22
	Rod eye, stainless steel CRSGS		22
3	Rod clevis SGA	With male thread	22
4	Self-aligning rod coupler FK	For compensating radial and angular deviations	22
5	Proximity sensor SMT-8F-I	Magneto-inductive, NAMUR, EU-compliant to Directive 94/9/EC (ATEX)	22
	Proximity sensor SMT-8	Magneto-resistive, can be integrated in the cylinder profile barrel	22
	Proximity sensor SME-8	Magnetic reed, can be integrated in the cylinder profile barrel	23
6	Slot cover ABP-5-S	To protect the sensor cables and slots from dirt	23

Linear actuators DFPI

Type codes

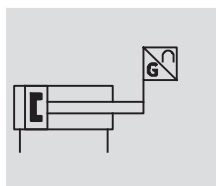
FESTO

DFPI		-	100	-	100	-	N	D2	P	-	C1		V	-	P	-		-	A	-	
Type																					
DFPI	Regulated actuator for process automation																				
Piston Ø																					
100	100 mm																				
125	125 mm																				
160	160 mm																				
200	200 mm																				
250	250 mm																				
320	320 mm																				
Stroke																					
	x length [40 ... 990 mm]																				
Function																					
-	Double-acting																				
Cushioning																					
N	No cushioning																				
Displacement encoder																					
D2	Analogue																				
Method of measurement																					
P	Potentiometer																				
Controller																					
-	Not specified																				
C1	Controller 1																				
Attachment position of controller																					
-	Integrated																				
E	External																				
Directional control valve																					
-	Not specified																				
V	Integrated																				
Connection type																					
-	Not specified																				
P	Protected																				
Safety position																					
-	Piston rod advancing																				
E	Piston rod retracting																				
Feedback																					
A	Analogue feedback signal																				
Generation																					
G2	Second generation																				

Linear actuators DFPI-ND2P-E-P-G2

Technical data

Function



-T- Stroke
40 ... 990 mm

Force
4,417 ... 48,255 N



-N- Piston Ø
100 ... 320 mm

General technical data						
Piston Ø	100	125	160	200	250	320
Based on standard (connection to process valve)	DIN 3358					
Type of mounting	On flange to DIN 3358					
Flange hole pattern	F07	F10		F10, F14		
Design	Piston rod, cylinder barrel					
Cushioning	None					
Mounting position	Any					
Mode of operation	Double-acting					
Stroke	[mm]	40 ... 990				
Stroke reserve	[mm]	3			4	
Pneumatic connection	For tubing O.D. 8 mm					
Electrical connection	3-pin, straight plug, screw terminal					
Max. cable length	[m]	30				
Measuring principle	Displacement encoder (potentiometer)					
Position sensing	Via proximity sensor, with integrated displacement encoder					
Repetition accuracy	[mm]	±0.12				
Independent linearity	0.04% full scale					
Hysteresis	[mm]	0.33				
Continuous shock resistance to DIN/IEC 68 Part 2-82	Tested to severity level 2					
Vibration resistance to DIN/ IEC 68 Part 2-6	Tested to severity level 2					

Linear actuators DFPI-ND2P-E-P-G2

FESTO

Technical data

Operating and environmental conditions		
Operating pressure	[bar]	3 ... 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		Lubricated operation possible (in which case lubricated operation will always be required)
Operating voltage range	[V DC]	0 ... 15
Max. operating voltage	[V DC]	15
Exterior use		C1 – weather-protected areas in accordance with IEC 60654
Ambient temperature	[°C]	–20 ... +60
Corrosion resistance class CRC ¹⁾		3
Relative air humidity	[%]	5 ... 100, condensing
Protection class		IP65, IP67, IP68, IP69K, NEMA 4 in assembled state
Certification		C-Tick
CE marking (see declaration of conformity) → www.festo.com		To EU Explosion Protection Directive (ATEX)
ATEX category for gas		II 2G
Explosion ignition protection type for gas		c T4X
ATEX category for dust		II 2D
Explosion ignition protection type for dust		c 120°CX
Explosion-proof temperature	[°C]	–20 °C ≤ Ta ≤ +60 °C

- 1) Corrosion resistance class 3 according to Festo standard 940 070
Components subject to high corrosion stress. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment or media such as solvents and cleaning agents.

Linear actuators DFPI-ND2P-E-P-G2

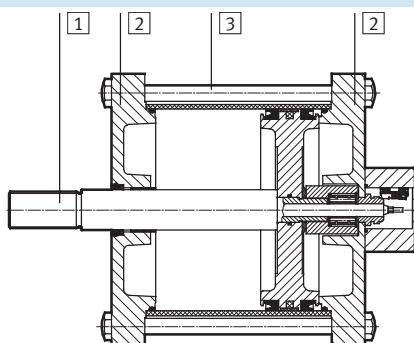
Technical data

Forces [N] and air consumption [l]						
Piston Ø	100	125	160	200	250	320
Theoretical force at 6 bar, advancing	4,712	7,363	12,064	18,850	29,452	48,255
Theoretical force at 6 bar, retracting	4,417	6,881	11,581	18,080	28,698	47,501
Air consumption, advancing, per 10 mm stroke	0.5498	0.859	1.4074	2.119	3.4361	5.6297
Air consumption, retracting, per 10 mm stroke	0.5153	0.8027	1.3511	2.111	3.3482	5.5418

Weight						
Piston Ø	100	125	160	200	250	320
Basic weight with 0 mm stroke [g]	3,476	5,530	6,529	13,946	22,569	35,359
Additional moving load per 10 mm stroke [g]	27	52	52	87	87	87
Moving load with 0 mm stroke [g]	1,228	1,944	2,250	4,722	7,059	11,417
Additional weight per 10 mm stroke [g]	80	145	159	187	325	399
Additional weight of displacement encoder per 10 mm stroke [g]	2					

Materials

Sectional view



Linear actuators			
[1]	Piston rod	High-alloy stainless steel	
[2]	Top cap (end cap)	Piston Ø 100, 125	Anodised wrought aluminium alloy
		Piston Ø 160 ... 320	Painted die-cast aluminium
	Bottom cap (bearing cap)	Piston Ø 100, 125	Anodised wrought aluminium alloy
		Piston Ø 160 ... 320	Painted die-cast aluminium
[3]	Cylinder barrel	Piston Ø 100 ... 200	Anodised wrought aluminium alloy
		Piston Ø 250 ... 320	High-alloy stainless steel
–	Screws	Piston Ø 100, 200, 250, 320	High-alloy stainless steel
		Piston Ø 125, 160	High-alloy stainless steel
–	Seals	Piston Ø 100	Polyurethane, nitrile rubber
		Piston Ø 125 ... 320	Nitrile rubber
–	Note on materials	Contains PWIS (paint-wetting impairment substances), RoHS-compliant	

Linear actuators DFPI-ND2P-E-P-G2

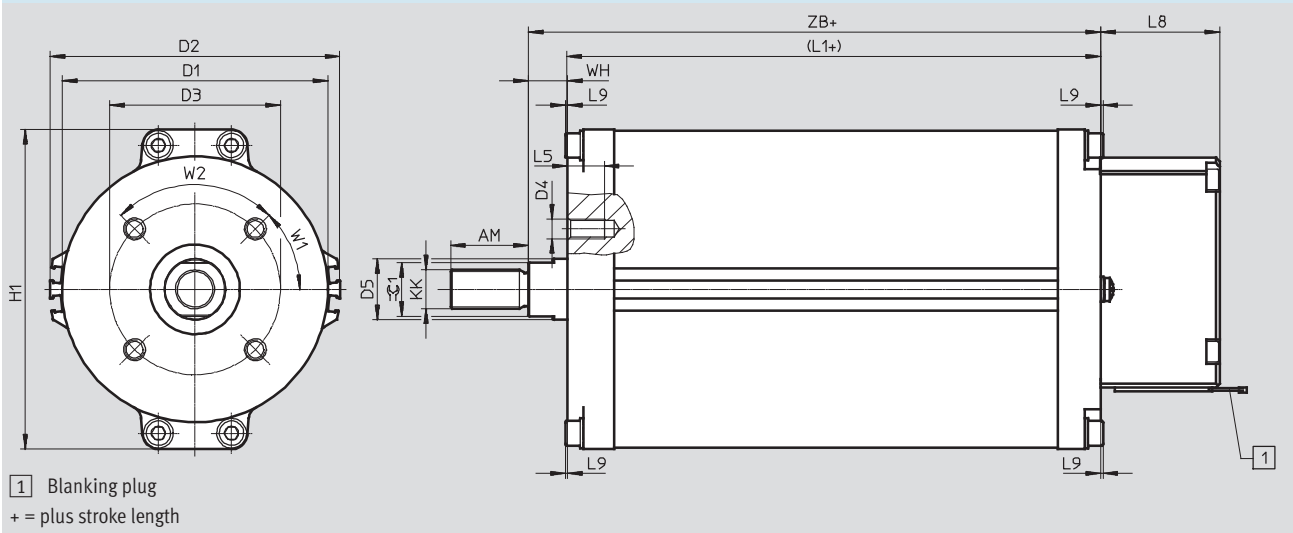
Technical data

FESTO

Dimensions

Download CAD Data → www.festo.com/us/cad

Piston Ø 100 ... 160



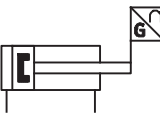
Piston Ø [mm]	AM -2	D1 Ø	D2 Ø	D3 Ø	D4	D5 Ø	H1	KK	L1+
DFPI-100	32	109	119	70	M8	25	131	M16x1.5	118.5
DFPI-125	54	135	147	102	M10	32	163	M27x2	119
DFPI-160		170	182				199		126.5

Piston Ø [mm]	L5	L8	L9	W1	W2	WH	ZB+	≈C1	Flange dimension to DIN 3358
DFPI-100	15	48.8	1	45°	90°	16	134.5	22	F07
DFPI-125	18	48.8	-	45°	90°	24	143	27	F10
DFPI-160							150.5		

Linear actuators DFPI-ND2P-E-P-G2

FESTO

Technical data

Ordering data			
Type	Piston Ø [mm]	Part No.	Type
	100	1808236	DFPI-100- ... -ND2P-E-P-G2
	125	1808239	DFPI-125- ... -ND2P-E-P-G2
	160	1808242	DFPI-160- ... -ND2P-E-P-G2
	200	1808245	DFPI-200- ... -ND2P-E-P-G2
	250	1808253	DFPI-250- ... -ND2P-E-P-G2
	320	1808263	DFPI-320- ... -ND2P-E-P-G2

Note

Stroke length of the actuator

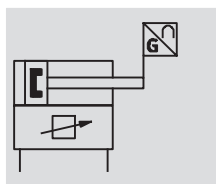
The stroke length of the actuator should generally at least correspond to the nominal diameter of the process valve so that the process valve can be fully opened and closed. The system tolerances can lead to a

greater stroke range than the specified nominal stroke range of the linear actuator. The adjustable rod clevis enables adjustment of the system.

Linear actuators DFPI-ND2P-C1V-...-A

Technical data

Function


-T- Stroke
40 ... 990 mm

Force
4,417 ... 48,255 N

-N- Piston Ø
100 ... 320 mm


General technical data						
Piston Ø	100	125	160	200	250	320
Based on standard (connection to process valve)	DIN 3358					
Type of mounting	On flange to DIN 3358					
Flange hole pattern	F07	F10		F10, F14		
Design	Piston rod, cylinder barrel					
Cushioning	No cushioning					
Mounting position	Any					
Mode of operation	Double-acting					
Stroke [mm]	40 ... 990					
Stroke reserve [mm]	3	3	3	4	4	4
Pneumatic connection						
DFPI-...-ND2P-C1V-A	G¼					
DFPI-...-ND2P-C1V-P-A	For tubing O.D. 8 mm, 10 mm					
Electrical connection	5-pin with screw terminal, straight plug					
Max. cable length [m]	30					
Measuring principle	Displacement encoder (potentiometer)					
Position sensing	Via proximity sensor, with integrated displacement encoder					
Repetition accuracy	1.6% full scale					
Positioning accuracy	≤ 500 mm stroke: 1.1% full scale, > 500 mm stroke: 2.2% full scale					
Hysteresis	1.5% full scale					
Size of the dead zone	1.25% full scale					
Accuracy of analogue output	2% full scale					
Max. speed, retracting [m/s]	0.071	0.048	0.031	0.016	–	0.005
Max. speed, advancing [m/s]	0.074	0.049	0.031	0.018	–	0.007
Continuous shock resistance to DIN/IEC 68 Part 2-82	Tested to severity level 2					
Vibration resistance to DIN/IEC 68 Part 2-6	Tested to severity level 2					

Linear actuators DFPI-ND2P-C1V-...-A

FESTO

Technical data

Operating and environmental conditions		
Operating pressure	[bar]	3 ... 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		Lubricated operation possible (in which case lubricated operation will always be required)
Operating voltage range	[V DC]	22.8 ... 26.4
Nominal operating voltage	[V DC]	24
Setpoint input	[mA]	4 ... 20
Actual value output	[mA]	4 ... 20
Max. current consumption	[mA]	220
Reverse polarity protection		For operating voltage
		For setpoint value
		For initialisation connection
Exterior use		C1 – weather-protected areas in accordance with IEC 60654
Ambient temperature	[°C]	–5 ... 50
Temperature of medium	[°C]	–5 ... 40
Corrosion resistance class CRC ¹⁾		3
Relative air humidity	[%]	5 ... 100, condensing
Protection class		IP65, IP67, IP68, IP69K, NEMA 4 in assembled state
Certification		C-Tick
CE marking (see declaration of conformity)		To EU EMC Directive
		To EU Explosion Protection Directive (ATEX)
→ www.festo.com		
ATEX category for gas		II3G
Explosion ignition protection type for gas		Ex nA IIC T4 X Gc
ATEX category for dust		II3D
Explosion ignition protection type for dust		Ex tc III C T120°C X Dc IP65/67/68/69k
Explosion-proof temperature		–5 °C ≤ Ta ≤ +50 °C

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

Components subject to high corrosion stress. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment or media such as solvents and cleaning agents.

Forces [N] and air consumption [l]						
Piston Ø	100	125	160	200	250	320
Theoretical force at 6 bar, advancing	4,712	7,363	12,064	18,850	29,452	48,255
Theoretical force at 6 bar, retracting	4,417	6,881	11,581	18,080	28,698	47,501
Air consumption, retracting, per 10 mm stroke	0.5153	0.8027	1.3511	2.111	3.3482	5.5418
Air consumption, advancing, per 10 mm stroke	0.5498	0.859	1.4074	2.119	3.4361	5.6297

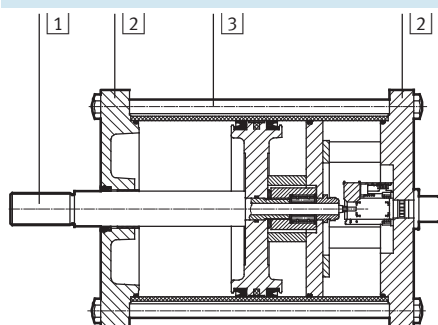
Linear actuators DFPI-ND2P-C1V-...-A

Technical data

Weight						
Piston Ø	100	125	160	200	250	320
Basic weight with 0 mm stroke						
DFPI-...-ND2P-C1V-A [g]	4,671	7,693	9,099	18,358	29,956	45,200
DFPI-...-ND2P-C1V-P-A [g]	5,237	8,259	9,665	18,924	30,522	45,766
Moving load with 0 mm stroke [g]	1,228	1,944	2,250	4,722	7,059	11,417
Additional weight per 10 mm stroke [g]	80	145	159	187	325	399
Additional moving load per 10 mm stroke [g]	27	52		87		

Materials

Sectional view



Linear actuators			
1	Piston rod	High-alloy stainless steel	
2	Top cap (end cap)	Piston Ø 100, 125	Anodised wrought aluminium alloy
		Piston Ø 160 ... 250	Anodised and painted wrought aluminium alloy
		Piston Ø 320	Painted die-cast aluminium
2	Bottom cap (bearing cap)	Piston Ø 100, 125	Anodised wrought aluminium alloy
		Piston Ø 160 ... 320	Painted die-cast aluminium
3	Cylinder barrel	Piston Ø 100 ... 200	Anodised wrought aluminium alloy
		Piston Ø 250 ... 320	High-alloy stainless steel
–	Screws	Piston Ø 100, 200, 250, 320	High-alloy stainless steel
		Piston Ø 125, 160	High-alloy stainless steel
–	Seals	Piston Ø 100	Polyurethane, nitrile rubber
		Piston Ø 125 ... 320	Nitrile rubber
–	Note on materials	Contains PWIS (paint-wetting impairment substances), RoHS-compliant	

Linear actuators DFPI-ND2P-C1V-...-A

Technical data

FESTO

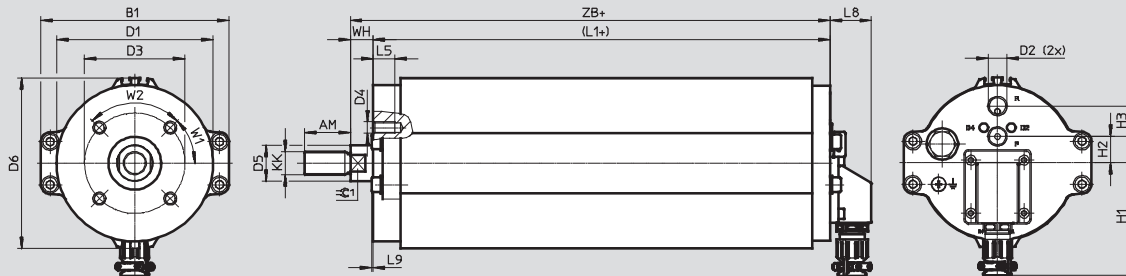
Dimensions

Download CAD Data → www.festo.com/us/cad

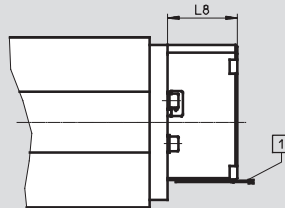
Piston Ø 100 ... 160

Shown without adhesive covers

DFPI- ... -ND2P-C1V-A



DFPI- ... -ND2P-C1V-P-A



1 Blanking plug
+ = plus stroke length

Piston Ø [mm]	AM -2	B1	D1 Ø	D2 Ø	D3 Ø	D4	D5 Ø	D6 Ø	H1 ±2	H2
DFPI-100- ... -C1V-A	32	131	109	G $\frac{1}{4}$	70	M8	25	119	79	18.3
DFPI-125- ... -C1V-A	54	163	135	G $\frac{1}{4}$	102	M10	32	147	79	18.3
DFPI-160- ... -C1V-A		199	170					182		

Piston Ø [mm]	H3	KK	L1+	L5	L8	L9	WH	ZB+	≈C1	Flange dimension to DIN 3358
DFPI-100- ... -C1V-A	21.2	M16x1.5	218.5	15	28.8	1	16	234.5	22	F07
DFPI-125- ... -C1V-A	21.2	M27x2	221	18	28.8	-	24	245	27	F10
DFPI-160- ... -C1V-A			227.5					251.5		

Piston Ø [mm]	AM -2	B1	D1 Ø	D2 Ø	D3 Ø	D4	D5 Ø	D6 Ø	H1	H2
DFPI-100- ... -C1V-P-A	32	131	109	G $\frac{1}{4}$	70	M8	25	119	-	18.3
DFPI-125- ... -C1V-P-A	54	163	135	G $\frac{1}{4}$	102	M10	32	147	-	18.3
DFPI-160- ... -C1V-P-A		199	170					182		

Piston Ø [mm]	H3	KK	L1+	L5	L8	L9	WH	ZB+	≈C1	Flange dimension to DIN 3358
DFPI-100- ... -C1V-P-A	21.2	M16x1.5	218.5	15	48.8	1	16	234.5	22	F07
DFPI-125- ... -C1V-P-A	21.2	M27x2	221	18	48.8	-	24	245	27	F10
DFPI-160- ... -C1V-P-A			227.5					251.5		

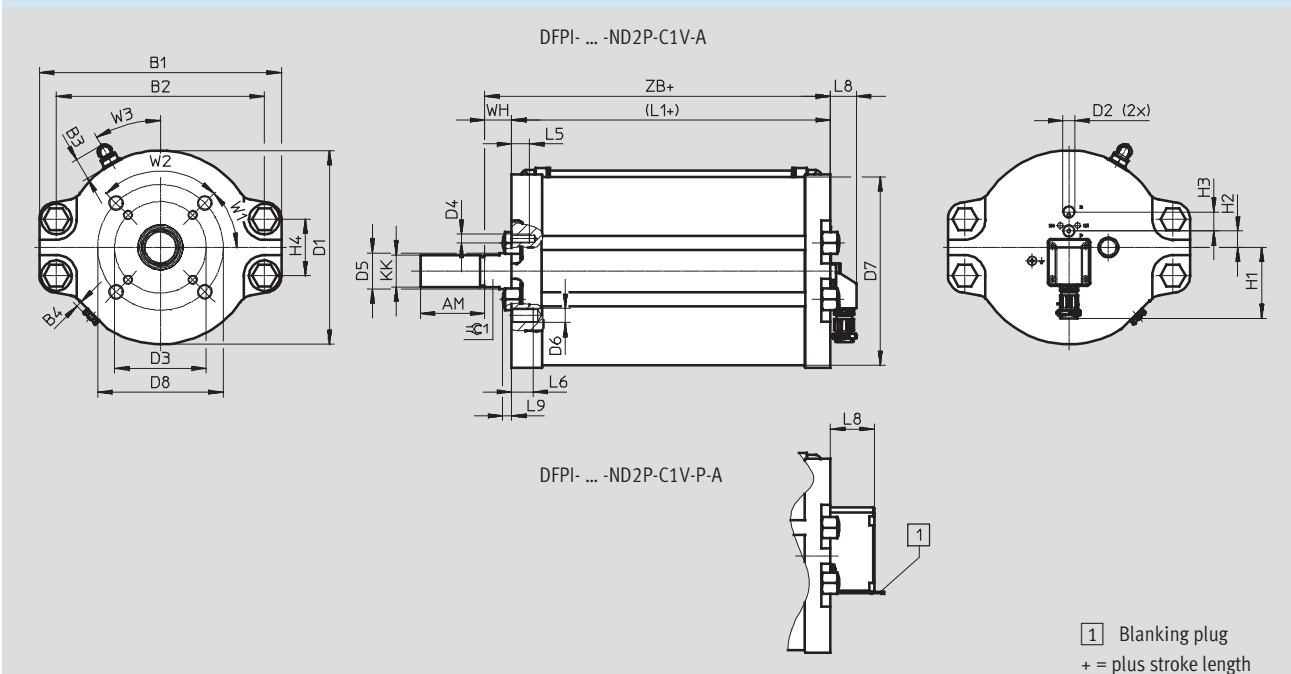
Linear actuators DFPI-ND2P-C1V-...-A

Technical data

Dimensions

Download CAD Data → www.festo.com/us/cad

Piston Ø 200 ... 320



Piston Ø [mm]	AM -2	B1	B2	B3	B4	D1 Ø	D2	D3 Ø	D4	D5 Ø	D6	D7 Ø min.	D8 Ø	H1 ±2	H2
DFPI-200- ... -C1V-A	72	270	232	24.5	6.5	216	G $\frac{1}{4}$	102	M10	40	M16	210	140	79	18.3
DFPI-250- ... -C1V-A	72	308	268	24.5	6.5	260	G $\frac{1}{4}$	102	M10	40	M16	254	140	79	18.3
DFPI-320- ... -C1V-A		378	338			332						325			

Piston Ø [mm]	H3	H4	KK	L1+	L5	L6 min.	L8	L9	≈C1	WH	W1	W2	W3	ZB+	Flange dimension to DIN 3358
DFPI-200- ... -C1V-A	21.2	63	M36x2	255.5	20	24	28.8	10	36	30	45°	90°	30°	285.5	F1014
DFPI-250- ... -C1V-A	21.2	82	M36x2	255	20	25	28.8	25	36	30	45°	90°	30°	285	F1014
DFPI-320- ... -C1V-A		126		262				-						292	

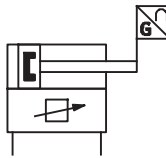
Piston Ø [mm]	AM -2	B1	B2	B3	B4	D1 Ø	D2	D3 Ø	D4	D5 Ø	D6	D7 Ø min.	D8 Ø	H2	H3
DFPI-200- ... -C1V-P-A	72	270	232	24.5	6.5	216	G $\frac{1}{4}$	102	M10	40	M16	210	140	18.3	21.2
DFPI-250- ... -C1V-P-A	72	308	268	24.5	6.5	260	G $\frac{1}{4}$	102	M10	40	M16	254	140	18.3	21.2
DFPI-320- ... -C1V-P-A		378	338			332						325			

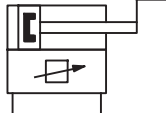
Piston Ø [mm]	H4	KK	L1+	L5	L6 min.	L8	L9	≈C1	WH	W1	W2	W3	ZB+	Flange dimension to DIN 3358
DFPI-200- ... -C1V-P-A	63	M36x2	255.5	20	24	48.8	10	36	30	45°	90°	30°	285.5	F1014
DFPI-250- ... -C1V-P-A	82	M36x2	255	20	25	48.8	25	36	30	45°	90°	30°	285	F1014
DFPI-320- ... -C1V-P-A	126		262				-						292	

Linear actuators DFPI-ND2P-C1V-...-A

FESTO

Technical data

Ordering data			
Type	Piston Ø [mm]	Part No.	Type
	100	1548004	DFPI-100- ... -ND2P-C1V-A
	125	1548020	DFPI-125- ... -ND2P-C1V-A
	160	1548026	DFPI-160- ... -ND2P-C1V-A
	200	1548030	DFPI-200- ... -ND2P-C1V-A
	250	1548037	DFPI-250- ... -ND2P-C1V-A
	320	1548041	DFPI-320- ... -ND2P-C1V-A

Ordering data			
Type	Piston Ø [mm]	Part No.	Type
Variant with analogue feedback signal			
	100	1548005	DFPI-100- ... -ND2P-C1V-P-A
	125	1548021	DFPI-125- ... -ND2P-C1V-P-A
	160	1548028	DFPI-160- ... -ND2P-C1V-P-A
	200	1548032	DFPI-200- ... -ND2P-C1V-P-A
	250	1548039	DFPI-250- ... -ND2P-C1V-P-A
	320	1548044	DFPI-320- ... -ND2P-C1V-P-A

Note

Stroke length of the actuator

The stroke length of the actuator should generally at least correspond to the nominal diameter of the process valve so that the process valve can be fully opened and closed. The system tolerances can lead to a greater stroke range than the specified nominal stroke range of the

linear actuator. During initialisation, the integrated position controller learns the stroke length used and ensures that the slide plate moves to the required positions in a controlled way – at most to the end positions learned during initialisation.

Linear actuators DFPI

Accessories

Connecting cable NHSB
for DFPI-ND2P-E-P-G2 and
DFPI-ND2P-C1V-P-A



General technical data			
Connecting cable	[mm ²]	3x 0.75	5x 0.75
Mounting position		Any	
Min. cable bending radius	[mm]	100	
Pneumatic connection		For tubing O.D. 8 mm	
		–	For tubing O.D. 10 mm

Operating and environmental conditions		
Ambient temperature	[°C]	–20 ... 60
Ambient temperature with flexible cable installation	[°C]	–5 ... 60
Operating voltage range DC	[V]	0 ... 30
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Lubricated operation possible
Protection class		IP65, IP67, IP68, IP69K, NEMA 4 in assembled state
Exterior use		C1 – weather-protected areas
Relative air humidity	[%]	5 ... 100, condensing

Materials	
Protective conduit	PA
Conduit fitting	PA
Cable sheath	PVC
Seals	TPE
Note on materials	Contains PWIS (paint-wetting impairment substances), RoHS-compliant
RoHS status	RoHS-compliant in accordance with EU Directive

Linear actuators DFPI

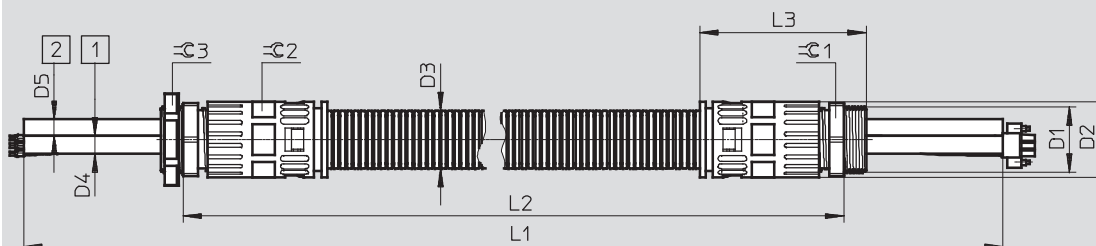
Accessories

FESTO

Dimensions

Download CAD Data → www.festo.com/us/cad

3-wire



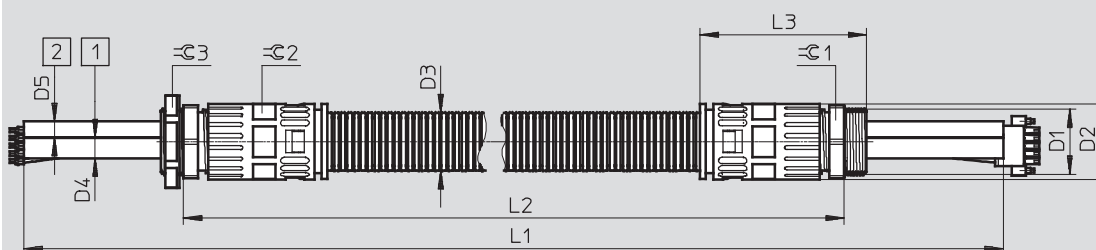
- 1 Tubing for exhausting
- 2 Tubing for pressurisation

Type	D1	D2 Ø	D3 Ø	D4 Ø	D5 Ø	L1 ±25	L2 ±25	L3	1	2	3
NHSB-A1-5-BLG3-LE3-PU8-2xBB	M32x1.5	37	28.5	8	8	6,100	5,000	82	36	34	41
NHSB-A1-10-BLG3-LE3-PU8-2xBB						11,100	10,000				
NHSB-A1-15-BLG3-LE3-PU8-2xBB						16,100	15,000				
NHSB-A1-20-BLG3-LE3-PU8-2xBB						21,100	20,000				
NHSB-A1-25-BLG3-LE3-PU8-2xBB						26,100	25,000				
NHSB-A1-30-BLG3-LE3-PU8-2xBB						31,100	30,000				

Dimensions

Download CAD Data → www.festo.com/us/cad

5-wire

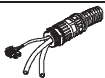


- 1 Tubing for exhausting
- 2 Tubing for pressurisation

Type	D1	D2 Ø	D3 Ø	D4 Ø	D5 Ø	L1 ±25	L2 ±25	L3	1	2	3
NHSB-A1-5-BLG5-LE5-PU8-2xBB	M32x1.5	37	28.5	10	8	6,100	5,000	82	36	34	41
NHSB-A1-10-BLG5-LE5-PU8-2xBB						11,100	10,000				
NHSB-A1-15-BLG5-LE5-PU8-2xBB						16,100	15,000				
NHSB-A1-20-BLG5-LE5-PU8-2xBB						21,100	20,000				
NHSB-A1-25-BLG5-LE5-PU8-2xBB						26,100	25,000				
NHSB-A1-30-BLG5-LE5-PU8-2xBB						31,100	30,000				

Linear actuators DFPI

Accessories

Ordering data – Connecting cable						Technical data → Internet: nhsb	
	Electrical connection 1	Electrical connection 2	Length	Cable composition	Product weight	Part No.	Type
			[m]	[mm²]	[g]		
3-wire, for DFPI- ... -ND2P-E-P							
	Straight plug, 3-pin	Open end, 3-wire	5	3x 0.75	1,250	1686608	NHSB-A1-5-BLG3-LE3-PU8-2XBB
			10		2,500	1686609	NHSB-A1-10-BLG3-LE3-PU8-2XBB
			15		3,750	1686610	NHSB-A1-15-BLG3-LE3-PU8-2XBB
			20		5,000	1686611	NHSB-A1-20-BLG3-LE3-PU8-2XBB
			25		6,250	1686612	NHSB-A1-25-BLG3-LE3-PU8-2XBB
			30		7,500	1686614	NHSB-A1-30-BLG3-LE3-PU8-2XBB
5-wire, for DFPI- ... -C1V							
	Straight plug, 5-pin	Open end, 5-wire	5	5x 0.75	1,250	1585793	NHSB-A1-5-BLG5-LE5-PU8-2XBB
			10		2,500	1585794	NHSB-A1-10-BLG5-LE5-PU8-2XBB
			15		3,750	1585795	NHSB-A1-15-BLG5-LE5-PU8-2XBB
			20		5,000	1585796	NHSB-A1-20-BLG5-LE5-PU8-2XBB
			25		6,250	1585797	NHSB-A1-25-BLG5-LE5-PU8-2XBB
			30		7,500	1585798	NHSB-A1-30-BLG5-LE5-PU8-2XBB

Linear actuators DFPI

Accessories

FESTO

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			
	100	9 263	SGS-M16x1,5		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			
	100	10 768	SGA-M16x1,5		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 – Piston rod attachments, corrosion-resistant				Technical data → Internet: crsg			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
Rod eye CRSG				Rod clevis CRSGS			
	100	13 571	CRSG-M16x1,5		100	195 584	CRSGS-M16x1,5
	125, 160	185 361	CRSG-M27x2		125, 160	195 586	CRSGS-M27x2

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

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	175 436	SMT-8-PS-K-LED-24-B	
					5.0	175 434	SMT-8-PS-K5-LED-24-B
		–	3-pin	0.3	175 484	SMT-8-PS-S-LED-24-B	
	NPN	3-wire	–	2.5	171 180	SMT-8-NS-K-LED-24-B	
		–	3-pin	0.3	171 181	SMT-8-NS-S-LED-24-B	

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	525 563	CRSMT-8-PS-K2,5-LED-24	
			5.0	525 564	CRSMT-8-PS-K5-LED-24	

Linear actuators DFPI

Accessories

FESTO

Ordering data – Proximity sensor for T-slot, magnetic reed				Technical data → Internet: sme	
	Connection technology		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
	N/C contact				
	3-wire	–	7.5	160 251	SME-8-O-K-LED-24

Ordering data – Connecting cable M8x1					Technical data ➔ Internet: nebu	
	Electrical connection, left	Electrical connection, right	Switching output	Cable length [m]	Part No.	Type
Basic design						
	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
	534 254	SMBK-8

Product Range and Company Overview

A Complete Suite of Automation Services

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 & drives



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 12,000 employees in 56 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.



© Copyright 2008, Festo Corporation. While every effort is made to ensure that all dimensions and specifications are correct, Festo cannot guarantee that publications are completely free of any error, in particular typing or printing errors. Accordingly, Festo cannot be held responsible for the same. For Liability and Warranty conditions, refer to our "Terms and Conditions of Sale", available from your local Festo office. All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, electronic, mechanical, photocopying or otherwise, without the prior written permission of Festo. All technical data subject to change according to technical update.



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

Festo North America

Festo Regional Contact Center

5300 Explorer Drive
Mississauga, Ontario L4W 5G4
Canada

USA Customers:

For ordering assistance,

Call: 1.800.99.FESTO (1.800.993.3786)

Fax: 1.800.96.FESTO (1.800.963.3786)

Email: customer.service@us.festo.com

For technical support,

Call: 1.866.GO.FESTO (1.866.463.3786)

Fax: 1.800.96.FESTO (1.800.963.3786)

Email: product.support@us.festo.com

Canadian Customers:

Call: 1.877.GO.FESTO (1.877.463.3786)

Fax: 1.877.FX.FESTO (1.877.393.3786)

Email: festo.canada@ca.festo.com

USA Headquarters

Festo Corporation
395 Moreland Road
P.O. Box 18023
Hauppauge, NY 11788, USA
www.festo.com/us

USA Sales Offices

Appleton

North 922 Tower View Drive, Suite N
Greenville, WI 54942, USA

Boston

120 Presidential Way, Suite 330
Woburn, MA 01801, USA

Chicago

1441 East Business Center Drive
Mt. Prospect, IL 60056, USA

Dallas

1825 Lakeway Drive, Suite 600
Lewisville, TX 75057, USA

Detroit – Automotive Engineering Center

2601 Cambridge Court, Suite 320
Auburn Hills, MI 48326, USA

New York

395 Moreland Road
Hauppauge, NY 11788, USA

Silicon Valley

4935 Southfront Road, Suite F
Livermore, CA 94550, USA

United States



USA Headquarters, East: Festo Corp., 395 Moreland Road, Hauppauge, NY 11788

Phone: 1.631.435.0800; Fax: 1.631.435.8026;

Email: info@festo-usa.com

www.festo.com/us

Canada



Headquarters: Festo Inc., 5300 Explorer Drive, Mississauga, Ontario L4W 5G4

Phone: 1.905.624.9000; Fax: 1.905.624.9001;

Email: festo.canada@ca.festo.com

www.festo.ca

Mexico



Headquarters: Festo Pneumatic, S.A., Av. Ceylán 3, Col. Tequesquahuac,
54020 Tlalneapantla, Edo. de México

Phone: 011 52 [55] 53 21 66 00; Fax: 011 52 [55] 53 21 66 65;

Email: festo.mexico@mx.festo.com

www.festo.com/mx

Central USA

Festo Corporation
1441 East Business
Center Drive
Mt. Prospect, IL 60056, USA
Phone: 1.847.759.2600
Fax: 1.847.768.9480



Western USA

Festo Corporation
4935 Southfront Road,
Suite F
Livermore, CA 94550, USA
Phone: 1.925.371.1099
Fax: 1.925.245.1286



Festo Worldwide

Argentina Australia Austria Belarus Belgium Brazil Bulgaria Canada Chile China Colombia Croatia Czech Republic Denmark
Estonia Finland France Germany Great Britain Greece Hong Kong Hungary India Indonesia Iran Ireland Israel Italy Japan Latvia
Lithuania Malaysia Mexico Netherlands New Zealand Norway Peru Philippines Poland Romania Russia Serbia Singapore
Slovakia Slovenia South Africa South Korea Spain Sweden Switzerland Taiwan Thailand Turkey Ukraine United States Venezuela

www.festo.com