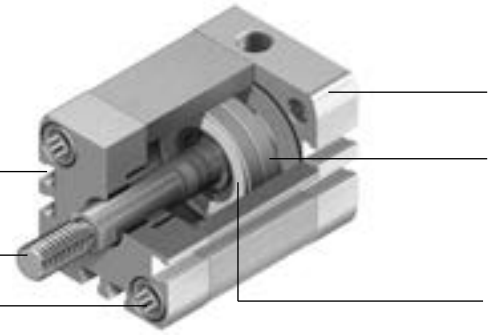
Key features

At a glance



More than the standard

- The compact cylinders comply with or are based on the ISO 21287 standard, depending on the piston diameter
- The ADN/AEN is characterised by its compact design and wide range of application thanks to the large number of variants
- The variants can be configured using a modular product system

Powerful

- Integrated cushioning for absorbing residual energy
- Long service life thanks to exceptional cushioning characteristics and low friction values

Convenient

- Easy to mount with a comprehensive range of mounting accessories for just about every type of installation
- Highly flexible thanks to the wide range of variants
- Contactless position sensing using proximity switches

Reliable

- Optimised manufacturing methods, patented technology and more than 40 years of experience in the field of cylinders make Festo and ADN/AEN a great partner

Cushioning types

Cushioning P

Operating mode
- The drive is fitted with polymer elastic end-position cushioning

Application
- Small loads
- Low speeds
- Small cushioning capacity

Advantages
- No adjustment required
- Saves time

Cushioning PPS

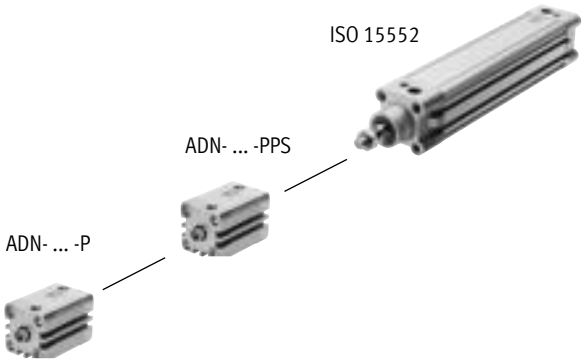
Operating mode
- The drive has self-adjusting, pneumatic end-position cushioning

Application
- Larger loads
- Higher speeds
- Larger cushioning capacity

Advantages
- No adjustment required
- Cushioning capacity is four times bigger than ADN-...-P
- Saves time
- Reduces noise

Cushioning capacity of ISO 21287 and ISO 15552

The cushioning capacity of the compact cylinder ADN-...-PPS fills the gap between ADN-...-P and standards-based cylinders to ISO 15552.



For manufacturing lithium-ion batteries

ADN-...-F1A

Recommended for production systems for manufacturing lithium-ion batteries. Metals with copper, zinc or nickel as the main constituent are excluded from use. Exceptions are nickel in steels, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils.

Accessories

Please contact your Festo representative for information on which accessories are suitable for manufacturing lithium-ion batteries

Type codes

001	Series	
ADN	Compact cylinder, double-acting, based on ISO 21287	

002	Piston diameter [mm]	
12	12	
16	16	
20	20	
25	25	
32	32	
40	40	
50	50	
63	63	
80	80	
100	100	
125	125	

003	Stroke range [mm]	
...	1 ... 500	

004	Piston rod thread type	
A	Male thread	
I	Female thread	

005	Cushioning	
P	Elastic cushioning rings/plates on both sides	
PPS	Pneumatic cushioning, self-adjusting at both ends	

006	Position sensing	
A	For proximity sensor	

007	Special material properties	
	None	
F1A	Recommended for production facilities for the manufacture of lithium-ion batteries	

008	Protection against rotation	
	None	
Q	Square piston rod	

009	Piston rod type	
	At one end	
S2	Through piston rod	
S20	Through, hollow piston rod	

010	Custom thread	
“M5”K5	M5	
“M6”K5	M6	
“M8”K5	M8	
“M10”K5	M10	
“M10x1,25”K5	M10x1.25	
“M12”K5	M12	
“M16”K5	M16	
“M20”K5	M20	
“M20x1,5”K5	M20x1.5	

011	Temperature range	
	Standard	
S6	Heat-resistant seals max. 120 °C	

012	Constant motion	
	Standard	
S10	Uniform, slow movement	

013	Running characteristics	
	Standard	
S11	Low friction	

014	Improved running performance	
	None	
K10	Smooth anodised aluminium coated piston rod	

015	Corrosion protection	
	Standard	
R3	High corrosion protection	

016	Captive rating plate	
	Rating plate, glued	
TL	Laser etched rating plate	

017	Low temperature	
	None	
TT	-40 °C ... +80 °C	

018	Scraper variant	
	Standard	
R8	Dust protection	

019	EU certification	
	None	
EX4	II 2GD	

Datasheet

Technical data – Basic version and variants					
Piston ø	50	63	80	100	125
Pneumatic connection					
–	G1/8	G1/8	G1/8	G1/8	G1/4
S1	–	G1/8	–	G1/8	–
Female piston rod thread					
–	M10	M10	M12	M12	M16
K5	M8	M8	M10	M10	–
S1	–	M12	–	M16	–
S1-K5	–	M10	–	–	–
Male piston rod thread					
–	M12x1.25	M12x1.25	M16x1.5	M16x1.5	M20x1.5
K5	M12; M16	M12; M16	M16; M20; M20x1.5	M16; M20; M20x1.5	M20
S1	–	M16x1.5	–	M20x1.5	–
S1-K5	–	M12x1.25; M16	–	M16x1.5; M20	–
Q-K5	M12	M12	M16	M16	M20
Max. torsional backlash of piston rod [°]					
Q	1	1	0.8	0.8	0.8

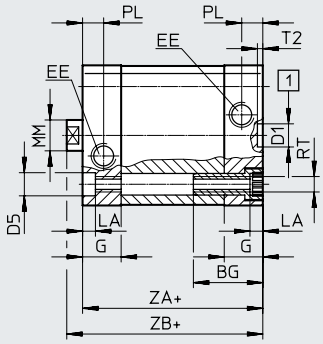
Operating and environmental conditions											
Piston ø	12	16	20	25	32	40	50	63	80	100	125
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]										
Note on the operating/ pilot medium	Lubricated operation possible (in which case lubrication will always be required)										
Operating pressure											
in [MPa]											
–	0.1 ... 1		0.06 ... 1								
PPS	–		0.15 ... 1			0.1 ... 1					–
Q	0.15 ... 1		0.1 ... 1								
Q-S6	0.15 ... 0.6		0.1 ... 0.6								
S1	–			0.1 ... 1	–	0.1 ... 1	–	0.1 ... 1	–	0.1 ... 1	–
S2, S20	0.15 ... 1		0.12 ... 1		0.1 ... 1			0.08 ... 1			
S6	0.1 ... 1		0.06 ... 1								
S11	0.045 ... 1				0.025 ... 1						
R8, TT	–		0.15 ... 1			0.1 ... 1					–
in [bar]											
–	1 ... 10		0.6 ... 10								
PPS	–		1.5 ... 10			1 ... 10					–
Q	1.5 ... 10		1 ... 10								
Q-S6	1.5 ... 6		1 ... 6								
S1	–			1 ... 10	–	1 ... 10	–	1 ... 10	–	1 ... 10	–
S2, S20	1.5 ... 10		1.2 ... 10		1 ... 10			0.8 ... 10			
S6	1 ... 10		0.6 ... 10								
S11	0.45 ... 10				0.25 ... 10						
R8, TT	–		1.5 ... 10			1 ... 10					–
Ambient temperature[1] [°C]											
–	–20 ... +80										
S6	0 ... +120										
S10, S11	+5 ... +80										
R3	–20 ... +80										
TT	–		–40 ... +80								–
Corrosion resistance class CRC[2]											
–	2										
R3	3										
F1A	0										
ATEX	Selected types ➔ www.festo.com										

1) Note operating range of proximity switches
2) More information www.festo.com/x/topic/crc

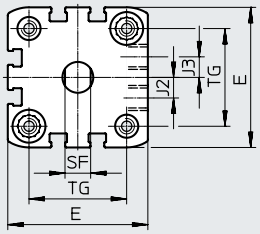
Datasheet

Dimensions – Basic version Download CAD data ➔ www.festo.com

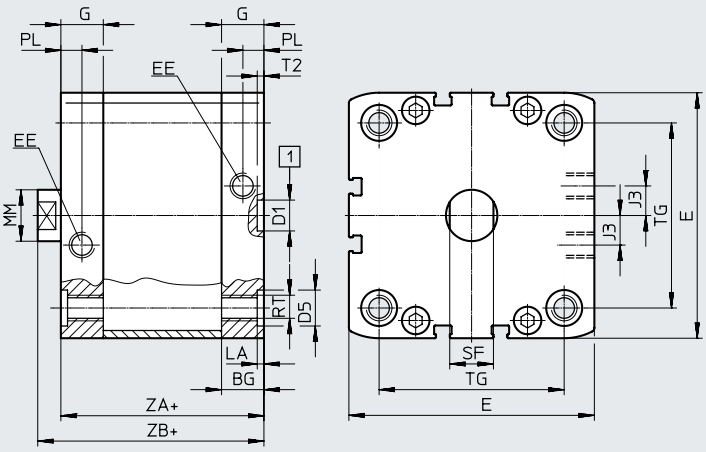
Ø 12 ... 63



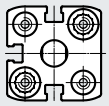
Ø 32 ... 63



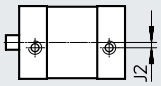
Ø 80 ... 125



Ø 12 ... 25



Ø 12



\+ = plus stroke length

[1] = Drilled hole for centring pin/sleeve

Ø [mm]	BG min.	D1 Ø H9	D5 Ø	E	EE	G	J2	J3	PW +0.2
12	17	9	6^{F9}	27.5 +0.3	M5	10.5	2	–	3.5
16				29 +0.3		11	2.6		
20	19.5		9^{F9}	35.5 +0.3		12			5
25				39.5 +0.3					
32	26			47 +0.3	G1/8	15	6		
40				54.5 +0.3			8		
50	27	12	12^{F9}	65.5 +0.3			11.5		
63				75.5 +0.3					
80	17		15	95.5 +0.6		16.5			2.6
100	21.5			113.5 +0.6		21.5	20		
125	20		–	134.6 +0.3	G1/4	20	21.15		–

Ø [mm]	MM Ø	PL +0.2	RT	ST h13	T2 +0.1	TG ±0.2	ZA ±0.6	ZB +1.2	ZB PPS +1.3
12	6	6	M4	5	2.1	16	35	39.2	–
16	8			7		18		39.7	
20	10		M5	9		22	37	42.5	42.5
25						26	39	44.5	45.3
32	12	8.2	M6	10		32.5	44	50	50.6
40						38	45	51.1	51.7
50	16		M8	13	2.6	46.5		52.7	53.2
63						56.5	49	56.5	57
80	20		M10	17		72	54	62.9	63.4
100		10.5				89	67	76	76.8
125	25		M12	21		110	81	92	–