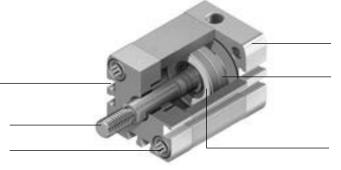
Key features

At a glance

Sensor slots on three sides for flush mounting of proximity switches

Piston rod with choice of male or female thread

Mounting option: Female thread and through-hole



Centring hole in the end cap suitable for centring pins ZBS

Magnet for contactless position sensing

Integrated cushioning for absorbing residual energy

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

Cushioning PPS

Operating mode

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

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.

ADN- ... -P

Application

- Small loads
- Low speeds
- Small cushioning capacity

Advantages

- No adjustment required
- Saves time

Larger cushioning capacity

Application

Larger loads

· Higher speeds

- AdvantagesNo adjustment required
- Cushioning capacity is four times bigger than ADN-...-P
- Saves time
- Reduces noise

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	
Α	Male thread	
T .	Female thread	
005	Cushioning	
Р	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	•
012	Standard	
S10	Uniform, slow movement	
310	official, stow movement	
013	Running characteristics	
	Standard	
S11	Low friction	
014	Improved running performance	
	None	
K10	Smooth anodised aluminium coated piston rod	
015	Corrosion protection	
013	Standard	
R3	High corrosion protection	
K5	Thigh corrosion protection	
016	Captive rating plate	
	Rating plate, glued	
TL	Laser etched rating plate	
017	Low temperature	
	None	
π	-40 °C +80 °C	
018	Scraper variant	
010	Standard Standard	
DO		_
R8	Dust protection	
019	EU certification	
	None	
EX4	II 2GD	

Datasheet

Pneumatic connection - S1		o ISO 8573-1:2010 [; tion possible (in whice	5; M16 25 7:4:4]	- - M16 0.8	x1.5 ; M20; M20x	50	100 G1/8 G1/8 M12 M10 M16 - M16x1.5 M16; M20; N M20x1.5 M16x1.5; M1 M16		125 G1/4 - M16 - - - M20x1.5 M20 - M20 0.8	125
	M10 M8 M12x1.25 M12; M16 - M12 1 12 16 Compressed air t	G1/8 M10 M8 M12 M10 M10 M12x1.25 M12; M16 M16x1.5 M12x1.25 M12 1 20 Ition possible (in which in the content of th	5; M16 25 7:4:4]	M12 M10 -	x1.5 ; M20; M20x	50	M12 M10 M16 - M16x1.5 M16; M20; N M20x1.5 M16x1.5; M:		M16	125
S1	M10 M8 M12x1.25 M12; M16 - M12 1 12 16 Compressed air t	G1/8 M10 M8 M12 M10 M10 M12x1.25 M12; M16 M16x1.5 M12x1.25 M12 1 20 Ition possible (in which in the content of th	5; M16 25 7:4:4]	M12 M10 -	x1.5 ; M20; M20x	50	M12 M10 M16 - M16x1.5 M16; M20; N M20x1.5 M16x1.5; M:		M16	125
Female piston rod thread -	M10 M8 M12x1.25 M12; M16 - M12 1 12	M10 M8 M12 M10 M12x1.25 M12; M16 M16x1.5 M12x1.25 M12 1	5; M16 25 7:4:4]	M12 M10 - - M16; - - M16 0.8	x1.5 ; M20; M20x	50	M12 M10 M16 - M16x1.5 M16; M20; N M20x1.5 M16x1.5; M3		M16 M20x1.5 M20 M20 0.8	125
Note on the operating / pilot medium Note on the operating pressure Image: Note of St.	M8	M8 M12 M10 M12x1.25 M12; M16 M16x1.5 M12x1.25 M12 1 20 co ISO 8573-1:2010 [in which is a second to be a seco	5; M16 25 7:4:4]	M10 M16; M16; M16 0.8	x1.5 ; M20; M20x	50	M10 M16 - M16x1.5 M16; M20; M M20x1.5 M16x1.5; M M16		M20x1.5 M20 M20 M20 0.8	125
K5	M8 M12x1.25 M12; M16 M12	M8 M12 M10 M12x1.25 M12; M16 M16x1.5 M12x1.25 M12 1 20 co ISO 8573-1:2010 [in which is a second to be a seco	5; M16 25 7:4:4]	M10 M16; M16; M16 0.8	x1.5 ; M20; M20x	50	M10 M16 - M16x1.5 M16; M20; M M20x1.5 M16x1.5; M M16		M20x1.5 M20 M20 M20 0.8	125
S1	M12x1.25 M12; M16 M12 1 12 16 Compressed air t Lubricated opera	M12 M10 M12x1.25 M12; M16 M16x1.5 M12x1.25 M12 1 20 to ISO 8573-1:2010 [in which is a second to be a se	5; M16 25 7:4:4]	-	x1.5 ; M20; M20x	50	M16x1.5 M16; M20; M M20x1.5 M16x1.5; M M16x1.5; M		M20x1.5 M20 - - M20	125
S1-K5	M12x1.25 M12; M16 M12 1 12 16 Compressed air t Lubricated opera	M10 M12x1.25 M12; M16 M16x1.5 M12x1.25 M12 1 20 to ISO 8573-1:2010 [in whice 0.06 1	5; M16 25 7:4:4]	- M16; M16; - M16 M16	; M20; M20x	50	M16x1.5 M16; M20; M M20x1.5 M16x1.5; M M16		M20x1.5 M20 - - M20	125
Male piston rod thread - K5 S1 S1-K5 Q-K5 Max. torsional backlash of piston rod [o] Q 1 Operating and environmental conditions Piston Ø 1 Operating medium Note on the operating/ pilot medium Operating pressure in [MPa] - C PPS Q Q-S6 S1 S2, S20 S6 S1 R8, TT in [bar] - In [bar] - I	M12x1.25 M12; M16 M12 1 12 16 Compressed air t Lubricated opera	M12x1.25 M12; M16 M16x1.5 M12x1.25 M12 1 20 to ISO 8573-1:2010 [in whice 0.06 1	5; M16 25 7:4:4]	M16; M16; - - M16 0.8	; M20; M20x	50	M16x1.5 M16; M20; M M20x1.5 M16x1.5; M M16		M20x1.5 M20 - - M20	125
Note on the operating pressure in [MPa]	M12; M16 - M12 1 12 16 Compressed air t Lubricated opera	M12; M16 M16x1.5 M12x1.25 M12 1 20 0 ISO 8573-1:2010 [intropossible (in whice) 0.06 1	5; M16 25 7:4:4]	M16; - - M16	; M20; M20x	50	M16; M20; M M20x1.5 M16x1.5; M: M16		M20 - - - M20	125
K5	M12; M16 - M12 1 12 16 Compressed air t Lubricated opera	M12; M16 M16x1.5 M12x1.25 M12 1 20 0 ISO 8573-1:2010 [intropossible (in whice) 0.06 1	5; M16 25 7:4:4]	M16; - - M16	; M20; M20x	50	M16; M20; M M20x1.5 M16x1.5; M: M16		M20 - - - M20	125
S1	M12 1 12 16 Compressed air t Lubricated opera	M16x1.5 M12x1.25 M12 1 20 0 ISO 8573-1:2010 [7 ition possible (in whice	25 7:4:4]	- - M16 0.8	40	50	M20x1.5 M16x1.5; M16		- - M20	125
S1-K5	1 12 16 Compressed air t Lubricated opera	M12x1.25 M12 1 20 to ISO 8573-1:2010 [7 tition possible (in whice	25 7:4:4]	0.8 32	40		M16x1.5; M16 M16		- M20	125
Q-K5	M12 1 12 16 Compressed air t Lubricated opera	M12 1 20 10 ISO 8573-1:2010 [: titon possible (in whice) 0.06 1	25 7:4:4]	0.8	40		M16		M20 0.8	125
Max. torsional backlash of piston rod [o] Q 1 Operating and environmental conditions Piston Ø 1 Operating medium Operating pressure in [MPa] -	1 16 Compressed air t	20 20 20 20 20 20 20 20	7:4:4]	0.8	40		0.8	80	0.8	125
Q 1 Operating and environmental conditions Piston Ø 1 Operating medium	12 16 Compressed air t Lubricated opera	20 20 0 20 20 20 20 20	7:4:4]	32				80		125
Q 1 Operating and environmental conditions Piston Ø 1 Operating medium	12 16 Compressed air t Lubricated opera	20 20 0 20 20 20 20 20	7:4:4]	32				80		125
Operating and environmental conditions Piston Ø 1 Operating medium 0 Note on the operating/pilot medium L Operating pressure in [MPa] — PPS — Q 0 QS-6 C S1 — S2, S20 C S6 S1 R8, TT — in [bar] — PPS — Q 1 QS6 1 S1 — S2, S20 1	12 16 Compressed air t Lubricated opera	20 20 0 20 20 20 20 20	7:4:4]	32				80		125
Piston Ø 1 Operating medium	Compressed air t Lubricated opera	o ISO 8573-1:2010 [; tion possible (in whic	7:4:4]	:			63	80	100	125
Operating medium C Note on the operating/pilot medium L Operating pressure in [MPa] - C PPS - Q C Q-S6 C S1 - S2, S20 C S6 C S11 C R8, TT - in [bar] - PPS - Q 1 Q-S6 1 S1 - S2, S20 1	Compressed air t Lubricated opera	o ISO 8573-1:2010 [; tion possible (in whic	7:4:4]	:			63	80	100	125
Note on the operating/ pilot medium Operating pressure in [MPa] - PPS Q C C C C C C C C C C C C C C C C C C C	Lubricated opera	tion possible (in whice		ication will	always be red	quired)	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·	
Note on the operating/ pilot medium Operating pressure in [MPa] - PPS Q Q-S6 S1 S2, S20 S6 S1 R8, TT - In [bar] - PPS Q Q-S6 S1 S1 S2, S20 S6 S1 R8, TT S1 S2 S2 S6 S1 S1 S1 S2 S2 S6 S1 S1 S2 S2 S6 S1 S1 S1 S2 S2 S6 S1 S1 S2 S2 S2 S2 S2 S2 S2 S2 S3 S4 S1 S2 S2 S2 S2 S2 S2 S2 S4 S4 S5 S4 S5 S5 S5 S5 S5 S6 S6 S6 S6 S7 S6 S7 S7 S8	Lubricated opera	tion possible (in whice		ication will	always be red	quired)				
pilot medium Operating pressure in [MPa] -		0.06 1				,				
Operating pressure in [MPa] -	0.1 1									
in [MPa] -	0.1 1									
- COMPRS -	0.1 1									
PPS - Q C C Q-S6 C C S1 - S2, S20 C C S6 C C S11 C C R8, TT C C C PPS C C C S C C S C C S C C S C C S C C S C C S C	V.1 1									
Q C C C C C C C C C C C C C C C C C C C	_	0.15 1			0.1 1					1_
QS6 C C S1 - S2, S20 C S6 C C S11 C C S1 C C S1 C C S11 C C S11 C C S11 C C S1 S1 S2, S20 S1 S1 C S1 S1 S2, S20 S1 S1 C S2 S20 S1 S1 C S2, S20 C S1 S1 C S2, S20 C S1 S2 S20 C S1 S20 C S20 C S2	0.15 1	0.1 1			1					
S1 - S2, S20 C S6 C S11 C R8, Π - in [bar] - PPS - Q 1 Q-S6 1 S1 - S2, S20 1	0.15 0.6	0.1 0.6								
S2, S20 C S6 C S11 C R8, Π -	-		0.1 1	Τ_	0.1 1	1_	0.1 1	_	0.1 1	1_
S6 C C S11 C C R8, TT C C C C C C C C C C C C C C C C C C	0.15 1	0.12 1	0.1 1	0.1 1	0.1 1		0.08		0.11	
S11 C R8, TT - In [bar] - 1 PPS - Q 1 Q-S6 1 S1 - S2, S20 1 1	0.1 1	0.06 1		0.12 1			1 0.00			
R8, TT - in [bar] - 1 PPS - Q Q-56 S1 S2, S20 1	0.045 1	0.00 1		0.025	1				· · · · · · · · · · · · · · · · · · ·	
in [bar] - 1 PPS - 2 Q 1 Q-S6 1 S1 - 52, S20 1	-	0.15 1		0.023	0.1 1					T_
- 1 PPS - Q 1 QS6 1 S1 - S2, S20 1		0.15 1			0.1 1					
PPS - Q 1 1 Q-S6 1 51 - S2, S20 1 1	1 10	0.6 10								-
Q 1 Q-S6 1 S1 - S2, S20 1	-	1.5 10			1 10					T_
Q-S6 1 S1 - S2, S20 1	1.5 10	1.3 10			1 10					
S1 - S2, S20 1	1.5 6	16								
S2, S20 1			1 10	T_	1 10	Τ_	1 10		1 10	1_
			1 10		1 10				1 10	
30	1.5 10	1.2 10		1 10		-	0.8 1	·U		
C11 ,		0.6 10		0.25 1	0					
	0.45 10	1.5 10		0.25 1	_					
R8, TT	_	1.5 10			1 10					-
	20 .00									
	-20 +80									
	0 +120								,	
	0 +120 +5 +80									
**	0 +120 +5 +80 -20 +80	T .								_
Corrosion resistance class CRC ²⁾	0 +120 +5 +80	-40 +80								
	0 +120 +5 +80 -20 +80	-40 +80								
	0 +120 +5 +80 -20 +80	-40 +80								
F1A C	0 +120 +5 +80 -20 +80 -	-40 +80								

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

Selected types → www.festo.com

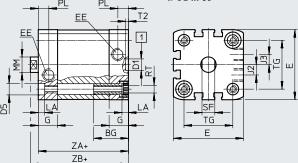
ATEX

Download CAD data → www.festo.com

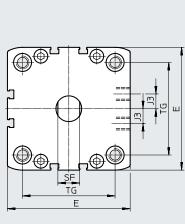
Datasheet

Dimensions – Basic version Ø 12 ... 63

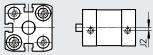




Ø 80 ... 125 EE,



ø 12 ... 25



Ø 12

- = plus stroke length
- [1] = Drilled hole for centring pin/sleeve

Ø	BG	D1	D5	E	EE	G	J2	J3	PW
		Ø	Ø						
[mm]	min.	H9							+0.2
12	17		6 ^{F9}	27.5 +0.3		10.5	2	_	3.5
16	1/		6.	29 +0.3	M5 G1/8	11			3.3
20	19.5	9	9 ^{F9}	35.5 +0.3		12	2.6		5
25	19.5			39.5 +0.3					
32	26			47 +0.3			6		
40	20			54.5 +0.3		15	8		
50	27		12 ^{F9}	65.5 +0.3		15	0		
63	27			75.5 +0.3			11.5		
80	17	12	15	95.5 +0.6		16.5	16.5	1.5	2.6
100	21.5	.5	15	113.5 +0.6		21.5	2	20	2.0
125	20		-	134.6 +0.3	G1/4	20	21	.15	-

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