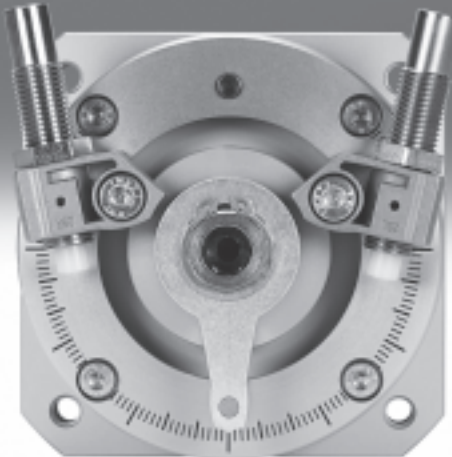


Swivel modules DSM/DSM-B



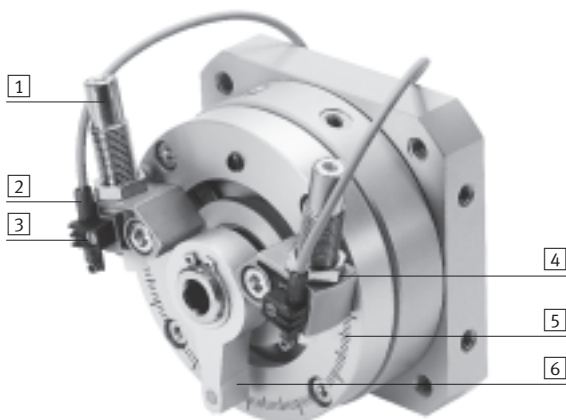
Swivel modules DSM/DSM-B

Key features

At a glance

- The swivel module DSM is a double-acting semi-rotary drive with rotary vane
- The swivel angle is infinitely adjustable over the entire swivel range
- High precision thanks to metal fixed stops
- Polyurethane ensures long service life for rotary vane and sealing system
- Easy precision adjustment of the end positions using the cushioning components
- The mechanical gearing between the stop element and swivel module prevents movement of the stop system under load
- Torques of up to 40 Nm with rotary vane principle in combination with multi-tooth shaft

The technology in detail



- 1** Cushioning
 - Two types of cushioning, with metal fixed stop:
 - Flexible cushioning components (P)
 - Hydraulic shock absorbers (CC)
- 2** Position sensing
 - Compact sensing of the swivel position:
 - For size 6 ... 40: SME/SMT-10
 - For size 63: SME/SMT-8
- 3** Sensor bracket
 - The proximity sensors are mounted directly on the stop system
- 4** Precision end position adjustment
 - After the lock nut is loosened, precision adjustment of the end positions is possible using an Allen key
- 5** Swivel angle scale
 - The required swivel angle can easily be preset using the scale
- 6** Stop lever
 - The magnet in the stop lever enables the swivel angle to be sensed

Note

If the swivel modules DSM-...-B are used without a stop system or the maximum permissible mass moment of inertia is exceeded, external stops

must be attached. The rotary vane is not suitable for use in defining end positions.

Technical data:

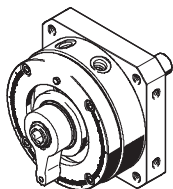
Size 6 ... 10 → 4

Size 12 ... 63 → 16

Wide choice of variants

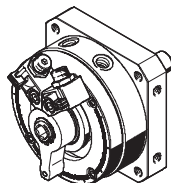
Without stop system

for size 12 ... 63



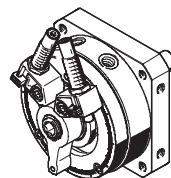
With flexible cushioning components

for size 6 ... 63



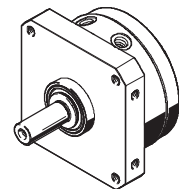
With shock absorbers (CC)

for size 12 ... 63



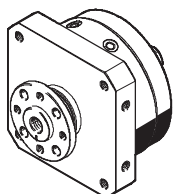
With spigot shaft

for size 6 ... 63



With flanged shaft

for size 6 ... 63



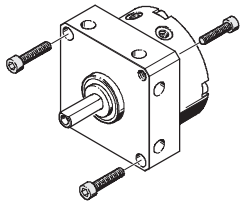
Swivel modules DSM/DSM-B

Key features

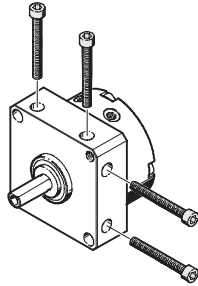
Mounting options

Size 6 ... 10

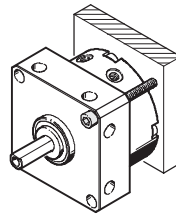
via threaded through-holes/
through-holes



via through-holes, lateral

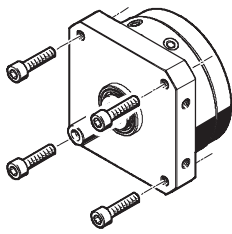


via threaded holes, lateral

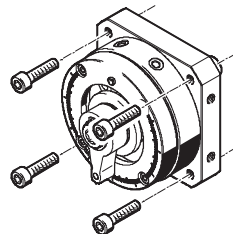


Size 12 ... 63

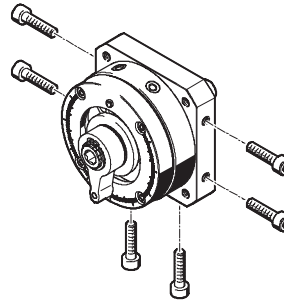
via threaded through-holes



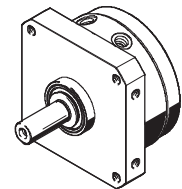
via through-holes



via threaded holes, lateral

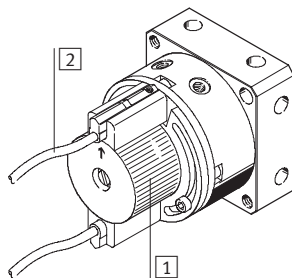


centring via centring collar



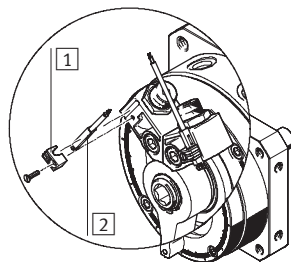
Accessories

Position sensing
for size 6 ... 10



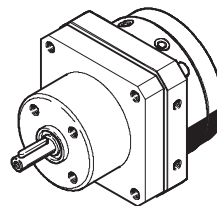
- 1** Mounting kit
- 2** Proximity sensor

for size 12 ... 63

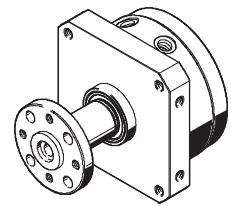


- 1** Sensor bracket
- 2** Proximity sensor

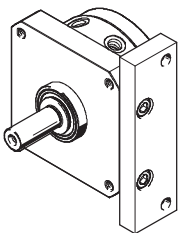
Freewheel unit FLSM
for size 6 ... 40



Push-on flange FWSR
for size 6 ... 40

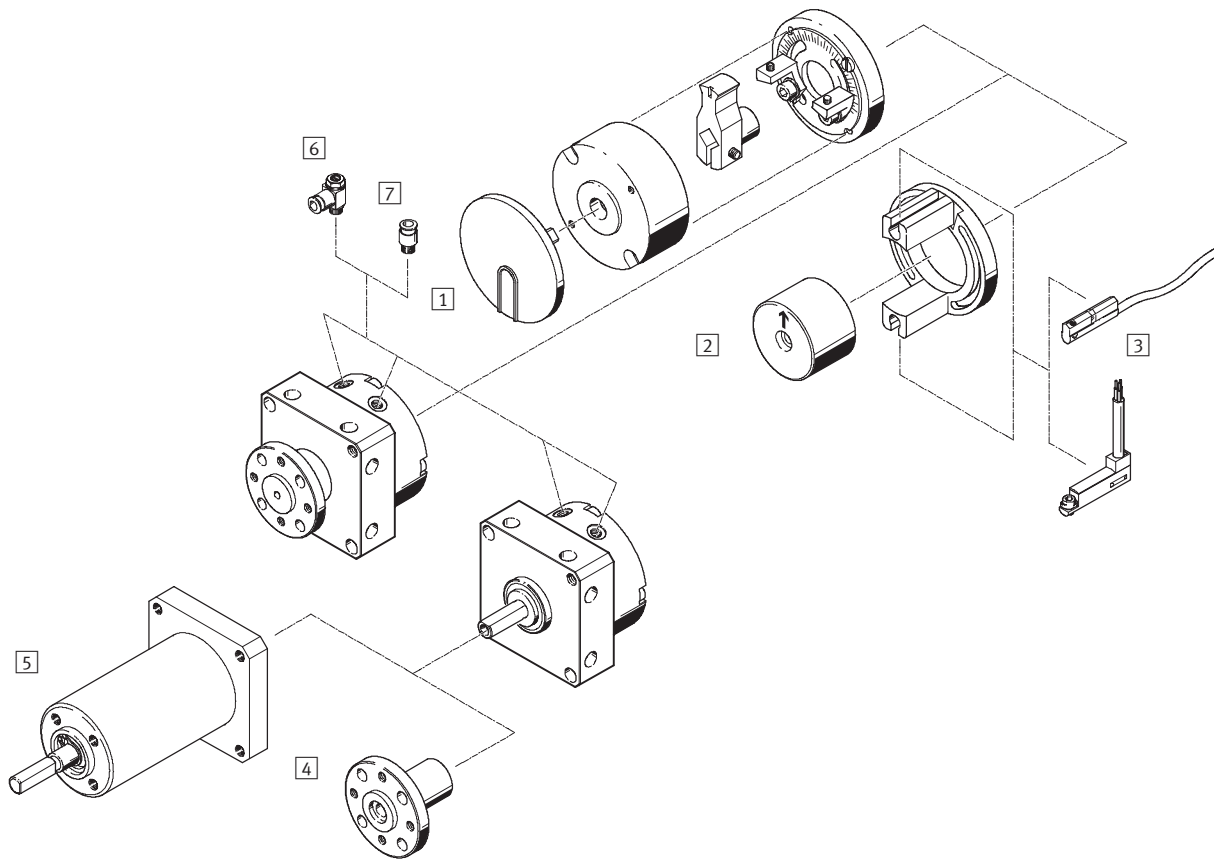


Mounting plate HSM
for size 12 ... 40



Swivel modules DSM

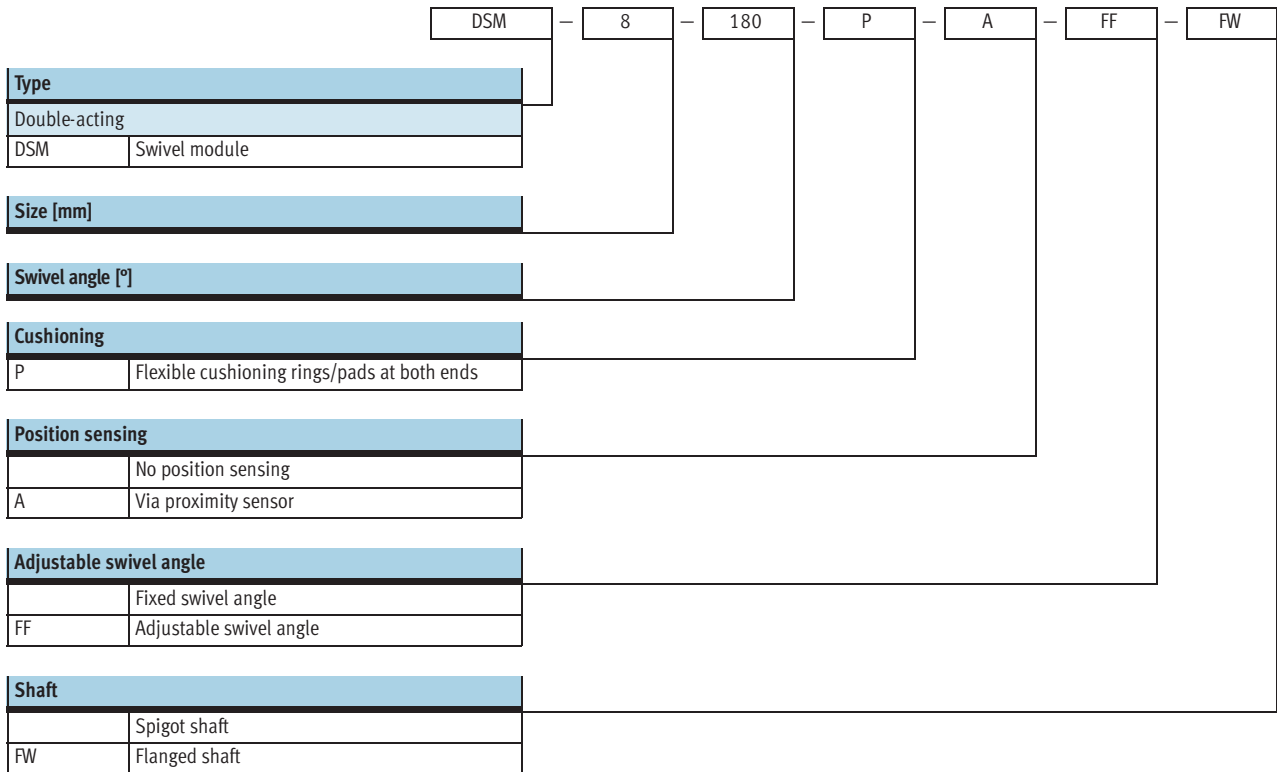
Peripherals overview DSM-6 ... 10



Accessories		
	Brief description	→ Page/Internet
1	Stop kit KSM	31
2	Mounting kit WSM-...-SME-10	31
3	Proximity sensor SME/SMT-10	32
4	Push-on flange FWSR	29
5	Freewheel unit FLSM	27
6	One-way flow control valve GRLA	33
7	Push-in fitting QS	quick star

Swivel modules DSM

Type codes DSM-6 ... 10



Swivel modules DSM

Technical data DSM-6 ... 10

FESTO

Function



Ø - Size
6 ... 10 mm



General technical data				
Size	6		8	10
Pneumatic connection	M3			
Constructional design	Rotary vane			
Cushioning	P – flexible cushioning rings/pads at both ends			
Type of mounting	Via female thread			
Mounting position	Any			
Swivel angle	fixed	[°]	90 or 180	90, 180 or 240
	adjustable	[°]	0 ... 180	0 ... 200
Max. swivel frequency at 6 bar		[Hz]	3	3 (at 240°: 2 Hz)
Cushioning angle		[°]	0.5	
Air consumption at max. swivel angle and 6 bar ¹⁾	90°	[cm ³]	0.6	5.5
	180°	[cm ³]	1.2	11
	240°	[cm ³]	–	15

1) Theoretical values

Operating and environmental conditions				
Size	6		8	10
Operating medium	Filtered compressed air, lubricated or unlubricated			
Operating pressure	[bar]	3.5 ... 8	3.5 ... 8	2.5 ... 8
Ambient temperature ¹⁾	[°C]	0 ... +60		
ATEX	Specified types → www.festo.com			

1) Note operating range of proximity sensors

Forces and torques				
Size	6		8	10
Torque at 6 bar	[Nm]	0.15	0.35	0.85
Max. perm. radial load on drive shaft	[N]	15	20	30
Max. perm. axial load on drive shaft	[N]	10		
Max. perm. mass moment of inertia on drive shaft ¹⁾	[kgm ²]	0.05 x 10 ⁻⁴	0.1 x 10 ⁻⁴	0.2 x 10 ⁻⁴

1) Unthrottled, please see graphs on → 9

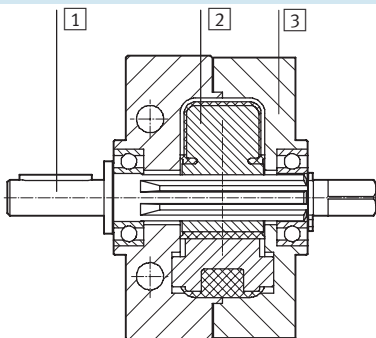
Swivel modules DSM

Technical data DSM-6 ... 10

Weight [g]				
Size		6	8	10
Spigot shaft				
DSM-...-P	90°	45	78	140
	180°	78	140	140
	240°	-	-	140
DSM-...-P-A	90°	50	85	149
	180°	50	85	149
	240°	-	-	149
DSM-...-P-FF	180°	70	140	-
	200°	-	-	240
DSM-...-P-A-FF	180°	85	155	-
	200°	-	-	255
Flanged shaft				
DSM-...-P-FW	90°	51	85	150
	180°	51	85	150
	240°	-	-	150
DSM-...-P-A-FW	90°	56	92	159
	180°	56	92	159
	240°	-	-	159
DSM-...-P-FF-FW	180°	76	147	-
	200°	-	-	250
DSM-...-P-A-FF-FW	180°	91	162	-
	200°	-	-	265

Materials

Sectional view



Swivel module	
1	Shaft High-alloy stainless steel
2	Rotary vane Glass fibre reinforced plastic
3	Housing Anodised aluminium
-	Screws Galvanised steel
-	Seals Polyurethane
-	Note on materials Free of copper and PTFE

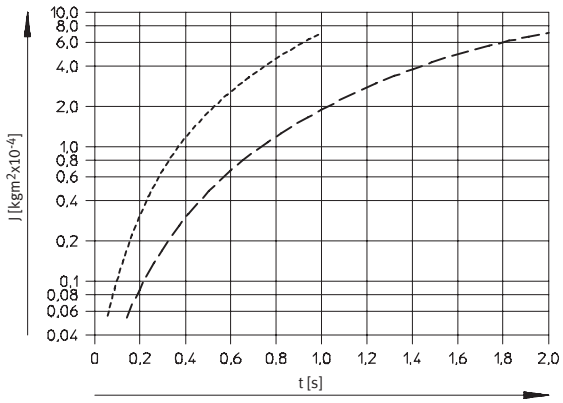
Swivel modules DSM

Technical data DSM-6 ... 10

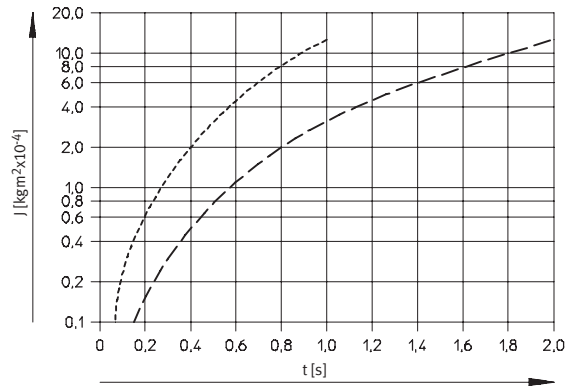


Mass moment of inertia J as a function of swivel time t

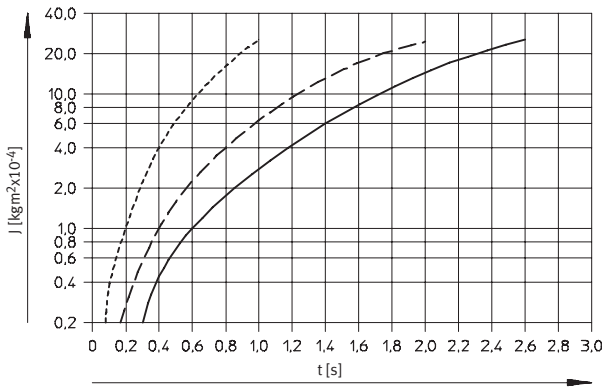
DSM-6



DSM-8



DSM-10



- - - 90°
- · - 180°
- 240°

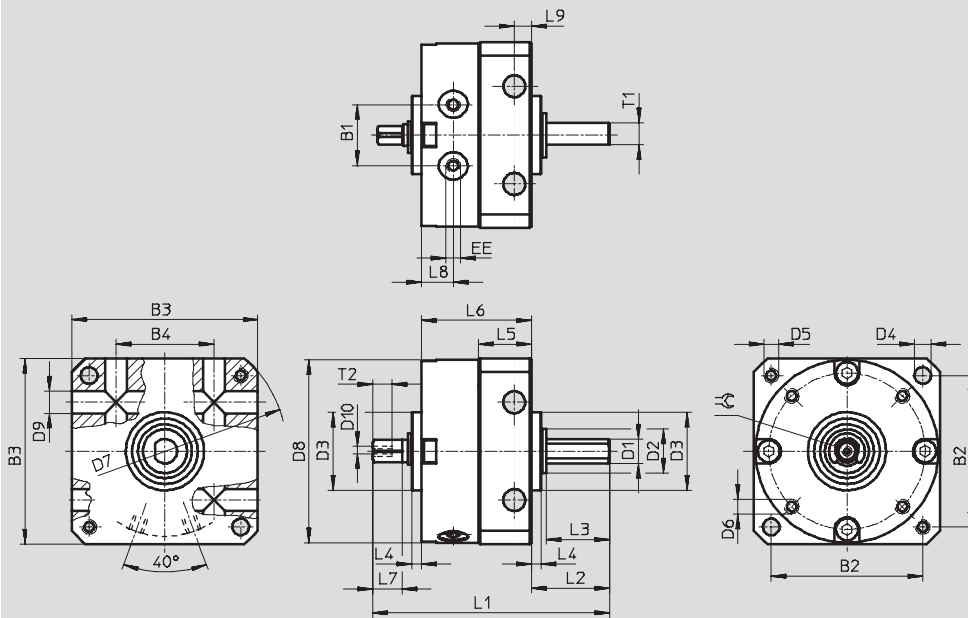
Swivel modules DSM

Technical data DSM-6 ... 10

Dimensions

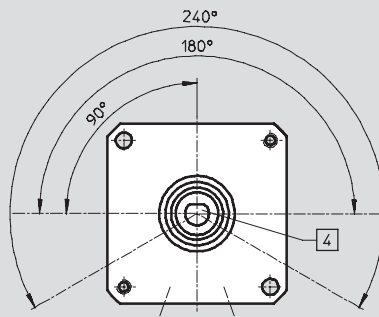
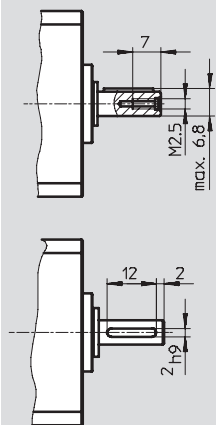
Download CAD data → www.festo.com

With spigot shaft and fixed stop



Spigot design for swivel module DSM-10

Shaft position



- Note

For swivel angle tolerance → table below. The supply ports are shown at the bottom in this drawing.

Size	B1	B2	B3	B4	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	EE
[mm]					∅ g7	∅	∅	∅ H12			∅ H12	∅	∅ H12		
6	10	25	30	17	4	8	14	3.2	M3	M2	40	29.4	3.5	M2	M3
8	12.8	31	38	20	5	9	16	3.2	M3	M2.5	50	37.4	3.5	M2	M3
10	15.9	38	47	26	6	12	19	4.3	M4	M3	62	46.4	4.5	M2.5	M3

Size	L1	L2	L3	L4	L5	L6	L7	L8	L9	T1	T2	≈	Swivel angle tolerance
[mm]											h12		
6	43	13	10	2	9.8	21	5	6	3	3.5	4	3	0/+5°
8	50	16	13	2	11.3	23	6	6.5	3	4.5	4.3	3.5	0/+5°
10	61	19.6	16	2	14.3	28.4	8	7.5	4	-	5	4.5	0/+5°

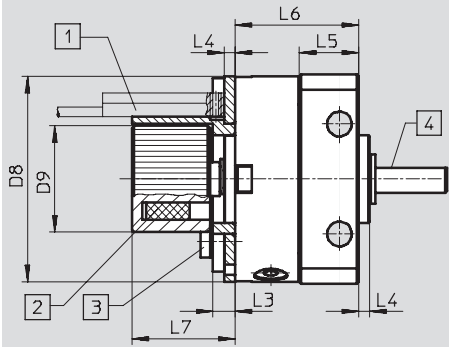
Swivel modules DSM

Technical data DSM-6 ... 10

Dimensions

Download CAD data → www.festo.com

With spigot shaft, fixed stop and position sensing



- 1 Proximity sensor not included in the scope of delivery. Observe fitting space for proximity sensor and cable
- 2 Magnet position

- 3 Max. tightening torque for sensor bracket screws → table below

- 4 The flat or the woodruff key on the shaft indicates the position of the rotary vane

Size	D8 Ø	D9 Ø	L3	L4	L5	L6	L7	Tightening torque
[mm]								[Nm]
6	29.4	17.3	4	2	9.8	21	19.5	0.19
8	37.4	19.3	4	2	11.3	23	19.5	0.32
10	46.4	22.3	4	2	14.3	28	19.5	0.44

Swivel modules DSM

Technical data DSM-6 ... 10

Dimensions Download CAD data → www.festo.com

With spigot shaft, fixed stop and adjustable swivel angle

- - Note

The swivel angle is infinitely adjustable over the entire swivel range. Size 6 can only be adjusted symmetrically to the centre.

without orifice and cover

- 1 Supply ports
- 2 Locking screw for clamping the stop
- 3 End position adjustment
- 4 Lock nut for end position adjustment
- 5 Infinitely adjustable stops

Size	B1	B2	B3	B4	D1	D2	D3	D4	D5	D6	D7	D8	D9	D18	EE
[mm]					∅ g7	∅	∅	∅ H12			∅ H12	∅	∅ H12	∅	
6	10	25	30	17	4	8	14	3.2	M3	M2	40	29.4	3.5	22	M3
8	12.8	31	38	20	5	9	16	3.2	M3	M2.5	50	37.4	3.5	26	M3
10	15.9	38	47	26	6	12	19	4.3	M4	M3	62	46.4	4.5	35.8	M3

Size	L1	L2	L3	L4	L5	L6	L7	L8	L9	T1	≈	Max. swivel angle	Precision adjustment per end
[mm]													
6	52	13	10	2	9.8	21	17.8	6	3	3.5	4	180°+5°	+1°/-5°
8	64	16	13	2	11.3	23	24.9	6.5	3	4.5	5	180°+5°	+1°/-5°
10	76	19.6	16	2	14.3	28.4	28.2	7.5	4	-	5.5	200°+5°	+1°/-5°

With spigot shaft, fixed stop, adjustable swivel angle and position sensing

- 1 Sensor not included in the scope of delivery. Observe fitting space for proximity sensor and cable
- 2 Magnet position
- 3 See table below for maximum tightening torque for sensor bracket screw
- 4 The flat or the woodruff key on the shaft indicates the position of the rotary vane

Size	D8	D9	L1	L3	L4	L5	L6	L7	Tightening torque
[mm]	∅								[Nm]
6	29.4	17.3	68.5	4	2	9.8	21	19.5	0.19
8	37.4	19.3	80	4	2	11.3	23	19.5	0.32
10	46.4	22.3	91.5	4	2	14.3	28.4	19.5	0.44

Swivel modules DSM

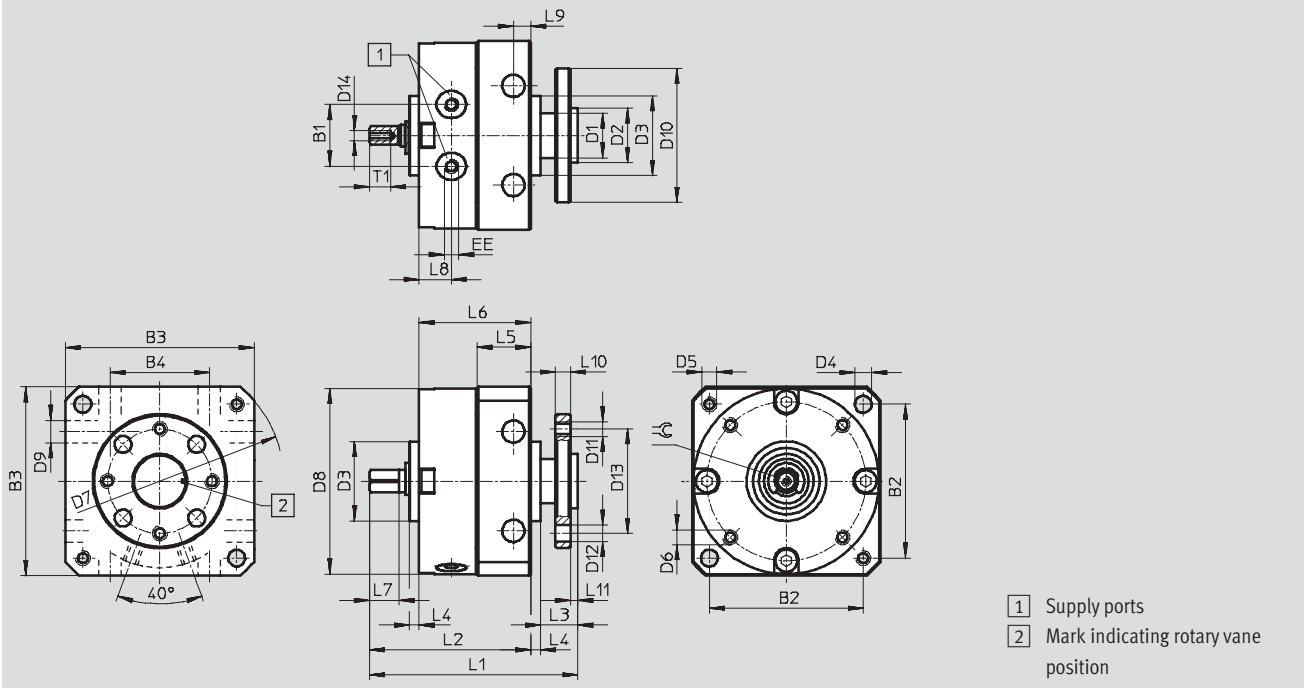
Technical data DSM-6 ... 10



Dimensions

Download CAD data → www.festo.com

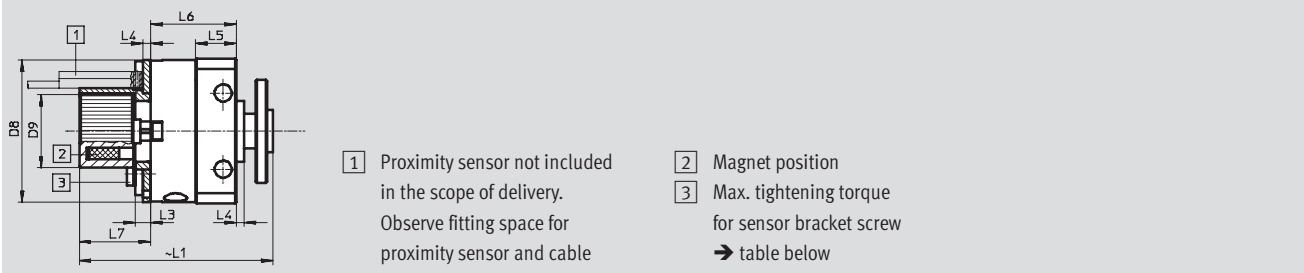
With flanged shaft and fixed stop



Size	B1	B2	B3	B4	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13
[mm]					∅	∅ g7	∅ f8	∅			∅ H12	∅	∅ H12	∅		∅ H13	∅
6	10	25	30	17	8	8	14	3.2	M3	M2	40	29.4	3.5	23	M3	3.4	16
8	12.8	31	38	20	9	11	16	3.2	M3	M2.5	50	37.4	3.5	27	M3	3.4	21
10	15.9	38	47	26	10	11	19	4.3	M4	M3	62	46.4	4.5	30	M3	3.4	21

Size	D14	EE	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	T1	⊖	Swivel angle tolerance
[mm]																
6	M2	M3	39.5	30	7.5	2	9.8	21	5	6	3	3	1.5	4	3	0/+5°
8	M2	M3	43.5	34	7.5	2	11.3	23	6	6.5	3	3	1.5	4.3	3.5	0/+5°
10	M2.5	M3	53	41.4	9.6	2	14.3	28.4	8	7.5	4	3	1.6	5	4.5	0/+5°

With flanged shaft, fixed stop and position sensing



Size	D8	D9	L1	L3	L4	L5	L6	L7	Tightening torque
[mm]	∅	∅							[Nm]
6	29.4	17.3	50	4	2	9.8	21	19.5	0.19
8	37.4	19.3	52	4	2	11.3	23	19.5	0.32
10	46.4	22.3	59.5	4	2	14.3	28.4	19.5	0.44

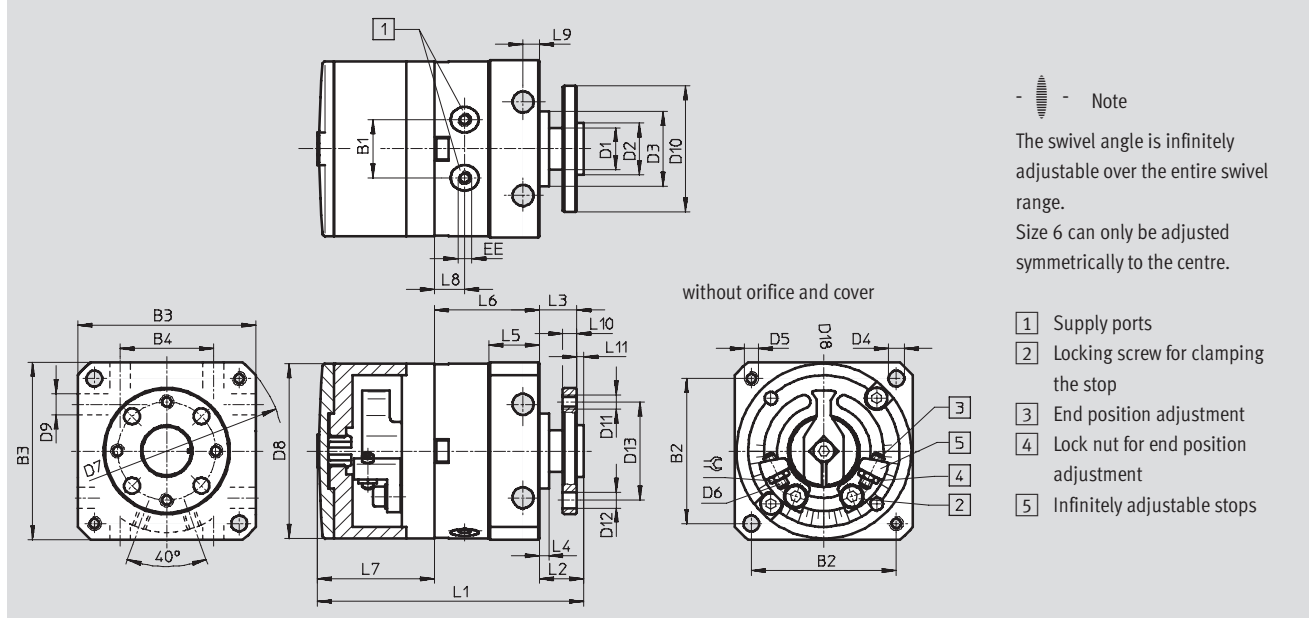
Swivel modules DSM

Technical data DSM-6 ... 10



Dimensions Download CAD data → www.festo.com

With flanged shaft, fixed stop and adjustable swivel angle



Size	B1	B2	B3	B4	D1	D2	D3	D4	D5	D6	D7	D8
[mm]					∅	g7	f8	H12			H12	∅
6	10	25	30	17	8	8	14	3.2	M3	M2	40	29.4
8	12.8	31	38	20	9	11	16	3.2	M3	M2.5	50	37.4
10	15.9	38	47	26	10	11	19	4.3	M4	M3	62	46.4

Size	D9	D10	D11	D12	D13	D18	EE	L1	L2	L3	L4
[mm]	∅ H12	∅		∅ H13	∅	∅					
6	3.5	23	M3	3.4	16	22	M3	48	9.5	8	2
8	3.5	27	M3	3.4	21	26	M3	58	9.5	8	2
10	4.5	30	M3	3.4	21	35.8	M3	68	11.6	10	2

Size	L5	L6	L7	L8	L9	L10	L11	⊖	Max. swivel angle	Precision adjustment per end
[mm]										
6	9.8	21	17.8	6	3	3	1.5	4	180° +5°	+1°/-5°
8	11.3	23	24.9	6.5	3	3	1.5	5	180° +5°	+1°/-5°
10	14.3	28.4	28.2	7.5	4	3	1.6	5.5	200° +5°	+1°/-5°

Swivel modules DSM

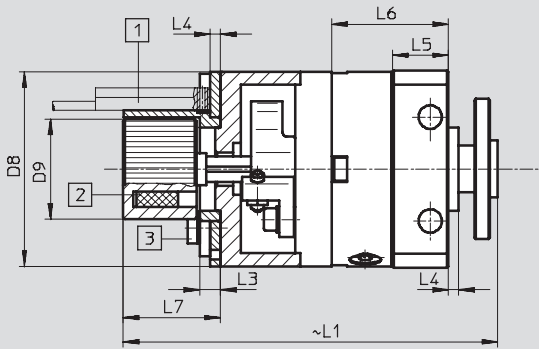
Technical data DSM-6 ... 10



Dimensions

Download CAD data → www.festo.com

With flanged shaft, fixed stop, adjustable swivel angle and position sensing



- 1 Proximity sensor not included in the scope of delivery. Observe fitting space for proximity sensor and cable
- 2 Magnet position

- 3 Max. tightening torque for sensor bracket screws → table below

- - Note

The swivel angle is infinitely adjustable over the entire swivel range.
Size 6 can only be adjusted symmetrically to the centre.

Size [mm]	D8 Ø	D9 Ø	L1	L3	L4	L5	L6	L7	Tightening torque [Nm]
6	29.4	17.3	65	4	2	9.8	21	19.5	0.19
8	37.4	19.3	73.5	4	2	11.3	23	19.5	0.32
10	46.4	22.3	83	4	2	14.3	28.4	19.5	0.44

Swivel modules DSM

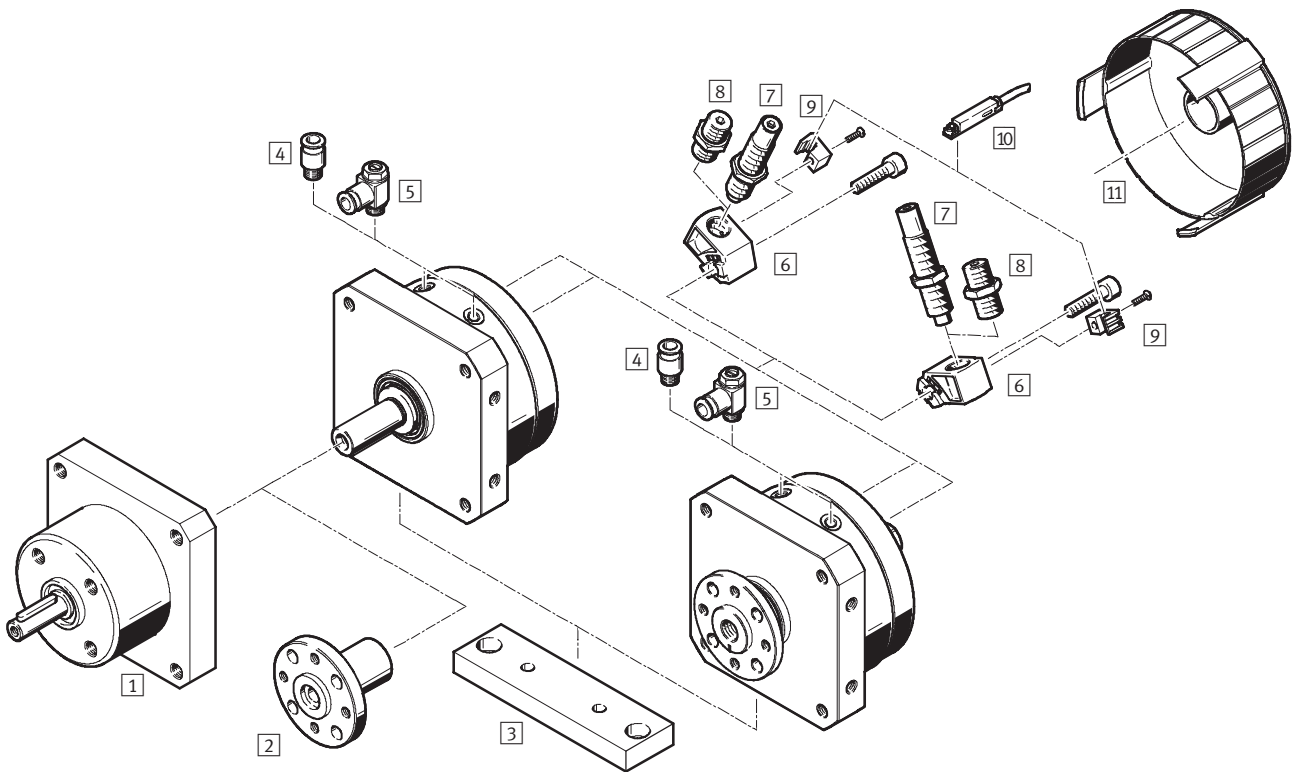
Technical data DSM-6 ... 10



Ordering data							
Swivel module	Key features	Swivel angle	Size [mm]	Part No.	Type		
Spigot shaft							
	<ul style="list-style-type: none"> Flexible cushioning rings/pads at both ends 	90°	6	173188	DSM-6-90-P		
			8	173190	DSM-8-90-P		
			10	173192	DSM-10-90-P		
		180°		6	173189	DSM-6-180-P	
				8	173191	DSM-8-180-P	
				10	173193	DSM-10-180-P	
		240°		10	173194	DSM-10-240-P	
			<ul style="list-style-type: none"> Flexible cushioning rings/pads at both ends Position sensing 	90°	6	173195	DSM-6-90-P-A
					8	173197	DSM-8-90-P-A
10	173199				DSM-10-90-P-A		
180°				6	173196	DSM-6-180-P-A	
				8	173198	DSM-8-180-P-A	
				10	173200	DSM-10-180-P-A	
240°				10	173201	DSM-10-240-P-A	
	<ul style="list-style-type: none"> Flexible cushioning rings/pads at both ends Adjustable swivel angle 			180°	6	175827	DSM-6-180-P-FF
					8	175828	DSM-8-180-P-FF
		200°		10	175829	DSM-10-240-P-FF	
	<ul style="list-style-type: none"> Flexible cushioning rings/pads at both ends Position sensing Adjustable swivel angle 	180°	6	175830	DSM-6-180-P-A-FF		
			8	175831	DSM-8-180-P-A-FF		
		200°		10	175832	DSM-10-240-P-A-FF	
Flanged shaft							
	<ul style="list-style-type: none"> Flexible cushioning rings/pads at both ends 	90°	6	185928	DSM-6-90-P-FW		
			8	185934	DSM-8-90-P-FW		
			10	185940	DSM-10-90-P-FW		
		180°		6	185929	DSM-6-180-P-FW	
				8	185935	DSM-8-180-P-FW	
				10	185941	DSM-10-180-P-FW	
		240°		10	185942	DSM-10-240-P-FW	
			<ul style="list-style-type: none"> Flexible cushioning rings/pads at both ends Position sensing 	90°	6	185930	DSM-6-90-P-A-FW
					8	185936	DSM-8-90-P-A-FW
10	185943				DSM-10-90-P-A-FW		
180°				6	185931	DSM-6-180-P-A-FW	
				8	185937	DSM-8-180-P-A-FW	
				10	185944	DSM-10-180-P-A-FW	
240°				10	185945	DSM-10-240-P-A-FW	
	<ul style="list-style-type: none"> Flexible cushioning rings/pads at both ends Adjustable swivel angle 			180°	6	185932	DSM-6-180-P-FF-FW
					8	185938	DSM-8-180-P-FF-FW
		200°		10	185946	DSM-10-240-P-FF-FW	
	<ul style="list-style-type: none"> Flexible cushioning rings/pads at both ends Position sensing Adjustable swivel angle 	180°	6	185933	DSM-6-180-P-A-FF-FW		
			8	185939	DSM-8-180-P-A-FF-FW		
		200°		10	185947	DSM-10-240-P-A-FF-FW	

Swivel modules DSM-B

Peripherals overview DSM-12 ... 63



Accessories			
	For size	Brief description	→ Page/Internet
1	12 ... 40	<ul style="list-style-type: none"> For synchronous rotation in one direction Only in combination with swivel module DSM with spigot shaft 	28
2	12 ... 40	Accessory for retrofitting on swivel module DSM with spigot shaft	29
3	12 ... 40	For foot or flange mounting	30
4	12 ... 63	For connecting compressed air tubing with standard outside diameter	quick star
5	12 ... 63	For regulating speed	33
6	12 ... 63	<ul style="list-style-type: none"> For flexible cushioning components For shock absorbers 	30
7	12 ... 63	Self-adjusting shock absorbers with fixed stop	31
8	12 ... 63	Flexible cushioning components with fixed stop	31
9	12 ... 40	For mounting the proximity sensors SME/SMT-10	31
10	12 ... 40	For sensing the end positions	32
11	63	For mounting the proximity sensors SME/SMT-8	31
12	63	For sensing the end positions	32
13	12 ... 40	For mounting the round inductive proximity sensors SIEN	31
14	12 ... 40	For sensing the end positions	32
15	12 ... 40	Reduces the risk of injury in the swivel range of the stop lever	30

Swivel modules DSM-B

Type codes DSM-12 ... 63

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	DSM	16	270	P	FW	A	B
Type							
Double-acting							
DSM	Swivel module						
Size [mm]							
Max. swivel angle [°], adjustable							
Cushioning							
P	Flexible cushioning components at both ends						
CC	Shock absorbers at both ends						
Shaft							
	Spigot shaft						
FW	Flanged shaft						
Position sensing							
A	Via proximity sensor						
Variant							
B	B series						

Swivel modules DSM-B

Technical data DSM-12 ... 63

FESTO

Function



 Size
12 ... 63 mm



General technical data						
Size	12	16	25	32	40	63
Pneumatic connection	M5			G $\frac{1}{8}$		G $\frac{1}{4}$
Constructional design	Semi-rotary actuator with rotary vane					
Cushioning	P – flexible cushioning components at both ends CC – shock absorbers at both ends, self-adjusting					
Type of mounting	Via female thread					
Mounting position	Any					
Swivel angle	with cushioning P	[°]	262	270		
Swivel angle adjustment		[°]	-6			
Swivel angle	with cushioning CC	[°]	246			240
Swivel angle adjustment		[°]	-3			
Swivel frequency	with cushioning P	[Hz]	2			1.6
(at max. swivel angle)	with cushioning CC	[Hz]	1.5	1	0.7	0.6
Swivel frequency	with cushioning CC	[Hz]	2	1.5		
(at smaller swivel angle)						
Cushioning angle	with cushioning CC	[°]	15	12	10	12
					16	17.5
Repetition accuracy	with cushioning P	[°]	1			
	with cushioning CC	[°]	0.1			

– † – Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Operating and environmental conditions						
Size	12	16	25	32	40	63
Operating medium	Filtered compressed air, lubricated or unlubricated					
Operating pressure	[bar]	2 ... 10		1.5 ... 10		
Ambient temperature	[°C]	- 10 ... +60				
Storage temperature	[°C]	20				
ATEX	Specified types → www.festo.com					

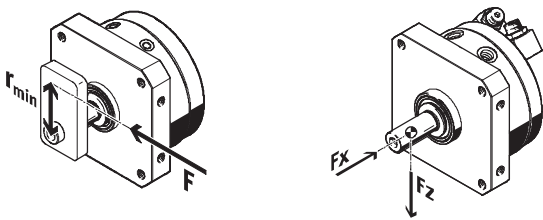
Weight [g]						
Size	12	16	25	32	40	63
Swivel module without cushioning						
DSM-...-B	240	410	620	1,250	2,400	4,220
DSM-...-FW-B	260	450	645	1,325	2,535	4,475
Swivel module with flexible cushioning elements						
DSM-...-P-A-B	275	470	700	1,425	2,700	4,900
DSM-...-P-FW-A-B	293	510	725	1,500	2,835	5,150
Swivel module with shock absorbers						
DSM-...-CC-A-B	285	480	710	1,460	2,800	5,150
DSM-...-CC-FW-A-B	300	520	735	1,550	2,935	5,400

Swivel modules DSM-B

Technical data DSM-12 ... 63

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Forces and torques		12	16	25	32	40	63
Size							
Torque at 6 bar	[Nm]	1.25	2.5	5	10	20	40
Torque per bar	[Nm]	0.2	0.41	0.83	1.66	3.33	6.66
Min. perm. stop radius r	[mm]	15	17	21	28	40	50
Max. perm. stop force F	[N]	90	160	320	480	650	1,050
Max. perm. radial load F_z on drive shaft	[N]	45	75	120	200	350	500
Max. perm. axial load F_x on drive shaft	[N]	18	30	50	75	120	500
Max. perm. mass moment of inertia		→20					



 Note

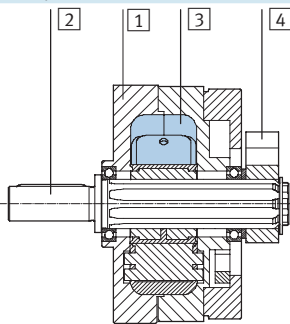
If the semi-rotary drives DSM-...-A-B are used without a stop system or the maximum mass moment of inertia is exceeded, external stops must be

attached. A minimum radius to the drive shaft (r_{min}) must be observed. The stop force must not exceed the maximum force.

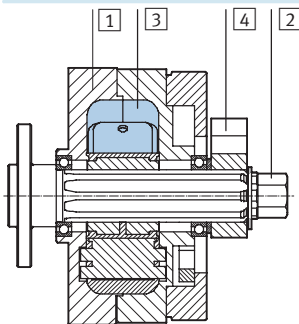
Materials

Sectional view

with spigot shaft



with flanged shaft



Swivel module

1	Housing, flange	Anodised aluminium
2	Shaft	Nickel plated steel
3	Rotary vane	Glass fibre reinforced plastic
4	Stop lever	Anodised aluminium
-	Fixed stops	Stainless steel
	Screws	Galvanised steel
	Stop screws	Stainless steel
	Cap	Glass fibre reinforced plastic
	Seals	Polyurethane
	Note on materials	Free of copper and PTFE

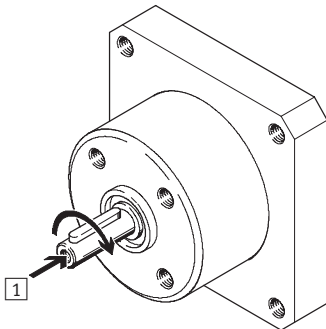
Direction of rotation in combination with freewheel unit FLSM

The freewheel unit blocks one of the two possible swivel directions

of the DSM swivel module. The counterdirection is blocked.

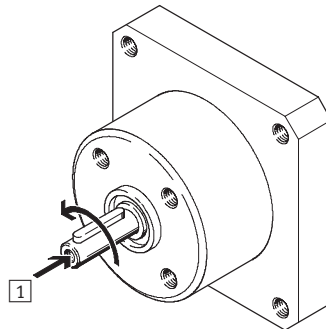
Dimensions and ordering data → 27

FLSM-...-R, right-hand (clockwise) rotation



1 View towards drive shaft

FLSM-...-L, left-hand (anti-clockwise) rotation

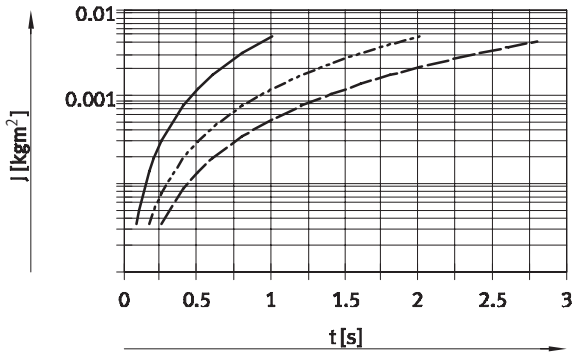


Swivel modules DSM-B

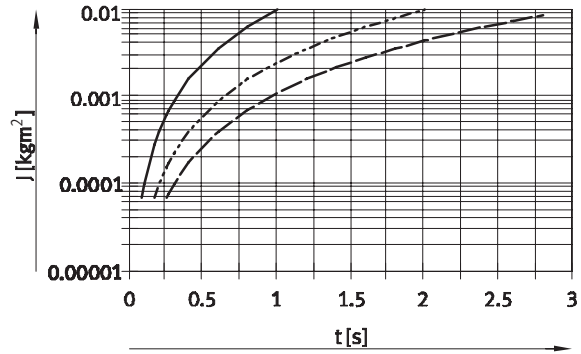
Technical data DSM-12 ... 63

Mass moment of inertia J as a function of swivel time t with flexible cushioning components

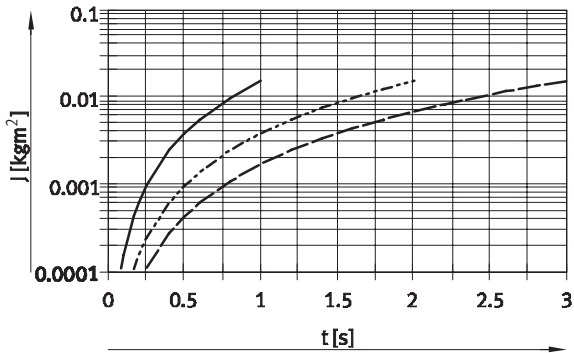
DSM-12-270-P-A-B



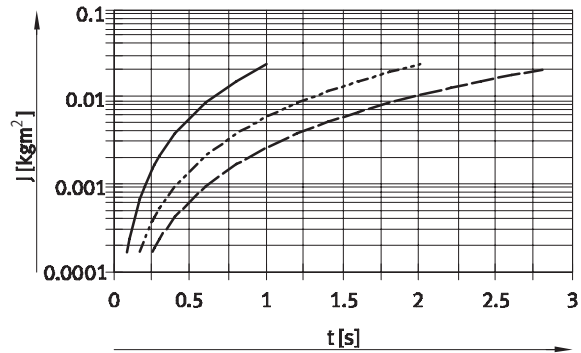
DSM-16-270-P-A-B



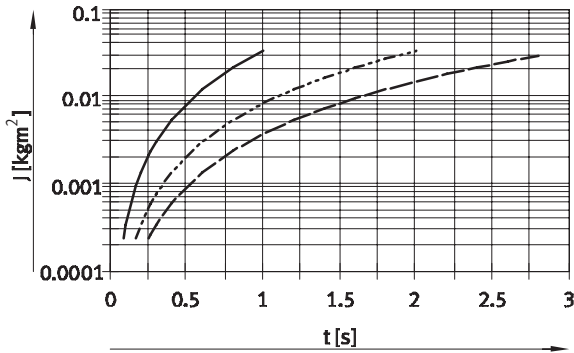
DSM-25-270-P-A-B



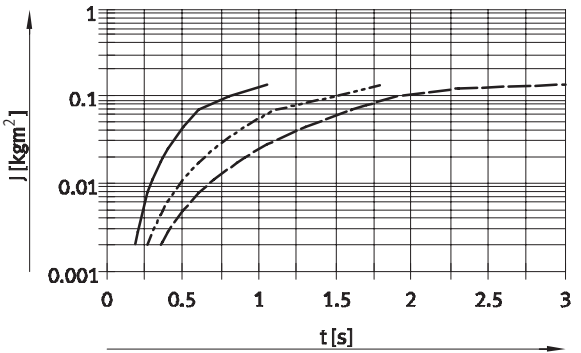
DSM-32-270-P-A-B



DSM-40-270-P-A-B



DSM-63-270-P-A-B



— 90°
- - - 180°
- · - 270°

- Note

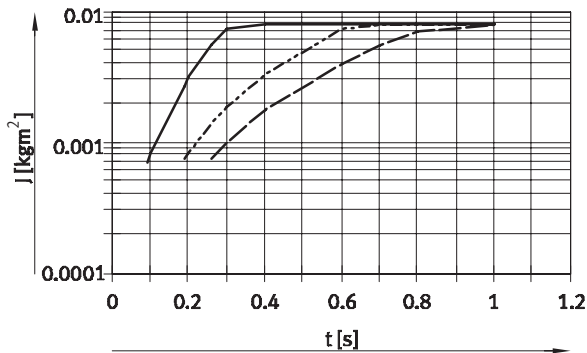
Design software for
calculating mass moment of inertia
→ www.festo.com

Swivel modules DSM-B

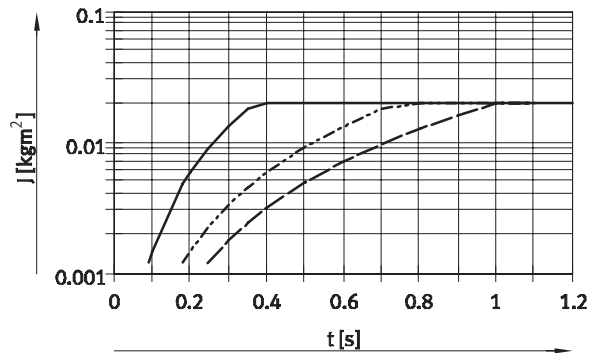
Technical data DSM-12 ... 63

Mass moment of inertia J as a function of swivel time t with shock absorber

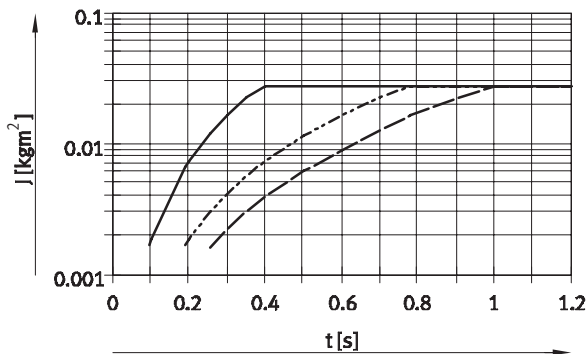
DSM-12-270-CC-A-B



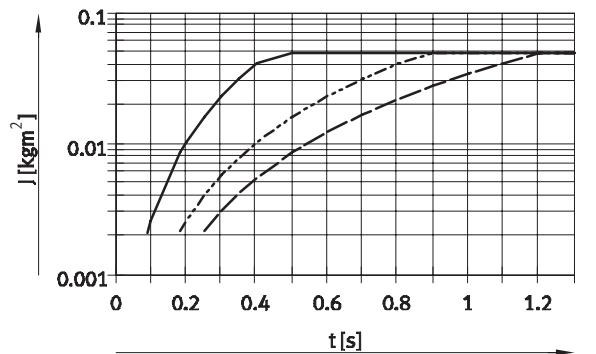
DSM-16-270-CC-A-B



DSM-25-270-CC-A-B

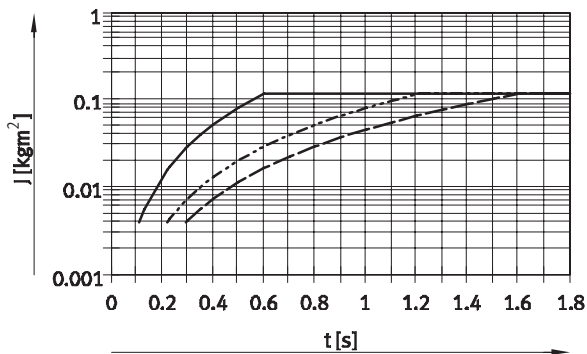


DSM-32-270-CC-A-B

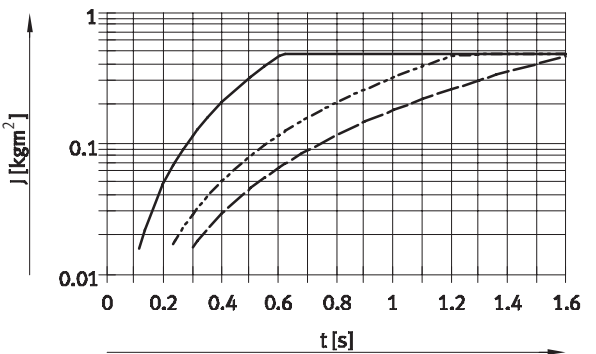


- 90°
- - - 180°
- · - 246°

DSM-40-270-CC-A-B



DSM-63-270-CC-A-B



- 90°
- - - 180°
- · - 240°

In the graphs for the DSM-...-CC, the swivel time is shown up to the point where the stop lever meets the shock absorber. The cushioning time of the shock absorber must be added in order to obtain the total swivel time.

Cushioning time of the shock absorber				
Size	12/16/25	32	40	63
Cushioning time [s]	0.1	0.25	0.3	0.4

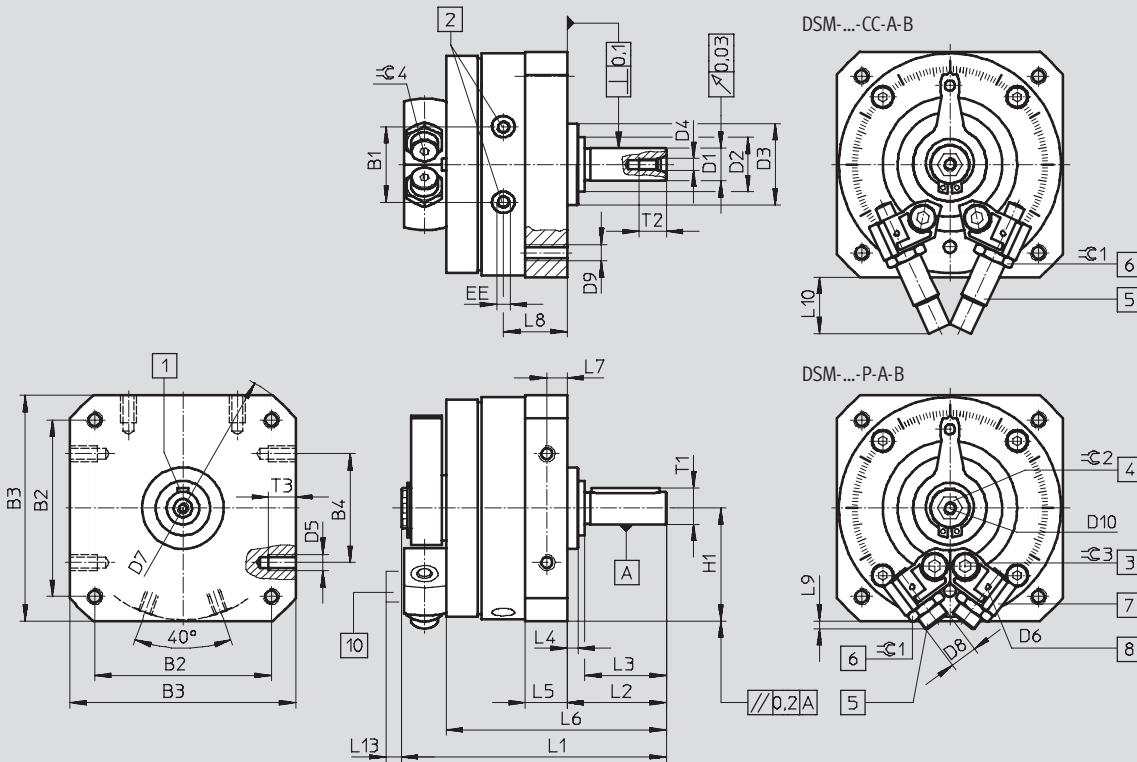
Swivel modules DSM-B

Technical data DSM-12 ... 63

Dimensions

Download CAD data → www.festo.com

With spigot shaft



- 1 Woodruff key position at 0°
- 2 Supply ports

- 3 Locking screw for clamping the stop
- 4 Manual override (internal hex)

- 5 End position adjustment
- 6 Lock nut for end position adjustment

- 7 Infinitely adjustable stops
- 8 Mounting thread for sensor bracket
- 10 Sensor bracket

Swivel modules DSM-B

Technical data DSM-12 ... 63

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Size [mm]	B1 ±0.5	B2	B3	B4	D1 ∅ g7	D2 ∅	D3 ∅ f8	D4	D5
12	19.8	48±0.3	59±0.3	30±0.2	8	15±0.2	24	M3	M4
16	23.5	57±0.3	70±0.3	40±0.2	10	18 _{-0.3}	28	M3	M5
25	28	65±0.3	83±0.3	40±0.2	12	20 _{-0.3}	30	M4	M6
32	35.5	85±0.3	105±0.3	60±0.3	16	27 _{-0.4}	42	M5	M8
40	43.8	105±0.3	130±0.5	80±0.3	20	36 _{-0.4}	52	M6	M10
63	50.3	125±0.5	152 ^{+0.2}	80±0.3	25	40±0.3	70	M10	M10

Size [mm]	D6	D7 ∅	D8	D9	D10	EE	H1 ±0.2	L1	L2 +0.6 -0.7
12	M2	78±0.3	M8x1	M4	M4	M5	29.5	68.3±0.3	24.5
16	M2	91±0.3	M10x1	M5	M5	M5	35	82.7±1	28
25	M2	106±0.3	M10x1	M6	M5	M5	41.5	97.5±0.5	36.5
32	M2	135±0.3	M12x1	M8	M5	G ¹ / ₈	52.5	127.1±0.5	51
40	M2	168±0.5	M16x1	M10	M6	G ¹ / ₈	65	155.5±0.6	62
63	M3	200±0.5	M22x1.5	M12	M6	G ¹ / ₄	76	197 ^{+0.4/-0.55}	75.5

Size [mm]	L3	L4 ±0.4	L5	L6	L7	L8	L9	L10	L13
12	20±0.2	3	10.3 ^{+0.2/-0.3}	55.5±0.8	5±0.1	16.5	3	22.7	6.5
16	23±0.2	2.6	13 ^{+0.2/-0.4}	67.1±0.9	6.5±0.2	20.2	7.2	26.1	6.5
25	30±0.2	4	15.2 ^{+0.2/-0.4}	81±1	7.5±0.2	23.5	2.9	20.7	6.5
32	40±0.2	8	19.2 ^{+0.2/-0.4}	107±1.1	9.5±0.2	30.5	3.8	29.1	6.5
40	50±0.3	8	23.7 ^{+0.2/-0.4}	131±1.2	12±0.2	36	3.4	43.5	6.5
63	60±0.3	10.5	28.5 ^{+0.3/-0.5}	159.5±1.2	14±0.2	45	10	72.5	4.5

Size [mm]	T1 max.	T2 +2	T3 +0.2	≈C 1	≈C 2	≈C 3	≈C 4	Woodruff key to DIN 6885 ¹⁾
12	8.8	9	8	10	6	2.5	2.5	A2x2x16
16	11.2	9	8	13	8	3	3	A3x3x18
25	13.5	10	10	13	8	4	3	A4x4x25
32	18	12.5	12	15	10	5	4	A5x5x36
40	22.5	16	15	19	10	6	5	A6x6x45
63	28	22	16	27	10	8	5	A8x7x50

1) Included in the scope of delivery

· ¶ - Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

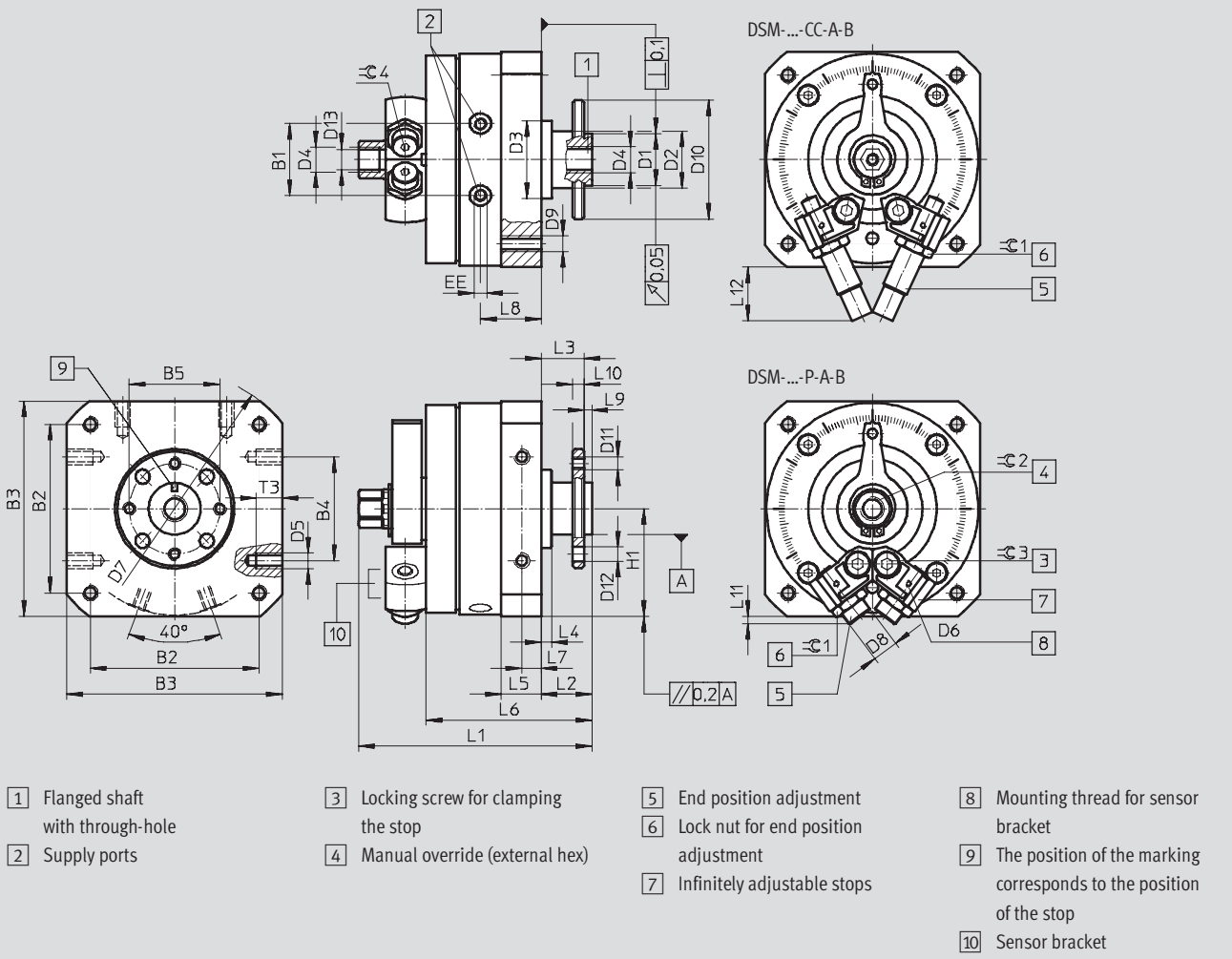
Swivel modules DSM-B

Technical data DSM-12 ... 63

Dimensions

Download CAD data → www.festo.com

With flanged shaft



Swivel modules DSM-B

Technical data DSM-12 ... 63

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Size [mm]	B1 ±0.5	B2	B3	B4	B5	D1 ∅ f8	D2 ∅	D3 ∅ f8	D4
12	19.8	48±0.3	59±0.3	30±0.2	25	14	15±0.2	24	M5
16	23.5	57±0.3	70±0.3	40±0.2	28	16	18 _{-0.3}	28	M5
25	28	65±0.3	83±0.3	40±0.2	35	20	20 _{-0.3}	30	G $\frac{1}{8}$
32	35.5	85±0.3	105±0.3	60±0.3	45	28	27 _{-0.4}	42	G $\frac{1}{8}$
40	43.8	105±0.3	130±0.5	80±0.3	54	36	36 _{-0.4}	52	G $\frac{1}{4}$
63	50.3	125±0.5	152±0.2	80±0.3	64	38	40±0.3	70	G $\frac{1}{4}$

Size [mm]	D5	D6	D7 ∅	D8	D9	D10 ∅	D11	D12 H13	D13
12	M4	M2	78±0.3	M8x1	M4	33	M3	3.4	4.2
16	M5	M2	91±0.3	M10x1	M5	38	M4	4.5	4.2
25	M6	M2	106±0.3	M10x1	M6	46	M5	5.5	8.6
32	M8	M2	135±0.3	M12x1	M8	60	M6	6.5	8.6
40	M10	M2	168±0.5	M16x1	M10	70	M8	9	11.5
63	M10	M3	200±0.5	M22x1.5	M12	88	M8	12	11.5

Size [mm]	EE	H1 ±0.2	L1	L2 +0.5 -0.85	L3 +0.5 -0.62	L4 ±0.4	L5	L6 ±1	L7
12	M5	29.5	67.3+0.4/-0.65	13	11	3	10.3+0.2/-0.3	44	5±0.1
16	M5	35	79+0.4/-0.65	15	13	2.6	13+0.2/-0.4	54.1	6.5±0.2
25	M5	41.5	90+0.4/-0.65	19.5	16.5	4	15.2+0.2/-0.4	64	7.5±0.2
32	G $\frac{1}{8}$	52.5	115.8+0.4/-0.65	27	23	8	19.2+0.2/-0.4	83	9.5±0.2
40	G $\frac{1}{8}$	65	143.8+0.4/-0.7	33	28	8	23.7+0.2/-0.4	102	12±0.2
63	G $\frac{1}{4}$	76	177.4+0.2/-0.55	37.5	31.5	10.5	28.5+0.3/-0.5	121.5	14±0.2

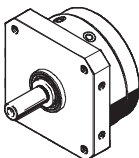
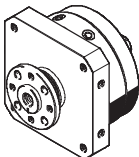
Size [mm]	L8	L9 -0.2	L10	L11	L12	T3 +0.2	≈C 1	≈C 2	≈C 3	≈C 4
12	16.5	2	3±0.1	3	22.7	8	10	8	2.5	2.5
16	20.2	2	4±0.1	7.2	26.1	8	13	11	3	3
25	23.5	3	4.5±0.1	2.9	20.7	10	13	13	4	3
32	30.5	4	6±0.1	3.8	29.1	12	15	13	5	4
40	36	5	7.5±0.1	3.4	43.5	15	19	19	6	5
63	45	6	9±0.2	10	72.5	16	27	22	8	5

· | - Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Swivel modules DSM-B

Technical data DSM-12 ... 63

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Ordering data					
Swivel module	Key features	Swivel angle	Size [mm]	Part No.	Type
With spigot shaft					
	<ul style="list-style-type: none"> Without stop system 	270°	12	547591	DSM-12-270-A-B
			16	547592	DSM-16-270-A-B
			25	547593	DSM-25-270-A-B
			32	547594	DSM-32-270-A-B
			40	547595	DSM-40-270-A-B
			63	552083	DSM-63-270-A-B
	<ul style="list-style-type: none"> With flexible cushioning components Adjustable swivel angle 	270°	12	547570	DSM-12-270-P-A-B
			16	547574	DSM-16-270-P-A-B
			25	547578	DSM-25-270-P-A-B
			32	547582	DSM-32-270-P-A-B
			40	547586	DSM-40-270-P-A-B
			63	552079	DSM-63-270-P-A-B
	<ul style="list-style-type: none"> Shock absorbers at both ends Adjustable swivel angle 	246°	12	547572	DSM-12-270-CC-A-B
			16	547576	DSM-16-270-CC-A-B
			25	547580	DSM-25-270-CC-A-B
240°		32	547584	DSM-32-270-CC-A-B	
		40	547588	DSM-40-270-CC-A-B	
		63	552081	DSM-63-270-CC-A-B	
With flanged shaft					
	<ul style="list-style-type: none"> Without stop system 	270°	12	547596	DSM-12-270-FW-A-B
			16	547597	DSM-16-270-FW-A-B
			25	547598	DSM-25-270-FW-A-B
			32	547599	DSM-32-270-FW-A-B
			40	547560	DSM-40-270-FW-A-B
			63	552084	DSM-63-270-FW-A-B
	<ul style="list-style-type: none"> With flexible cushioning components Adjustable swivel angle 	270°	12	547571	DSM-12-270-P-FW-A-B
			16	547575	DSM-16-270-P-FW-A-B
			25	547579	DSM-25-270-P-FW-A-B
			32	547583	DSM-32-270-P-FW-A-B
			40	547587	DSM-40-270-P-FW-A-B
			63	552080	DSM-63-270-P-FW-A-B
	<ul style="list-style-type: none"> Shock absorbers at both ends Adjustable swivel angle 	246°	12	547573	DSM-12-270-CC-FW-A-B
			16	547577	DSM-16-270-CC-FW-A-B
			25	547581	DSM-25-270-CC-FW-A-B
240°		32	547585	DSM-32-270-CC-FW-A-B	
		40	547589	DSM-40-270-CC-FW-A-B	
		63	552082	DSM-63-270-CC-FW-A-B	

Swivel modules DSM/DSM-B

Accessories

Freewheel unit FLSM

for size 6, 8

Material:

Housing: Anodised aluminium


Shaft, sleeve: Size 6, 8:

Steel

Size 10:

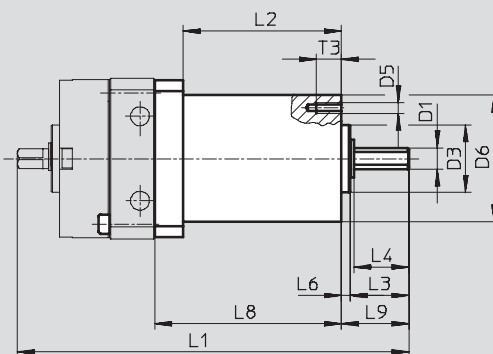
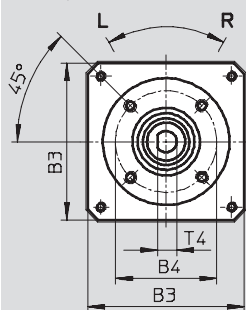
Hardened steel



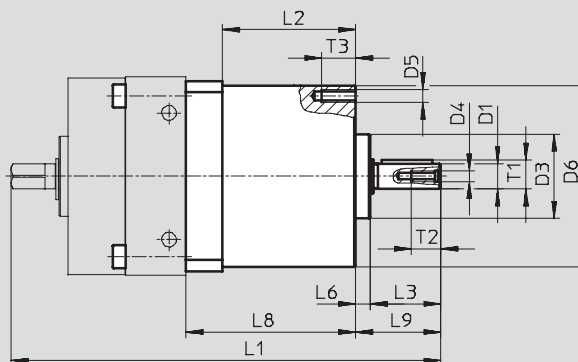
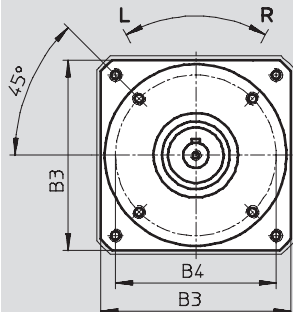
 Note
The minimum possible swivel angle is 3°. Switching accuracy is, however, dependent on speed and load.

Dimensions and ordering data

FLSM-6/8



FLSM-10



For size	B3	B4	D1	D3	D4	D5	D6	L1	L2	L3	L4	L6
		±0.15	∅ g7	∅ h8			∅ ±0.3					±0.2
6	29.5	23	4	14	–	M3	28	85.8	36 ±0.1	10.8	10	2
8	37	24	5	16	–	M3	30	94.5	37.5 ±0.1	14	13	2
10	45	38	6	20	M2.5	M3	43	101	30 ±0.1	16.7	–	3.5

For size	L8	L9	T1	T2	T3	T4	Woodruff key to DIN 6885	CRC ¹⁾	Weight [g]	Direction of rotation	Part No.	Type
	±0.1											
6	43	12.8	–	–	5	3.5	–	2	100	Anti-clockwise rotation	188523	FLSM-6-L
										Clockwise rotation	188522	FLSM-6-R
8	44.5	16	–	–	6	4.5	–	2	125	Anti-clockwise rotation	188525	FLSM-8-L
										Clockwise rotation	188524	FLSM-8-R
10	40	20.2	6.8	7	8	–	A2x2x12	2	160	Anti-clockwise rotation	188527	FLSM-10-L
										Clockwise rotation	188526	FLSM-10-R

1) Corrosion resistance class 2 as per Festo standard 940 070

Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Swivel modules DSM/DSM-B

Accessories

Freewheel unit FLSM


for size 12 ... 40

Material:

Housing: Anodised aluminium

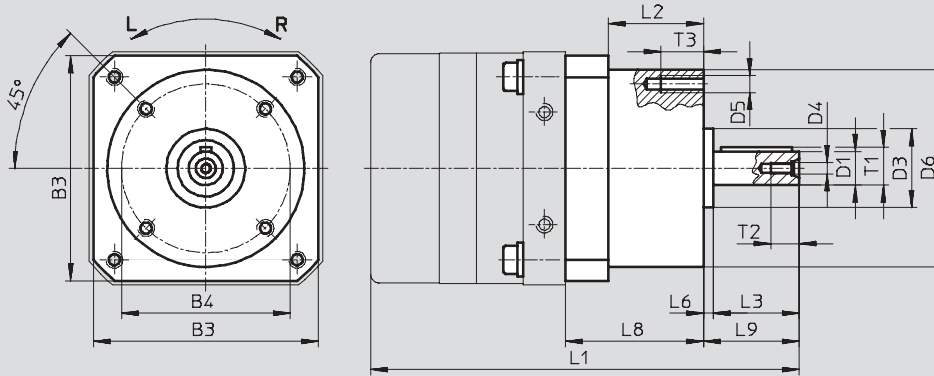
Shaft, sleeve: Hardened steel



 Note
The minimum possible swivel angle is 3°. Switching accuracy is, however, dependent on speed and load.

Dimensions and ordering data

FLSM-12 ... 40



For size	B3	B4	D1	D3	D4	D5	D6	L1	L2	L3	L6	L8
[mm]		±0.15	∅ g7	∅ h8			∅ ±0.3				+0.2	±0.1
12	55	42	8	25	M3	M3	48.5	125	37 ±0.4	20	3.5	47.3
16	65	50	10	24	M3	M4	60	137	34 ±0.4	23	3.5	47
25	80	60	12	28	M4	M6	70	152	34 ±0.4	30	3.5	49
32	100	83	16	42	M5	M6	95	197.8	42.8 ±0.4	40	7.2	60.8
40	120	96	20	52	M6	M8	110	244.5	54 ±0.4	50	6	77

For size	L9	T1	T2	T3	Woodruff key to DIN 6885	CRC ¹⁾	Weight	Direction of rotation	Part No.	Type
[mm]							[g]			
12	24.5	8.8	9	8	A2x2x16	2	300	Anti-clockwise rotation	164229	FLSM-12-L
								Clockwise rotation	164234	FLSM-12-R
16	27.4	11.2	9	10	A3x3x18	2	450	Anti-clockwise rotation	164230	FLSM-16-L
								Clockwise rotation	164235	FLSM-16-R
25	34	13.5	10	15	A4x4x25	2	650	Anti-clockwise rotation	164231	FLSM-25-L
								Clockwise rotation	164236	FLSM-25-R
32	48.5	18	12.5	15	A5x5x36	2	1,500	Anti-clockwise rotation	164232	FLSM-32-L
								Clockwise rotation	164237	FLSM-32-R
40	58	22.5	16	15	A6x6x45	2	2,350	Anti-clockwise rotation	164233	FLSM-40-L
								Clockwise rotation	164238	FLSM-40-R

1) Corrosion resistance class 2 as per Festo standard 940 070

Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

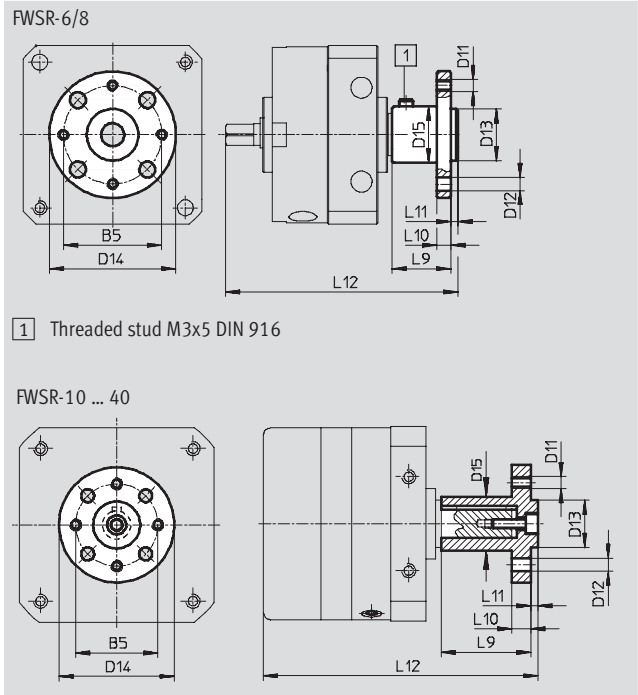
Swivel modules DSM/DSM-B

Accessories

FESTO

Push-on flange FWSR

Material:
Wrought aluminium alloy, anodised
Free of copper, PTFE and silicone



Dimensions and ordering data														
For size	B5	D11	D12	D13	D14	D15	L9	L10	L11	L12	CRC ¹⁾	Weight	Part No.	Type
[mm]			∅ H13	∅ g7	∅	∅						[g]		
6	16	M3	3.4	8	23	10	10.5	3	1.5	45	2	6	185948	FWSR-6
8	21	M3	3.4	11	27	12	12.5	3	1.5	51	2	8	185949	FWSR-8
10	21	M3	3.4	11	30	12	22	3	1.6	68.6	2	14	32798	FWSR-10
12	25	M3	3.4	14	35	15	25	3	3	85.5	2	32	14659	FWSR-12
16	28	M4	4.5	16	40	17	28	5	3	98.8	2	51	13239	FWSR-16
25	35	M5	5.5	20	50	23	38	8	3	116.5	2	68	13240	FWSR-25
32	45	M6	6.5	28	60	28	48	10	4	151.5	2	180	13241	FWSR-32
40	54	M8	9	36	70	38	60	11	5	186.5	2	300	14656	FWSR-40

1) Corrosion resistance class 2 as per Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

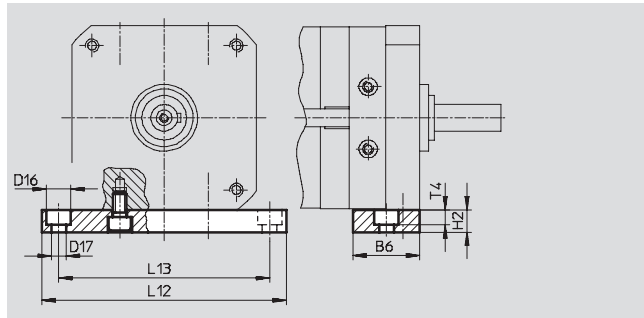
Swivel modules DSM/DSM-B

Accessories



Mounting plate HSM

Material:
Aluminium

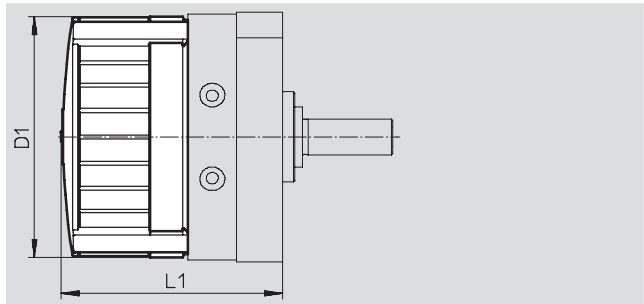
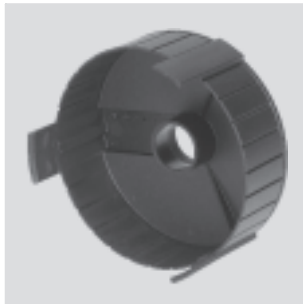


Dimensions and ordering data											
For size [mm]	B6	D16 Ø	D17 Ø	H2	L12	L13	T4	CRC ¹⁾	Weight [g]	Part No.	Type
12	20	8	4.5	10	84	72	4.6	2	48	165571	HSM-12
16	28	10	5.5	10	98	84	5.7	2	80	165572	HSM-16
25	30	11	6.6	10	110	95	6.8	2	94	165573	HSM-25
32	40	15	9	15	145	125	9	2	246	165574	HSM-32
40	45	18	11	20	180	155	11	2	459	165575	HSM-40

1) Corrosion resistance class 2 as per Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Cover cap AKM

Material:
Polyamide





Dimensions and ordering data				
For size [mm]	D1 Ø	L1	Part No.	Type
12	59	56.2±1.2	549194	AKM-12
16	70	68±1.2	549195	AKM-16
25	83	73.4±1.2	549196	AKM-25
32	105	89.7±1.5	549197	AKM-32
40	130	107.1±1.5	549198	AKM-40


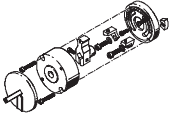
Ordering data – Cushioning mounts				
	For size	Remarks	Part No.	Type
	12	<ul style="list-style-type: none"> For flexible cushioning components For shock absorbers 	547900	DSM-12-B
	16		547901	DSM-16-B
	25		547902	DSM-25-B
	32		547903	DSM-32-B
	40		547904	DSM-40-B
	63		552085	DSM-63-B

Swivel modules DSM/DSM-B

Accessories



Ordering data – Cushioning kits				
	For size	Remarks	Part No.	Type
	12	For cushioning mount DSM-...-B	550657	DSM-12-P-B
	16, 25		550658	DSM-16/25-P-B
	32		550659	DSM-32-P-B
	40		550660	DSM-40-P-B
	63		552086	DSM-63-P-B

Ordering data – Shock absorbers				Technical data → Internet: dysc
	For size	Remarks	Part No.	Type
	12	For cushioning mount DSM-...-B	548011	DYSC-5-5-Y1F
	16, 25		548012	DYSC-7-5-Y1F
	32		548013	DYSC-8-8-Y1F
	40		548014	DYSC-12-12-Y1F
	63		553593	DYSC-16-18-Y1F

Ordering data – Kits				
	For size	Remarks	Part No.	Type
Mounting kit Technical data → Internet: wsm				
	6	For proximity sensor SME/SMT-10	173205	WSM-6-SME-10
	8		173206	WSM-8-SME-10
	10		173207	WSM-10-SME-10
Stop kit Technical data → Internet: ksm				
	6	For adjusting the swivel angle, max. 180°	175833	KSM-6
	8		175834	KSM-8
	10	For adjusting the swivel angle, max. 200°	175835	KSM-10

Ordering data – Kit accessories				
For size	Remarks	Part No.	Type	
6	Adapter for attaching the stop kit KSM or mounting kit WSM-...-SME-10	375098	DSM-6-180-P-A-FF	
8		375099	DSM-8-180-P-A-FF	
10		375100	DSM-10-240-P-A-FF	
6	Socket head screw for attaching the stop kit KSM or mounting kit WSM-...-SME-10	258568	DIN 84-M2x25-4.8	
8		385259	DIN 84-M2x30-4.8	
10		365902	M2.5x32 ¹⁾	

1) Screw similar to DIN 84

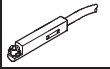
Ordering data – Sensor brackets				
	For size	Remarks	Part No.	Type
	12, 16, 25, 32, 40	For proximity sensor SME/SMT-10	550661	SL-DSM-B
	63	For proximity sensor SME/SMT-8	552088	SL-DSM-63-B
	12, 16, 25, 32, 40	For inductive proximity sensors SIEN-M5	1130882	SL-DSM-S-M5-B
		For inductive proximity sensors SIEN-M8	1132360	SL-DSM-S-M8-B

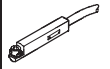
Swivel modules DSM/DSM-B

Accessories

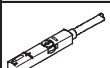

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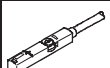

Proximity sensors for size 6 ... 40

Ordering data – Proximity sensors for C-slot, magneto-resistive						Technical data → Internet: smt	
	Type of mounting	Switching output	Electrical connection, connection direction	Cable length [m]	Part No.	Type	
N/O contact							
	Is clamped to the DSM using the sensor bracket	PNP	Cable, 3-wire, in-line	2.5	525915	SMT-10F-PS-24V-K2,5L-OE	
			Plug M8x1, 3-pin, in-line	0.3	525916	SMT-10F-PS-24V-K0,3L-M8D	

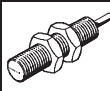
Ordering data – Proximity sensors for C-slot, magnetic reed						Technical data → Internet: sme	
	Type of mounting	Switching output	Electrical connection, connection direction	Cable length [m]	Part No.	Type	
N/O contact							
	Is clamped to the DSM using the sensor bracket	Contacting	Plug M8x1, 3-pin, in-line	0.3	525914	SME-10F-DS-24V-K0,3L-M8D	
			Cable, 3-wire, in-line	2.5	525913	SME-10F-DS-24V-K2,5L-OE	
			Cable, 2-wire, in-line	2.5	526672	SME-10F-ZS-24V-K2,5L-OE	

Proximity sensors for size 63

Ordering data – Proximity sensors for T-slot, magneto-resistive						Technical data → Internet: smt	
	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type	
N/O contact							
	Insertable in the slot from above, flush with the cylinder profile	PNP	Cable, 3-wire	2.5	543867	SMT-8M-PS-24V-K-2,5-OE	
			Plug M8x1, 3-pin	0.3	543866	SMT-8M-PS-24V-K-0,3-M8D	
			Plug M12x1, 3-pin	0.3	543869	SMT-8M-PS-24V-K-0,3-M12	
		NPN	Cable, 3-wire	2.5	543870	SMT-8M-NS-24V-K-2,5-OE	
			Plug M8x1, 3-pin	0.3	543871	SMT-8M-NS-24V-K-0,3-M8D	
	Insertable in the slot lengthwise, flush with the cylinder profile	PNP	Cable, 3-wire	2.5	175436	SMT-8-PS-K-LED-24-B	
			Plug M8x1, 3-pin	0.3	175484	SMT-8-PS-S-LED-24-B	

Ordering data – Proximity sensors for T-slot, magnetic reed						Technical data → Internet: sme	
	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type	
N/O contact							
	Insertable in the slot from above, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	543862	SME-8M-DS-24V-K-2,5-OE	
			Cable, 3-wire	5.0	543863	SME-8M-DS-24V-K-5,0-OE	
			Cable, 2-wire	2.5	543872	SME-8M-ZS-24V-K-2,5-OE	
			Plug M8x1, 3-pin	0.3	543861	SME-8M-DS-24V-K-0,3-M8D	
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	150855	SME-8-K-LED-24	
			Plug M8x1, 3-pin	0.3	150857	SME-8-S-LED-24	



Inductive proximity sensors for size 12 ... 40


Ordering data – Proximity sensors, inductive					Technical data → Internet: sien	
	Threaded	Contact	Connection	Part No.	Type	
	M5	N/O contact	Cable	150370	SIEN-M5B-PS-K-L	
			Plug	150371	SIEN-M5B-PS-S-L	
	M8	N/O contact	Cable	150386	SIEN-M8B-PS-K-L	
			Plug	150387	SIEN-M8B-PS-S-L	

Swivel modules DSM/DSM-B

Accessories

FESTO

Ordering data – Connecting cables				Technical data → Internet: nebu	
	Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type
	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
	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

Ordering data – One-way flow control valves				Technical data → Internet: grla		
	For size	Connection		Material	Part No.	Type
		Thread	For tubing O.D.			
For exhaust air						
	12, 16, 25	M5	3	Metal design	193137	GRLA-M5-QS-3-D
			4		193138	GRLA-M5-QS-4-D
			6		193139	GRLA-M5-QS-6-D
	32, 40	G $\frac{1}{8}$	3		193142	GRLA- $\frac{1}{8}$ -QS-3-D
			4		193143	GRLA- $\frac{1}{8}$ -QS-4-D
			6		193144	GRLA- $\frac{1}{8}$ -QS-6-D
	63	G $\frac{1}{4}$	8		193145	GRLA- $\frac{1}{8}$ -QS-8-D
			8		193147	GRLA- $\frac{1}{4}$ -QS-8-D
			10		193148	GRLA- $\frac{1}{4}$ -QS-10-D

What must be observed when using Festo components?

Specified limit values for technical data and any specific instructions must be adhered to by the user in order to ensure recommended operating conditions.

When pneumatic components are used, the user shall ensure that they are operated using correctly prepared compressed air without aggressive media.

When Festo components are used in safety-oriented applications, the user shall ensure that all applicable

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You should contact Festo's advisors if one of the following apply to your application:

- The ambient conditions and conditions of use or the operating medium differ from the specified technical data.
- The product is to perform a safety function.
- A risk or safety analysis is required.
- You are unsure about the product's suitability for use in the planned application.
- You are unsure about the product's suitability for use in safety-oriented applications.

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