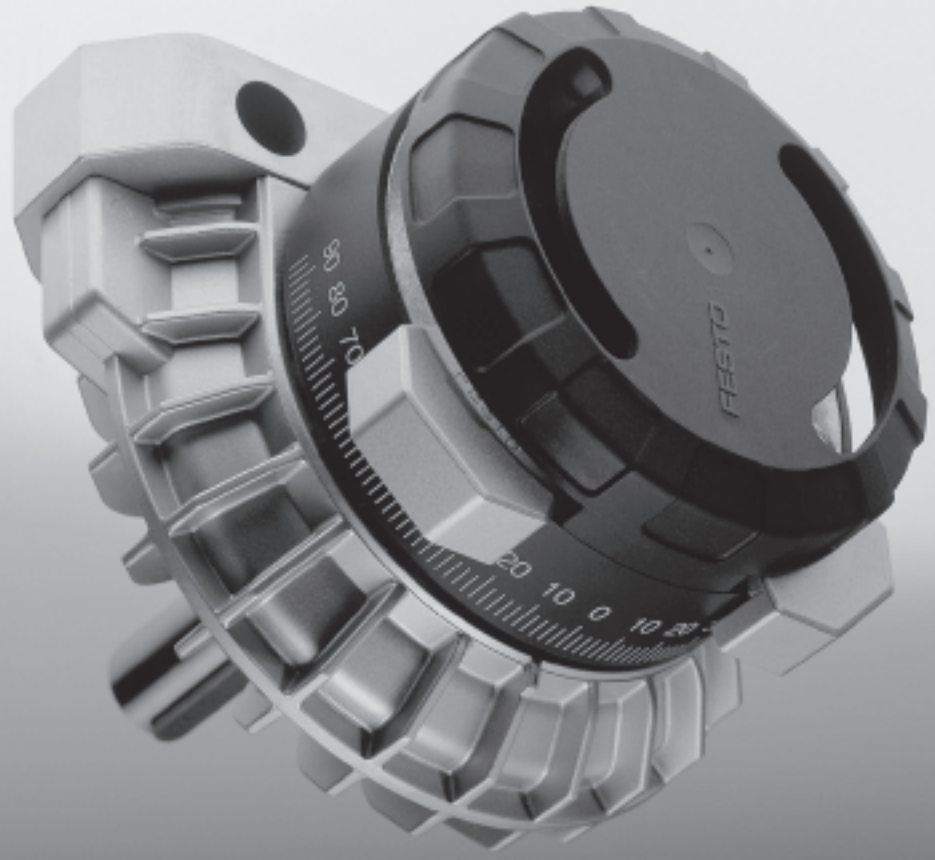
Semi-rotary drives DSR/DSRL

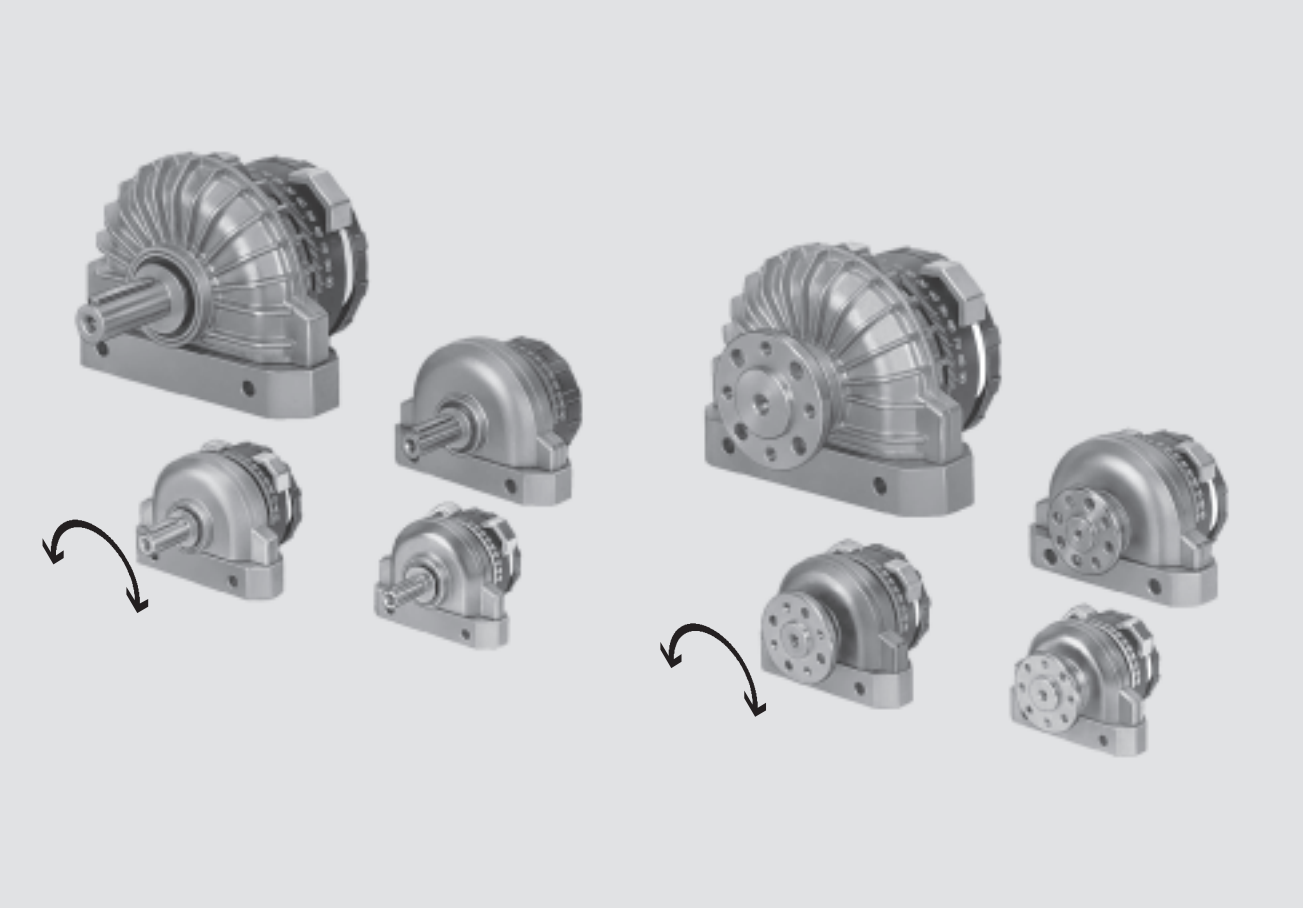


- Wide variety of mounting options
- Infinitely adjustable swivel angle
- Comprehensive range of accessories

Specified types in accordance with ATEX directive for potentially explosive atmospheres
➔ www.festo.com/en/ex

Semi-rotary drives DSR/DSRL

Features



Brief description

In these semi-rotary drives, the force is directly transmitted to the drive shaft via a rotary vane. The swivel angle is infinitely adjustable from 0 ... 184°
(DSRL-10 and 12: 0 ... 181°).

The adjustable stop system is separate from the rotary vane so that any forces which occur are absorbed by the stop blocks. The impacts are cushioned at the end positions by flexible plastic plates.

DSRL-...-FW
This design with hollow flanged shaft permits the passage of liquid or gaseous media, or even tubing or wiring. The force is transmitted directly and backlash-free via a splined shaft.

Note

Sizing software
Calculating inertia
➔www.festo.com

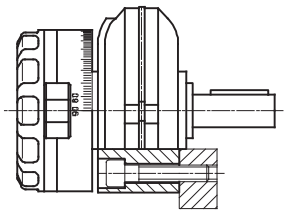
Semi-rotary drives DSR/DSRL

Features

Mounting options

Without mounting attachments

Direct mounting



With mounting attachments

for DSR

Foot mounting HSR-...-FW

Flange mounting FSR

Push-on flange FWSR

for DSRL

Foot mounting HSR-...-FW

Freewheel unit for synchronous movements

The freewheel unit is an attachment which is fitted to the drive shaft of the semi-rotary drive DSR. The freewheel unit converts the oscillating rotary movement of the semi-rotary drive into a synchronous, indexing movement. The movement of the semi-rotary drive shaft only occurs in the working directions left or right. This permits infinitely adjustable feed movements.

The minimum possible swivel angle is 0.4°. Switching accuracy is also dependent upon switching speed and load.

- - Note

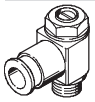
The load must be stopped externally!

FLSR-...-L (left-hand)
Viewed from the drive shaft side, rotation counter-clockwise.

FLSR-...-R (right-hand)
Viewed from the drive shaft side, rotation clockwise.

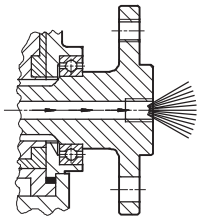
FLSR with semi-rotary drive

Accessories
Speed regulation
➔ 20

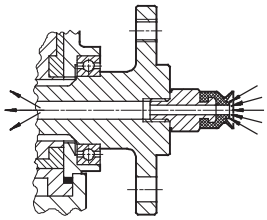


Sample applications with hollow flanged shaft in DSRL

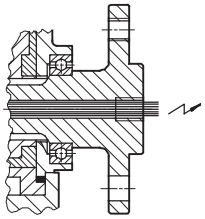
Air blast



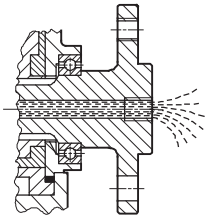
Vacuum



Electrical lines



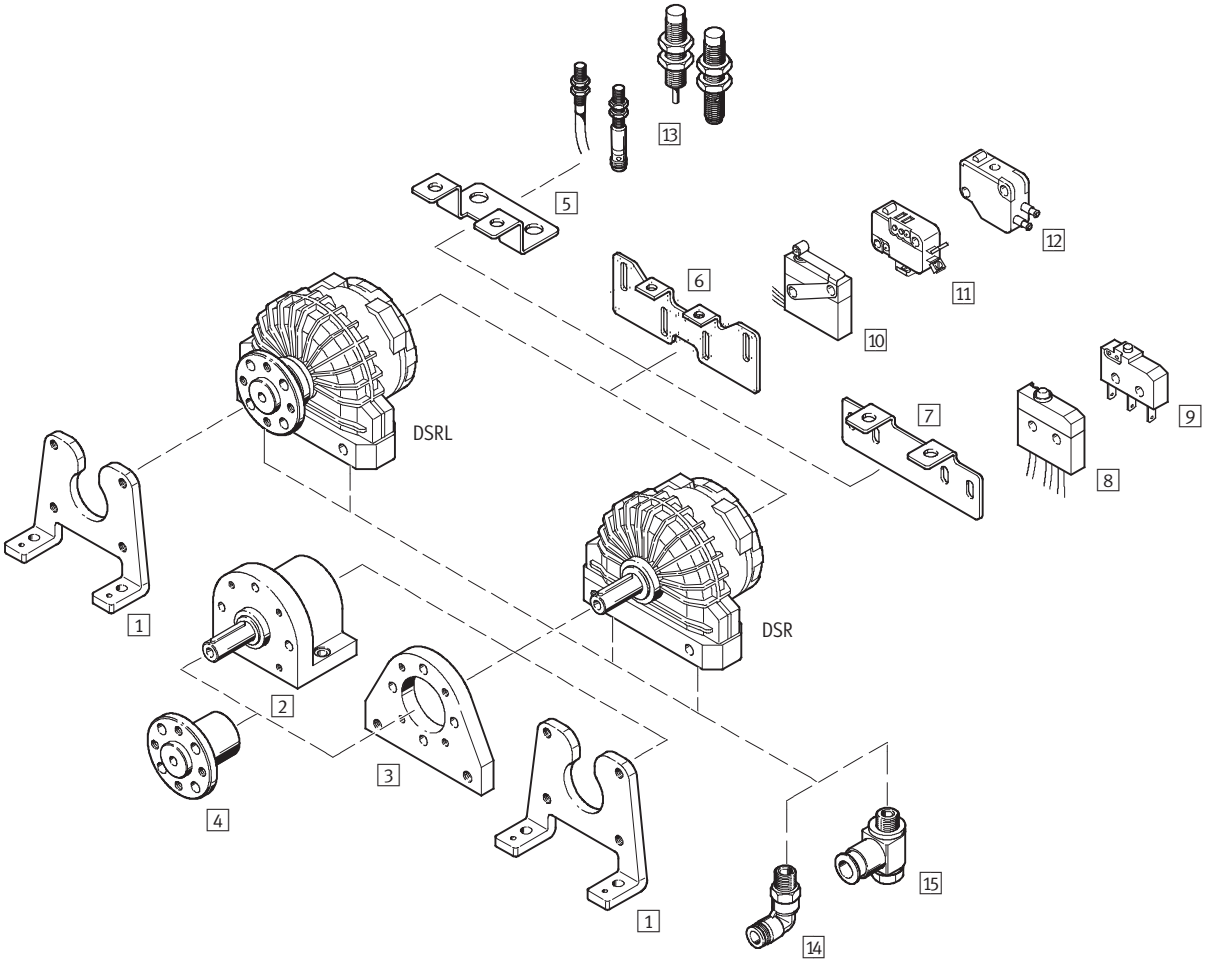
Water, coolant, oil, glue, etc.



Semi-rotary drives DSR/DSRL

Peripherals overview and type codes

FESTO



Semi-rotary drives DSR/DSRL

Peripherals overview and type codes

FESTO

Mounting attachments and accessories				
	Brief description	DSR	DSRL	→ Page/Internet
1 Foot mounting HSR-...-FW	On drive shaft side	■	■	12
2 Freewheel unit FLSR-...-L/R	For spigot shaft, clockwise or anti-clockwise rotation optional	■	–	14
3 Flange mounting FSR	On drive shaft side	■	–	12
4 Push-on flange FWSR	For spigot shaft	■	–	13
5 Mounting kit WSR-...	For proximity sensor SIEN	■	■	17
6 Mounting kit WSR-12 ... 40	For micro switch SR-3-E-SW, S-3-E and micro stem actuated valve SO-3-PK-3-B, S-3-PK-3-B	■	■	16
7 Mounting kit WSR-10/12-K	For micro switch S-3-BE-SW, S-3-BE	■	■	16
8 Micro switch S-3-BE-SW	Electric, with cable, splash-proof	■	■	19
9 Micro switch S-3-BE	Electric, with push-in connector	■	■	19
10 Micro switch SR-3-E-SW	Electric, with roller lever and cable, splash-proof	■	■	19
11 Micro switch S-3-E	Electric, screw connector	■	■	19
12 Micro stem actuated valve SO-3-PK-3-B, S-3-PK-3-B	Pneumatic, either normally opened or normally closed	■	■	20
13 Proximity sensors SIEN	Inductive	■	■	20
14 Push-in L-fitting QSL	For connecting compressed air tubing with standard external diameters	■	■	quick star
15 One-way flow control valve GRLA	For speed regulation	■	■	20

DSRL – 10 – 180 – P – FW

Type	
Double-acting	
DSR	Semi-rotary drive with spigot shaft
DSRL	Semi-rotary drive, with flanged, hollow drive shaft

Piston ∅ [mm]

Swivel angle [°]

Cushioning	
P	Non-adjustable at either end

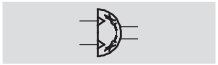
Shaft	
	Spigot shaft
FW	Drive shaft

Semi-rotary drives DSR/DSRL

Technical data

FESTO

Function



10 … 40 mm

Force
0.5 … 20 Nm

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Variants

- With spigot shaft
- With hollow flanged shaft

DSR DSRL

General technical data							
Piston ∅		10	12	16	25	32	40
Pneumatic connection		M3	M5	M5	M5	G1⁄8	G1⁄4
Design		Semi-rotary actuator with vane drive					
Cushioning		Non-adjustable at either end					
Position sensing		Electrical					
		Pneumatic					
		Inductive					
Type of mounting		Via through-holes					
		Via accessories					
Mounting position		Any					
Max. swivel angle		0 … 181 °		0 … 184 °			

Note: This product conforms to ISO 1179-1 and to ISO 228-1

Operating and environmental conditions							
Piston ∅		10	12	16	25	32	40
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:–:–]					
Operating pressure	[bar]	2.5 … 8	2 … 8		1.5 … 8		
Temperature range[1]	[°C]	–10 … +60					

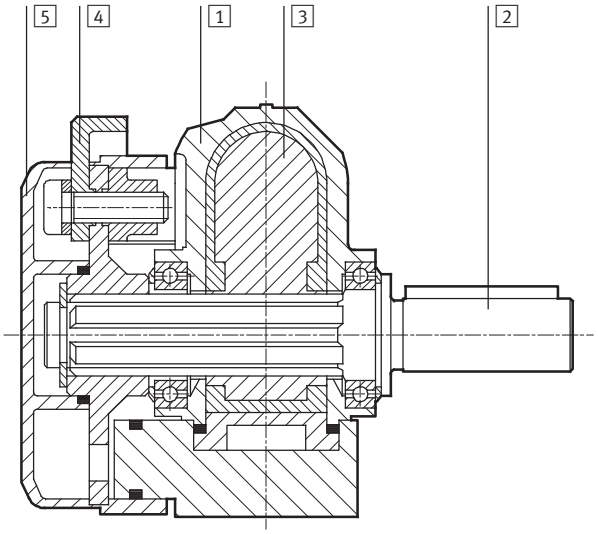
1) Note operating range of proximity sensors

Forces and torques							
Piston ∅		10	12	16	25	32	40
Torque at 6 bar	[Nm]	0.5	1	2	5	10	20
Max. swivelling frequency[1]	[Hz]	3					
Max. perm. radial load[2]	[N]	30	45	75	120	200	350
Max. perm. axial load[2]	[N]	10	18	30	50	75	120
Max. perm. mass moment of inertia[2]		Diagrams ➔ 8					

1) Please observe the max. permissible mass moments of inertia ➔ 8
2) On the drive shaft at maximum frequency

Materials

Sectional view



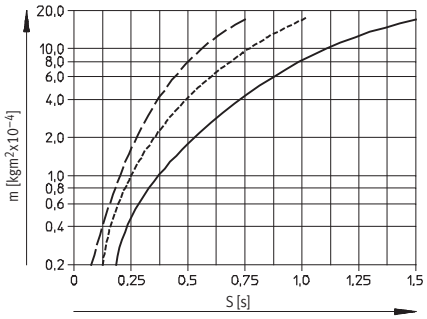
Rotary actuator	
1 Housing	Die-cast zinc
2 Drive shaft	Nickel plated steel
3 Rotary vane	Plastic
4 Trip cam	Sintered steel, nickel plated
5 Cover cap	Plastic
– Seals	Nitrile rubber

Weights [g]						
Piston ∅	10	12	16	25	32	40
DSR-...-P	100	200	310	540	1,285	2,400
DSRL-...-FW	140	240	350	610	1,390	2,700

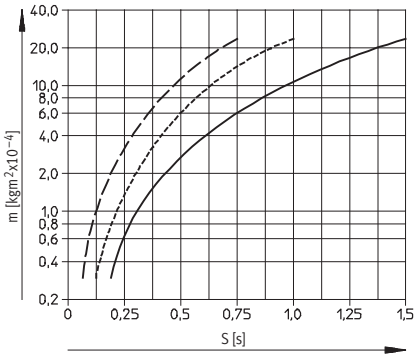
Max. permissible mass moment of inertia

Mass moment of inertia m as a function of swivel time S and swivel angle

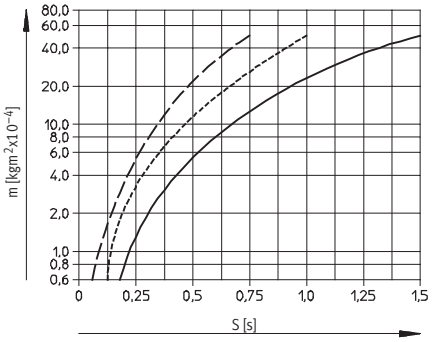
DSR/DSRL-10



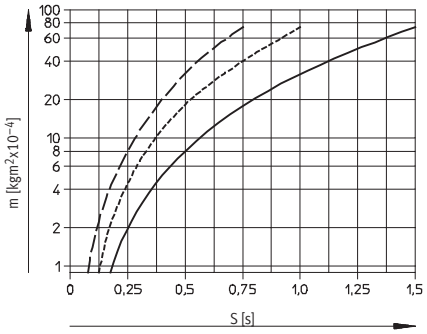
DSR/DSRL-12



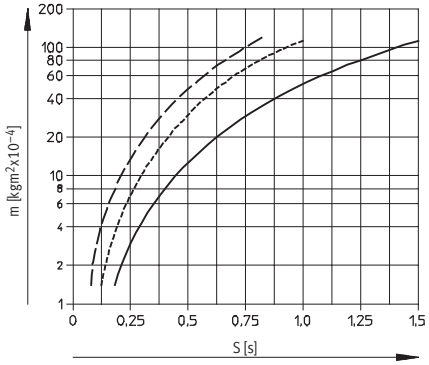
DSR/DSRL-16



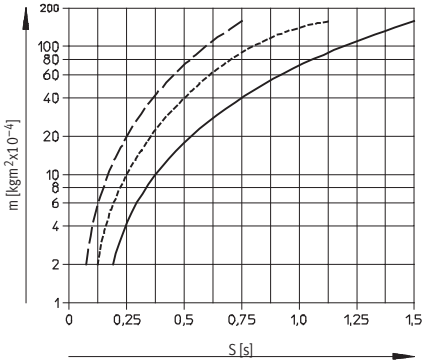
DSR/DSRL-25



DSR/DSRL-32



DSR/DSRL-40



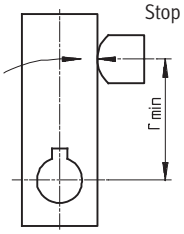
- - - - - - - - - - Swivel angle 90°
. . . . . Swivel angle 120°
———— Swivel angle 180°

Note

Sizing software
Calculating inertia
➔www.festo.com

Assembly instructions:

If the listed maximum permissible mass moment of inertia is exceeded, external stops must be attached.
Please note:
The stop must not be less than the minimum radius to the drive shaft (r_{min}). The stop force must not exceed the maximum force. Due to the flexibility of the stops, a precise end position can only be achieved using external stops.



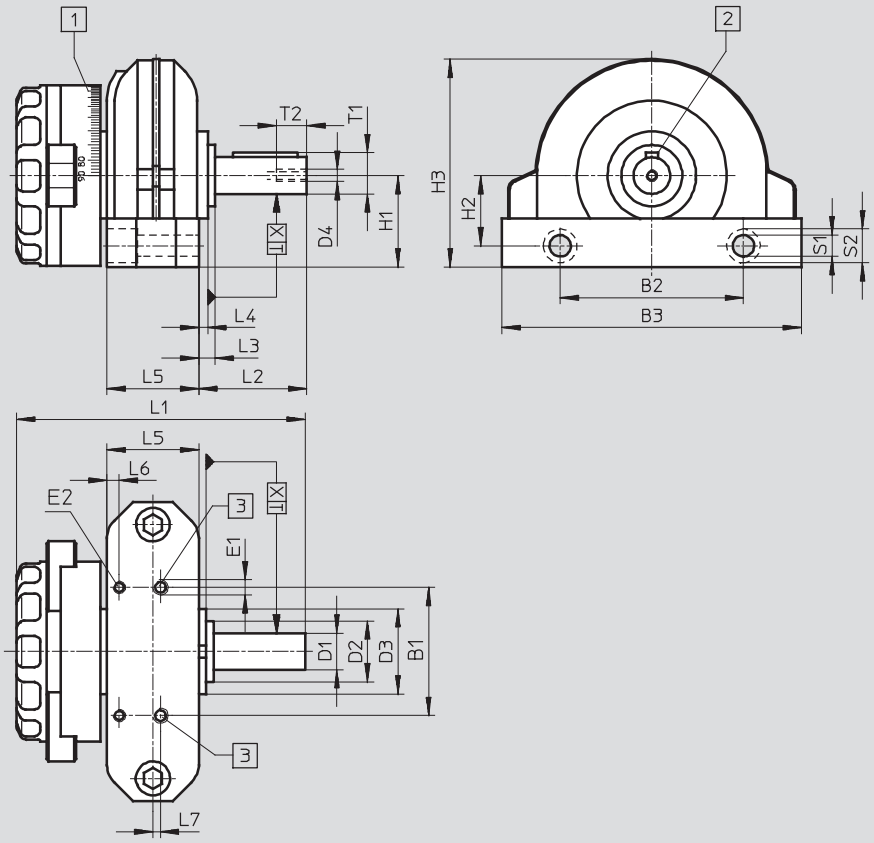
∅ [mm]	Stop radius r_{min} [mm]	Force [N]
10	13	60
12	15	90
16	17	160
25	21	320
32	28	480
40	40	650

Note

When throttling the semi-rotary drives to swivelling speeds under 180°/s, the drives must be operated at a pressure of at least 6 bar. A constant speed fluctuation of ±30 % is to be expected. The flutters and the swivelling times shown in the diagrams can only be improved by using flow control valves.

Dimensions Download CAD data ➔ **www.festo.com**

DSR



1 Angle scale for swivel angle reading

2 Woodruff key position at 0 °

3 Supply port

Note

The swivel angle is 180° and pressure-dependent. The cushioning angle on each side is approx. 1.6° maximum at 8 bar.
If after the swivel process, the kinetic energy is converted by cushioning, the drive shaft swivels back by a corresponding angle.

The stops must not be removed as the rotary vane is not suitable for end-position limiting. The cover cap is equipped with an angle scale for adjusting.

When attaching additional components to the drive shaft, the maximum permissible tightening torque of the bolt at D4 must not be exceeded.

∅ [mm]	B1	B2	B3	D1 ∅ g7	D2 ∅	D3 ∅ h8	D4	E1	E2	H1	H2	H3	L1	L2
10	22	32	53	6	12	20	M2.5	M3	M3	19.4	15.5	38.8	57	22.4
12	26	40	65	8	16	22	M3	M5	M3	23.5	18.5	48	65.6	25.5
16	30	46	78	10	17	24	M3	M5	M3	27	20.5	56.5	75.8	29
25	42	60	98	12	18	28	M4	M5	M4	30	23	68.1	94.5	35.4
32	54	80	130	16	27	42	M5	G⅛	M4	43	34	92	125.5	50
40	70	100	160	20	36	52	M6	G¼	M4	53	40	121	162	60

∅ [mm]	L3	L4	L5	L6	L7	S1	S2	T1	T2	X	Woodruff key to DIN 6885[1)]	Tightening torque at D4 [Nm]
10	6.5	4.5	15.1	2.2	2	3.4	6	6.8	7	0.35	A2 x 2 x 12	0.7
12	5.5	3.5	18	2.1	2.5	4.4	8	8.8	9	0.35	A2 x 2 x 16	1.2
16	6	3.5	22.5	2.1	–	5.5	10	11.2	9	0.35	A3 x 3 x 18	1.2
25	5.4	3	30	4	–	7	11	13.5	10	0.4	A4 x 4 x 25	5.5
32	10	7	36	4	–	8.5	15	18	12.5	0.45	A5 x 5 x 36	5.5
40	10	6	50	4	–	8.5	15	22.5	16	0.5	A6 x 6 x 45	5.5

1) included in scope of delivery

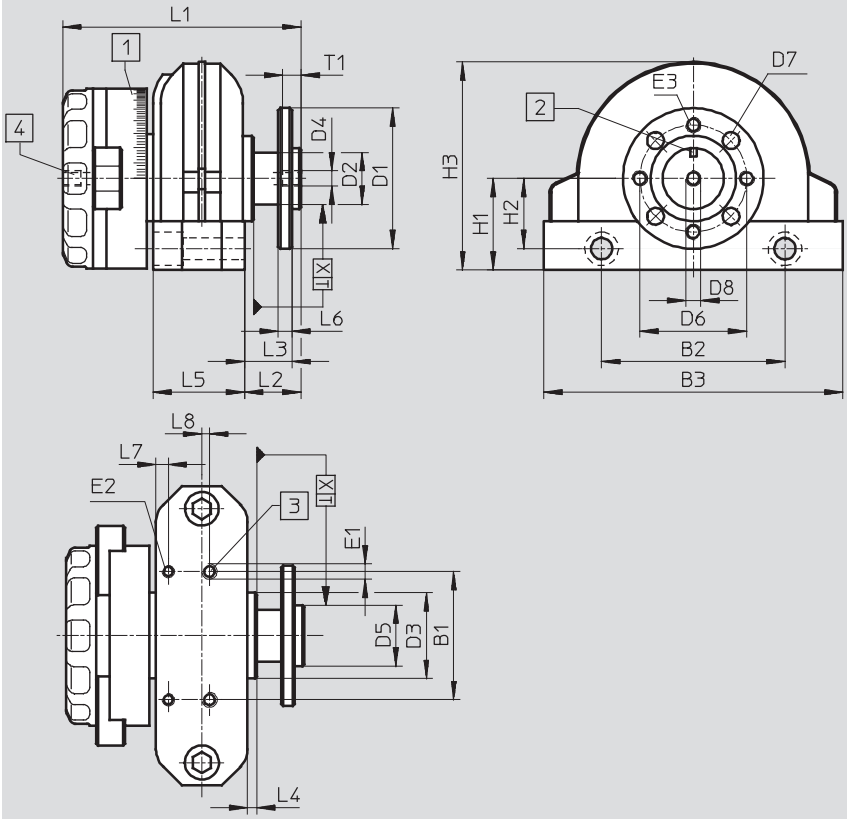
Note: This product conforms to ISO 1179-1 and to ISO 228-1

Semi-rotary drives DSR/DSRL

Technical data

Dimensions Download CAD data ➔ **www.festo.com**

DSRL



1 Angle scale for swivel angle reading

2 Position of marking at angle scale 0°

3 Supply port

4 Through-hole

Note

The swivel angle is 180° and pressure-dependent. The cushioning angle on each side is approx. 1.6° maximum at 8 bar.
If after the swivel process, the kinetic energy is converted by cushioning, the drive shaft swivels back by a corresponding angle.

The stops must not be removed as the rotary vane is not suitable for end-position limiting. The cover cap is equipped with an angle scale for adjusting.

When attaching additional components to the drive flange, the maximum permissible tightening torque of the bolt at D4 must not be exceeded.

∅ [mm]	B1	B2	B3	D1 ∅ g7	D2 ∅	D3 ∅ h8	D4	D5 ∅ f8	D6 ∅	D7 ∅ H13	D8 ∅ min.	E1	E2	E3	H1
10	22	32	53	30	10	20	M3	11	21	3.4	1.5	M3	M3	M3	19.4
12	26	40	65	33	13	22	M3	14	25	3.4	1.5	M5	M3	M3	23.5
16	30	46	78	38	14	24	M5	16	28	4.5	3.5	M5	M3	M4	27
25	42	60	98	46	17	28	M5	20	35	5.5	3.5	M5	M4	M5	30
32	54	80	130	60	24	42	G⅛	28	45	6.5	7	G⅛	M4	M6	43
40	70	100	160	70	30	52	G⅛	36	54	9	7	G¼	M4	M8	53

∅ [mm]	H2	H3	L1	L2	L3	L4	L5	L6	L7	L8	S1	S2	T1	X	Tightening torque at D4 [Nm]
10	15.5	38.8	49	14	12.3	4.5	15.1	3	2.2	2	3.4	6	5	0.35	0.7
12	18.5	48	54.2	13.5	11.5	3.5	18	3	2.1	2.5	4.4	8	5	0.35	1.2
16	20.5	56.5	64.7	16	14	3.5	22.5	4	2.1	–	5.5	10	6	0.35	1.2
25	23	68.1	78	18.5	15.5	3	30	4.5	4	–	7	11	6	0.4	5.5
32	34	92	102.8	26	22	7	36	6	4	–	8.5	15	8	0.45	5.5
40	40	121	134.5	31	26	6	50	7.5	4	–	8.5	15	8	0.5	5.5

Note: This product conforms to ISO 1179-1 and to ISO 228-1

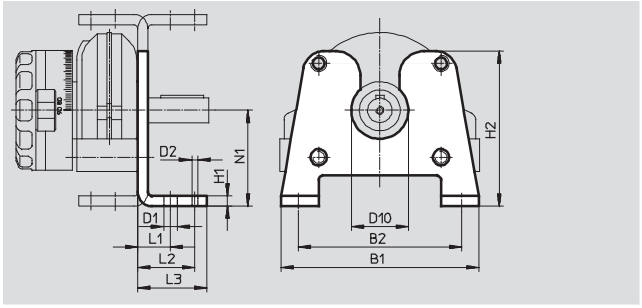
Semi-rotary drives DSR/DSRL

Technical data

Ordering data				
Rotary actuator	Design	∅ [mm]	Part No.	Type
DSR-...-P				
	With spigot shaft	10	**33 297**	**DSR-10-180-P**
		12	**11 909**	**DSR-12-180-P**
		16	**11 910**	**DSR-16-180-P**
		25	**11 911**	**DSR-25-180-P**
		32	**11 912**	**DSR-32-180-P**
		40	**13 467**	**DSR-40-180-P**
DSRL-...-P-FW				
	With hollow flanged shaft	10	**33 296**	**DSRL-10-180-P-FW**
		12	**30 654**	**DSRL-12-180-P-FW**
		16	**30 655**	**DSRL-16-180-P-FW**
		25	**30 656**	**DSRL-25-180-P-FW**
		32	**30 657**	**DSRL-32-180-P-FW**
		40	**30 658**	**DSRL-40-180-P-FW**

Foot mounting HSR-...-FW

Material:
Steel



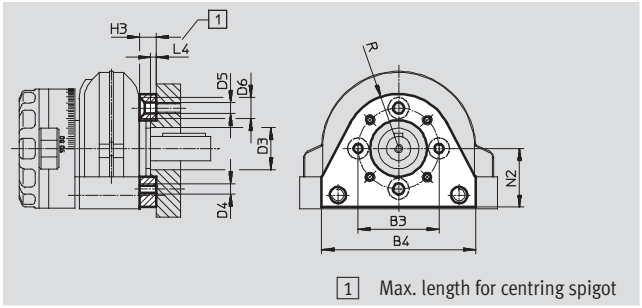
Dimensions and ordering data

For ∅ [mm]	B1	B2	D1 ∅ H13	D2	D10	H1	H2	L1	L2	L3	N1	CRC[1]	Weight [g]	Part No.	Type
10	53.5	43	3.5	2	20	4	53	11	17	21	34	2	61	**33 317**	**HSR-10-FW**
12	64	52	3.5	2	22	4	63	11	17	21	40	2	87	**30 923**	**HSR-12-FW**
16	77	63	5.7	2	24	5	71	14	22	26.5	44	2	170	**30 924**	**HSR-16-FW**
25	97	80	6.8	3	28	5	76	16	28	34	47	2	235	**30 925**	**HSR-25-FW**
32	129	105	8.8	4	42	8	108	20	34	43	66	2	660	**30 926**	**HSR-32-FW**
40	159	130	8.8	5	52	8	134	25	42	52	81	2	1,040	**30 927**	**HSR-40-FW**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents

Flange mounting FSR

Material:
Aluminium



1 Max. length for centring spigot

Dimensions and ordering data

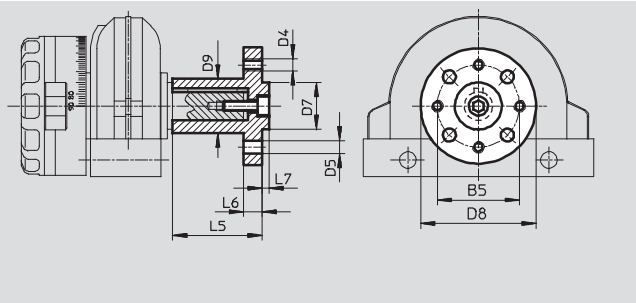
For ∅ [mm]	B3	B4	D3 ∅ min.	D4	D5 ∅ H13	D6 ∅ H13	H3	L4 max.	N2	R	CRC[1]	Weight [g]	Part No.	Type
10	28	46	13	M3	3.4	6.5	7	2	20	18	2	22	**34 480**	**FSR-10**
12	31	54	17	M3	3.4	6.5	7	2	22	20.5	2	32	**14 658**	**FSR-12**
16	35	62	19	M4	4.5	8.5	8	2	26.5	23.5	2	50	**13 236**	**FSR-16**
25	40	76	21	M5	5.5	10.4	8	2.5	29	27	2	70	**13 237**	**FSR-25**
32	56	100	32	M6	6.6	12.4	12	2.5	42	36	2	180	**13 238**	**FSR-32**
40	72	120	37	M8	9	16.4	14	4	52	46	2	300	**14 655**	**FSR-40**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents

Push-on flange FWSR

The permissible tightening torque may not be exceeded when installing the push-on flange FWSR on the drive shaft.

Material:
Wrought aluminium alloy, anodised
Copper, PTFE and silicone free



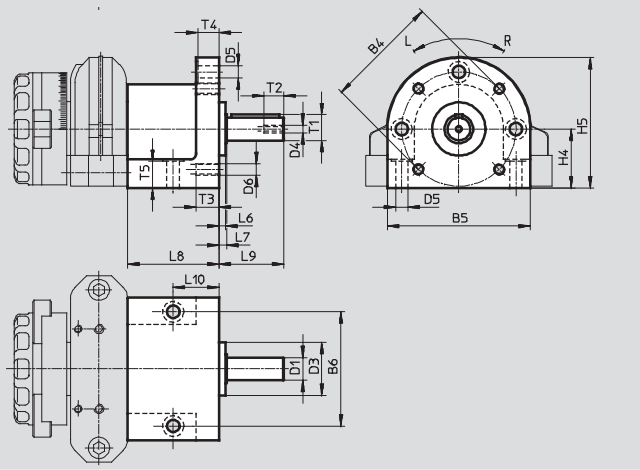
Dimensions and ordering data

For ∅ [mm]	B5	D4	D5 ∅ H13	D7 ∅ f8	D8	D9	L5	L6	L7	Tightening torque [Nm]	CRC[1]	Weight [g]	Part No.	Type
10	21	M3	3.4	11	30	12	22	3	1.6	0.7	2	10	**32 798**	**FWSR-10**
12	25	M3	3.4	14	35	15	25	3	3	1.2	2	19	**14 659**	**FWSR-12**
16	28	M4	4.5	16	40	17	28	5	3	1.2	2	30	**13 239**	**FWSR-16**
25	35	M5	5.5	20	50	23	38	8	3	5.5	2	70	**13 240**	**FWSR-25**
32	45	M6	6.6	28	60	28	48	10	4	5.5	2	120	**13 241**	**FWSR-32**
40	54	M8	9	36	70	38	60	11	5	5.5	2	240	**14 656**	**FWSR-40**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents

Freewheel unit FLSR

Material:
Housing: Aluminium die-cast
Sleeve, shaft: Case-hardened steel
Seal, cap: Nitrile rubber

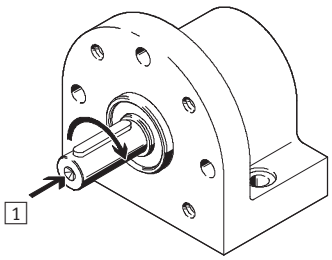


General technical data							
Piston ∅		10	12	16	25	32	40
Design		Freewheel unit as attachment					
Rotation angle		Infinitely adjustable steps (independent of rotation angle)					
Applied radial load	[N]	52	77	160	350	200	350
Applied axial load	[N]	30	50	100	200	75	120
Max. torque	[Nm]	0.7	1.3	2.7	6.6	13.3	26.7
Frequency		3 Hz (- The load must be stopped externally!)					
Temperature range	[°C]	–10 ... +60					

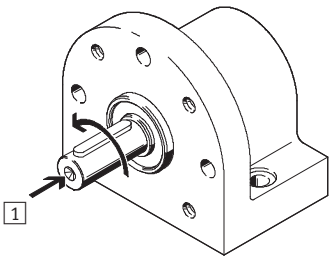
Direction of rotation

The freewheel unit blocks one of the two possible swivel directions of the DSM swivel module.

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



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



1 Viewed towards drive shaft

Dimensions and ordering data

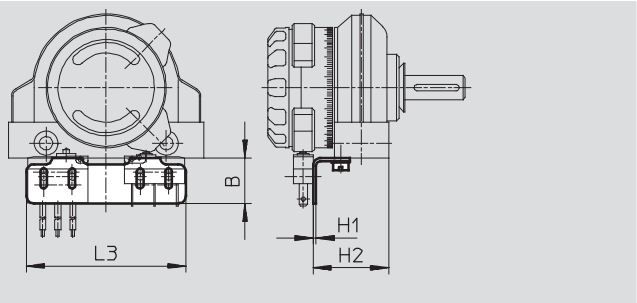
For ∅ [mm]	B4	B5	B6	D1 ∅ g7	D3 ∅ h8	D4	D5 ∅ H13	D6	H4	H5	L6	L7	L8	L9	L10
10	38	45	38.5	6	20	–	3.3	M3	20	42.5	3.5	4.2	41.5	20.2	23
12	42	49	41.5	8	25	M3	3.3	M3	24	48.5	3.5	4.5	47.3	24.5	25
16	50	60	50	10	24	M3	4.5	M4	28	58	3.5	4.4	47	27.4	23.5
25	60	75	60	12	28	M4	6.6	M6	31	68.5	3.5	4.1	48	34	24
32	83	98	83	16	42	M5	6.6	M6	44	93	7.2	8.5	60	48.5	30
40	96	114	96	20	52	M6	8.6	M8	54	111	6	8	75	58	38

For ∅ [mm]	T1	T2	T3	T4	T5	Woodruff key[1] to DIN 6885	CRC[2]	Weight [g]	Direction of rotation	Part No.	Type
10	6.8	8	8	5	8	A2 x 2 x 12	2	165	left-hand	**33 298**	**FLSR-10-L**
									right-hand	**33 299**	**FLSR-10-R**
12	8.8	9	8	5	9	A2 x 2 x 16	2	225	left-hand	**30 930**	**FLSR-12-L**
									right-hand	**30 929**	**FLSR-12-R**
16	11.2	11	10	8	11	A3 x 3 x 18	2	340	left-hand	**15 281**	**FLSR-16-L**
									right-hand	**15 280**	**FLSR-16-R**
25	13.5	14	12	11	14	A4 x 4 x 25	2	500	left-hand	**13 778**	**FLSR-25-L**
									right-hand	**13 730**	**FLSR-25-R**
32	18	16	12	11	16	A5 x 5 x 36	2	1 140	left-hand	**15 688**	**FLSR-32-L**
									right-hand	**15 687**	**FLSR-32-R**
40	22.5	21	15	11	21	A6 x 6 x 45	2	1 800	left-hand	**19 037**	**FLSR-40-L**
									right-hand	**19 036**	**FLSR-40-R**

1) included in scope of delivery
2) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents

Mounting kit
WSR-10/12-K
for micro switch S-3-BE, S-3-BE-SW

Material:
Steel



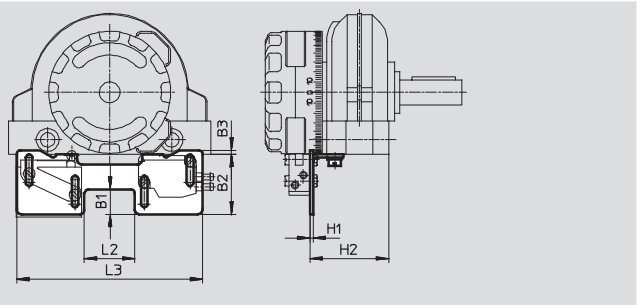
Dimensions and ordering data

For ∅ [mm]	B	H1	H2	L3	CRC[1)]	Weight [g]	Part No.	Type
10	15	1	22.2	47	2	11	**33 414**	**WSR-10-K**
12	15	1	25.1	53	2	13	**15 686**	**WSR-12-K**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents

Mounting kit
WSR-12 … 40
for micro switch S-3-E, SR-3-E-SW and micro stem actuated valve S-3-PK-3-B, SO-3-PK-3-B

Material:
Steel



Dimensions and ordering data

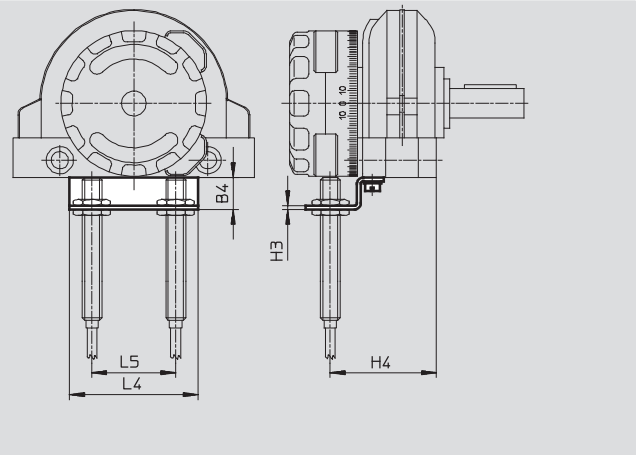
For ∅ [mm]	B1	B2	B3	H1	H2	L2	L3	CRC[1)]	Weight [g]	Part No.	Type
12	5.8	23.4	4	1.5	23	14	79	2	12	**15 684**	**WSR-12**
16	10	26.5	4.5	1.5	29.8	19	84.5	2	23	**14 874**	**WSR-16**
25	12	29	2	1.5	38	24.5	90	2	26	**14 796**	**WSR-25**
32	12	29	2	1.5	49.2	40.5	107	2	29	**14 960**	**WSR-32**
40	12	29	2	1.5	68.7	52	118.5	2	32	**14 961**	**WSR-40**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents

Mounting kit
WSR-...-J
for proximity sensors SIEN-M8

WSR-...-J-M5
for proximity sensors SIEN-M5

Material:
Steel



Dimensions and ordering data

WSR-...-J

For ∅ [mm]	B4	H3	H4	L4	L5	CRC[1)]	Weight [g]	Part No.	Type
16	13	1.5	35	52	27	2	12	**14 873**	**WSR-16-J**
25	13	1.5	43.1	52	34	2	17	**14 799**	**WSR-25-J**
32	13	1.5	54.3	64	48	2	18	**14 962**	**WSR-32-J**
40	13	1.5	76.3	80	60	2	24	**14 963**	**WSR-40-J**

WSR-...-J-M5

For ∅ [mm]	B4	H3	H4	L4	L5	CRC[1)]	Weight [g]	Part No.	Type
10	8	1	25.4	30	20	2	6	**33 413**	**WSR-10-J-M5**
12	8	1	28.3	34	24.5	2	10	**15 685**	**WSR-12-J-M5**
16	8	1	34.9	38	27	2	78	**15 931**	**WSR-16-J-M5**
25	13	1.5	43	52	34	2	17	**15 932**	**WSR-25-J-M5**
32	13	1.5	54.3	64	48	2	25	**15 933**	**WSR-32-J-M5**
40	13	1.5	76.3	80	60	2	30	**15 934**	**WSR-40-J-M5**

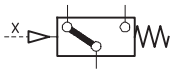
1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents

Semi-rotary drives DSR/DSRL

Accessories

FESTO

Electrical limit switch for end-position sensing



The switching point may only be exceeded by 0.5 mm in these electrical limit switches. Actuation only vertical to stem axis.

	S-3-BE	S-3-BE-SW	S-3-E	SR-3-E-SW
Connection	3 push-in connectors (2.8x0.5 mm)	3 wires (0.75 mm²)	Screw connector	3 wires 0.5 m long
Contact rating	➔ Table below			
Operating voltage	250 V AC/250 V DC			
Line current ohmic load	–	–	6 A/250 V AC 0.25 A/250 V DC	5 A/250 V AC 0.25 A /250 V DC
Line current inductive load	–	–	2 A/250 V AC 0.1 A/250 V DC	2 A/250 V AC 0.03 A/250 V DC
Utilisation category	AC 12/DC 12 (ohmic load)			
	AC 14/DC 13 (inductive load)			
CE symbol	Yes, as per EU Directive 73/23/EEC			
Protection class to EN 60 529	IP40	IP67	IP 00	IP65
Temperature range	–20 ... +85 °C		–20 ... +80 °C	
Material	Housing, cover: black plastic			
Weight	2 g	16 g	7 g	10 g

Test symbols:

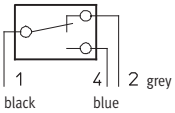
S-3-BE: VDE-ÜG, UL, CSA, SEMKO

S-3-BE-SW: VDE, SEV, SEMKO, BEAB

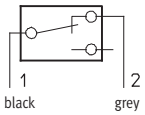
S-3-E: VDE, ÖVE, SEMKO, SEV, UL, CSA

Contact configuration:

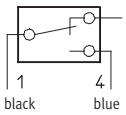
Changeover switch



NC contact



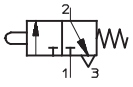
NO contact



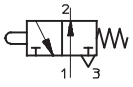
S-3-BE, S-3-BE-SW				
AC voltage				
Voltage [V] ~	Resistance load [A]		Inductive load [A]	
12	6		6	
24	3		2	
60	1		0.5	
110	0.5		0.2	
220	0.25		0.1	
S-3-E	DC	AC	DC	AC
12	6	–	6	–
24	6	–	6	–
60	1	–	0.5	–
110	0.5	–	0.2	–
220	0.25	–	0.1	–
250	–	6	–	2
SR-3-E-SW	DC	AC	DC	AC
15	3	–	5	–
30	3	–	5	–
50	1	–	1	–
75	0.25	–	0.75	–
125	0.03	5	0.5	5
250	0.03	5	0.25	5

Pneumatic limit valve for end-position sensing

S-...



SO-...



The switching point is pressure-dependent and deviates up to 0.8 mm in the pressure range from 0 ... 8 bar. The switching point may only be exceeded by 0.5 mm. The valve must not be used as a fixed stop and should only be operated vertically to the stem.

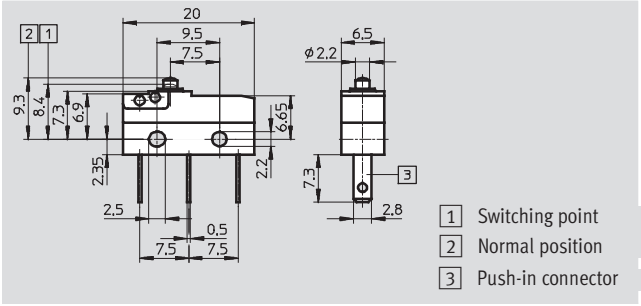
S-3-PK-3-B/SO-3-PK-3-B	
Connection	Barbed fitting for 3 mm plastic tubing
Nominal size	1.8 mm
Standard nominal flow rate (1 > 2)	60 l/min
Pressure range	–0.95 ... +8 bar
Actuating force at 6 bar	6 N
Temperature range	–10 ... +60 °C
Materials	Plastic, brass
Weight	7 g

Semi-rotary drives DSR/DSRL

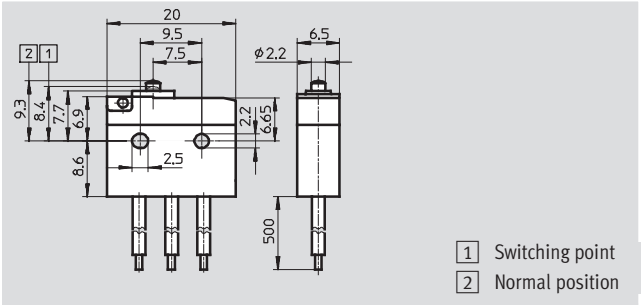
Accessories

Electrical limit switch for end-position sensing

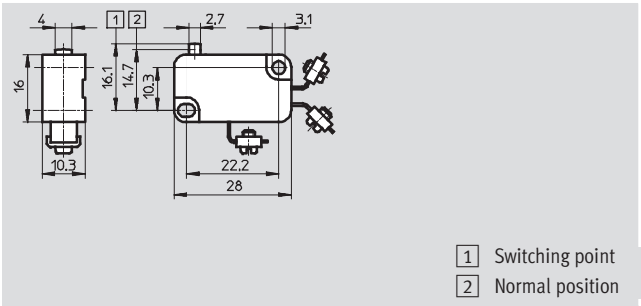
Micro switch
S-3-BE



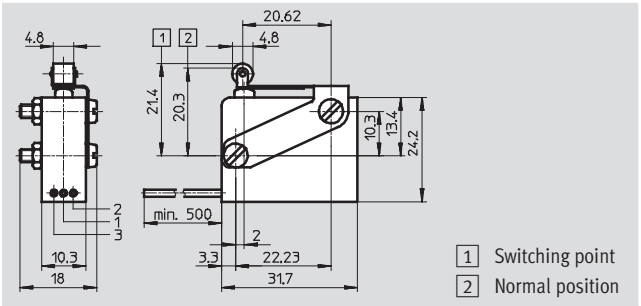
Micro switch with cable (splash-proof)
S-3-BE-SW



Micro switch
S-3-E



Micro switch with roller lever
(splash-proof)
SR-3-E-SW

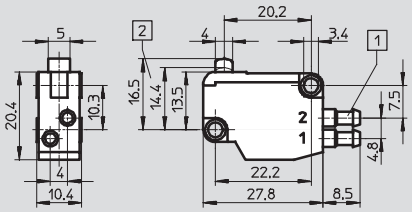


Ordering data

For ∅ [mm]	Electrical limit switches, splash-proof	Design	Part No.	Type
10 ... 12			**30 648**	**S-3-BE**
		With cable	**30 649**	**S-3-BE-SW**
16 ... 40		With roller lever	**7 347**	**S-3-E**
			14 797	**SR-3-E-SW**

Pneumatic limit valve for end-position sensing

Micro stem actuated valve
S-3-PK-3-B
SO-3-PK-3-B



[1] Barbed fittings for 3 mm plastic tubing
[2] Switching point min.

1 (P) = supply port
2 (A) = working or outlet line
3 (R) = exhaust

Ordering data

For ∅ [mm]	Pneumatic limit switch	Design	Part No.	Type
16 ... 40		Normally closed	**7 843**	**S-3-PK-3-B**
		Normally open	**10 403**	**SO-3-PK-3-B**

Ordering data – Proximity sensors, inductive — Technical data ➔ Internet: sien

	For ∅	Remarks	Connection	Part No.	Type
	10 ... 40	For mounting kit WSR-...-J-M5	Cable	**150 370**	**SIEN-M5B-PS-K-L**
			Plug	**150 371**	**SIEN-M5B-PS-S-L**
	16 ... 40	For mounting kit WRM-...-J	Cable	**150 386**	**SIEN-M8B-PS-K-L**
			Plug	**150 387**	**SIEN-M8B-PS-S-L**

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	**541 333**	**NEBU-M8G3-K-2.5-LE3**
			5	**541 334**	**NEBU-M8G3-K-5-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**

Ordering data – One-way flow control valves — Technical data ➔ Internet: grla

	Connection		Material	Part No.	Type
	Thread	For tubing OD			
	M3	3	Metal design	**175 041**	**GRLA-M3-QS-3**
	M5	3		**193 137**	**GRLA-M5-QS-3-D**
		4		**193 138**	**GRLA-M5-QS-4-D**
		6		**193 139**	**GRLA-M5-QS-6-D**
	G1/8	3		**193 142**	**GRLA-1/8-QS-3-D**
		4		**193 143**	**GRLA-1/8-QS-4-D**
		6		**193 144**	**GRLA-1/8-QS-6-D**
		8		**193 145**	**GRLA-1/8-QS-8-D**
	G1/4	6		**193 146**	**GRLA-1/4-QS-6-D**
		8		**193 147**	**GRLA-1/4-QS-8-D**
		10		**193 148**	**GRLA-1/4-QS-10-D**

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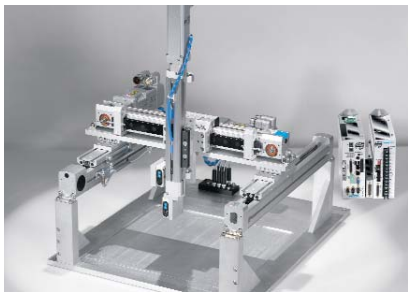

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Festo North America

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)
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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
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Chicago
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Detroit – Automotive Engineering Center
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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. Tequesquinahuac,
54020 Tlalnepantla, 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

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