

Quarter turn actuators DFPD

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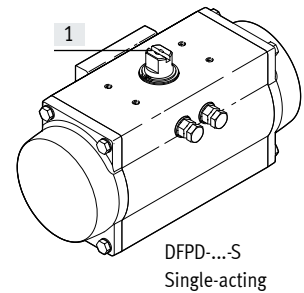
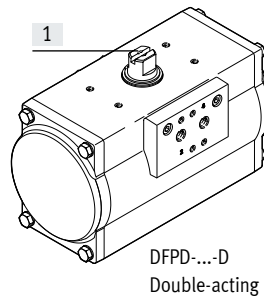
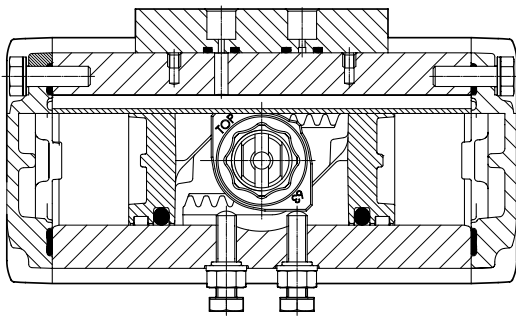
Just look
for the
star!

Key features

Function

The DFPD series features a gear rack and pinion combination with a constant torque characteristic across the entire swivel range. It is available in sizes 10 to 2300. The DFPD is suitable for the automation of butterfly valves, ball valves and air dampers.

It is also suitable for water/wastewater, beverage, pharmaceutical and process automation. The modular and compact design of the DFPD offers various spring configurations as a suitable solution for different applications.



[1] The position of the shaft in the delivery condition

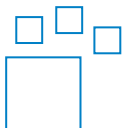
Types of connection

- Port pattern to NAMUR VDI/VDE 3845 for mounting solenoid valves, position sensors and positioners
- Standards-based connection to process valve, ISO 5211

Variants

High temperature DFPD-...-T4	Closes to the left and right DFPD-...-R/L	Spring configuration DFPD-...-S	180° version DFPD-...-180
<ul style="list-style-type: none"> • Seals made of FKM and plain bearings made of PPS • For applications up to +150 °C • II 2G c T3 X • II 2D c 175°C X • 0°C ≤ Ta ≤ +150°C 	<ul style="list-style-type: none"> • The modular system offers the option of closing to the left. This is done by turning the pistons 	<ul style="list-style-type: none"> • The spring force can be adapted to the system's supply pressure in steps of 0.5 bar by freely selecting the number of spring cartridges (4 to 12) 	<ul style="list-style-type: none"> • Sizes 40, 120, 240, 480 double-acting also available with 180° swivel angle
Epoxy coating DFPD-...-EP	Stainless steel shaft DFPD-...-R3	NPT version DFPD-...-N	
<ul style="list-style-type: none"> • Actuator with epoxy coating 	<ul style="list-style-type: none"> • With stainless steel shaft 	<ul style="list-style-type: none"> • Pneumatic connections with NPT threads 	

Ordering data – Product options



Configurable product
 This product and all its product options can be ordered using the configurator.

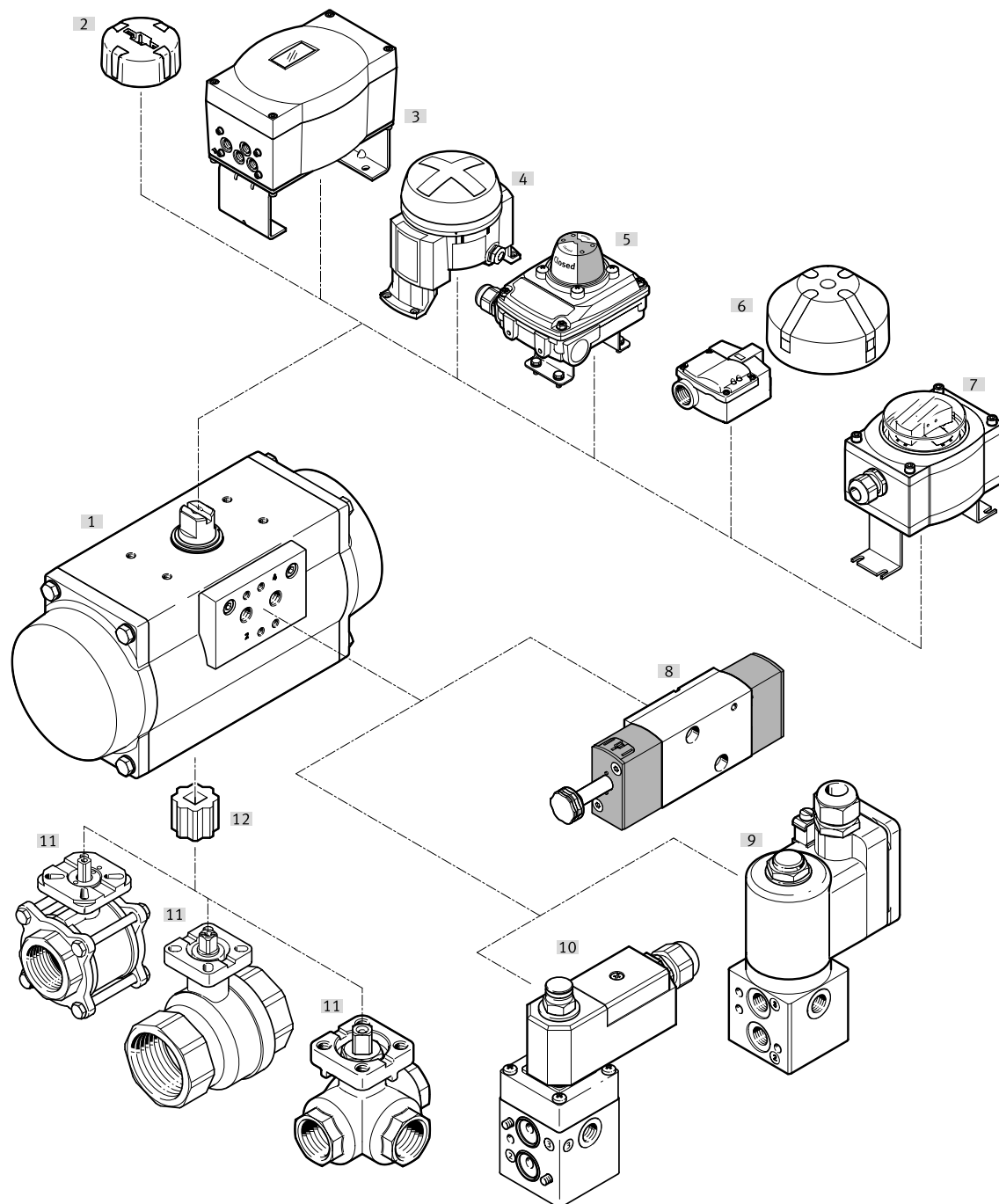
The configurator can be found under Products on the DVD or at
 → www.festo.com/catalogue/...

Part no.	Type
8042184	DFPD-10
8042185	DFPD-20
8042186	DFPD-40
8042187	DFPD-80
8042188	DFPD-120
8042189	DFPD-160
8042190	DFPD-240
8042191	DFPD-300
8042192	DFPD-480
8042193	DFPD-700
8042194	DFPD-900
8042195	DFPD-1200
8042196	DFPD-2300

Key features

Size	Flange pattern	Shaft connection	Shaft connection depth [mm]	Pneumatic connection
10	F03	T9	10	G1/8
	F04			1/8 NPT
20	F03	T9	10	G1/8
	F04	T11	12	1/8 NPT
	F05			
40	F04	T11	12	G1/8
	F05F07	T14	16	1/8 NPT
80	F05F07	T17	19	G1/8
	F07			1/8 NPT
120	F05F07	T17	19	G1/4
	F07			1/4 NPT
160	F07F10	T22	24	G1/4
	F07			1/4 NPT
240	F07F10	T22	24	G1/4
	F10			1/4 NPT
300	F07F10	T22	24	G1/4
	F10			1/4 NPT
480	F10F12	T27	29	G1/4
	F12			1/4 NPT
700	F10F12	T27	29	G1/4
	F12			1/4 NPT
900	F10F12	T27	29	G1/4
	F14	T36	38	1/4 NPT
1200	F10F12	T27	29	G1/4
	F14	T36	38	1/4 NPT
2300	F12F16	T46	48	G1/4
	F14	T36	38	1/4 NPT

Peripherals overview



Peripherals overview

Mounting components and accessories		Description	→ Page/Internet
[1]	Quarter turn actuators DFPD	For sizes 10 to 2300	7
[2]	Position indicator SASF	The different sizes of the SASF corresponds to the DFPD shaft size	39
[3]	Positioner CMSX	For controlling the position of quarter turn actuators in process automation systems	cmsx
[4]	Sensor box DAPZ	Round design, variant AR, electrical, inductive or inductive and explosion-proof sensing	dapz
[5]	Sensor box SRBC	For electrical feedback and position monitoring of process valves that are actuated with quarter turn actuators	srbc
[6]	Sensor box SRBG	For electrical feedback and position monitoring of process valves that are actuated with quarter turn actuators	srbg
[7]	Sensor box SRAP	Analogue sensor box continuously senses the entire swivel range and reports this back to the controller	srap
[8]	Solenoid valve VSNC	For single-acting and double-acting quarter turn actuators with a plug pattern to VDI/VDE 3845	vsnc
[9]	Solenoid valve VOFD	Solenoid valve with solenoid coil, connection pattern to NAMUR	vofd
[10]	Solenoid valve VOFC	Solenoid valve with solenoid coil, connection pattern to NAMUR	vofc
[11]	Ball valve VAPB, VZBA	2-way brass or stainless steel, corrosion-resistant; 3-way stainless steel, corrosion-resistant	vapb
[12]	Reducing sleeve DARQ	With female square and external octagon for mounting VAPB, VZBA	35

Type codes

001	Series	
DFPD	Semi-rotary drive	

002	System of units	
	Metric	
N	Imperial	

003	Size	
10	10	
20	20	
40	40	
80	80	
120	120	
160	160	
240	240	
300	300	
480	480	
700	700	
900	900	
1200	1200	
2300	2300	

004	Design	
RP	Rack and pinion	

005	Swivel angle [°]	
90	90	
120	120	
135	135	
180	180	

006	Swivel direction	
L	Left	
R	Right	

007	Function	
D	Double-acting	
S	Single-acting	

008	Spring force	
	None	
20	For connection pressure 2 bar	
25	For connection pressure 2.5 bar	
30	For connection pressure 3 bar	
35	For connection pressure 3.5 bar	
40	For connection pressure 4 bar	
45	For connection pressure 4.5 bar	
50	For connecting pressure 5 bar	
55	For connection pressure 5.5 bar	
60	For connection pressure 6 bar	

009	Normal position	
U	Open	
	Closed	

010	Flange pattern 1	
F03	Hole pattern F03	
F04	Hole pattern F04	
F05	Hole pattern F05	
F07	Hole pattern F07	
F10	Hole pattern F10	
F12	Hole pattern F12	
F14	Hole pattern F14	
F16	Hole pattern F16	

011	Flange pattern 2	
	None	
F07	Hole pattern F07	
F10	Hole pattern F10	
F12	Hole pattern F12	
F16	Hole pattern F16	

012	Width across flats	
	Standard	
9	9 mm	
11	11 mm	
17	17 mm	
27	27 mm	
36	36 mm	

013	Pneumatic connection	
	Standard	
X	Alternative connection size	

014	Temperature range	
	Standard	
T4	0 ... +150°C	

015	Shaft material	
	Standard	
R3	Stainless steel	

016	Housing surface treatment	
	None	
EP	Epoxy coated	

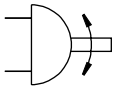
017	Industry focus	
	General	
C	Chemical industry	

018	Mechanical interface	
	Standard	
VDE2	VDI/VDE 3847-2	

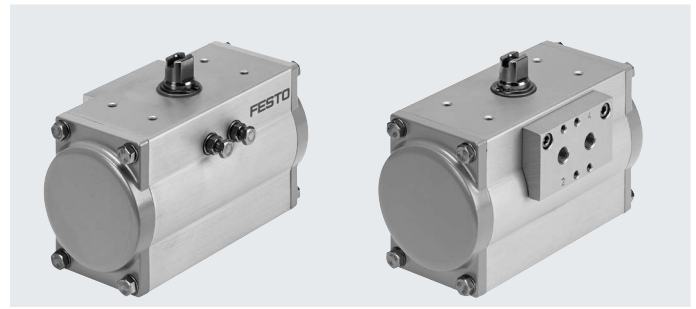
019	Approval for installation on ships	
	None	
GL	To DNV-GL for integration on ships	

Data sheet

Function



- | - Size
10 ... 2300
- ◡ - Swivel angle
0 ... 180°



General technical data											
Size	10	20	40	80	120	160					
Mode of operation	Double-acting										
Design	Gear rack/pinion										
Cushioning	No cushioning										
Mounting position	Any										
Pneumatic connection	G1/8					G1/4					
	1/8 NPT					1/4 NPT					
Process valve connection to standard	ISO 5211										
Valve connection conforms to standard	VDI/VDE 3845 (NAMUR)										
Connection for positioner and position sensor conforms to standard	VDI/VDE 3845 (NAMUR)										
Safety Integrity Level (SIL)	Up to SIL 2 High Demand mode, up to SIL 2 Low Demand mode, up to SIL 3 in a redundant architecture, up to SIL 1 High Demand mode										
Certified for safety function to ISO 13849 and IEC 61508 (SIL)	Product can be used in SRP/CS up to SIL 2 Low Demand, Product can be used in SRP/CS up to SIL 1 High Demand, up to SIL 3 in a redundant architecture										
Size	AA 1										
Flange hole pattern 1	F03	F04	F03	F04	F05	F04	F05	F05	F05	F07	
Flange hole pattern 2	-	-	-	-	-	F07	F07	F07	F07	F10	
Swivel angle [°]	90										
	-							120	-	120	-
	-							135	-	135	-
	-							180	-	180	-
End-position adjusting range at 0° [°]	-5 ... +5										
End-position adjusting range at 90° [°]	-5 ... +5										
End-position adjusting range at 180°	-						-5 ... +5	-	-5 ... +5	-	
Position sensing	Optical										
Closing direction	Closes to the right										

Data sheet

General technical data							
Size	240	300	480	700	900	1200	2300
Mode of operation	Double-acting						
Design	Gear rack/pinion						
Cushioning	No cushioning						
Mounting position	Any						
Pneumatic connection	G1/4						
	1/4 NPT						
Process valve connection to standard	ISO 5211						
Valve connection conforms to standard	VDI/VDE 3845 (NAMUR)						
Connection for positioner and position sensor conforms to standard	VDI/VDE 3845 (NAMUR)						
Safety Integrity Level (SIL)	Up to SIL 2 High Demand mode, up to SIL 2 Low Demand mode, up to SIL 3 in a redundant architecture, up to SIL 1 High Demand mode						
Certified for safety function to ISO 13849 and IEC 61508 (SIL)	Product can be used in SRP/CS up to SIL 2 Low Demand, Product can be used in SRP/CS up to SIL 1 High Demand, up to SIL 3 in a redundant architecture						
Size	AA 2				AA 3		
Flange hole pattern 1	F07	F07	F10	F10	F10 F14	F10 F14	F12 F14
Flange hole pattern 2	F10	F10	F12	F12	F12	F12	F16
Swivel angle [°]	90						
	120	–	120	–			
	135	–	135	–			
	180	–	180	–			
End-position adjustment range at 0° [°]	–5 ... +5						
End-position adjustment range at 90° [°]	–5 ... +5						
End-position adjustment range at 180°	–5 ... +5	–	–5 ... +5	–			
Position sensing	Optical						
Closing direction	Closes to the right						


Data sheet

Operating and environmental conditions		DFPD	DFPD-...T4
Operating pressure	[bar]	2 ... 8	3 ... 8
	[MPa]	0.2 ... 0.8	0.3 ... 0.8
	[psi]	29 ... 116	43.5 ... 116
Nominal operating pressure	[bar]	5.5	
	[MPa]	0.55	
	[psi]	79.75	
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]	
Note on operating/ pilot medium		Pressure dew point 10°C below ambient temperature/temperature of medium	
		Lubricated operation possible (in which case lubricated operation will always be required)	
Ambient temperature	[°C]	-20 ... +80	0 ... +150
Storage temperature	[°C]	-20 ... +60	
Maritime classification		See certificate	
Certificate issuing authority		DNV TAP00001CE, German Technical Control Board (TÜV) Rheinland 968/V 1106.01/2023	DNV TAP00001CE
UKCA marking (see declaration of conformity)		To UK EX instructions	

ATEX		DFPD	DFPD-...T4
ATEX category for gas		II 2G	
Type of ignition protection for gas		Ex h IIC T4 Gb X	Ex h IIC T3 Gb X
ATEX category for dust		II 2D	
Type of ignition protection for dust		Ex h IIIC T105°C Db X	Ex h IIIC T175°C Db X
Explosion-proof ambient temperature	[°C]	-20 ≤ Ta ≤ +80	0 ≤ Ta ≤ +150
CE marking (see declaration of conformity)		To EU Explosion Protection Directive (ATEX)	

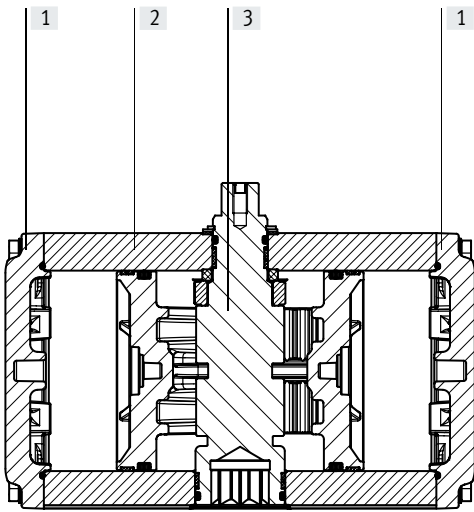
Data sheet

Theoretical torque [Nm] as a function of operating pressure											
	Operating pressure [bar]										
Size	2	2.5	3	3.5	4	4.5	5	5.5	6	7	8
10	3.7	4.7	5.6	6.6	7.5	8.4	9.4	10.3	11.2	13.1	15.0
20	7.3	9.1	11.0	12.8	14.6	16.4	18.3	20.1	21.9	25.6	29.2
40	13.9	17.4	20.9	24.4	27.9	31.3	34.8	38.3	41.8	48.7	55.7
80	30.0	37.5	44.9	52.4	59.9	67.4	74.9	82.4	89.9	104.9	119.9
120	42.7	53.4	64.0	74.7	85.4	96.1	106.7	117.4	128.1	149.4	170.8
160	58.5	73.2	87.8	102.5	117.1	131.7	146.4	161.0	175.6	204.9	234.2
240	85.2	106.5	127.8	149.1	170.4	191.7	213.0	234.3	255.6	298.2	340.8
300	109.8	137.2	164.7	192.1	219.6	247.0	274.5	301.9	329.3	384.2	439.1
480	172.4	215.5	258.5	301.6	344.7	387.8	430.9	474.0	517.1	603.3	689.5
700	241.2	301.5	361.8	422.1	482.4	542.7	603.0	663.3	723.6	844.2	964.8
900	306.2	382.7	459.3	535.8	612.4	688.9	765.4	842.0	918.5	1071.6	1224.7
1200	425.2	531.6	637.9	744.2	850.5	956.8	1063.1	1169.4	1275.7	1488.4	1701.0
2300	812.1	1015.1	1218.2	1421.2	1624.2	1827.2	2030.3	2233.3	2436.3	2842.4	3248.4

 **Note**

The operating torque of the actuator must not be higher than the maximum permissible torque listed in ISO 5211 in relation to the size of the mounting flange and of the coupling.

Data sheet



Materials	
Sectional view	
Quarter turn actuators	
[1] Cover	Coated die-cast aluminium
[2] Housing	Anodised wrought aluminium alloy
[3] Shaft	Nickel-plated steel
	R3 High-alloy stainless steel
- Connecting plate	Anodised wrought aluminium alloy
Piston/piston rod	Die-cast aluminium
Seals	NBR
Bearing	POM
Cam	Stainless steel casting (DFPD-10, 20, 40, 80, 120, 160-90) Steel (DFPD-240, 300, 480, 700, 900, 1200, 2300-90)
Screws	High-alloy stainless steel
Note on materials	RoHS-compliant

Air consumption [l/cycle] at 6 bar

Type	
DFPD-10-RP-90-D	1
DFPD-20-RP-90-D	1.8
DFPD-40-RP-90-D	3.4
DFPD-40-RP-120-D	4.2
DFPD-40-RP-135-D	5.6
DFPD-40-RP-180-D	5.2
DFPD-80-RP-90-D	7.4
DFPD-120-RP-90-D	10.4
DFPD-120-RP-120-D	11.9
DFPD-120-RP-135-D	12.6
DFPD-120-RP-180-D	12.8
DFPD-160-RP-90-D	14
DFPD-240-RP-90-D	20.3

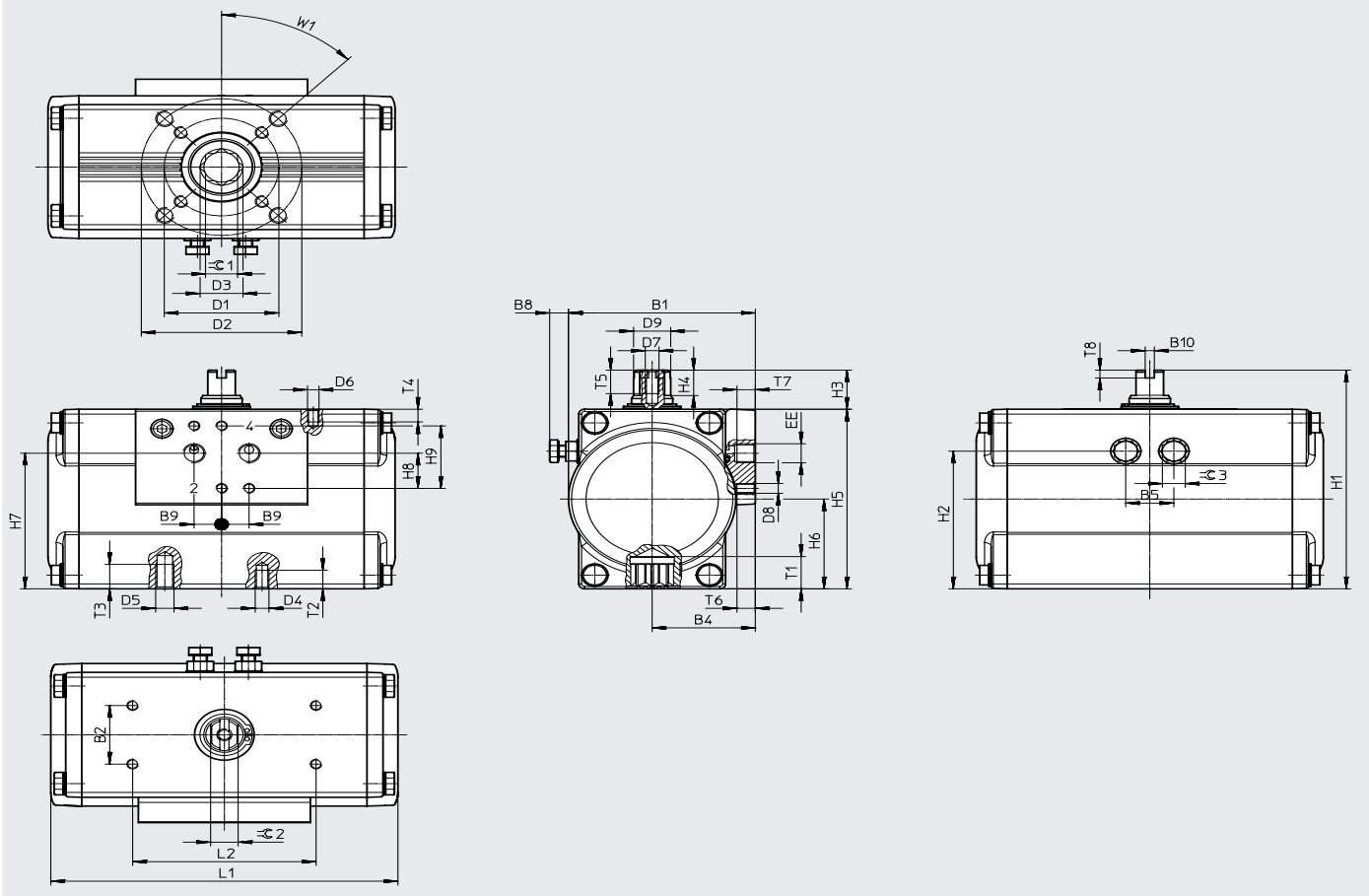
Type	
DFPD-240-RP-120-D	24.5
DFPD-240-RP-135-D	26.6
DFPD-240-RP-180-D	25.7
DFPD-300-RP-90-D	26.4
DFPD-480-RP-90-D	40.5
DFPD-480-RP-120-D	48.3
DFPD-480-RP-135-D	51.8
DFPD-480-RP-180-D	61.4
DFPD-700-RP-90-D	58.8
DFPD-900-RP-90-D	75.9
DFPD-1200-RP-90-D	105
DFPD-2300-RP-90-D	204

Data sheet

Dimensions

Download CAD data → www.festo.com

Size: 10 ... 80



Data sheet

Type	B1	B2 ±0.1	B4	B5	B8 max.	B9	B10	D1 ∅ ±0.1	D2 ∅ ±0.1	D3 ∅	D4	D5	D6
DFPD-10-F03	59.5	30	35	16	10.7	12	4	36	-	12	M5	-	M5
DFPD-10-F04								42					
DFPD-20-F04	68.5		38.5	19	9.2			-	14.6	M5	-		
DFPD-20-F05												M6	
DFPD-40-...-F0507	81.5		45	21	8.2			70	18.7	M6	M8		
DFPD-40-180-...-F0507													
DFPD-80-...-F0507	99	53	26	9	23.3								

Type	D7	D8	D9 ∅ ±0.1	EE	H1	H2	H3 -0.5	H4 +0.1	H5	H6 ±0.2	H7 ±0.3	H8 ±0.1	H9
DFPD-10-F03	M6	M5	10.9	G1/8 or 1/8 NPT	90	51	20	10	70	35	47	16	32
DFPD-10-F04			12.7		100	59.75		10	80	40	57.5		
DFPD-20-F04			16.2		112	70.5		13	92	46	67.5		
DFPD-20-F05													
DFPD-40-...-F0507			20.2		130	86		13	110	55	86.5		
DFPD-40-180-...-F0507													
DFPD-80-...-F0507													

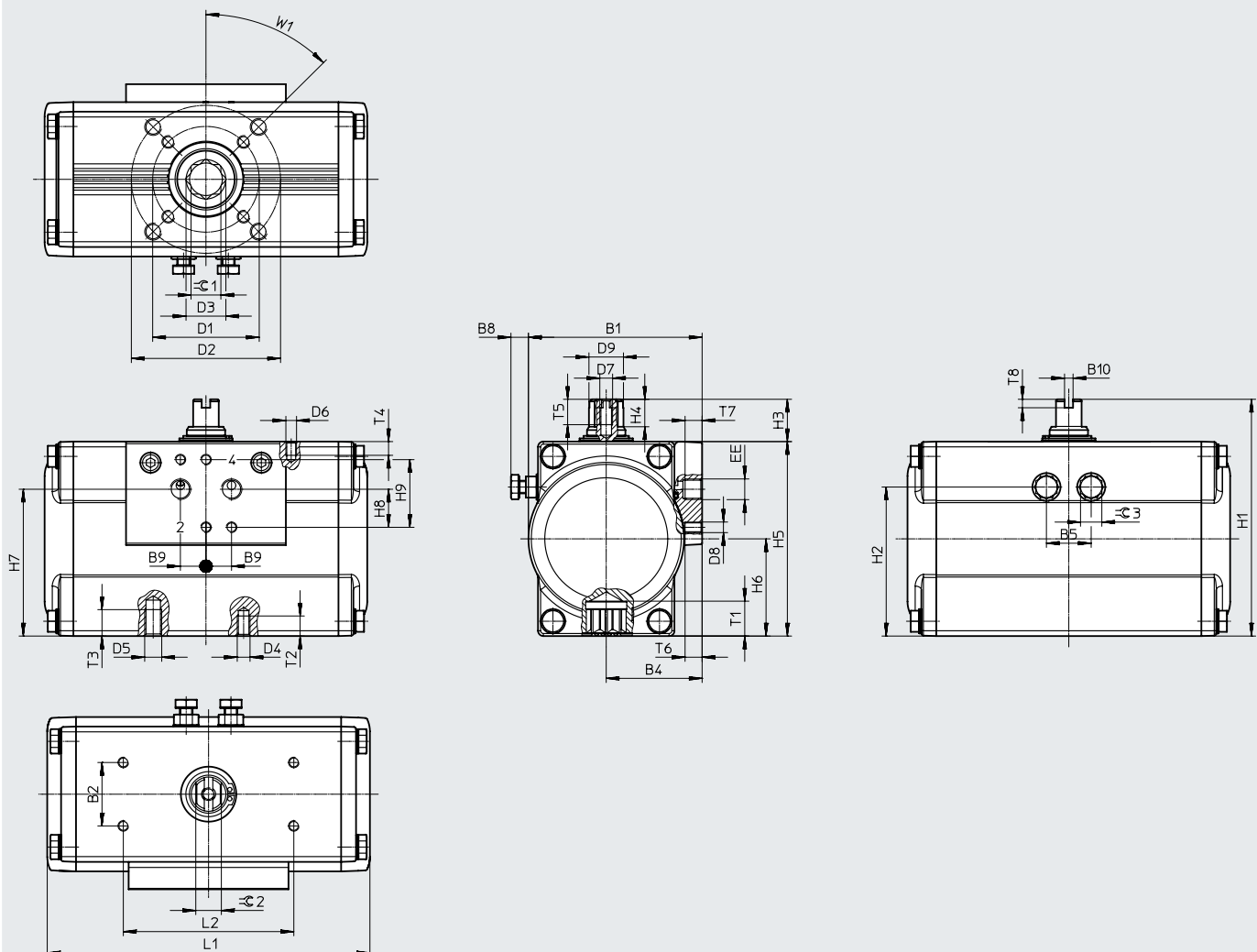
Type	L1	L2 ±0.1	T1 ±0.4	T2	T3	T4	T5	T6	T7	T8 +0.5	≈C 1 H11	≈C 2 h11	≈C 3	W1
DFPD-10-F03	124.7	80	10.7	8	-	8	12	8	8	4	9	9	10	45°
DFPD-10-F04														
DFPD-20-F04	133.3		13.2	8	-						11	9	10	
DFPD-20-F05														
DFPD-40-...-F0507	151.4		16.5	9	12						14	12	10	
DFPD-40-180-...-F0507	227													
DFPD-80-...-F0507	189.3	19.3	17	15	13									

Data sheet

Dimensions

Download CAD data → www.festo.com

Size: 120 ... 480



Data sheet

Type	B1	B2 ±0.1	B4	B5	B8 max.	B9	B10	D1 ∅ ±0.1	D2 ∅ ±0.1	D3 ∅	D4	D5	D6			
DFPD-120-...-F0507	111.5	30	60.5	32	12.3	12	4	50	70	23.2	M6	M8	M5			
DFPD-120-180-...-F0507																
DFPD-160-...-F0710	120		63.5	36	13.4							30		M8	M10	
DFPD-240-...-F0710	135.5		71.5	41	18.5					70	102	30.3				
DFPD-240-180-...-F0710			74.5	46	17					30.3						
DFPD-300-...-F0710	144											30				
DFPD-480-...-F1012	163			83	52			19.3			102	125		37.4	M10	M12
DFPD-480-180-...-F1012																

Type	D7	D8	D9 ∅ ±0.1	EE	H1	H2	H3 -0.5	H4 +0.1	H5	H6	H7 ±0.3	H8 ±0.1	H9		
DFPD-120-...-F0507	M6	M5	22.5	G1/4 or 1/4 NPT	143	97.75	20	13	123	61.5 _{±0.2}	98.4	16	32		
DFPD-120-180-...-F0507															
DFPD-160-...-F0710						25.5	154	106.25			134			67 _{±0.2}	109.4
DFPD-240-...-F0710						31.8	180	120.5	30	19.5	150			75 _{±0.2}	120.2
DFPD-240-180-...-F0710							192	131			162			81 _{±0.3}	132.1
DFPD-300-...-F0710						38	214	149.5			184			92 _{±0.4}	152.5
DFPD-480-...-F1012															
DFPD-480-180-...-F1012															

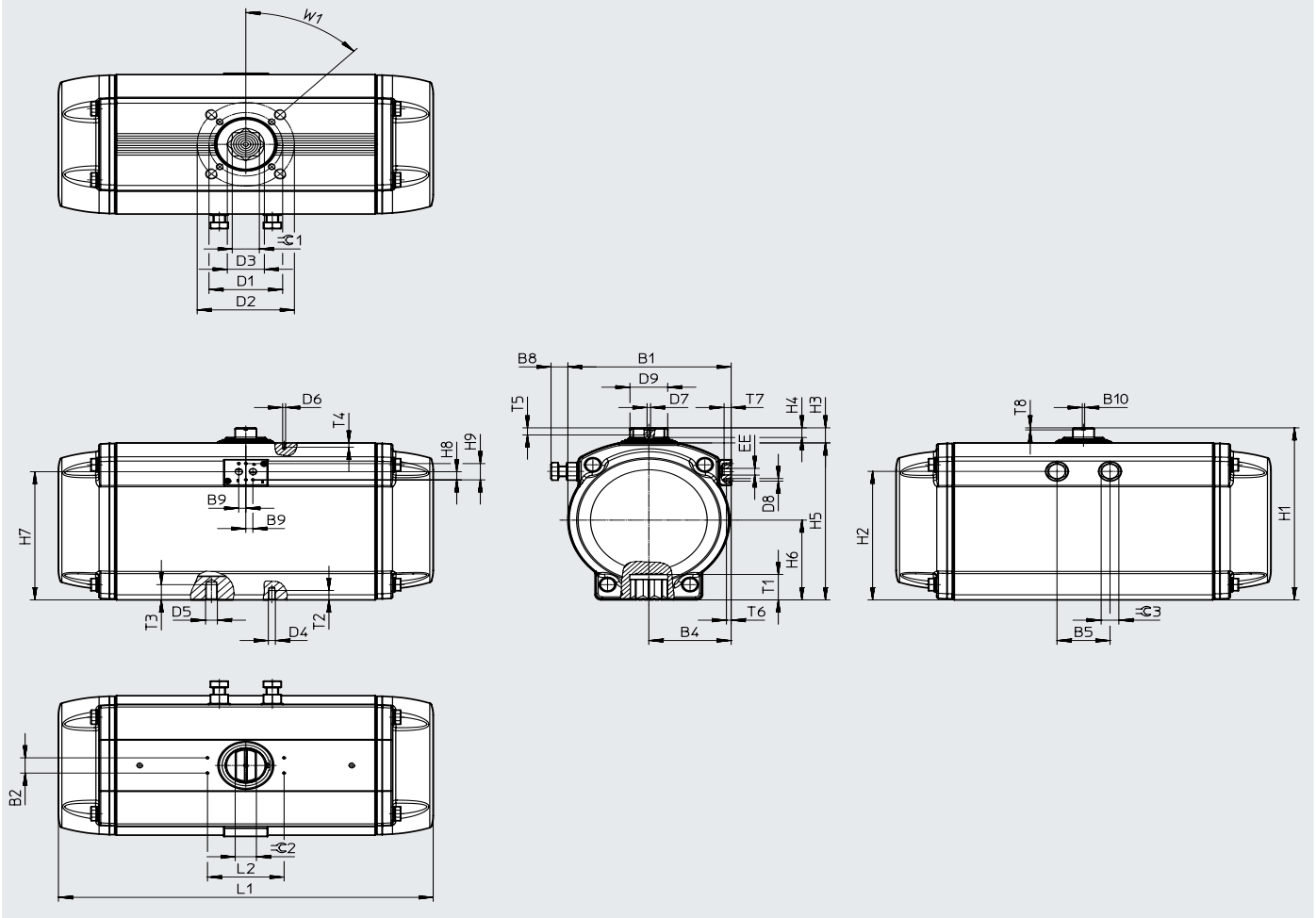
Type	L1	L2 ±0.1	T1 ±0.4	T2	T3	T4	T5	T6	T7	T8 +0.5	⊖ 1 H11	⊖ 2 h11	⊖ 3	W1					
DFPD-120-...-F0507	213.7	80	19.3	9	12	8	14	8	12	4	17	15	13	45°					
DFPD-120-180-...-F0507	326.8																		
DFPD-160-...-F0710	230.9																19	16	
DFPD-240-...-F0710	257		24.3	12	15												22	22	18
DFPD-240-180-...-F0710	395.5																		
DFPD-300-...-F0710	334.4																		
DFPD-480-...-F1012	374.2		29.5	15	18												27	27	21
DFPD-480-180-...-F1012	550.3																		

Data sheet

Dimensions

Download CAD data → www.festo.com

Size: 700 ... 2300



Data sheet

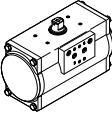
Type	B1	B2 ±0.1	B4	B5	B8 max.	B9	B10 ±0.1	D1 ∅	D2 ∅	D3 ∅	D4	D5	D6
DFPD-700- ... -F10/12	184	30	93	57.6	17.5	12	4	102	125	37.4	M10	M12	M5
DFPD-900- ... -F10/12	202		102	64.8	28.6			140	-	50.1	M16	-	
DFPD-900- ... -F14	221.5		111.5	72	24			102	125	37.4	M10	M12	
DFPD-1200- ... -F10/12			140	-	50.1			M16	-				
DFPD-1200- ... -F14	277		139.8	90	33			125	165	62.9	M12	M20	
DFPD-2300- ... -F12/16			140	-	50.1			M16	-				
DFPD-2300- ... -F14													

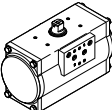
Type	D7	D8	D9 ±0.1	EE	H1	H2	H3	H4	H5	H6	H7	H8 ±0.1	H9	
DFPD-700- ... -F10/12	M6	M5	41	G1/4 or 1/4 NPT	232.7	168	29.7	21	203	103	164.9	16	32	
DFPD-900- ... -F10/12			44		252.7	182			223	113	178.3			
DFPD-900- ... -F14			50		275.7	204			246	125	199.6			
DFPD-1200- ... -F10/12			64		338.7	253			19	309	157			252.3
DFPD-1200- ... -F14														
DFPD-2300- ... -F12/16														
DFPD-2300- ... -F14														

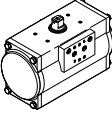
Type	L1	L2 ±0.1	T1 min.	T2	T3	T4	T5	T6	T7	T8	≈G 1 +0.5 H11	≈G 2 h11	≈G 3	W1
DFPD-700- ... -F10/12	428.2	80	29.7	15	18	8	14	8	12	4	27	30	21	45°
DFPD-900- ... -F10/12	469.6	130	30.2	15.5	18.5	36					32	24		
DFPD-900- ... -F14			40.2	24.5	-	27					36			
DFPD-1200- ... -F10/12	519.3		31	15.5	18.5	36						36		
DFPD-1200- ... -F14			40	24.5	-	46								
DFPD-2300- ... -F12/16	636		50	18.5	30	36					30			
DFPD-2300- ... -F14			40	24.5	-	36								

Data sheet

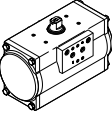
★ Core product range

Ordering data				
Type	Size	Product weight [g]	Part no.	Type
	10	965	★ 8047613	DFPD-10-RP-90-RD-F03
	20	1275	★ 8047614	DFPD-20-RP-90-RD-F04
	40	1882	★ 8047615	DFPD-40-RP-90-RD-F0507
	80	3308	★ 8047616	DFPD-80-RP-90-RD-F0507
	120	4872	★ 8048123	DFPD-120-RP-90-RD-F0507

Ordering data				
Type	Size	Product weight [g]	Part no.	Type
	160	6082	8048124	DFPD-160-RP-90-RD-F0710
	240	8594	8048125	DFPD-240-RP-90-RD-F0710
	300	11224	8048126	DFPD-300-RP-90-RD-F0710
	480	16025	8048127	DFPD-480-RP-90-RD-F1012

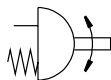
Ordering data				
Type	Size	Product weight [g]	Part no.	Type
	10	965	8048010	DFPD-10-RP-90-RD-F04
	20	1275	8048011	DFPD-20-RP-90-RD-F05
	40	2608	8065336	DFPD-40-RP-180-RD-F0507
	40	2467	8065337	DFPD-40-RP-135-RD-F0507
	40	2419	8065338	DFPD-40-RP-120-RD-F0507
	120	7122	8065339	DFPD-120-RP-180-RD-F0507
	120	6363	8065340	DFPD-120-RP-135-RD-F0507
	120	6250	8065341	DFPD-120-RP-120-RD-F0507
	240	12549	8065342	DFPD-240-RP-180-RD-F0710
	240	11139	8065343	DFPD-240-RP-135-RD-F0710
	240	10939	8065344	DFPD-240-RP-120-RD-F0710
	480	23456	8065345	DFPD-480-RP-180-RD-F1012
	480	21013	8065346	DFPD-480-RP-135-RD-F1012
	480	20653	8065347	DFPD-480-RP-120-RD-F1012
	700	22464	8065261	DFPD-700-RP-90-RD-F1012
	900	25574	8065265	DFPD-900-RP-90-RD-F14
	1200	35834	8065269	DFPD-1200-RP-90-RD-F14
2300	64900	8065273	DFPD-2300-RP-90-RD-F1216	


Data sheet

Ordering data				
Type	Size	Product weight [g]	Part no.	Type
Variant R3-EP, epoxy coated				
	10	965	8047617	DFPD-10-RP-90-RD-F03-R3-EP
			8048012	DFPD-10-RP-90-RD-F04-R3-EP
	20	1275	8047618	DFPD-20-RP-90-RD-F04-R3-EP
			8048013	DFPD-20-RP-90-RD-F05-R3-EP
	40	1882	8047619	DFPD-40-RP-90-RD-F0507-R3-EP
	80	3308	8047620	DFPD-80-RP-90-RD-F0507-R3-EP
	120	4872	8048128	DFPD-120-RP-90-RD-F0507-R3-EP
	160	6082	8048129	DFPD-160-RP-90-RD-F0710-R3-EP
	240	8594	8048130	DFPD-240-RP-90-RD-F0710-R3-EP
	300	11224	8048131	DFPD-300-RP-90-RD-F0710-R3-EP
	480	16025	8048132	DFPD-480-RP-90-RD-F1012-R3-EP
	700	22464	8065263	DFPD-700-RP-90-RD-F1012-R3-EP
	900	25574	8065267	DFPD-900-RP-90-RD-F14-R3-EP
	1200	35834	8065271	DFPD-1200-RP-90-RD-F14-R3-EP
2300	64900	8065275	DFPD-2300-RP-90-RD-F1216-R3-EP	

Data sheet

Function



- | - Size
20 ... 2300
-  - Swivel angle
0 ... 90°

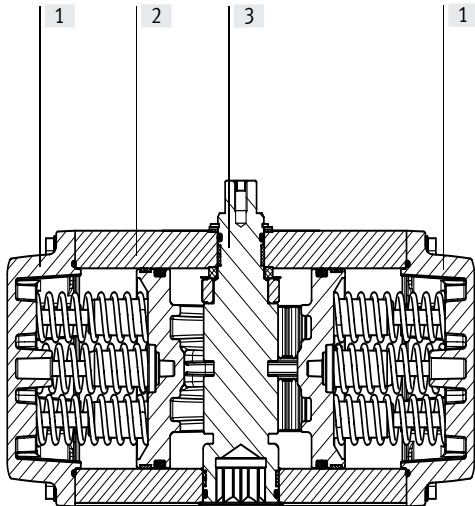


General technical data																			
Size	20	40	80	120	160	240	300	480	700	900	1200	2300							
Mode of operation	Single-acting																		
Design	Gear rack/pinion																		
Cushioning	No cushioning																		
Mounting position	Any																		
Pneumatic connection	G1/8							G1/4											
	1/8 NPT							1/4 NPT											
Process valve connection to standard	ISO 5211																		
Valve connection conforms to standard	VDI/VDE 3845 (NAMUR)																		
Connection for positioner and position sensor conforms to standard	VDI/VDE 3845 (NAMUR)																		
Safety Integrity Level (SIL)	Up to SIL 2 High Demand mode, up to SIL 2 Low Demand mode, up to SIL 3 in a redundant architecture, up to SIL 1 High Demand mode																		
Certified for safety function to ISO 13849 and IEC 61508 (SIL)	Product can be used in SRP/CS up to SIL 2 Low Demand, Product can be used in SRP/CS up to SIL 1 High Demand, up to SIL 3 in a redundant architecture																		
Size	AA 1							AA 2					AA 3						
Flange hole pattern 1	F03	F04	F05	F04	F05	F05	F05	F07	F07	F07	F10	F10	F10	F14	F10	F14	F12	F14	
Flange hole pattern 2	-	-	-	F07	F07	F07	F07	F10	F10	F10	F12	F12	F12	F12	F12	F12	F16	F16	
Swivel angle [°]	90																		
End-position adjustment range at 0° [°]	-5 ... +5																		
End-position adjustment range at 90° [°]	-5 ... +5																		
Position sensing	Optical																		
Closing direction	Closes to the right																		

Operating and environmental conditions										
Variant	S20	S25	S30	S35	S40	S45	S50	S55	S60	
Operating pressure	[bar]	2 ... 8								
	[MPa]	0.2 ... 0.8								
Nominal operating pressure	[bar]	2	2.5	3	3.5	4	4.5	5	5.5	6
	[MPa]	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6
	[psi]	29	36.25	43.5	50.75	58	65.25	72.5	79.75	87
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]									
Note on operating/pilot medium	Pressure dew point 10°C below ambient temperature/temperature of medium									
	Lubricated operation possible (in which case lubricated operation will always be required)									
Ambient temperature [°C]	-20 ... +80									
Storage temperature	-20 ... +60									
Maritime classification	See certificate									
Certificate issuing authority	German Technical Control Board (TÜV) Rheinland 968/V 1106.01/2023									
	DNV TAP00001CE									

Data sheet

ATEX	
ATEX category for gas	II 2G
Type of ignition protection for gas	Ex h IIC T4 Gb X
ATEX category for dust	II 2D
Type of ignition protection for dust	Ex h IIIC T105°C Db X
Explosion-proof ambient temperature [°C]	-20 ≤ Ta ≤ +80
CE marking (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)



Materials	
Sectional view	
Quarter turn actuators	
[1] Cover	Coated die-cast aluminium
[2] Housing	Anodised wrought aluminium alloy
[3] Shaft	Nickel-plated steel
	R3 High-alloy stainless steel
- Connecting plate	Anodised wrought aluminium alloy
- Piston rod	Die-cast aluminium
- Seals	NBR
- Spring	Spring steel
- Bearing	POM
- Cam	Stainless steel casting (DFPD-20...160...RS)
	Steel (DFPD-240 ... 2300...RS)
- Screws	High-alloy stainless steel
- Note on materials	RoHS-compliant


Air consumption [l/cycle] at 6 bar

Type	
DFPD-20-RP-90-S	0.8
DFPD-40-RP-90-S	1.5
DFPD-80-RP-90-S	3.1
DFPD-120-RP-90-S	4.3
DFPD-160-RP-90-S	5.9
DFPD-240-RP-90-S	8.6
DFPD-300-RP-90-S	11.0
DFPD-480-RP-90-S	17.2

Type	
DFPD-700-RP-90-S	24.5
DFPD-900-RP-90-S	31.5
DFPD-1200-RP-90-S	43.5
DFPD-2300-RP-90-S	84.4


Data sheet

Theoretical torque [Nm] as a function of operating pressure [bar] and swivel angle [°]													
Spring configuration	Nominal swivel angle	Spring torque [Nm]	Operating pressure [bar]										
	[°]		2	2.5	3	3.5	4	4.5	5	5.5	6	7	8
Size DFPD-20													
20	0	2.4	4.9	6.7	8.6	10.4	12.2	14.0	15.9	17.7	19.5	23.2	26.8
	90	4.8	2.5	4.4	6.2	8.0	9.9	11.7	13.5	15.3	17.2	20.8	24.5
25	0	3.0	4.3	6.1	8.0	9.8	11.6	13.4	15.3	17.1	18.9	22.6	26.2
	90	6.0	1.4	3.2	5.0	6.8	8.7	10.5	12.3	14.2	16.0	19.6	23.3
30	0	3.6		5.5	7.4	9.2	11.0	12.8	14.7	16.5	18.3	22.0	25.6
	90	7.1		2.0	3.8	5.7	7.5	9.3	11.1	13.0	14.8	18.4	22.1
35	0	4.2			6.8	8.6	10.4	12.2	14.1	15.9	17.7	21.4	25.0
	90	8.3			2.6	4.5	6.3	8.1	9.9	11.8	13.6	17.3	20.9
40	0	4.8				8.0	9.8	11.6	13.5	15.3	17.1	20.8	24.4
	90	9.5				3.3	5.1	6.9	8.8	10.6	12.4	16.1	19.7
45	0	5.4					9.2	11.0	12.9	14.7	16.5	20.2	23.8
	90	10.7					3.9	5.7	7.6	9.4	11.2	14.9	18.5
50	0	6.0						10.4	12.3	14.1	15.9	19.6	23.2
	90	11.9						4.5	6.4	8.2	10.0	13.7	17.3
55	0	6.6							11.7	13.5	15.3	19.0	22.6
	90	13.1							5.2	7.0	8.8	12.5	16.1
60	0	7.2								12.9	14.7	18.4	22.0
	90	14.3								5.8	7.6	11.3	15.0
Size DFPD-40													
20	0	4.6	9.3	12.8	16.3	19.8	23.3	26.7	30.2	33.7	37.2	44.1	51.1
	90	9.1	4.8	8.3	11.8	15.3	18.8	22.3	25.7	29.2	32.7	39.7	46.6
25	0	5.8	8.2	11.7	15.1	18.6	22.1	25.6	29.1	32.6	36.0	43.0	50.0
	90	11.4	2.6	6.1	9.5	13.0	16.5	20.0	23.5	27.0	30.4	37.4	44.4
30	0	6.9		10.5	14.0	17.5	21.0	24.4	27.9	31.4	34.9	41.8	48.8
	90	13.6		3.8	7.3	10.8	14.2	17.7	21.2	24.7	28.2	35.1	42.1
35	0	8.1			12.8	16.3	19.8	23.3	26.8	30.3	33.7	40.7	47.7
	90	15.9			5.0	8.5	12.0	15.4	18.9	22.4	25.9	32.9	39.8
40	0	9.2				15.2	18.7	22.1	25.6	29.1	32.6	39.5	46.5
	90	18.2				6.2	9.7	13.2	16.7	20.1	23.6	30.6	37.5
45	0	10.4					17.5	21.0	24.5	28.0	31.4	38.4	45.4
	90	20.4					7.4	10.9	14.4	17.9	21.4	28.3	35.3
50	0	11.5						19.8	23.3	26.8	30.3	37.2	44.2
	90	22.7						8.6	12.1	15.6	19.1	26.0	33.0
55	0	12.7							22.2	25.7	29.1	36.1	43.1
	90	25.0							9.8	13.3	16.8	23.8	30.7
60	0	13.8								24.5	28.0	34.9	41.9
	90	27.2								11.1	14.5	21.5	28.5

 **Note**
 The semi-rotary drive is designed to switch to a specific position by spring force when de-energized. A loss of at least 30% of the calculated torque is expected as a result of spring relaxation and friction.
 Please consider an appropriate safety factor when selecting and configuring your drive.

Data sheet

Theoretical torque [Nm] as a function of operating pressure [bar] and swivel angle [°]													
Spring configuration	Nominal swivel angle	Spring torque [Nm]	Operating pressure [bar]										
	[°]		2	2.5	3	3.5	4	4.5	5	5.5	6	7	8
Size DFPD-80													
20	0	9.9	20.1	27.6	35.1	42.6	50.0	57.5	65.0	72.5	80.0	95.0	110.0
	90	19.5	10.5	18.0	25.5	33.0	40.4	47.9	55.4	62.9	70.4	85.4	100.4
25	0	12.4	17.6	25.1	32.6	40.1	47.6	55.1	62.6	70.1	77.5	92.5	107.5
	90	24.4	5.6	13.1	20.6	28.1	35.6	43.1	50.6	58.1	65.5	80.5	95.5
30	0	14.8		22.6	30.1	37.6	45.1	52.6	60.1	67.6	75.1	90.1	105.0
	90	29.2		8.2	15.7	23.2	30.7	38.2	45.7	53.2	60.7	75.5	90.6
35	0	17.3			27.7	35.1	42.6	50.1	57.6	65.1	72.6	87.6	102.6
	90	34.1			10.9	18.3	25.8	33.3	40.8	48.3	55.8	70.8	85.8
40	0	19.8				32.7	40.2	47.7	55.1	62.6	70.1	85.1	100.1
	90	39.0				13.5	21.0	28.5	35.9	43.4	50.9	65.9	80.9
45	0	22.2					37.7	45.2	52.7	60.2	67.7	82.6	97.6
	90	43.8					16.1	23.6	31.1	38.6	46.1	61.0	76.0
50	0	24.7						42.7	50.2	57.7	65.2	80.2	95.2
	90	48.7						18.7	26.2	33.7	41.2	56.2	71.2
55	0	27.2							47.7	55.2	62.7	77.7	92.7
	90	53.6							21.3	28.8	36.3	51.3	66.3
60	0	29.6								52.8	60.3	75.2	90.2
	90	58.4								24.0	31.5	46.4	61.4
Size DFPD-120													
20	0	14.0	28.7	39.3	50.0	60.7	71.3	82.0	92.7	103.4	114.0	135.4	156.7
	90	27.8	14.9	25.6	36.3	46.9	57.6	68.3	79.0	89.6	100.3	121.7	143.0
25	0	17.6	25.1	35.8	46.5	57.2	67.8	78.5	89.2	99.9	110.5	131.9	153.2
	90	34.7	8.0	18.7	29.3	40.0	50.7	61.4	72.0	82.7	93.4	114.7	136.1
30	0	21.1		32.3	43.0	53.6	64.3	75.0	85.7	96.3	107.0	128.4	149.7
	90	41.6		11.7	22.4	33.1	43.7	54.4	65.1	75.8	86.4	107.8	129.1
35	0	24.6			39.5	50.1	60.8	71.5	82.2	92.8	103.5	124.8	146.2
	90	48.6			15.5	26.1	36.8	47.5	58.1	68.8	79.5	100.8	122.2
40	0	28.1				46.6	57.3	68.0	78.6	89.3	100.0	121.3	142.7
	90	55.5				19.2	29.9	40.5	51.2	61.9	72.6	93.9	115.2
45	0	31.6					53.8	64.5	75.1	85.8	96.5	117.8	139.2
	90	62.5					22.9	33.6	44.3	54.9	65.6	87.0	108.3
50	0	35.1						61.0	71.6	82.3	93.0	114.3	135.7
	90	69.4						26.7	37.3	48.0	58.7	80.0	101.4
55	0	38.6							68.1	78.8	89.5	110.8	132.2
	90	76.3							30.4	41.1	51.7	73.1	94.4
60	0	42.1								75.3	86.0	107.3	128.6
	90	83.3								34.1	44.8	66.1	87.5


 **Note**

The semi-rotary drive is designed to switch to a specific position by spring force when de-energized. A loss of at least 30% of the calculated torque is expected as a result of spring relaxation and friction.

Please consider an appropriate safety factor when selecting and configuring your drive.


Data sheet

Theoretical torque [Nm] as a function of operating pressure [bar] and swivel angle [°]													
Spring configuration	Nominal swivel angle	Spring torque [Nm]	Operating pressure [bar]										
	[°]		2	2.5	3	3.5	4	4.5	5	5.5	6	7	8
Size DFPD-160													
20	0	19.2	39.3	53.9	68.6	83.2	97.9	112.5	127.1	141.8	156.4	185.7	214.9
	90	38.1	20.5	35.1	49.7	64.4	79.0	93.6	108.3	122.9	137.6	166.8	196.1
25	0	24.1	34.5	49.1	63.8	78.4	93.0	107.7	122.3	137.0	151.6	180.9	210.1
	90	47.6	37.6	25.6	40.2	54.9	69.5	84.1	98.8	113.4	128.0	157.3	186.6
30	0	28.9		44.3	59.0	73.6	88.2	102.9	117.5	132.1	146.8	176.0	205.3
	90	57.1		16.1	30.7	45.3	60.0	74.6	89.2	103.9	118.5	147.8	177.1
35	0	33.7			54.1	68.8	83.4	98.1	112.7	127.3	142.0	171.2	200.5
	90	66.6			21.2	35.8	50.4	65.1	79.7	94.4	109.0	138.3	167.5
40	0	38.5				64.0	78.6	93.2	107.9	122.5	137.2	166.4	195.7
	90	76.2				26.3	40.9	55.6	70.2	84.8	99.5	128.7	158.0
45	0	43.3					73.8	88.4	103.1	117.7	132.3	161.6	190.9
	90	85.7					31.4	46.0	60.7	75.3	90.0	119.2	148.5
50	0	48.1						83.6	98.3	112.9	127.5	156.8	186.1
	90	95.2						36.5	51.2	65.8	80.4	109.7	139.0
55	0	52.9							93.5	108.1	122.7	152.0	181.3
	90	104.7							41.6	56.3	70.9	100.2	129.5
60	0	57.7								103.3	117.9	147.2	176.5
	90	114.2								46.8	61.4	90.7	119.9
Size DFPD-240													
20	0	28.0	57.2	78.5	99.8	121.1	142.4	163.7	185.0	206.3	227.6	270.2	312.8
	90	55.4	29.8	51.1	72.4	93.7	115.0	136.3	157.6	178.9	200.2	242.8	285.4
25	0	35.0	50.2	71.5	92.8	114.1	135.4	156.7	178.0	199.3	220.6	263.2	305.8
	90	69.2	16.0	37.3	58.6	79.9	101.2	122.5	143.8	165.1	186.4	229.0	271.6
30	0	42.0		64.5	85.8	107.1	128.4	149.7	171.0	192.3	213.6	256.2	298.8
	90	83.0		23.5	44.8	66.1	87.4	108.7	130.0	151.3	172.6	215.2	257.8
35	0	49.0			78.8	100.1	121.4	142.7	164.0	185.3	206.6	249.2	291.8
	90	96.9			30.9	52.2	73.5	94.8	116.1	137.5	158.7	201.3	243.9
40	0	56.0				93.1	114.4	135.7	157.0	178.3	199.6	242.2	284.8
	90	110.7				38.4	59.7	81.0	102.3	123.6	144.9	187.5	230.1
45	0	63.0					107.4	128.7	150.0	171.3	192.6	235.2	277.8
	90	124.6					45.8	67.1	88.4	109.7	131.0	173.6	216.2
50	0	70.0						121.7	143.0	164.3	185.6	228.2	270.8
	90	138.4						53.3	74.6	95.9	117.2	159.8	202.4
55	0	77.0							136.0	157.3	178.6	221.2	263.8
	90	152.2							60.8	82.1	103.4	146.0	188.6
60	0	84.0								150.3	171.6	214.2	256.8
	90	166.1								68.2	89.5	132.1	174.7

 **Note**
 The semi-rotary drive is designed to switch to a specific position by spring force when de-energized. A loss of at least 30% of the calculated torque is expected as a result of spring relaxation and friction.
 Please consider an appropriate safety factor when selecting and configuring your drive.

Data sheet

Theoretical torque [Nm] as a function of operating pressure [bar] and swivel angle [°]													
Spring configuration	Nominal swivel angle	Spring torque	Operating pressure [bar]										
	[°]		[Nm]	2	2.5	3	3.5	4	4.5	5	5.5	6	7
Size DFPD-300													
20	0	36.1	73.7	101.1	128.6	156.0	183.4	210.9	238.3	265.8	293.2	348.1	403.0
	90	71.4	38.4	65.9	93.3	120.8	148.2	175.6	203.1	230.5	258.0	312.9	367.8
25	0	45.2	64.6	92.1	119.5	147.0	174.4	201.9	229.3	256.8	284.2	339.1	394.0
	90	89.2	20.6	48.0	75.5	102.9	130.4	157.8	185.3	212.7	240.1	295.0	349.9
30	0	54.2		83.0	110.5	137.9	165.4	192.8	220.3	247.7	275.2	330.1	384.9
	90	107.0		30.2	57.6	85.1	112.5	140.0	167.4	194.9	222.3	277.2	332.1
35	0	63.2			101.5	128.9	156.4	183.8	211.2	238.7	266.1	321.0	375.9
	90	124.9			39.8	67.2	94.7	122.1	149.6	177.0	204.5	259.4	314.2
40	0	72.2				119.9	147.3	174.8	202.2	229.7	257.1	312.0	366.9
	90	142.7				49.4	76.8	104.3	131.7	159.2	186.6	241.5	296.4
45	0	81.3					138.3	165.7	193.2	220.6	248.1	303.0	357.9
	90	160.6					59.0	86.4	113.9	141.3	168.8	223.7	278.6
50	0	90.3						156.7	184.2	211.6	239.0	293.9	348.8
	90	178.4						68.6	96.1	123.5	150.9	205.8	260.7
55	0	99.3							175.1	202.6	230.0	284.9	339.8
	90	196.2							78.2	105.7	133.1	188.0	242.9
60	0	108.4								193.5	221.0	275.9	330.8
	90	214.1								87.8	115.3	170.2	225.0
Size DFPD-480													
20	0	56.7	115.7	158.8	201.9	245.0	288.0	331.1	374.2	417.3	460.4	546.6	632.8
	90	112.0	60.3	103.4	146.5	189.6	232.7	275.8	318.9	362.0	405.1	491.2	577.4
25	0	70.9	101.5	144.6	187.7	230.8	273.9	317.0	360.1	403.2	446.2	532.4	618.6
	90	140.1	32.3	75.4	118.5	161.6	204.7	247.8	290.9	334.0	377.0	463.2	549.4
30	0	85.0		130.4	173.5	216.6	259.7	302.8	345.9	389.0	432.1	518.3	604.4
	90	168.1		47.4	90.5	133.6	176.7	219.8	262.8	305.9	349.0	435.2	521.4
35	0	99.2			159.4	202.4	245.5	288.6	331.7	374.8	417.9	504.1	590.3
	90	196.1			62.5	105.6	148.7	191.7	234.8	277.9	321.0	407.2	493.4
40	0	113.4				188.3	231.4	274.5	317.5	360.6	403.7	489.9	576.1
	90	224.1				77.6	120.6	163.7	206.8	249.9	293.0	379.2	465.4
45	0	127.5					217.2	260.3	303.4	346.5	389.6	475.7	561.9
	90	252.1					92.6	135.7	178.8	221.9	265.0	351.2	437.4
50	0	141.7						246.1	289.2	332.3	375.4	461.6	547.8
	90	280.1						107.1	150.8	193.9	237.0	323.2	409.4
55	0	155.9							275.0	318.1	361.2	447.4	533.6
	90	308.1							122.8	165.9	209.0	295.2	381.3
60	0	170.0								304.0	347.1	433.2	519.4
	90	336.1								137.9	181.0	267.2	353.3


 **Note**

The semi-rotary drive is designed to switch to a specific position by spring force when de-energized. A loss of at least 30% of the calculated torque is expected as a result of spring relaxation and friction.

Please consider an appropriate safety factor when selecting and configuring your drive.


Data sheet

Theoretical torque [Nm] as a function of operating pressure [bar] and swivel angle [°]														
Spring configuration	Nominal swivel angle	Spring torque [Nm]	Operating pressure [bar]											
	[°]		2	2.5	3	3.5	4	4.5	5	5.5	6	7	8	
Size DFPD-700														
20	0	78.8	162.4	222.7	283.0	343.3	403.6	463.9	524.2	584.5	644.8	705.1	765.4	825.7
	90	143.7	97.5	157.8	218.1	278.4	338.7	399.0	459.3	519.6	579.9	640.2	700.5	760.8
25	0	99.6	141.6	201.9	262.2	322.5	382.8	443.1	503.4	563.7	624.0	684.3	744.6	804.9
	90	181.7	59.5	119.8	180.1	240.4	300.7	361.0	421.3	481.6	541.9	602.2	662.5	722.8
30	0	120.9		180.6	240.9	301.2	361.5	421.8	482.1	542.4	602.7	663.0	723.3	783.6
	90	220.5		81.0	141.3	201.6	261.9	322.2	382.5	442.8	503.1	563.4	623.7	684.0
35	0	142.6			219.2	279.5	339.8	400.1	460.4	520.7	581.0	641.3	701.6	761.9
	90	260.1			101.6	161.9	222.2	282.5	342.8	403.1	463.4	523.7	584.0	644.3
40	0	164.8				257.3	317.6	377.9	438.2	498.5	558.8	619.1	679.4	739.7
	90	300.6				121.5	181.8	242.1	302.4	362.7	423.0	483.3	543.6	603.9
45	0	187.4					295.0	355.3	415.6	475.9	536.2	596.5	656.8	717.1
	90	341.9					140.5	200.8	261.1	321.4	381.7	442.0	502.3	562.6
50	0	210.5						332.2	392.5	452.8	513.1	573.4	633.7	694.0
	90	384.0						158.7	219.0	279.3	339.6	399.9	460.2	520.5
55	0	234.1							368.9	429.2	489.5	549.8	610.1	670.4
	90	427.0							176.0	236.3	296.6	356.9	417.2	477.5
60	0	258.1								405.2	465.5	525.8	586.1	646.4
	90	470.7								192.5	252.8	313.1	373.4	433.7
Size DFPD-900														
20	0	99.2	206.9	283.5	360.0	436.6	513.1	589.7	666.2	742.8	819.3	895.8	972.4	1048.9
	90	181.6	124.6	201.1	277.6	354.2	430.7	507.3	583.8	660.4	736.9	813.5	890.0	966.5
25	0	125.5	180.7	257.3	333.8	410.3	486.9	563.4	640.0	716.5	793.1	869.6	946.2	1022.7
	90	229.6	76.5	153.1	229.6	306.2	382.7	459.3	535.8	612.4	688.9	765.4	842.0	918.5
30	0	152.3		230.5	307.0	383.5	460.1	536.6	613.2	689.7	766.3	842.8	919.4	995.9
	90	278.7		104.0	180.6	257.1	333.7	410.2	486.8	563.3	639.8	716.4	792.9	869.4
35	0	179.6			279.6	356.2	432.7	509.3	585.8	662.3	738.9	815.4	892.0	968.5
	90	328.8			130.5	207.0	283.6	360.1	436.7	513.2	589.7	666.2	742.8	819.3
40	0	207.6				328.2	404.8	481.3	557.9	634.4	710.9	787.4	864.0	940.5
	90	379.9				155.9	232.4	309.0	385.5	462.1	538.6	615.1	691.7	768.2
45	0	236.1					376.2	452.8	529.3	605.9	682.4	759.0	835.5	912.0
	90	432.1					180.2	256.8	333.3	409.9	486.4	563.0	639.5	716.0
50	0	265.2						423.7	500.3	576.8	653.3	729.8	806.3	882.8
	90	485.4						203.5	280.1	356.6	433.2	509.7	586.3	662.8
55	0	294.8							470.6	547.1	623.7	700.2	776.7	853.2
	90	539.6							225.8	302.4	378.9	455.4	531.9	608.4
60	0	325.1								516.9	593.5	670.0	746.5	823.0
	90	595.0								247.0	323.6	400.1	476.7	553.2

 **Note**
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 Please consider an appropriate safety factor when selecting and configuring your drive.

Data sheet

Theoretical torque [Nm] as a function of operating pressure [bar] and swivel angle [°]													
Spring configuration	Nominal swivel angle	Spring torque [Nm]	Operating pressure [bar]										
	[°]		2	2.5	3	3.5	4	4.5	5	5.5	6	7	8
Size DFPD-1200													
20	0	146.4	278.9	385.2	491.5	597.8	704.1	810.5	916.8	1023.1	1129.4	1342	1554
	90	243.8	181.5	287.8	394.1	500.4	606.7	713.0	819.3	925.7	1032.0	1244	1457
25	0	185.0	240.2	346.5	452.8	559.1	665.4	771.8	878.1	984.4	1090.7	1303	1515
	90	308.2	117.0	223.3	329.7	436.0	542.3	648.6	754.9	861.2	967.5	1180	1392
30	0	224.6		307.0	413.3	519.6	625.9	732.2	838.5	944.9	1051.2	1263	1476
	90	374.1		157.5	263.8	370.1	476.4	582.7	689.1	795.4	901.7	1114	1326
35	0	264.9			372.9	479.2	585.5	691.9	798.2	904.5	1010.8	1223	1436
	90	441.3			196.6	302.9	409.2	515.5	621.8	728.1	834.4	1047	1259
40	0	306.2				438.0	544.3	650.6	757.0	863.3	969.6	1182	1394
	90	510.0				234.2	340.5	446.8	553.2	659.5	765.8	978.4	1191
45	0	348.2					502.3	608.6	714.9	821.2	927.5	1140	1352
	90	580.0					270.5	376.8	483.1	589.4	695.7	908.4	1121
50	0	391.1						565.7	672.0	778.3	884.6	1097	1309
	90	651.5						305.3	411.7	518.0	624.3	836.9	1049
55	0	434.9							628.3	734.6	840.9	1053	1266
	90	724.3							338.8	445.1	551.4	764.1	976.7
60	0	479.4								690.0	796.3	1008	1221
	90	798.6								370.9	477.2	689.8	902.4
Size DFPD-2300													
20	0	278.8	533.3	736.3	939.4	1142	1345	1548	1751	1954	2157	2563	2969
	90	473.5	338.6	541.6	744.7	947.7	1150	1353	1556	1759	1962	2368	2774
25	0	352.5	459.6	662.6	865.7	1068	1271	1474	1677	1880	2083	2489	2895
	90	598.7	213.4	416.4	619.5	822.5	1025	1228	1431	1634	1837	2243	2649
30	0	427.8		587.3	790.4	993.4	1196	1399	1602	1805	2008	2414	2820
	90	726.6		288.5	491.6	694.6	897.6	1100	1303	1506	1709	2115	2521
35	0	504.7			713.5	916.5	1119	1322	1525	1728	1931	2337	2743
	90	857.2			361.0	564.0	767.0	970.0	1173	1376	1579	1985	2391
40	0	583.2				838.0	1041	1244	1447	1650	1853	2259	2665
	90	990.5				430.6	633.7	836.7	1039	1242	1445	1851	2257
45	0	663.3					960.9	1163	1367	1570	1773	2179	2585
	90	1127					497.6	700.6	903.6	1106	1309	1715	2121
50	0	745.0						1082	1285	1488	1691	2097	2503
	90	1265						561.8	764.9	967.9	1170	1577	1983
55	0	828.3							1201	1405	1608	2014	2420
	90	1407							623.4	826.4	1029	1435	1841
60	0	913.2								1320	1523	1929	2335
	90	1551								682.2	885.2	1291	1697

 - Note

The semi-rotary drive is designed to switch to a specific position by spring force when de-energized. A loss of at least 30% of the calculated torque is expected as a result of spring relaxation and friction.

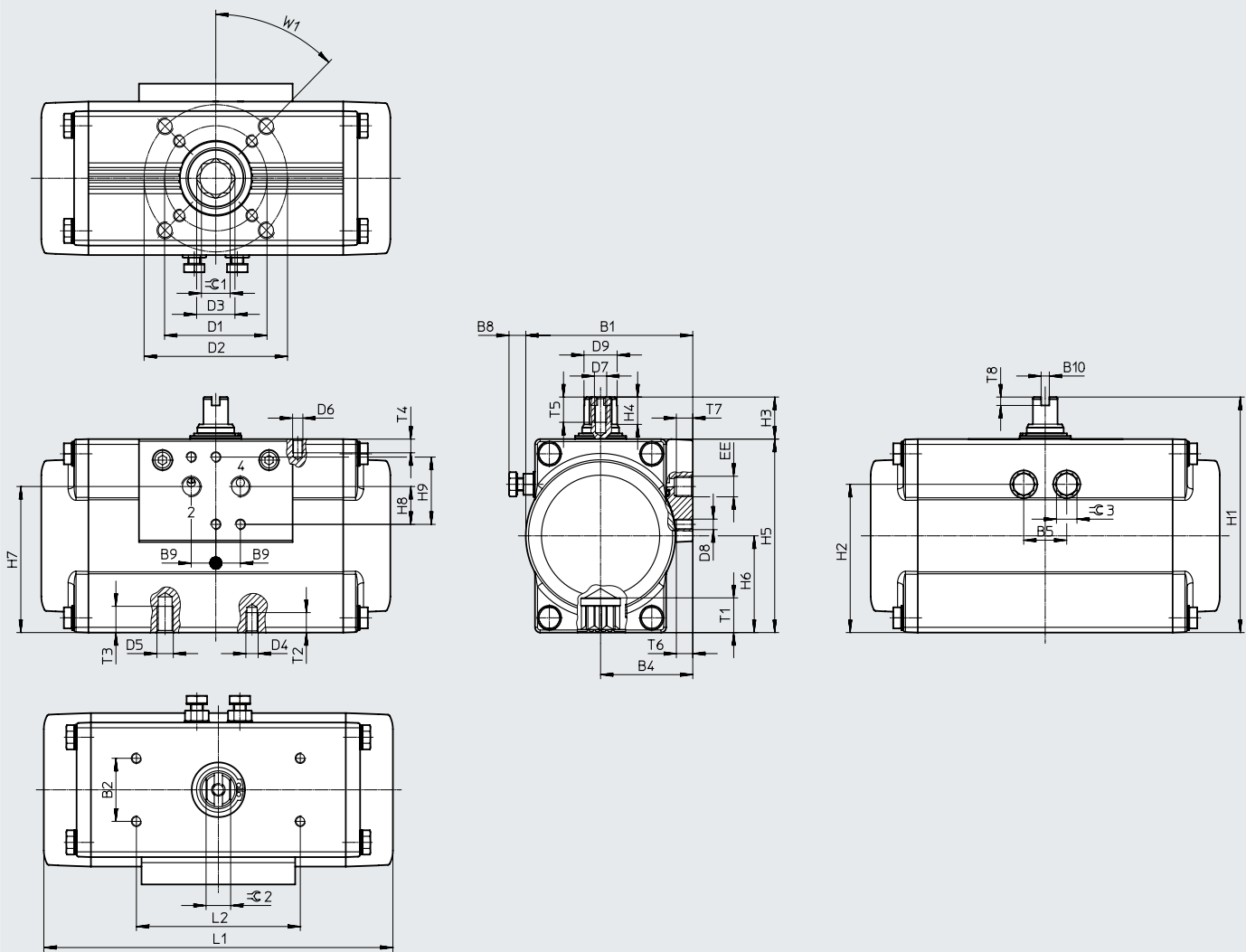
Please consider an appropriate safety factor when selecting and configuring your drive.

Data sheet

Dimensions

Size: 20 ... 80

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Data sheet

Type	B1	B2	B4	B5	B8	B9	B10	D1 ∅	D2 ∅	D3 ∅	D4	D5	D6
[mm]		±0.1			max.		+0.1	±0.1	±0.1				
DFPD-20-F03	68.5	30	38.5	19	9.2	12	4	36	-	12	M5	-	M5
DFPD-20-F04								42		14.6			
DFPD-20-F05								50		14.6			
DFPD-40-F04	81.5	30	45	21	8.2	12	4	42	70	18.7	M6	M8	M5
DFPD-40-F0507								50		23.3			
DFPD-80-F0507								99		53			

Type	D7	D8	D9 ∅	EE	H1	H2	H3	H4	H5	H6	H7	H8	H9
[mm]			±0.1				-0.5	+0.1		±0.2	±0.3	±0.1	
DFPD-20-F03	M6	M5	12.7	G1/8 or 1/8 NPT	100	59.8	20	10	80	40	57.5	16	32
DFPD-20-F04													
DFPD-20-F05													
DFPD-40-F04	M6	M5	16.2	G1/8 or 1/8 NPT	112	70.5	20	13	92	46	67.5	16	32
DFPD-40-F0507													
DFPD-80-F0507													

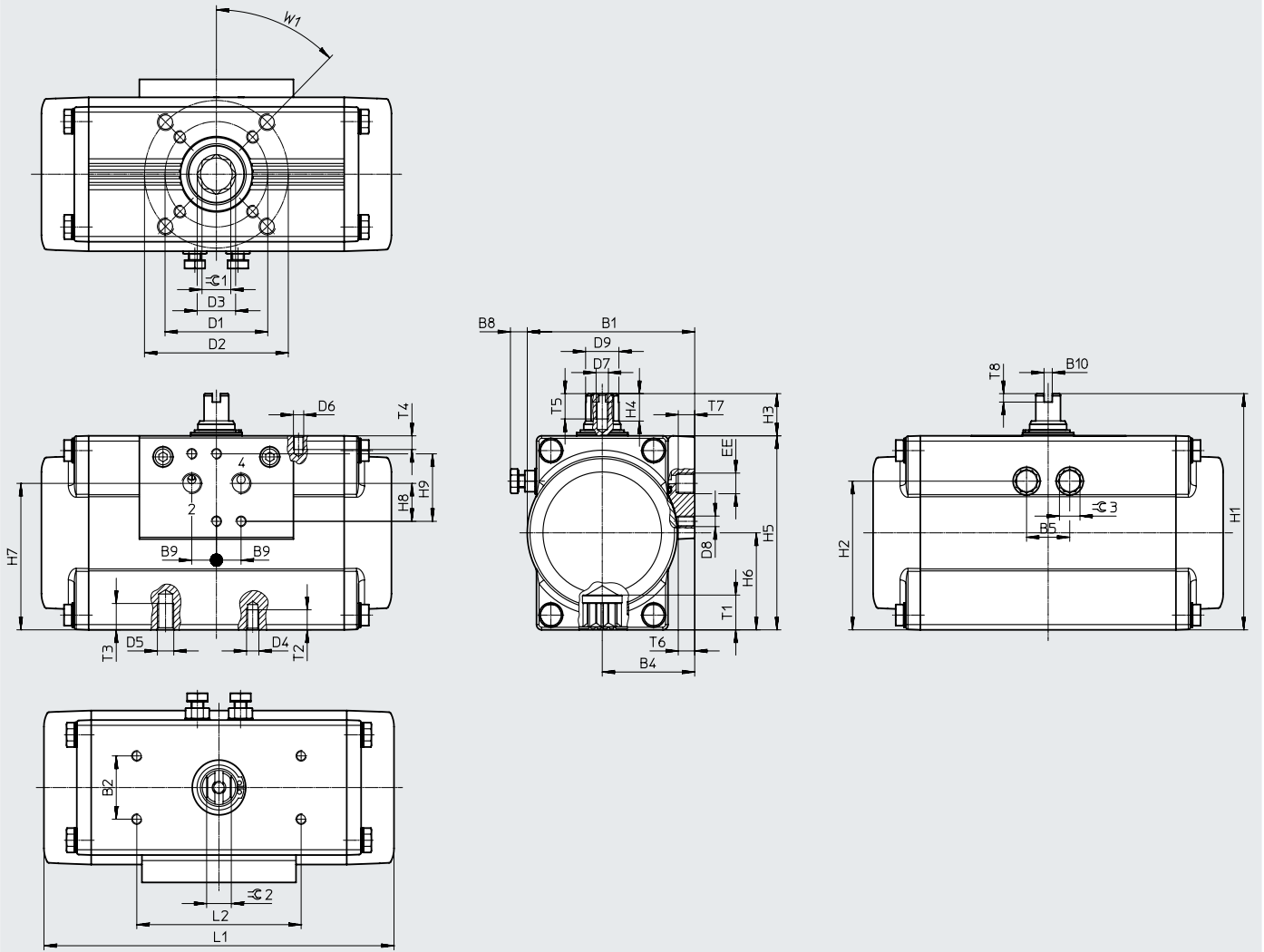
Type	L1	L2	T1	T2	T3	T4	T5	T6	T7	T8	≈C 1	≈C 2	≈C 3	W1	
[mm]		±0.1	±0.4							+0.5	H11	h11			
DFPD-20-F03	145.7	80	10 min	8	-	8	12	8	8	4	9	9	10	45°	
DFPD-20-F04			13.2	9							11				
DFPD-20-F05			12 min	8							11				
DFPD-40-F04	170.4	80	16.5	9	12	8	12	8	8	4	14	12	10	45°	
DFPD-40-F0507											17				15
DFPD-80-F0507											223.1				19.3

Data sheet

Dimensions

Size: 120 ... 480

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Data sheet

Type	B1	B2	B4	B5	B8	B9	B10	D1 ∅	D2 ∅	D3 ∅	D4	D5	D6
[mm]		±0.1			max.			±0.1	±0.1				
DFPD-120-F0507	111.5	30	60.5	32	12.3	12	4	50	70	23.2	M6	M8	M5
DFPD-160-F0710	120		63.5	36	13.4			30	M8	M10			
DFPD-240-F0710	135.5		71.5	41	18.5			30.3					
DFPD-300-F0710	144		74.5	46	17			30					
DFPD-480-F1012	163		83	52	19.3			102	125	37.4	M10	M12	

Type	D7	D8	D9 ∅	EE	H1	H2	H3	H4	H5	H6	H7	H8	H9
[mm]			±0.1				0.5	+0.1			±0.3	±0.1	
DFPD-120-F0507	M6	M5	22.5	G1/4 or 1/4 NPT	143	97.75	20	13	123	61.5	98.4	16	32
DFPD-160-F0710			25.5		154	106.25			134	67	109.4		
DFPD-240-F0710			31.8		180	120.5	30	19.5	150	75	120.2		
DFPD-300-F0710			38		192	131			162	81	132.1		
DFPD-480-F1012			214		149.5	184			92	152.5			

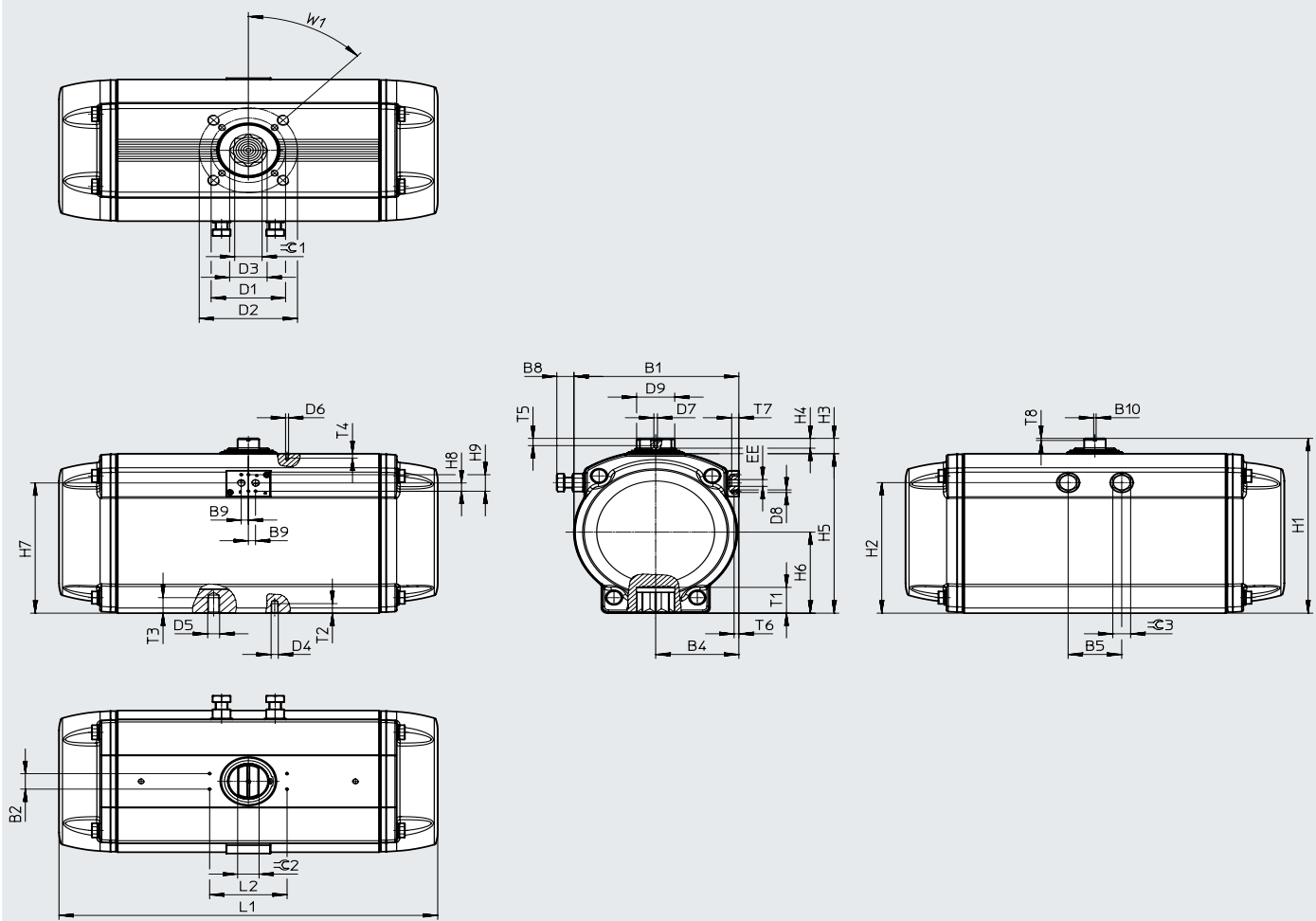
Type	L1	L2	T1	T2	T3	T4	T5	T6	T7	T8	≅ 1	≅ 2	≅ 3	W1
[mm]		±0.1	±0.4							+0.5	H11	h11		
DFPD-120-F0507	252.3	80	19.3	9	12	8	14	8	12	4	17	15	13	45°
DFPD-160-F0710	270.9		19	16										
DFPD-240-F0710	301.4		22	18										
DFPD-300-F0710	334.4		22	18										
DFPD-480-F1012	374.2		27	27	21									

Data sheet

Dimensions

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Size: 700 ... 2300



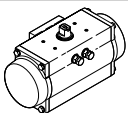
Data sheet

Type	B1	B2	B4	B5	B8	B9	B10	D1 ∅	D2 ∅	D3 ∅	D4	D5	D6
[mm]		±0.1			max.		±0.1						
DFPD-700-...-F1012	184	30	93	57.6	17.5	12	4	102	125	37.4	M10	M12	M5
DFPD-900-...-F1012	202		102	64.8	28.6			140	–	50.1	M16	–	
DFPD-900-...-F14			102	125	37.4			M10	M12				
DFPD-1200-...-F1012	221.5		111.5	72	24			140	–	50.1	M16	–	
DFPD-1200-...-F14			125	165	62.9			M12	M20				
DFPD-2300-...-F1216	277		139.8	90	33			140	–	50.1	M16	–	
DFPD-2300-...-F14													

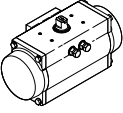
Type	D7	D8	D9 ∅	EE	H1	H2	H3	H4	H5	H6	H7	H8	H9	
[mm]			±0.1									±0.1		
DFPD-700-...-F1012	M6	M5	41	G1/4 or 1/4 NPT	232.7	168	29.7	21	203	103	164.9	16	32	
DFPD-900-...-F1012			44		252.7	182			223	113	178.3			
DFPD-900-...-F14			50		275.7	204			246	125	199.6			
DFPD-1200-...-F1012			64		338.7	253			19	309	157			252.3
DFPD-1200-...-F14														
DFPD-2300-...-F1216														
DFPD-2300-...-F14														

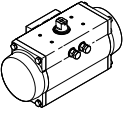
Type	L1	L2	T1	T2	T3	T4	T5	T6	T7	T8	≈C 1	≈C 2	≈C 3	W1	
[mm]		±0.1	min.							+0.5	H11	h11			
DFPD-700-...-F1012	428.2	80	29.7	15	18	8	8.5	14	8	12	4	27	30	21	45°
DFPD-900-...-F1012	469.6	130	30.2	15.5	18.5	36						32	24		
DFPD-900-...-F14			40.2	24.5	–	27						36			
DFPD-1200-...-F1012	519.3		31	15.5	18.5	36							36	30	
DFPD-1200-...-F14			40	24.5	–	46									
DFPD-2300-...-F1216	636		50	18.5	30	36						30			
DFPD-2300-...-F14			40	24.5	–	36									

Ordering data

Type	Size	Product weight [g]	Part no.	Type
	20	1419	★ 8047622	DFPD-20-RP-90-RS60-F04
	40	2180	★ 8047624	DFPD-40-RP-90-RS60-F0507
	80	3960	★ 8047626	DFPD-80-RP-90-RS60-F0507
	120	5736	★ 8048134	DFPD-120-RP-90-RS60-F0507
	160	7179	8048136	DFPD-160-RP-90-RS60-F0710
	240	10036	8048138	DFPD-240-RP-90-RS60-F0710
	300	12880	8048140	DFPD-300-RP-90-RS60-F0710
	480	18485	8048142	DFPD-480-RP-90-RS60-F1012

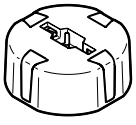
Data sheet

Ordering data				
Type	Size	Product weight [g]	Part no.	Type
	20	1371	8047644	DFPD-20-RP-90-RS30-F03
		1419	8047645	DFPD-20-RP-90-RS60-F03
		1371	8047621	DFPD-20-RP-90-RS30-F04
		1371	8048014	DFPD-20-RP-90-RS30-F05
		1419	8048015	DFPD-20-RP-90-RS60-F05
	40	2087	8047635	DFPD-40-RP-90-RS30-F04
		2180	8047636	DFPD-40-RP-90-RS60-F04
		2087	8047623	DFPD-40-RP-90-RS30-F0507
	80	3746	8047625	DFPD-80-RP-90-RS30-F0507
	120	5422	8048133	DFPD-120-RP-90-RS30-F0507
	160	6767	8048135	DFPD-160-RP-90-RS30-F0710
	240	9442	8048137	DFPD-240-RP-90-RS30-F0710
	300	12052	8048139	DFPD-300-RP-90-RS30-F0710
	480	17261	8048141	DFPD-480-RP-90-RS30-F1012
	700	26268	8065262	DFPD-700-RP-90-RS60-F1012
	900	30395	8065266	DFPD-900-RP-90-RS60-F14
			8084135	DFPD-900-RP-90-RS60-F1012
1200	43022	8065270	DFPD-1200-RP-90-RS60-F14	
		8084143	DFPD-1200-RP-90-RS60-F1012	
2300	77884	8065274	DFPD-2300-RP-90-RS60-F1216	

Ordering data				
Type	Size	Product weight [g]	Part no.	Type
Variant EP, epoxy coated				
	20	1371	8047646	DFPD-20-RP-90-RS30-F03-R3-EP
		1419	8047647	DFPD-20-RP-90-RS60-F03-R3-EP
		1371	8047627	DFPD-20-RP-90-RS30-F04-R3-EP
		1419	8047628	DFPD-20-RP-90-RS60-F04-R3-EP
		1371	8048016	DFPD-20-RP-90-RS30-F05-R3-EP
		1419	8048017	DFPD-20-RP-90-RS60-F05-R3-EP
	40	2087	8047642	DFPD-40-RP-90-RS30-F04-R3-EP
		2180	8047643	DFPD-40-RP-90-RS60-F04-R3-EP
		2087	8047629	DFPD-40-RP-90-RS30-F0507-R3-EP
		2180	8047630	DFPD-40-RP-90-RS60-F0507-R3-EP
	80	3746	8047631	DFPD-80-RP-90-RS30-F0507-R3-EP
		3960	8047632	DFPD-80-RP-90-RS60-F0507-R3-EP
	120	5422	8048143	DFPD-120-RP-90-RS30-F0507-R3-EP
		5736	8048144	DFPD-120-RP-90-RS60-F0507-R3-EP
	160	6767	8048145	DFPD-160-RP-90-RS30-F0710-R3-EP
		7179	8048146	DFPD-160-RP-90-RS60-F0710-R3-EP
	240	9442	8048147	DFPD-240-RP-90-RS30-F0710-R3-EP
		10036	8048148	DFPD-240-RP-90-RS60-F0710-R3-EP
	300	12052	8048149	DFPD-300-RP-90-RS30-F0710-R3-EP
		12880	8048150	DFPD-300-RP-90-RS60-F0710-R3-EP
	480	17261	8048151	DFPD-480-RP-90-RS30-F1012-R3-EP
		18485	8048152	DFPD-480-RP-90-RS60-F1012-R3-EP
	700	26268	8065264	DFPD-700-RP-90-RS60-F1012-R3-EP
	900	30395	8065268	DFPD-900-RP-90-RS60-F14-R3-EP
			8084137	DFPD-900-RP-90-RS60-F1012-R3-EP
	1200	43022	8065272	DFPD-1200-RP-90-RS60-F14-R3-EP
			8084145	DFPD-1200-RP-90-RS60-F1012-R3-EP
2300	77884	8065276	DFPD-2300-RP-90-RS60-F1216-R3-EP	

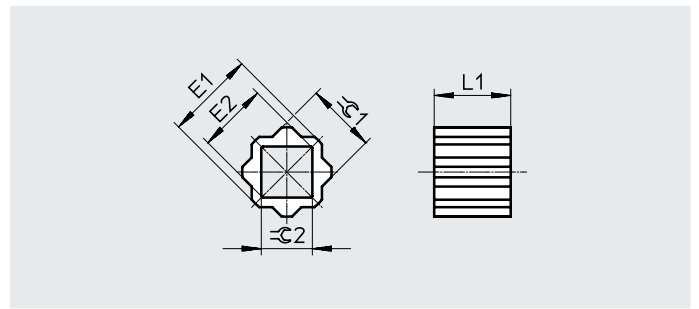
Accessories

Position indicator SASF

	For size	Dimensions W x L x H	Ambient temperature	Product weight	Part no.	Type
	DFPD-20	Ø 50 mm x 20 mm	-20 ... 80 °C	17 g	8147090	SASF-F9-DE-12-A20
	DFPD-40				8147091	SASF-F9-DE-16-A20
	DFPD-60				8147092	SASF-F9-DE-19-A20
	DFPD-80				8147093	SASF-F9-DE-20-A20
	DFPD-120				8147094	SASF-F9-DE-22-A20
	DFPD-160				8147095	SASF-F9-DE-25-A20
	DFPD-240, 300	Ø 70 mm x 25 mm		30 g	8147096	SASF-F9-DE-31-A30
	DFPD-480			29 g	8147098	SASF-F9-DE-38-A30
	DFPD-700			28 g	8147099	SASF-F9-DE-41-A30
	DFPD-900			27 g	8147100	SASF-F9-DE-44-A30
	DFPD-1200			26 g	8147101	SASF-F9-DE-50-A30
	DFPD-2300	Ø 101 mm x 30 mm		50 g	8147102	SASF-F9-DE-64-A30

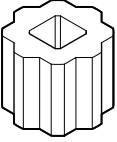
Reducing sleeve DARQ

- Connection 1, function: drive outlet
- Connection 2, function: reducing outlet
- Material: Sintered stainless steel
- RoHS-compliant
- Contains paint-wetting impairment substances



DARQ-R-A-...	E1 +0.1/-0.3	E2 +0.3/-0.1	L1 ±0.2	⊙ 1 -0.02/-0.12	⊙ 2 +0.04/+0.18
S11-S8-...	14	11	12	11	8
S11-S9-...	14	12.3	11	11	9
S14-S8-...	18	11	16	14	8
S14-S9-...	18	12.3	16	14	9
S14-S10-...	18	13.3	16	14	10
S14-S11-...	18	14.3	16	14	11
S14-S12-...	18	16.3	16	14	12
S17-S8-...	22	11	17	17	8
S17-S9-...	22	12.3	17	17	9
S17-S11-...	22	14.3	17	17	11
S17-S12-...	22	16.3	17	17	12
S17-S14-...	22	18.3	17	17	14
S22-S11-...	28	14.3	22	22	11
S22-S14-...	28	18.3	22	22	14
S22-S16-...	28	21.3	22	22	16
S22-S17-...	28	22.3	22	22	17
S27-S14-...	36	18.3	27	27	14
S27-S17-...	36	22.3	27	27	17
S27-S22-...	36	28.5	27	27	22
S36-S22-...	48	28.5	36	36	22
S36-S27-...	48	36.1	36	36	27
S46-S36-...	59	48	46	46	36

Accessories

Ordering data		Connection Drive outlet	Reducing outlet	Length [mm]	CRC ¹⁾	Weight/piece [g]	Part no.	Type	PU ²⁾
Design									
Square socket and external octagon									
	SW11	SW8	12	2	7	8082116	DARQ-R-A-S11-S8-12	1	
	SW11	SW9	11		5	8082117	DARQ-R-A-S11-S9-11		
	SW14	SW8	16		20	8086383	DARQ-R-A-S14-S8-16		
	SW14	SW9	16		18	8082118	DARQ-R-A-S14-S9-16		
	SW14	SW10	16		16	8082119	DARQ-R-A-S14-S10-16		
	SW14	SW11	16		13	8082120	DARQ-R-A-S14-S11-16		
	SW14	SW12	16		10	8082121	DARQ-R-A-S14-S12-16		
	SW17	SW8	17		36	8086384	DARQ-R-A-S17-S8-17		
	SW17	SW9	17		34	8096914	DARQ-R-A-S17-S9-17		
	SW17	SW11	17		29	8082122	DARQ-R-A-S17-S11-17		
	SW17	SW12	17		25	8086385	DARQ-R-A-S17-S12-17		
	SW17	SW14	17		19	8082123	DARQ-R-A-S17-S14-17		
	SW22	SW11	22		75	8086386	DARQ-R-A-S22-S11-22		
	SW22	SW14	22		62	8082124	DARQ-R-A-S22-S14-22		
	SW22	SW16	22		52	8082125	DARQ-R-A-S22-S16-22		
	SW22	SW17	22		46	8082126	DARQ-R-A-S22-S17-22		
	SW27	SW14	27		140	8096913	DARQ-R-A-S27-S14-27		
	SW27	SW17	27		121	8086387	DARQ-R-A-S27-S17-27		
	SW27	SW22	27		80	8082127	DARQ-R-A-S27-S22-27		
	SW36	SW22	36		286	8096915	DARQ-R-A-S36-S22-36		
	SW36	SW27	36		215	8082128	DARQ-R-A-S36-S27-36		
	SW46	SW36	46		410	8082129	DARQ-R-A-S46-S36-46		
	SW11	SW8	12		35	8082130	DARQ-R-A-S11-S8-12-P5		5
	SW11	SW9	11		25	8082131	DARQ-R-A-S11-S9-11-P5		
	SW14	SW8	16		100	8086388	DARQ-R-A-S14-S8-16-P5		
	SW14	SW9	16		90	8082132	DARQ-R-A-S14-S9-16-P5		
	SW14	SW11	16		65	8082133	DARQ-R-A-S14-S11-16-P5		
	SW17	SW11	17		145	8082134	DARQ-R-A-S17-S11-17-P5		
	SW17	SW12	17		125	8086389	DARQ-R-A-S17-S12-17-P5		
	SW17	SW14	17		95	8082135	DARQ-R-A-S17-S14-17-P5		
	SW22	SW14	22		310	8082136	DARQ-R-A-S22-S14-22-P5		
	SW22	SW17	22		230	8082137	DARQ-R-A-S22-S17-22-P5		
SW27	SW22	27	400	8082138	DARQ-R-A-S27-S22-27-P5				
SW36	SW27	36	1075	8082139	DARQ-R-A-S36-S27-36-P5				
SW11	SW9	11	50	8082140	DARQ-R-A-S11-S9-11-P10	10			
SW14	SW9	16	180	8082141	DARQ-R-A-S14-S9-16-P10				
SW14	SW11	16	130	8082142	DARQ-R-A-S14-S11-16-P10				
SW17	SW14	17	190	8082143	DARQ-R-A-S17-S14-17-P10				
SW22	SW17	22	460	8082144	DARQ-R-A-S22-S17-22-P10				
SW11	SW9	11	250	8082145	DARQ-R-A-S11-S9-11-P50		50		
SW14	SW9	16	900	8082146	DARQ-R-A-S14-S9-16-P50				
SW14	SW11	16	650	8082147	DARQ-R-A-S14-S11-16-P50				
SW17	SW11	17	1450	8082148	DARQ-R-A-S17-S11-17-P50				
SW22	SW17	22	2300	8082149	DARQ-R-A-S22-S17-22-P50				

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

2) Packaging unit