

Quarter turn actuators DAPS

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Quarter turn actuators DAPS


Key features

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Brief description

-  - Size
0008 ... 8000

-  - Torque
8 ... 8,000 Nm

-  - Swivel angle
0 ... 90°

The quarter turn actuators DAPS are specially tailored to the requirements of the process industry. The torque is generated via a scotch yoke mechanism. This is advantageous for overcoming the valve's high breakaway torques.

Given their robustness and graduated torques, the DAPS quarter turn actuators are predominantly used to control valves through which various media flow and whose angle of rotation is limited to 90°, e.g. ball valves and butterfly valves.

- Compact design
- Torque characteristics matched to the process valves
- For the same housing size, the single-acting drive has half the torque of the double-acting drive
- Low wearing thanks to the simple and robust mechanical system
- Adjustable swivel angle
- Selected types acc. to ATEX directive for explosive atmospheres
→ www.festo.com/en/ex

- Port pattern to Namur VDI/VDE 3845 for attaching solenoid valves



Quarter turn actuators DAPS, double-acting

Product range overview



Flange hole pattern – Connection dimensions to DIN ISO 5211 and Namur VDI/VDE 3845										
Connection	F03	F03	F04	F04	F05	F05	F05	F07	F07	Shaft height
Square	V11	V11	V11	V14	V11	V14	V17	V14	V17	
DAPS-0008-...-F03	■	-	-	-	-	-	-	-	-	20
DAPS-0015-...-F03	-	■	-	-	-	-	-	-	-	20
DAPS-0015-...-F04	-	-	■	-	-	-	-	-	-	20
DAPS-0030-...-F0305	-	■	-	-	■	-	-	-	-	20
DAPS-0030-...-F04	-	-	■	-	-	-	-	-	-	20
DAPS-0060-...-F04	-	-	-	■	-	-	-	-	-	20
DAPS-0060-...-F0507	-	-	-	-	-	■	-	■	-	20
DAPS-0106-...-F0507	-	-	-	-	-	-	■	-	■	20
Hole pattern for Namur accessories	30	30	30	30	30	30	30	30	30	
	30	80	80	80	80	80	80	80	80	

Flange hole pattern – Connection dimensions to DIN ISO 5211 and Namur VDI/VDE 3845												
Connection	F07	F10	F10	F12	F12	F12	F14	F14	F16	F16	F25	Shaft height
Square	V22	V22	V27	V27	V36	V46	V36	V46	V46	V46	V55	
DAPS-0180-...-F0710	■	■	-	-	-	-	-	-	-	-	-	30
DAPS-0240-...-F0710	■	■	-	-	-	-	-	-	-	-	-	30
DAPS-0360-...-F0710	■	■	-	-	-	-	-	-	-	-	-	30
DAPS-0480-...-F1012	-	-	■	■	-	-	-	-	-	-	-	30
DAPS-0720-...-F1012	-	-	■	■	-	-	-	-	-	-	-	30
DAPS-0960-...-F12	-	-	-	-	■	-	-	-	-	-	-	30
DAPS-0960-...-F14	-	-	-	-	-	-	■	-	-	-	-	30
DAPS-1440-...-F12	-	-	-	-	■	-	-	-	-	-	-	30
DAPS-1440-...-F14	-	-	-	-	-	-	■	-	-	-	-	30
DAPS-1920-...-F14	-	-	-	-	-	-	-	■	-	-	-	30
DAPS-1920-...-F1216	-	-	-	-	-	■	-	-	■	-	-	30
DAPS-2880-...-F16	-	-	-	-	-	-	-	-	-	■	-	30
DAPS-3840-...-F16	-	-	-	-	-	-	-	-	-	■	-	30
DAPS-5760-...-F25	-	-	-	-	-	-	-	-	-	-	■	30
DAPS-8000-...-R-F25	-	-	-	-	-	-	-	-	-	-	■	30
Hole pattern for Namur accessories	30	30	30	30	30	30	30	30	30	30	30	
	80	80	80	80	80	80	80	80	80	130	130	

Quarter turn actuators DAPS, single-acting

Product range overview



Flange hole pattern – Connection dimensions to DIN ISO 5211 and Namur VDI/VDE 3845									
Connection	F03	F04	F04	F05	F05	F05	F07	F07	Shaft height
Square	V11	V11	V14	V11	V14	V17	V14	V17	
DAPS-0015-...-F0305	■	-	-	■	-	-	-	-	20
DAPS-0015-...-F04	-	■	-	-	-	-	-	-	20
DAPS-0030-...-F04	-	-	■	-	-	-	-	-	20
DAPS-0030-...-F0507	-	-	-	-	■	-	■	-	20
DAPS-0053-...-F0507	-	-	-	-	-	■	-	■	20
Hole pattern for Namur accessories	30	30	30	30	30	30	30	30	
	80	80	80	80	80	80	80	80	

Flange hole pattern – Connection dimensions to DIN ISO 5211 and Namur VDI/VDE 3845											
Connection	F07	F10	F10	F12	F12	F12	F14	F14	F16	F16	Shaft height
Square	V22	V22	V27	V27	V36	V46	V36	V46	V46	V46	
DAPS-0090-...-F0710	■	■	-	-	-	-	-	-	-	-	30
DAPS-0120-...-F0710	■	■	-	-	-	-	-	-	-	-	30
DAPS-0180-...-F0710	■	■	-	-	-	-	-	-	-	-	30
DAPS-0240-...-F1012	-	-	■	■	-	-	-	-	-	-	30
DAPS-0360-...-F1012	-	-	■	■	-	-	-	-	-	-	30
DAPS-0480-...-F12	-	-	-	-	■	-	-	-	-	-	30
DAPS-0480-...-F14	-	-	-	-	-	-	■	-	-	-	30
DAPS-0720-...-F12	-	-	-	-	■	-	-	-	-	-	30
DAPS-0720-...-F14	-	-	-	-	-	-	■	-	-	-	30
DAPS-0960-...-F14	-	-	-	-	-	-	-	■	-	-	30
DAPS-0960-...-F1216	-	-	-	-	-	■	-	-	■	-	30
DAPS-1440-...-F16	-	-	-	-	-	-	-	-	-	■	30
DAPS-1920-...-F16	-	-	-	-	-	-	-	-	-	■	30
DAPS-2880-...-F16	-	-	-	-	-	-	-	-	-	■	30
DAPS-4000-...-RS1-F25	-	-	-	-	-	-	-	-	-	■	30
DAPS-4000-...-RS2-F25	-	-	-	-	-	-	-	-	-	■	30
DAPS-4000-...-RS3-F25	-	-	-	-	-	-	-	-	-	■	30
DAPS-4000-...-RS4-F25	-	-	-	-	-	-	-	-	-	■	30
Hole pattern for Namur accessories	30	30	30	30	30	30	30	30	30	30	
	80	80	80	80	80	80	80	80	80	130	

Quarter turn actuators DAPS, double-acting

Type codes

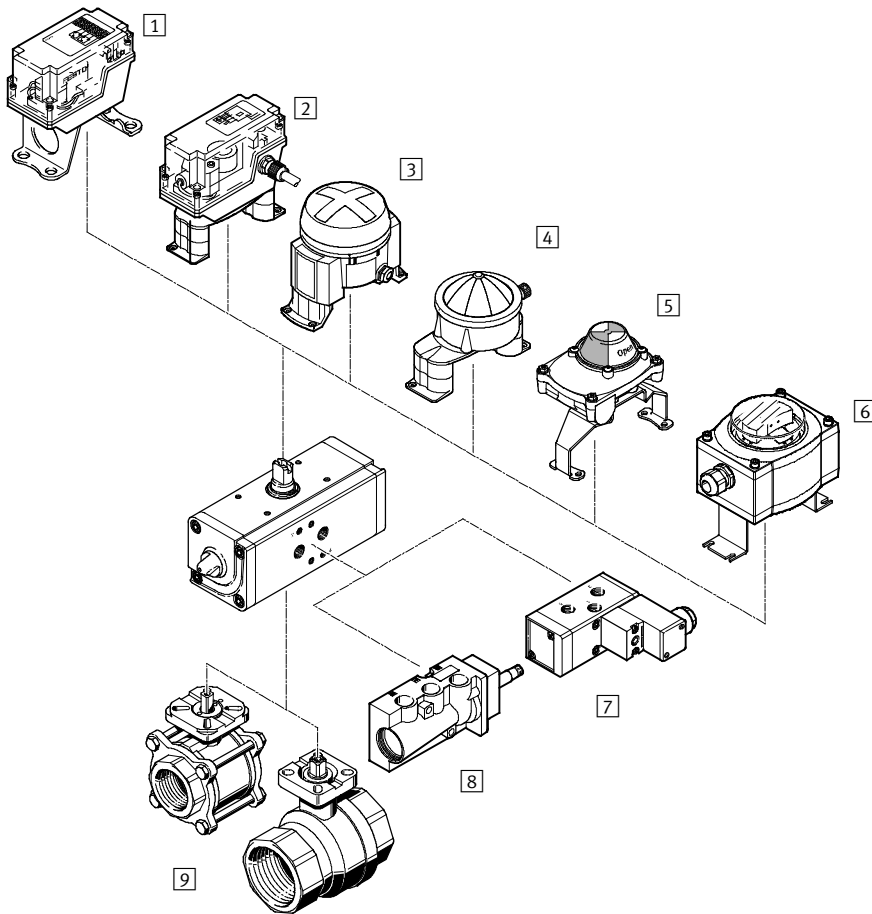


DAPS – 0240 – 090 – R – F10 12

Type	
DAPS	Quarter turn actuator
Size	
0008	Nominal torque 8 Nm
0015	Nominal torque 15 Nm
0030	Nominal torque 30 Nm
0060	Nominal torque 60 Nm
0106	Nominal torque 106 Nm
0180	Nominal torque 180 Nm
0240	Nominal torque 240 Nm
0360	Nominal torque 360 Nm
0480	Nominal torque 480 Nm
0720	Nominal torque 720 Nm
0960	Nominal torque 960 Nm
1440	Nominal torque 1440 Nm
1920	Nominal torque 1920 Nm
2880	Nominal torque 2880 Nm
3840	Nominal torque 3840 Nm
5760	Nominal torque 5760 Nm
8000	Nominal torque 8000 Nm
Swivel angle	
090	90°
Closing direction	
R	Closes to right
Mode of operation	
	Double-acting
1st flange hole pattern	
F03	Flange hole pattern F03
F04	Flange hole pattern F04
F05	Flange hole pattern F05
F07	Flange hole pattern F07
F10	Flange hole pattern F10
F12	Flange hole pattern F12
F14	Flange hole pattern F14
F16	Flange hole pattern F16
F25	Flange hole pattern F25
2nd flange hole pattern	
05	Flange hole pattern F05
07	Flange hole pattern F07
10	Flange hole pattern F10
12	Flange hole pattern F12
16	Flange hole pattern F16

Quarter turn actuators DAPS

Peripherals overview



Mounting attachments and accessories		
	Brief description	→ Page/Internet
1	End-position sensing attachment QH-DR-E Square design Pneumatic, electrical or inductive sensing	qh-dr-e
2	End-position sensing attachment DAPZ Square design Electrical, electrically explosion-proof or inductive sensing	dapz
3	End-position sensing attachment DAPZ Round design, variant AR Electrical, inductive or inductively explosion-proof sensing	dapz
4	End-position sensing attachment DAPZ Round design, variant RO Electrical, inductive or inductive Namur sensing	dapz
5	End-position sensing attachment SRBF Square design Sensing via two mechanical switches	srbf
6	Sensor box SRBP, SRAP SRBP, binary sensor box reports the open and closed position of the drive SRAP, analogue sensor box continuously senses the entire swivel range and reports this back to the controller	srbp, srap
7	Solenoid valve MFH ¹⁾ Solenoid valve MN1H ¹⁾ Solenoid valve MGTBH ¹⁾	mfh mn1h mgtbh
8	Solenoid valve NVF3 ¹⁾	nvf3
9	Ball valve VAPB Brass or stainless steel, corrosion-resistant	vapb

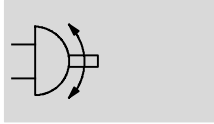
1) Direct mounting of the solenoid valves only possible as from size 0015

Quarter turn actuators DAPS, double-acting

Technical data

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Function




Swivel angle
0 ... 90°

Wearing parts kits
→ 18



-  - Size
0008 ... 8000

-  - Torque
8 ... 8000 Nm

General technical data					
Size	0008	0015 ... 0360	0480 ... 1920	2880 ... 5760	8000
Pneumatic connection	G $\frac{1}{8}$	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{3}{8}$
Design	Scotch yoke mechanism, double-acting				
Mounting position	Any				
Swivel angle [°]	90				
End position adjustment range at 0° [°]	-	-	-	±5	±5
End position adjustment range at 90° [°]	-	±2	±2	±5	±5
Closing direction	Closes to right				

Operating and environmental conditions					
Size	0008	0015 ... 0360	0480 ... 1920	2880 ... 5760	8000
Operating pressure [bar]	1 ... 8.4				1 ... 7
Nominal operating pressure [bar]	5,6				
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]				
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)				
Ambient temperature [°C]	-20 ... +80				
Corrosion resistance class CRC ¹⁾	3				
CE marking (see declaration of conformity) → www.festo.com	Explosion protection directive 94/9/EC - ATEX				
ATEX specification	II 2 GD c X				
ATEX ambient temperature	-20 °C ≤ Ta ≤ +60 °C				

1) Corrosion resistance class 3 to Festo standard 940 070
Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface

Air consumption [l/cycle] at 6 bar			
Size	Size		
DAPS-0008	0.4	DAPS-0720	24.5
DAPS-0015	0.72	DAPS-0960	48
DAPS-0030	1.44	DAPS-1440	53.2
DAPS-0060	3	DAPS-1920	96
DAPS-0106	5.04	DAPS-2880	140
DAPS-0180	8.64	DAPS-3840	170.1
DAPS-0240	12	DAPS-5760	266
DAPS-0360	17.4	DAPS-8000	300
DAPS-0480	24		

Quarter turn actuators DAPS, double-acting

Technical data

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Weights [kg]		Size	
DAPS-0008	0.3	DAPS-0720	12.2
DAPS-0015	0.75	DAPS-0960	17.4
DAPS-0030	1	DAPS-1440	23.0
DAPS-0060	1.9	DAPS-1920	30.7
DAPS-0106	2.3	DAPS-2880	55
DAPS-0180	4.1	DAPS-3840	49
DAPS-0240	5.2	DAPS-5760	85
DAPS-0360	6.2	DAPS-8000	110
DAPS-0480	8.2		

Materials	
Semi-rotary drives	
Housing	Wrought aluminium alloy
End cap	Wrought aluminium alloy
Shaft	Stainless steel
External screws	Stainless steel
Seals	Nitrile rubber

Quarter turn actuators DAPS, double-acting

Technical data



Actual torque [Nm] as a function of operating pressure [bar] and swivel angle [°]									
Size	Swivel angle [°]	Operating pressure [bar]							
		2.5	3	4	5	5.6	6	7	8
DAPS-0008	0	3.1	3.8	5	6.3	7	7.5	8.8	10
	50	1.6	1.9	2.5	3.1	3.5	3.8	4.4	5
	90	3.1	3.8	5	6.3	7	7.5	8.8	10
DAPS-0015	0	6.7	8	10.7	13.4	15	16.1	18.8	21.4
	50	3.3	4	5.4	6.7	7.5	8	9.4	10.7
	90	5	6	8.1	10.1	11.3	12.1	14.1	16.1
DAPS-0030	0	13.4	16.1	21.4	26.8	30	32.1	37.5	42.9
	50	6.7	8	10.7	13.4	15	16.1	18.8	21.4
	90	10	12	16.1	20.1	22.5	24.1	28.1	32.1
DAPS-0060	0	26.8	32.1	42.9	53.6	60	64.3	75	85.7
	50	13.4	16.1	21.4	26.8	30	32.1	37.5	42.9
	90	20.1	24.1	32.1	40.2	45	48.2	56.3	64.3
DAPS-0106	0	47.5	57	76	95	106	114	133	151
	50	23.5	28	38	47	53	57	66	76
	90	35.5	43	57	71	80	86	100	114
DAPS-0180	0	80.4	96	128.4	160.8	180	193.2	225.6	264.8
	50	40.2	48	64.8	80.4	90	96	112.8	128.4
	90	60.6	72	97.2	121.2	135	145.2	169.2	193.2
DAPS-0240	0	107.1	128.6	171.4	214.3	240	257.1	300	342.9
	50	53.5	64.3	85.7	107.1	120	128.6	150	171.4
	90	80.3	96.4	128.6	160.7	180	192.9	225	257.1
DAPS-0360	0	160.8	192	256.8	321.6	360	386.4	451.2	513.6
	50	80.4	96	129.6	160.8	180	192	225.6	264.8
	90	121.2	144	194.4	242.4	270	290.4	338.4	386.4
DAPS-0480	0	214.3	257.1	342.9	428.6	480	514.3	600	685.7
	50	107.1	128.6	171.4	214.3	240	257.1	300	342.9
	90	160.7	192.9	257.1	321.4	360	358.7	450	514.3
DAPS-0720	0	321.4	384	513.6	643.2	720	772.8	902.4	1027.2
	50	160.7	192	259.2	321.6	360	384	451.2	529.6
	90	241	288.1	388.8	484.8	540	580.8	676.8	772.8
DAPS-0960	0	428.6	514.3	685.7	857.1	960	1028.6	1200	1371.4
	50	214.3	257.1	342.9	428.6	480	514.3	600	685.7
	90	321.4	385.7	514.3	642.9	720	771.4	900	1028.6
DAPS-1440	0	642.8	768	1027.2	1286.4	1440	1545.6	1804.8	2057.4
	50	321.4	384	518.4	643.2	720	768	902.4	1059.2
	90	482.1	576	777.6	969.9	1080	1161.6	1353.6	1545.6
DAPS-1920	0	857.1	1028.6	1371.4	1714.3	1920	2057.1	2400	2742.9
	50	428.6	514.3	685.8	857.1	960	1028.6	1200	1371.4
	90	642.9	771.4	1028.6	1285.7	1440	1542.9	1800	2057.1
DAPS-2880	0	1285	1542	2057	2571	2880	3085	3600	4114
	50	642	771	1028	1285	1440	1542	1800	2057
	90	856	1028	1371	1741	1920	2056	2400	2742
DAPS-3840	0	1714	2057	2743	3428	3840	4114	4800	5485
	50	857	1028	1371	1714	1920	2057	2400	2742
	90	1285	1543	2057	2571	2880	3085	3600	4114
DAPS-5760	0	2571	3085	4114	5142	5760	6171	7200	8228
	50	1285	1542	2057	2571	2880	3085	3600	4141
	90	1928	2313	3085	3856	4320	4628	5400	6171
DAPS-8000	0	3571.4	4285.7	5714.3	7142.9	8000	8571.4	10000	-
	50	1785.7	2142.9	2857.1	3571.4	4000	4285.7	5000	-
	90	2678.6	3214.3	4285.7	5357.1	6000	6428.6	7500	-

Torque for size at 5.6 bar and swivel angle 0°

Quarter turn actuators DAPS, double-acting

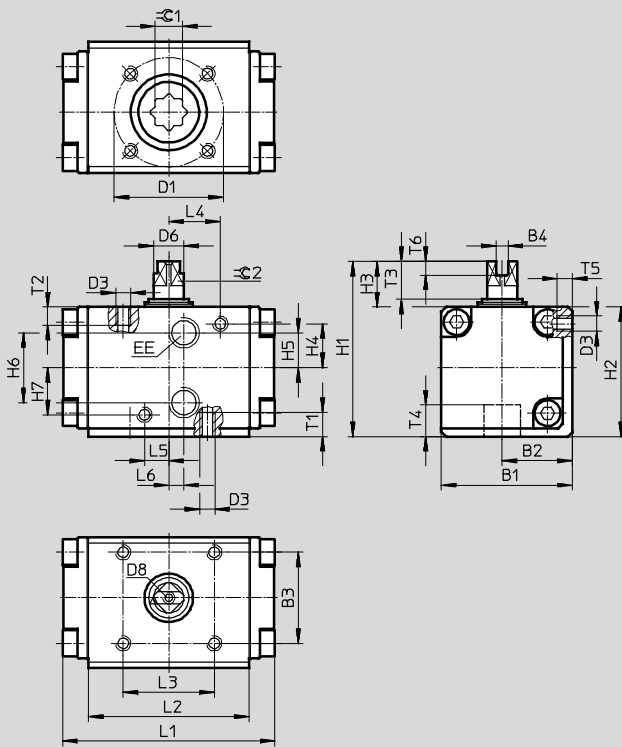
Technical data

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Dimensions

Download CAD data → www.festo.com

Size 0008



Size	B1	B2	B3	B4	D1 ∅	D3	D6 ∅	D8	EE	H1	H2	H3	H4	H5	H6
DAPS-008-...	43.2	23.2	30	4	36	M5	10	M4	G $\frac{1}{8}$	57.7	42.7	15	14.5	11.5	23

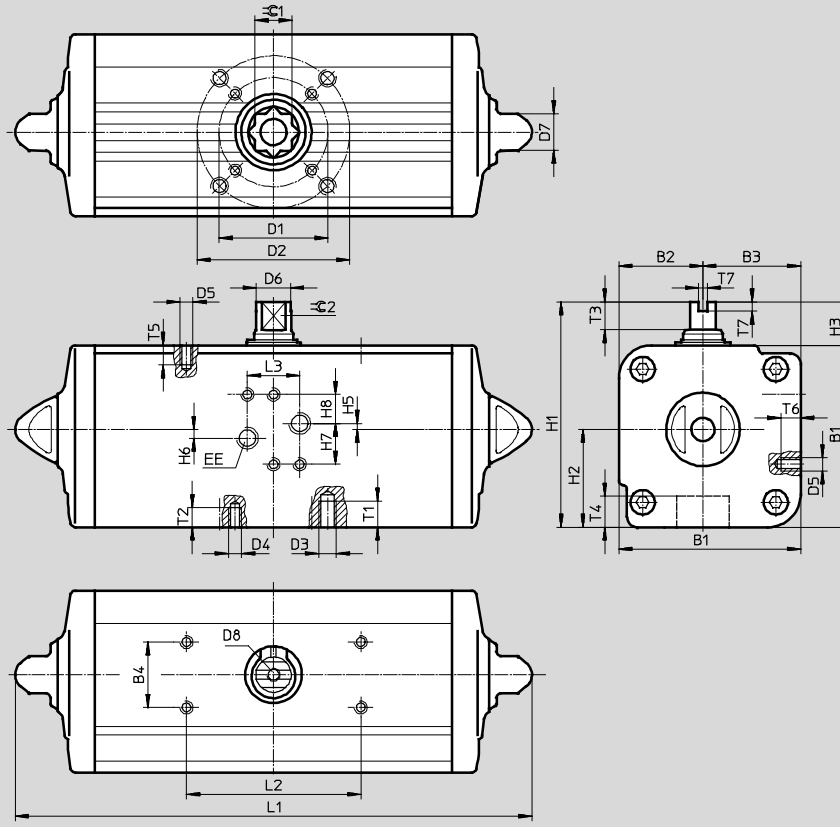
Size	H7	L1	L2	L3	L4	L5	L6	T1	T2	T3	T4	T5	T6	$\varnothing 1$	$\varnothing 2$
DAPS-008-...	15.5	70	53	30	17	8	5	8	6	12.5	10.4	5	4.5	9	8

Quarter turn actuators DAPS, double-acting

Technical data



Size 0015 ... 0360



Size	B1	B2	B3	B4	D1 ∅ ±0.1	D2 ∅ ±0.1	D3	D4	D5	D6 ∅	D7 ∅	D8	EE	H1	H2	H3			
DAPS-0015-...-F03	52.2	24.2	28	30	36	-	-	M5	M5	9.2	13	M6	G1/8	72.2	28	20			
DAPS-0015-...-F04					42			M5											
DAPS-0030-...-F0305	59.2	27.7	31.5		36	50	M6	M5		10.9	13			79.2	31.5	20			
DAPS-0030-...-F04					42	-	-	M5											
DAPS-0060-...-F04	70.4	32.7	37.7		42	-	-	M5		M5	14.5			13	M6	G1/8	90.4	37.7	20
DAPS-0060-...-F0507					50	70	M8	M6											
DAPS-0106-...-F0507	83.3	38.5	44.8		50	70	M8	M6		16.2	17			103.3	44.8	20			
DAPS-0180-...-F0710	107.5	51	56.5		70	102	M10	M8		20.2	22			137.5	56.5	30			
DAPS-0240-...-F0710	111.1	51	60.1		70	102	M10	M8		22.5	22			141.1	60.1	30			
DAPS-0360-...-F0710	118	56	62		70	102	M10	M8		25.5	22			148	62	30			

Size	H5	H6	H7	H8	L1	L2	L3	T1	T2	T3	T4	T5	T6	T7	≈C 1	≈C 2		
DAPS-0015-...-F03	0.8	3.2	18	14	159	80	24	-	8	10	13.2	6	7	4	11	8		
DAPS-0015-...-F04									8									
DAPS-0030-...-F0305	0.8	3.2			174			9	8	10	13.2				11	9		
DAPS-0030-...-F04																	-	8
DAPS-0060-...-F04	-	4			198			80	24	-	8				13	16.5	14	10
DAPS-0060-...-F0507																		
DAPS-0106-...-F0507	-	4			236.5			12	9	13	19.3				17	12		
DAPS-0180-...-F0710	-	4			289.9			15	12	16	24.8				22	15		
DAPS-0240-...-F0710	-	4			313.6			15	12	17	24.8				22	15		
DAPS-0360-...-F0710	-	4			339.3			15	12	19	24.3				22	19		

Quarter turn actuators DAPS, double-acting

Technical data



Size	B1	B2	B3	B4	D1 ∅ ±0.1	D2 ∅ ±0.1	D3	D4	D5	D6 ∅	D7 ∅	D8	EE	H1	H2
DAPS-0480....-F1012	134.9	62	72.9	30	102	125	M12	M10	M5	29	27	M6	G¼	164.9	72.9
DAPS-0720....-F1012	148	-	-		102	125	M12	M10		31.8	27			178	78.5
DAPS-0960....-F12	168	74.5	93.5		102	125	M12	M10		36.5	27			198	93.5
DAPS-0960....-F14					140	-	-	M16							
DAPS-1440....-F12	186	-	-		125	-	-	M12		41	36			216	101.5
DAPS-1440....-F14					140	-	-	M16							
DAPS-1920....-F14	207.7	93	114.7		140	-	-	M16		46	36			237.7	114.7
DAPS-1920....-F1216					125	165	M20	M12							

Size	H3	H5	H7	L1	L2	L3	T1	T2	T3	T4	T5	T6	T7	≈C 1	≈C 2
DAPS-0480....-F1012	30	0.5	16	387.7	80	24	15	18	19	29.5	6	7	4	27	19
DAPS-0720....-F1012		-1		433			18	15	19.5	29				27	22
DAPS-0960....-F12		0.5		479.4			18	15	19.5	38.5				36	24
DAPS-0960....-F14							24								
DAPS-1440....-F12		-1		567			-	18	19.5	38.5				36	27
DAPS-1440....-F14							24								
DAPS-1920....-F14		0.5		601			-	24	18.5	48.5				46	32
DAPS-1920....-F1216							30	18							