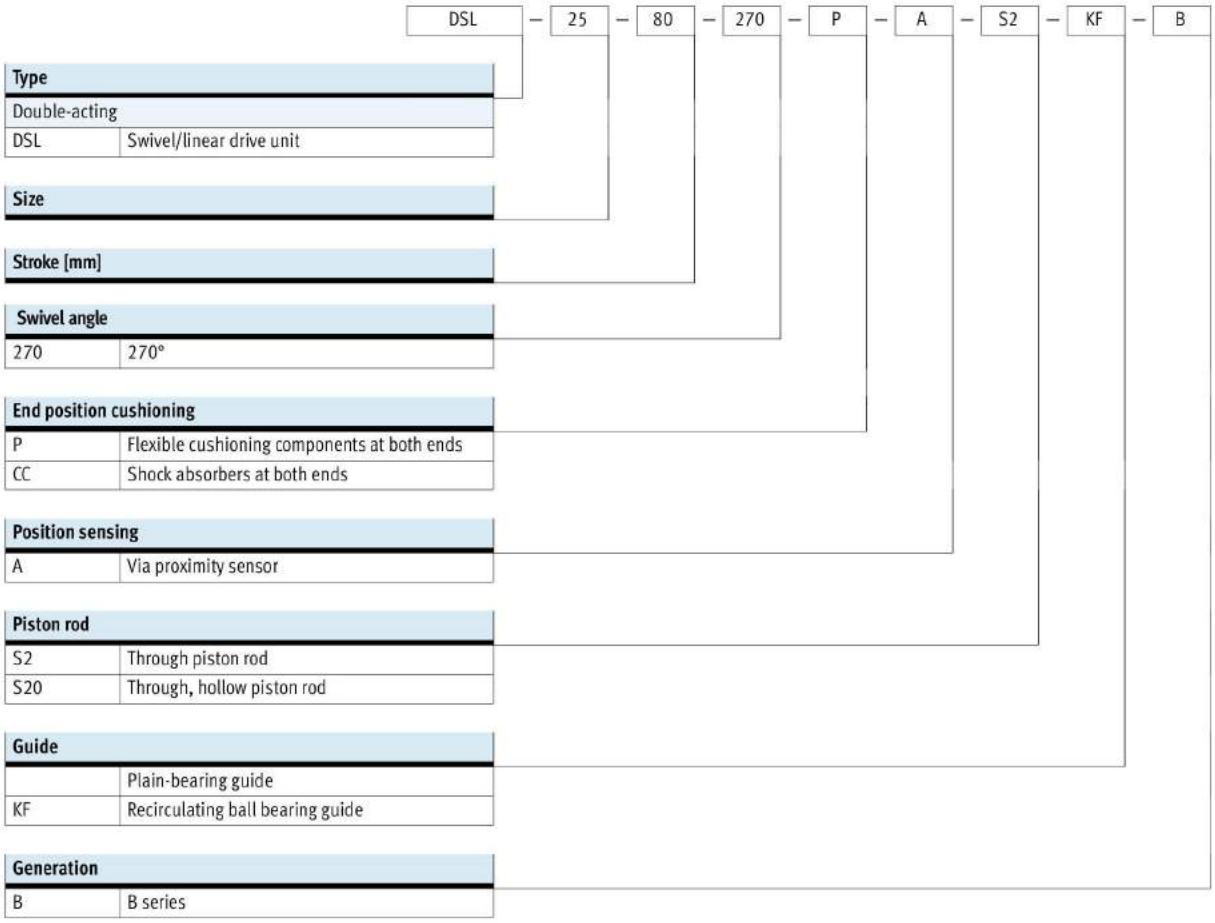
Swivel/linear drive units DSL-B

Type codes

FESTO



Type	
Double-acting	
DSL	Swivel/linear drive unit

Size

Stroke [mm]

Swivel angle	
270	270°

End position cushioning	
P	Flexible cushioning components at both ends
CC	Shock absorbers at both ends

Position sensing	
A	Via proximity sensor

Piston rod	
S2	Through piston rod
S20	Through, hollow piston rod

Guide	
	Plain-bearing guide
KF	Recirculating ball bearing guide

Generation	
B	B series

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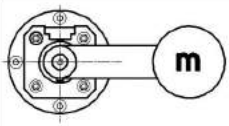
Operating and environmental conditions		
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)
Operating pressure	[bar]	2.5 ... 8
Ambient temperature[1]	[°C]	–10 ... +60
Corrosion resistance class CRC[2]		1

1) Note operating range of proximity sensors.
2) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Forces and torques							
Size			16	20	25	32	40
Theoretical torque[1]		[Nm]	1.25	2.5	5	10	20
Theoretical force, advancing[1]	with plain-bearing guide	[N]	102.5	159	246	422.5	660
	with recirculating ball bearing guide	[N]	103.5	158	248	403.5	603
Theoretical force, retracting[1]		[N]	73.5	120.5	173.5	294	495
Max. perm. effective load ➔ 7		[kg]	1	3	6	9	14

1) Theoretical values at 6 bar

Observe max. dynamic torque load (linear motion)							
Size			16	20	25	32	40
	with plain-bearing guide	[Nm]	0.1	0.2	0.45	0.8	1.1
	with recirculating ball bearing guide	[Nm]	0.17	0.35	0.7	1.0	5.4

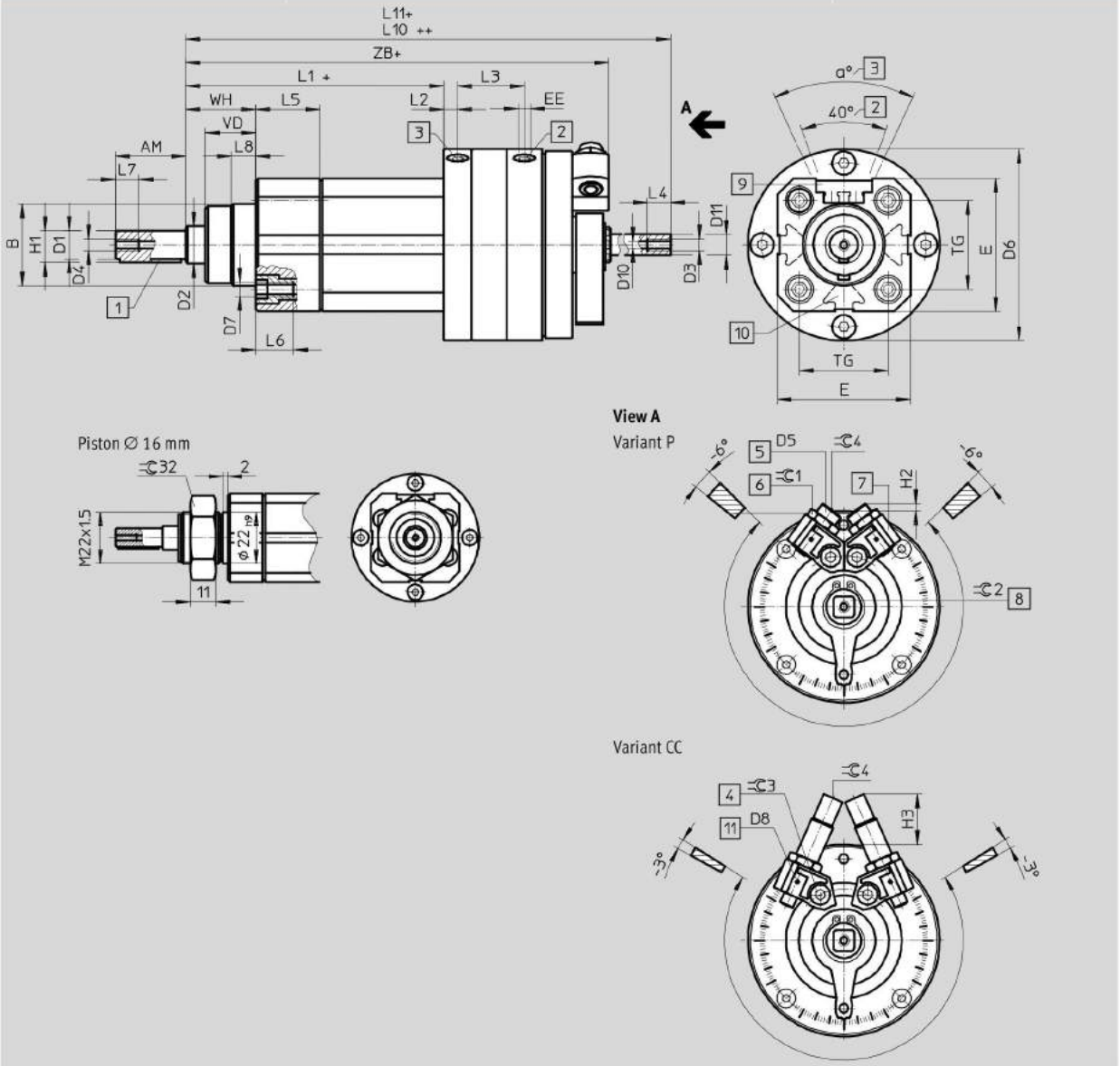
Note

The rotary vane is not suitable for use in defining end positions, i.e. the stop lever and the stops must not be removed.

With plain-bearing guide:
If the effective load is attached eccentrically, increased internal friction forces occur with horizontal installation, thereby causing a reduction of the effective force of the linear motion.

Weight [g]					
Size	16	20	25	32	40
Plain-bearing guide					
Cushioning P	695	1090	1510	2985	5150
Cushioning CC	697	1130	1605	3020	5205
Additional weight per 10 mm stroke	33	52	67	109	170
Recirculating ball bearing guide					
Cushioning P	745	1180	1660	3265	5300
Cushioning CC	747	1220	1755	3300	5355
Additional weight per 10 mm stroke	33	52	67	109	175

Dimensions



1 Woodruff key position at 0°
2 Supply port, rotary part
3 Supply port, linear part
4 Locking screw for clamping the stop
5 End position adjustment
6 Lock nut for end position adjustment
7 Infinitely adjustable fixed stops
8 Manual override (square)
9 Slot for proximity sensor SME/SMT-8
10 Mounting slots
11 Mounting thread for sensor retainer

\+ = plus stroke length
++ = plus 2 stroke lengths

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Size	AM	B Ø d11	D1 Ø g7	D2 Ø f8	D3[1)]		D4		D5	D6 Ø ±0.2	D7	D8
					S2	S20	S2	S20				
16	20±0.2	–	8	10	M3	M3	M3	M3	M8x1	58	–	M2
20	23±0.2	30	10	12	M5	M5	M5	M5	M10x1	69	M6	M2
25	30±0.2	35	12	16	M5	M5	M5	M5	M10x1	82	M6	M2
32	40±0.3	40	16	20	M5	M5	M5	M5	M12x1	104	M8	M2
40	50±0.3	45	20	25	M6	M7	M6	M7	M16x1	128	M8	M2

Size	D11[1)]	E	EE	H1 max.	H2	H3	L1[1)]	L2 ±0.2	L3	L4
16	–	38	M5	8.8	4.6	23.7	$89^{+1.1/-1.3}$	6	22.5±0.5	9^{+2}
20	–	50	M5	11.2	8.1	27.7	$95^{+1.1/-1.3}$	6	26.2±0.6	10^{+1}
25	–	57	M5	13.5	4	22	$100.5^{+1.2/-1.3}$	6	29.5±0.6	10^{+1}
32	–	72	G⅛	18	6	30.5	$111^{+1.3/-1.4}$	9	39.5±0.6	12.5^{+2}
40	–	83.5	G⅛	22.5	5.7	45.5	$132^{+1.3/-1.4}$	9	44.7±0.6	6.5^{+2}

Size	L5	L6 +2	L7	L8 ±0.3	L10[1)]	TG	VD	WH	ZB[1)]
16	$18^{+0.2}$	–	9^{+2}	–	$159^{+0.8/-0.1}$	–	22±0.2	$28^{+1.3/-1.7}$	$144.8^{+1.4/-1.5}$
20	$26_{-0.2}$	17	10^{+1}	10.5	$175^{+0.8/-0.1}$	32.5	19±0.2	$26^{+1.3/-1.7}$	$161.8^{+1.4/-1.5}$
25	$27.5_{-0.2}$	17	10^{+1}	10.5	$186.5^{+0.8/-0.1}$	38	21.5±0.2	$30^{+1.4/-1.7}$	$173.4^{+1.4/-1.2}$
32	$28.5_{-0.2}$	21	12.5^{+2}	12	$224^{+0.6/-0.2}$	46.5	28.5±0.3	$37^{+1.4/-1.8}$	$205^{+1.5/-1.9}$
40	$35_{-0.2}$	18	14^{+2}	15	$263^{+0.6/-0.2}$	56.5	34.7±0.3	$46^{+1.4/-1.8}$	$243.5^{+1.8/-1.9}$

Size	α	⌭1	⌭2	⌭3	⌭4	Woodruff key to DIN 6885	D10 min. Ø S20
16	60°	10	5.5	2.5	2.5	A2x2x16	2.5
20	50°	13	7	3	3	A3x3x18	3.2
25	50°	13	9	4	3	A4x4x25	4.2
32	50°	15	10	5	4	A5x5x36	4.2
40	50°	19	12	8	5	A6x6x45	5.6

1) Deviating dimensions for variant with recirculating ball bearing guide KF

Size	Stroke	D3		D11 Ø h7	L1	L11		ZB
		S2	S20			S2 +0.8/−0.1	S20 +0.8/−0.1	
16	25	–	M3	6	$104^{+1.1/-1.3}$	*	198	$159.6^{+1.4/-1.5}$
	≤ 50					*	223	
	> 50					213	273	
20	≤ 50	–	M5	8	$111^{+1.1/-1.3}$	*	241	$177.7^{+1.4/-1.5}$
	> 50					225	291	
25	≤ 50	–	M5	10	$129^{+1.2/-1.3}$	*	266	$201.2^{+1.4/-1.2}$
	> 50					238	316	
32	≤ 50	–	M7	13	$143^{+1.3/-1.4}$	*	305	$237^{+1.5/-1.9}$
	> 50					253	355	
40	≤ 50	–	G⅛	16	$182^{+1.3/-1.4}$	*	364	$293.5^{+1.5/-1.9}$
	> 50					*	414	
	> 100					352	464	

*) Profile rod does not protrude beyond the drive unit