DATA SHEET DB 31a-E2010-02000

BR 31a · Quarter-turn actuator Edition 2010

Version DAP / SRP 2000 · Technical data and spare parts

CE

Applications

Single-acting or double-acting piston actuators for butterfly valves, ball valves and other final control elements with rotary closure members. Particularly suitable for high process requirements in chemical plants:

- **Opening angle 90°**
- **Temperatures -40°C to +80°C**

PFEIFFER Chemie-Armaturenbau GmbH · Hooghe Weg 41 · 47906 Kempen · Germany
Phone: +49 2152 2005-0 · Fax: +49 2152 1580
E-Mail: vertrieb@pfeiffer-armaturen.com · Internet: www.pfeiffer-armaturen.com

Dimensions of quarter-turn actuator

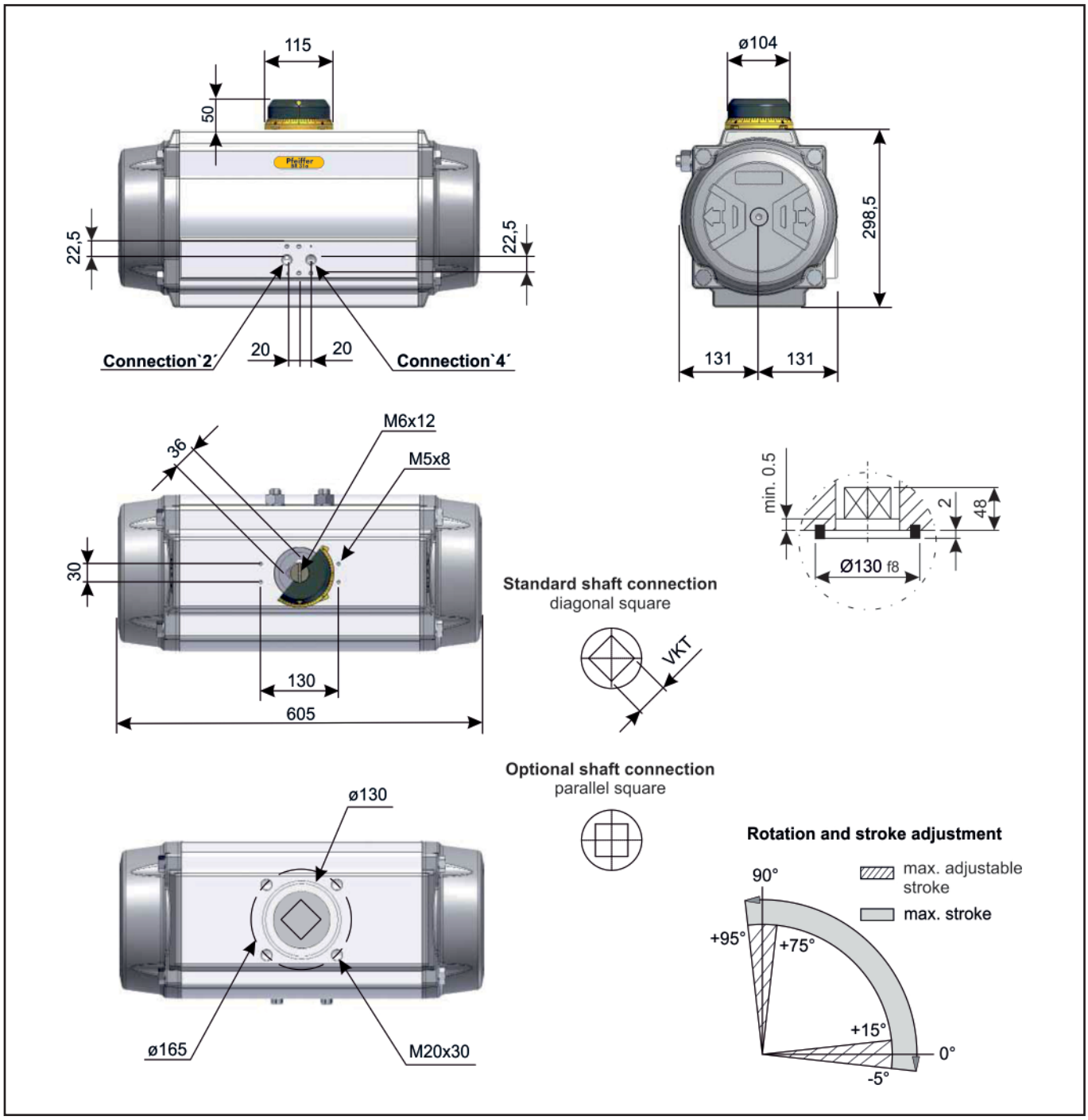

Fig. 2: *Dimensional drawing*

Table 1: *Connection dimensions / Connections*

ISO 5211	Flange	F16
	Square (diagonal)	46mm
VDI/VDE 3845	Air connection	40x45mm + 2x G½"
	Fixing level 1	AA4 (130x30x50mm)

Technical Data

Table 2: *Torques for double and single acting quarter-turn actuators*

Type	Torque double and single acting in Nm																						Spring stroke		Weight in kg
Pressure in bar	2.5		3		3.5		4		4.2		4.5		5		5.5		6		7		8				
	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°	
DAP	**893**		**1072**		**1251**		**1430**		**1501**		**1608**		**1787**		**1966**		**2144**		**2502**		**2859**		-		54.6
																							Start	End	
SRP 2,5	**533**	**372**	712	551	890	730	1069	908	1141	980	1248	1087	1426	1266	1605	1444	1784	1623	2141	1980	2499	2338	521	360	60.6
SRP 3	461	268	**640**	**447**	818	625	997	804	1068	876	1176	983	1354	1162	1533	1340	1711	1519	2068	1876	2426	2234	625	433	61.8
SRP 3,5	388	163	568	343	**746**	**521**	925	700	996	771	1104	879	1282	1057	1461	1236	1640	1415	1996	1771	2354	2129	730	505	63.0
SRP 4	316	59.3	495	238	674	417	**853**	**596**	**924**	**667**	1032	774	1210	953	1389	1132	1568	1310	1925	1668	2282	2025	834	577	64.2
SRP 4,5	244		423	134	602	313	781	491	852	563	**959**	**670**	1138	849	1317	1028	1495	1206	1853	1564	2210	1921	938	649	65.4
SRP 5	172		351	30.0	530	209	708	387	780	459	887	566	**1066**	**745**	1245	923	1423	1102	1781	1459	2138	1817	1042	721	66.6
SRP 5,5	100		279		458	105	636	283	708	355	815	462	994	640	**1173**	**819**	1351	998	1709	1355	2066	1713	1146	793	67.8
SRP 6	28.3		207		386		564	178	636	250	743	357	922	536	1101	715	**1279**	**894**	1637	1251	1994	1608	1251	865	69.0

Table 3: *Specially technical data*

Type	Pressure max. in bar	Rotation	Screw stroke adjustment	Chamber Ø in mm	Air volume in Litre		Moving time in Sec. [1]		Operating temperature in °C [2]		
					Open	Close	Open	Close	**STD** (Standard)	**HT** (High temp.)	**SLT** (Low temp.)
DAP	8	90° -5°/+15°	for 1° 1/4 rotation	240	10	15.2	3.50	4.00	-40 bis +80	-15 bis +150	-55 bis +80
SRP							4.10	4.60			

[1] The above indicated moving time of the actuator is obtained under the following test conditions:
(1) room temperature, ***(2)*** actuator stroke 90°, ***(3)*** solenoid valve with Ø11mm and flow capacity Qn 6000 L/min., ***(4)*** inside pipe Ø11mm, ***(5)*** medium clean air, ***(6)*** air supply pressure 5,5 bar (79,75 Psi), ***(7)*** actuator without external resistance load.

It has to be expected, e.g. for field applications, when one or more of the above parameters are different, the moving time will be different.

[2] For **HT** (high temperature) and **SLT** (low temperature) applications a special grease is needed. Please contact PFEIFFER.

Table 4: *Air consumption*

Type	Air consumption in Litre / Switching cycle [3]									
Pressure	2.5	3	3.5	4	4.5	5	5.5	6	7	8
DAP	88.20	100.80	113.40	126,00	138.60	151.20	163.80	176.40	201.60	226.80
SRP	35.00	40.00	45.00	50.00	55.00	60.00	65.00	70.00	80.00	90.00

[3] A switching cycle is the movement from 0 ° to 90 ° + 90 ° to 0 °

Operating Medium:

The operating medium must be free of dust and oil. The maximum particle size must not exceed 30µ. (ISO 8573 Part1, Class5).
In order to prevent water condensation and/or solidification (ice when actuator works below 0°C), the operating medium must have a dew point equal to -20°C or at least 10°C below the ambient temperature (ISO 8573 Part1, Class3).

Parts list for actuator DAP/SRP 2000

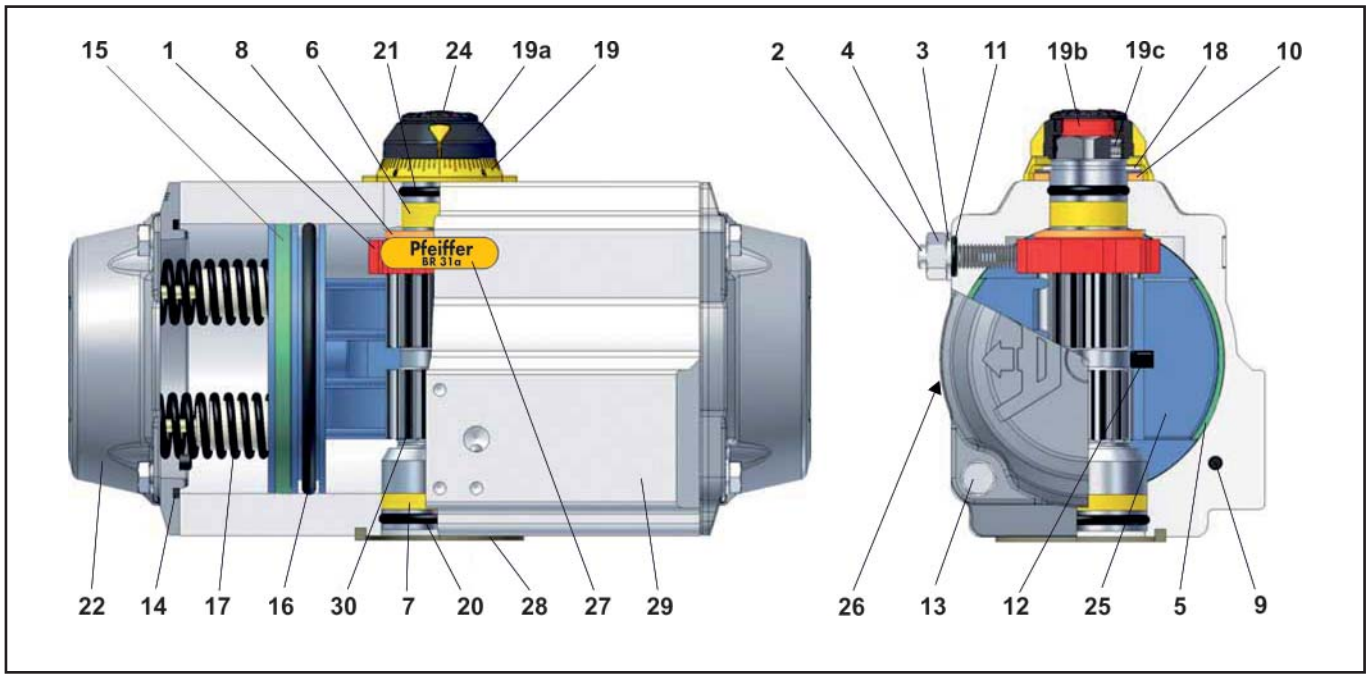

Fig. 3: *Quarter-turn actuator BR 31a, Type SRP 2000*

Table 5: *Parts and spare parts list*

Item	Qty.	Description	Material	Abrasion package for SRP/DAP 2000
1	1	Octi-cam	Carbon steel, zinc coated	
2	2	Stop cap screw	Stainless steel	
3	2	Washer	Stainless steel	
4	2	Stop screw	Stainless steel	
5 [1]	2	Piston guide bearing	PA46	
6 [1]	1	Pinion top bearing	High-grade polymers	
7 [1]	1	Pinion bottom bearing	High-grade polymers	
8 [1]	2	Pinion thrust bearing	PA46	
9 [1] [2] [3]	2	Plug	Silicone	
10	1	Thrust washer	Stainless steel	
11 [1] [2] [3]	2	O-ring	M-NBR	
12	2	Piston guide	PA66+GF	
13	16	Cap Screw	Stainless steel	
14 [1] [2] [3]	2	O-ring	M-NBR	
15 [1] [2]	2	Piston head bearing	POM	STD = 43728v
16 [1] [2] [3]	2	O-ring	M-NBR	HT = 45442v
17	5 to 12	Spring pressure cartridge	SiCr Spring alloy Steel epoxy coated	SLT = 48032v
18	1	Spring clip	Spring steel, ENP	
19	1	Graduated ring	PA66+GF(+CB)	
19a	1	Position indicator	PA66+GF+CB	
19b	1	Top adaptor	Extruded aluminium alloy, anodized	
19c		Hex. socket screw	Stainless steel	
20 [1] [2] [3]	1	O-ring	M-NBR	
21 [1] [2] [3]	1	O-ring	M-NBR	
22	1	End cap	Pressure die cast aluminium alloy, anodized and coated	
24	1	Cap screw	PA66+GF+CB	
25	2	Piston	Pressure die cast aluminium alloy, anodized	
26	1	Identification label	Polyester-Silver	
27	1	Plate	Polyester	
28	1	Spigot	Extruded aluminium alloy, anodized	
29	1	Body	Extruded aluminium alloy, coated	
30	1	Drive shaft	Steel, ENP	

[1] Included in the abrasion package (**STD**), [2] Included in the high temperature kit (**HT**), [3] Included in the low temperature set (**SLT**)

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Specification subject to change without notice