



Pneumatic double piston rotary actuator for butterfly valves and ball valves with 90° movement

Article DR 60 = double acting Article SC 60 = single acting

The latest generation of pneumatic actuators offers a high quality standard and innovative solutions for example such as the light outer rotation angle setting of 75° up to 95°, singleacting actuators with safety springs and same dimensions.

High-tech elastomer O-rings allow a standard temperaturerange from -40° C to +80° C. The most varied outer surface protection systems enable them to be used even under extreme conditions.

Valve connection acc. to ISO 5211 F05 + F07 (F04 optional) octagonal shaft connection according to DIN 3337 14,0 mm

Plug inserts allow the reduction to 9.0 mm or 11,0 mm

Standard with puck on the top at the housing for the visionary position indicator.



CE	Pressure Equipment Directive 2014/68 / EU (PED)
Toc	Environment -40°C +80°C
SIL 2	SIL 3 according to IEC 61508
$\langle \epsilon_x \rangle$	ATEX 94/9/EC II2 GD EEx D IIB T6

Technical data standard design

Norms

construction type Pneumatic double piston rotary actuator, same dimension double- or single-acting. safety springs in the end cap provide the safety position optionally OPEN or CLOSE

Mounting position random

Interface actuator / signaling device according to VDI / VDE 3845 (NAMUR)

Interface actuator / solenoid valve according to NAMUR or VDI/VDE 3845

Interface actuator / valve

Four- or octagonal plug insert with ISO 5211 mounting hole pattern in the actuator body

-40° C up to + 80° C NBR-seal kit (standard) -15° C up to +150° C Viton-seal kit -55° C up to + 80° C Super-low temperature ambient temperature

3 Nm up to 13.000 Nm torque

control pressure 2,0 bar up to 8,0 bar (Ü)

control medium filtered air, with respect to residual oil content, dust

and water, minimum according to DIN 8573-1

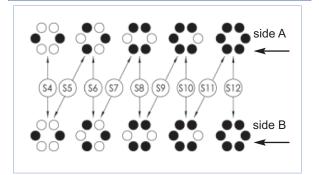
air pressure class 4, particle size < 30 µm quality Tp < 20° C, Tp minimum +10° C

spring package

- service-friendly safety springs
- number of springs variable according to control pressure
- protected against corrosion

spring arrangement:

S 4 = 4 springs S 5 = 5 springs S 6 = 6 springsS 7 = 7 springs S 8 = 8 springsS 9 = 9 springs S12 = 12 springs



Rev.0 2017 ENG DR-SC-60 actuator pneum.

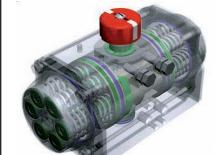


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Possible mounting options for pneumatic actuators positioner Limit switch box mounting with bracket NAMUR solenoid valve 5/2-way design = actuator double acting 3/2-way design = actuator single acting couplable emergency gearbox for valve actuation in case of compressed air failure Valve top flange acc. ISO 5211



Depending on the installation location and the atmospheric load, the following may be selected coating systems

description	design		parts and coat	ing		installation site
description	design	housing	сар	stem	piston	mistaliation site
4.5	Code "A" standard	ALODUR 30 - 35 µm silver grey	anodized + polyester 80 - 90 µm light gray	chemically nickel plated ENP 25 - 30 µm	anodized 15 - 20 µm black	process industry solvent resistant
	Code "B"	anodized + PTFE coated 50 - 55 μm	anodized + polyester coated 95 - 110 µm	chemically nickel plated ENP 25 - 30 µm	anodized 15 - 20 µm black	general industry light to medium loaded atmosphere
	Code "E"	anodized + PTFE coated 50 - 55 μm	anodized + PTFE coated 50 - 55 µm	stainless steel (1.4401)	anodized 15 - 20 µm black	strong environmental influences, strong acidity and basic atmosphere
	Code "EC"	anodized + + 1 primer + 2 Epoxy coating 85-120 µm	anodized + + 1 primer + 2 Epoxy coating 70 - 105 µm	stainless steel (1.4401)	anodized 15 - 20 µm black	direct lake vicinity On- / Offshore applications

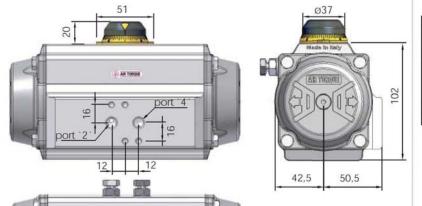
BSA-Armaturen GmbH Einstein Ring 20 D-48599 Gronau

pneum. actuator DR-SC-60 ENG 2017 Rev.0

Tel.: +49 (0)2562/70107-0 Fax: +49 (0)2562/70107-11 E-mail: info@bsa-armaturen.de Internet: www.bsa-armaturen.de

pneumatic actuator, DR/SC 60

Dimensions in mm

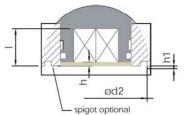


M5x8

ISO 5211 - available flanges

		Stan	dard	optional							
ISO 52	211	F05	+ F07	F05	F04* + F07						
Ød	2	35		35		*					
Ød	3	50	70	50	42	70					
d4		M6x9	M8x12	M6x9	M5x8	M8x12					
ØН	Š	3	35	35							
SW x I	D		-1	11 x 18 - 14 x 16							
min.	DS	14:	x 18	14 x 18 - 17 x 18							
h min	L.	0,5	0,5	0,5	0,5	0,5					
h1		2	-	2							

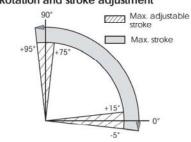
*before selecting the flange connection please consider the indications standard n° 5211 on page 0911 of our manual for op, and maintenance



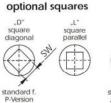
Connection / Attachment

Pressure connection port 2 and 4	G1/8"
Ancillaries attachment	AA 1

Rotation and stroke adjustment



411		HA.
9	O O OH	
	od3 d4	
		1



						0	utput	torqu	ie foi	r doub	ole a	cting	and	spring	retu	rn in f	Vm						Spr	ing	approx.
Pressure	2,	5 bar	3	bar	3,5	bar	4	bar	4,2	bar	4,5	bar	5	bar	5,5	bar	61	bar	7	bar	8	bar	torc	que	weight
	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°	in kg
DR	- :	29,1	3	4,9	40	0,7	40	6,5	4	8,9	5	2,4	5	8,2	(64	69	9,8	8	1,4	9:	3,1			2,68

SC 2/3	18	11,8	23,8	17,6	29,7	23,4	35,5	29,2	37,8	31,6	41,3	35,0	47,1	40,9									17,3	11,1	2,83
SC 3	15,8	8,3	21,6	14,1	27,5	19,9	33,3	25,8	35,6	28,1	39,1	31,6	44,9	37,4	50,7	43,2							20,8	13,3	2,86
SC 3/4			19,4	10,7	25,2	16,5	31,1	22,3	33,4	24,6	36,9	28,1	42,7	33,9	48,5	39,8	54,3	45,6					24,2	15,5	2,89
SC 4					23	13	28,8	18,8	31,2	21,2	34,7	24,7	40,5	30,5	46,3	36,3	52,1	42,1	63,7	53,7			27,7	17,7	2,92
SC 4/5							26,6	15,4	29	17,7	32,5	21,2	38,3	27	44,1	32,8	49,9	38,6	61,5	50,3	73,2	61,9	31,2	19,9	2,95
SC 5											30,2	17,7	36,1	23,6	41,9	29,4	47,7	35,2	59,3	46,8	71	58,5	34,6	22,1	2,98
SC 5/6													33,8	20,1	39,7	25,9	45,5	31,7	57,1	43,4	68,7	55	38,1	24,3	3,01
SC 6			0												37,5	22,4	43,3	28,3	54,9	39,9	66,5	51,5	41,5	26,5	3,04

Pressure	Rotation	Screw stroke	Chamber	Air vo	lume (L)	Mo	ving tir	ne (s	ec.) (A)
max.	(STD) (C)	adjustment	Ø (mm)	OPEN	CLOSE	0	PEN	C	LOSE
8 bar	0° - 90°	for 1° 1/6 rotation	75	0,31	0,49	D S	0,30		0,35 0,50

Operating temperature (°C) (B)									
ST (Standard)	HT (High temperature)	LLT (Extreme low temperature							
- 40 to + 80	- 15 to + 150	- 55 to + 80							

(A) the above indicated moving time of the actuator is obtained under the following test conditions: (1) room temperature, (2) actator stroke 90°, (3) solenoid valve with \emptyset 4 mm and flow capacity Qn 400 L/min. (4) inside pipe \emptyset 8 mm, (5) medium clean air (6) air supply pressure 5,5 bar (79,75 Psi), (7) actuator without external resitance load. Caution: It has to be expected, e.g. for field applications, when one ore more of the above parameters are different, the moving time will be different.

(B) Every temperature range option requires proper components and lubricant. Please contact BSA Armaturen.

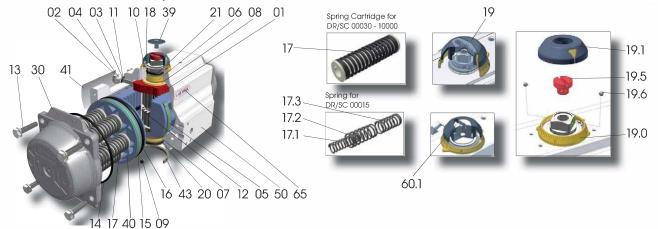
Operating Medium

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, Class 3).





pneumatic actuator, DR/SC 60



Pos	i.		Quantity / Note	Description	Material
01		,		0.11.0	Stainless Steel (for DR/SC00015U - DR/SC00150U)
)]		1		Octi-Cam (Stop arrangement)	Carbon Steel / Nodular Cast Iron, zinc coated
)2		2		Stop Cap Screw	Stainless Steel
)3		2		Washer	Stainless Steel
)4		2		Nut (Stop screw)	Stainless Steel
05 🔿		2	for DR/SC 10000U	Bearing (Piston top)	hochwertiger Kunststoff
06 ()		1	10. 21,/00 10000	Bearing (Pinion top)	high-grade plastic
7 0		i		Bearing (Pinion bottom)	high-grade plastic
08 ()		2		Thrust bearing	high-grade plastic
09 ()		2		Plug	Silicone
9.10		2	for DR/SC 05000U-10000U	O-Ring plug	M-NBR
10		1	Tel Biyee edeed feede	Thrust Washer	Stainless Steel
10		2		O-Ring (Stop screw)	M-NBR
12		2		Piston Guide	high-grade plastic
		8	for DR/SC 00015U-02000U	BIOT Guide	півт-діаае ріазііс
13		12	for DR/SC 03000U-04000U	Cap Screw	Stainless Steel
13		16		Cap sciew	Signification of the state of t
10.1		16	for DR/SC 05000U-10000U	Machania	Charles and Charles
13.1		-	for DR/SC 10000U	Washer (Cap screw end cap)	Stainless Steel
14 0		2		O-Ring (End cap)	M-NBR
15 0	_	2		Bearing (Piston head)	high-grade plastic
16 ()		2	, DD (0.0 00000) 10000)	O-Ring (Piston)	M-NBR
17		max. 12	for DR/SC 00030U-10000U	Spring Cartridge	_
17.1				Spring	SiCr Spring Steel
17.2		max. 2	for DR/SC 00015U	Spring	
17.3				Spring	
18		1		Spring Clip	SiCr Spring Steel, ENP
19		1	for DR/SC 00015U-00030U	Position Indicator	high-grade plastic / Stainless Steel
19.0		1		Graduated Ring	high-grade plastic
19.1		1	for DR/SC 00015U-00030U	Position Indicator	high-grade plastic
19.5		1	for DR/SC 00015U-00030U	Top Adaptor	Extruded Aluminium alloy, anodized
19.6		2	for DR/SC 00015U-00030U	Hex. Socket Screw (Top adaptor)	Stainless Steel
20 O		1		O-Ring (Pinion bottom)	M-NBR
21 O		1		O-Ring (Pinion top)	M-NBR
30		2		End Cap	Pressure Die Cast Aluminium alloy, coated Cast Aluminium alloy, coated (DR/SC10000)
39		1		Cap Screw (Indicator)	high-grade plastic
		<u>'</u>			Pressure Die Cast Aluminium alloy, coated
10		2		Piston	Cast Aluminium alloy, coated (DR/SC10000)
11		1		Label	Polyester Aluminium
13		i		Spigot (on request*)	Extruded Aluminium alloy, anodized
		<u> </u>			Extruded Aluminium alloy, coated
50		1		Body	Cast Aluminium alloy, coated (DR/SC 05000+10000)
50		1		Drive Shaft	Extruded Aluminium alloy, anodized (DR/SC10000)
,,,		·		DIVO GIGIT	Carbon Steel, ENP
60.1		1	not for all types	Integral Drive Shaft	Stainless Steel, ENP
65		1		Plastic Insert	high-grade plastic

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O enclosed in spare part kit $\ \square$ enclosed in O-Ring kit

*on request