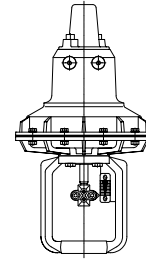


# Technical Data Sheet

## pneum. Diaphragm Actuator



TD\_811

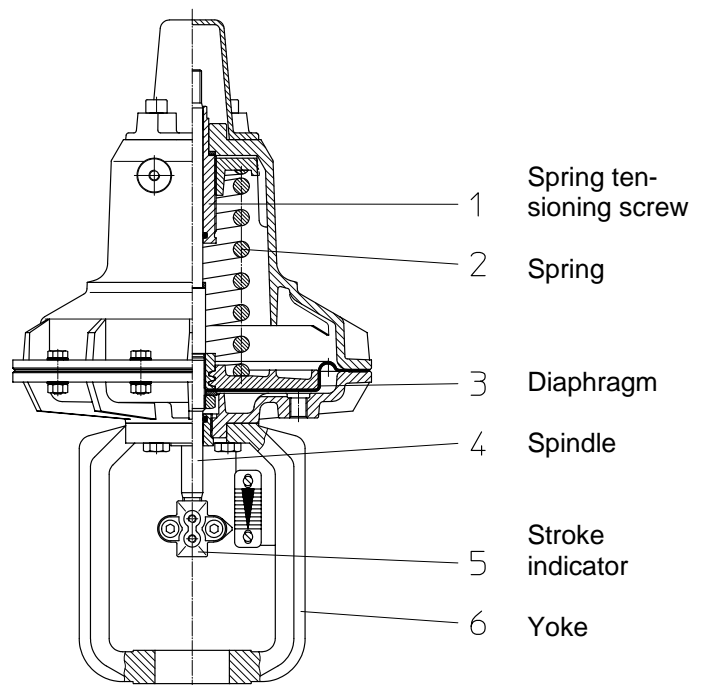
### Technical Data

<b>Series</b>	811
<b>Diaphragm effective area</b>	210 - 1440 cm <sup>2</sup>
<b>Stroke</b>	10 - 120 mm
<b>Control signal</b>	6 bar max.
<b>Materials</b>	Body parts and diaphragm plates: seawater-proof aluminium alloy 3.2581 Spring tensioning screw, spindle bushing: 1.4104 Spindle: 1.4021 Yoke: GG-25 or GGG-40, free of non-ferrous metal Diaphragm: NBR, fabric-reinforced (moulded)
<b>Operating temperature</b>	-20 to +80°C (Option -40 to + 80°C)
<b>Spindle bushing</b>	Straight-through spindle with rolled surface, top and bottom guided in PTFE/Graphite-slot ring bearings. Pressure chamber with O-ring sealing.
<b>Standard spring</b>	Control range = 0,8 bar, for control function: air to open or air to close
<b>Reinforced spring</b>	Control range > 0,8 bar; for max. spring forces with control function: air to open

### Functional description:

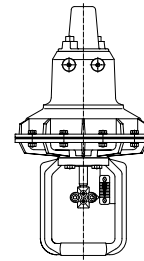
This is a pneumatic diaphragm actuator with spring return (fail safe) and is used to actuate linear valves. The actuator positions the valve plug, which in turn is controlled by a pneumatic or electropneumatic positioner. These actuators can be operated in the "Air to open" function or with the reverse action "Air to close".

- The central spring preload can be adjusted to optimum effect to the required actuating forces using the spring tensioning screw (1).
- A fabric-reinforced diaphragm ensures smooth conversion of the pneumatic application of pressure into the linear motion of the actuator spindle. The power diaphragm (3), supported by the diaphragm disc, is connected to the actuator spindle (4) and divides the actuator housing into pressure and spring chambers. If the force of the compressed air control signal exceeds the opposing spring force (2), the actuator spindle (4) moves and actuates the linear valve.
- The valve yoke (6) connects the actuator to the control valve, while the actuator spindle (4) is connected to the valve spindle via the coupling shown as a stroke indicator (5), securely guided in the slide bearing and sealed with a sealing element.



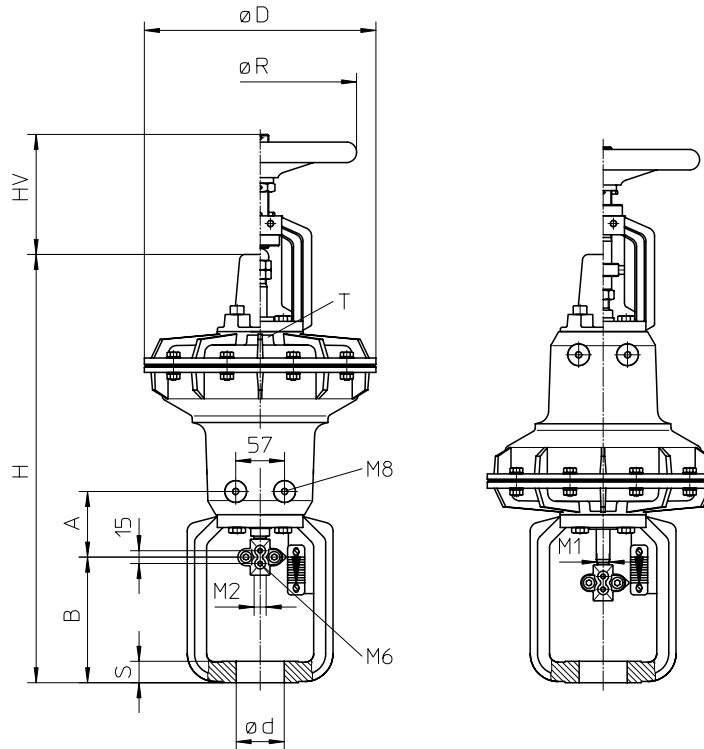
# Technical Data Sheet

## pneum. Diaphragm Actuator



TD\_811

### Dimensions and weights

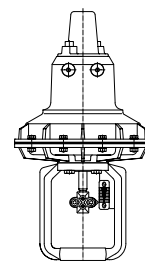


M2=Thread of particular valve spindle

Size	Diaph.-surf. (cm <sup>2</sup> )	Order-No.	Weight (kg) handwheel w/o with		Stroke	ØD	M1 actuator	Ød	S	B	A	H	HV	ØR	T inside						
U0	210	811.11	6,6	8,2	10/20	230	M10	40	15	117	77	430	110	180	G ¼						
		811.13	7,0	8,6								438									
		811.12	7,0	8,6																	
		811.14	7,4	9,0																	
UI	320	811.21	13,5	16,3	10/20	270	M10	48	20	127	82	495	135	225	G ¼						
		811.23	14,1	16,9																	
		811.22	14,2	17,0								20/30				M14	56	25	147	77	510
		811.24	14,6	17,4																	
UIII	720	811.31	33,0	42,3	20/30	392	M14	56	25	151	155	722	197	320	G ½						
		811.34	36,2	45,5																	
		811.32	33,2	42,5	30							72				30	196	140	752		
		811.33	35,0	44,3	45																
		811.35	37,2	46,5	60																
		811.36	39,3	48,6																	
UV	1440	811.41	79,0	99,0	30	530	M20x 1,5	72	30	194	147	1006	295	400	2x G½"						
		811.44	85,0	105,0	45					187	154										
					60					194	147										
		811.42	79,5	99,5	60					234	127					1026					
		811.43	78,0	98,0	75																
		811.45	86,0	106,0	100																
811.46	87,0	107,0																			
UV	1440	811.43.1 811.46.1	100	120	100	530	M20x 1,5	100	50	334	138	1134	295	400	2x G½"						
UV	1440	811.47 811.48	105	125	120	530	M20x 1,5	100	50	344	128	1176	300	400	2x G½"						

# Technical Data Sheet

## pneum. Diaphragm Actuator



TD\_811

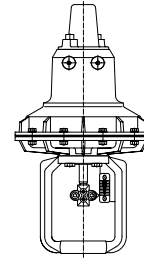
### Control forces and control ranges

Opening function (air to open - spring to close)

Size	Diaphragm surface (cm <sup>2</sup> )	Order-No.	Spring-No.	Stroke (mm)	Control range adjustable (bar)		Control force (kN)
					from	to	
U0	210	811.11	54610	10	0,4-0,8	1,4-1,8	2,8
				20	0,0-0,8	1,0-1,8	2,1
		811.12	54610	10	0,4-0,8	1,4-1,8	2,8
				20	0,0-0,8	1,0-1,8	2,1
		811.13	54611	10	1,0-1,8	2,2-3,0	4,5
				20	0,2-1,8	1,4-3,0	2,8
811.14	54611	10	1,0-1,8	2,2-3,0	4,5		
				20	0,2-1,8	1,4-3,0	2,8
UI	320	811.21	54620	10	0,55-0,95	1,4-1,8	4,4
				20	0,15-0,95	1,0-1,8	3,1
		811.22	54621	20	0,46-1,0	1,26-1,8	4,0
				30	0,2-1,0	1,0-1,8	3,1
		811.23	54622	10	1,28-1,8	2,48-3,0	7,7
				20	0,75-1,8	1,95-3,0	5,7
811.24	54622	20	0,75-1,8	1,95-3,0	5,7		
				30	0,4-2,0	1,4-3,0	4,4
UIII	720	811.31	54630	20	0,46-1,0	1,46-2,0	10,3
				30	0,2-1,0	1,2-2,0	8,4
		811.32	54631	30	0,46-1,0	1,26-1,8	8,8
				45	0,2-1,0	1,0-1,8	7,0
		811.33	54632	60	0,2-1,0	0,8-1,6	5,7
				811.34	54633	20	1,36-1,9
		30	1,4-2,2			2,2-3,0	15,5
		811.35	54633	30	1,4-2,2	2,2-3,0	15,5
45	1,0-2,2			1,8-3,0	12,7		
811.36	54633	60	0,7-2,3	1,4-3,0	9,8		
UV	1440	811.41	54650	30	0,5-0,9	1,4-1,8	19,7
				45	0,3-0,9	1,2-1,8	16,9
				60	0,1-0,9	1,0-1,8	14,1
		811.42	54651	60	0,3-0,9	1,0-1,6	14,1
				75	0,1-0,9	0,8-1,6	11,3
		811.43	54652	100	0,1-0,9	0,6-1,4	8,4
				811.44	54658	30	1,0-1,65
		45	0,7-1,65			2,05-3,0	28,9
811.45	54658	60	0,4-1,65	1,75-3,0	24,7		
		75	0,4-2,0	1,4-3,0	19,7		
811.46	54658	100	0,4-2,4	1,0-3,0	14,1		
UV	1440	811.47	54652	120	0,15-1,0	0,35-1,2	5,0
		811.48	54658	120	0,25-3,2	0,7-3,2	10,0

# Technical Data Sheet

## pneum. Diaphragm Actuator



**TD\_811**

**Closing function** (air to close - spring to open)

Size	Diaphragm surface (cm <sup>2</sup> )	Order-No.	Spring-No.	Stroke (mm)	Control range (bar)	Control force kN depending on control pressure (bar)						
						1,4	2,0	2,5	3,0	4,5	6,0	
U0	210	811.11	54610	10	0,4	2,0	3,2	4,3	5,3	8,5	11,6	
				20	0,8	1,1	2,4	3,4	4,5	7,6	10,8	
		811.12		10	0,4	2,0	3,2	4,3	5,3	8,5	11,6	
				20	0,8	1,1	2,4	3,4	4,5	7,6	10,8	
UI	320	811.21	54620	10	0,4	3,1	5,0	6,6	8,2	13,2	17,8	
				20	0,8	1,9	3,8	5,4	7,0	11,8	16,6	
		811.22		54621	20	0,53	2,1	4,0	5,6	7,2	12,0	16,8
					30	0,8	1,3	3,2	4,8	6,4	11,2	16,0
UIII	720	811.31	54630	20	0,53	6,3	10,6	14,2	17,8	28,6	39,4	
				30	0,8	3,7	8,0	11,6	15,2	26,0	36,0	
		811.32		54631	30	0,53	6,4	10,7	14,3	17,9	28,7	39,5
					45	0,8	4,6	8,9	12,5	16,1	26,9	37,7
		811.33		54632	60	0,8	3,8	8,1	11,7	15,3	26,1	36,9
		UV		1440	811.41	54650	30	0,4	14,9	23,6	30,8	38,0
45	0,6		12,3				21,0	28,2	35,4	57,1	78,6	
60	0,8		9,7				18,4	25,6	32,8	54,4	76,2	
811.42	54651		60		0,6		11,8	20,4	27,6	34,8	56,4	78,0
			75		0,8		9,7	18,3	25,5	32,7	54,3	75,9
811.43	54652		100		0,8		7,9	16,5	23,7	30,9	52,5	74,1
UV	1440	811.47	54652	120	1,0	-	-	-	-	-	-	
		811.48	54658	120	2,5	-	-	-	-	21,0	43,0	