

# Datasheet Pneumatic Actuator PA 11 / 21



## Advantages

- Robust PP-GF housing
- Full plastic actuator
- Position indicator with integrated NAMUR interface
- Fast cycle times
- Multi functional modul with different limit switch types optional available

Combinations					
PA 11 with 2- Way Ball Valve Type 546 from d16DN10 to d32DN25					
PA 21 with 2- Way Ball Valve Type 546 from d40DN32 to d63DN50					
Nominal torque M <sub>dn</sub>		Housing materials			
10 Nm (7.4 lb. ft.)		PP fiberglass-reinforced, highly chemical resistant			
Peak torque		Connectors			
20 Nm (15 lb. ft.)		PA11: F04			
Actuator connection		PA21: F05			
G1/8"		Weight			
Control time		0.75 kg - 1.445 kg			
1 - 2 s, with throttle valve 5 s		Control volume in dm <sup>3</sup>			
Mode of operation		DN	Single acting (FC/FO) dm <sup>3</sup>	Double acting (DA) dm <sup>3</sup>	
Fail-safe close (FC)		mm			
Fail-safe open (FO)					
Double acting (DA)					
Working principle		PA11	10	0.15	0.18 (open)
Rack and pinion			15		0.15 (closed)
Temperature control medium			20		
Max. 40 °C			25		
Ambient temperature		PA21	32	0.28	0.35 (open)
-10 ° bis +50 °C			40		0.28 (closed)
			50		
Control medium		Accessories			
Neutral, non aggressive gases		3/2-Way pilot solenoid valve PV94/95			
(Control with fluids on request)		3/2 and 5/2-way pilot solenoid valve MNL532			
Compressed air class per ISO 8573-1		4/2-way solenoid valve 5470			
2 or 3 at -10 °C		Namur connector plate			
3 or 4 at T > 0 °C		Pilot valve cluster PV2000			
Allowable humidity		Electropneumatic positioner DSR500-3			
0 - 100 %		Limit switch box for feedback			
Max. allowable control pressure		AS-Interface connections			
7 bar		Emergency manual override			
Position indicator					
Optical integrated					

## Combinations

### Pneumatic actuated Ball Valves Type 230-235

Ball valves type 230 - 235 are based on manual ball valve type 546 d16DN10 to d63DN50 and pneumatic actuator PA11 (DN10-DN25) or PA21 (DN32-DN50).



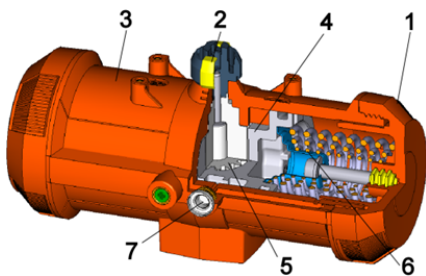
Ball Valve Pneumatic	Pneumatic Actuator	Manual Ball Valve	Dimensions	Materials	Standards
Type 230	PA 11 / PA21	Type 546	DN 10 - DN 50	PVC-U, PVC-C, ABS,	ISO/DIN
Type 231	PA 11 / PA21	Type 546	DN 10 - DN 50	PP-H	all standards
Type 232	PA 11 / PA21	Type 546	DN 10 - DN 50	PVDF	all standards
Type 233	PA 11 / PA21	Type 546	DN 10 - DN 50	PVC-U, PVC-C,	ASTM/ANSI
Type 234	PA 11 / PA21	Type 546	DN 10 - DN 50	PVC-U, ABS,	BS
Type 235	PA 11 / PA21	Type 546	DN 10 - DN 50	PVC-U, PVC-C, PP-H, PVDF	JIS

Ball valves type 285 - 288 are based on ball valve type 543 d16DN10 to d63DN50 and pneumatic actuator PA21. The type range 285-288 is designed as modular upgradeable 3-Way ball valve for mixing and diverting applications which demand special process requirements.



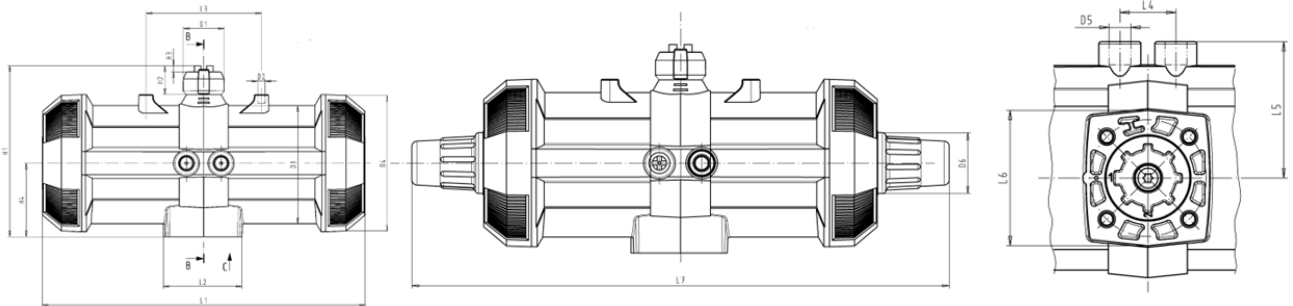
Ball Valve Pneumatic	Pneumatic Actuator	Manual Ball Valve	Dimensions	Materials	Standards
Type 285	PA 11 / PA 21	Type 543 horizontal	DN 10-DN 50	PVC-U, PVC-C, ABS	all standards
Type 286	PA 11 / PA 21	Type 543 horizontal	DN 10-DN 50	PROGEF	DIN/ISO, ASTM
Type 287	PA 11 / PA 21	Type 543 horizontal	DN 10-DN 50	SYGEF	DIN/ISO, ASTM
Type 288	PA 11 / PA 21	Type 543 vertical	DN 10-DN 50	PVC-U, ABS	DIN/ISO, JIS

### Exploded view



1. Spring cover	5. Pinion shaft
2. Optical position indicator	6. Preloaded spring assembly
3. Housing of PP-GF	7. Connection for control air G1/8"
4. Piston with rack	

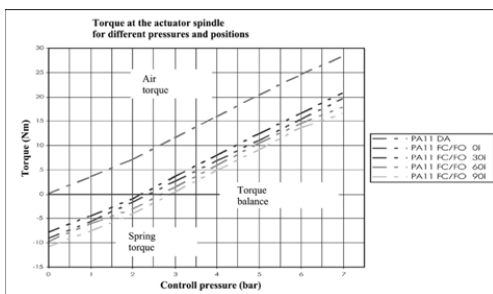
## Dimensions



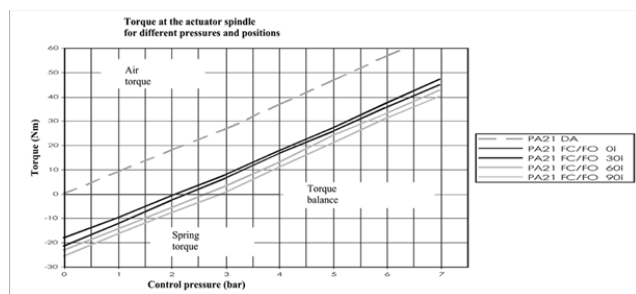
	L1	L2	L3	L4	L5	L6	L7	H1	H2	H3	H4	D1	D2	D3	D4	D5	D6
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		mm
PA11	194	44	80	24	48	54	275	97	20	4	40	29	M5	61	74	G1/8"	35
PA21	224	55	80	24	58.5	58	305	119	20	4	51	29	M5	82	94	G1/8"	35

## torque characteristics

### PA 11

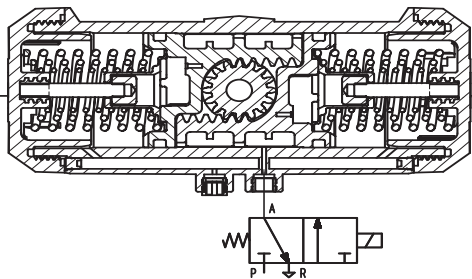


### PA 21

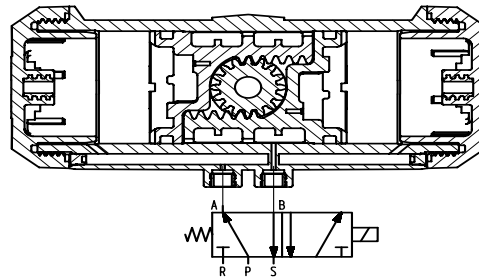


## Operating Diagram FC, FO, DA

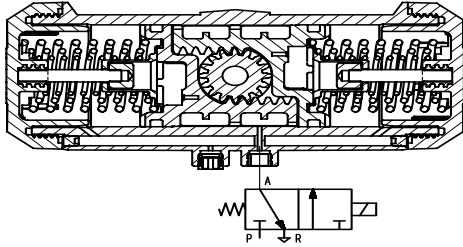
Fail safe to close (FC) with 3/2-Way Solenoid Valve de-energized closed



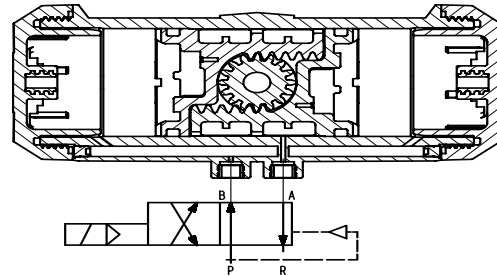
Double acting (DA) with 5/2-Way Solenoid Valve



Fail safe to open (FO) with 3/2-Way Solenoid Valve de-energized closed



Double acting (DA) with 4/2-Way Solenoid Valve



### Planning Fundamentals

The following link will lead you to the Georg Fischer Planning Fundamentals. These detailed documents will support you by choosing the right valve for your application.

[http://www.gfps.com/content/gfps.com/en/support\\_and\\_services/planning\\_assistance/planning\\_fundamentals.html?lang=en](http://www.gfps.com/content/gfps.com/en/support_and_services/planning_assistance/planning_fundamentals.html?lang=en)