

Application

On/off valve with pneumatic piston actuator

Nominal size	DN 15 to 80
Nominal pressure	PN 16
Temperature range	-10 to +180 °C

Globe (straight-pattern) valve with soft-seated flat plug with

- Pneumatic piston actuator
- Cast iron body

Permissible media

- Water
- Air
- Neutral gases and liquids
- Oils
- Steam up to 180 °C

Easy serviceability and low price due to

- Replaceable soft seal
- Safe relief of the actuator springs without having to use a spring clamping device

Version

Nominal sizes DN 15 to 80, body made of cast iron EN-GJL-250 (EN-JL1040), nominal pressure PN 16

Pneumatic piston actuator with either 30, 60 or 120 cm² effective area (63, 90 or 125 mm piston diameter)

- **Type 3354** · Globe valve, flanged connections (Fig. 1 and Fig. 2)

Further versions

- Other body materials · On request
- ANSI version · On request

Accessories

Type 4740 Limit Switch with inductive proximity switches or with microswitches, optionally with 3/2-way solenoid valve (max. 7 bar; Fig. 3)

- Fixture for holding proximity switches with M12 thread
- NAMUR adapter to mount a solenoid valve on actuators with 30 or 60 cm² effective area
- 3/2-way solenoid valve with G 1/8 for direct attachment to the actuator (double nipple required for mounting) in DN 1.5; 0 to 12 bar; 24 V DC or 230 V AC, optional silencer
- Double nipple G 1/8 x G 1/4 detachable, brass
- Elbow fitting (order no. 8582-2273) for valves, DN 65 and 80



Fig. 1: Type 3354, DN 40



Fig. 2: Type 3354, DN 80



Fig. 3: Type 4740 Electric Limit Switch and solenoid valve, mounted on a pneumatic actuator

Principle of operation

The process medium flows through the valve in the direction indicated by the arrow in the flow-to-open direction. The valve plug position determines the cross-sectional area between the seat and plug.

Fail-safe position

Depending on how the springs are arranged in the pneumatic actuator (Fig. 5 and Fig. 6), the valve has two fail-safe positions effective upon air supply failure.

Fail-close (FA/NC):

The valve is closed upon air supply failure.

Fail-open (FE/NO):

The valve is opened upon air supply failure.

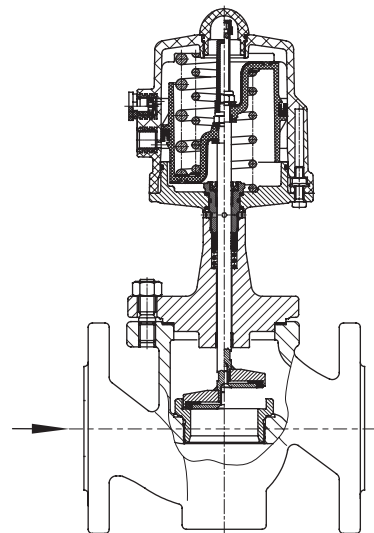


Fig. 5: Type 3354 Globe Valve
pneumatic actuator with 60 cm² effective area

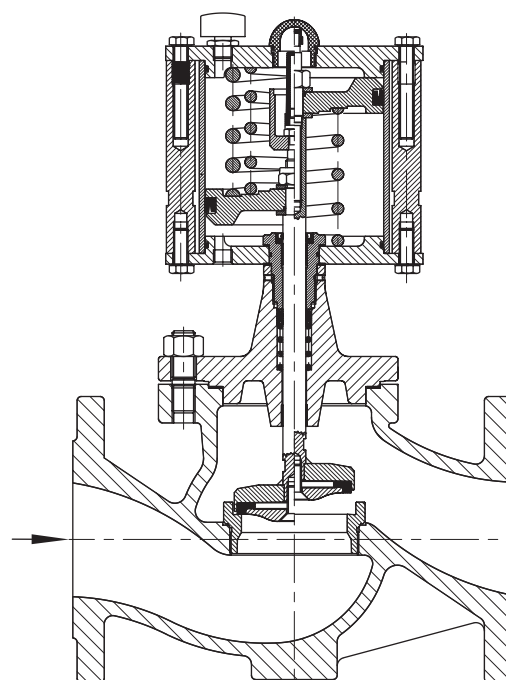


Fig. 6: Type 3354 Globe Valve
pneumatic actuator with 120 cm² effective area

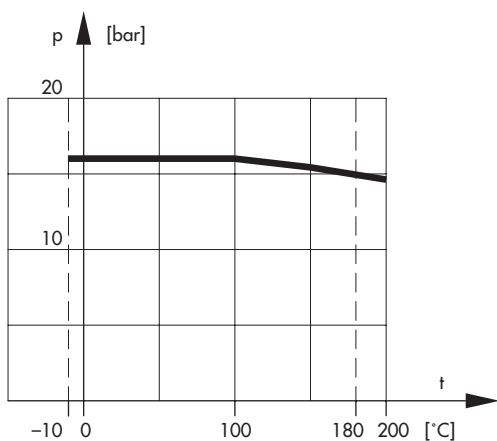


Fig. 4: Pressure-temperature diagram

Table 1: Technical data for Type 3354 Globe Valve

Nominal sizes	DN 15 to 80
Material	Cast iron EN-GJL-250 (EN-JL1040)
Type of end connection	Flange
Nominal pressure	PN 16
Seat/plug seal	Soft seal
Characteristic	On/off
Actuator	30 cm ² (Ø = 63 mm) · 60 cm ² (Ø = 90 mm) · 120 cm ² (Ø = 125 mm)
Permissible signal pressure	Minimum as listed in Table 4.1 and Table 4.2 · Maximum 8 bar
Signal pressure connection	G ¼
Temperature range	
Perm. medium temperature	-10 to 180 °C
Perm. ambient temperature	-10 to 60 °C
Permissible flow velocity	
Max. velocity at the valve outlet	Liquids: 3 m/s · Gases: 0.3 Mach
Compliance	
ERC	

Table 2: Materials

Valve body	Cast iron EN-GJL-250 (EN-JL1040)	
Connecting piece	1.0566	
Actuator stem	1.4571	
Flat plug	1.4571	
Seal	PTFE, 35 % carbon fiber reinforced	
Packing	PTFE/carbon, spring-loaded	
Actuator	30/60 cm ²	120 cm ²
Cover	PA 66, glass fiber reinforced	Aluminum
Piston	PA 66, glass fiber reinforced	Aluminum
Actuator base	Spheroidal graphite iron EN-GJS-400-18-LT (EN-JS1049)	Aluminum

Table 3: Overview: Nominal sizes, valve coefficients and seat diameters

Nominal size	DN	15	20	25	32	40	50	65	80
Flow coefficient	K _{VS}	6	9	18	20	36	44	65	90
Seat Ø	mm	20		24	48			74	
Travel	mm	15							

Table 4: Permissible differential pressures

The specifications for the standard version have a gray background.

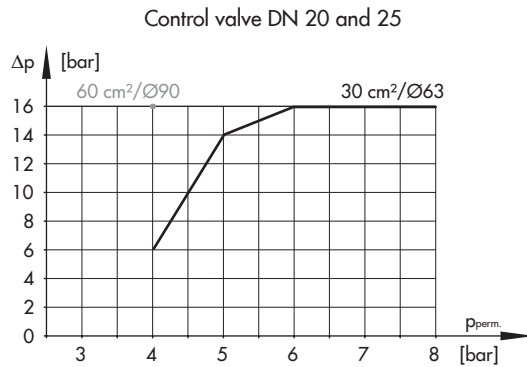
Table 4.1: Version FA/NC with fail-safe position: fail-close

Nominal size DN		15 · 20	25	32 · 40 · 50	65 · 80
Actuator	Signal pressure in bar	Δp			
Actuator area					
30 cm ²	5.0	20	10	4	–
60 cm ²	4.0	16	16	6	–
	5.4	–	16	10	–
120 cm ²	5.8	–	–	–	10

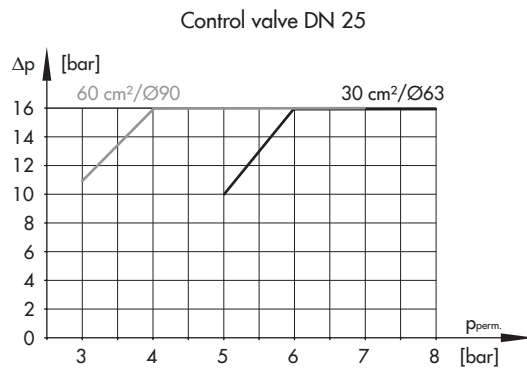
Table 4.2: Version FE/NO with fail-safe position: fail-open · Allocation according to nominal size and actuator size

Required actuators and signal pressures to close the valve at the specified differential pressure

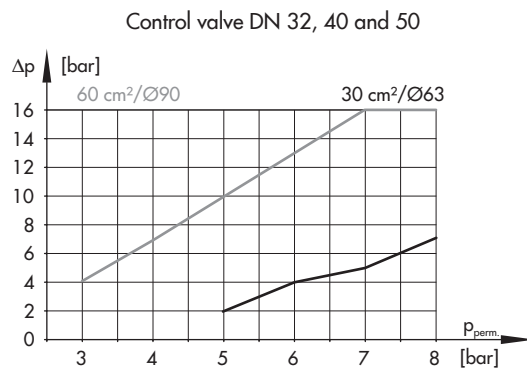
Nominal size DN 15 and 20		
Actuator	Signal pressure	Δp
30 cm ² Ø = 63 mm	4 bar	6
	5 bar	14
	6 bar	16
	7 bar	
8 bar		
60 cm ² Ø = 90 mm	4 bar	



Nominal size DN 25		
Actuator	Signal pressure	Δp
30 cm ² Ø = 63 mm	5 bar	10
	6 bar	16
	7 bar	
	8 bar	
60 cm ² Ø = 90 mm	3 bar	11
	4 bar	16
	7 bar	



Nominal size DN 32, 40 and 50		
Actuator	Signal pressure	Δp
30 cm ² Ø = 63 mm	5 bar	2
	6 bar	4
	7 bar	5
	8 bar	7
60 cm ² Ø = 90 mm	3 bar	4
	4 bar	7
	5 bar	10
	6 bar	13
	7 bar	16
8 bar		



Nominal size DN 65 and 80		
Actuator	Signal pressure	Δp
120 cm ² Ø = 125 mm	3 bar	3
	4 bar	6
	5 bar	8
	6 bar	11
	7 bar	14
	8 bar	16

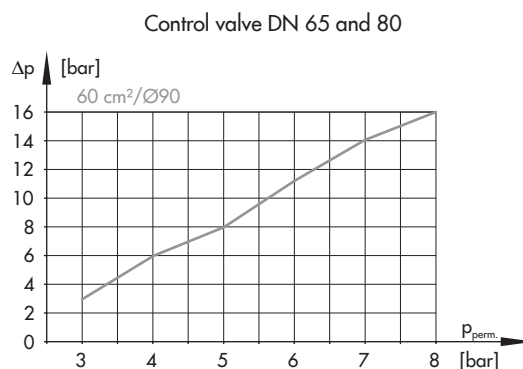


Table 5: Dimensions in mm and weights in kg

Table 5.1: Version with flanges

Nominal size	DN	15	20	25	32	40	50	65	80
Face-to-face dimension L	mm	130	150	160	180	200	230	290	310
Height including actuator H	mm	235		249		262		368	
Flange diameter Ød	mm	95	105	115	140	150	165	185	200
Valve weight including actuator	kg	5.4	6.0	7.3	12.3	13.0	15.7	30.5	33.5

Table 5.2: Pneumatic piston actuator

Version	Effective area/ piston Ø	30 cm ² /Ø = 63 mm	60 cm ² /Ø = 90 mm		120 cm ² /Ø = 125 mm
			One spring	Two springs	
Housing ØD	mm	100	127		180
Signal pressure connection		G ¼			

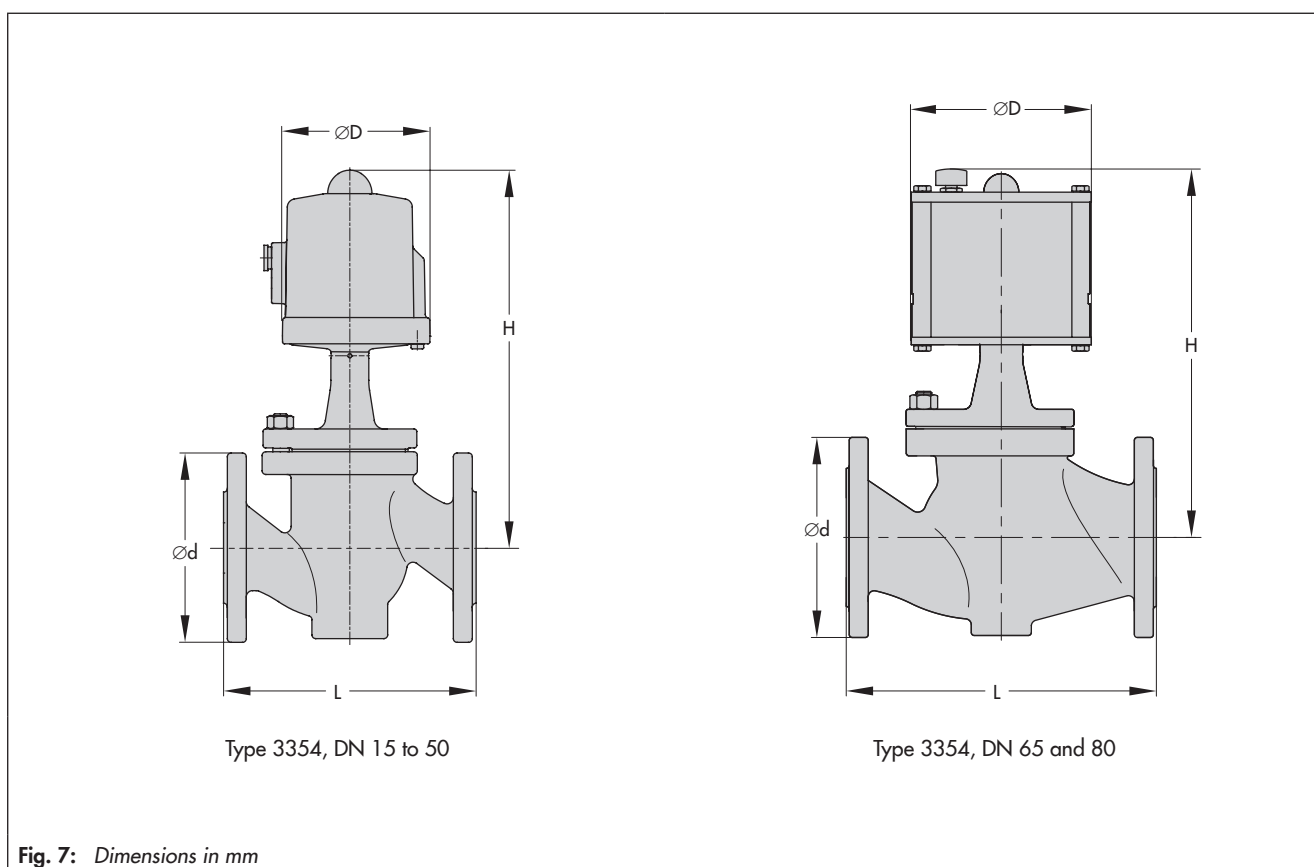


Fig. 7: Dimensions in mm

Ordering text

The following specifications are required on ordering:

Operational data (for sizing performed by SAMSON)

Medium	<input type="checkbox"/> water
	<input type="checkbox"/> steam
	<input type="checkbox"/> neutral gas e.g. air, nitrogen
	<input type="checkbox"/> ...
Flow rate	max ...
Input pressure p_1	... bar
Output pressure p_2	... bar or
differential pressure Δp	... bar
Temperature T_1	... °C

Type 3354 Globe Valve

Nominal size	DN ...
Valve coefficient	K_{VS} ...

Pneumatic actuator

Effective area/piston \emptyset	<input type="checkbox"/> 30 cm ² / \emptyset = 63 mm
	<input type="checkbox"/> 60 cm ² / \emptyset = 90 mm, one spring
	<input type="checkbox"/> 60 cm ² / \emptyset = 90 mm, two springs
	<input type="checkbox"/> 120 cm ² / \emptyset = 125 mm (fail-close only)
	<input type="checkbox"/> 120 cm ² / \emptyset = 125 mm (fail-open only)
Fail-safe position	<input type="checkbox"/> fail-close (FA)
	<input type="checkbox"/> fail-open (FE)

Additional equipment

Limit switch	<input type="checkbox"/> inductive proximity switches
	<input type="checkbox"/> solenoid valve
	<input type="checkbox"/> microswitch
	<input type="checkbox"/> solenoid valve
NAMUR adapter	<input type="checkbox"/>
3/2-way solenoid valve and double nipple	<input type="checkbox"/> 24 V DC
	<input type="checkbox"/> 230 V AC
Silencer and fitting for solenoid valve	<input type="checkbox"/>

Specifications subject to change without notice

