

Pneumatic Control Valve Type 3258-1 Angle Valve with Split Body Type 3258

Application

Control valve assembly for process engineering applications, especially for chemical plants where the valve materials must meet severe requirements

Nominal sizes DN 25 to DN 125
Nominal pressures PN 16 to PN 40
Temperatures -10 °C to +220 °C

Conversion of valve sizing coefficients:

C_v (in U.S.-gallons/min) = $1.17 \cdot K_{vs}$ (in m^3/h)
 K_{vs} (in m^3/h) = $0.86 \cdot C_v$ (in U.S.-gallons/min)

Type 3258 Angle Valve with split body with

- Type 3271 Pneumatic Actuator (Type 3258-1 Control Valve)
- Type 3277 Pneumatic Actuator (Type 3258-7 Control Valve)

Valve body made of

- Cast steel
- Stainless cast steel

Special materials

- Hastelloy B or Hastelloy C
- Titanium
- Monel

Valve plug with

- Metal sealing
- Soft sealing
- Lapped-in metal

The valves designed according to the modular-assembly principle can be equipped with various optional accessories:

Positioners, solenoid valves and other accessories conforming with IEC 60534-6 and NAMUR recommendations. Refer to Information Sheet T 8350 EN for more details.

Versions

Standard version Type 3258 Valve with split-body in DN 15 to 150 and nominal pressures PN 16 or PN 40 for temperatures ranging from -10 °C to +220 °C

- **Type 3258-1** · Valve with Type 3271 Pneumatic Actuator
- **Type 3258-7** · Valve with Type 3277 Pneumatic Actuator

Further versions with

- Adjustable packing
- Additional metal bellows seal
- Nominal size up to DN 200, nominal pressure up to PN 160, temperature range up to 450 °C · On request
- Body made of special material such as Hastelloy B or C, titanium, Monel
- Ceramic trim for eroding or abrasive media · See Data Sheet T 8071 EN
- Additional handwheel · See Data Sheet T 8310-1/-2 EN
- Electric actuator · On request



Fig. 1 · Type 3258-1 Pneumatic Control Valve

Principle of operation

The process medium flows through the valve in the direction indicated by the arrow. The position of the plug determines the flow rate between the plug and the seat.

The valve bonnet can be separated from the bottom section of the valve after removing the connecting bolts. The seat is then easily accessible.

The angle valve can be cleaned while remaining in the line since complete draining is possible as the body has a smooth passage with no dead cavities.

Fail-safe action

Depending on how the springs are arranged in the actuator (for details refer to Data Sheets T 8310-1 EN and T 8310-2 EN), the control valve has two different fail-safe positions which become effective upon a supply air failure:

"Actuator stem extends" (FA),

The valve closes when the supply air fails.

"Actuator stem retracts" (FE),

The valve opens when the supply air fails.

Table 1 · Technical data

Nominal size	DN 25, 50, 80, 100, 150	
Material	Cast steel 1.0619	Stainless cast steel 1.4581
Nominal pressure	PN 16 to 40	
Connection	Flange Form B1	
Plug/seat sealing	Metal, soft or lapped-in metal	
Characteristic	Equal percentage or linear	
Rangeability	50 : 1	
Temperature ranges in °C		
Body without ins. section	-10 ... 220	
With insulating section or bellows seal	-10 ... 400	-10 ... 450
Leakage rate according to DIN EN 1349: 2000		
Metal sealing	IV	
Soft sealing	VI	
Lapped-in metal	IV-S2 IV-S3 up to DN 80	

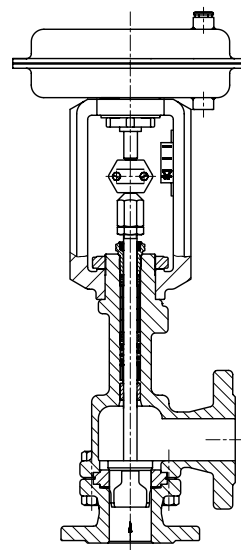


Fig. 2 · Type 3258-1 Pneumatic Control Valve

Table 2 · Materials

Standard version		
Valve body and flanges ¹⁾	Cast steel 1.0619	Stainless cast steel 1.4581
Seat and plug ²⁾ With metal sealing	1.4006 / 1.008	1.4571 / 1.4581
Seat ring With soft sealing	PTFE with glass fiber	
Guide bushings	1.4006	2.4610
Stuffing box packing	V-ring packing PTFE with carbon; spring 1.4310 or high-temperature packing	

¹⁾ Upon request, other body materials: Titanium, Monel, Hastelloy B, Hastelloy C or tantalum or zirconium lining

²⁾ All seats and plugs with metal sealing are also available with Stellite facing

Table 3 · Available K_{vs} values · Ceramic trims available on request

K _{vs}	0.1 · 0.16 · 0.25 0.4 · 0.63 · 1.0	1.6	2.5	4.0	6.3	10	16	25	40	63	100	160	360
Seat∅ mm	6	12	24			31	38	50	63	80	100	150	
Tr. mm	15							30				60	
DN													
25	•	•	•										
50							•	•					
80									•		•		
100										•		•	
150												•	•

Table 4 Differential pressure tables

Permissible differential pressures Δp for plug with metal sealing when p₂ = 0

Values in the gray columns apply to standard applications · Differential pressures in the white columns apply to maximum pretensioned springs
Differential pressures in parentheses apply to the values in parentheses in the Bench range row.

Table 4a · Valve with fail-safe position "Actuator stem extends" · Valve CLOSED when the signal pressure is 0 bar

Table 4b · Valve with fail-safe position "Actuator stem retracts" · Valve CLOSED at the required signal pressure

Table 4a · Fail-safe position "Actuator stem extends"							Table 4b · "Stem retracts"				
Bench range [bar]			0.2...1.0	0.4...1.2	0.4...2.0 (1.2...2.0)	0.8...2.4 (1.6...2.4)	0.6...3.0 (2.1...3.5)	1.4...4.2 (2.8...4.2)	0.2...1.0	0.2...1.0	0.2...1.0
Required supply air			1.2	1.4	2.2	2.6	3.7	4.4	1.2	2.4	4.0
DN	K _{vs}	Actuator cm ²	Δp when p ₂ = 0								
25	0.1...1.0	350	40	40	40	40	40	40	40	40	–
	1.6 · 2.5		16.3	40	40	40	40	40	40	40	–
	4.6.3.10	350	2.4	16.5	16.5	40	38	40	2.4	40	40
700		16.5	40	(40)	(40)	(40)	(40)	(40)	(40)	(40)	
50	16	350	–	7.6	7.6	24	20	40	–	40	40
		700	7.6	24	(40)	(40)	(40)	(40)	(40)	(40)	(40)
50	25	350	–	4.7	4.7	15.9	13.1	33	–	33	40
		700	4.7	15.9	(40)	(40)	(40)	(40)	(27)	(40)	(40)
50 and 80	40	700	2.3	8.8	8.8	22	18.5	40	2.3	40	40
		1400	8.8	22	(40)	(40)	–	–	(35)	(40)	(40)
100	63	700	0.3	4.4	4.4	12.5	10.5	25	0.3	25	40
		1400	4.4	12.5	45	(40)	–	–	(20)	(40)	(135)
80	100	700	–	2.5	2.5	7.6	6.3	15.2	–	15.2	35
		1400	2.5	7.6	(28)	(38)	–	–	(12.6)	(40)	(40)
100 and 150	160	700	–	1.4	1.4	4.7	3.9	9.5	–	9.5	22
		1400	1.4	4.7	(18)	(24)	–	–	(7.9)	(27)	(40)
150	360	1400	0.2	1.6	1.6	4.5	–	–	0.2	8.8	20
		2800	1.6	4.5	(16)	(22)	–	–	(7.4)	(25)	(40)

Notes concerning permissible differential pressures in Table 4

The differential pressure tables were created under the following conditions:

- The maximum supply pressure is 4 bar for valves in nominal sizes DN 15 to DN 80 and actuators with 700 cm² effective diaphragm area values.
- Direction of flow: FTO

- Version with PTFE packing
 - The leakage rates as per Table 1 are kept with the specified permissible differential pressures.
 - The specified differential pressure can be limited by the Pressure-Temperature Diagram.
- The actuator sizing must be checked separately for a version with metal bellows seal and p₂ ≠ 0 bar.

Table 5 · Dimensions for Type 3258 Angle Valve

Valve	DN	25	50	80	100	150
L	mm	100	125	155	175	225
H1 with Type 3271 Actuator (Type 3277 +100 mm)	350 cm ²	390	–	–	–	–
	700 cm ²	390	451	451	531	–
	1400 cm ²	–	–	507	586	750
	2800 cm ²	–	–	–	–	1000

Actuator	cm ²	350	700	1400	2800
Diaphragm Ø D		280	390	530	770
H		82	134	197	520
H3 (Types 3271 and 3277 Actuators) ¹⁾		110	190	610	648
Thread		M30 x 1.5		M60 x 1.5	M100 x 2
α (with Type 3271 Actuator)		G 3/8 (3/8 NPT)		G 3/4 (3/4 NPT)	G 1 (1 NPT)
α2 (with Type 3277 Actuator)		G 3/8 (3/8 NPT)		–	

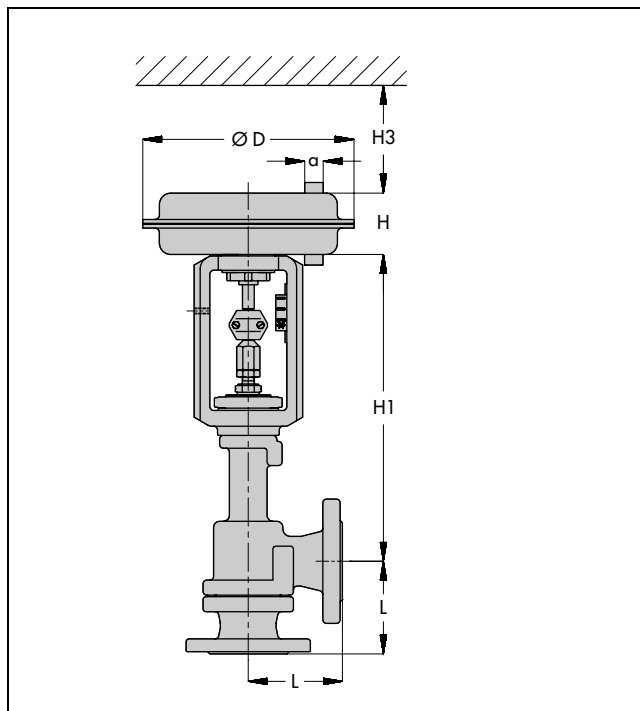
¹⁾ Minimum distance to be kept clear for removing the actuator

Table 7 · Weights for the standard version of the Type 3258 Angle Valve

Valve	DN	25	50	80	100	150
Weight without actuator	kg	17	30	47	60	150

Actuator	cm ²	350	700	1400	2800
Type 3271 (approx. kg) ¹⁾		8	22	70	450
		13	27	155	575
Type 3277 (approx. kg) ¹⁾		12	26	–	
		17	31	–	

¹⁾ Top row without handwheel and bottom row with handwheel


Ordering text

Nominal size DN	Acc. to Table 3; DN 200 on request
Nominal pressure	Up to PN 40; up to PN 200 on request
Valve body material	Acc. to Table 2; special materials and linings on request
End connections	Flanges; others on request
Seat and plug	Standard, stellited
Plug sealing	Metal sealing, soft sealing or lapped in metal
Characteristic	Equal percentage or linear
Actuator	Versions according to T 8310-1 EN/ T 8310-2 EN
Fail-safe position	Valve OPEN or CLOSED
Process medium	Density in kg/m ³ and temperature in °C
Flow rate	In kg/h or m ³ /h in standard or operating conditions
Pressure	p ₁ in bar (absolute pressure p _{abs}) p ₂ in bar (absolute pressure p _{abs}) at minimum, normal and maximum flow rate
Accessories	

Specifications subject to change without notice.

