

Pneumatic Control Valve Type 3252-1 and Type 3252-7 High Pressure Valve Type 3252

Application

Control valve used to control small flow rates in process engineering

Nominal size	G 1/2" to 1" · NPT 1/2" to 1" · DN 15 to 25 · ANSI 1/2" to 1"
Nominal pressure	PN 40 to 400 · ANSI Class 300 to 2500
Temperatures	–200 to 450 °C · –320 to 800 °F

Type 3252 High Pressure Valve with globe-style or angle-style valve body with

- Type 3271 Pneumatic Actuator (Type 3252-1 Control Valve) or
- Type 3277 Pneumatic Actuator (Type 3252-7 Control Valve)

Valve body

- Material WN 1.4404/A 316 L
- G or NPT threaded connection, optionally welding ends or weld-on flanges

Valve plug

- With metal sealing

The control valves have a modular-assembly design and can be equipped with various accessories as follows:

Positioners, limit switches, solenoid valves and other equipment for attachment according to DIN IEC 534-6 and NAMUR recommendation.

For more details, please refer to Information Sheet T 8350 EN.

Versions

Standard version designed as globe-style or angle-style valve body with PTFE V-ring packing suitable for temperature ranges of –10 to 220 °C (15 to 430 °F)

Nominal pressure PN 40 to PN 400, ANSI Class 300 to 2500

Female thread G 1/2", 3/4", 1" or NPT 1/2, 3/4, 1

Body material WN 1.4404/A 316 L

- **Type 3252-1** Control Valve with Type 3271-5 Pneumatic Actuator (120 cm²) or Type 3271 Pneumatic Actuator (350 cm²)
- **Type 3252-7** Control Valve (Fig. 1) with Type 3277-5 Pneumatic Actuator (120 cm²) or with Type 3277 Pneumatic Actuator (350 cm²) for integral positioner attachment.

Additional versions available with

- **Welding ends** size DN 15, 20, 25 or ANSI 1/2", 3/4", 1"
- **Flanges** size DN 15, 20, 25 or ANSI 1/2", 3/4", 1"
- **Male thread** on request
- **Insulating section** for temperatures from –200 to 450 °C (–320 to 800 °F)
- **Metal bellows seal** for PN 40 to PN 400 or ANSI Class 150 to 2500
- **Special valve body materials** on request
- **Adjustable stuffing box**



Fig. 1 · Type 3252-7 High Pressure Valve with Type 3767 i/p Positioner

Principle of operation

The process medium flows through the valve in the direction indicated by the arrow. The position of the plug determines the cross-sectional area of flow between the seat and the plug. The plug stem is connected to the actuator stem via coupling and sealed with a self-adjusting packing. For higher demands regarding the tightness of the seal to the outside, the valve can be equipped with a multiple-walled metal bellows.

Fail-safe position

Depending on how the compression springs are arranged in the actuator (see Data Sheets T 8310 EN and T 8311 EN for details), the control valve has two different fail-safe positions in case the supply air fails:

Actuator stem extends (FA)

Whenever the supply air fails, the valve closes.

Actuator stem retracts (FE)

Whenever the supply air fails, the valve opens.

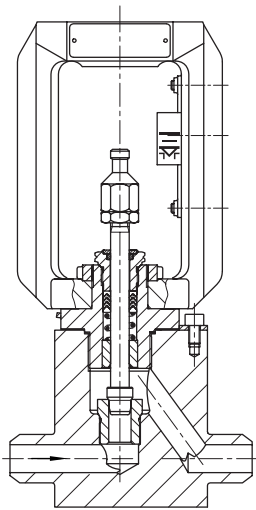


Fig. 2 · Type 3252 High Pressure Valve as globe-style valve with welding ends

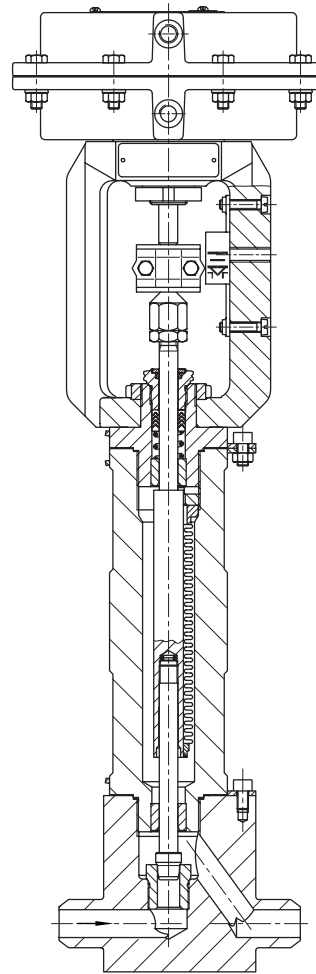


Fig. 3 · Type 3252-1 High Pressure Valve with insulating section or bellows seal

Table 1 · Technical data for Type 3252

Connection	Female thread	Welding ends	Weld-on flanges
Nominal size	G 1/2", 3/4", 1" NPT 1/2", 3/4", 1"	DN 15, 20, 25 1/2", 3/4", 1"	DN 15, 20, 25 1/2", 3/4", 1"
Nominal pressure	PN 40 ... 400 or ANSI Class 300 ... 2500		
Seat-plug seal	Metal sealing		
Characteristic	Equal percentage or linear		
Rangeability	50 : 1		
Temperature ranges			
Valve body without insulating section	-10 ... 220 °C (15 ... 430 °F)		
Valve body with	Insul. sec. short	-50 ... 450 °C (-57 ... 800 °F)	
	long	-200 ... 450 °C (-320 ... 800 °F)	
	Bellows seal	-10 ... 220 °C (15 ... 430 °F) · other ranges on request	
Leakage class acc. to DIN IEC 534	IV		

Table 2 · Materials (WN = Material No. acc. to DIN)

Standard version	
Valve body	WN 1.4404 / A 316 L ¹⁾
Valve bonnet (wetted parts)	WN 1.4404 / A 316 L
Seat and plug	WN 1.4404 / A 316 L (Stellited seats and purely Stellited plug also available)
Packing	V-ring packing PTFE incl. carbon
Body gasket	WN 1.4404 / A 316 L
Insulating section	WN 1.4404 / A 316 L
Metal bellows seal	
Intermediate piece	WN 1.4404 / A 316 L
Metal bellows PN 40 ... 400 CI 300 ... 2500	WN 1.4571 / A 316 Ti

1) Other materials on request

Table 3 · K_{Vs} values available

K _{Vs}	0.1	0.16	0.25	0.4	0.63	1.0	1.6	2.5	4.0	
C _V	0.12	0.2	0.3	0.5	0.75	1.2	2.0	3.0	5.0	
Seat Ø	mm	6					12		14	
Travel	mm	7.5								

Table 4 · Permissible differential pressures for versions without metal bellows seal · All pressures stated in bar

Table 4a · Fail-safe position "Actuator stem extends"							Table 4b · "Actuator stem retracts"			
Bench range				0.6 ... 1.0	1.2 ... 2.0	1.85 ... 2.3	2.7 ... 3.3	0.2 ... 0.6		
Required supply pressure				1.2	2.2	2.5	3.5	1.0	2.0	3.0
DN	K _{Vs}	Seat Ø mm	Actuator cm ²	Δp for p ₂ = 0						
15 to 25 or 1/2" to 1"	0.1 · 0.16 0.25 · 0.4 0.63 · 1.0	6	120	50	128	205	400	50	400	400
			350	330	400	–	–	330	400	–
	1.6 · 2.5	12	120	8	82	135	230	8	100	230
			350	130	270	400	–	130	295	400
	4.0	14	120	2	60	99	165	2	80	165
			350	90	198	310	400	90	315	400

Table 5 · Permissible differential pressures for versions with metal bellows seal · All pressures stated in bar

Table 5a · Fail-safe position "Actuator stem extends"							Table 5b · "Actuator stem retracts"			
Bench range				0.6 ... 1.0	1.2 ... 2.0	1.85 ... 2.3	2.7 ... 3.3	0.5 ... 1.3		
Required supply pressure				1.2	2.2	2.5	3.5	1.5	2.5	3.5
DN	K _{Vs}	Seat Ø mm	Actuator cm ²	Δp for p ₂ = 0						
15 to 25 or 1/2" to 1"	0.1 · 0.16 0.25 · 0.4 0.63 · 1.0	6	120	–	102	164	400	–	80	400
			350	100	320	–	–	100	400	–
	1.6 · 2.5	12	120	–	66	108	140	–	55	140
			350	65	216	320	400	65	173	400
	4.0	14	120	–	48	79	125	–	55	125
			350	65	158	248	400	65	250	400

Table 6 · Dimensions in mm and weights for Type 3252 High Pressure Valve with globe-style valve body

Valve	Standard	DIN			ANSI			
	DN	15	20	25	DN	1/2"	3/4"	1"
Length L with female thread	PN 40 ... 400	130			Cl 300 ...2500	130		
Length L with welding ends	PN 40 ... 400	130	130 ¹⁾	130	Cl 300 ...2500	130		
Length L with flanges	PN 40	210	210	230	Cl 300	190	194	197
	PN 63 ... 160	210	–	230	Cl 600	203	206	210
	PN 250 ... 400	230	–	260	Cl 900 /1500	216	229	254
Cl 2500	264				273	308		
W	PN 40 ... 400	70	70	70	Cl 300 ...2500	70	70	70
H1		228	228	228		228	228	228
H2		26	26	26		26	26	26
Weights in kg (approx.) for globe-style valve body incl. yoke								
With female thread	PN 40	8.5			Cl 300	on request		
With welding ends	... 400	6.5				on request		
With flanges	PN 400	13	–	19.5	Cl 2500	12.5	13.5	16.5

¹⁾ Only PN 40

Table 7 · Dimensions in mm and weights for Type 3252 High Pressure Valve with angle-style valve body

Valve	Standard	DIN			ANSI			
	DN	15	20	25	DN	1/2"	3/4"	1"
Length L 1 with female thread	PN 40 ... 400	60	60	60	Cl 300 ...2500	60	60	60
Length L 1 with welding ends	PN 40 ... 400	57	57 ¹⁾	57	Cl 300 ...2500	57		
Length L 1 with flanges	PN 40	90	95	100	Cl 300	95 ²⁾	97 ²⁾	98 ²⁾
	PN 63 ... 160	105	–	115	Cl 600	102 ²⁾	103 ²⁾	105 ²⁾
	PN 250 ... 400	115	–	130	Cl 900 /1500	108	114	127
Cl 2500	132				136	154		
W	PN 40 ... 400	70			Cl 300 ...2500	70		
H1		194				194		
Weights in kg (approx.) for angle-style valve body incl. yoke								
With female thread	PN 400	7.5			Cl 300 ... 2500	on request		
With welding ends		5.5				on request		
With flanges	PN 400	12	–	18.5	Cl 2500	11.5	12.5	15.5

¹⁾ Only PN 40

²⁾ Special lengths

Dimensions for globe-style and angle-style valve bodies

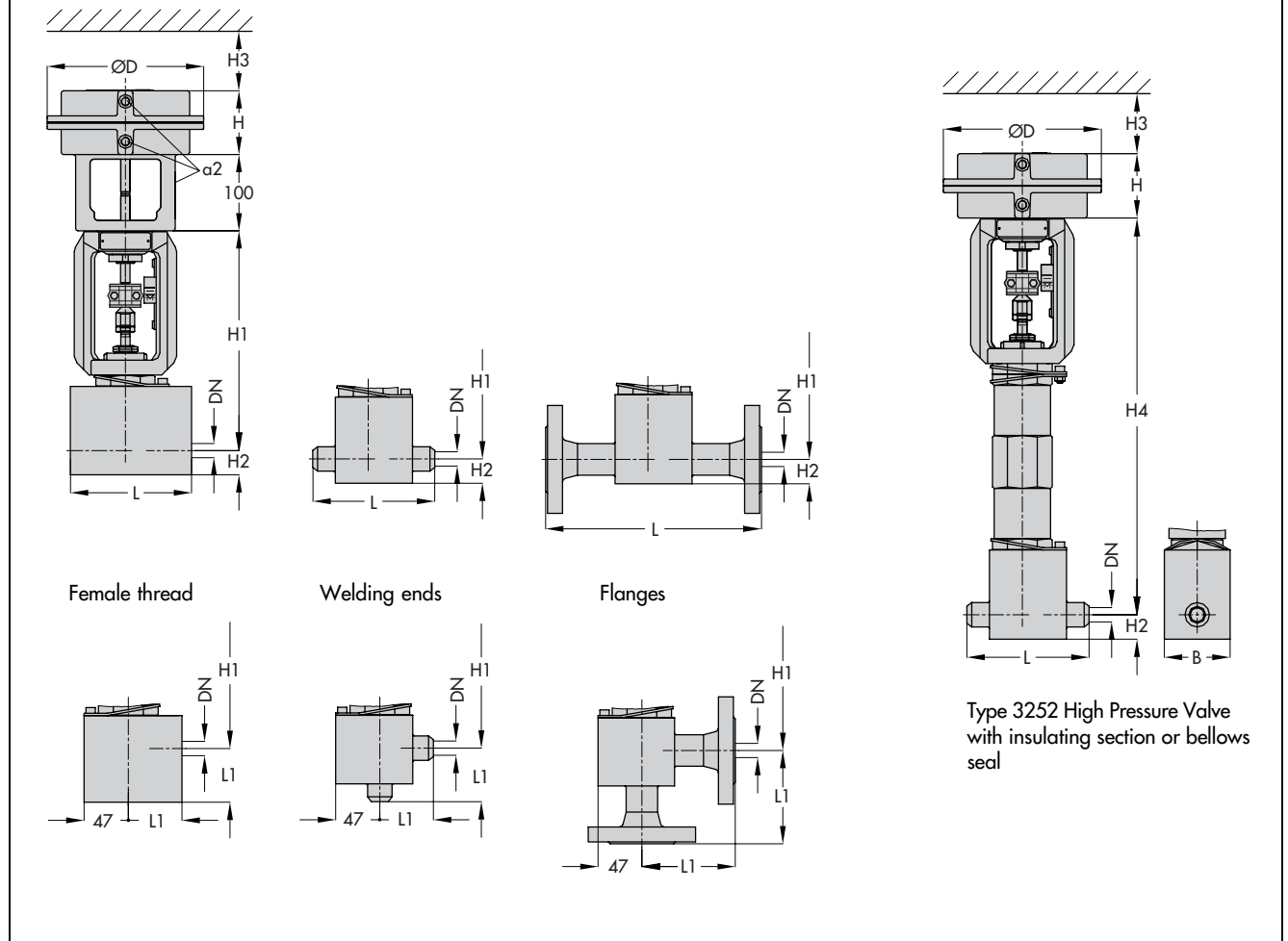


Table 8 · Dimensions in mm for versions with insulating section or metal bellows seal

Globe valve	DN	15	20	25		1/2"	3/4"	1"
H4 with insulating section	PN 40 ... 400		415		Cl 300 ... 2500		415	
H4 with metal bellows seal	PN 40 ... 160		415		Cl 300 ...900		415	
	PN 250		483		Cl 1500		483	
	PN 400		588		Cl 2500		588	

Angle valve	DN	15	20	25		1/2"	3/4"	1"
H4 with insulating section	PN 40 ... 400		381		Cl 300 ... 2500		381	
H4 with metal bellows seal	PN 40 ... 160		381		Cl 300 ...900		381	
	PN 250		450		Cl 1500		450	
	PN 400		554		Cl 2500		554	

Weights	DN	15	20	25		1/2"	3/4"	1"
Metal bellows seal, additional weight in kg	PN 40/160		3.5		Cl 300 ... 2500	on request		
	PN 250		5.0					
	PN 400		6.5					

Table 9 · Dimensions in mm and weights for actuators

Actuator	cm ²	120	350
Diaphragm Ø D		168	280
H		69	85
H3 (Type 3271 Actuator and Type 3277) ¹⁾		225	
Thread		M 30 x 1.5	
a (for Type 3271 Actuator)		G 1/8 (NPT 1/8)	G 3/8 (NPT 3/8)
a2 (for Type 3277 Actuator)		–	G 3/8 (NPT 3/8)
Weight of Type 3271 Actuator (approx. kg)/ handwheel	without	3	8
	with	–	13
Weight of Type 3277 Actuator (approx. kg)/ handwheel	without	3.5	12
	with	–	17

¹⁾ Minimum clearance for disassembly of actuator

Please submit the following details when ordering:

Type 3252 Valve	Globe- or angle-style valve body
DN ... PN ...	According to DIN or ANSI
Type of connection	Female thread G or NPT/ welding ends or flanges
Characteristic	Equal percentage or linear
Pneumatic actuator	Type 3271 or Type 3277 see T 8310 EN/T 8311 EN
Fail-safe position	Valve closed or valve open
Process medium	Density in kg/m ³ and temperature in °C
Max. flow rate	in kg/h or m ³ /h
Pressure	p ₁ in bar (absolute pressure p _{abs}) p ₂ in bar (absolute pressure p _{abs})
Accessories	Positioner, limit switch

Specifications subject to change without notice.

