

## T 8056 EN

### Series 250 · Type 3253-1 and Type 3253-7 Pneumatic Control Valves

Type 3253 Three-way Valve · ANSI version



#### Application

Mixing or diverting valve for process engineering applications with high industrial requirements

<b>Valve size</b>	<b>NPS ½ to 20</b>
<b>Pressure rating</b>	<b>Class 150 to 2500</b>
<b>Temperatures</b>	<b>-325 to +1022 °F (-196 to +550 °C)</b>

Type 3253 Three-way Valve with

- Type 3271 Pneumatic Actuator (Type 3253-1 Control Valve)
- Type 3277 Pneumatic Actuator (Type 3253-7 Control Valve) for integral positioner attachment

Valve body made of

- Cast steel
- Cast stainless steel, high-temperature cast steel or cast cold-resisting steel
- Special materials

Two spring-loaded PTFE V-ring packings or two adjustable high-temperature packings

On request with a test connection between the two packings.

Conversion between mixing and diverting services by **reversing** the seat-guided valve plug

Optional with RFID tags with unique device marking according to DIN SPEC 91406.

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

Positioners, limit switches, solenoid valves and other accessories according to IEC 60534-6 <sup>1)</sup> and NAMUR recommendation. Refer to Information Sheet ▶ T 8350 for more details.

#### Versions

**Standard version** with PTFE packing for temperatures from 14 to 428 °F (-10 to +220 °C) or with adjustable high-temperature packing from 14 to 662 °F (-10 to +350 °C), valve size NPS ½ to 20, pressure rating Class 150 to 900

- **Type 3253-1** (Fig. 1) · Type 3253 Valve and Type 3271 Actuator with 350 to 2800 cm<sup>2</sup> actuator area (see Data Sheets ▶ T 8310-1, ▶ T 8310-2 and ▶ T 8310-3)
- **Type 3253-7** · Type 3253 Valve and Type 3277 Pneumatic Actuator with 350 to 700 cm<sup>2</sup> actuator area, for integral positioner attachment (see Data Sheet ▶ T 8310-1)

<sup>1)</sup> Accessories required. See associated actuator documentation



**Fig. 1:** Type 3253-1 Pneumatic Control Valve with Type 3271 Actuator

#### Further versions

- **Insulating section or bellows seal** · See Technical data
- **Additional handwheel** · See Data Sheets ▶ T 8310-1, ▶ T 8310-2 and ▶ T 8310-3
- **DIN version** · DN 15 to 500, PN 10 to 400 · See Data Sheet ▶ T 8055
- **Type 3244** · NPS ½ to 6, Class 150 to 300 · See Data Sheet ▶ T 8026
- **Type 3253-2 Electric Control Valve** · Details on request
- **Type 3253-3 Manually Operated Valve** with Type 3273 Hand-operated Actuator · See Data Sheet ▶ T 8312

## Principle of operation

Depending on the plug arrangement, the three-way valve can be used either as a mixing or diverting valve.

In mixing valves, the process media to be mixed enter at valve ports A and B. The combined flow exits the valve at port AB (Fig. 2 and Fig. 3). The flow rate from ports A or B to AB depends on the cross-sectional area of flow between the seats and plugs.

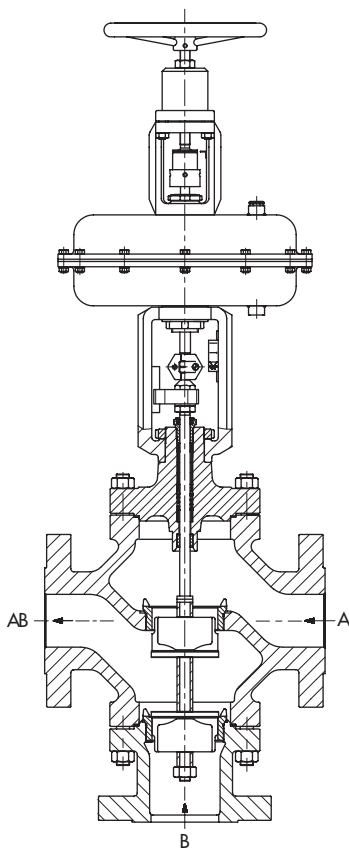
In diverting valves, the process medium enters at the valve port AB and the partial flows exit at ports A and B (Fig. 4).

## Fail-safe position

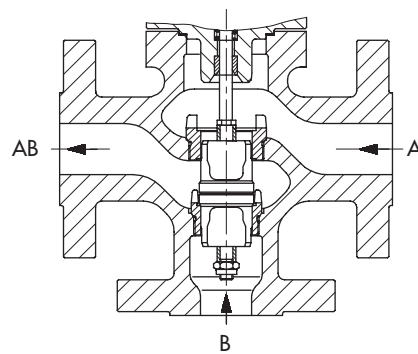
Depending on how the springs are arranged in the pneumatic actuator (see Data Sheets ▶ T 8310-1, ▶ T 8310-2 and ▶ T 8310-3), the valve has two different fail-safe positions effective upon air supply failure.

- **Actuator stem extends:** when the supply air fails, port B is closed in mixing valves and port A is closed in diverting valves.
- **Actuator stem retracts:** when the supply air fails, port A is closed in mixing valves and port B is closed in diverting valves.

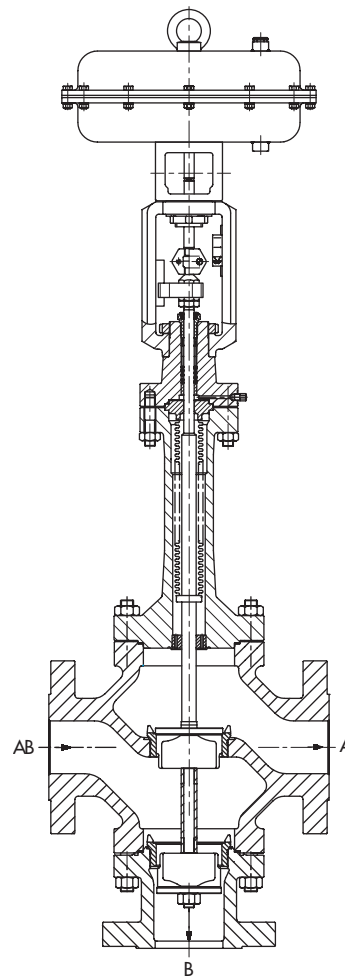
Fig. 2 to Fig. 4 show configuration examples.



**Fig. 2:** Type 3253-1 Control Valve with Type 3271 Pneumatic Actuator and additional handwheel, body version for NPS 2 to 20, plug arrangement for mixing service (anti-rotation fixture for NPS 2 and higher)



**Fig. 3:** Type 3253 Three-way Valve, body version for NPS 1/2 to 1 1/2, plug arrangement for mixing service  
plug arrangement for diverting service NPS 1/2 to 1



**Fig. 4:** Type 3253-7 Control Valve with Type 3277 Pneumatic Actuator (only up to NPS 2), body version for NPS 1 1/2 to 20, plug arrangement for diverting service (anti-rotation fixture for NPS 2 and higher)

**Table 1: Technical data for Type 3253**

Material		Cast steel A216 WCC		Cast steel A217 WC6		Cast stainless steel A351 CF8M	
Valve size <sup>1)</sup>	NPS	½ to 4	6 to 20	½ to 4	6 to 20	½ to 4	6 to 20
Pressure rating <sup>1)</sup>	Class	150 to 900	150 to 900	150 to 900	150 to 900	150 to 900	150 to 900
Type of connection	Flanges	All ANSI versions					
Seat-plug seal		Metal seal					
Characteristic		Linear					
Rangeability		50:1					
<b>Temperature ranges</b> in °F (°C) · Permissible operating pressures acc. to pressure-temperature diagrams (see Information Sheet ▶ T 8000-2)							
Body without insulating section		14 to 428 (-10 to +220) · Up to +662 (+350) with high-temperature packing					
Body with insulating section or bellows seal		-20 to +800 (-29 to +427)		-20 to +932 (-29 to +500)		-325 to +1022 (-196 to +550) <sup>2)</sup>	
Valve plug	Metal seal	-325 to +1022 (-196 to +550) <sup>2)</sup>					
<b>Leakage class</b> according to ANSI/FCI 70-2		0.05 % of C <sub>V</sub> coefficient					
RFID tag (optional)		Application range acc. to the technical specifications and the explosion protection certificates. Documents ▶ <a href="http://www.samsongroup.com">www.samsongroup.com</a> > Service & Support > Electronic nameplate Max. permissible operating temperature: 185 °F (85 °C)					
Conformity		<b>CE · EAC</b>					

<sup>1)</sup> Up to Class 2500 on request · NPS 16 and 20 only up to Class 900 <sup>2)</sup> Note: The temperature limits are not directly converted temperatures.

**Table 2: Materials**

Standard version Body	Cast steel A216 WCC	Cast steel A217 WC6	Cast stainless steel A351 CF8M
Valve bonnet	A216 WCC/A 105	A217 WC6/A182 F12 Cl. 2	A351 CF8M/A 182 F316
Seat and plug <sup>1)</sup>	410-2/1.4008		316L/CF3M
Guide bushings	1.4112		2.4610
Packing <sup>2)</sup>	V-ring packing: PTFE with carbon, spring: 302 or high-temperature packing		
Body gaskets	Graphite seal on metal core		
<b>Insulating section</b>	A216 WCC/A 105	A217 WC6/A182 F12 Cl. 2	A351 CF8M/A 182 F316
<b>Metal bellows seal <sup>4)</sup></b>			
Intermediate piece	A216 WCC/A 105	A217 WC6/A182 F12 Cl. 2	A351 CF8M/A 182 F316
Metal bellows	1.4571 <sup>3)</sup>		

<sup>1)</sup> All seats and plugs also available with Stellite® facing

<sup>3)</sup> Other bellows material on request

<sup>2)</sup> Other packings on request (▶ T 8000-1)

<sup>4)</sup> Bellows in combination with >NPS 8 and >Class 600 on request

**Table 3: Available C<sub>V</sub> and K<sub>VS</sub> coefficients**

Terms for control valve sizing according to IEC 60534, Parts 2-1 and 2-2: F<sub>L</sub> = 0.95, X<sub>T</sub> = 0.75

C <sub>V</sub>	5	9.5	30	47	120	190	420	735	950	1730	2900	4200	
K <sub>VS</sub>	4	8	25	40	100	160	360	630	800	1500	2500	3600	
Seat Ø	in	0.94	1.5	1.97	3.15	3.94	5.91	7.87	9.84	11.81	15.75	19.69	
	mm	24	38	50	80	100	150	200	250	300	400	500	
Rated travel	in	0.59		1.18			2.36			4.72			
	mm	15		30			60			120			
NPS	DN												
½	15	•											
1	25		•										
1½	40			• <sup>1)</sup>									
2	50				• <sup>1)</sup>								
3	80					• <sup>1)</sup>							
4	100						• <sup>1)</sup>						
6	150							• <sup>1)</sup>					
8	200								• <sup>1)</sup>				
10	250 <sup>2)</sup>									•			
12	300										• <sup>1)</sup>		
16	400											• <sup>1)</sup>	
20	500											• <sup>1)</sup>	
<sup>1)</sup> Red. C <sub>V</sub> /K <sub>VS</sub> w. Cl. 900 to 2500:	C <sub>V</sub>	4.2	9	26	42	105	170	375	650	-	1560	2600	3700
	K <sub>VS</sub>	3.6	7.5	22	36	90	144	320	560	-	1350	2250	3200

<sup>2)</sup> Special version C<sub>V</sub> 1150 (K<sub>VS</sub> 1000) only for NPS 10 (DN 250) as mixing valve with 120 mm travel

### Notes on the differential pressure tables

- Bench ranges highlighted in gray apply to standard operation ( $p_2 = 0$ ), i.e. at rated travel · Bench ranges not highlighted apply to the maximum pretensioned springs
- Bench ranges not highlighted apply to the maximum pretensioned springs.
- Differential pressures in parentheses refer to the values for half travel in parentheses in the bench range row
- The springs in actuators with fail-safe action "actuator stem retracts" cannot be preloaded.

**Table 4: Differential pressures**

**Table 4.1: Permissible differential pressures  $\Delta p$  for valves with and without bellows seal · Fail-safe position "actuator stem extends" · Pressures in bar**

Bench range [bar] with actuator area [cm <sup>2</sup> ]					350	700	1400	2800	2 x 2800
					0.2 to 1.0 (0.8 to 1.2)	0.4 to 2.0 (1.6 to 2.4)	1.4 to 2.3 (1.85 to 2.3)	2.1 to 3.3 (2.7 to 3.3)	-
					-		0.5 to 2.5 (2 to 3)	1.1 to 2.4 (2.05 to 2.7)	1.3 to 2.8 (2.45 to 3.2)
					-			1.1 to 2.3 (2.0 to 2.6)	1.3 to 3.3
Required supply pressure					Lower spring range value + Upper spring range value				
NPS	C <sub>v</sub>	Travel [mm]	Seat bore [mm]	Actuator [cm <sup>2</sup> ]	$\Delta p$ in bar				
½	5	15	24	350	8	22	90	140	-
				700	(105)	(215)	(250)	(370)	-
1	10	15	24	350	8	22	90	140	-
				700	(105)	(215)	(250)	(370)	-
1½	30	15	38	350	-	8	35	55	-
				700	(140)	(85)	(100)	(145)	-
2	47	30	50	700	4	10	42	65	-
				1400	(49)	(100)	(126)	(129)	(155)
3	120	30	80	700	-	-	(16)	25	-
				1400	(18)	(38)	(49)	(50)	(60)
4	190	30	100	700	-	-	10	15	-
				1400	(11)	(24)	(31)	(32)	(38)
6	420	60	150	1400	-	2	3	7	8.5
				2800	-	(22)	(28)	(28)	-
8	735	60	200	1400	-	-	-	4	4.5
				2800	-	(12)	(15.5)	(15.5)	-
				2x2800	-	(25)	(32)	(32)	-
10	950	60	250	2800	-	-	-	(10)	-
				2x2800	-	-	-	(20)	-
12	1730	120	300	2800	-	-	-	3.5	-
				2x2800	-	-	-	7.5	-
16	2900	120	400	2800	-	-	-	-	2.3
				2x2800	-	-	-	-	5
20	4200	120	500	2x2800	-	-	-	-	3

**Table 4.2:** Permissible differential pressures  $\Delta p$  for valves with and without bellows seal · Fail-safe position "actuator stem extends" · Pressures in psi

Bench range [psi] with actuator area [cm <sup>2</sup> ]					350	2 to 14 (11 to 17)	5 to 29 (23 to 34)	20 to 33 (26 to 33)	30 to 47 (39 to 47)	-
					700			7 to 36 (29 to 43)	15 to 34 (29 to 39)	18 to 40 (35 to 46)
Required supply pressure					1400	-				
					2800					
Lower spring range value + Upper spring range value										
NPS	C <sub>v</sub>	Travel [mm]	Seat bore [mm]	Actuator [cm <sup>2</sup> ]	$\Delta p$ in psi					
½	5	15	24	350	116	319	1305	2030	-	
				700	(1522)	(3118)	(3625)	(5366)	-	
1	10	15	24	350	116	319	1305	2030	-	
				700	(1522)	(3118)	(3625)	(5366)	-	
1½	30	15	38	350	-	116	507	797	-	
				700	(2030)	(1232)	(1450)	(2103)	-	
2	47	30	50	700	58	145	609	942	-	
				1400	(710)	(1450)	(1827)	(1870)	(2248)	
3	120	30	80	700	-	-	(232)	362	-	
				1400	(261)	(551)	(710)	(725)	(870)	
4	190	30	100	700	-	-	145	217	-	
				1400	(159)	(348)	(449)	(464)	(551)	
6	420	60	150	1400	-	29	43	101	123	
				2800	-	(319)	(406)	(406)	-	
8	735	60	200	1400	-	-	-	58	65	
				2800	-	(174)	(224)	(224)	-	
				2x2800	-	(362)	(464)	(464)	-	
10	950	60	250	2800	-	-	-	(145)	-	
				2x2800	-	-	-	(290)	-	
12	1730	120	300	2800	-	-	-	50	-	
				2x2800	-	-	-	108	-	
16	2900	120	400	2800	-	-	-	-	33	
				2x2800	-	-	-	-	72	
20	4200	120	500	2x2800	-	-	-	-	43	

**Table 5: Differential pressures**

**Table 5.1: Permissible differential pressures  $\Delta p$  for valves with and without bellows seal · Fail-safe position "actuator stem retracts" Pressures in bar**

Bench range [bar] with actuator area [cm <sup>2</sup> ]					350	0.2 to 1.0 (0.2 to 0.6)	0.4 to 2.0 (0.4 to 1.2)	1.4 to 2.3 (1.4 to 1.85)	2.1 to 3.3 (2.1 to 2.7)	-
					700			0.5 to 2.5 (0.5 to 1.5)	1.1 to 2.4 (1.1 to 1.75)	1.3 to 2.8 (1.3 to 2.05)
Required supply pressure					1400	-		1.1 to 2.3 (1.1 to 1.7)	1.3 to 3.3 (1.3 to 2.3)	
					2800			2 x 2800		
Lower spring range value + Upper spring range value										
NPS	C <sub>v</sub>	Travel [mm]	Seat bore [mm]	Actuator cm <sup>2</sup>	$\Delta p$ in bar					
½	5	15	24	350	8.5	22.5	92	141	-	
				700	(22.5)	(50)	(189)	(287)	-	
1	10	15	24	350	8.5	22.5	92	141	-	
				700	(22.5)	(50)	(189)	(287)	-	
1½	30	15	38	350	-	8	36	55	-	
				700	(8.5)	(19)	(75)	(114)	-	
2	47	30	50	700	4	10.5	42.5	65	-	
				1400	(10.5)	(23.5)	(30)	(68)	(80)	
3	120	30	80	700	-	-	16	25	-	
				1400	(3.5)	(9)	(11.5)	(26)	(31.5)	
4	190	30	100	700	-	-	10.5	16	-	
				1400	-	(5.5)	(7)	(16.5)	(20)	
6	420	60	150	1400	-	-	-	7	8.5	
				2800	-	(5)	(6.5)	(15)	-	
8	735	60	200	1400	-	-	-	4	4.5	
				2800	-	-	-	(8)	-	
				2x2800	-	(5.5)	(7)	(17)	-	
10	950	60	250	2800	-	-	-	(5)	(13)	
				2x2800	-	-	(4.5)	(10)	-	
12	1730	120	300	2800	-	-	-	-	-	
				2x2800	-	-	-	7.5	9	
16	2900	120	400	2800	-	-	-	-	-	
				2x2800	-	-	-	-	5	
20	4200	120	500	2x2800	-	-	-	-	3	

**Table 5.2:** Permissible differential pressures  $\Delta p$  for valves with and without bellows seal · Fail-safe position "actuator stem retracts" · Pressures in psi

Bench range [psi] with actuator area [cm <sup>2</sup> ]					350	2 to 14 (2 to 8)	5 to 29 (5 to 17)	20 to 33 (20 to 26)	30 to 47 (30 to 39)	-
					700			7 to 36 (7 to 21)	15 to 34 (15 to 25)	18 to 40 (18 to 29)
Required supply pressure					1400	-				
					2800					
Lower spring range value + Upper spring range value										
NPS	C <sub>v</sub>	Travel [mm]	Seat bore [mm]	Actuator cm <sup>2</sup>	$\Delta p$ in psi					
½	5	15	24	350	123	326	1334	2045	-	
				700	(326)	(725)	(2741)	(4162)	-	
1	10	15	24	350	123	326	1334	2045	-	
				700	(326)	(725)	(2741)	(4162)	-	
1½	30	15	38	350	-	116	522	797	-	
				700	(123)	(275)	(1087)	(1653)	-	
2	47	30	50	700	58	152	616	942	-	
				1400	(152)	(340)	(435)	(986)	(1160)	
3	120	30	80	700	-	-	232	362	-	
				1400	(50)	(130)	(166)	(377)	(456)	
4	190	30	100	700	-	-	152	232	-	
				1400	-	(79)	(101)	(239)	290	
6	420	60	150	1400	-	-	-	101	123	
				2800	-	(72)	(94)	(217)	-	
8	735	60	200	1400	-	-	-	58	65	
				2800	-	-	-	(116)	-	
				2x2800	-	(79)	(101)	(246)	-	
10	950	60	250	2800	-	-	-	(72)	(188)	
				2x2800	-	-	(65)	(145)	-	
12	1730	120	300	2800	-	-	-	-	-	
				2x2800	-	-	-	108	130	
16	2900	120	400	2800	-	-	-	-	-	
				2x2800	-	-	-	-	72	
20	4200	120	500	2x2800	-	-	-	-	43	

**Table 6:** Dimensions in mm and inches for standard versions of Type 3253-1 and Type 3253-7

**Table 6.1:** Type 3253 Three-way Valve

Valve		NPS	½	1	1½	2	3	4	6	8	10	12	16	20	
		DN	15	25	40	50	80	100	150	200	250	300	400	500	
Length L	Class 150	in	7.25	7.25	8.75	10.00	11.75	13.88	17.75	21.38	26.50	29.00	40.00	On request	
		mm	184	184	222	254	298	352	451	543	673	737	1016		
	Class 300	in	7.50	7.75	9.25	10.50	12.50	14.50	18.62	22.38	27.88	30.50	41.62	On request	
		mm	190	197	235	267	318	368	473	568	708	775	1057		
	Class 600	in	8.00	8.25	9.88	11.25	13.25	15.50	20.00	24.00	29.62	32.25	43.62	On request	
		mm	203	210	251	286	337	394	508	610	752	819	1108		
	Class 900	in	8.50	10.00	12.00	14.50	15.00	18.00	24.00	29.00	33.00	38.00	44.50	On request	
		mm	216	254	305	368	381	457	610	737	838	965	1130		
	Class 1500	in	8.50	10.00	12.00	14.50	18.50	21.50	27.75	32.75	39.00	44.50	54.50	On request	
		mm	216	254	305	368	470	546	705	832	991	1130	1384		
Class 2500	in	10.38	12.12	15.12	17.75	22.75	26.50	36.00	40.25	50.00	56.00	-			
	mm	264	308	384	451	578	673	914	1022	1270	1422				
Height H4	Class 150 to 300	in	5.98	5.98	6.46	8.54	8.74	9.53	12.4	15.31	17.36	25.67	25.08	28.94	
		mm	152	152	164	217	222	242	315	389	441	652	637	735	
	Class 600	in	5.98	5.98	6.46	8.54	8.74	9.53	12.4	15.31	20.39	25.67	On request		
		mm	152	152	164	217	222	242	315	389	518	652			
	Class 900	in	7.32	7.32	7.68	9.88	8.74	9.53	12.4	15.31	20.39	-			
		mm	186	186	195	251	222	242	315	389	518				
Class 1500 to 2500	in	7.32	7.32	7.68	9.88	11.34	13.70	17.52	21.42	27.52	31.93	-			
	mm	186	186	195	251	288	348	445	544	699	811				
H8 for actuator	350 cm <sup>2</sup>	in	9.45	9.45	9.45	9.45	9.45	9.45	-						
		mm	240	240	240	240	240	240							
	700 cm <sup>2</sup>	in	9.45	9.45	9.45	9.45	9.45	9.45	16.46	16.46	16.46	-			
		mm	240	240	240	240	240	240	418	418	418				
	1400-60 cm <sup>2</sup>	in	-				11.61	11.61	11.61	16.46	16.46	16.46	19.80	19.80	19.80
		mm					295	295	295	418	418	418	503	503	503
1400-120 cm <sup>2</sup> 2800 cm <sup>2</sup>	in	-				18.90	18.90	18.90	19.80	19.80	19.80	25.59	25.59	25.59	
	mm					480	480	480	503	503	503	650	650	650	
H2 (approx.)	Class 150	in	-	4.13	-		10.83	12.01	18.90	20.47	23.43	28.58	32.68	38.66	
		mm	-	105			275	305	480	520	595	726	830	982	
	Class 300	in	4.53	4.53	5.12	10.91	12.20	14.72	21.14	23.23	27.87	28.58	32.68	38.66	
		mm	115	115	130	277	310	374	537	590	708	726	830	982	
	Class 600	in	4.53	4.53	5.12	10.91	12.20	14.72	21.26	23.23	28.74	31.10	-		
		mm	115	115	130	277	310	374	540	590	730	790			
	Class 900	in	-				14.53	12.44	14.84	22.52	23.23	28.74	-		
		mm					369	316	377	572	590	730			
	Class 1500	in	-				14.53	-	23.23	-		43.31	-		
		mm					369	590	1100						
Class 2500	in	-					18.11	24.80	-						
	mm						460	630							



**Table 6.2:** *Types 3271 and 3277 Pneumatic Actuators*

Actuator area	cm <sup>2</sup>	350	700	1400-60	1400-120	2800	2 x 2800
Diaphragm ØD	in	11.02	15.35	20.87	21.02	30.32	30.32
	mm	280	390	530	534	770	770
H <sup>1)</sup>	in	3.23	7.83	13.27	23.54	28.07	47.76
	mm	82	199	337	598	713	1213
H3 <sup>2)</sup>	in	4.33	7.48	24.02	25.59	25.59	25.59
	mm	110	190	610	650	650	650
H5	Type 3277 in	3.98	3.98	–	–	–	–
	Type 3277 mm	101	101	–	–	–	–
Thread	Type 3271	M30 x 1.5			M100 x 2		
	Type 3277	M30 x 1.5			–	–	–
α	Type 3271	G ¾ (¾ NPT)	G ¾ (¾ NPT)	G ¾ (¾ NPT)	G 1 (1 NPT)	G 1 (1 NPT)	G 1 (1 NPT)
α2	Type 3277	G ¾	G ¾	–	–	–	–

<sup>1)</sup> Height including lifting eyelet or female thread and eyebolt according to DIN 580. Height of the swivel lifting hook may differ. Actuators up to 355v2 cm<sup>2</sup> without lifting eyelet or female thread

<sup>2)</sup> Minimum clearance required to remove the actuator

**Table 7:** *Weights for Type 3253-1 and Type 3253-7 in standard version***Table 7.1:** *Type 3253 Three-way Valve*

Valve	NPS	½	1	1½	2	3	4	6	8	10	12	16	20
	DN	15	25	40	50	80	100	150	200	250	300	400	500
Valve without actuator	lbs	On request											
	kg												

**Table 7.2:** *Types 3271 and 3277 Pneumatic Actuators*

Actuator	cm <sup>2</sup>	350	700	1000	1400-60	1400-120	2800	2 x 2800	
Type 3271 (approx.)	Without handwheel	lbs	18	49	187	154	386	992	2094
		kg	8	22	85	70	175	450	950
	With handwheel	lbs	29	60	419	386	661 <sup>1)</sup> /937 <sup>2)</sup>	1268 <sup>1)</sup> /1543 <sup>2)</sup>	On request
		kg	13	27	190	175	300 <sup>1)</sup> /425 <sup>2)</sup>	575 <sup>1)</sup> /700 <sup>2)</sup>	
Type 3277 (approx.)	Without handwheel	lbs	26	57	–				
		kg	12	26					
	With handwheel	lbs	37	68					
		kg	17	31					

<sup>1)</sup> Side-mounted handwheel up to 80 mm travel

<sup>2)</sup> Side-mounted handwheel above 80 mm travel

**Table 8: Dimensions and weights for Type 3253 with insulating section · Without actuator**

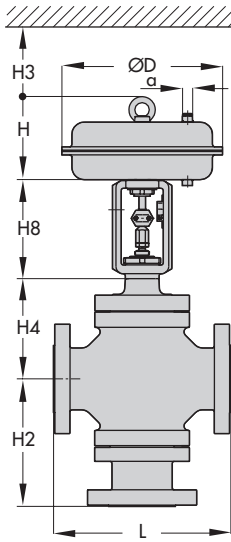
Valve size	NPS	½	1	1½	2	3	4	6	8	10	12	16	20	
	DN	15	25	40	50	80	100	150	200	250	300	400	500	
Height H4	Class 150 to 600	in	13.90	13.90	14.37	19.17	19.37	20.16	26.18	37.17	41.89	45.28	44.72	47.24
		mm	353	353	365	487	492	512	665	944	1064	1150	1136	1200
	Class 900	in	15.04	15.04	15.40	20.32	19.37	20.16	26.18	37.17	41.89	-		
		mm	382	382	391	516	492	512	665	944	1064			
	Class 1500 to 2500	in	15.04	15.04	15.40	20.32	21.50	23.55	31.10	42.05	-			
		mm	382	382	391	516	546	598	789	1068				
Weight without actuator	lbs	On request												
	kg													

**Table 9: Dimensions and weights for Type 3253 with bellows seal · Without actuator**

Valve size	NPS	½	1	1½	2	3	4	6	8	10	12	16	20	
	DN	15	25	40	50	80	100	150	200	250	300	400	500	
	Travel													
Height H4	Class 150	in	0.59 to 2.36	13.78	13.78	14.25	23.46	23.66	23.66	28.43	40.87	58.78	-	
		mm	15 to 60	350	350	362	596	601	601	722	1038	1493		
	Class 300	in	0.59 to 2.36	13.78	13.78	14.25	23.46	23.66	23.66	33.70	40.87	On request	-	
		mm	15 to 60	350	350	362	596	601	601	856	1038			
	Class 600	in	0.59 to 2.36	13.78	13.78	14.25	23.46	23.66	23.66	33.70	56.61	On request	-	
		mm	15 to 60	350	350	362	596	601	601	856	1438			
	Class 900	in	0.59 to 2.36	13.46	13.46	13.86	23.03	23.66	23.66	33.70	61.89	On request	-	
		mm	15 to 60	342	342	352	585	601	601	856	1572			
	Class 1500	in	0.59 to 1.18	24.45	24.45	24.53	33.07	33.15	On request	-				
		mm	15 to 30	621	621	623	840	842						
	Class 150	in	4.72	-								59.84	59.33	-
		mm	120									1520	1507	-
Class 300	in	4.72	-								On request			
	mm	120												
Class 600	in	4.72	-								On request			
	mm	120												
Weight	lbs	On request												
	kg													

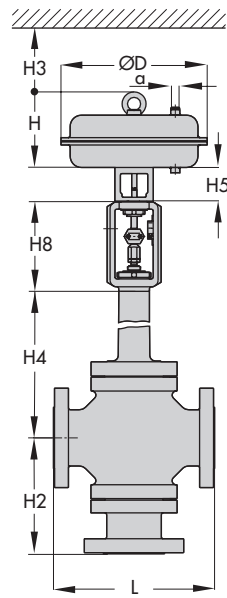
Dimensional drawings

Type 3271 Pneumatic Actuator

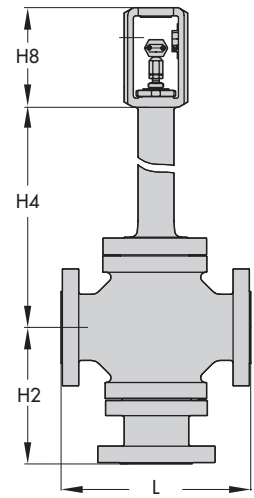


Type 3253-1

Type 3277 Pneumatic Actuator



Type 3253-7



Type 3253 with bellows seal or insulating section

### Selection and sizing of the control valve

- Calculate the  $C_v$  ( $K_v$ ) coefficient according to IEC 60534-6.
- Select valve size NPS and  $C_v$  ( $K_{vs}$ ) coefficient from Table 3, Table 4, and Table 5.
- Determine the permissible differential pressure  $\Delta p$  from Table 4 and Table 5.
- Select the valve body material from Table 1 and Table 2 as well as from the pressure-temperature diagrams in Information Sheet ► T 8000-2
- Select accessories from Table 1 and Table 2.

### Order specifications:

Valve size	NPS
Pressure rating	Class
Body material	According to Table 2
Bonnet	Standard bonnet, insulating section or bellows seal
Type of connection	Flanges
Actuator	Type 3271 or Type 3277 (see Data Sheets ► T 8310-1, ► T 8310-2 and ► T 8310-3)
Fail-safe position	Actuator stem extends/retracts
Process medium	Density in lb/cu.ft or kg/m <sup>3</sup> and temperature in °F (°C)
Flow rate	lb/h or kg/h cu.ft/min or m <sup>3</sup> /h
Pressure	$p_1$ and $p_2$ in psi (bar) (absolute pressure $p_{abs}$ ) (with minimum, normal and maximum flow rate)
RFID tag	Yes/No
Valve accessories	Positioner and/or limit switch

Note: The temperature limits for DIN and ANSI versions are not directly converted temperatures.