

T 5861 EN

Types 3260/5857, 3260/5827, 3260/3374, 3260/SAM, 3260/5757-7, 3260/5724-8, 3260/5725-8 Electric Control Valves

Types 3260/2780, 3260/3372, 3260/3271, 3260/3277 Pneumatic Control Valves

Type 3260 Three-way Valve



Application

Control valves available as mixing or diverting valves for use in industrial applications as well as heating, ventilation and air-conditioning systems

DN 15 to 300 · PN 16 · Up to 150 °C

Special features

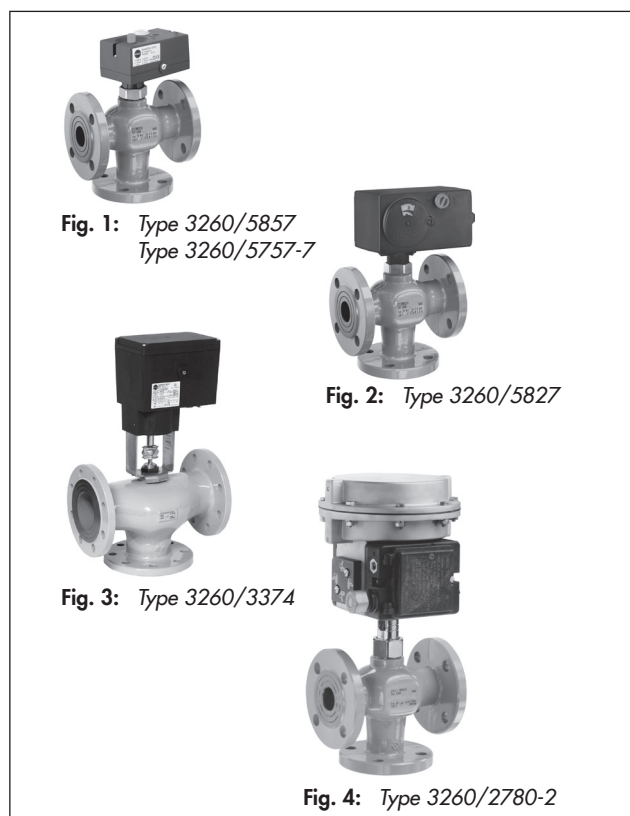
- Type 3260 Three-way Valve (mixing or diverting valve) combined with electric or pneumatic actuators
- Type 3260 Three-way Valve combined with Type 5857 and TROVIS 5757-7 (with special spring)
- Assembling valve and actuator
 - DN 15 to 50: Force-locking connection
 - DN 65 to 300: Form-fit connection
- Type 3260 Three-way Valve in special version for oils (up to DN 125)
- Valves to protect panel heating according to DIN 4747 can also be combined with electric actuator with fail-safe action

Versions

Electric control valves		
Type 3260/5857	PN 16	DN 15 to 25
Type 3260/5827 ¹⁾	PN 16	DN 15 to 80
Type 3260/3374 ¹⁾	PN 16	DN 65 to 150
Type 3260/SAM-32	PN 16	DN 200 to 300
Electric control valve with electric actuator with process controller for heating and cooling applications		
Type 3260/5757-7	PN 16	DN 15 to 25
Type 3260/5724-8	PN 16	DN 15 to 50
Type 3260/5725-8	PN 16	DN 15 to 50
Pneumatic control valves		
Type 3260/2780-1	PN 16	DN 15 to 50
Type 3260/2780-2 ²⁾	PN 16	DN 15 to 50
Type 3260/3372	PN 16	DN 65 to 150
Type 3260/3271	PN 16	DN 65 to 80 DN 200 to 300
Type 3260/3277 ²⁾	PN 16	DN 65 to 80

¹⁾ Electric actuators with fail-safe action: Type 5827-A, Type 5827-E, Type 3374-25/-35 and TROVIS 5725-8

²⁾ Pneumatic actuator suitable for integrated positioner attachment



Also available:

- Type 3260 Globe Valve, see Data Sheet ▶ T 5862
- Three-way valve with male thread connection for welding ends or threaded ends or with female thread connection, see Data Sheet ▶ T 5863

Principle of operation (Fig. 5)

The three-way valve is primarily used as a mixing valve. The media to be mixed enter the valve at ports A and B. The combined flow exits the valve at port AB. Diverting valves can also be delivered on request. In this case, the process medium enters at the valve port AB and the partial flows exit at ports A and B.

The cross-sectional area of flow between the seat (2) and plug (3) is determined by the position of the plug stem (6). The plug is moved by changing the control signal applied to the actuator.

The valve (1) and actuator have a force-locking connection up to DN 50 and a form-fit connection for sizes DN 65 and larger.

An intermediate insulating piece is available for insulated pipes.

Fail-safe position

For three-way valves mounted to an actuator with fail-safe action, the control valve has two different positions which become effective upon power supply failure:

Actuator stem extends

- Port B of the mixing valve closes upon power supply failure
- Port A of the diverting valve closes upon power supply failure

Actuator stem retracts

- Port A of the mixing valve closes upon power supply failure
- Port B of the diverting valve closes upon power supply failure

Electric actuators

The Types 5857, 5827, 3374 and SAM Electric Actuators can be controlled using a three-step signal. All electric actuators can also be controlled in the version with positioner by a 0/4 to 20 mA or 0/2 to 10 V signal. Various electrical accessories can be optionally installed.

Types 5827-A, 5827-E, 3374-25 and 3374-35 Actuators are able to perform a fail-safe action. Refer to section Table 4.

Refer to the data sheets for more details on the electric actuators:

- ▶ **T 5857:** Type 5857 Electric Actuator
- ▶ **T 5827:** Types 5827 Electric Actuator
- ▶ **T 8331:** Type 3374 Electric Actuator
- ▶ **T 8330:** Type SAM Electric Actuator

Electric actuators with process controllers

Electric actuators with process controller are a combination of an electric actuator and a digital process controller. The TROVIS 5757-7, TROVIS 5724-8 and TROVIS 5725-8 Electric Actuators with Process Controller are suitable for heating and cooling applications.

TROVIS 5724-8 and TROVIS 5725-8 have two PID control modules and are ready-wired. The TROVIS 5725-8 Actuator is able to perform a fail-safe action. Refer to Table 4.

Refer to the data sheets for more details on the electric actuators with process controller:

- ▶ **T 5757-7:** TROVIS 5757-7 Electric Actuator with Process Controller for heating and cooling applications
- ▶ **T 5724-8:** TROVIS 5724-8 Electric Actuator with Process Controller without fail-safe action and TROVIS 5725-8 with fail-safe action for heating and cooling applications

Pneumatic actuators

The Types 2780, 3271 and 3277 Pneumatic Actuators as well as the Type 3372 Electropneumatic Actuator work with various control signals (see Table 5.2). All actuators are available for fail-safe action "actuator stem extends (FA)" or "actuator stem retracts (FE)".

The Types 2780-2 and 3277 Pneumatic Actuators are suitable for integral positioner attachment. Various optional accessories can be mounted onto the Type 3277 Actuator.

Types 3271 and 3277 Actuator are also available with hand-wheel.

Refer to the data sheets for more details on the pneumatic actuators:

- ▶ **T 5840:** Type 2780-1 and Type 2780-2 Pneumatic Actuators
- ▶ **T 8310-X:** Type 3271 and Type 3277 Pneumatic Actuators
- ▶ **T 8313:** Type 3372 Electropneumatic Actuator

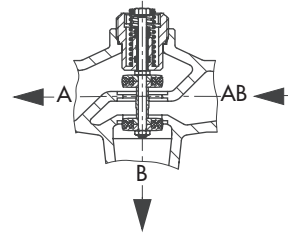
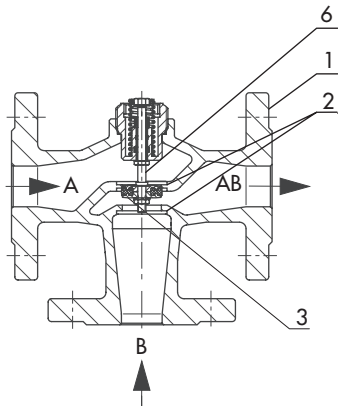
Installation of the control valve

The control valves can be mounted in any position. However, the electric actuators must not be suspended downwards.

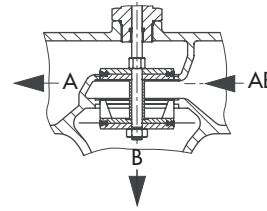
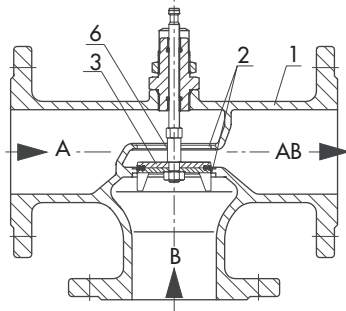
Make sure that the ambient temperature at the point of installation does not exceed or fall below the permissible temperature limits specified for each actuator. Make sure that the inlet and outlet flows of the plant are correctly assigned to ports A, B and AB. Fig. 6 schematically illustrates a few typical applications.

Force-locking connection: If the control valve is to be insulated, the actuator and the coupling nut must not be insulated as well. Make sure the permissible ambient temperature is not exceeded. If necessary, an intermediate insulating piece must be used. Do not insulate it over 25 mm.

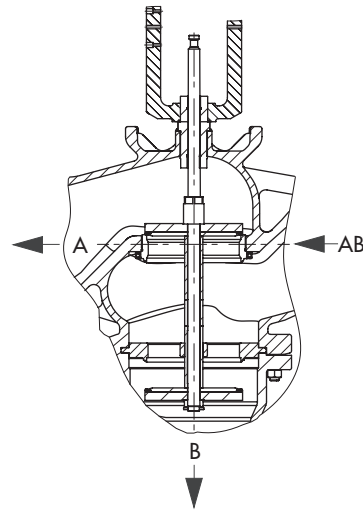
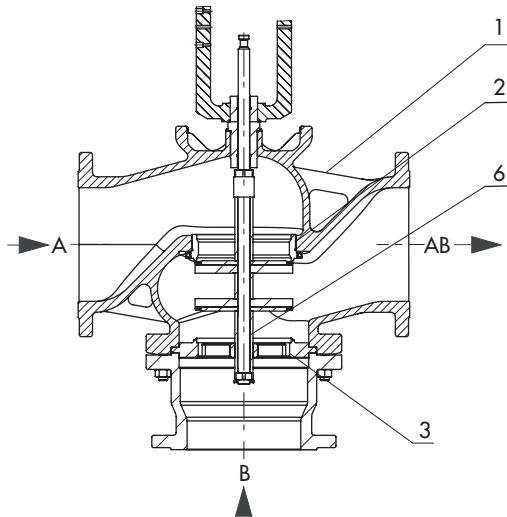
DN 15 to 50



DN 65 to 150



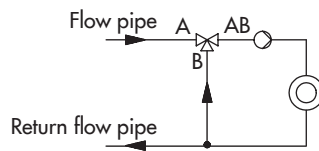
DN 200 to 300



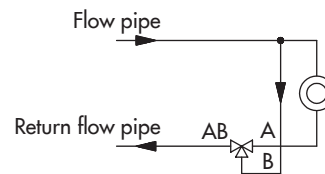
- 1 Valve body
- 2 Seat
- 3 Plug
- 6 Plug stem

Fig. 5: Functional drawing of Type 3260 as a mixing valve (left) and diverting valve (right)

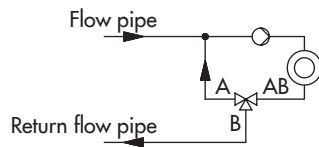
Mixing valve
for mixing service



For diverting service



Diverting valve
for mixing service



For diverting service

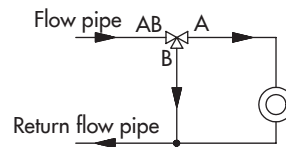


Fig. 6: Typical installations

Ordering text

Control Valve Type:

- 3260/5857, 3260/5827-..., 3260/3374-...,
- 3260/SAM-..., 3260/5757-7, 3260/5724-8...,
- 3260/5725-8..., 3260/2780-1, 3260/2780-2,
- 3260/3372,

3260 with Type 3271 Actuator,

3260 with Type 3277 Actuator

- Valve type: mixing valve, diverting valve
- Valve size: DN ...
- K_{VS} coefficient: ...
- Medium temperature: ...
- Special version for oils: yes, no


Further specifications on the electric actuator

- Control: three-step signal, positioner
- Supply voltage ...
- Electric additional equipment ...

Further specifications on the pneumatic actuator

- Actuator area: ...
- Bench range: ...
- Signal pressure connection for Type 2780-1: G $\frac{1}{8}$, $\frac{1}{8}$ NPT
- Fail-safe action: stem extends (FA), stem retracts (FE)

Table 1: Technical data

Type 3260 Three-way Valve																
Valve size	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	
Pressure rating	PN	16														
Permissible temperature range	°C	5 ¹⁾ to 150 ¹⁾														
Seat-plug seal		Soft seal														
Rated travel	mm	6			12			15			30			60		
Mixing valve		•			•			•			•			•		
Diverting valve		•			•			•			•			•		
Leakage class according to IEC 60534-4		Class IV (≤ 0.01 % of K _{VS} coefficient)														
Conformity ²⁾																

- ¹⁾ Use an intermediate insulating piece (1990-1712) for valves in DN 15 to 50 or (1991-4686) for valves in DN 65 to 150:
 – for medium temperatures between –10 to +5 °C (actuators according to Table 4)
 – In networks with a constant medium temperature >135 °C (TROVIS 5724-8, TROVIS 5725-8, Type 5827 Actuators)
 – for liquids >120 °C (TROVIS 5757-7 and Type 5857 Actuators)

- ²⁾ Field of applications are the control of Group II fluids according to Pressure Equipment Directive 2014/68/EU. However, it does not include steam and neutral vapors. Footnote 1) on the permissible temperature range and the corresponding details applies.

Table 2: Materials · Material numbers according to DIN EN

Type 3260 Three-way Valve																
Valve size	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	
Valve body		Cast iron EN-GJL-250 (GG-25)														
Seat		Cast iron EN-GJL-250 (GG-25)											1.4006/ 1.0619	1.4301/ 1.0619		
Plug		Brass · CC754 · CW617											1.4404	1.4301		
Plug stem		Stainless steel · 1.4305											1.4305			
Seat-plug seal		EPDM (standard) · FKM (special version up to DN 125)														
Stem seal		EPDM seal ring														
Special version for oils		FKM seal											–			
Rod-type yoke		–							See actuator				–			

Table 3: Valve sizes, K_{VS} coefficients and seat diameters

Type 3260 Three-way Valve																		
Valve size	DN	15			20	25	32	40	50	65	80	100	125	150	200	250	300	
K _{VS} coefficient		1	1.6	2.5	4	6.3	10	16	25	40	60	80	160	250 250/ 320 ¹⁾	630	800	1200	
Seat Ø	mm	16	16	16	16	20	24	32	40	40	70	70	100	130	130	207	207	276
Rated travel	mm	6	6	6	6	6	6	12	12	12	15	15	30	30	30	60	60	60

- ¹⁾ Direction of flow B ↔ AB with maximum K_{VS} coefficient
 Direction of flow A ↔ AB with reduced K_{VS} coefficient

Table 4: Possible combinations

Type 3260 Three-way Valve/actuator																		
Type/TROVIS	Fail-safe action: Actuator stem		Details in	Valve size DN														
	Extends	Retracts		15	20	25	32	40	50	65	80	100	125	150	200	250	300	
Electric actuators																		
5857 ¹⁾	–	–	▶ T 5857	•	•	•											–	
5827-N1	–	–	▶ T 5827	•	•	•											–	
5827-A1	•	–	▶ T 5827	•	•	•											–	
5827-E1	–	•	▶ T 5827	•	•	•											–	
5827-N2	–	–	▶ T 5827				•	•	•								–	
5827-A2	•	–	▶ T 5827				•	•	•								–	
5827-E2	–	•	▶ T 5827				•	•	•								–	
5827-N3 ^{2) 5)}	–	–	▶ T 5827								•	•					–	
3374-11	–	–	▶ T 8331								•	•					–	
3374-10	–	–									•	•	•	•	•		–	
3374-25 ³⁾	•	–									•	•	•	•	•		–	
3374-35 ³⁾	–	•									•	•	•	•	•		–	
SAM-32 ⁴⁾	–	–	▶ T 8330													•	•	•
Electric actuators with process controller for heating and cooling applications																		
5757-7 ¹⁾	–	–	▶ T 5757-7	•	•	•											–	
5724-810	–	–	▶ T 5724-8	•	•	•											–	
5724-820	–	–						•	•	•							–	
5724-830 ^{2) 5)}	–	–									•	•					–	
5725-810	•	–	▶ T 5724-8	•	•	•											–	
5725-820	•	–						•	•	•							–	
Pneumatic actuators																		
2780-1	•	•	▶ T 5840	•	•	•	•	•	•								–	
2780-2	•	•			•	•	•	•	•	•								–
3372 ⁶⁾	•	•	▶ T 8313								•	•	•	•	•		–	
3271 ^{3) 4)}	•	•	▶ T 8310-1								•	•				•	•	•
3277 ³⁾	•	•	▶ T 8310-1								•	•					–	

- 1) Type 3260 Three-way Valve combined with this actuator as version with special spring
- 2) Versions with half transit time on request
- 3) Type 3260 Three-way Valve in combination with these actuators with rod-type yoke:
DN 65 to 80: order no. 1890-8696; for Type 3271 with 175v2 cm² actuator area additionally order no. 0250-1450
DN 100 to 150: order no. 1400-8822
- 4) DN 200 to 300: these valves do not need an extra rod-type yoke.
- 5) Type 3260 Three-way Valve in combination with this actuator with rod-type yoke, order no. 1400-7414
- 6) DN 65 to 80: with integrated i/p converter or with Type 3725 Positioner (direct attachment)
DN 100 to 150: with Type 3725 Positioner (direct attachment)

Table 5: Permissible differential pressures (all pressures stated in bar)

Table 5.1: Type 3260/... Electric Control Valves

Type/TROVIS		5857, 5757-7	5827, 5724, 5725	3374		3374	SAM	
				-11 ³⁾	-10 ³⁾	-25/-35	-32	
DN	K _{V5} coefficients	Δp when p ₂ = 0 bar						
15	1 · 1.6 · 2.5 · 4	4.0	4.0	-				
20	6.3	2.6	4.0	-				
25	10	1.8	4.0	-				
32	16	-	1.7	-				
40	25	-	1.1	-				
50	40	-	1.1	-				
65	60	-	1.3 ¹⁾	4.0	4.0	4.0	-	
80	80	-	1.3 ¹⁾	4.0	4.0	4.0	-	
100	160	-		2.8	1.9	-		
125	250	-		1.7	1.1	-		
150	250/320 ²⁾	-		1.7	1.1	-		
200	630	-						3.1
250	800	-						3.1
300	1200	-						1.6

¹⁾ Only with Type 5827-N3 Electric Actuator

²⁾ Direction of flow B -> AB with maximum K_{V5} coefficient, direction of flow A -> AB with reduced K_{V5} coefficient

³⁾ The maximum differential pressure is reduced by 50 % when actuators with positioners in the version with faster motors are used.

Table 5.2: Type 3260/... Pneumatic Control Valves

Type		2780-1	2780-2	3372			3271 and 3277				3271			
Actuator area ⁶⁾	cm ²	120	120	120	120 ⁴⁾	350 ⁴⁾	350 ⁵⁾	175v2	175v2	350	350	1000	1400-60	
Min. bench range ¹⁾	bar	0.4	0.4	1.4	2.1	0.8	0.9	0.6	1.3	0.4	0.6	0.8	1.0 ⁴⁾	1.1
Max. bench range ¹⁾	bar	1.0	2.0	2.3	3.3	1.3	1.65	3.0	2.9	2.0	3.0	2.8	3.2	2.4
Maximum supply pressure	bar	1.4 ²⁾	2.4 ²⁾	4.0	5.0	2.3	2.5	3.7	4.3	2.5	3.7	4.0	4.0	
DN	K _{V5} coefficients	Δp when p ₂ = 0 bar												
15	1 · 1.6 · 2.5 · 4	4.0	4.0	-										
20	6.3	4.0	4.0	-										
25	10	4.0	4.0	-										
32	16	1.7	1.7	-										
40	25	1.1	1.1	-										
50	40	1.1	1.1	-										
65	60	-		3.8	4.0	-	-	2.1	4.0	3.0	4.0	-		
80	80	-		3.8	4.0	-	-	2.1	4.0	3.0	4.0	-		
100	160	-			3.1	3.1	-					-		
125	250	-			1.8	1.8	-					-		
150	250/320 ³⁾	-			1.8	1.8	-					-		
200	630	-						-		2.2	3.0	4.0		
250	800	-						-		2.2	3.0	4.0		
300	1200	-						-		1.2	1.7	2.2		

¹⁾ Other bench ranges only on request

²⁾ Only with "actuator stem retracts" fail-safe action. Max. 4 bar with "actuator stem extends" fail-safe action.

³⁾ Direction of flow B -> AB with maximum K_{V5} coefficient, direction of flow A -> AB with reduced K_{V5} coefficient

⁴⁾ Actuator stem extends

⁵⁾ Actuator stem retracts

⁶⁾ v2 is added to the actuator area (e.g. 175v2 cm²) to indicate that Type 3271 and Type 3277 Actuators have a full diaphragm

Table 6: Dimensions and weights for electric control valves**Table 6.1:** Type 3260 Three-way Valve · Face-to-face dimensions

Valve size	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300
Overall length L1	mm	130	150	160	180	200	230	290	310	350	400	480	600	730	850
Overall length L2	mm	70	80	85	100	105	120	130	140	150	200	210	450	450	550

Table 6.2: Type 3260 Three-way Valve · Overall height

Valve size	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300		
Height H1 for Type/TROVIS ... Actuator	5857, 5757-7	mm	131			-											
	5724-8, 5725-8	mm	158			168			-								
	5827	mm	161			171			-								
	5827-N3	mm	-			-			277			-					
	3374-10/-11	mm	-			-			365			406			-		
Height H2 for actuator	3374-25/-35	mm	-			-			265			306			-		
	SAM-32	mm	-			-			-			-			519 519 556		

Table 6.3: Type 3260 Three-way Valve · Weights

Valve size	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300
Weight, approx.	kg	4.0	5.0	5.5	8.5	10	12	20	23	38	50	65	266	285	410

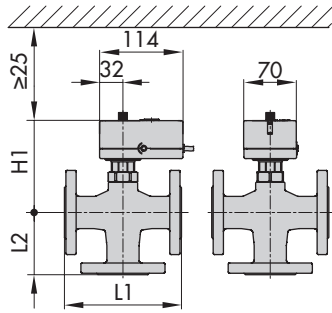
Table 6.4: Electric actuators · Weights

Type		5857	5827-N	5827-A/-E	3374-10/-11	3374-25/-35	SAM-32
Weight, approx.	kg	0.7	0.75	1.0	3.2	6.2	13

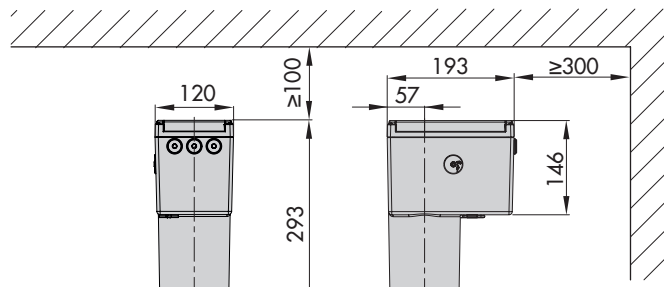
Table 6.5: Electric actuators with process controller · Weights

TROVIS		5757-7	5724-8	5725-8
Weight, approx.	kg	0.7	1.1	1.3

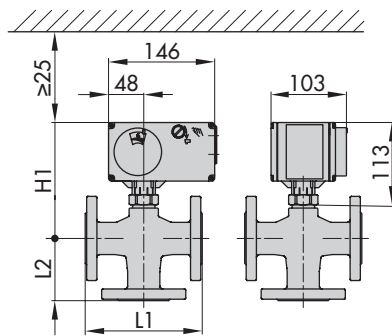
Electric control valves



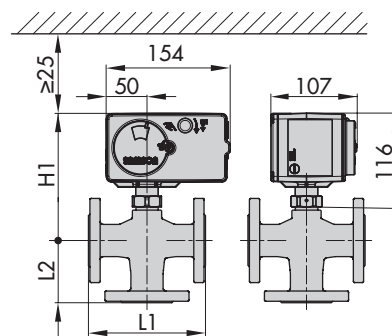
Type 3260/5857, Type 3260/5757-7
DN 15 to 25



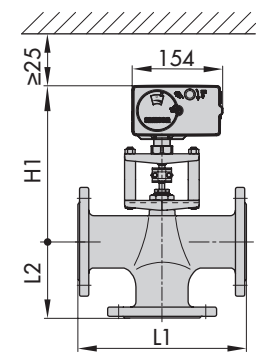
Types 3260/3374-25 and -35
DN 65 to 150



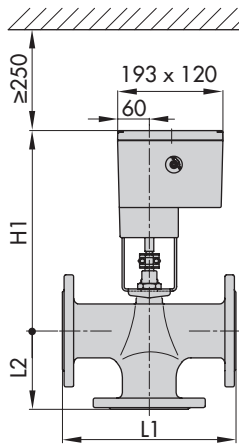
Type 3260/5724-8, Type 3260/5725-8
DN 15 to 50



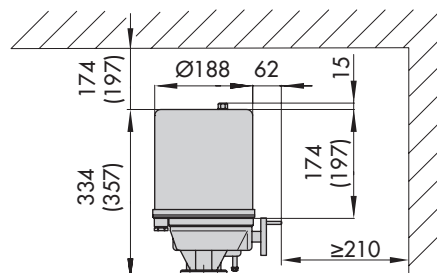
Type 3260/5827
DN 15 to 50



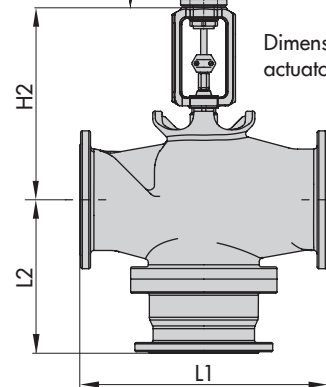
Type 3260/5827-N3
DN 65 and 80



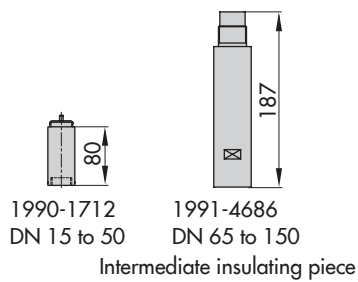
Types 3260/3374-10 and -11
DN 65 to 150



Dimensions in parentheses apply to
actuator with positioner



Type 3260/SAM-32
DN 200 to 300



1990-1712 DN 15 to 50
1991-4686 DN 65 to 150

Intermediate insulating piece

Table 7: Dimensions and weights for pneumatic control valves**Table 7.1:** Type 3260 Three-way Valve · Face-to-face dimensions

Valve size	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300
Overall length L1	mm	130	150	160	180	200	230	290	310	350	400	480	600	730	850
Overall length L2	mm	70	80	85	100	105	120	130	140	150	200	210	450	450	550

Table 7.2: Type 3260 Three-way Valve · Overall height

Valve size	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	
Height H1 for actuator	2780-1	mm	161		171			–								
	2780-2	mm	261		271			–								
	3372 (120 cm ²)	mm	–					307		–						
	3372 (350 cm ²)	mm	–							382		–				
Height H2 for actuator	3271	mm	–					265		–			519	565	556	
	3277	mm	–					265		–			–			

Table 7.3: Type 3260 Three-way Valve · Weights

Valve size	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300
Weight, approx.	kg	4.0	5.0	5.5	8.5	10	12	20	23	38	50	65	266	285	410

Table 7.4: Pneumatic actuators · Dimensions and weights

Type	2780	3372			3271				3277	
Actuator area ³⁾	cm ²	120	120	350	175v2	350	1000	1400-60	175v2	350
Height H	mm	–	–	–	78	82	313	197 ¹⁾	78	82
Height H7	mm	–	–	–	–	–	90 ²⁾	90 ²⁾	–	–
Height H3 ⁴⁾	mm	110	110	110	110	110	610	610	110	110
Diaphragm ØD	mm	168	168	280	215	280	462	530	215	280
Supply air port	a	G 1/8	G 1/4	G 1/4	G 1/4	G 3/8	G 3/4	G 3/4	G 1/4	G 3/8
Weight	kg (approx.)	2	3.7	15	6	8	80	70	10	12

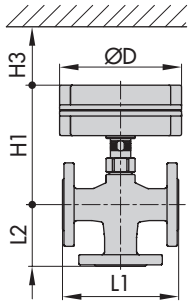
¹⁾ Height H increases to 243 mm for special version with female thread.

²⁾ Height with welded-on lifting eyelet or height of eyebolt according to DIN 580. Further information on lifting eyelets can be found in Data Sheets ▶ T 8310-1, ▶ T 8310-2 and ▶ T 8310-3

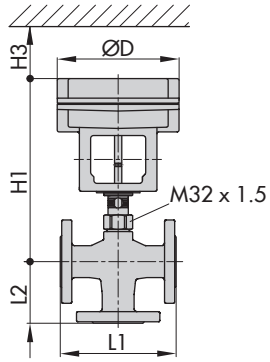
³⁾ v2 is added to the actuator area (e.g. 175v2 cm²) to indicate that Type 3271 and Type 3277 Actuators have a full diaphragm

⁴⁾ Minimum clearance required to remove the actuator

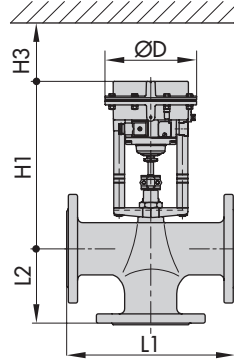
Pneumatic control valves



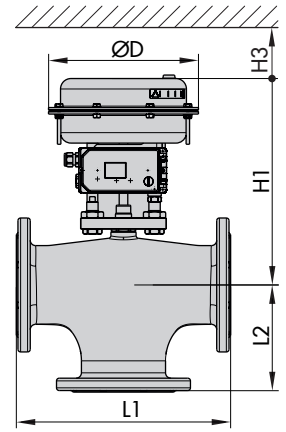
Type 3260/2780-1
DN 15 to 50



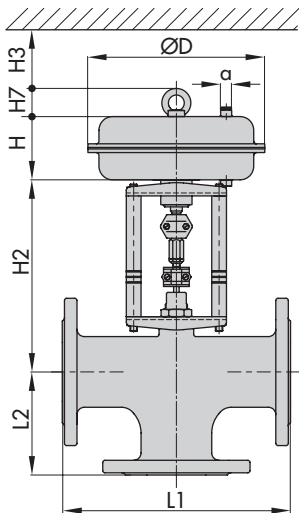
Type 3260/2780-2
DN 15 to 50



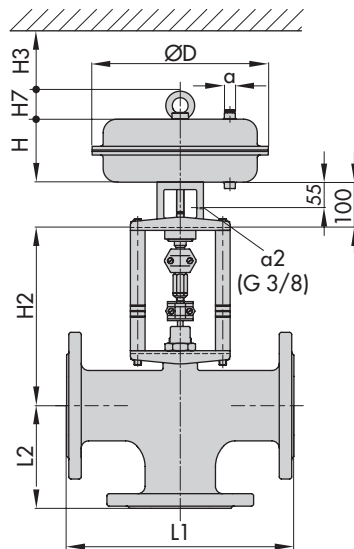
Type 3260/3372 (120 cm²)
DN 65 to 80



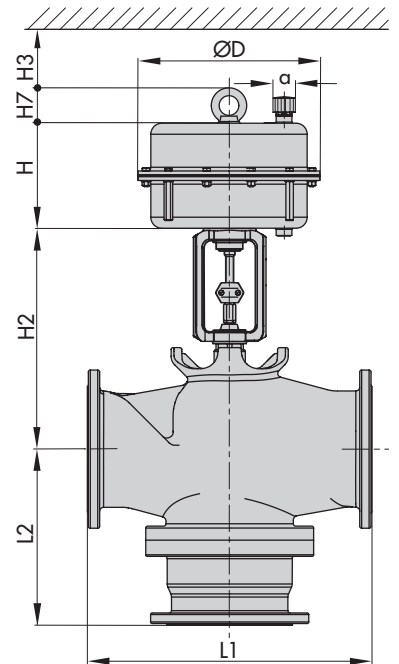
Type 3260/3372 (350 cm²)
DN 100 to 150



Type 3260/3271
DN 65 to 80



Type 3260/3277
DN 65 to 80



Type 3260/3271
DN 200 to 300

