

# Electric Control Valves Types 3260/5857, 3260/5824, 3260/5825, 3260/3374, 3260/3274, 3260/5757-7, 3260/5725-7



## Pneumatic Control Valves Types 3260/2780, 3260/3372, 3260-1, 3260-7

### Three-way Valve Type 3260

#### 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 150 · PN 16 · Version 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 Types 5857 and 5757-7 (with special spring)
- Connection between valve and actuator:
  - DN 15 to 50: Force-locking connection
  - DN 65 to 150: Form-fit connection
- Type 3260 Three-way Valve in special version for oils

#### Versions

Electric control valves		
Type 3260/5857	PN 16	DN 15 to 25
Type 3260/5824	PN 16	DN 15 to 80
Type 3260/5825 <sup>1)</sup>	PN 16	DN 15 to 50
Type 3260/3374	PN 16	DN 65 to 150
Type 3260/3274 <sup>1)</sup>	PN 16	DN 65 to 150
Electric control valves/controller with electric actuator for heating and cooling applications		
Type 3260/5757-7	PN 16	DN 15 to 25
Type 3260/5725-7 <sup>1)</sup>	PN 16	DN 15 to 50
Pneumatic control valves		
Type 3260/2780-1	PN 16	DN 15 to 50
Type 3260/2780-2 <sup>2)</sup>	PN 16	DN 15 to 50
Type 3260/3372	PN 16	DN 65 to 80
Type 3260-1	PN 16	DN 65 to 150
Type 3260-7 <sup>2)</sup>	PN 16	DN 65 to 150

<sup>1)</sup> Electric actuators with fail-safe action:  
Types 5825, 3274-21/-22 and 5725-7

<sup>2)</sup> Pneumatic actuator suitable for integral positioner attachment

#### Also available:

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

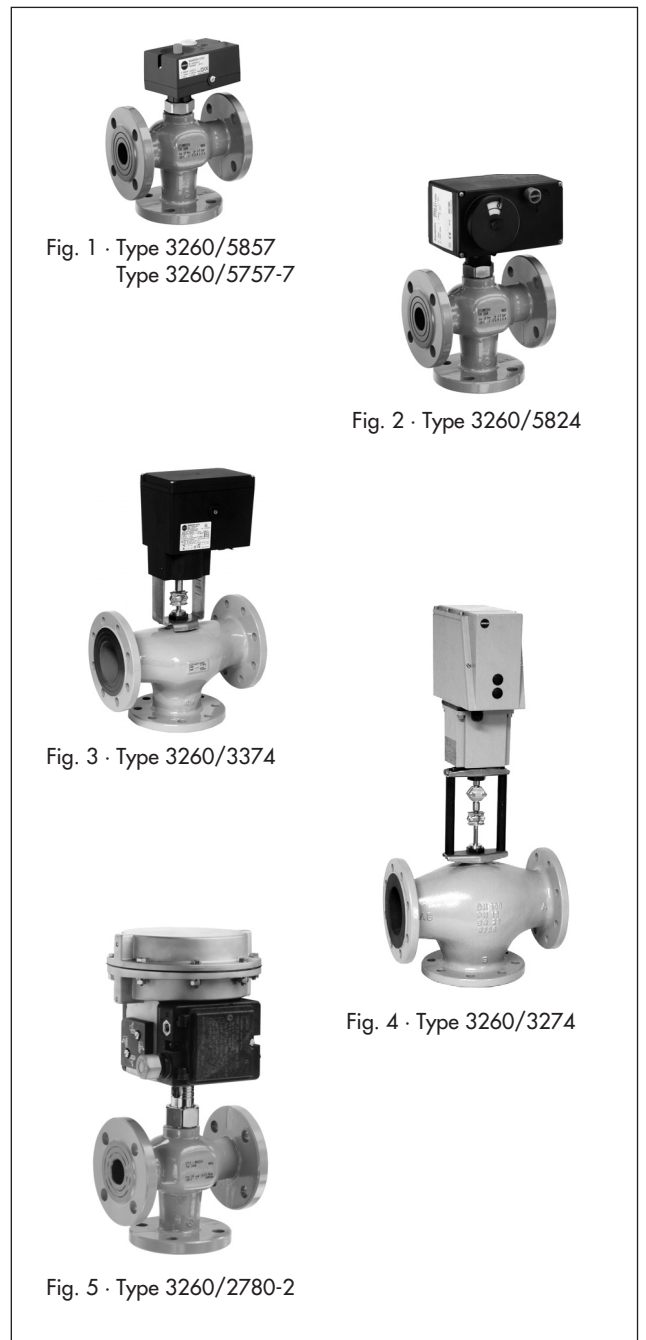


Fig. 1 · Type 3260/5857  
Type 3260/5757-7

Fig. 2 · Type 3260/5824

Fig. 3 · Type 3260/3374

Fig. 4 · Type 3260/3274

Fig. 5 · Type 3260/2780-2

### Principle of operation (Fig. 6)

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.

Flow-diverting valves are also available on request. The medium enters the valve at port AB and the partial flows exit at ports A and B.

The position of the plug stem (6) determines the cross-sectional area of flow between the plug (3) and the seat (2). The plug is moved by changing the control signal acting on 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.

### 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, 5824, 5825 and 3374 Electric Actuators and the Type 3274 Electrohydraulic Actuator can either be controlled using a three-stepping point signal or, in the version with positioner, with continuous signals from 0(4) to 20 mA or 0(2) to 10 V. Various optional electric accessories can be mounted onto the control valve.

Types 5825, 3274-21 and 3274-22 Actuators are able to perform a fail-safe action. Refer to Table 4.

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

- **T 5857 EN:** Type 5857 Electric Actuator
- **T 5824 EN:** Types 5824 and 5825 Electric Actuators
- **T 8331 EN:** Type 3374 Electric Actuator
- **T 8340 EN:** Type 3274 Electrohydraulic Actuator

### Controllers with electric actuators

The actuator consists of a digital controller which is integrated into the electric actuator housing. The Types 5757-7 and 5725-7 Controllers with Electric Actuators are suited for heating and cooling applications. They are controlled by continuous signals which can be adjusted in ranges from 0 to 20 mA or 0 to 10 V.

Type 5725-7 Actuator is able to perform a fail-safe action. Refer to Table 4.

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

- **T 5757-7 EN:** Type 5757-7 Controller with Electric Actuator for heating and cooling applications
- **T 5725-7 EN:** Type 5725-7 Controller with Electric Actuator 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. Types 2780, 3271 and 3277 Pneumatic Actuators require a supply pressure of at least 0.2 bar above the max-

imum bench range. A supply pressure of at least 3.7 bar is required for Type 3372.

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 manual override (handwheel).

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

- **T 5840 EN:** Types 2780-1 and 2780-2 Pneumatic Actuators
- **T 8310-1 EN:** Types 3271 and 3277 Pneumatic Actuators

### Installation of the control valve

The control valves can be mounted in any position. However, the electric actuators and the controllers with 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. 7 schematically illustrates a few typical applications.

### Ordering text

Control Valve Type:

- 3260/5857,  3260/5824-...,  3260/5825-...,
- 3260/3374-...,  3260/3274-...,
- 3260/5757-7,  3260/5725-7...,
- 3260/2780-1,  3260/2780-2,  3260/3372,
- 3260-1 (Type 3271 Actuator),  3260-7 (Type 3277 Actuator)

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

Further specifications for electric actuator

- Control signal:  three-stepping point signal,  continuous (positioner)
- Power supply: ...
- Electric additional equipment: ...

Further specifications for pneumatic actuator

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

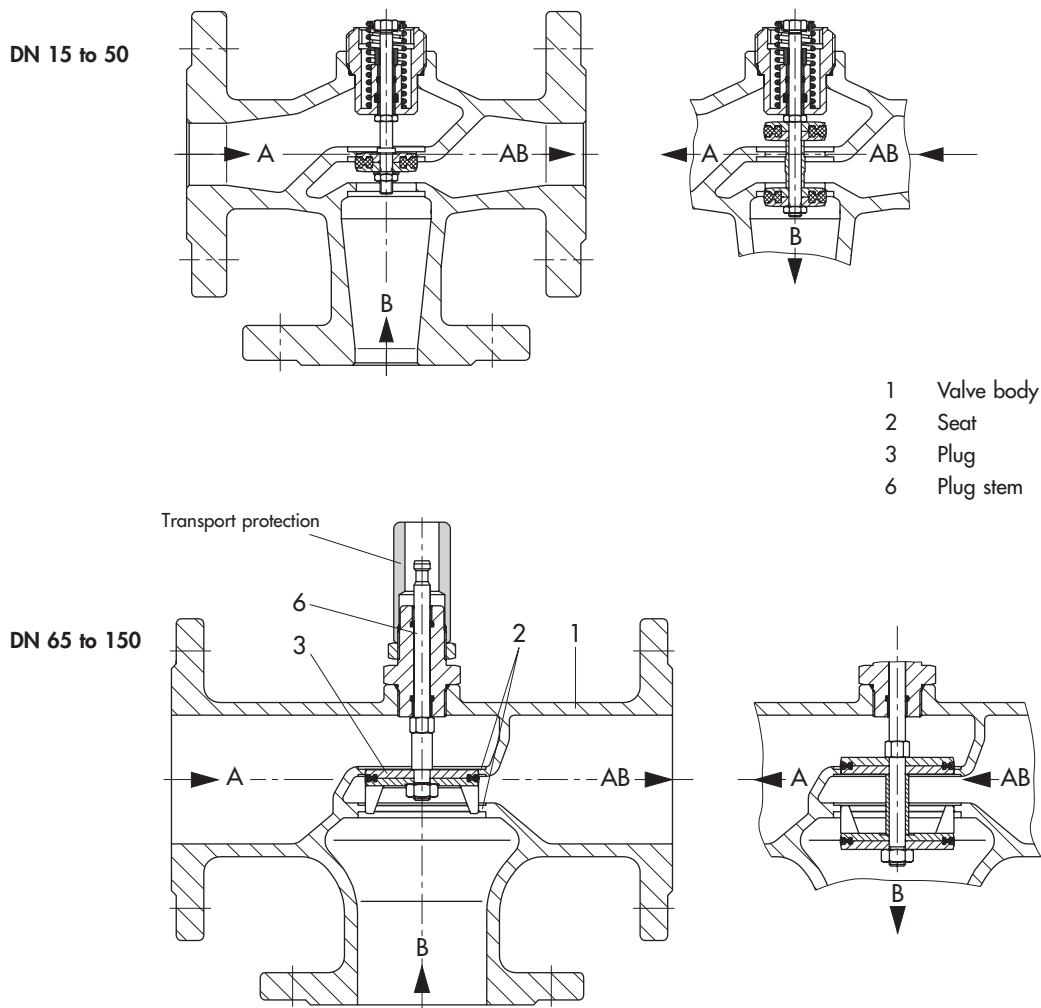


Fig. 6 · Functional drawing of Type 3260 as a mixing valve (left) and diverting valve (right)

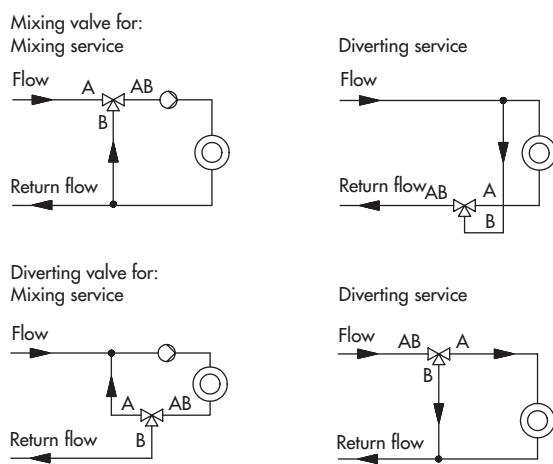


Fig. 7 · Typical installations

**Table 1 · Technical data**

Type 3260 Three-way Valve													
Nominal size	DN	15	20	25	32	40	50	65	80	100	125	150	
Nominal pressure	PN	16											
Permissible temperature range	°C	5 <sup>1)</sup> to 150 <sup>2)</sup>											
Seat/plug sealing		Soft sealing											
Rated travel	mm	6			12			15			30		
Mixing valve		•			•			•			•		
Diverting valve		•			•			•			•		
Leakage rate acc. to DIN EN 60534-4		Class IV ( $\leq 0.01$ % of the $K_{VS}$ coefficient)											

1) **Types 3260/5857, 3260/5824, 3260/5825, 3260/5757-7, 3260/5725-7:**

Use an intermediate insulating section (1990-1712) for temperatures from -10 to +5 °C.

2) **Types 3260/5824, 3260/5825, 3260/5725-7:**

Use an intermediate insulating section (1990-1712) for networks with constant media temperatures between 130 to 150 °C.

**Types 3260/5857, 3260/5757-7:**

Use an intermediate insulating section (1990-1712) for networks with constant media temperatures between 120 to 150 °C.

**Table 2 · Materials** (material number acc. to DIN EN)

Type 3260 Three-way Valve													
Nominal size	DN	15	20	25	32	40	50	65	80	100	125	150	
Valve body and seat		Cast iron EN-JL1040 (GG-25)											
Plug		Brass · CuZn37Pb											
Plug stem		Stainless steel · 1.4305											
Seat/plug sealing		EPDM (standard) · FPM (special version)											
Stem sealing		EPDM seal rings											
Special version for oils		FPM seal											
Rod-type yoke		-						See actuator					

**Table 3 · Nominal sizes,  $K_{VS}$  coefficients and seat diameters**

Type 3260 Three-way Valve														
Nominal size	DN	15			20	25	32	40	50	65	80	100	125	150
$K_{VS}$ coefficient		1	1.6	2.5	4	6.3	10	16	25	40	60	80	160	250 320/ 250 <sup>1)</sup>
Seat $\varnothing$	mm	16	16	16	16	20	24	32	40	40	70	70	100	130
Rated travel	mm	6	6	6	6	6	6	12	12	12	15	15	30	30

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

**Table 4 · Possible combinations**

Type 3260 Three-way Valve/actuator															
Typ	Fail-safe action: Actuator stem		Refer to Data Sheet	Nominal size DN											
	extends	retracts		15	20	25	32	40	50	65	80	100	125	150	
<b>Electric actuators</b>															
5857 <sup>1)</sup>	–	–	T 5857 EN	•	•	•								–	
5824-10 <sup>2)</sup>	–	–	T 5824 EN	•	•	•								–	
5825-10 <sup>2)</sup>	•	–		•	•	•									–
5825-15 <sup>2)</sup>	–	•		•	•	•									–
5824-20 <sup>2)</sup>	–	–		–	–	–	•	•	•						–
5825-20 <sup>2)</sup>	•	–		–	–	–	•	•	•						–
5825-25 <sup>2)</sup>	–	•		–	–	–	•	•	•						–
5824-30 <sup>2) 4)</sup>	–	–		–	–	–	–	–	–		•	•			–
3374-11	–	–		T 8331 EN	–	–	–	–	–		•	•			–
3374-10	–	–	–		–	–	–	–		•	•	•	•	•	
3274-11 <sup>3)</sup>	–	–	T 8340 EN	–	–	–	–	–		•	•	•	•	•	
3274-15 <sup>3)</sup>	–	–		–	–	–	–	–		•	•	•	•	•	
3274-21 <sup>3)</sup>	•	–		–	–	–	–	–		•	•	•	•	•	
3274-22 <sup>3)</sup>	–	•		–	–	–	–	–		•	•	•	•	•	
				–	–	–	–	–		•	•	•	•	•	
<b>Controller with electric actuator for heating and cooling applications</b>															
5757-7 <sup>1)</sup>	–	–	T 5757-7 EN	•	•	•								–	
5725-710	•	–	T 5725-7 EN	•	•	•								–	
5725-715	–	•		•	•	•									–
5725-720	•	–		–	–	–	•	•	•						–
5725-725	–	•		–	–	–	•	•	•						–
				–	–	–	•	•	•						–
<b>Pneumatic actuators</b>															
2780-1	•	•	T 5840 EN	•	•	•	•	•	•					–	
2780-2	•	•		•	•	•	•	•	•						–
3372	•	•	EB 8313 EN	–	–	–	–	–	–		•	•		–	
3271 <sup>3)</sup>	•	•	T 8310-1 EN	–	–	–	–	–	–		•	•	•	•	
3277 <sup>3)</sup>	•	•	T 8310-1 EN	–	–	–	–	–	–		•	•	•	•	

1) Type 3260/5857 Control Valve requires a Type 3260 Valve (with special spring)

2) Version 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 Types 3271/3277 with 240 cm<sup>2</sup> diaphragm area additionally order no. 0250-1450  
DN 100 to 150: Order no. 1400-8822

4) Type 3260 Three-way Valve in combination with this actuator with rod-type yoke: Order no. 1400-7414

**Table 5 · Permissible differential pressures** (all pressures in bar)

The specified differential pressure may be restricted by the pressure-temperature diagram.

Table 5.1 · Electric Control Valves Type 3260/...					
Type	5857 5757-7	5824, 5825 5725-7	3374		3274
			-11	-10	-11/-15/-21/-22
Kvs coefficients	$\Delta p$ when $p_2 = 0$ bar				
1 · 1.6 · 2.5 · 4	4	4	-		
6.3	2.6	4	-		
10	1.8	4	-		
16	-	1.7	-		
25	-	1.1	-		
40	-	1.1	-		
60	-	1.3 <sup>1)</sup>	4	4	4
80	-	1.3 <sup>1)</sup>	4	4	4
160	-	-	2.8		1.9
250	-	-	1.7		1.1
320	-	-	1.7		1.1

1) Only with Type 5824-30 Electric Actuator

Table 5.2 · Pneumatic Control Valves Type 3260/...										
Type	2780-1	2780-2	3372		3271 and 3277					
Effective diaphragm area	cm <sup>2</sup>	120	120	120	120	240	240	350	350	700
Bench range	min. bar	0.4	0.4	1.4	2.1	0.4	0.6	0.4	0.6	0.4
	max. bar	1.0	2.0	2.3	3.3	2.0	3.0	2.0	3.0	2.0
Maximum supply pressure	bar	1.4 <sup>1)</sup>	2.4 <sup>1)</sup>	4	5	2.5	3.7	2.5	3.7	2.4
Kvs coefficient	$\Delta p$ when $p_2 = 0$ bar									
1 · 1.6 · 2.5 · 4	4	4	-							
6.3	4	4	-							
10	4	4	-							
16	1.7	1.7	-							
25	1.1	1.1	-							
40	1.1	1.1	-							
60	-	-	3.8	4	1.9	3.1	3	4	-	
80	-	-	3.8	4	1.9	3.1	3	4	-	
160	-	-	-							3.1
250	-	-	-							1.8
320	-	-	-							1.8

1) Only with spring-to-open, max. 4 bar with spring-to-close

**Table 6 · Dimensions and weights**

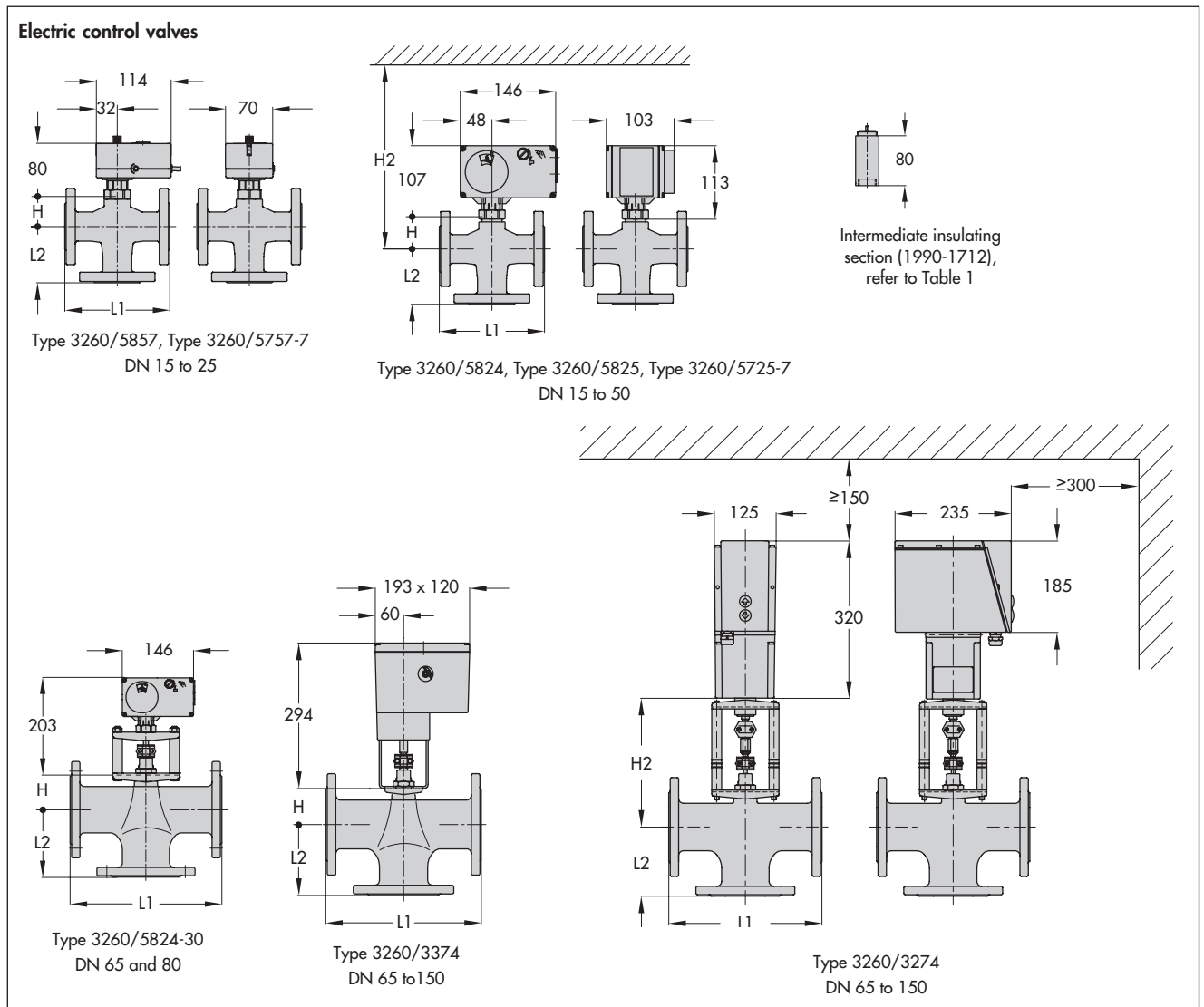
Table 6.1 · Type 3260 Three-way Valve												
Nominal size	DN	15	20	25	32	40	50	65	80	100	125	150
Length L1	mm	130	150	160	180	200	230	290	310	350	400	480
Length L2	mm	70	80	85	100	105	120	130	140	150	200	210
Height H	mm	51	51	51	61	61	61	71	71	112	112	112
Height H2	mm	168	168	168	178	178	178	265	265	306	306	306
Weight, approx.	kg	4.0	5.0	5.5	8.5	10	12	20	23	38	50	65

Table 6.2 · Electric actuators						
Type		5857	5824	5825	3374	3274
Weight, approx.	kg	0.7	0.75	1.0	3.2	1) <sup>1)</sup>

1)<sup>1)</sup> Types 3274-11/-21/-22: 12 kg · Types 3274-15: 15 kg

Table 6.3 · Controller with electric actuator			
Type	5757-7	5725-7	
Weight, approx.	kg	0.7	1.3

**Dimensions in mm**



**Table 6.1 - Type 3260 Three-way Valve**

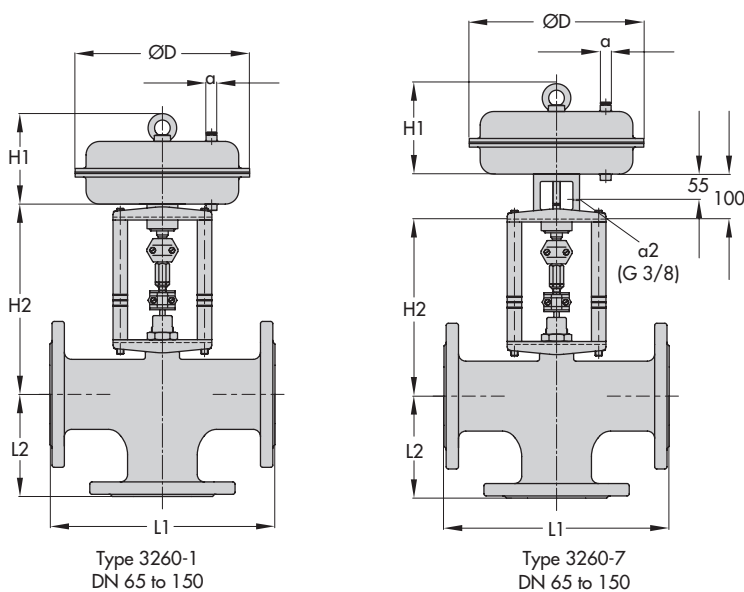
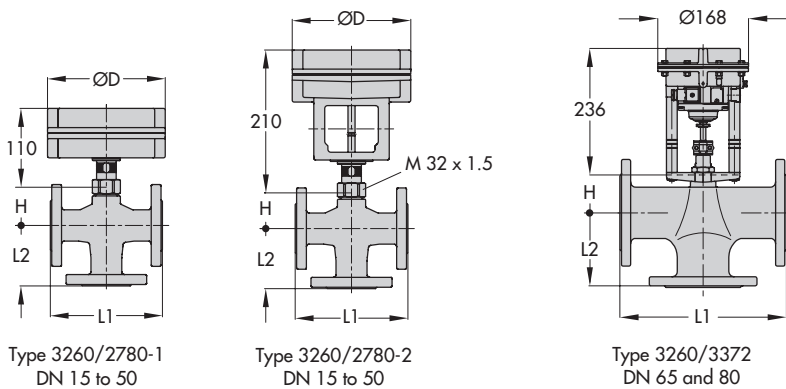
Nominal size	DN	15	20	25	32	40	50	65	80	100	125	150
Length L1	mm	130	150	160	180	200	230	290	310	350	400	480
Length L2	mm	70	80	85	100	105	120	130	140	150	200	210
Height H	mm	51	51	51	61	61	61	71	71	112	112	112
Height H2	mm	168	168	168	178	178	178	265	265	306	306	306
Weight, approx.	kg	4.0	5.0	5.5	8.5	10	12	20	23	38	50	65

**Table 6.4 - Pneumatic actuators**

Type	2780	3372	3271			3277			
Effective area	cm <sup>2</sup>	120	120	240	350	700	240	350	700
Height H1	mm	-	-	65	80	199	65	65	199
Diaphragm ØD	mm	170	168	240	280	390	240	240	390
Load pressure connection a		G 1/8	G 3/8	G 1/4	G 3/8	G 3/8	G 1/4	G 3/8	G 3/8
Weight, approx.	kg	2	3.7	5	8	22	9	12	26

**Dimensions in mm**

**Pneumatic control valves**



Specifications subject to change without notice.

