

Series 240

Electric Control Valve Type 3241/3374 Globe Valve Type 3241

Electric Control Valve Type 3244/3374 Three-way Valve Type 3244

Application

Versatile control valves for industrial applications as well as for heating, ventilation and air-conditioning systems

DN 15 to DN 150 · PN 16 to PN 40 · Temperature range between -196 °C and +450 °C



Type 3244 Three-way Valve or Type 3241 Globe Valve with Type 3374 Electric Actuator

- Valve body made of:
 - Cast iron
 - Cast steel or
 - Cast stainless steel
 - Type 3241 also of spheroidal graphite iron or forged steel
- Undivided valve bonnet

The Type 3374 Electric Actuator is available in various versions (see Data Sheet T 8331 EN for details):

- With mechanical override
- With additional electrical equipment (limit switches, potentiometers, positioner)

Versions

Standard version for temperatures from -10 °C to +220 °C

- **Type 3241/3374** (Fig. 1) · Type 3241 Globe Valve with Type 3374 Electric Actuator
- **Type 3244/3374** (Fig. 2) · Type 3244 Three-way Valve with Type 3374 Electric Actuator

Further versions with

- **Extension bonnet** · See Technical data
- **Metal bellows seal** with backup packing · See Technical data
- **Heating jacket** · See Technical data

Also available

- Electric control valves with other electric actuators (see Data Sheets T 5874 EN, T 8340 EN and T 8331 EN)
- Pneumatic actuators (see Data Sheet T 8015 EN)
- Typetested versions (see Data Sheet T 5871 EN)



Fig. 1 · Type 3241/3374



Fig. 2 · Type 3244/3374

Principle of operation (Figs. 3 to 5)

The medium flows through the globe valve in the direction indicated by the arrow on the valve body.

The Type 3244 Three-way Valve is available for either mixing service (Fig. 4) or diverting service (Fig. 5). The valves cannot be modified to suit the other service type as the plug is welded to the plug stem.

To achieve the maximum flow rate in diverting valves in size DN 65 and larger, port AB-A can be designed for higher K_{VS} values than port AB-B (see Table 4).

Both valves can be equipped with a metal bellows seal or an extension bonnet to meet special requirements, for example, with vacuum applications, or with aggressive media or high temperatures.

Sizing and selection of the control valve

1. Calculate appropriate K_V coefficient according to IEC 60534.
2. Select valve size and K_{VS} coefficient from Table 2.
3. Determine permissible differential pressure Δp from Table 2.
4. Select suitable actuator from Data Sheet T 8331 EN, taking into account the thrust, travel, and transit time.
5. Select materials, pressure and temperature from Table 1, also taking into account the pressure-temperature diagram.
6. Optionally, select additional electrical equipment (refer to Data Sheet T 8331 EN for details).

Terms for control valve sizing according to IEC 60534, parts 2-1 and 2-2:

$$F_L = 0.95; \quad x_T = 0.75$$

Installation

The control valves can be installed in any desired position except with the actuator suspended downwards. The linear actuator is attached to the yoke with a fastening nut.

Ordering text

- Electric Control Valve · Type 3241/3374 or 3244/3374
- DN ..., body material ..., PN ...
- For Type 3244: mixing or diverting service
- Actuator Type 3374:
Power supply 230/24 V, 50 Hz or 110 V, 60 Hz
- Optionally, special version

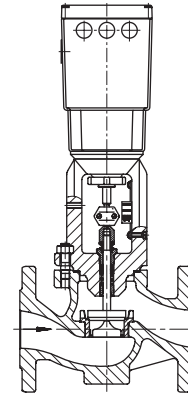


Fig. 3 · Type 3241/3374 Electric Control Valve with Type 3374 Electric Actuator and Type 3241 Globe Valve

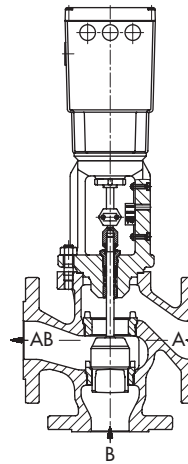


Fig. 4 · Type 3244/3374 Electric Control Valve with Type 3374 Electric Actuator and Type 3244 Three-way Valve for mixing service

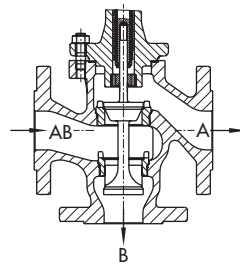


Fig. 5 · Type 3244 Three-way Valve for diverting service

Table 1.1 · Technical data

Type	3241 (globe valve)		3244 (three-way valve)	
Nominal size	DN	15 · 20 · 25 · 32 · 40 · 50 · 65 · 80 · 100 · 125 · 150		
Nominal pressure		PN 16 to 40		
Rated travel	mm	DN 15 to 80: 15 · DN 100 to 150: 30		
Seat/plug sealing		Metal sealing Soft sealing High-performance metal sealing	Metal sealing	
Type of end connections		All flange forms as specified in DIN	All flange forms as specified in DIN (with DN 15 only acc. to DIN EN 1092-1 and DIN EN 1092-2)	
Rangeability		DN 15 to 50: 50 : 1 · DN 65 to 150: 30 : 1		
Characteristic		Equal percentage/linear	Linear	
Permissible temperature range with valve body ...				
Without extension bonnet		-10 to +220 °C		
With extension bonnet or bellows seal, short		-10 to 300 °C · Valve body made of EN-JL1040 -10 to 350 °C · Valve body made of EN-JS1049 -10 to 400 °C · Valve body made of 1.0619 -10 to 450 °C · Valve body made of 1.0460 -50 to 450 °C · Valve body made of 1.4408	-10 to 300 °C · Valve body made of EN-JL1040 -10 to 400 °C · Valve body made of 1.0619 -50 to 450 °C · Valve body made of 1.4408	
With extension bonnet or bellows seal, long		-196 to 450 °C · Valve body made of 1.4408/1.4401	-	
Permissible temperature range with valve plug ...				
Standard, metal sealing		-196 to 450 °C	-196 to +450 °C	
Standard, soft sealing		-196 to 220 °C	-	
Balanced with PTFE ring		-196 to 220 °C	-	
Balanced with graphite ring		220 to 450 °C	-	
Leakage class according to DIN EN 60534-4 with valve plug ...				
Standard, metal sealing		IV	0.05 % Kvs	
Standard, soft sealing		VI	-	
Standard, high-performance metal sealing		V	-	
Balanced, with metal sealing, with PTFE ring with graphite ring		IV IV	- -	

Table 1.2 · Materials · Material numbers according to DIN EN

Nominal pressure	PN 16		PN 16/25	PN 16/25/40		
Standard version	Type	3241/3244	3241	3241/3244		3241
Valve body		EN-JL1040 (GG-25)	EN-JS1049 (GGG-40.3)	1.0619 (GS-C25)	1.4408	1.0460 (C22.8) 1.4571
Valve bonnet		1.0460 (C22.8)			1.4408/1.4401	1.0460
Seat (seat and plug also available with Stellite facing)		1.4006				1.4006
Plug		1.4006				1.4104
Guide bushings		1.4104				
Packing		V-ring packing, PTFE with carbon (other packings on request) · Spring 1.4310				
Body gaskets		Metal/graphite				
Extension bonnet		1.0460 (C22.8)		1.4408/1.4401	1.0460 (C22.8)	1.4571
Metal bellows seal						
Intermediate piece		1.0460 (C22.8)			1.4408/1.4401	1.0460 (C22.8) 1.4571
Metal bellows		1.4571				
Heating jacket (Type 3241 only)		1.4404				

Table 2 · Overview: Nominal sizes, K_{VS} coefficients, seat diameter and maximum differential pressures Δp in bar when p₂ = 0 bar

Table 2.1 · Type 3241/3374-15, both balanced and unbalanced versions																					
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	60	63	80	100	160	200	260
Seat Ø	3			6			12			24		31	38	48	63		80		100	110	130
DN																					
15	•	•	•	•	•	•	•	•	•												
20	•	•	•	•	•	•	•	•	•	•											
25	•	•	•	•	•	•	•	•	•	•	•										
32				•	•	•	•	•	•	•	•	•									
40				•	•	•	•	•	•	•	•	•	•								
50				•	•	•	•	•	•	•	•	•	•	•							
65													•	•	•						
80													•	•	•		• 1)				
100																	• 1)	• 1)			
125																		• 1)	•	• 1)	
150																	•	• 1)	• 1)		• 1)
Δp in bar when p ₂ = 0 · Nominal thrust: 2.5 kN																					
Unbalanced version																					
Without/with metal bellows	40	40	40	40	40	40	40	40	40	40	40	25.6	16.6	10.1	5.5	5.4	3.2	3.1	1.7	1.4	0.9
Balanced plug with metal sealing																					
Without bellows	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	40	40	40	31.2
With bellows	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	11	8.7	7.6	5.3

1) Version also available with pressure balancing

Table 2.2 · Type 3244/3374-15 for mixing and diverting service																		
K _{VS}	2	4	6.3	10	6.3	10	16	25	25	40	60	80	100	140	160	200	300	
Seat Ø	24				31			38	48		63	75	80	90	100	110	130	
DN																		
15	•	•																
20	•	•	•															
25	•	•	•	•														
32					•	•	•											
40					•	•	•	•										
50					•	•	•	•		•								
65									•	•	•							
80									•	•	•	•						
100													•		•			
125														•		•		
150																•	•	
Δp in bar when p ₂ = 0 · Nominal thrust: 2.5 kN																		
Mixing valve	40	40	40	40	26.4	26.4	26.4	17.2	10.4	10.4	5.7	3.2	1.9	1.5	1.1	1.0	0.6	
Diverting valve	40	40	40	40	26.4	26.4	26.4	17.2	10.4	10.4	5.7	3.2	1.9	1.5	1.9	1.0	0.6	

Table 3 · Dimensions and weights

Table 3.1 · Type 3241 Globe Valve (without actuator)												
Nominal size	DN	15	20	25	32	40	50	65	80	100	125	150
Length L	mm	130	150	160	180	200	230	290	310	350	400	480
Height H1	mm	H2 + H										
Height H2	mm	220	220	220	220	220	220	260	260	350	363	390
Height H3	mm	61	61	61	61	61	61	61	61	75	75	75
Height H4, valve closed	mm	75	75	75	75	75	75	75	75	90	90	90
Height H5	mm	44	44	44	72	72	72	98	98	118	144	175
Weight	kg	5	6	7	11	12	15	24	30	42	80	120

Table 3.2 · Type 3241 Globe Valve with extension bonnet/with bellows seal (without actuator)													
Nominal size	DN	15	20	25	32	40	50	65	80	100	125	150	
Height H9	Short/with bellows	mm	408	408	408	408	408	408	450	450	635	625	655
	Long/long w. bellows	mm	710	710	710	712	712	712	754	754	883	885	912
Weight	Short/with bellows	kg	8	9	10	17	18	21	32	38	60	105	150
	Long/long w. bellows	kg	12	13	14	21	22	25	36	42	68	113	158

Table 3.3 · Type 3241 Globe Valve with heating jacket (not for valve bodies made of EN-JL1040 or EN-JS1049)					
Nominal size	DN	25	50	80	100
a	mm	110	140	180	200
b	mm	15	20	35	50
c	mm	140	170	215	250

Table 3.4 · Type 3374 Actuator		
Height H	mm	204
Height H6	mm	150 (min. clearance required to disassemble the actuator) / 300 (Cover screws are mounted from top)
Weight	approx. kg	3.2

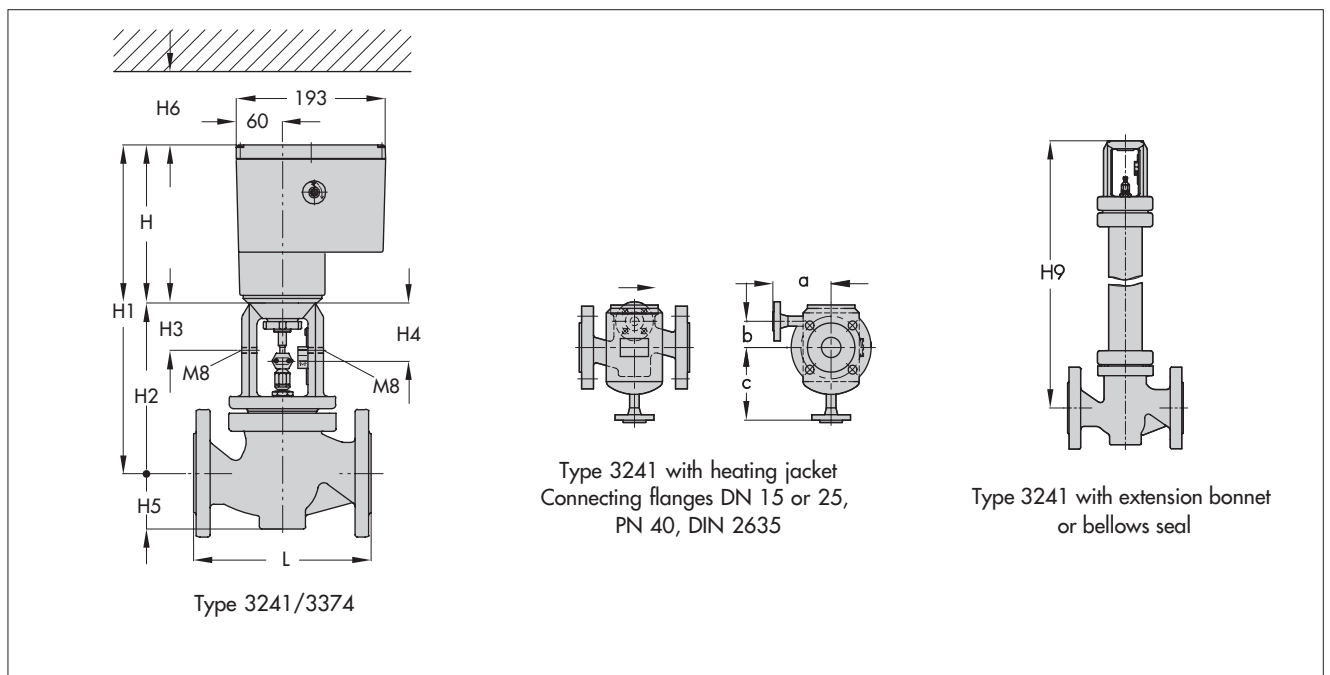
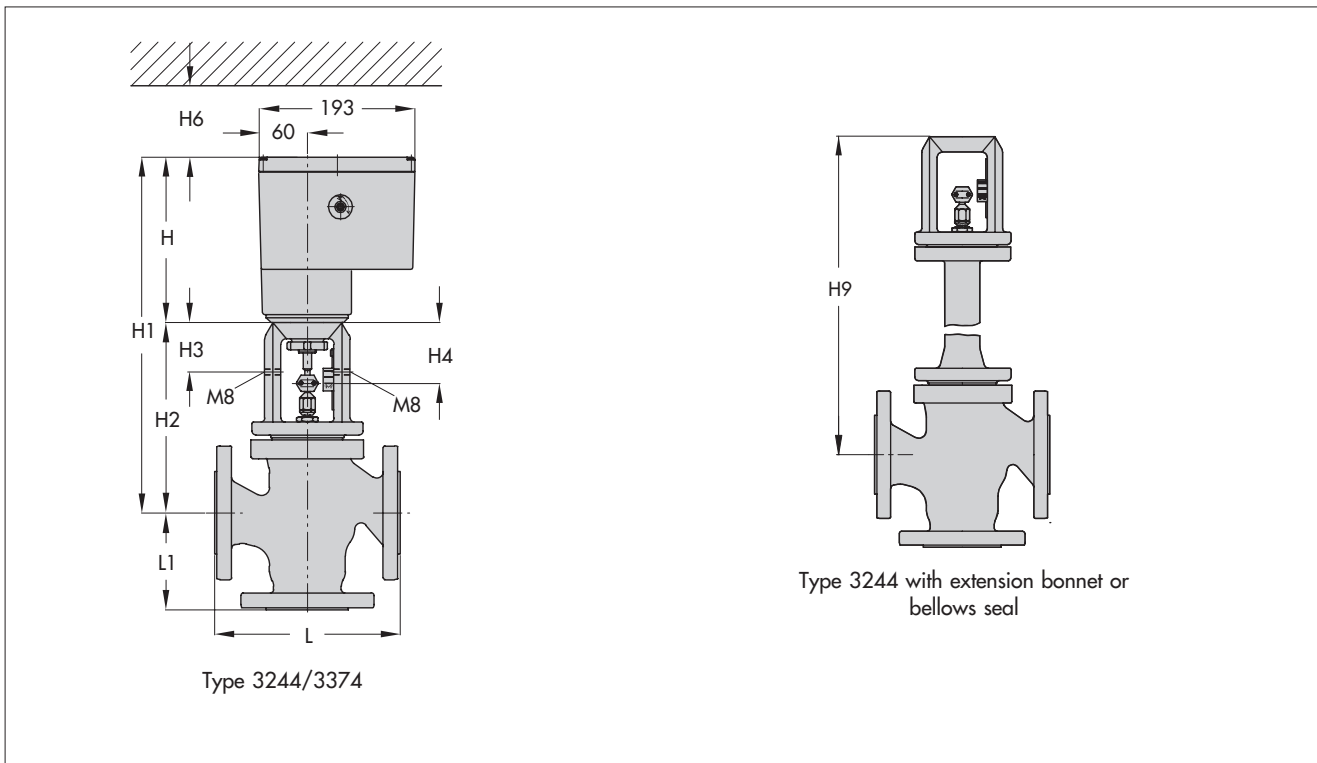


Table 3.5 · Type 3244 Three-way Valve (without actuator)												
Nominal size	DN	15	20	25	32	40	50	65	80	100	125	150
Length L	mm	130	150	160	180	200	230	290	310	350	400	480
Height L1	mm	70	80	85	100	105	120	130	140	150	200	210
Height H1	mm	H2 + H										
Height H2	mm	235	235	235	235	235	235	270	270	360	375	375
Height H3	mm	61	61	61	61	61	61	61	61	75	75	75
Height H4, valve closed	mm	75	75	75	75	75	75	75	75	90	90	90
Weight	kg	6	7	8	14	15	17	31	37	49	93	135

Table 3.6 · Type 3244 Three-way Valve with extension bonnet/with bellows seal (without actuator)												
Nominal size	DN	15	20	25	32	40	50	65	80	100	125	150
Height H9	Short/with bellows	mm	420	420	420	410	410	410	435	435	635	615
	Long/long w. bellows	mm	725	725	725	715	715	715	740	740	875	855
Weight	Short/with bellows	kg	9	10	11	20	21	23	39	45	67	118
	Long/long w. bellows	kg	12	14	16	24	25	27	43	49	95	173

Table 3.7 · Type 3374 Actuator		
Height H	mm	204
Height H6	mm	150 (min. clearance required to disassemble the actuator) / 300 (Cover screws are mounted from top)
Weight	approx. kg	3.2



Specifications subject to change without notice.

