

## T 5871 EN

## Type 3241/3274 and Type 3241/3374 Electric Control Valves with safety function, tested according to DIN EN 14597

Type 3241 Globe Valve · Series 240



### Application

Control valves with safety function to protect heating systems against excess temperatures or pressures. Suitable for water and steam.

DN 15 to 150 · PN 16 to 40 · Version up to 220 °C (version with insulating section up to 350 °C)

### Special features

The Type 3241/3274 and Type 3241/3374 Control Valves tested according to DIN EN 14597 consist of a Type 3241 Globe Valve with either a Type 3274 Electrohydraulic Actuator or a Type 3374 Electric Actuator with fail-safe action. Further details can be found in Data Sheets ▶ T 8331 and ▶ T 8340.

The control valves are used to control the temperature. A current or voltage signal is used to position the valve. In safety interlock circuits, the control valves also serve as a shut-off device which is triggered upon failure of the supply voltage.

The control valves are tested by the German technical surveillance association TÜV according to DIN EN 14597 and have been defined as shut-off and control devices. They are suitable for water and steam in the standard version up to 220 °C and with insulating section up to 350 °C at a maximum ambient temperature of 60 °C.

In safety interlock circuits, a strainer (e.g. Type 2 NI in Data Sheet ▶ T 1015) must be installed upstream of the valve in the direction of flow.

- Valve body optionally available in cast iron, spheroidal graphite iron, cast steel, cast stainless steel, forged steel 1.0460 (C22.8) or 1.4571
- Undivided valve bonnet
- Standard low-noise plug with metal sealing
- Special version with flow divider for noise reduction
- Versions in DN 80 to 150 also with balanced plug and PTFE seal (max. temperature 220 °C)
- Testing according to DIN EN 14597

The Type 3241 Valves combined with the Type 3374 Electric Actuator or the Type 3274 Electrohydraulic Actuator are tested by the German technical surveillance association TÜV according to DIN EN 14597.

The register number is available on request.

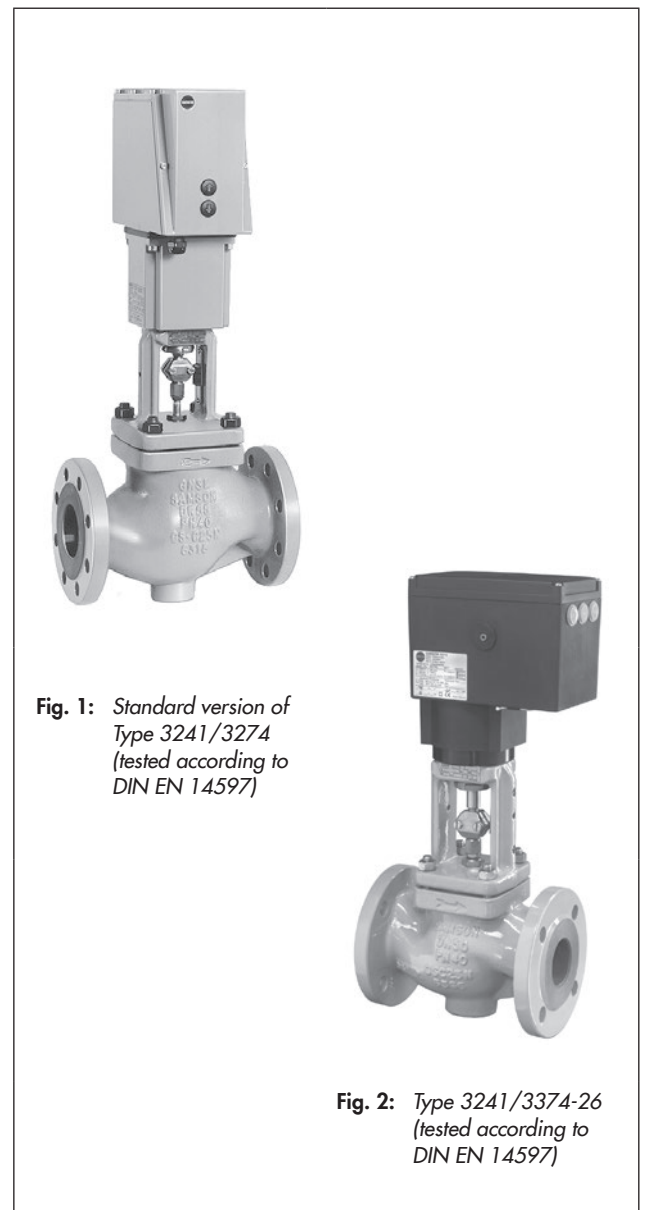


Fig. 1: Standard version of Type 3241/3274 (tested according to DIN EN 14597)

Fig. 2: Type 3241/3374-26 (tested according to DIN EN 14597)

## Versions

- **Type 3241/3274 tested according to DIN EN 14597** · Standard version up to 220 °C (see Fig. 1) · DN 15 to 150, PN 16 to 40. Type 3241 Globe Valve with Type 3274-23 Electric Actuator with fail-safe action and with electric override
- **Type 3241/3374 tested according to DIN EN 14597** (Fig. 2) · DN 15 to 80, PN 16 to 40. Type 3241 Globe Valve with Type 3374-26 Electric Actuator with fail-safe action
- **Version with unbalanced plug** · Metal-seated plug, PTFE/carbon compound packing
- **Version with balanced plug** · PTFE seal for temperatures up to max. 220 °C, DN 80 to 150, PN 40 · With Type 3274-21 Actuator
- **Version with flow divider** · DN 32 to 150, also for special version with insulating section (see Data Sheet ▶ T 8081)

## Options

- **Special version with insulating section for temperatures up to 350 °C** and unbalanced metal-seated plug

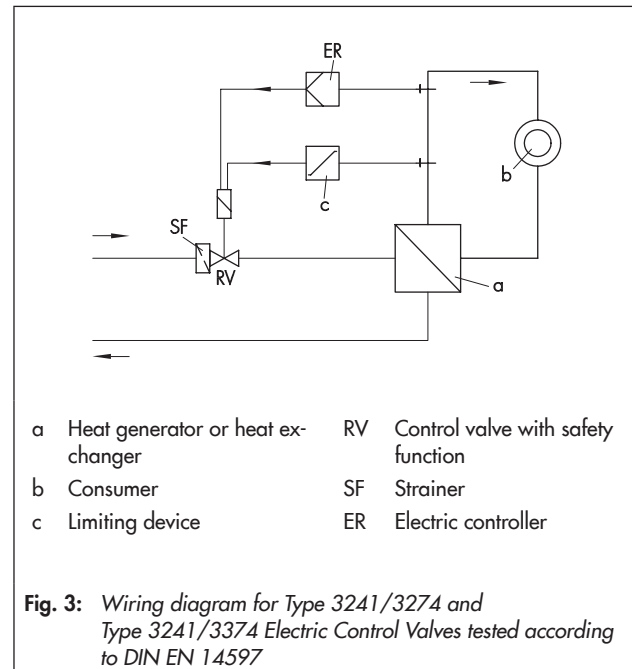
## Design and principle of operation

### – Type 3274

The actuator mainly consists of the actuator housing containing the motor with oil pump, the cylinder housing containing the piston, a spring-return mechanism and an additional safety solenoid valve that opens upon failure or interruption of the supply voltage and relieves the pressure in the pressure chamber. The spring assembly moves the actuator stem to the fail-safe position.


### – Type 3374

The electric actuator consists of a reversible motor and a maintenance-free planetary gear with ball screw drive. The motor is switched off by torque switches when an end position is reached or in case the motor is overloaded. The gear is disengaged inside the actuator in the event of failure or interruption of the supply voltage by the safety limiter because an adjusted temperature or pressure limit is exceeded. The springs inside the actuator moves the actuator stem to the end position causing the valve to close.



## Technical data

**Table 1:** Type 3241 Valve

<b>Valve size</b>	<b>DN</b>	<b>15 · 20 · 25 · 32 · 40 · 50 · 65 · 80 · 100 · 125 · 150</b>
Pressure rating		PN 16 to 40
Permissible temperatures		
Without insulating section	°C	Max. 220
With insulating section	°C	Max. 350
Valves with balanced plugs	°C	Max. 220
Permissible operating pressures		According to the pressure-temperature diagram (see Information Sheet ► T 8000-2)
Seat-plug seal		Metal seal
Type of connection		All flange types acc. to DIN
Characteristic		Equal percentage · Linear · On/off
Leakage class according to IEC 60534-4		≤Class IV (≤0.01 % of $K_{VS}$ coefficient)
Conformity		

**Table 2:** Materials for Type 3241

Pressure rating	PN 10/16	PN 16/25	PN 16, 25 and 40			
Body material	Cast iron EN-GJL-250 (EN-JL1040, GG-25)	Spheroidal graphite iron EN-GJS-400-18-LT (EN-JS1049, GGG-40)	Cast steel 1.0619 (GS-C25)	Cast stainless steel 1.4408	Forged steel 1.0460	Forged stainless steel 1.4571
Valve bonnet	1.0460/EN- GJL-250	1.0460/1.0619		1.4408/ 1.4401 · 1.4404	1.0460	1.4401 · 1.4404
Seat	1.4006			1.4404/1.4409	1.4006	1.4404/ 1.4409
Plug	1.4006/1.4008			1.4404/1.4409	1.4006/1.4008	1.4404/ 1.4409
Plug seal	Seal ring for soft-seated plug: PTFE with glass fiber					
	Seal ring for balanced plug: PTFE with carbon or graphite ring				-	
Guide bushing	1.4104		1.4404	1.4104	1.4404	
Packing	V-ring packing: PTFE with carbon · Spring: 1.4310					
Body gasket	Graphite on metal core					
<b>Insulating section</b>	1.0460		1.4401 · 1.4404		1.0460	1.4401 · 1.4404
<b>Bellows seal</b>	Intermediate piece	1.0460		1.4401 · 1.4404		1.0460
	Bellows seal	1.4571				
Heating jacket	-		1.4404			

**Table 3:** Overview: Valve sizes,  $K_{VS}$  coefficients, seat diameters and permissible differential pressures  $\Delta p$  in bar when  $p_2 = 0$  bar  
All pressures in bar (gauge). Direction of flow: FTO

**Table 3.1:** Type 3241/3274 and Type 3241/3374 without flow divider

$K_{VS}$ coefficient	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 $\varnothing$ mm	3			6			12			24			31	38	48	63	80	80	100	110	130
Travel mm	15															30	15	30			
DN																					
15	•	•	•	•	•	•	•	•	•	•											
20	•	•	•	•	•	•	•	•	•	•											
25	•	•	•	•	•	•	•	•	•	•	•										
32				•	•	•	•	•	•	•	•	•									
40				•	•	•	•	•	•	•	•	•	•								
50				•	•	•	•	•	•	•	•	•	•	•							
65													•	•	•						
80													•	•	•		•				
100																•		•	•		
125																		•	•	•	
150																•			•		•
<b>Permissible operating pressure p and permissible differential pressure <math>\Delta p</math> in bar · Actuator thrust ▶ T 8340 and ▶ T 8331</b>																					
Without balanced plug																					
Type 3274-23	40	40	40	40	40	40	40	40	40	40	40	37.8	24.8	15.2	8.5	7.2	5.0	4.2	2.5	2.0	1.3
Type 3374-26	40	40	40	40	40	40	40	40	40	35.6	35.6	20.8	13.5	8.1	4.4	–	2.5	–	–	–	–
Balanced (PTFE, without bellows seal)																					
Type 3274-21	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	40	25 <sup>1)</sup>	25 <sup>2)</sup>	25	15

- 1) Differential pressure up to 39 bar possible with DN 100  
2) Differential pressure up to 29.5 bar possible with DN 100

**Table 3.2:** Type 3241/3274 and Type 3241/3374 with flow divider ST 1 and ST 3

$K_{VS}$ coefficient	Flow divider ST 1												Flow divider ST 3								
	5.7	9	14.5	22	36	54	57	72	90	144	180	234	7.5	20	30	47	75	120			
Seat $\varnothing$ mm	24		31	38	48	63		80		100	110	130	24	38	48	63	80	100			
Rated travel mm	15						30	15	30				15			30					
DN																					
32	•	•																			
40	•	•	•	•																	
50	•	•	•	•	•										•						
65				•	•	•								•	•						
80				•	•	•		•						•	•	•					
100								•		•	•						•				
125										•	•	•							•		
150										•	•		•						•	•	
<b>Permissible operating pressure p and permissible differential pressure <math>\Delta p</math> in bar · Actuator thrust ▶ T 8340 and ▶ T 8331</b>																					
Without balanced plug																					
Type 3274-23	40	40	37.7	24.8	15.2	8.5	7.2	5.0	4.2	2.5	2.0	1.3	40	24.8	15.2	7.3	4.2	2.5			
Type 3374-26	35.6	35.6	20.8	13.5	8.1	4.4	–	2.5	–	–	–	–	35.8	13.5	8.1	–	–	–			
Balanced (PTFE, without bellows seal)																					
Type 3274-21	–	–	–	–	–	–	–	40	25 <sup>1)</sup>	25 <sup>2)</sup>	25	15	–	–	–	–	–	25	25		

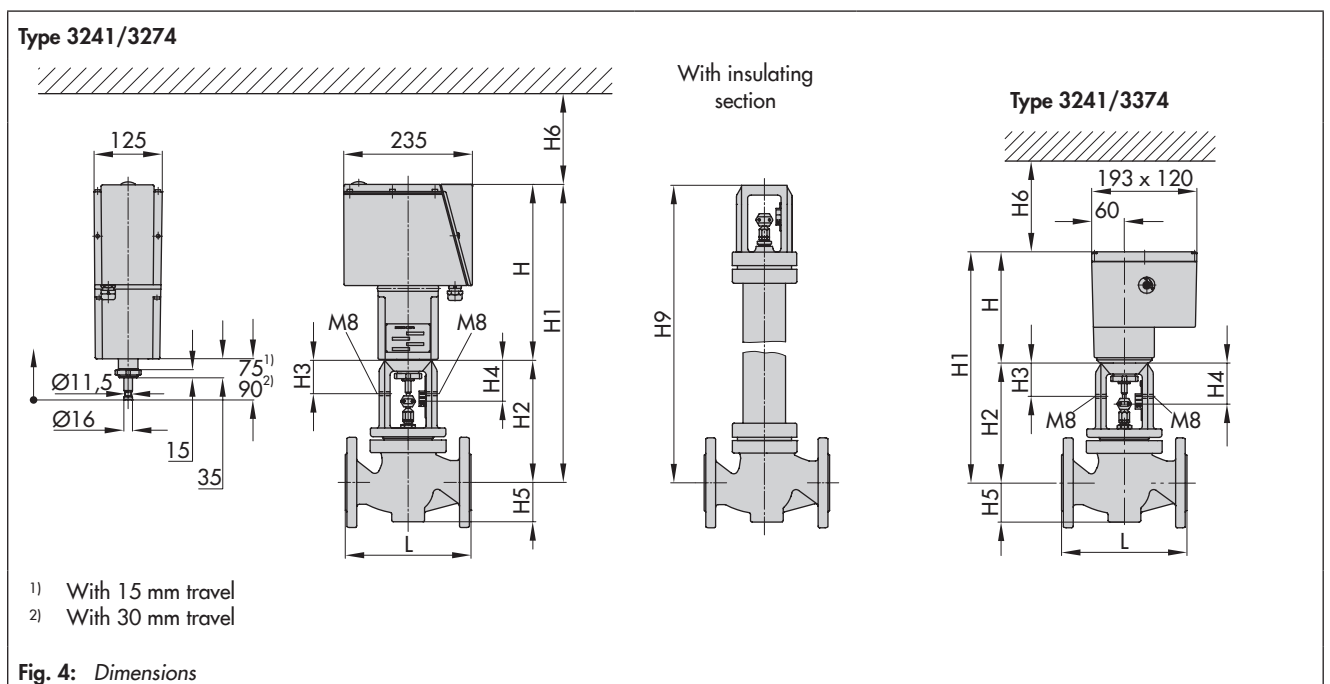
- 1) Differential pressure up to 39 bar possible with DN 100  
2) Differential pressure up to 29.5 bar possible with DN 100

**Table 4:** Possible combinations for Type 3241 Globe Valve/actuators (version tested according to DIN EN 14597)

Type 3241 Globe Valve		Valve size DN										
Type	Refer to data sheet for details	15	20	25	32	40	50	65	80	100	125	150
		3274-23	▶ T 8340	•	•	•	•	•	•	•	•	•
3274-21	-	-		-	-	-	-	•	•	•	•	•
3374-26	▶ T 8331	•	•	•	•	•	•	•	•	-	-	-

**Table 5:** Dimensions and weights

Valve 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	222	222	222	223	223	223	262	262	354	363	390	
Height H3	mm	61	61	61	61	61	61	61	61	75	75	75	
Height H4, fail-close	mm	75	75	75	75	75	75	75	75	90	90	90	
Height H5	approx. mm	44	44	44	72	72	72	98	98	118	144	175	
Height H													
Type 3241/3274	mm	320											
Type 3241/3374	mm	220									-	-	-
Height H6													
Type 3241/3274	mm	150											
Type 3241/3374	mm	300									-	-	-
Height H9 (including insulating section)	mm	409	409	409	410	410	410	451	451	636	645	672	
Weight													
Type 3241/3274 without insulating section	kg (approx.)	18	19.5	20	24	26	30	41	46	64	93	120	
Type 3241/3274 with insulating section	kg (approx.)	21	22.5	23	30	32	36	49	54	82	118	150	
Type 3241/3374 without insulating section	kg (approx.)	9	10	11	15	17	21	32	37	-	-	-	
Type 3241/3374 with insulating section	kg (approx.)	12	13	14	21	23	27	40	45	-	-	-	



### Ordering text

- Type 3241/3274 or Type 3241/3374 Electric Control Valve with fail-safe action, tested according to DIN EN 14597
- DN ..., PN ..., body material ...
- Max. operating temperature ... °C, maximum  $\Delta p$  ... bar
- Without/with insulating section, balanced/unbalanced plug
- Kvs ...
- Characteristic: Equal percentage, linear or on/off
- Supply voltage ... V, ... Hz
- Additional electrical equipment
- Optionally, special version

### Associated Information Sheets

▶ T 5800

▶ T 8000-2

### Associated Data Sheets

▶ T 1015

▶ T 8081

▶ T 8331

▶ T 8340