

Electric Control Valves with safety function, typetested Types 3213/5825, 3214/5825, 3214/3374, 3214/3274



Single-seated Globe Valve Type 3213, unbalanced Single-seated Globe Valve Type 3214, balanced

Application

Globe valves mounted on electric actuators with safety function to protect heating systems against excess temperatures or pressures.

DN 15 to DN 250 · PN 16 to PN 40 · Versions up to 150 °C and up to 220 °C



The control valves consist of a globe valve and a force-locking electric actuator with safety function. The control valves can take on the task of a shut-off valve within safety interlock circuits triggered by the signal of a temperature or pressure limiting device or upon a power supply failure.

The control valves are typetested by the German technical inspectorate (TÜV) according to DIN EN 14597 and have been defined as shut-off and control devices.

Typetested versions

- With **Type 3213 Globe Valve**, unbalanced in nominal sizes DN 15 to 50

Electric Control Valves		
Type 3213/5825 · Fig. 1	PN 25	DN 15 to 25
	PN 16	DN 32 to 50

- With **Type 3214 Globe Valve**, balanced by a stainless steel bellows in nominal sizes DN 15 to 250

Electric Control Valves		
Type 3214/5825	PN 16 to 40	DN 15 to 50
Type 3214/3374 · Fig. 2	PN 16 to 40	DN 65 to 100
Type 3214/3274 · Fig. 3	PN 16 to 40	DN 125 to 250

Register number

The actuators with safety function in conjunction with the listed valves are typetested according to DIN EN 14597 by the German technical inspectorate TÜV. The register number is available on request.

Also available:

- Type 3213 and Type 3214 Globe Valves mounted on controllers with electric actuators, **typetested** (refer to T 5769 EN)
- Type 3213 and Type 3214 Globe Valves with electric actuators or pneumatic actuators, not typetested (refer to T 5868 EN)
- Type 3213 and Type 3214 Globe Valves mounted on controllers with electric actuators without safety function (refer to T 5768 EN)



Fig. 1 · Type 3213/5825

Fig. 2 · Type 3214/3374

Fig. 3 · Type 3214/3274

Principle of operation (Figs. 4 and 5)

A safety mechanism in the actuator is triggered when the voltage supply fails or the control signal is interrupted by the limitation equipment due to the temperature or pressure exceeding the adjusted limit. As a result, the valve is closed by the force of the compression springs in the actuator.

The medium flows through the single-seated globe valve in the direction indicated by the arrow. The position of the valve plug determines the cross-sectional area of flow between the plug (3) and seat (2).

In the pressure-balanced Type 3214 Valves, the upstream pressure is transmitted over a hole in the plug stem (4) to the outside of the balancing bellows, whereas the downstream pressure acts on the inside of the bellows. As a result, the forces created by these pressures acting on the valve plug are eliminated. The Type 3214 Globe Valve can also be fitted with a Flow Divider St I. Refer to Data Sheet T 8081 for further details.

The plug is moved by changing the control signal acting on the actuator. The signal of Types 5825 and 3374 Electric Actuators as well as Type 3274 Electrohydraulic Actuator is a three-point stepping signal or, when an additional electric positioner is used, an analog signal of 0 to 20 mA, 4 to 20 mA or 0 (2) to 10 V-.

The electric actuators can be equipped with additional accessories.

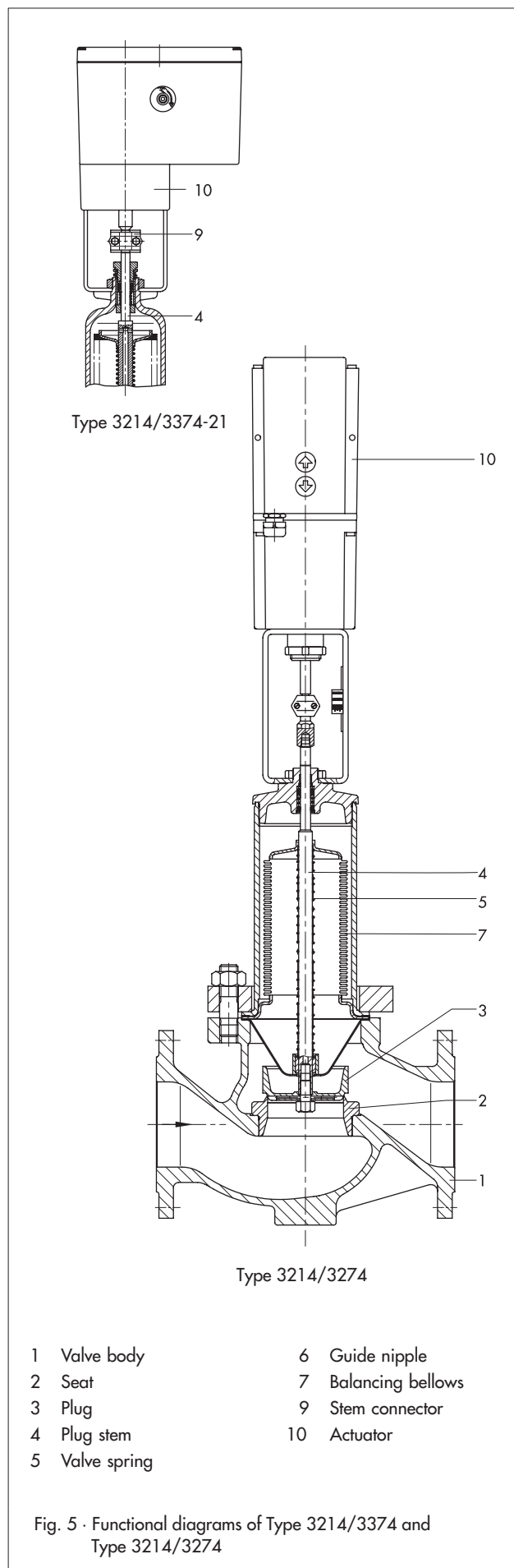
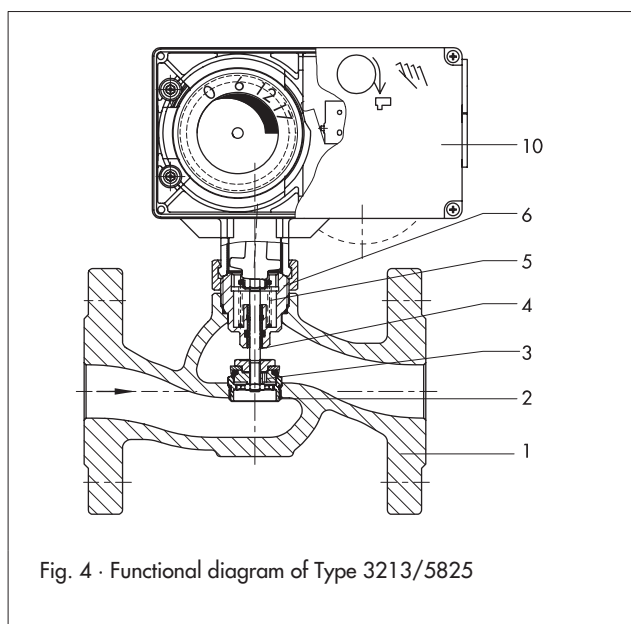
Refer to Data Sheet for details	
Type 5825	-> Data Sheet T 5824 EN
Type 3374	-> Data Sheet T 8331 EN
Type 3274	-> Data Sheet T 8340 EN

Installation

Install the valve in the pipeline with the actuator in the upright position.

Other mounting positions on request.

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

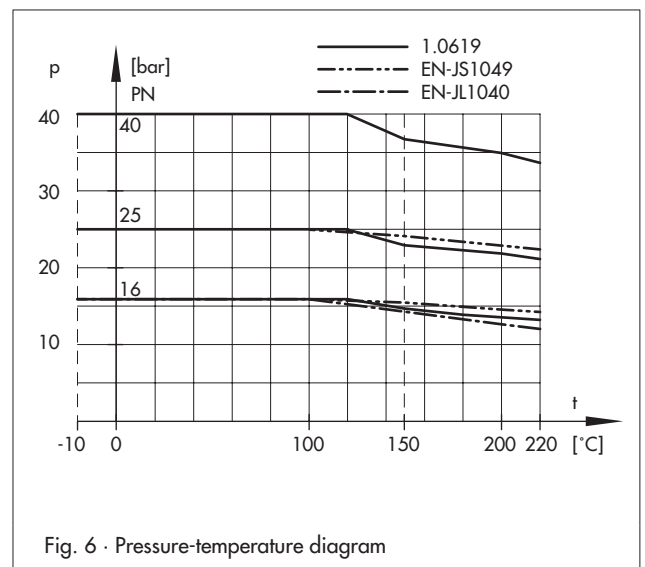


Terms for control valve sizing

acc. to DIN EN 60534, parts 2-1 and 2-2: $F_L = 0.95$; $x_T = 0.75$

Selection and sizing of the control valve

1. Calculate appropriate K_V coefficient according to DIN EN 60534.
2. Select valve size and K_{VS} coefficient from Table 2.
3. Check permissible differential pressure from Table 2.
4. Check permissible temperature and select valve version from Table 1.
5. Select suitable actuator from Table 3 and from the technical data of the actuator:
 - Type 5825 → T 5824 EN
 - Type 3374 → T 8331 EN
 - Type 3274 → T 8340 EN
6. Select materials, pressure and temperature from Tables 1 and 2 and from the pressure-temperature diagram (Fig. 6).
7. Select additional accessories depending on the electric actuator. Refer to technical data of the actuators for more details.



Ordering text

Typetested electric control valve

- Type 3213/5825
- Type 3214/5825, Type 3214/3274, Type 3214/3374
- Power supply ...V, ... Hz
- With/without limit switches, potentiometer, positioner
- DN ..., PN ..., K_{VS} ...
- Max. differential pressure Δp ... bar, max. temperature ... °C
- Body material ...

Table 1.1 · Technical data

Type 3213 Globe Valve															
Nominal size	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	
Nominal pressure		PN 25			PN 16										
Perm. temperature (upright)	°C	150			150										
Version for steam	°C	200			On request										
Rated travel	mm	6			12										
Rangeability		50 : 1													
Leakage class		Class I (< 0.05 % of K_{VS})													
Type 3214 Globe Valve															
Nominal size	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	
Nominal pressure		PN 16 to 40													
Perm. temperature (upright)	°C	150			220			220			150 ¹⁾				
Version up to 220 °C	°C	220									-				
Rated travel	mm	6			12			15			30				
Rangeability		50 : 1			40 : 1			30 : 1							
Leakage class		Class I (< 0.05 % of K_{VS})													

1) 220 °C for special version with metal-seated plug or plug with PTFE soft seating

Table 1.2 · Materials · Material number acc. to DIN EN

Type 3213 Globe Valve			
Nominal pressure	PN 16	PN 25	PN 40
Valve body	EN-JL1040 (GG-25)	EN-JS1049 (GGG-40.3)	–
Seat	1.4305	1.4305	–
Plug	1.4305 with metal sealing	Brass with EPDM soft sealing or FPM (FKM) seal	–
Special version	–	K _{VS} = 0.1 to 2.5: 1.4305 with metal sealing	–
Plug stem	1.4305		–
Spring	1.4310		–
Guide nipple	Brass with EPDM seal or FPM (FKM) seal		–
Insulating section (version for steam)	1.4571		–
Type 3214 Globe Valve			
Nominal pressure	PN 16	PN 25	PN 40
Valve body	EN-JL1040 (GG-25)	EN-JS1049 (GGG-40.3) or 1.0619 (GS-C 25)	1.0619 (GS-C 25)
Special version	EN-JS1049 or 1.0619	–	–
Seat and plug			
DN 15 to 100	CrNi steel · Special version with EPDM soft sealing		
DN 125 to 250	CrNiMo steel with EPDM soft sealing · Special version with metal sealing		
Plug stem	1.4301		
Spring	–		
Bellows housing	1.0425		
Balancing bellows	1.4571		
Guide nipple (DN 15 to 50)	Brass with EPDM seal or FPM (FKM) seal		
Packing (DN 65 to 250)	V-ring packing PTFE with carbon		
Insulating section for version up to 220 °C	1.4305 with EPDM seal or FPM (FKM) seal		

Table 2 · Overview: Nominal sizes, K_{VS} coefficients and maximum differential pressures

Type 3213 Globe Valve														
Nominal size	DN	15	20	25	32	40	50	65	80	100	125	150	200	250
Rated travel	mm	6			12									
K _{VS}		4	6.3	8	16	20	32	–						
Max. diff. pressure in bar		10			2.9	2.9	1.6	–						
Special version														
K _{VS}	0.1 · 0.16 0.25 · 0.4 0.63 · 1.0 1.6	2.5	2.5	–			40	–						
Max. diff. pressure in bar		20	10	10	–			1	–					
Type 3214 Globe Valve														
Nominal size	DN	15	20	25	32	40	50	65	80	100	125	150	200	250
Rated travel	mm	6			12			15		30				
K _{VS}		4	6.3	8	16	20	32	50	80	125	200	320	500	600
With flow divider		–	–	–	–	–	–	38	60	95	150	210	315	375
Reduced K _{VS}		2.5	2.5 · 4	2.5 · 4 · 6.3	8	8 · 16	8 · 16 · 20	–						
Max. diff. pressure	bar	25						20		16	12 ¹⁾	10 ¹⁾		

1) A special version must be used on using a Type 3274 Actuator in sizes DN 150 to DN 250 for applications with steam

Table 3 · Possible combinations for Type 3213 and Type 3214 Globe Valves/actuators

Type 3213 Globe Valve															
Actuator ¹⁾	Type	Refer to Data Sheet for details	Nominal size DN												
			15	20	25	32	40	50	65	80	100	125	150	200	250
Electric	5825-10	T 5824 EN	•	•	•	–	–	–							
	5825-13		•	•	•	–	–	–							
	5825-20		–	–	–	•	•	•	–						
	5825-23		–	–	–	•	•	•							
Type 3214 Globe Valve															
Actuator ¹⁾	Type	Refer to Data Sheet for details	Nominal size DN												
			15	20	25	32	40	50	65	80	100	125	150	200	250
Electric	5825-10	T 5824 EN	•	•	•	–	–	–	–	–	–	–	–	–	–
	5825-13		•	•	•	–	–	–	–	–	–	–	–	–	
	5825-20		–	–	–	•	•	•	–	–	–	–	–	–	
	5825-23		–	–	–	•	•	•	–	–	–	–	–	–	
	3374-21	T 8331 EN	–	–	–	–	–	–	•	•	•	–	–	–	
Electro-hydraulic	3274-23	T 8340 EN	–	–	–	–	–	–	–	–	•	•	•	•	

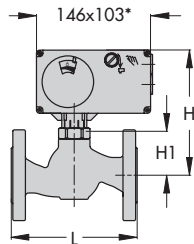
¹⁾ Fail-safe action: Actuator stem extends

Table 4 · Dimensions and weights

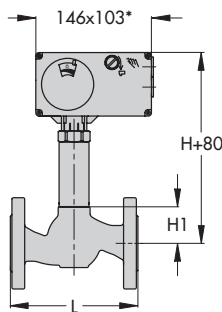
Type 3213 Globe Valve															
Nominal size	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	
Length	L	130	150	160	180	200	230	–							
Height	H1	60			125			–							
	H	190			255			–							
Weight (add 0.3 kg for version for steam)															
Type 3213/5825	approx. kg	3.1	3.7	4.1	12.5	14.5	16.5	–							
Type 3214 Globe Valve															
Nominal size	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	
Length	L	130	150	160	180	200	230	290	310	350	400	480	600	730	
Height	H1	225						305	305	355	580	710	860	860	
	H	350						599	599	649	900	1030	1180	1180	
	H2	55			72			100	100	120	145	175	270	270	
	H3	–						–			1050	1180	1330	1330	
Weight (add 0.3 kg for version up to 220 °C · Version for PN 25 and PN 40: +15 %)															
Type 3214/5825	approx. kg	7	7.5	8.5	15	15.5	18	–							
Type 3214/3374	approx. kg	–						35	40	47	–				
Type 3214/3274	approx. kg	–						–			87	128	271	315	

Dimensions in mm

**Type 3213 Globe Valve
mounted on electric actuators**

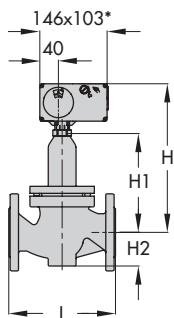


Type 3213/5825-xx: DN 15 to 50

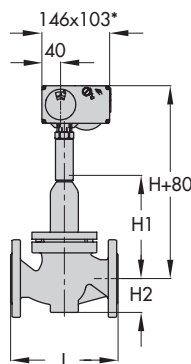


Version for steam
Type 3213/5825-xx: DN 15 to 50

**Type 3214 Globe Valve
mounted on electric actuators**

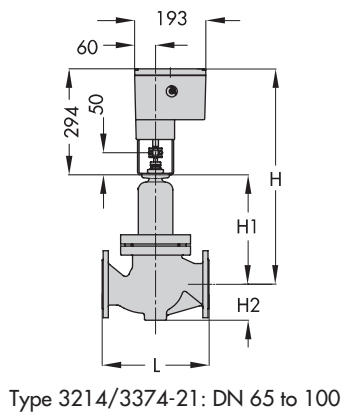


Type 3214/5825-xx: DN 15 to 50

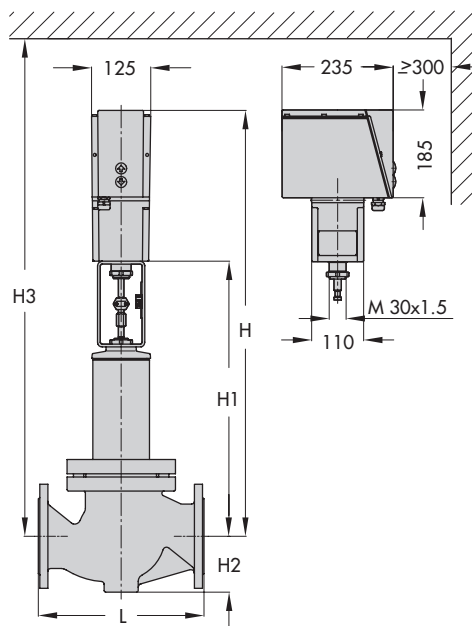


Version up to 220 °C
Type 3214/5725-xx: DN 15 to 50

* Dimensions for
Type 5825-x3
Actuators:
146 x 136



Type 3214/3374-21: DN 65 to 100



Type 3214/3274: DN 125 to 250

Specification subject to change without notice.

