

Electric Control Valves/Controller with Electric Actuator with safety function, typetested Types 3213/5725, 3214/5725



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

Application

Globe valves mounted on a controller with electric actuator with safety function to protect heating systems against exceeding certain temperature or pressure limits

DN 15 to DN 50 · PN 16 to PN 40 · Versions up to 220 °C



The control valves consist of either a single-seated, unbalanced Type 3213 Globe Valve or a single-seated, balanced Type 3214 Globe Valve together with a Type 5725 Controller with 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

Electric control valves/controller with electric actuator		
Type 3213/5725 · Fig. 1	PN 25	DN 15 to 25
	PN 16	DN 32 to 50

- With **Type 3214 Globe Valve**, balanced

Electric control valves/controller with electric actuator		
Type 3214/5725 · Fig. 2	PN 16 to 40	DN 15 to 50

Register number

The Type 5725 Controller with Electric Actuator 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 a controller with electric actuator without safety function (refer to T 5768 EN)
- Type 3213 and Type 3214 Globe Valves with electric or pneumatic actuators (refer to T 5868 EN)

Typetested electric control valves:

- Type 3213 and Type 3214 Globe Valves mounted on controllers with electric actuators with safety function (refer to T 5869 EN)



Fig. 1 · Type 3213/5725



Fig. 2 · Type 3214/5725

Principle of operation (Fig. 3)

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 released between the plug (3) and seat (2).

Type 3214 Valves are pressure-balanced. In this case, the pressure upstream of the plug is transferred over a hole in the plug stem (4) to the outside of the balancing bellows, whereas the pressure downstream of the plug acts on the inside of the bellows. In this way, 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 electric actuator contains a digital controller integrated into the actuator. The controlled variable is recorded over the directly connected Pt 1000 sensor. The output signal of the digital controller acts as a three-point stepping signal on the synchronous motor of the actuator and is transferred over the connected gear as a positioning force onto the actuator stem.

Refer to Data Sheet for details

Type 5725 → Data Sheet T 5724 EN

Installation

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

Other mounting positions on request.

Terms for control valve sizing according 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 KV coefficient according to DIN EN 60534.
2. Select valve size and Kvs 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 controller with electric actuator from Table 3 and from the technical data (see T 5724 EN).
6. Select materials, pressure and temperature from Tables 1 and 2, from the data sheet of the controller with electric actuator as well as from the pressure-temperature diagram (Fig. 4).

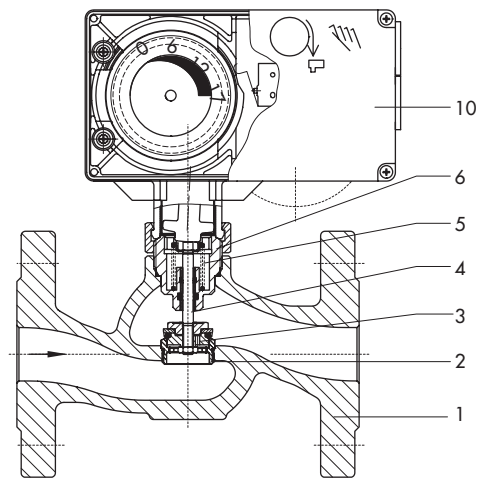
Ordering text

Typetested electric control valve/Controller with electric actuator
Type 3213/5725 or Type 3214/5725

DN ..., PN ..., Kvs,

max. differential pressure Δp ... bar, max. temperature ... °C,

body material ...



- 1 Valve body
- 2 Seat
- 3 Plug
- 4 Plug stem
- 5 Valve spring
- 6 Guide nipple
- 10 Controller with electric actuator

Fig. 3 · Functional diagram of Type 3213/5725

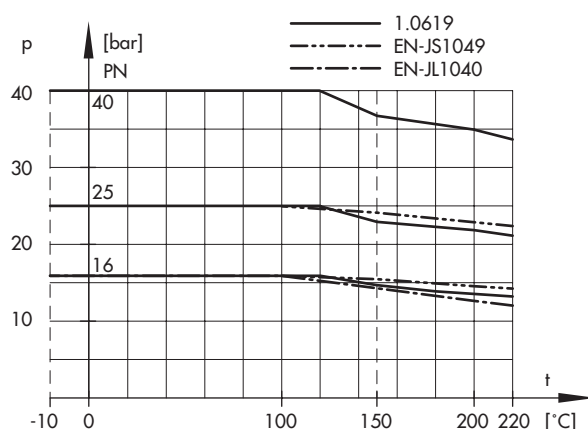


Fig. 4 · Pressure-temperature diagram

Table 1.1 · Technical data

Type 3213 Globe Valve							
Nominal size	DN	15	20	25	32	40	50
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 Kvs)					
Type 3214 Globe Valve							
Nominal size	DN	15	20	25	32	40	50
Nominal pressure		PN 16 to 40					
Perm. temperature (upright)	°C	150					
Version up to 220 °C	°C	220					
Rated travel	mm	6			12		
Rangeability		50 : 1					
Leakage class		Class I (< 0.05 % of Kvs)					

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	–	Kvs = 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	CrNi steel · Special version with EPDM soft sealing		
Plug stem	1.4301		
Spring	–		
Bellows housing	1.0425		
Balancing bellows	1.4571		
Guide nipple	Brass with EPDM seal or FPM (FKM) seal		
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
Rated travel	mm	6			12		
K _V s		4	6.3	8	16	20	32
Maximum differential pressure	bar	10	10	10	2.9	2.9	1.6
Special version							
K _V s		0.1 · 0.16 · 0.25 · 0.4 · 0.63 · 1.0 · 1.6	2.5	2.5	–		40
Maximum differential pressure	bar	20	10	10	–		1
Type 3214 Globe Valve							
Nominal size	DN	15	20	25	32	40	50
Rated travel	mm	6			12		
K _V s		4	6.3	8	16	20	32
Reduced K _V s		2.5	2.5 · 4	2.5 · 4 · 6.3	8	8 · 16	8 · 16 · 20
Maximum differential pressure	bar	25					

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

Type	Refer to Data Sheet for details	Nominal size DN					
		15	20	25	32	40	50
Type 3213 Globe Valve							
5725-10	T 5724 EN	•	•	•	–	–	–
5725-13		•	•	•	–	–	–
5725-20		–	–	–	•	•	•
5725-23		–	–	–	•	•	•
Type 3214 Globe Valve							
5725-10	T 5724 EN	•	•	•	–	–	–
5725-13		•	•	•	–	–	–
5725-20		–	–	–	•	•	•
5725-23		–	–	–	•	•	•

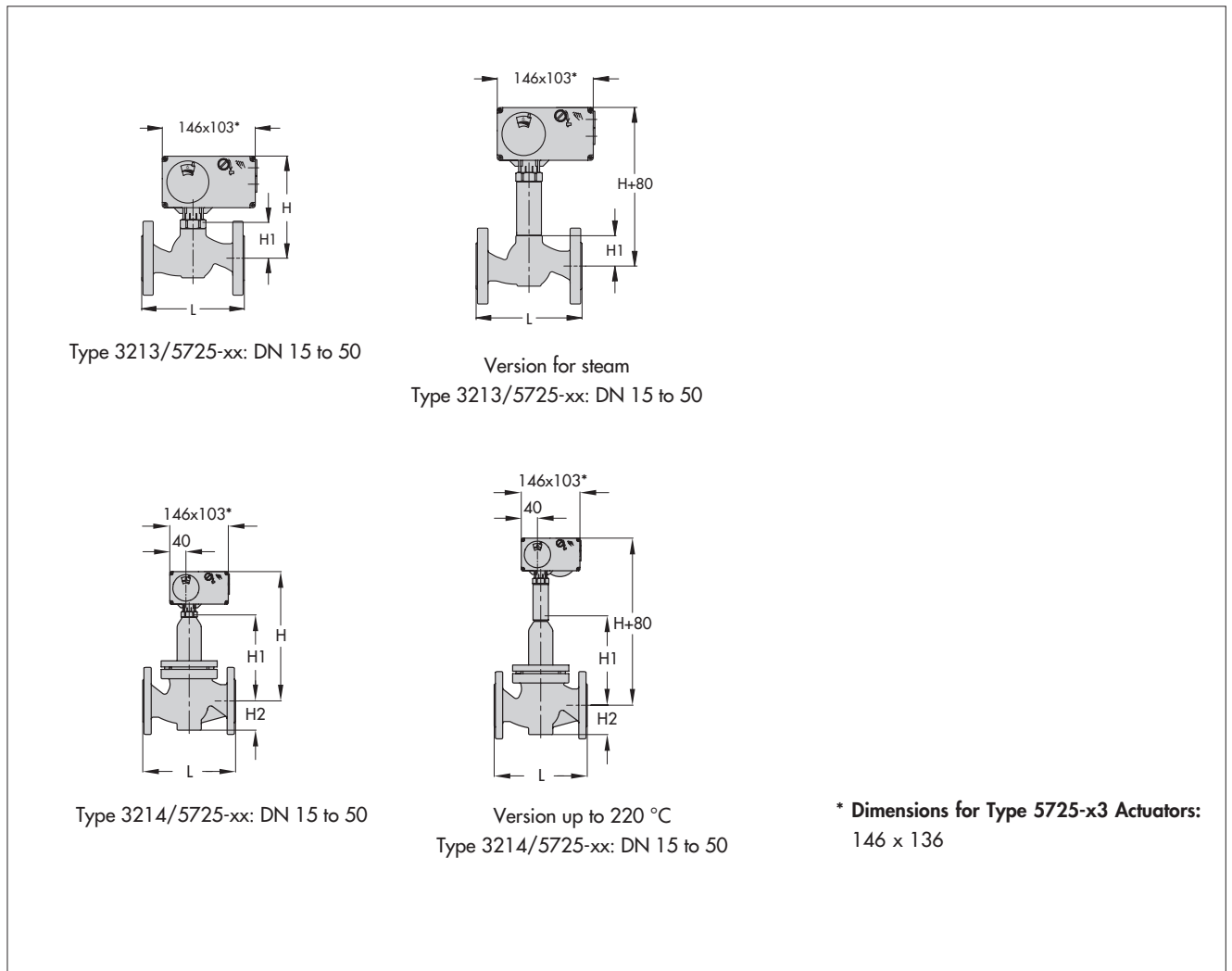
Table 4 · Dimensions and weights

Type 3213 Globe Valve								
Nominal size	DN		15	20	25	32	40	50
Length	L	mm	130	150	160	180	200	230
Height	H1	mm	60	60	60	125	125	125
Height	H	mm	190	190	190	255	255	255
Weight ¹⁾	Approx.	kg	3.6	4.2	4.6	13.0	15.0	17.0
Type 3214 Globe Valve								
Nominal size	DN		15	20	25	32	40	50
Length	L	mm	130	150	160	180	200	230
Height	H1	mm	225	225	225	225	225	225
Height	H	mm	350	350	350	350	350	350
Height	H2	mm	55	55	55	72	72	72
Weight ²⁾	Approx.	kg	7.5	8	9	15.5	16	18.5

1) Add 0.3 kg for version for steam

2) Add 0.3 kg for version up to 220 °C · Version for PN 25 and PN 40: +15 %

Dimensions in mm



Specification subject to change without notice.



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T 5769 EN

2010-01