

T 5868-1 EN

Types 3214/3374 and 3214/SAM Electric Control Valves Type 3214 Globe Valve balanced by a diaphragm



Application

Control valves with globe valves balanced by a diaphragm for HVAC applications

DN 65 to 300 · PN 16 to 40

Up to 150 °C (water),

Up to 80 °C (non-flammable gases)

The control valves consist of a Type 3214 Globe Valve balanced by a diaphragm and an electric or electrohydraulic actuator.

Special features

- Very high K_{VS} coefficients
- Soft-seated plug to minimize seat leakage
- Seat/plug trim made of red brass or brass with stainless steel (DN 65 to 100)
- Low overall height compared to version balanced by a bellows
- Actuators with fail-safe action or without fail-safe action

Versions

Version tested according to DIN EN 14597		
Type 3214/3374	PN 16 to 40	DN 65 to 150

Electric control valves		
Type 3214/3374 · Fig. 1	PN 16 to 25	DN 65 to 100
Type 3214/3374	PN 16 to 40	DN 125 to 250
Type 3214/SAM	PN 16 to 40	DN 300

Register number

The actuators with fail-safe action in conjunction with the listed valves are tested by the German technical surveillance association TÜV according to DIN EN 14597. The register number is available on request.

Also available:

Type 3214 Globe Valve **balanced by a bellows**:

- Control valves with electric or pneumatic actuator without fail-safe action, see Data Sheet ► T 5868
- Control valves tested according to DIN EN 14597 with electric actuator with fail-safe action, see Data Sheet ► T 5869



Fig. 1: Type 3214/3374
Type 3214 Globe Valve balanced by a diaphragm

Principle of operation

The medium flows through the globe valve in the direction indicated by the arrow on the valve body. The cross-sectional area of flow between the seat (2) and plug (3) is determined by the position of the plug stem.

The downstream pressure p_2 is applied to the inside of the Type 3214 Valve; the upstream pressure p_1 acts on the outside. The forces acting on the valve plug due to the upstream and downstream pressures are balanced by the diaphragm (4).

The plug is moved by changing the control signal applied to the actuator. For the Type 3374 and Type SAM Electric Actuators, this signal is a three-step signal. The actuators can also be controlled in the version with positioner by a 0/4 to 20 mA or 0/2 to 10 V signal. Various electrical accessories can be optionally installed.

The electric actuators can be equipped with additional accessories.

Refer to data sheet for details

Type 3374 ► Data Sheet T 8331

Type SAM ► Data Sheet T 8330

Installation

- Install the valves in horizontal pipelines.
- The direction of flow must match the direction indicated by the arrow on the valve body
- Install the valve with the balancing diaphragm or actuator in upright position, facing upward.
- Install a strainer (e.g. SAMSON Type 2 N or Type 2 NI) upstream of the valve.

Ordering text

Type 3214/3374 or Type 3214/SAM Electric Control Valve balanced by a diaphragm

- DN ..., PN ..., K_{VS} ...
- Max. differential pressure Δp ... bar, max. temperature ... °C
- Body material ...

Associated Mounting and Operating Instructions

► EB 5868-1

Legend for Fig. 2

1	Valve body	5	Rod-type yoke
2	Seat	6	Plug stem
3	Plug	8	Actuator
4	Balancing diaphragm	10	Stem connector

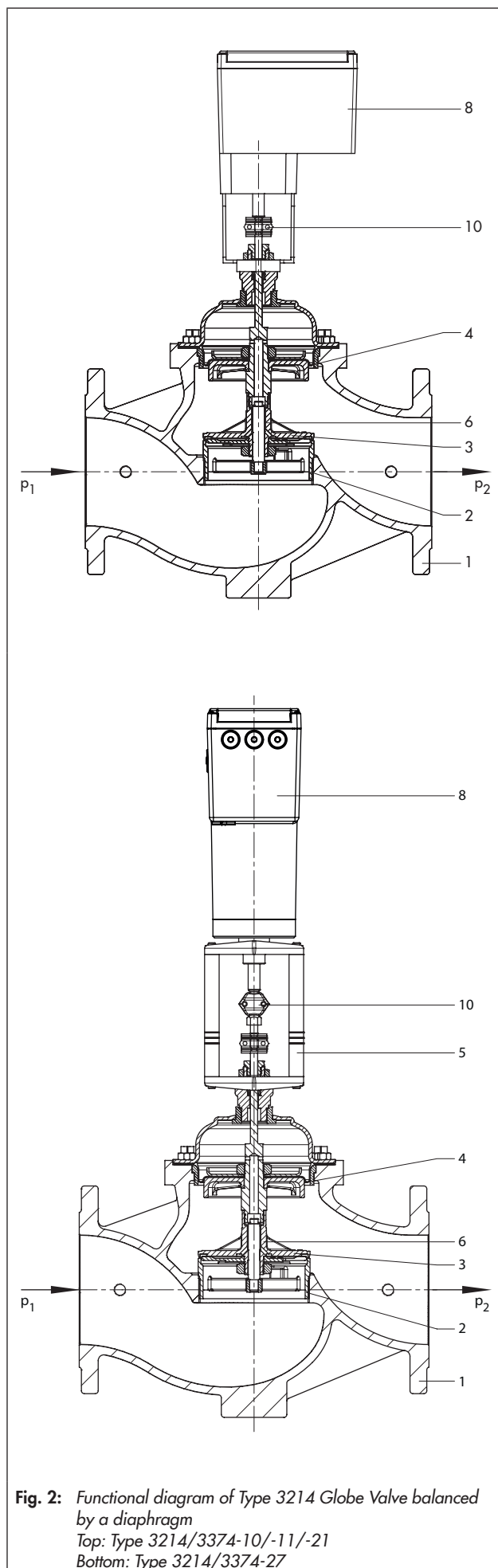


Fig. 2: Functional diagram of Type 3214 Globe Valve balanced by a diaphragm
Top: Type 3214/3374-10/-11/-21
Bottom: Type 3214/3374-27

Table 1: Technical data

Valve size	DN	65	80	100	125	150	200	250	300
Pressure rating	PN	16 and 25			16 to 40				
Rated travel	mm	15	15	15	30	30	30	30	50
K _V S coefficient		50	80	125	230	340	620	750	1200
Max. perm. differential pressure Δp	bar	10	10	10	12	12	10	10	10
Max. permissible temperature	°C								
Version for water		150							
Version for non-flammable gases		80							
Rangeability		40:1			30:1				
Leakage class according to IEC 60534-4		Class IV (≤0.01 % of K _V S coefficient)							
Conformity									

Table 2: Materials · Material numbers according to DIN EN

Valve size	DN	65	80	100	125	150	200	250	300
Body	PN 16	EN-GJL-250 (EN-JL1040) EN-GJS-400-18-LT (EN-JS1049)			EN-GJL-250 (EN-JL1040)	EN-GJL-250 (EN-JL1040)		EN-GJL-250 (EN-JL1040) 1.6019	
	PN 16/25				EN-GJS-400-18-LT (EN-JS1049)	–			
	PN 16, 25 and 40				1.0619		1.0619		
Valve seat		1.4408			CC499K			1.4301	
Plug		CW617N with EPDM soft seal			CC491K with EPDM soft seal			1.4301 with EPDM soft seal	
Pressure balancing		EPDM balancing diaphragm							

Table 3: Possible combinations: Type 3214 Globe Valve with balancing diaphragm/actuator

Actuator	Type	Refer to data sheet for details	Valve size							
			65	80	100	125	150	200	250	300
Without fail-safe action	3374-10	▶ T 8331	–	–	–	•	•	•	•	–
	3374-11		•	•	•	–	–	–	–	–
	SAM-32	▶ T 8330	–	–	–	–	–	–	–	•
With fail-safe action	3374-27 ¹⁾	▶ T 8340	–	–	–	•	•	•	•	–
	3374-21	▶ T 8331	•	•	•	–	–	–	–	–
	3376 ²⁾	▶ T 8333	–	–	–	–	–	–	–	•

¹⁾ The rod-type yoke (1400-8822) is additionally required to connect Type 3374-27 Actuators.

²⁾ Product in preparation

NOTICE

Risk of valve damage due to excessively high forces.

When the valves are combined with pneumatic actuators, the maximum forces of the electric actuators listed in Table 3 must not be exceeded.

➔ If necessary, restrict the supply pressure.

Table 4: Dimensions and weights with actuator

Valve size	DN	65	80	100	125	150	200	250	300
Length L	mm	290	310	350	400	480	600	730	850
Height H1	mm	163	163	189	286	291	361	361	386
Height H2	mm	98	98	118	145	175	270	270	285
Height H	mm								
Type 3214/3374-27		–	–	–	753	778	848	848	–
Type 3214/3374-10/-11/-21		457	457	483	580	585	655	655	–
Type 3214/SAM-32		–	–	–	–	–	–	–	1130
Type 3214/3376 ²⁾		–	–	–	–	–	–	–	On request
Weight ¹⁾	kg (approx.)								
Type 3214/3374-27		–	–	–	56	76	218	228	–
Type 3214/3374-10/-11/-21		30	34	44	52	72	214	224	–
Type 3214/SAM-32		–	–	–	–	–	–	–	335

1) Valves in PN 16; versions in PN 25 and 40: +15 %

2) Product in preparation

Dimensions in mm

