



Technical description

Application:

Heating and cooling systems.

Function:

Maintaining minimum flow through the main pipe to minimize response times of control loops in the system.
Opens at increasing Δp .

Pressure class:

PN 16 or PN 25

Max. differential pressure:

1600 kPa = 16 bar

Temperature:

Max. working temperature: 150°C

Min. working temperature: -10°C

Setting range:

Differential pressure adjustable 10 - 60, 50 - 150, 130 - 250 kPa.

Media:

Water and neutral fluids, water-glycol mixtures.

Material:

Valve body: Ductile iron EN-GJS-400-18LT

Actuator body: Ductile iron EN-GJS-400-18LT

Diaphragm: EPDM

Valve seat: Stainless steel

Valve plug: Stainless steel with EPDM insert

Surface treatment:

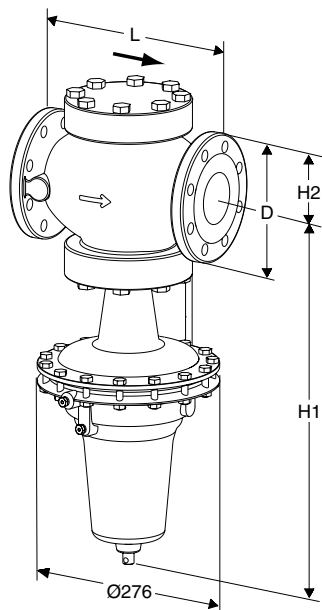
Duasolid painting.

Marking:

TA, DN, PN and flow direction arrow.

Flanges:

According to EN-1092-2:1997, type 21.



→ = Flow direction

10-60 kPa

TA No	DN	D	L	H1	H2	Kvs	Kg
PN 16							
52 789-065	65	185	290	580	135	55	55
52 789-090	100	235	350	680	175	120	88
52 789-091	125	270	400	690	190	145	105
52 789-092	150	300	480	775	227	230	235
52 789-093	200	360	600	822	260	360	297
PN 25 (DN 32-50 and DN 80 also fit PN 16 flanges)							
52 789-332	32	140	180	535	102	21	38
52 789-340	40	150	200	535	102	25	39
52 789-350	50	165	230	560	116	32	46
52 789-365	65	185	290	580	135	55	55
52 789-380	80	200	310	592	149	70	66
52 789-390	100	235	350	680	175	120	88
52 789-391	125	270	400	690	190	145	105
52 789-392	150	300	480	775	227	230	235
52 789-393	200	360	600	822	260	360	297

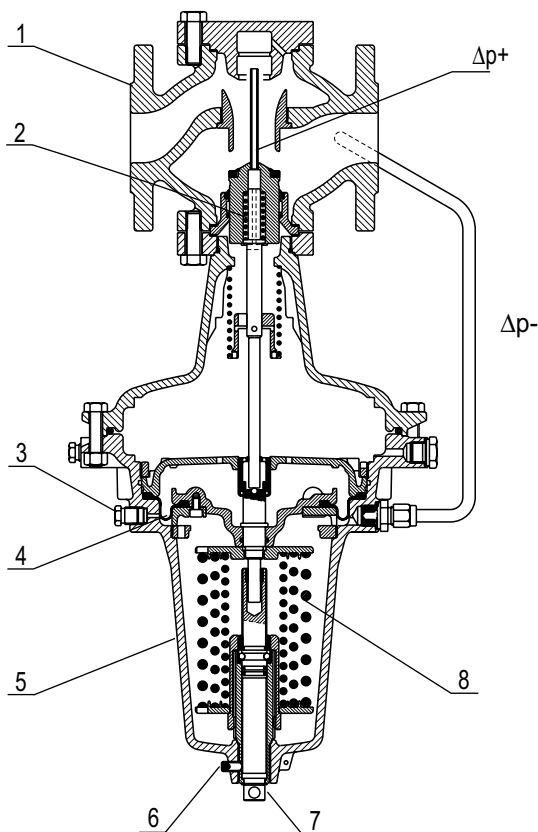
50-150 kPa

TA No	DN	D	L	H1	H2	Kvs	Kg
PN 16							
52 789-165	65	185	290	580	135	55	55
52 789-190	100	235	350	680	175	120	88
52 789-191	125	270	400	690	190	145	105
52 789-192	150	300	480	775	227	230	235
52 789-193	200	360	600	822	260	360	297
PN 25 (DN 32-50 and DN 80 also fit PN 16 flanges)							
52 789-432	32	140	180	535	102	21	38
52 789-440	40	150	200	535	102	25	39
52 789-450	50	165	230	560	116	32	46
52 789-465	65	185	290	580	135	55	55
52 789-480	80	200	310	592	149	70	66
52 789-490	100	235	350	680	175	120	88
52 789-491	125	270	400	690	190	145	105
52 789-492	150	300	480	775	227	230	235
52 789-493	200	360	600	822	260	360	297

130-250 kPa

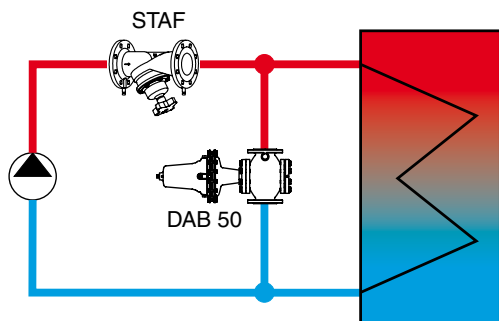
TA No	DN	D	L	H1	H2	Kvs	Kg
PN 16							
52 789-265	65	185	290	580	135	55	55
52 789-290	100	235	350	680	175	120	88
52 789-291	125	270	400	690	190	145	105
52 789-292	150	300	480	775	227	230	235
52 789-293	200	360	600	822	260	360	297
PN 25 (DN 32-50 and DN 80 also fit PN 16 flanges)							
52 789-532	32	140	180	535	102	21	38
52 789-540	40	150	200	535	102	25	39
52 789-550	50	165	230	560	116	32	46
52 789-565	65	185	290	580	135	55	55
52 789-580	80	200	310	592	149	70	66
52 789-590	100	235	350	680	175	120	88
52 789-591	125	270	400	690	190	145	105
52 789-592	150	300	480	775	227	230	235
52 789-593	200	360	600	822	260	360	297

Operating function



Installation in bypass pipe. The controller consists of a valve (1) and a diaphragm actuator (5). Valve is protected against overload with a safety spring (2). The pressure upstream the controller acts through an internal impulse pipe ($\Delta p+$), to the top side of the diaphragm (4) and attempts to open the valve. The pressure downstream the consumer acts through an external impulse pipe ($\Delta p-$) to the bottom side of the diaphragm and attempts to close the valve together with the force of the working spring (8). As long as the forces on the diaphragm are balanced, the valve's plug stands still. If the differential pressure rises, the valve opens until new balance is reached, and vice versa.

Installation



Install the controller in bypass pipe. The direction of flow is shown by the arrow on the valve body. It is recommended to install the controller in horizontal pipeline with actuator body below. Installation of a strainer upstream of the controller is recommended.

It is important to ensure that working temperature and pressure do not exceed allowed values. Before you mount the controller, check the fitting length of the controller, pitch diameter and the diameter of the holes for the screws. When the pipeline and the controller are full of water and the pressure is stabilized, vent the controller by vent screws (3).

Installation of balancing valve STAF is recommended to enable flow measurement, commissioning and troubleshooting with balancing instrument TA-CBI or measuring instrument TA-CMI.

Setting

Differential pressure adjustment

1. Release the fixing screw (6).
2. Adjust differential pressure by turning adjustment screw (7).
3. To increase the differential pressure, turn the adjustment screw clockwise (bottom view of the screw).
4. At the end, tighten the fixing screw.
5. The pressures can be controlled through pressure gauges on the pipeline.

Sizing

Select the size according to maximal speed. To prevent noise, maximal speed should not exceed 2 m/s in residential buildings and 3 m/s in industrial buildings.

Control the pressure drop in the valve by formula: $\Delta p = 100 \times q^2 / Kvs^2$ [kPa], where q is flow in m^3/h .

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