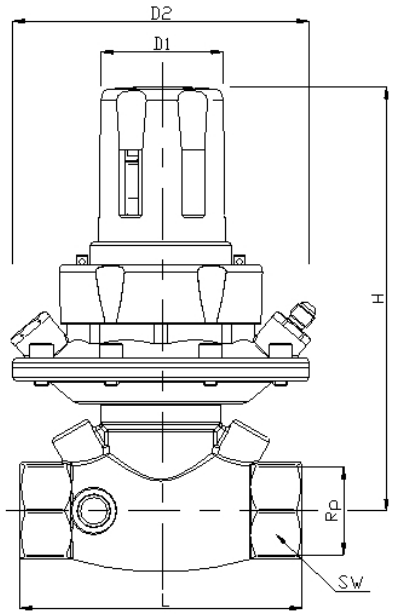
Differential pressure controller

Standard specification sheet

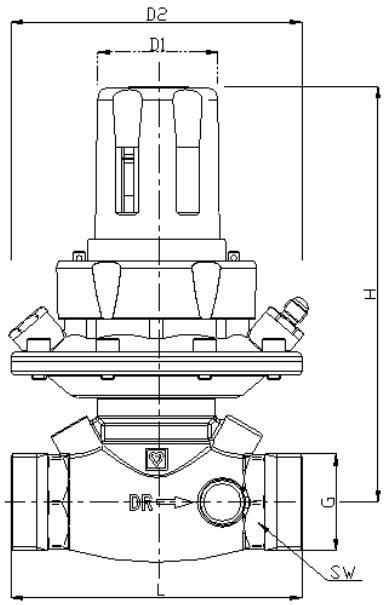
4007, 4007F, 4207

Version 0507

Dimensions



4007



4207

Order no.	DN	Rp	L	SW	H	D1	D2
1 **4007** 01	DN 15	1/2	100	27	170	50	125
1 **4007** 02	DN 20	3/4	100	32	170	50	125
1 **4007** 03	DN 25	1	120	41	180	50	125
1 **4007** 04	DN 32	1¼	140	50	185	50	125
1 **4007** 05	DN 40	1½	150	55	185	50	125
1 **4007** 06	DN 50	2	165	70	196	50	125

Order no.	DN	G	L	SW	H	D1	D2
1 **4207** 01	DN 15	3/4	102	27	170	50	125
1 **4207** 02	DN 20	1	110	32	170	50	125
1 **4207** 03	DN 25	1¼	126	41	180	50	125
1 **4207** 04	DN 32	1½	142	50	185	50	125
1 **4207** 05	DN 40	1¾	150	55	185	50	125
1 **4207** 06	DN 50	2⅜	167	70	196	50	125

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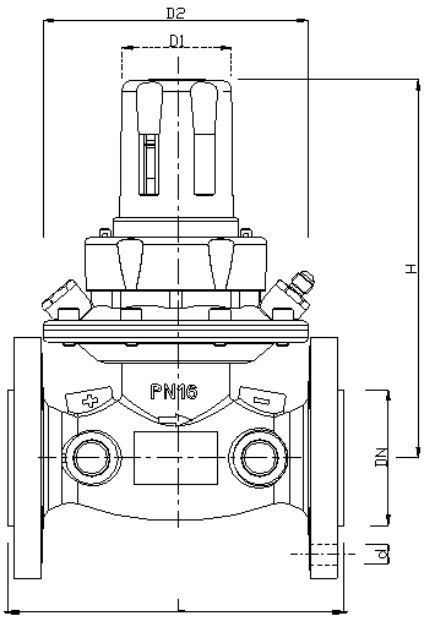


4007 F

Order no. **4007 F**	DN	L	H	D1	D2	d
1 **4007** 13	25	160	180	50	125	14
1 **4007** 14	32	180	185	50	125	19
1 **4007** 15	40	200	185	50	125	19
1 **4007** 16	50	230	196	50	125	19

Model

The differential pressure controller is a straight-version proportional controller and works without auxiliary energy. The required nominal differential pressure can be continuously adjusted from 50 to 300 mbar. The adjusted set point can be read, locked and sealed. The nominal set point is factory preset at minimum. The required set point is adjusted by means of a hand wheel and secured against turning by the block ring. The impulse line (1000 mm) is included with the valve and is connected to a circuit regulating valve in the flow.
It is possible to convert HERZ STRÖMAX valves 4215, 4217, 4415 or 4218AGF to a differential pressure controller.

Other versions

4007 for FWW, 25kPa fixed adjustment

Order no. 4007	DN	Order no. 4007F	DN
1 **4007** 51	15	----------	----------
1 **4007** 52	20	----------	----------
1 **4007** 53	25	1 **4007** 63	25
1 **4007** 54	32	1 **4007** 64	32
1 **4007** 55	40	1 **4007** 65	40
1 **4007** 56	50	1 **4004** 66	50

Operational data

Maximum operating pressure	16 bar
Test pressure	24 bar
Maximum differential pressure on the body	2 bar
Minimum operating temperature	+2 °C (pure water)
Maximum operating temperature	130 °C DN 15 - DN 50
Minimum operating temperature	-20 °C (frost protection, brass body) -10 °C (frost protection, grey cast-iron body)
Maximum operating temperature	120 °C DN 15 - DN 32 110 °C DN40 - DN50

Materials

Valve Body 4007, 4207	Dezincification-resistant brass
Valve Body 4007F	Grey cast iron GJL 250 according to EN 1561

PN16 Flanges to EN 1092
Membrane and O-rings, EPDM
Set point spring in Stainless steel
Water quality according to ÖNORM H 5195 and VDI 2035

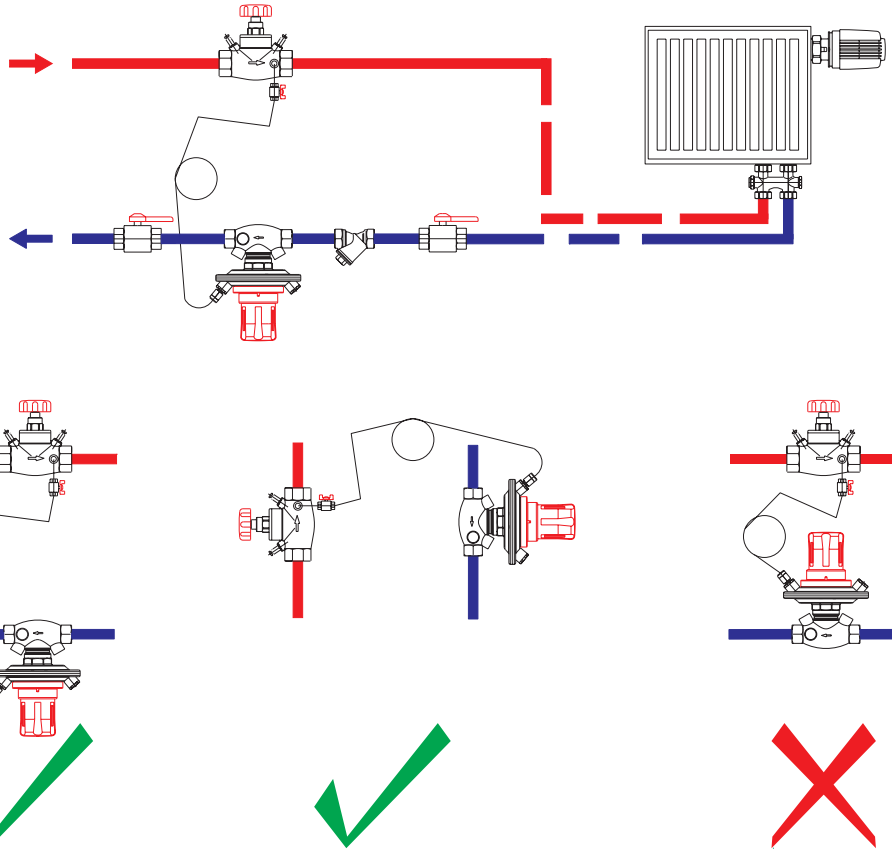
Ethylene and propylene glycol is to be used in a mixing ratio of 15-45 vol. [%].

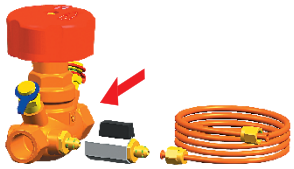
Installation

Installation is carried out in the return flow and it should be hanging or vertical but not standing. The direction of the flow is in the direction of the arrow shown on the body. The impulse should be connected to a flow mounted regulating valve.

Installation of a shut-off valve both in front and behind the differential pressure controller is recommended. Also the on-site use of a ball valve in the impulse line is recommended in order to prevent pressure shocks on the membrane when filling the device.

The differential pressure controller can be isolated using an SW 4 Allen key. It is recommended that the block ring is set to prevent adjustment of the set point during isloation.





Application

For heating and cooling systems, to ensure constant differential pressure constant within the control range.
Reset from HERZ STRÖMAX circuit regulating valves.

kVs values

DN 15	4.8 m^3/h	DN 32	13.2 m^3/h
DN 20	5.9 m^3/h	DN 40	15.6 m^3/h
DN 25	9.5 m^3/h	DN 50	25.2 m^3/h

Accessories and replacement parts

1 **4117** ..	HERZ- STRÖMAX circuit control valves, angle version
1 **4217** ..	HERZ- STRÖMAX circuit control valves, straight version
1 **4125** ..	HERZ shut-off valves, angle version
1 **4115** ..	HERZ shut-off valves, angle version
1 **4215** ..	HERZ shut-off valves, straight version
	plus variants with outside thread connections. Details can be found in the corresponding data sheets.
1 **4218** GMF	HERZ STRÖMAX circuit control valves, straight version, grey cast-iron body and brass upper parts
1 **4218** AGF	HERZ STRÖMAX circuit control valves, straight version, grey cast-iron body and brass upper parts
1 **0276** 00	drain valve, 3/8 with handle and swivel hose connection
1 **0276** 09	drain valve, 1/4 with handle and swivel hose connection
1 **0273** 09	screw plug, 1/4
1 **0273** 00	screw plug, 3/8
1 **4007** 79	control capillary with G 1/4 connections, length 1,000 mm
1 **4007** 80	control capillary with G 1/4 connections, length 1,500 mm
1 **6386** ..	Replacement upper parts for differential pressure controller

Connection accessories Body with threaded ends

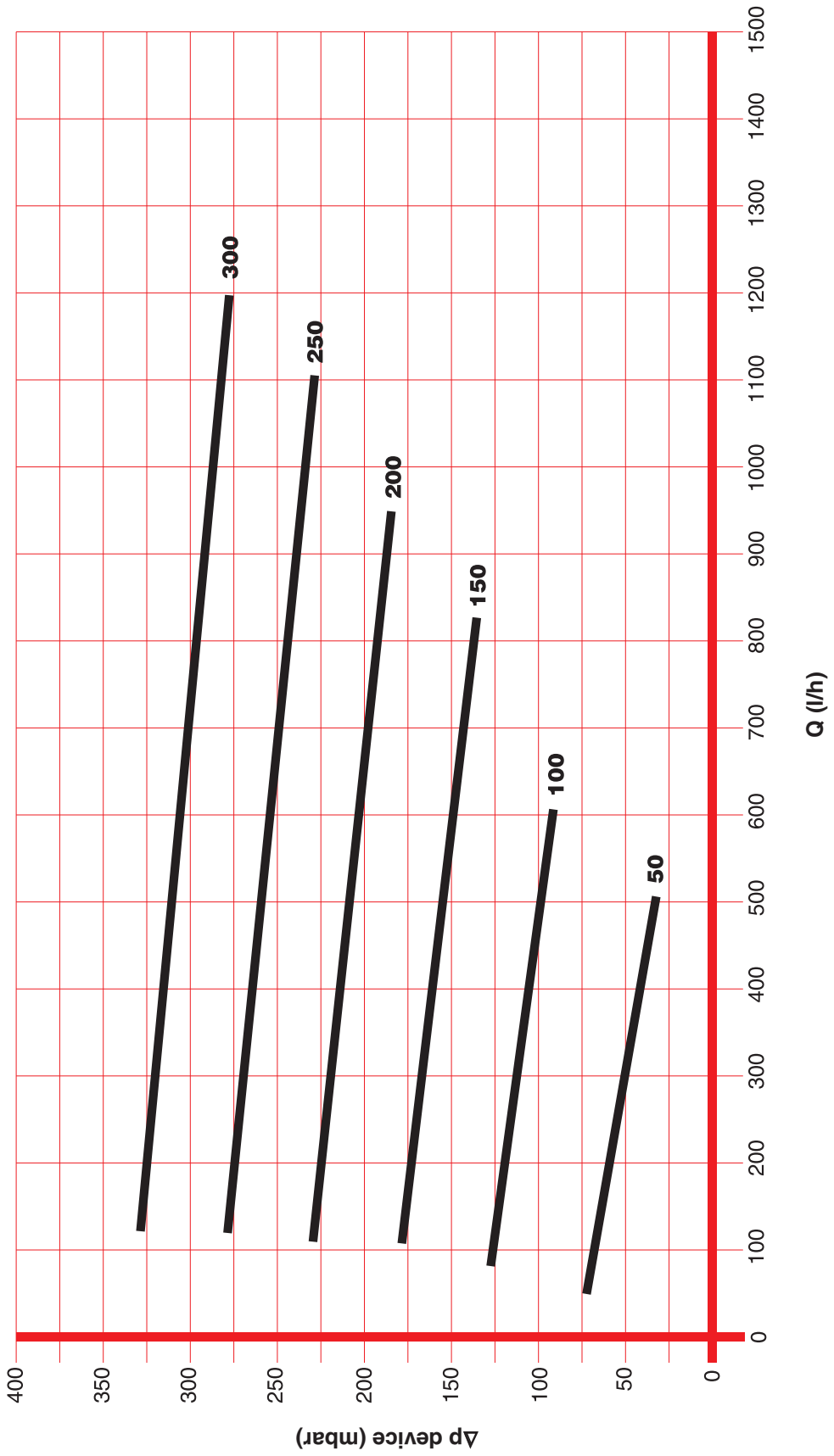
1 **6266** ..	AG R 1/2...R1 coupling piece on AG G 1/2 ...G1 with cone
1 **6272** 01	coupling piece, AG R 1/2 on AG M 22 x 1.5 mm with cone
1 **6092** ..	Plastic pipe connections, G 1/2
1 **6066** ..	Plastic pipe connections, M 22 x 1.5 mm
1 **6098** ..	Plastic pipe connections G 3/4 cone
1 **6294** 01	Compression union, metallically sealed for pipe 15 x 1, nut G 1/2
1 **6284** ..	Compression union, metallically sealed for metal pipes, nut M 22 x 1.5 mm
1 **6286** ..	Compression union, soft sealed for metal pipes, nut M 22 x 1.5 mm
1 **6274** ..	Compression union, metallically sealed for metal pipes, nut G 3/4
1 **6276** ..	Compression union, soft sealed for metal pipes, nut G 3/4

Connection accessories Flat face connections

1 **6220** ..	Iron pipe connection consisting of union nut, sealing and pipe nipple with pipe external thread
1 **6236** ..	Soldered connection, consisting of union screw, sealing and soldered nipple
1 **6240** ..	Welded connection consisting of union nut, sealing and pipe nipple with pipe external thread

HERZ “Pipefix” pipe installation system, d = 10 mm .... 63 mm, consisting of pipes and shaped pieces for heating, cooling and drinking water usage.

HERZ standard diagramm	Differential pressure controller
Item no. **4007 • 4207**	Dim. DN 15, DN 20



We reserve the right to make changes.

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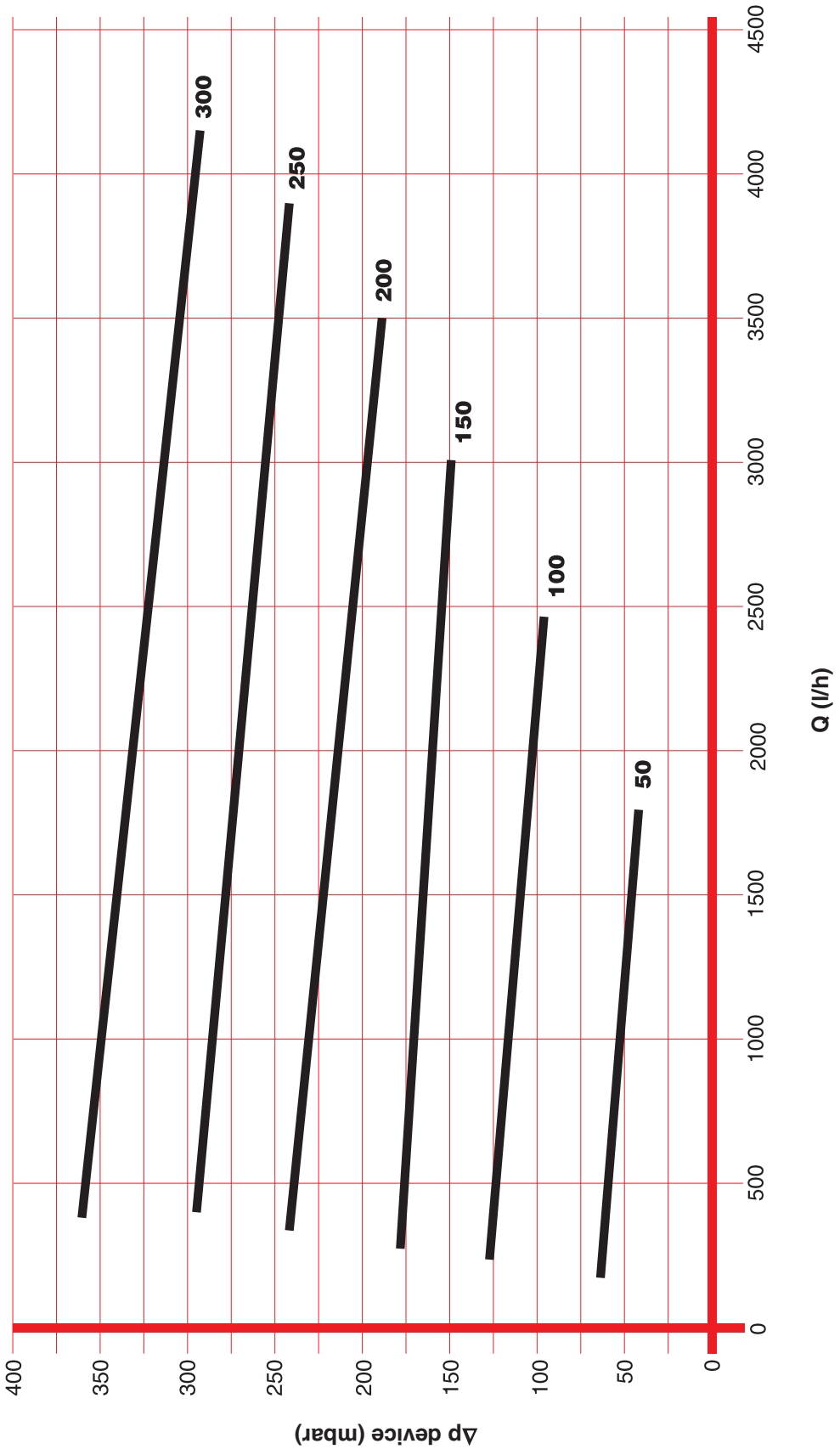
HERZ standard diagramm	Differential pressure controller
Item no. **4007 • 4207 • 4007F**	Dim. DN 25



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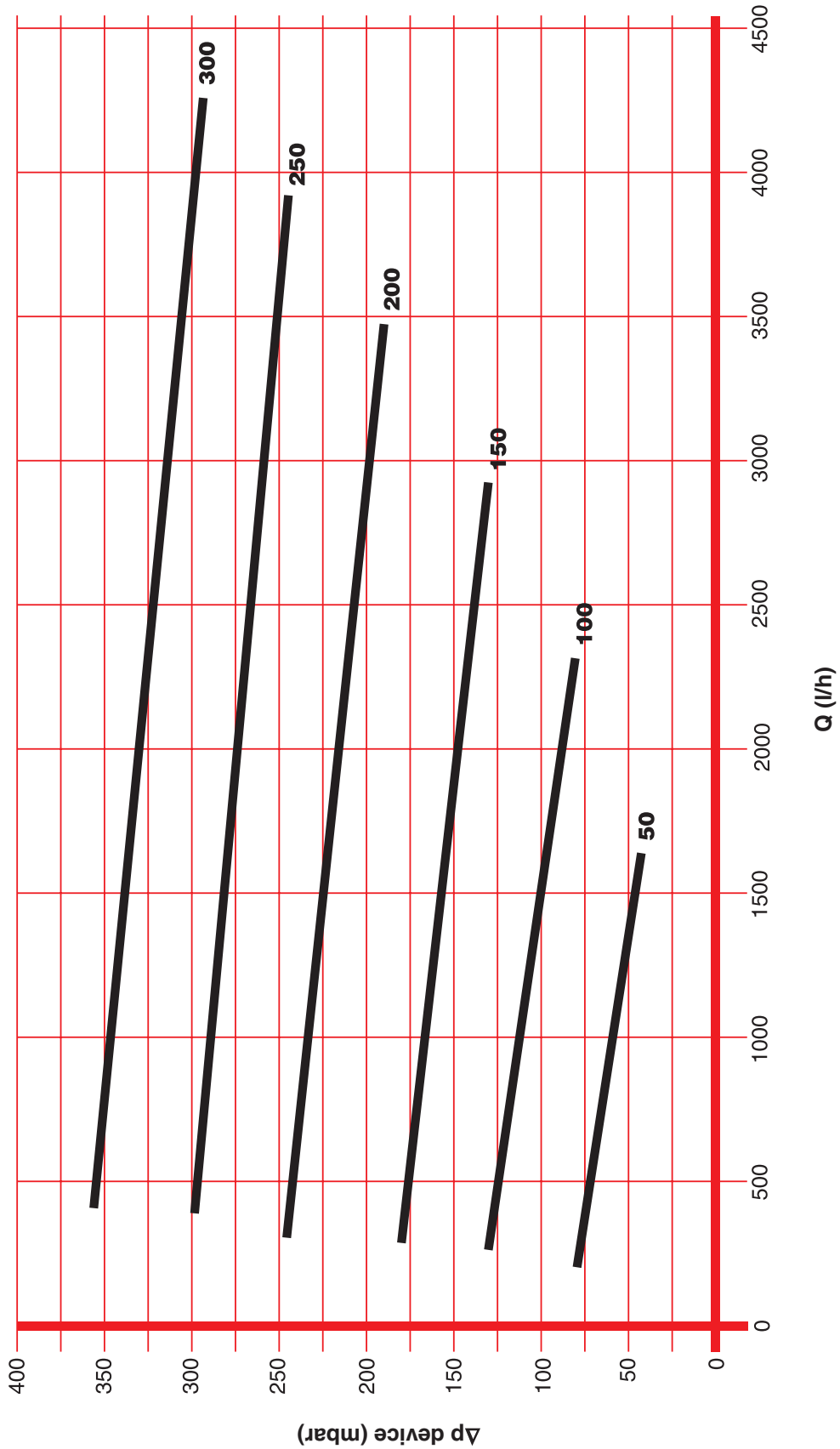
HERZ standard diagramm	Differential pressure controller
Item no. **4007 • 4207 • 4007F**	Dim. DN 32



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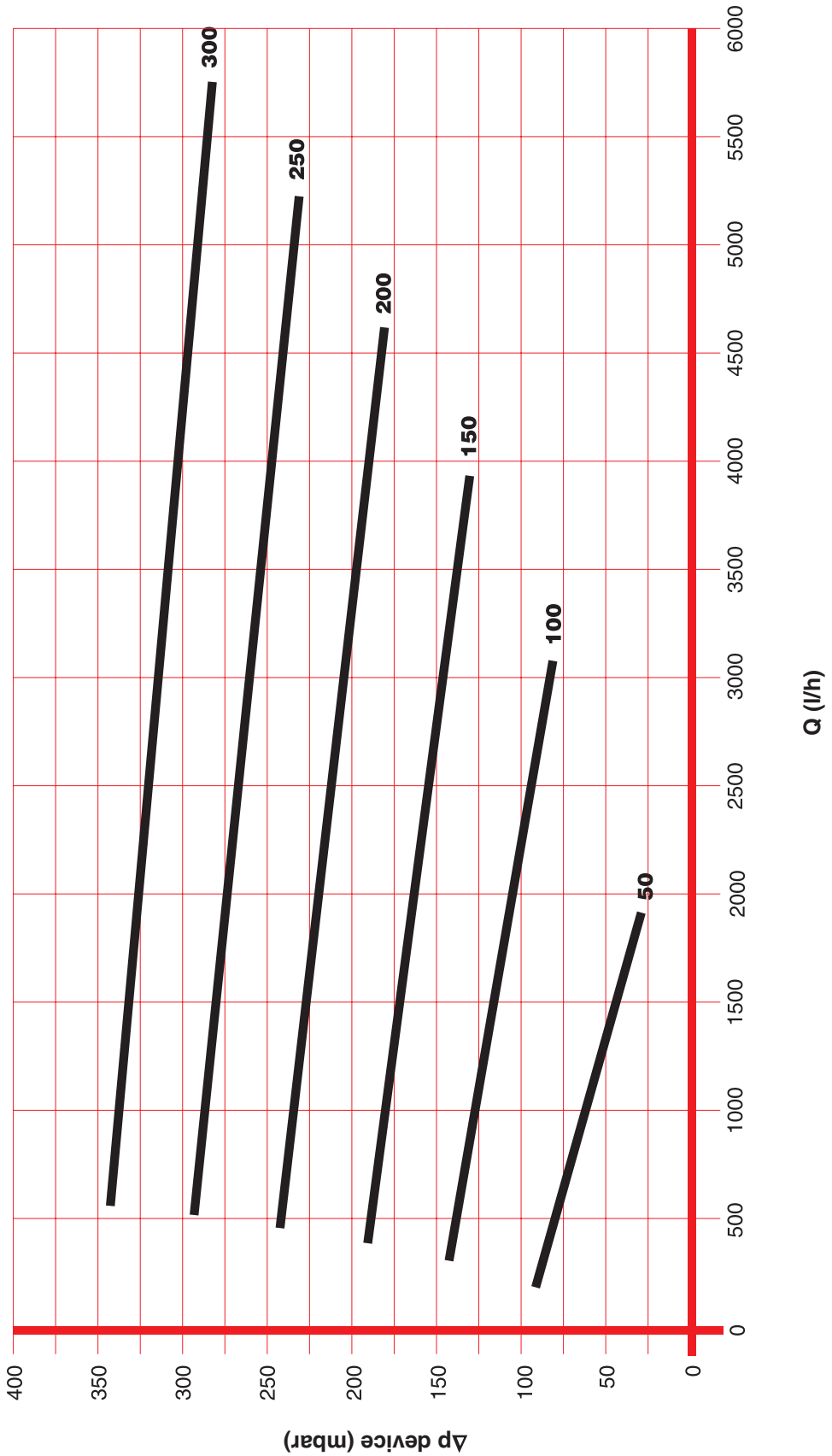
HERZ standard diagramm	Differential pressure controller
Item no. **4007 • 4207 • 4007F**	Dim. DN 40



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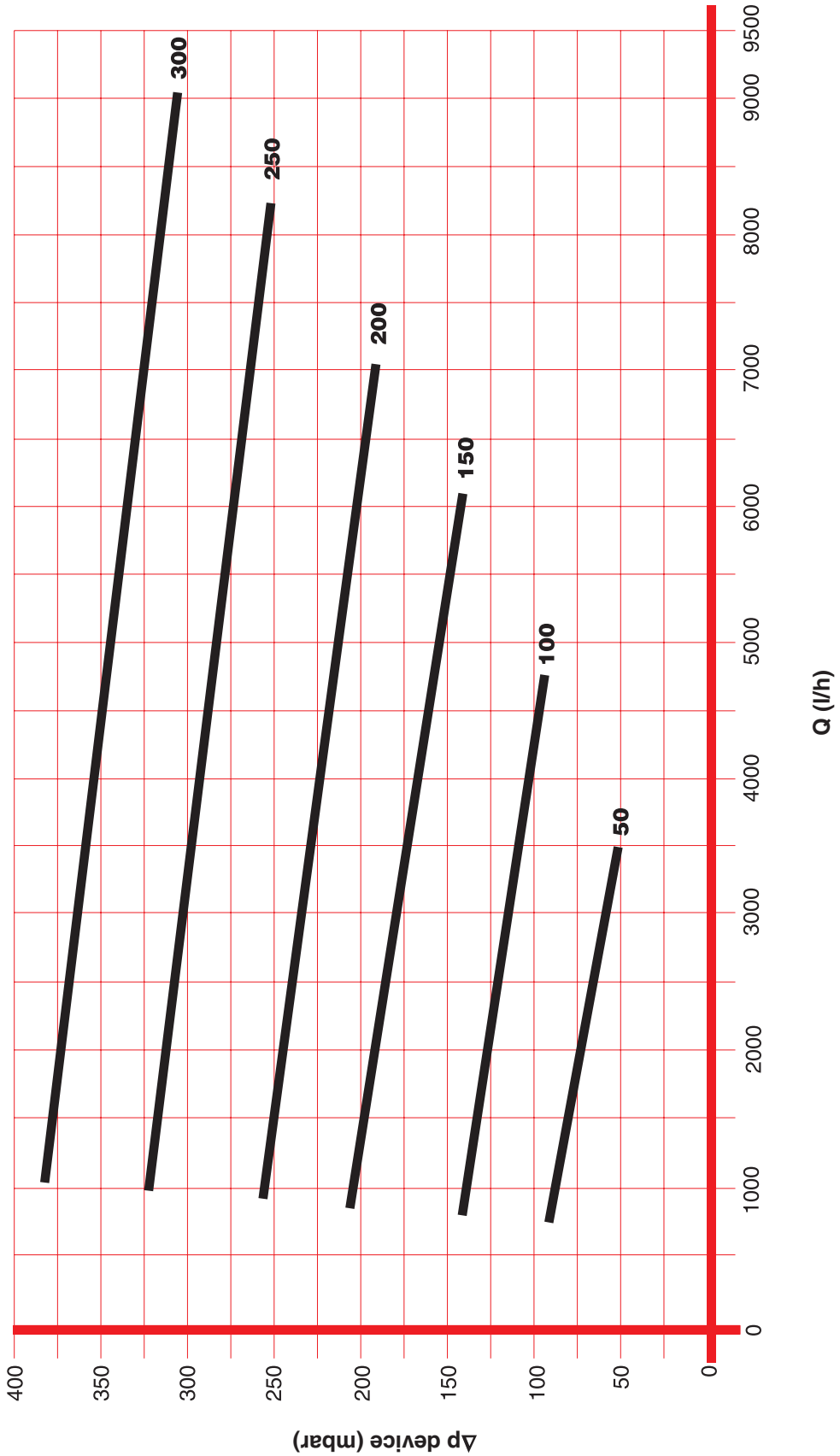
HERZ standard diagramm	Differential pressure controller
Item no. **4007 • 4207 • 4007F**	Dim. DN 50



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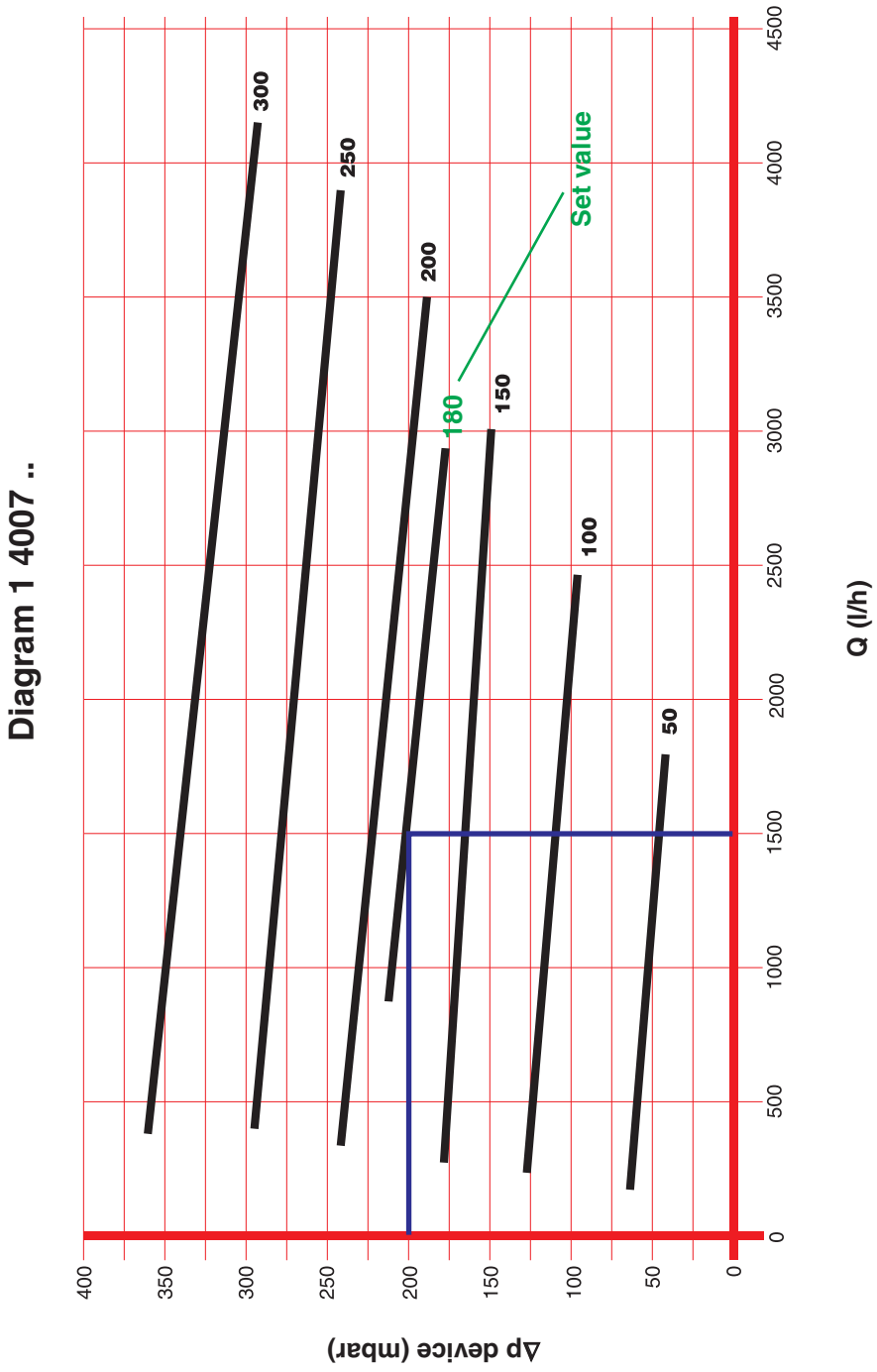
Example: desired differential pressure 200 mbar
Flow rate 1500 l/h

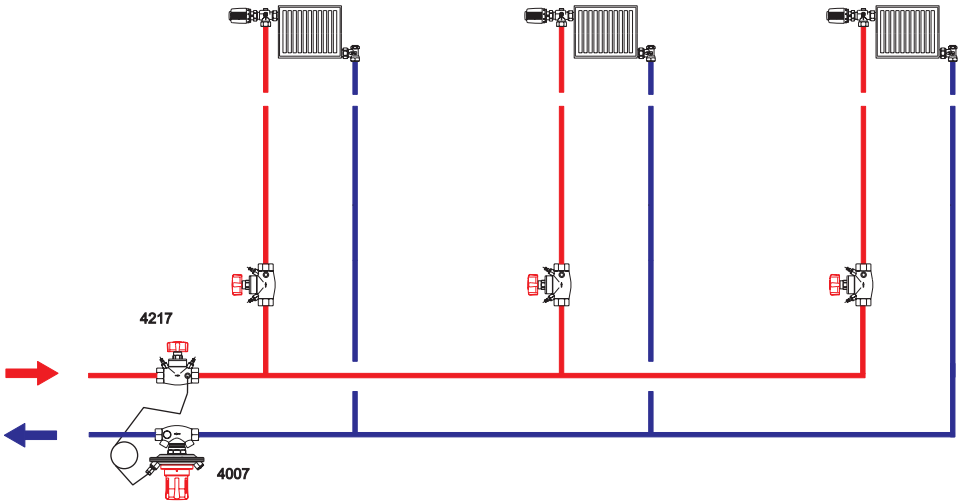
------> Adjustment value on scale **180**

Adjustment value of the scale and equipment differential pressure are congruent for an amount of water.



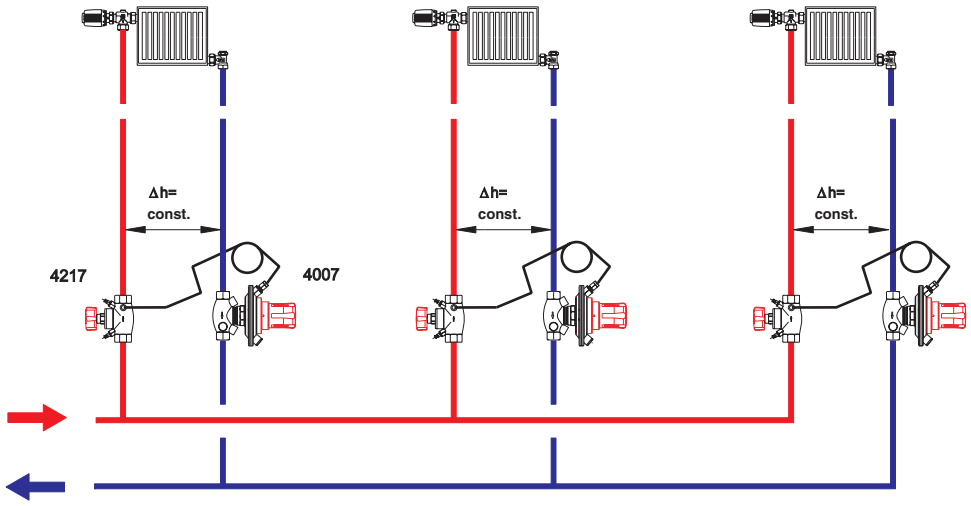
Example 1: Keeping the differential pressure constant in the main pipe

The 4007 differential pressure controller keeps the differential pressure in the supply pipe constant for the consumer. By using circuit control valves 4217 (or 4117- angle design) in the consumer supply pipe, the flow will be limited and the amounts of water can be controlled and measured.



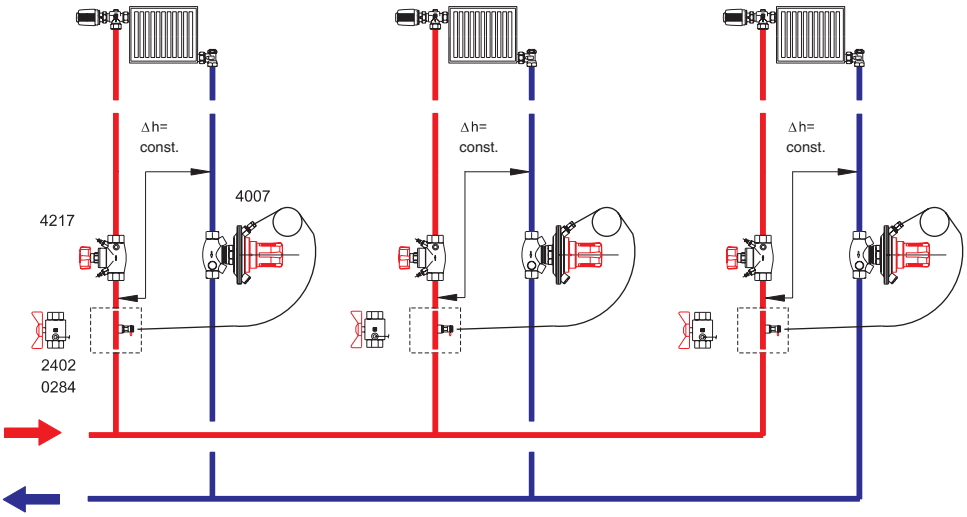
Example 2: Keeping the differential pressure constant in the supply pipe

In equipment with pre-settable (thermostatic) valves the differential pressure is maintained constant despite the fluctuation in flowrate resulting from the TRV's opening and closing.
Circuit control valves 4217 (or 4117) are used as partnering valves and for measuring.



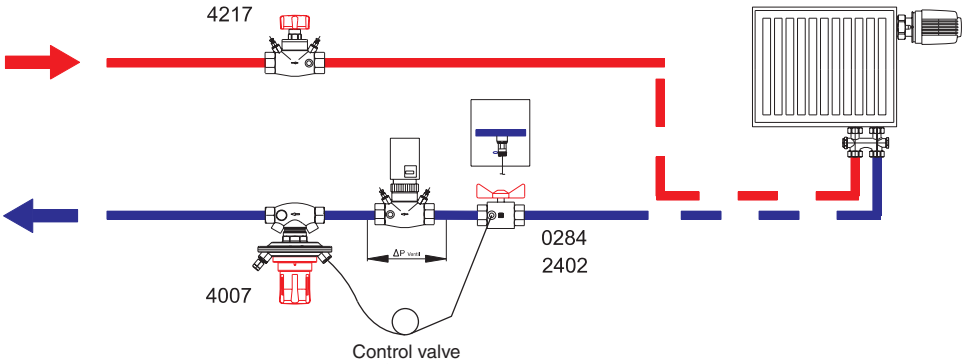
Example 2a: Use in equipment with non-balanced consumers

In systems that are not pre-set, the inflow is adjusted by the circuit control valve, 4217 (or 4117) and is measured using the measuring computer, 8903 (or 8900). The differential pressure is kept constant in the area displayed. This circuit has no effect on water distribution between the individual consumers. The capillary is installed on a test point (0284) for this purpose or on the drain plug of a ball valve (2402).



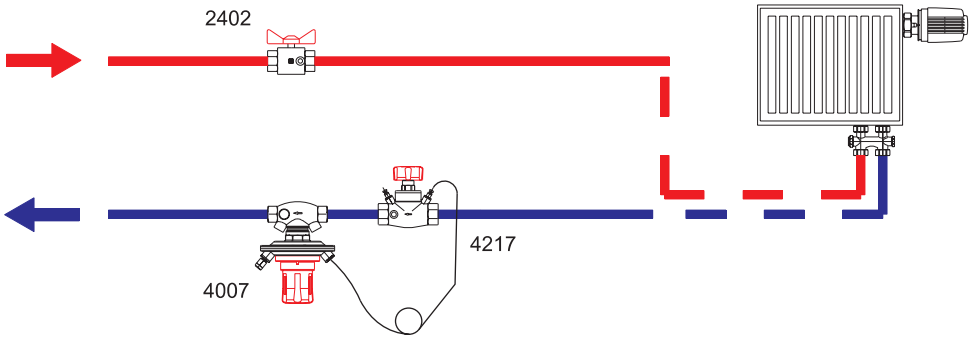
Example 3: Maintaining a constant differential pressure using a control valve

On equipment with large load fluctuations, the differential pressure can be kept constant with this set-up using a control valve. This allows a valve authority of around 1 to be achieved. The nominal flow rate is generated from the drop in pressure in the control valve and the differential pressure set. With the measuring computer, 8903 (or 8900) measurements can be made via the circuit control valve, 4217 (or 4117). The capillary is installed on a test point for this purpose (0284) or to the drain plug of a ball valve (2402).



Example 4: Maintaining a constant volume flow

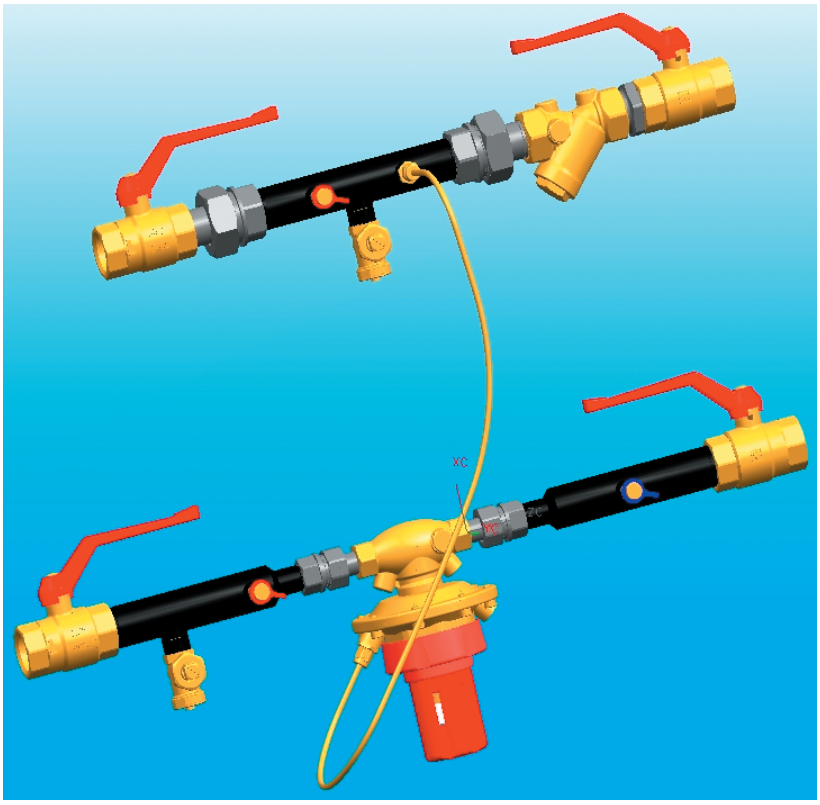
In equipment where a constant volume flow is required, the 4007 differential pressure controller can be combined with a circuit control valve, 4217 (or 4117). A defined drop in pressure occurs via the valve, which the controller tries to keep constant.



Note: All drawings are symbolic in nature and do not claim to be complete

Note:
Ready-made modules can also be used for the circuit connection.
These are pre-installed and contain isolation valves, drain valves, test points and a DP controller

1 **4500** 13	DN 25
1 **4500** 15	DN 40
1 **4500** 16	DN 50



Quick-reference table

Item no.	dim.	l/h without Δp-control mbar	mbar	l/h	kPa
1 4007 01	1/2	1500	100	60 -600 l/h	10
		1900	150	82 -820 l/h	15
		2100	200	95 -950 l/h	20
1 4007 02	3/4	1900	100	60 -600 l/h	10
		2300	150	80 -800 l/h	15
		2600	200	100 -1000 l/h	20
1 4007 03	1	3000	100	240 -2400 l/h	10
		3700	150	300 -3000 l/h	15
		4200	200	350 -3500 l/h	20
1 4007 04	1¼	4400	100	230 -2300 l/h	10
		5400	150	290 -2900 l/h	15
		6300	200	340 -3400 l/h	20
1 4007 05	1½	5100	100	300 -3050 l/h	10
		6200	150	390 -3900 l/h	15
		7200	200	460 -4600 l/h	20
1 4007 06	2	8000	100	770 -4750 l/h	10
		9900	150	830 -6050 l/h	15
		11400	200	900 -7000 l/h	20

l/h	50	80	100	200	300	400	600	800	1000	2300	3000	3500	4000	4500	4750	6000	7000	9000
l/s	0,01	0,02	0,03	0,06	0,08	0,1	0,2	0,2	0,3	0,6	0,8	1,0	1,1	1,3	1,3	1,7	1,9	2,5

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