



AB-PM (DN 40-100)

Pressure difference controller with integrated flow limiter

Description

AB-PM is a combined balancing valve.

It features 4 functions in one compact valve:

1. Differential pressure control
2. Flow limitation
3. Control valve with linear characteristic
4. Zone control

AB-PM is ideal for staged installation and commissioning.

Reliable HVAC system with low total cost of ownership.

Features & benefits

- Design:
 - Easy, fast and flexible HVAC system design
- Construction:
 - Fast installation and easy setting
 - Lower commissioning cost - no need for balancing
 - Faster project with staged handover
- Operation:
 - Perfect balance at all loads
 - Guaranteed flow and Δp for users
 - No problems caused by poor designed/executed user installations
 - Unoccupied zones do not impact other users
 - Flow verification and easy troubleshooting

Applications

Variable flow systems

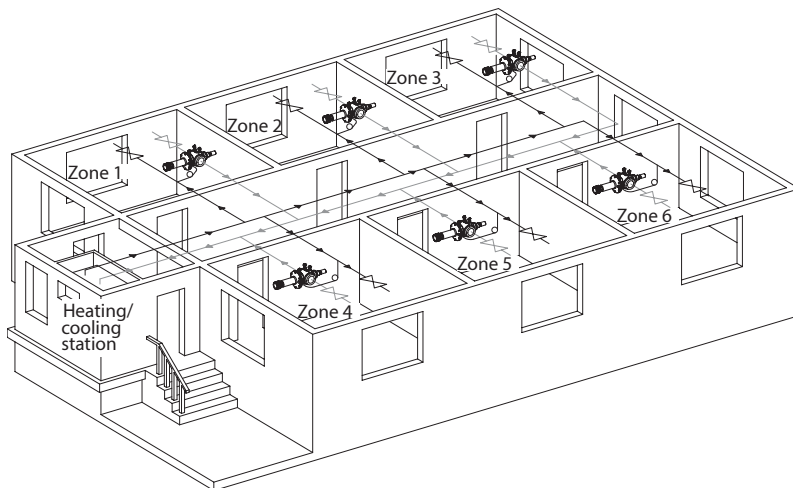
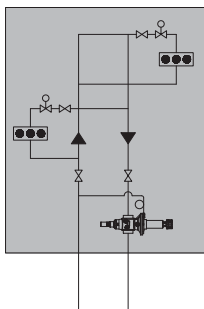


Fig. Staged commissioning – 1st stage : ensuring Δp and flow for each zone

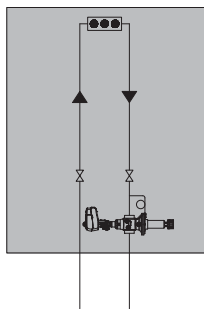
AB-PM DN 40 to 100 is the ideal solution for applications where a so called staged installation, hand over and commissioning is used. In such cases, the 1st stage is installation of backbone piping without terminal units. AB-PM is used as DPCV with flow limitation, ensuring the specified design pressure and flow to each zone. The 2nd stage is then the installation of terminal units.

Typical applications are shopping malls and shell & core office buildings.

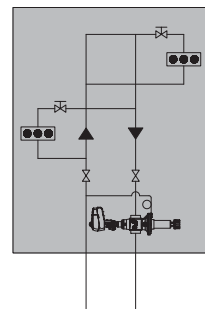
The AB-PM ensures the required flow for each zone and maintains hydronic balance in the system.



DPCV: several fan coils with individual room control



PIBCV: zone control for one terminal unit



DPCV: Zone control for several fan coils

Fig. Staged commissioning – 2nd stage : Installation of terminal units

In the 2nd stage of commissioning the installation of terminal units can be done. Optionally the AB-PM can be changed from differential pressure controller to pressure independent control valve. This allows flexibility when designing the zones. If only one terminal unit is used in the zone, the AB-PM as a PIBCV can be used to control that unit and no additional valves are needed.

Ordering

Product code numbers

AB-PM valve (including 2.5 m impulse tube (G 1/16 A), brass handle (003Z0695) impulse tube connector (003L8151)).

Description	Valve size	Connection types	Code number
AB-PM DN 40, combined automatic balancing valve	DN 40	Flange (EN 1092-2)	003Z1435
AB-PM DN 50, combined automatic balancing valve	DN 50	G 2A	003Z1436
AB-PM DN 65, combined automatic balancing valve	DN 65	PN16/type 21/GI250/B/	003Z1438
AB-PM DN 80, combined automatic balancing valve	DN 80	PN16/type 21/GI250/B/	003Z1439
AB-PM DN 100, combined automatic balancing valve	DN 100	PN16/type 21/GI250/B/	003Z1440
AME 435 QM, 24V AC/DC, 20 mm, actuator for modulating control for AB-QM DN 40-100			082H0171

¹⁾ Actuator type AME 435 QM - for more information see AME 435 QM datasheet

Accessories code numbers



065Z0313

Adapter AMV(E)335/435-VRB/G,VF/L DN15-50

Adapter AMV(E)335/435-VRB/G,VF/L DN15-50



003Z0694

Adapter AMV/E 25 DN 40 - 100

Adapter AMV/E 25 DN 40 - 100



003Z0100

Set of test plugs, needle type (2 pcs.)

Set of test plugs, needle type (2 pcs.)



003Z0106

Set of test plugs, straight, extended (2 pcs., blue + red)

Set of test plugs, straight, extended (2 pcs., blue + red)



003Z0107

Set of measuring needles (2 pcs.)

Set of measuring needles (2 pcs.)



003Z3944

Test plug, elbow, extended (blue)

Test plug, elbow, extended (blue)



003Z3945

Test plug, straight, extended (blue)

Test plug, straight, extended (blue)



003Z0278

Tailpiece with External thread DN 50

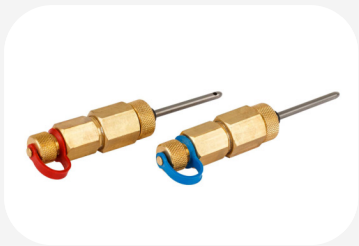
Tailpiece with External thread DN 50



003Z0276

Tailpiece for welding DN 50 (1 pc.)

Tailpiece for welding DN 50 (1 pc.)



003Z3946

Set of extended test plugs, needle type (2 pcs., blue + red)

Set of extended test plugs, needle type (2 pcs., blue + red)



003Z0270

Tailpiece for welding DN 40 (1 pc.)

Tailpiece for welding DN 40 (1 pc.)



003Z0279

Tailpiece with External thread DN 40

Tailpiece with External thread DN 40

Spare parts code numbers



003L5042

Nipple, G1/16-R3/8

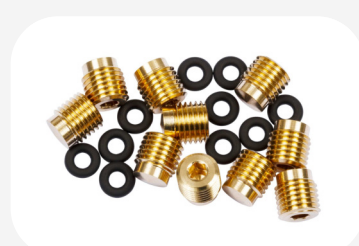
Nipple, G1/16-R3/8



003Z1275

INOX tailpiece for welding DN 40

INOX tailpiece for welding DN 40



003L8174

Plug for impulse tube connection (10 pcs.)

Plug for impulse tube connection (10 pcs.)



003Z0690

Impulse tube with O-rings, 2,5 m

Impulse tube with O-rings, 2,5 m



003Z0695

Handle for AB-QM DN 40 - 100

Handle for AB-QM DN 40 - 100



003L8151

Plug for connecting impulse tube, G1/16-R1/4

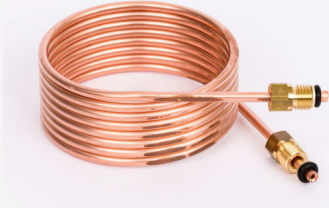
Plug for connecting impulse tube, G1/16-R1/4



003Z0689

Plastic impulse tube with connectors and adapters, 1,5 m, Industry pack

Plastic impulse tube with connectors and adapters, 1,5 m, Industry pack



003L8152

Impulse tube with O-rings, 1,5 m

Impulse tube with O-rings, 1,5 m



003Z0691

1/4" combined impulse tube adapter for large ASV

1/4" combined impulse tube adapter for large ASV



003L8153

Impulse tube with O-rings, 5 m

Impulse tube with O-rings, 5 m



003L8175

O-ring for impulse tube (10 pcs.)

O-ring for impulse tube (10 pcs.)



003Z0109

Impulse tube adapter

Impulse tube adapter



003Z1276

INOX tailpiece for welding DN 50

INOX tailpiece for welding DN 50

Functions

Flow verification / trouble shooting

To verify that an installation functions per the design specifications the AB-PM (DN 40-100) has test plugs that allow measuring of the pressure difference Δp_r or Δp_{cv} across the valve. In this way the pressure difference and flow can be verified for handover or troubleshooting.

At handover of the base building when the HVAC design conditions are specified but components are not yet installed in the zone, the differential pressure and flow for the valve and loop can only be verified by installing a bypass with the same dp as specified for the zone. For quick hand over, without flow verification, the calculated dp can be pre-set on the valve for the dp and flow demand of the loop.

In the 2nd stage of commissioning when the HVAC system has been installed in the zone, the differential pressure and flow can be verified for handover and troubleshooting.

The differential pressure can be measured using the following methods:

DPCV: Measure differential pressure from AB-PM to installed partner valve ($\Delta p_r = p_0 - p_1$).

PIBCV: Measure the differential pressure across the control valve ($\Delta p_{cv} = p_1 - p_2$).

To calculate the flow below formulas are used:

DPCV:

$$\Delta p_r = p_0 - p_1$$

$$Q = k_{v_{cv}} \times \sqrt{\Delta p_r}$$

PIBCV:

$$\Delta p_{cv} = p_1 - p_2$$

$$Q = k_{v_{cv}} \times \sqrt{\Delta p_{cv}}$$

For $k_{v_{cv}}$ values see datasheet "AB-QM flow checker DN 40-250"

For trouble shooting the available pressure can be verified, Closing the AB-PM valve fully and measuring $p_0 - p_2$.

Verifying the pressure and flow can be done by using Danfoss PFM or other dp measuring devices (select valve type: AB-QM).

Operation

Commissioning

When filling the system make sure to open the supply valve before opening the return valve. The pressure on the upper side of the membrane (impulse tube) should always be higher than the pressure on the lower side of the membrane (at the valve) .

Flush the impulse tube and ensure the HVAC system is de-aired before starting the system.

For the setting procedure please refer to the operating instructions enclosed with the product.

It is recommended that an FV filter be installed in the system supply pipe.

Settings

The AB-PM valves are factory preset to min. Δp setting with 100% flow.
 For changing the setting please use the following procedure:

Setting the desired differential pressure:

the setting on the AB-PM can be changed by turning the setting spindle to allow higher differential pressure. Turning the spindle clockwise increases the setting; turning it counter clockwise reduces the setting.

If the setting is not known, turn the spindle fully clockwise. With this the setting on AB-PM is at maximum value within setting range. Now turn the spindle backwards a number of times (n) (see figures AB-PM DN 40-50 or AB-PM DN 65-100 in the "Design" chapter) until the required differential pressure setting is obtained.



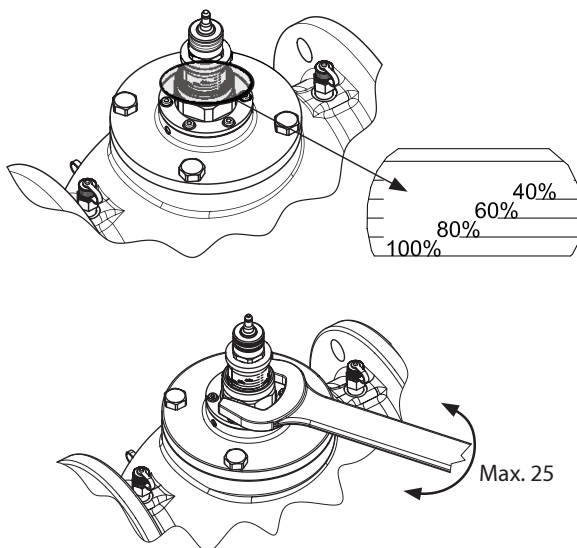
Fig. Setting of differential pressure is done with standard tool

Adjusting the flow limitation:

To give lower flow than factory setting the % scale on the AB-PM need to be adjusted according to sizing diagrams. The calculated flow can be adjusted easily with a standard tool. The presetting scale indicates values from 100 % flow to 40 %. Clock wise turning would decrease the flow value while counter clock wise would increase it.

Danfoss recommends a presetting/flow from 40 % to 100 %. Factory presetting is 100 %.

DN	Wrench	
40-50	50	
65-100	42	



* one turn is 10%

Fig. Setting of flow limitation with standard tool

Product details

General data

Technical data

Nominal diameter	DN	40	50	65	80	100
Q _{nom} factory setting (Δp_r 25 kPa)	l/h	5000	6500	16800	19600	21000
Min. differential pressure (Δp_a), Factory setting ^{*)}	kPa	42		60		
Setting range ^{1), 2)}	Flow %	40-100				
	Δp setting	0-20 turns		0-40 turns		
Nominal maximal pressure	bar	16 (PN16)				
Max. pressure drop		4				
Control valve characteristics		Linear				
Shut-off leakage rate		Acc. to ISO 5208 class A - no visible leakage				
CV stroke	mm	10	10	15	15	15
Connection		External thread (ISO 228/1) G2A		Flange (EN 1092-2)		
Connection actuator		Danfoss standard				
Flow medium		Water and water mixture for closed heating and cooling systems according to plant type I for DIN EN 14868. When used in plant Type II for DIN EN 14868 appropriate protective measures are taken. The requirements of VDI 2035, part 1 + 2 are observed.				
Medium temperature	°C	-10 ... 120				

^{*)} For other settings see table for Min. differential pressure (Δp_a)

¹⁾ Factory setting see fig. under the chapter Design,

²⁾ Regardless of the setting, the valve can modulate below 1% of set flow.



Sizing

AB-PM is to be sized based on the needed flow (Q) and the needed differential pressure drop for the zone (Δp_z). Max flow / Δp_z for all sizes are presented in the sizing guide in fig. below. When pipe dimension has been selected, specific sizing, selection and setting can be identified based on Q and Δp_z . Alternatively tables below can be used for AB-PM sizing as well.

For needed flow and differential pressure outside specified in graphs and tables, setting can be calculated by linear distribution of setting.

For minimum needed available differential pressure (Δp_a) at Q nominal see the *Min. differential pressure (Δp_a)* table.

Sizing graph - ΔP / max. flow

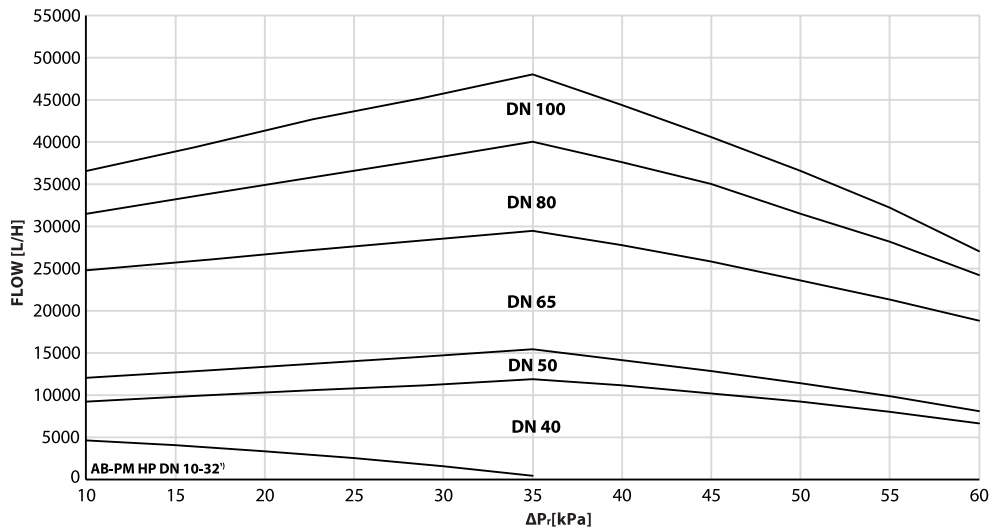


Fig.

¹⁾See datasheet AB-PM DN 10-32



DN 40

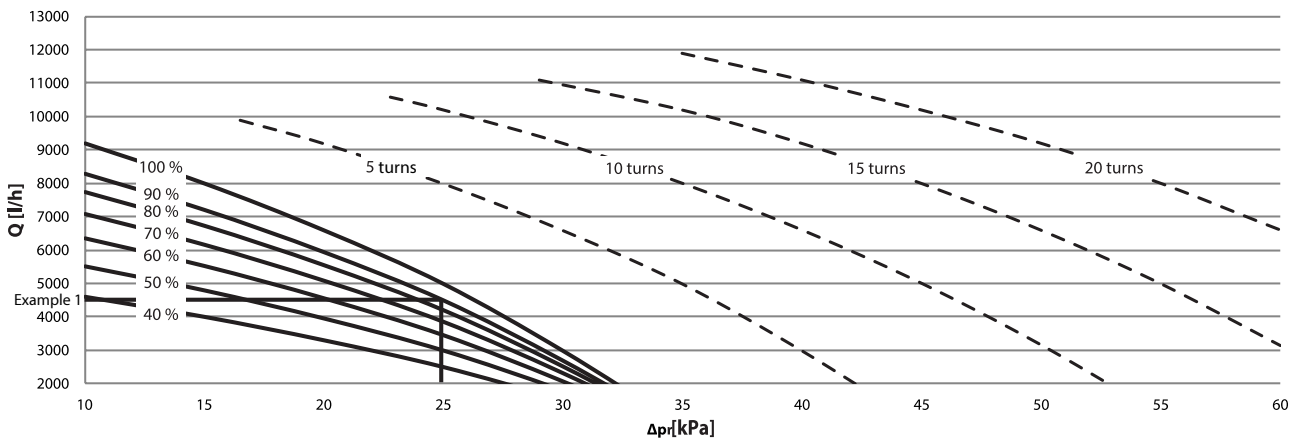


Fig.

Example 1

Given : Design flow to zone 4200 l/h, pressure drop over the zone at design flow 25 kPa.

Solution: AB-PM DN 40 is selected. Δp setting is kept at factory setting and flow limitation is changed to 80 %. AB-PM will control differential pressure of 25 kPa when design flow is achieved and the flow to the zone will be limited to 4200 l/h

DN 40	Flow limitation on Δp factory setting						Factory setting	Δp setting [kPa]				
	Δp_r [kPa]	40%	50%	60%	70%	80%		90%	100%/0 turns	5 turns	10 turns	15 turns
Q [l/h]												
10	4600	5520	6348	7084	7728	8280	9200					
15	4000	4800	5520	6160	6720	7200	8000					
20	3300	3960	4554	5082	5544	5940	6600	9200				
25	2500	3000	3450	3850	4200	4500	5000	8000	10200			
30			2070	2310	2520	2700	3000	6600	9200	11100		
35								5000	8000	10200	11900	
40								3000	6600	9200	11100	
45									5000	8000	10200	
50									3150	6600	9200	
55										5000	8000	
60										3150	6600	



DN 50

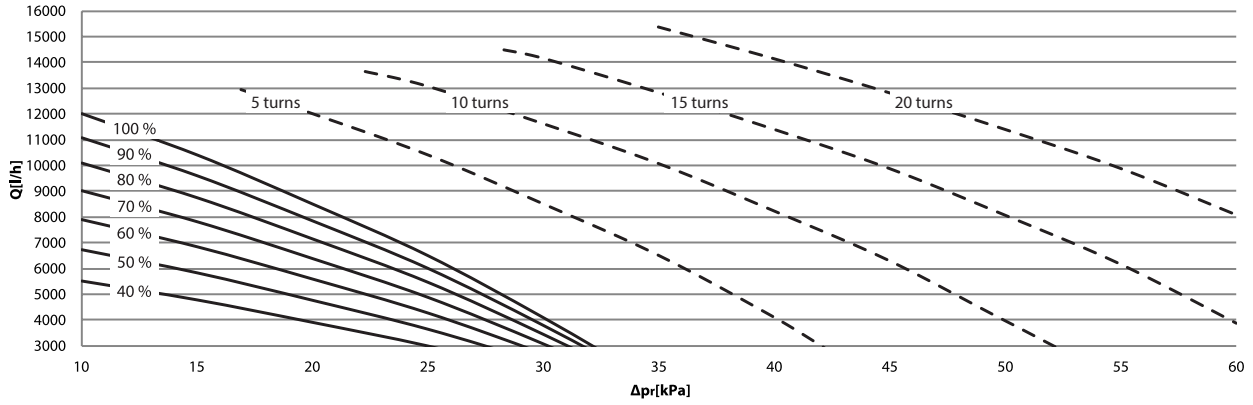


Fig.

DN 50	Flow limitation on Δp factory setting						Factory setting	Δp setting [kPa]				
	Δp_r [kPa]	40%	50%	60%	70%	80%		90%	100%/0 turns	5 turns	10 turns	15 turns
Q [l/h]												
10	5520	6750	7920	9030	10080	11070	12000					
15	4784	5850	6864	7826	8736	9594	10400					
20	3910	4781	5610	6396	7140	7841	8500	12000				
25		3656	4290	4891	5460	5996	6500	10400	13095			
30				3085	3444	3782	4100	8500	11640	14155		
35								6500	10088	12825	15390	
40								4100	8245	11400	14155	
45									6305	9880	12825	
50									3977	8075	11400	
55											6175	9880
60											3895	8075



DN 65

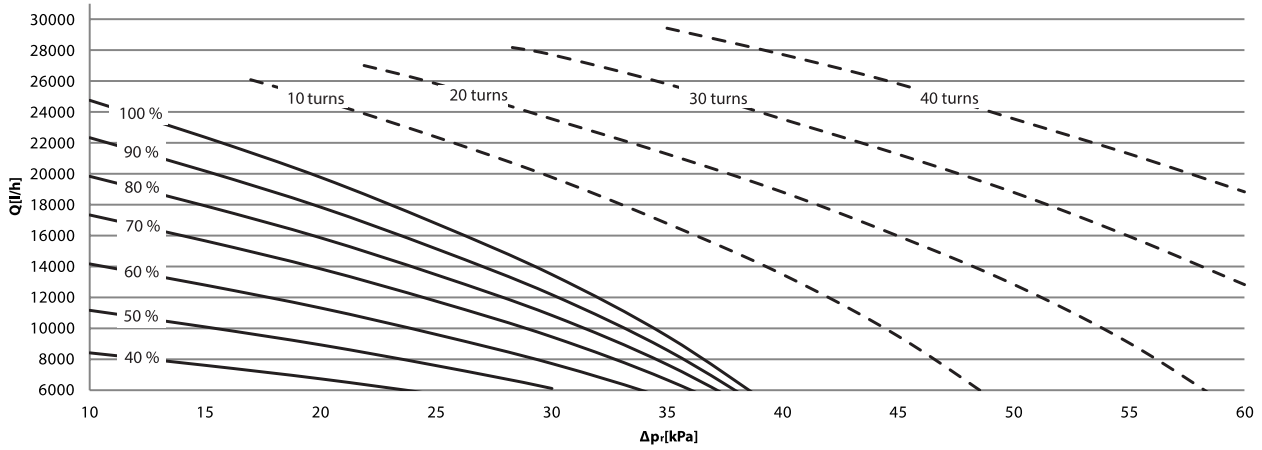


Fig.

DN 65	Flow limitation on Δp factory setting						Factory setting	Δp setting [kPa]				
	Δp_r [kPa]	40%	50%	60%	70%	80%		90%	100%/0 turns	10 turns	20 turns	30 turns
Q [l/h]												
10	8432	11160	14136	17360	19840	22320	24800					
15	7616	10080	12768	15680	17920	20160	22400					
20	6732	8910	11286	13860	15840	17820	19800	24800				
25		7560	9576	11760	13440	15120	16800	22400	25840			
30		6075	7695	9450	10800	12150	13500	19800	23560	27740		
35				6650	7600	8550	9500	16800	21280	25840	29450	
40								13500	18810	23560	27740	
45								9500	15960	21280	25840	
50									12825	18810	23560	
55									9025	15960	21280	
60										12825	18810	



DN 80

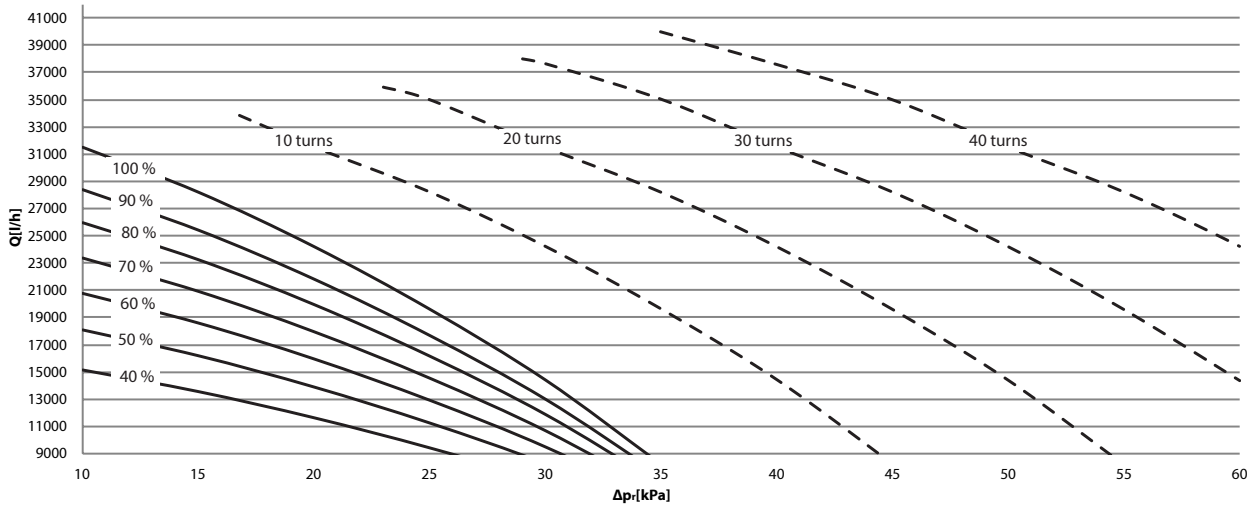


Fig.

DN 80	Flow limitation on Δp factory setting						Factory setting	Δp setting [kPa]				
	Δp_r [kPa]	40%	50%	60%	70%	80%		90%	100%/0 turns	10 turns	20 turns	30 turns
Q [l/h]												
10	15120	18113	20790	23373	25956	28350	31500					
15	13536	16215	18612	20924	23237	25380	28200					
20	11616	13915	15972	17956	19941	21780	24200	31500				
25	9408	11270	12936	14543	16150	17640	19600	28200	35000			
30			9504	10685	11866	12960	14400	24200	31500	37600		
35								19600	28200	35000	40000	
40								14400	24200	31500	37600	
45									19600	28200	35000	
50									14400	24200	31500	
55										19600	28200	
60										14400	24200	



DN 100

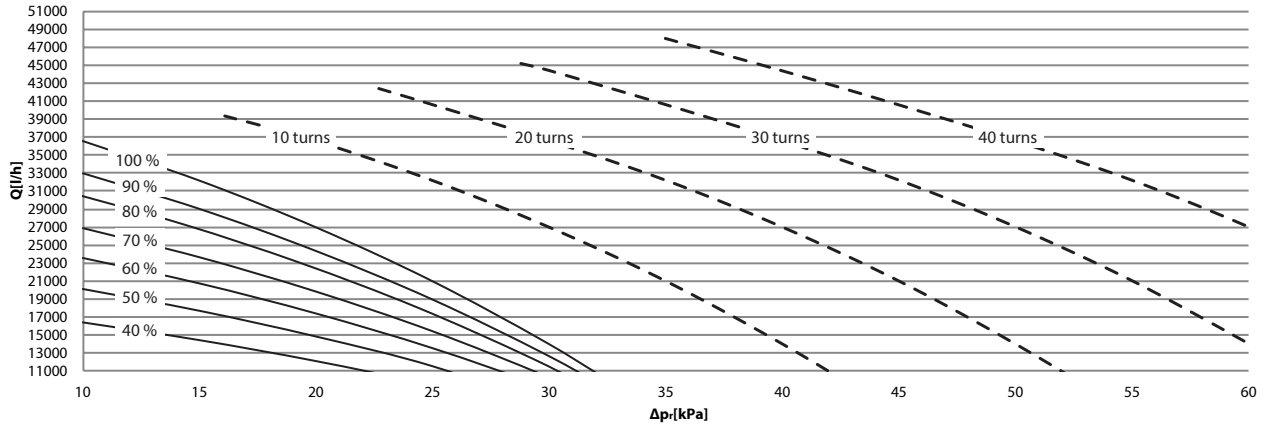
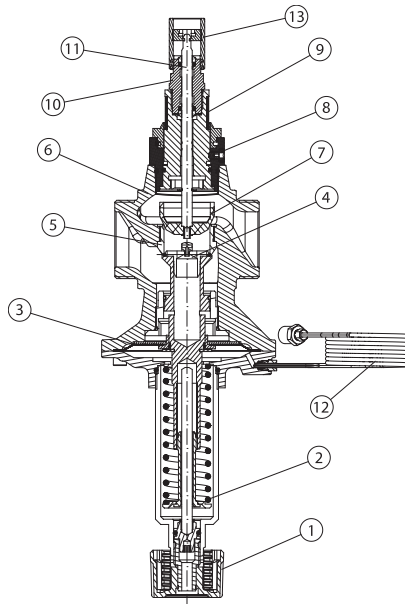


Fig.

DN 100	Flow limitation on Δp factory setting						Factory setting	Δp setting [kPa]				
	Δp_r [kPa]	40%	50%	60%	70%	80%		90%	100%/0 turns	10 turns	20 turns	30 turns
Q [l/h]												
10	16470	20130	23607	26901	30012	32940	36600					
15	14490	17710	20769	23667	26404	28980	32200					
20	12150	14850	17415	19845	22140	24300	27000	36600				
25			13545	15435	17220	18900	21000	32200	40600			
30					11480	12600	14000	27000	36600	44400		
35								21000	32200	40600	48000	
40								14000	27000	36600	44400	
45									21000	32200	40600	
50									14000	27000	36600	
55										21000	32200	
60										14000	27000	

Design

1. Shut off knob
2. Differential pressure setting spindle
3. Membrane
4. DP cone
5. Seat
6. Valve body
7. Control valve cone
8. Locking screw
9. Scale
10. Stuffing box
11. Spindle
12. Impulse tube
13. Brass handle



DN	40	50
	5	5

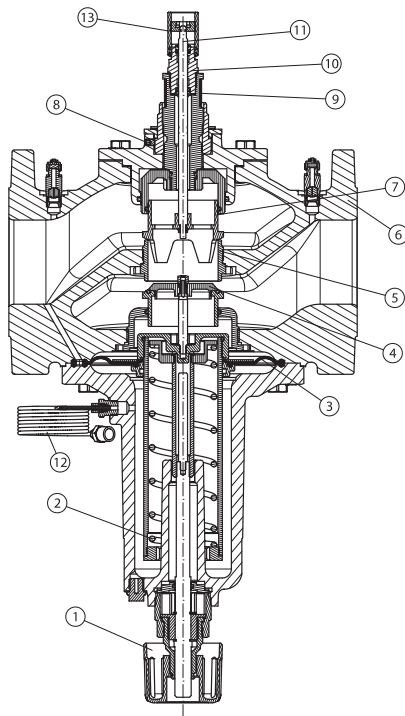
Factory presetting	DN 40-50
Δp setting	min. setting (0 turns)
Flow %	100%

n (turns)	Δp setting
0 turns	Min. setting (factory setting)
...	...
20 turns	Max. setting

Do not turn the spindle more than 20 turns as it will become disengaged.

Fig. AB-PM DN 40-50

1. Shut off knob
2. Differential pressure setting spindle
3. Membrane
4. DP cone
5. Seat
6. Valve body
7. Control valve cone
8. Locking screw
9. Scale
10. Stuffing box
11. Spindle
12. Impulse tube
13. Brass handle



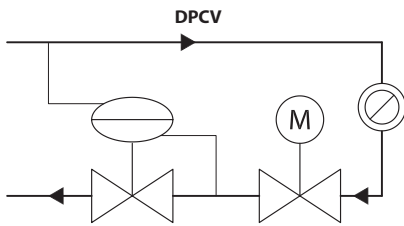
n (turns)	Δp setting
0	Min. setting (factory setting)
...	...
40	Max. setting

Factory presetting	DN 65-100
Δp setting	min. setting (0 turns)
Flow %	100%

DN	65	80	100	DN	65	80	100
	42				13	23	

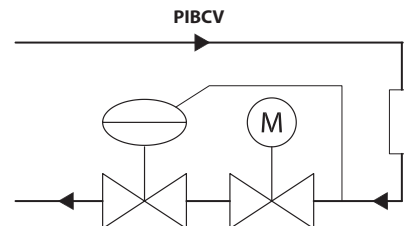
Do not turn the spindle more than 40 turns as it will become disengaged.

Fig. AB-PM DN 65-100



AB-PM is a combined automatic balancing valve. It works as differential pressure controller (DPCV) or pressure independent control valve (PIBCV), flow limiter and zone controller/control valve. As DPCV it keeps a constant differential pressure over the control loop and when installed as a PIBCV it keeps the pressure constant over the control valve ensuring it full authority.

Higher pressure acts on the lower side of the control membrane (3) via an impulse tube (12) while the lower pressure in the return pipe acts on the upper side of the membrane (use either membrane or diaphragm. Do not mix these two, it will help clarity). When available pressure increases at partial loads, the membrane closes and thus keeps the differential pressure stable.



The control part of AB-PM is working as a flow limiter. This enables to set a required combination of the design flow as well as the needed Δp . By presetting the AB-PM, the flow rate is defined based on the pressure demand of the loop or terminal unit.

With an actuator mounted on the valve, AB-PM can be used as a zone valve. When the AB-PM is converted to a PICV it can be used, together with an actuator, as a full authority control valve with either a linear or a logarithmic characteristic.

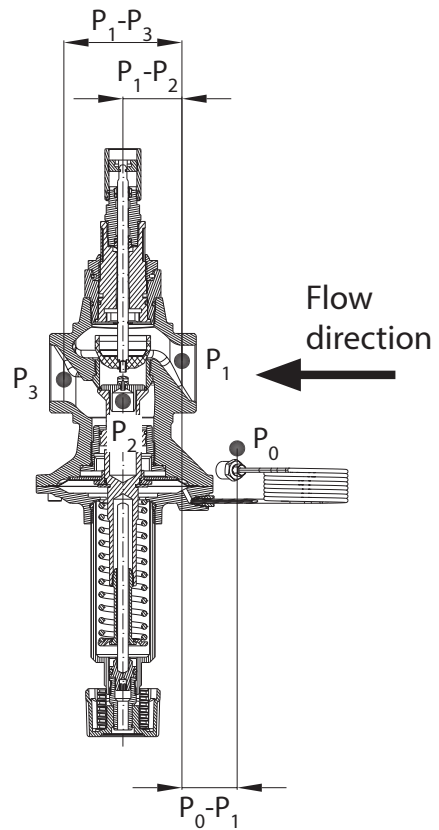
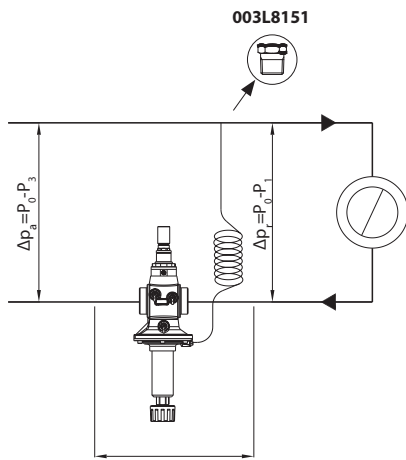
Materials

Materials in water

Body	Cast iron EN-GJL 250 (GG 25)
Membrane and O-rings	EPDM
Springs	W.Nr. 1.4568, W.Nr. 1.4310
Cone (Pc)	CuZn40Pb3 -CW 614N, W.Nr. 1.4305
Seat (Pc)/(Cv)	W.Nr. 1.4305
Cone (Cv)	CuZn40Pb3 -CW 614N
Screw	Stainless steel (A2)
Flat gasket	NBR
Sealing agent (for test plugs)	Dimenthrylate Ester

Pressure and temperature data

Differential pressure legend



Q = needed design flow for the loop

Δp_r = needed differential pressure for the loop

Δp_v = differential pressure on AB-PM

Δp_a = min. needed differential pressure over both AB-PM and loop

$$\Delta p_a = \Delta p_v + \Delta p_r$$

$$\Delta p_v = p_1 - p_3$$

$$\Delta p_r = p_0 - p_1 \text{ (as DPCV)}$$

$$\Delta p_{cv} = p_1 - p_2 \text{ (as PIBCV for flow validation)}$$

$$\Delta p_a = p_0 - p_3$$

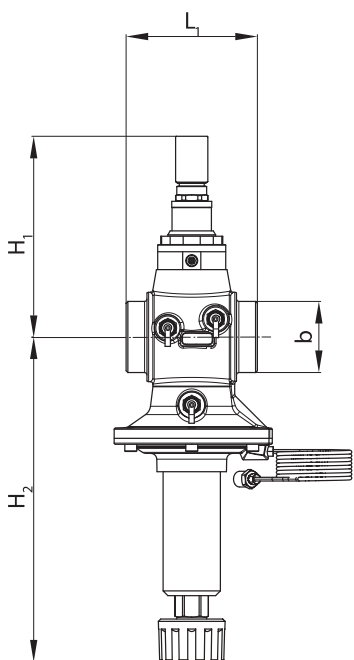
Fig. Differential pressure legend

Min. differential pressure (Δp_a)

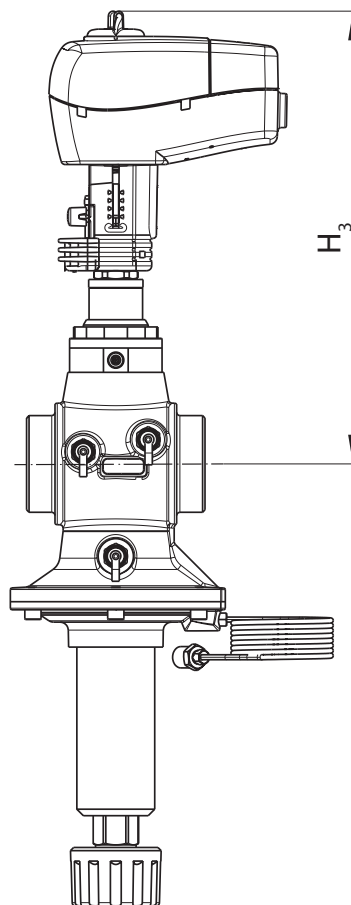
Nominal diameter	\leq Factory setting		Δp setting ¹⁾			
	$\leq 100\%$ / 0 turns	5 turns ($\Delta p_r \geq 20$ kPa)	10 turns ($\Delta p_r \geq 25$ kPa)	15 turns ($\Delta p_r \geq 30$ kPa)	20 turns ($\Delta p_r \geq 35$ kPa)	
		Δp_a [kPa]				
DN40	42	52	63	74	85	
DN50	42	52	63	74	85	
DN65	60	72	83	94	105	
DN80	60	72	83	94	105	
DN100	60	72	83	94	105	

¹⁾If application requires less dpr for valve will be higher so flow validation across valve is needed in order to increase.

Dimensions

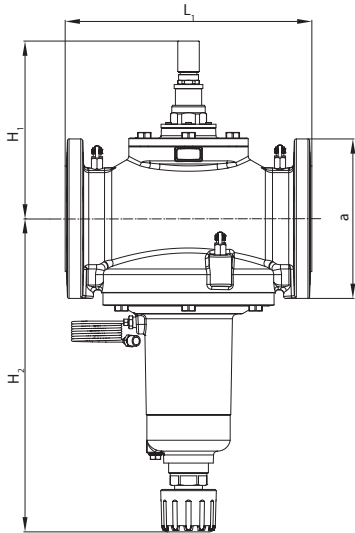


AB-PM DN 40, 50

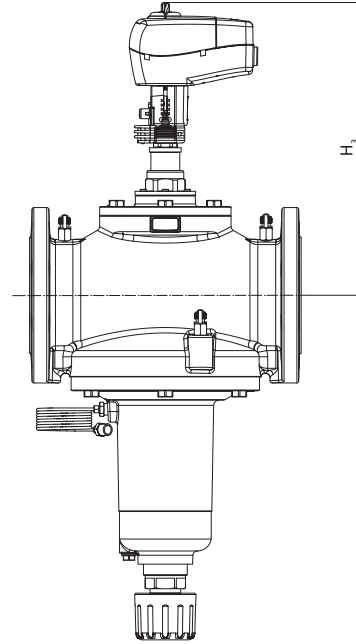


AB-PM + AME 435 QM

Type	L_1	H_1	H_2	H_3	b	Weight (kg)
	mm					
DN40	110	168	273	280	G 2 (ISO228/1)	6.9
DN50	130				G 2 ½ (ISO228/1)	7.8



AB-PM DN 65-100



AB-PM + AME 435 QM

Type	L ₁	H ₁	H ₂	H ₃	a (EN 1092-2)	Weight (kg)
	mm					
DN 65	290	218	388	330	185	41
DN 80	310	223	393	335	200	46
DN 100	350	239	451	350	220	64

Installation

Mounting

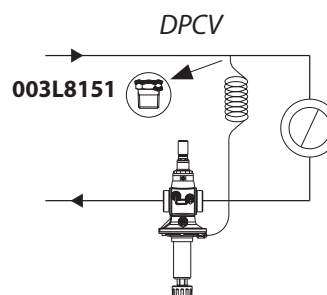
AB-PM DN 40-100 should be mounted in the return pipe. The arrow on the valve body should correspond with the flow direction of the medium. The impulse tube should be connected to the supply pipe using the included $\frac{1}{4}$ "- $\frac{1}{16}$ " adaptor (**003L8151**).

Alternatively, the impulse tube can be connected to a partner valve, such as ASV-BD or MSV-F2 ¹⁾. Using a partner valve offers additional service/troubleshooting functions such as flow verification, shut-off etc.

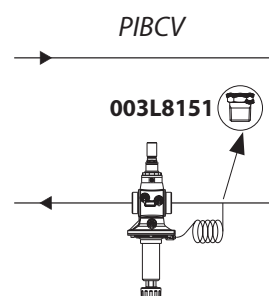
If the impulse tube is connected to the supply pipe the AB-PM functions as a differential pressure controller with flow limitation. The impulse tube can also be connected to the return pipe (upstream from the AB-PM) or to the red test plug with adapter **003Z0691**. In that case the AB-PM will function as a pressure independent control valve with 100% authority.

¹⁾ For information on partner valve see ASV and MSV-F2 datasheet

Impulse tube connection



Impulse tube connection to flow



Impulse tube connection to return

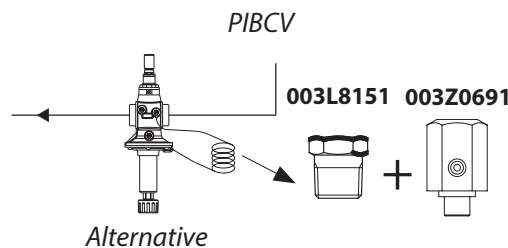


Fig. AB-PM can be connected to flow or return with impulse tube

Service

The valve can be manually shut off for service purposes, up to 16 Bar.

AB-PM is equipped with 3 test plugs for flow verification, service and trouble shooting.

Please check the following if the valve does not function correctly:

1. Is the flow direction through the valve correct?
2. Is the impulse tube fitted correctly and are any test plugs open?
3. Is the valve shut-off open? (see operating instructions)
4. Is the available pressure big enough?

Certificates, declarations and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

When you click on the link you will be directed to the latest version of the 'Declaration of Conformity'. Products developed and sold before this date of issue conform to the directives/standards in force at the time of their sale.

Approval type	Title	Certification body	Approval topic
EU Declaration	Danfoss EU 221011EN0815101.04	Danfoss	LVD, EU RoHS
Export Control Declaration	Gear and Thermal actuators	Danfoss	
EAC Declaration	EAC KZ 7100841.13.12.02339	EAC - Eurasian Customs Union	MD
Manufacturer's Declaration	Danfoss MD BF347735717827en-000101.01	Danfoss	PED, EU RoHS
Pressure Safety Certificate	CE-0062-PED-H-DAF 002-24-DNK-rev-A	BV - Bureau Veritas	Pressure, PED
Manufacturer's Declaration	Declaration of Energy Classes (BACS) - EN ISO 52120-1 and EN ISO 16484-4	Danfoss	Compliance misc. Standards
Pressure Safety Certificate	LLC CDC EURO-TYSK UA.TR.089.1011.01-22	LLC CDC EURO TYSK - Ukraine	Pressure, PED
Export Control Declaration	Automatic balancing and Pressure independent control valves	Danfoss	
EU Declaration	EU declaration BF27112024-en01	Danfoss	Pressure, PED

Tender text

AB-PM DN 40-100 is a combined differential pressure controller for dynamic hydronic balance.

- The valve should be able to ensure hydronic balance for each zone with one or more terminal units.
- Valve shall have flexible functionality as either DPCV or PIBCV.
- The valve can be connected to either flow or return pipe via impulse tube.
- With impulse tube connected to flow, the valve should keep differential pressure across the branch by membrane driven controller.
- With impulse tube connected to the return, the valve should control the flow on every terminal unit
- Valve should have shut-off function.
- Valve should have possibility to mount actuator without effecting presetting.
- Valve should have variable setting. Setting value should allow to set a combination of needed differential pressure and flow for zone.
- Setting should be lockable to prevent unauthorized change.
- Control valve should have metal to metal sealing to ensure sufficient performance of differential pressure control at low flows.
- Shut-off service function should be possible to do with hand or a tool. The Dp controller should have soft sealing to ensure sufficient closing in case of zero flow.
- Valve should be delivered with min. 2.5 m impulse tube. Diameter of impulse tube should not be bigger than 1.2 mm.
- Valve should be delivered in reliable packaging for safe transport and handling.

Product characteristics:

1. Pressure class: PN16
2. Max. pressure drop across AB-PM: 4 bar
3. Temperature range: -10 ... 120 °C
4. Connections size: DN 40-100
5. Connection type: External tread ISO 228/1 (DN 40, DN50), Flange EN1092-2 (DN 65-100)
6. Installation: in return pipe with connection via impulse tube to flow or return pipe
7. Setting range: Flow: 40-100%, Δp setting : 0-20 turns (DN40, DN50), 0-40 turns (DN65-DN100)
8. Nom. flow at factory setting (Δp 25 kPa): 5000l/h (DN40), 6500 l/h (DN50), 16800 l/h (DN65), 19600 (DN80), 21000 (DN100)
9. Minimum differential pressure across valve and zone at factory setting 45 kPa (DN40, DN50), 60 kPa (DN65-100)

Contact details

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