

#### **Data sheet**

# AB-QM 4.0 / AB-QM Pressure Independent Control Valves (PICV) DN 15-250



The AB-QM valve equipped with an actuator is a control valve with full authority and an automatic balancing function / flow limitation. Typical applications are: Temperature control with permanent automatic balancing on terminal units (chillers, air-handling units, fan coils, induction units, radiation panels and heat exchangers). Without an actuator is a flow limiter e.g for one-pipe systems.

#### Description

The Danfoss AB-QM is a Pressure Independent Control Valve (PICV) that combines high accuracy and durability with market leading user-friendliness. The design of the AB-QM is fully geared towards making your project run on time and on budget while delivering the most efficient HVAC system.

Pressure independent valves are control valves with an automatic balancing function. An in-built pressure controller keeps a constant differential pressure over the control valve, ensuring full authority and automatic flow limitation. By combining two functions in one, control and automatic hydronic balance, Danfoss PICVs provide a cost-efficient solution for the challenges faced by forward-looking designers of HVAC systems.

The Danfoss AB-QM delivers the lowest total cost of ownership because:

- Precise flow limitation ensures always the right flow at the right time, ensuring minimized pumping energy
- Full range from DN15 to DN250 for flows up to 407 m3/h
- Available with internal and external thread for universal applicability
- Danfoss' durability test ensures the AB-QM has best-in-class resistance to scaling and clogging
- Easy troubleshooting because of the always visible setting and the ability to measure flow through test plugs
- Minimum hysteresis for stable and precise temperature control
- Future-ready with a range of smart actuators, ready for data driven and optimized HVAC 4.0



### Ordering

AB-QM 4.0 threaded version (with test plugs and without test plugs) - External thread

		With test plugs	Without test plugs		
Picture	DN	<b>Q</b> <sub>nom.</sub> (I/h)	Ext. thread (ISO 228/1)	Code No.	Code No.
<b>73</b>	15 LF	200		003Z8200	003Z8220
	15	600	G 34A	003Z8201	003Z8221
	15 HF	1,200	1	003Z8202	003Z8222
	20	1,200	C 1A	003Z8203	003Z8223
and the same of th	20 HF	2,200	- G 1A	003Z8204	003Z8224

#### AB-QM threaded version (with test plugs and without test plugs) - External thread

		With test plugs	Without test plugs		
Picture	DN	<b>Q</b> <sub>nom.</sub> (I/h)	Ext. thread (ISO 228/1)	Code No.	Code No.
	25	1,700	G 1 1/4 A	003Z1214	003Z1204
	25HF	2,700	G I ¼A	-	003Z1224
	32	3,200	C 1 1/ A	003Z1215	003Z1205
	32 HF	4,000	G 1 ½A	-	003Z1225
	40	7,500	G2A	003Z0770	*
	50	12,500	G 2 ½ A	003Z0771	]

<sup>\*</sup> AB-QM DN 15-32 w/o TP can not be upgraded to version with TP

### AB-QM 4.0 threaded version (with test plugs and without test plugs) - Internal thread

		With test plugs	Without test plugs		
Picture	DN	<b>Q</b> <sub>nom.</sub> (I/h)	Int. thread (ISO 7/1)	Code No.	Code No.
M	15 LF	200		003Z8300	003Z8320
	15	600	Rp ½	003Z8301	003Z8321
n Sn	15 HF	1,200		003Z8302	003Z8322
Ц	20	1,200	D 3/	003Z8303	003Z8323
and the second	20 HF	2,200	Rp ¾	003Z8304	003Z8324

#### **AB-QM** flanged version

Picture	DN	<b>Q</b> <sub>nom.</sub> (I/h)	Flange connection (EN 1092-1)	Code No.
	50	12,500		003Z0772
<b>.</b>	65	20,000		003Z0773
	65 HF	25,000		003Z0793
	80	28,000		003Z0774
	80 HF	40,000		003Z0794
	100	38,000		003Z0775
	100 HF	59,000		003Z0795
4	125	90,000	PN 16	003Z0705
<b>A A</b>	125 HF	110,000		003Z0715
	150	145,000		003Z0706
	150 HF	190,000		003Z0716
	200	200,000		003Z0707
	200 HF	270,000		003Z0717
	250	300,000		003Z0708
	250 HF	370,000		003Z0718

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### **Ordering** (continuous) Accessories & spare parts

<b>-</b>		Comments	C. I. N.					
Туре	To pipe	To valve	Code No.					
Union connection	R 1/2	DN 15	003Z0232					
(CW617N)	R 3/4	DN 20	003Z0233					
(1 pcs.)	R1	DN 25	003Z0234					
<b>⊢</b> H	R 1 1/4	DN 32	003Z0235					
E-H	R 11/2	DN 40	003Z0279					
	R2	DN 50	003Z0278					
Tailpiece welding		DN 15	003Z0226					
(W. Nr. 1.0308)		DN 20	003Z0227					
(1 pcs.)	Weld.	DN 25	003Z0228					
CEI	weid.	DN 32	003Z0229					
Щ		DN 40	003Z0270					
		DN 50	003Z0276					
		DN 15	003Z1271					
		DN 20	003Z1272					
CB.	Weld.	DN 25	003Z1273					
<u>~</u> Н	weia.	DN 32	003Z1274					
		DN 40	003Z1275					
		DN 50	003Z1276					
Tailpieces for soldering (CW614N) (2 nuts, 2 gaskets, 2 soldering plugs	15×1 mm	DN 15	065Z7017					
		DN 40-100	003Z0695					
Handle AB-QM (necessary accessory if installing valv	e without actuator)	DN 125-150	003Z0696					
inccessory accessory it installing valv	c without actuator)	DN 200-250	003Z0697					
Stem heater for AB-QM DN 40-100 / A	065Z0315							
Stem heater for AB-QM DN 125, 150 /	065Z7022							
Elbow test plug extension (1 pcs.)	003Z3944							
Straight test plug extension (1 pcs.)	Straight test plug extension (1 pcs.)							
Straight plug extension set (1 pcs.)			003Z3946					



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#### **Technical data**

				AB-QM	<b>4.0</b> (threade	d version)				AB-QM (thre	aded versio	n)	
Nominal dian	neter	DN	15 LF	15	15 HF	20	20 HF	25	25 HF	32	32 HF	40	50
El	Q <sub>nom</sub> (100 %) <sup>1)</sup>	175	200	600	1.200	1.200	2.200	1.700	2.700	3.200	4.000	7.500	12.500
Flow range	Q <sub>high</sub> <sup>3)</sup>	l/h	200	600	1.200	1.200	2.200	1.870	2.970	3.520	4.400	7.500	12.500
Setting range	1), 2)	%			10-100	•			20-	110		40-	-100
Diff. pressure	$\Delta p_{min}$	kPa	16	16	32	16	32	20 (25)	35 (40)	25 (30)	35 (40)	3	30
3), 4)	$\Delta p_{max}$	кРа						600					
Pressure stage	?	PN			25					1	16		
Control range								1:1000					
Control valve's	s characteristic					Linear (coul	d be conver	ted by actua	tor to equal	percentage	2)		
Leakage rate with recommended actuators				IEC 60	534-4:2007	class IV			ı	EC 60534-4	:2007 class	II	
For shut off fu	nction					Ace	c. to ISO 520	8 class A - no	visible leak	age			
Flow medium												368. When us	
Medium temp	erature	- °c			-10 +95	-10 +95 (-10*) + 2 120							
Storage and transport temp.								-40 +70					
Stroke		mm	4				4	.5		1	10		
	ext. thread (ISO 2	228/1)	G 3/4 A		G	1 A	G 1	1⁄4 A	G 1	½ A	G2A	G 2 ½ A	
Connection	int. thread (ISO 7	'/1)	Rp ½ Rp ½ Rp ½ Rp ¾ R		Rp ¾				-				
	actuator		M30 x 1.5								Danfoss	standard	
Materials and	d medium												
	Valve bodies						DZR Brass	S				EN-GJL-250 G25)	
	Membranes and	O-rings		EPDM									
	Shutter guide				PPSU					N	I/A		
	Shutter				DZR Brass						-		
Materials in	Springs				W.Nr.1.4310			W.Nr.1.4310, W.Nr. 1.4568					
the medium	Spring support				PPSU						-		
	Cone (Pc)				-				W.Nr.	1.4305		CW 614N,	W.Nr.1.4305
	Cone (Cv)				PPSU					CW	614N		
	Seat (Pc)		-		EPDM			W.Nr.	1.4305				
	Seat (Cv)		DZR Brass				s W.Nr. 1.43				1.4305		
	Screw				-					Stainles	s steel A2		
Makadalaa	Plastic parts				PA6				P	A		PC	OM
Materials out of medium	Materials out				-			CW 614N, W.Nr. 1.4310, W.Nr. 1.4401					

 $According \ suitability\ and\ usage\ especially\ in\ not\ oxygen\ tight\ systems\ please\ mind\ the\ instructions\ given\ by\ the\ coolant\ producer.$ 

Pc - pressure controller part Cv - Control valve part

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 $<sup>^{9}</sup>$  Factory setting of the valve is done at nominal setting range.  $^{2}$  Regardless of the setting, the valve can modulate below 1 % of set flow.  $^{3}$  When set above 100 %, minimum starting pressure needed is higher, see figures in the ().

<sup>\*</sup>At min differential pressure valve reaches at least 90% of nominal flow. Declaration of performance is available upon request.

\*If the medium temperature when using AB-QM DN 15-32 is below 2 °C, than ice forming on the spindle must be prevented, there fore valve and actuator should be insulated. For AB-QM DN40-100 stem heaters must be used: Code 065B2171, 065Z0315 or 065Z7022.

#### **Technical data** (continuous)

#### AB-QM (flanged version)

Nominal diar	neter	DN	50	65	65 HF	80	80 HF	100	100 HF		
	Q <sub>nom</sub> (100 %) 1)	1.0	12,500	20,000	25,000	28,000	40,000	38,000	59,000		
Flow range	Q <sub>high</sub>	l/h	12,500	20,000	25,000	28,000	40,000	38,000	59,000		
Setting range	1), 2)	%				40-100	,				
Diff. pressure	$\Delta p_{min}$	kPa	3	30 60 30 60 30							
3) ,5)	$\Delta p_{\text{max}}$	Kra		600							
Pressure stage	2	PN	16								
Control range			Acc. to s	tandard IEC	534 control ra	nge is high a	s Cv characte	eristic is linea	r. (1:1000)		
Control valve's characteristic				Linear (co	uld be conver	ted by actua	tor to equal p	percentage)	_		
Leakage rate v actuators	vith recommend	ed			ma	ax. 0.05 % of 0	Q <sub>nom</sub>				
For shut off fu	nction			A	cc. to ISO 520	)8 class A - no	visible leaka	nge			
Flow medium			I for DIN E	N 14868. Whe	e for closed he en used in pla en. The requi	nt Type II for	<b>DIN EN 1486</b>	8 appropriate	protective		
Medium temperature °C						-10 +120					
Storage and tr	ansport temp.	٠.ر	-40 70								
Stroke		mm	10 15								
Connection	flange		PN 16								
Connection	actuator		Danfoss standard								
Materials in t	he water										
Valve bodies					Grey iro	n EN-GJL-25	0 (GG25)				
Membranes/ E	Bellow					EPDM					
O-rings			EPDM								
Springs			W.Nr. 1.4568, W.Nr. 1.4310								
Cone (Pc)			CuZn40Pb3 - CW 614N, W.Nr. 1.4305								
Seat (Pc)			W.Nr. 1.4305								
Cone (Cv)			CuZn40Pb3 - CW 614N								
Seat (Cv)			W.Nr. 1.4305								
Screw			Stainless Steel (A2)								
Flat gasket						NBR					

Nominal diam	eter	DN	125	125 HF	150	150 HF	200	200 HF	250	250 HF
El	Q <sub>nom</sub> (100 %) 1)	176	90,000	110,000	145,000	190,000	200,000	270,000	300,000	370,000
Flow range	Q <sub>high</sub> 3)	l/h	100,000	120,000	160,000	209,000	220,000	300,000	330,000	407,000
Setting range <sup>2</sup>	)	%				4	0-110			
Diff. pressure	$\Delta p_{min}$	kPa	40 (60)	60 (80)	40 (60)	60 (80)	45 (65)	60 (80)	45 (65)	60 (80)
3), 4), 5)	$\Delta p_{\text{max}}$	кРа	600	600	600	600	600	600	600	600
Pressure stage		PN					16			
Control range						1:	:1000			
Control valve's	characteristic			Linear	(could be o	onverted b	y actuator	to equal pe	ercentage)	
Leakage rate w actuators	ith recommend	ed				max.0.0	1 % of Q <sub>nor</sub>	1		
Flow medium			I for DIN	EN 14868.	When used	in plant Ty	pe II for DIN	N EN 14868		o plant type protective rved.
Medium temperature °C						-10	+120			
Storage and tra	ansport temp.	1	-40 70							
Stroke		mm	30							
C	flange		PN 16							
Connection	actuator					Danfos	s standard			
Materials in tl	ne water									
Valve bodies					G	rey iron EN	-GJL-250 (G	iG 25)		
Membranes/B	ellow		W.Nr.	1.4571			E	PDM		
O-rings	-					Е	PDM			
Springs	-		W.Nr.	1.4401			W.N	r.1.4310		
Cone (Pc)	-		W.Nr.1.4404NC W.Nr.1.4021							
Seat (Pc)			W.Nr.1.4027							
Cone (Cv)			W.Nr.1.4404NC W.Nr.1.4021							
Seat (Cv)			W.Nr.1.4027							
Screw	W.Nr.1.1181									

Non asbestos

Flat gasket

Pc - pressure controller part Cv - Control valve part

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Graphite gasket

Factory setting of the valve is done at nominal setting range.
 Regardless of the setting, the valve

can modulate below 1 % of set flow.

When set above 100 %, minimum starting pressure needed is higher,

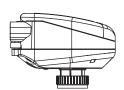
see figures in the ().
In case AB-QM is used above 400 kPa differential pressure contact Danfoss design center to assure proper design.

5) At min differential pressure valve

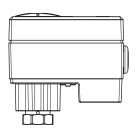
reaches at least 90% of nominal flow. Declaration of performance is available upon request.



#### Actuators overview AB-QM DN 15-32









Cables	Code No.
1 meter	082F1081
5 meter	082F1082
10 meter	082F1083





#### NovoCon® S

NovoCon® S is a high accuracy multi-functional field bus actuator, specifically designed for use in combination with the Pressure Independent Balancing Control Valve type AB-QM in sizes from DN 15 LF-32 HF. The actuator with AB-QM is used to control water supply to fan coil units, chilled beams, induction units, small re-heaters, re-coolers, AHU's and other terminal units for zone control, in which heating/chilled water is the controlled medium.

Туре	Speed	Power supply	Control signal	Communication protocol	Enclosure	Code No.
NovoCon® S	3/6/12/24 s/mm	24 V ac/dc	0-10 V, 2-10V, 0-20mA, 4-20mA	BACnet MS/TP, Modbus RTU	IP 54 (IP40 if mounted upside down)	003Z8504

#### **AME 110/120 NL**

The AME 110 and 120 are high precision modulating gear actuators that can be mounted on the AB-QM for precise control. They have a calibration function so the travel of the actuator always matches the stroke of the AB-QM perfectly. The actuator is suitable for both linear and logarithmic characteristics. The AME 110/120 fits to AB-QM DN 15 LF to DN 32 HF.

Туре	Speed	Feedback signal	Power supply	Control signal	Enclosure	Code No.
AME 110 NL	24 s/mm	No		0-10 V, 2-10V,		082H8057
AME 110 NLX	24 s/mm	Yes	24 V ac		IP 42	082H8060
AME 120 NL	12 s/mm	No	0-20mA, 4-20mA			082H5059

#### AME 13 SU/SD

The AME 13 is a precision gear actuator that has a built-in spring that will close the valve (Spring Down, SD) or open the valve (Spring Up, SU) if the power on the actuator is lost. The characteristic can be set to Logarithmic or Linear with a dip switch. The AME 13 SU/SD fits to AB-QM DN 15 LF to DN 32 HF.

Тур	•	Speed	Spring	Power supply	Control signal	Feedback signal	Enclosure	Code No.
AME	13 SU-1	14 s/mm	Spring to open	24 V ac	0-10 V, 2-10V,	0-10 V, 2-10V	IP 42	082H5006
AME	13 SD-1	14 s/mm	Spring to close	24 V aC	0-20mA, 4-20mA			082H5007

#### ABNM-A5

The ABNM is a thermal modulating actuator. It can be used to modulate the AB-QM if speed or precision is not the first concern. ABNM has either a Logarithmic (LOG) or a Linear (LIN) characteristic which should be chosen to fit the application. It is available in Normally Open (NO) and Normally Closed (NC) versions, as well as in 24V DC and AC. The ABNM-A5 fits to AB-QM DN 15 LF to DN 32 HF.

Туре	NO/NC	LOG/LIN	Supply voltage	Stroke	Full stroke time	Enclosure	Code No.
ABNM-A5	NC	LOG	241/	5 mm			082F1160
ABNM-A5	NC	LIN		5 mm			082F1161
ABNM-A5	NC	LOG		6.5 mm		IP 54	082F1162
ABNM-A5	NO	LOG	24 V ac	6.5 mm	2.5		082F1163
ABNM-A5	NC	LIN		6.5 mm	3-5 min		082F1164
ABNM-A5	NO	LIN		6.5 mm			082F1165
ABNM-A5	NC	LOG	2414.1	6.5 mm			082F1166
ABNM-A5	NO	LOG	24 V dc	6.5 mm			082F1167

Note: ABN & ABNM A5 with 5mm stroke are only able to open AB-QM DN 25-32 90%.

#### TWA-Z

TWA-Z is a thermal actuator that is used for On/Off applications, where control precision and speed are not prioritized. It is available in Normally Open (NO) and Normally Closed (NC) versions and in 24 and 230 Volt. TWA-Z has a position indicator to show if it is open or closed. The TWA-Z fits to AB-QM DN 15 LF to DN 32 HF.

Туре	NO/NC	Voltage	Stroke	Full stroke time	Enclosure	Code No.
TWA-Z	NO	24 V ac				082F1260
TWA-Z	NC	24 V ac	min 2.8 mm	3 min (if warm, otherwise 6 min)	IP 41	082F1262
TWA-Z	NO	230 V ac				082F1264
TWA-Z	NC	230 V ac				082F1266

 $Note: TWA-Z \ can \ not \ open \ the \ AB-QM \ fully, if \ the setting \ on \ DN15, 20 \ is \ above \ 65\% \ and \ DN25, 32 \ above \ 60\%. \ Please \ contact \ your \ Danfoss \ representative \ if \ higher \ settings \ are \ needed.$ 

#### **ABN A5**

The ABN A5 on/off thermal actuator has been specifically designed for use with AB-QM valves DN15LF to DN 32 HF in heating and cooling applications.

Туре	Supply voltage	Normally Open/Closed	Cable	End Switch	Code No.
ABN A5, with VA 41 adapter, without cable	24 V ac/dc	NC			082F1150
	24 V dC/UC	NO	Diversion on a time already and	N-	082F1151
	2201/	NC	Plug-in, not included	No	082F1152
	230 V ac	NO			082F1153

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## Actuators overview AB-QM DN 40-100

#### **AME 435 QM**

The AME 435 QM is a high precision modulating gear actuator that can be mounted on the AB-QM for precise control. It has a calibration function, so the travel of the actuator always matches the stroke of the AB-QM perfectly. The actuator is suitable for both linear and logarithmic characteristics. The AME 435 QM fits to AB-QM DN 40 to DN 100 HF.

Туре	Speed	Power supply	Control signal	Feedback signal	Enclosure	Code No.
AME 435 QM	7.5/15 s/mm	24 V ac/dc	0-10 V, 2-10V, 0-20mA, 4-20mA	0-10 V, 2-10V	IP 54	082H0171

#### AME 25 SU/SD

The AME 25 SU/SD is a precision gear actuator that has a built-in spring that will close the valve (Spring Down, SD) or open the valve (Spring Up, SU) if the power on the actuator is lost. The characteristic can be set to Logarithmic or Linear with a dip switch. The AME 25 SU/SD fits to AB-QM DN 40 to DN 100 HF.

Туре	Speed	Power supply	Control signal	Feedback signal	Enclosure	Code No.
AME 25 SD	1F c/mm	24 V ac	0-10 V, 2-10V,	0.10.1/.2.101/	IID E 4	082H3038
AME 25 SU	15 s/mm	24 V aC	0-20mA, 4-20mA	0-10 V, 2-10V	IIP 54	082H3041

Please consider adapter is needed 003Z0694

## Actuators overview AB-QM DN 125-150

#### AME 55 QM

AME 55 QM and AME 655-1 actuators are used with pressure independent balancing and control valve typeAB-QM DN 125 and DN 150.

Туре	Speed	Power supply	Power supply Control signal		Enclosure	Code No.
AME 55 QM	8 s/mm	24 V ac	0-10 V, 2-10V, 0-20mA, 4-20mA	0-10 V, 2-10V	IP 54	082H3078

#### AME 655-1

Туре	Speed	Power supply	Control signal	Feedback signal	Enclosure	Code No.
AME 655-1	2/6 s/mm	24 V ac/dc	0-10 V, 2-10V, 0-20mA, 4-20mA	0-10 V, 2-10V, 0-20mA, 4-20mA	IP 54	082H5010

#### AME 658 SU/SD-1

AME 658 SU/SD-1 actuator is used together with pressure independent balancing and control valves type AB-QM DN 125 and DN 150. The AME 658 SU/SU-1 is a precision gear actuator that has a built-in spring that will close the valve (Spring Down, SD) or open the valve (Spring Up, SU) if the power on the actuator is lost. The characteristic can be set to Logarithmic or Linear with a dip switch.

Туре	Speed	Power supply	Control signal	Feedback signal	Enclosure	Code No.
AME 658 SU-1	4/6 -/	241//-	0-10 V, 2-10V, 0-20mA,	0-10 V, 2-10V,	ID C4	082H5012
AME 658 SD-1	4/6 s/mm	24 V ac/dc	4-20mA	0-20mA, 4-20mA	IP 54	082H5011

#### Actuators overview AB-QM DN 200-250

#### AME 85 OM

AME 85 QM and AME 685-1 are used together with large pressure independent balancing and control valves type AB-QM DN 200 and DN 250.

Туре	Speed	Power supply	Power supply Control signal		Enclosure	Code No.
AME 85 QM	8 s/mm	24 V ac	0-10 V, 2-10V, 0-20mA, 4-20mA	0-10 V, 2-10V	IP 54	082G1453

#### AME 685-1

Туре	Speed	Power supply	Control signal	Feedback signal	Enclosure	Code No.
AME 685-1	3/6 s/mm	24 V ac/dc	0-10 V, 2-10V, 0-20mA, 4-20mA	0-10 V, 2-10V, 0-20mA, 4-20mA	IP 54	082H5013



Click on icon to get more information



#### **Presetting**

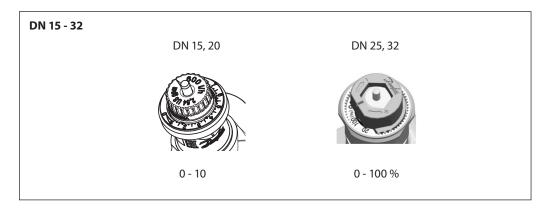
#### DN 15-32

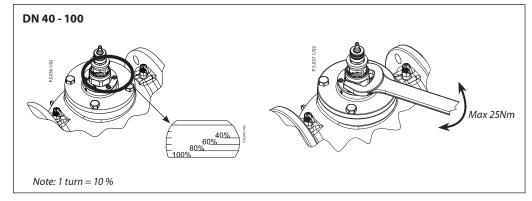
The calculated flow can be adjusted easily without using special tools.

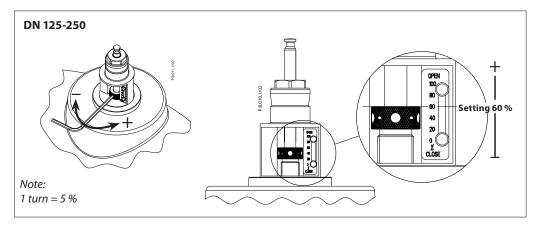
The change of presetting (factory setting is 100% (10) follow steps below:

- 1. Remove the blue protective cap or the mounted actuator
- 2. Raise the pointer (DN 25-32)

- **3.** Turn the pointer (clockwise to decrease) to the new setting
- **4.** Press pointer back into lock position (DN 25-32) the presetting scale indicates values from 100% flow to 0% (DN 25-32) and 10-0 (DN 15-20). Clockwise turning would decrease the flow value while counter clock wise would increase it.







#### Service

#### DN 15-32

For the service shut off function, it is recommended to install the valve in the supply water pipe.

#### DN 40-100

For the service shut-off function, the valve can be installed in either supply or return pipe.

Valves are equipped with manual shut-off for isolating function up to 16 bar.

#### DN 125-250

For the service shut-off function, the valve can be installed in either supply or return pipe.

For shut-off set the valve to 0%.

#### **AB-QM DN 15-250**



#### **Tender text**

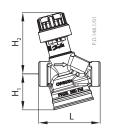
A pressure independent balancing and control valve with a linear control characteristic that is independent of the available pressure and setting. Make: Danfoss AB-QM or equivalent.

The pressure independent valve should have the following features:

- Automatic flow limitation function
- · Membrane driven design for reduced clogging risk
- Modulating below 1% of set flow, regardless of the setting
- Maximum flow clearly marked on the valve
- Authority of 1 at all settings
- Ability to close against 16 Bar of differential pressure.
- · Linear control characteristic
- Linear setting
- Control ratio 1:1000
- Test plugs for pump optimization and flow verification for DN 15-250. Available in the range from DN 10 – 250 from one supplier.
- Option to change the characteristic from linear to equal percentage at all sizes by adjusting actuator settings.
- Leakage rate of no visible leakage (IEC 60534-4:2007 class IV) for DN 15 DN 20 in combination with recommended actuator
- Leakage of 0.05 % of the  $\rm Q_{nom}$  for DN 25 DN 100 (IEC 60534-4:2007 class III) in combination with recommended actuator
- Leakage of 0.01 % of the  $Q_{nom}$  for DN 125 DN 250 (IEC 60534-4:2007 class IV) in combination with recommended actuator
- Flow measurements (AB-QM DN 15, 20) according to BS7350:1990



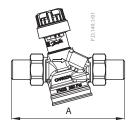
### Dimensions





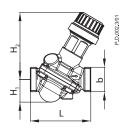
ext. (ISO 228/1)

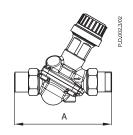


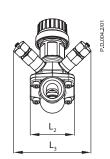




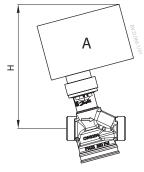
		Len	gth		Hei	gth	Threaded	Welded	_
DN	exte	rnal	inte	rnal	H <sub>1</sub> H <sub>2</sub> A		<b>L</b> <sub>2</sub> (mm)		
	L (mm)	b	L (mm)	b	(mm)				(11111)
15	65	G ¾A	75	Rp ½	46.6	36.7	120	139	42.6
20	82	G 1A	85	Rp ¾	66.2	43.9	143	166	49.4

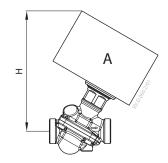






	Len	ght	Hei	ght	Threaded	Welded	,	
DN	L		H <sub>1</sub>	H <sub>2</sub>	1	A	L <sub>2</sub>	<b>L</b> <sub>3</sub>
	(mm)	b		(r	(mm)			
25	104	G 1 ¼	42	82	174	188	71	79
32	130	G 1 ½	50	93	207	214	90	79





DN 15, 20

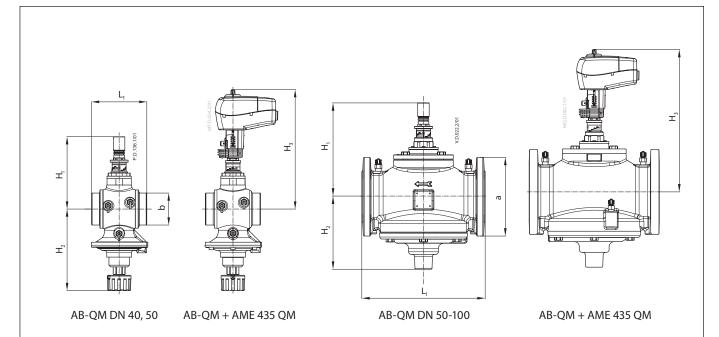
DN 25, 32

DN	TWA-Z	ABNM	AME/AMV 110NL, 120 NL, AMI 140	NovoCon™	AME 13 SU	<b>Valve weight</b> (kg)	
			H (mm)			external	internal
15	101.3	97.8	131.3	130.1	210.7	0.56	0.59
20	102.5	99	132.5	131.3	212.1	0.75	0.73
25	117	124	155	153	233.9	1.	45
32	128	136	166	164	245	2.	21

10 | VD.A8.A2.02 © Danfoss | 2019.10

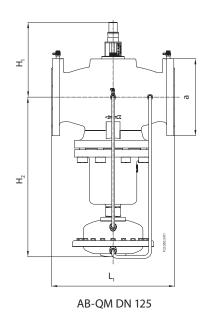
## Danfoss

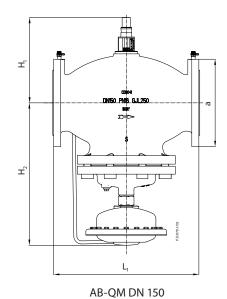
### **Dimensions** (continuous)



DN	L,	H,	H <sub>2</sub>	H <sub>3</sub>	b	Weight
DN		m	m	(ISO 228/1) kg	kg	
40	110	170	174	280	G 2	6.9
50	130	170	174	280	G 2 ½	7.8

DN	L,	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	a	Weight
DN		m	m	(EN 1092-2)	(kg)	
50	230	170	174	280	165	14.2
65	290	220	172	330	185	38.0
80	310	225	177	335	200	45.0
100	350	240	187	350	220	57.0

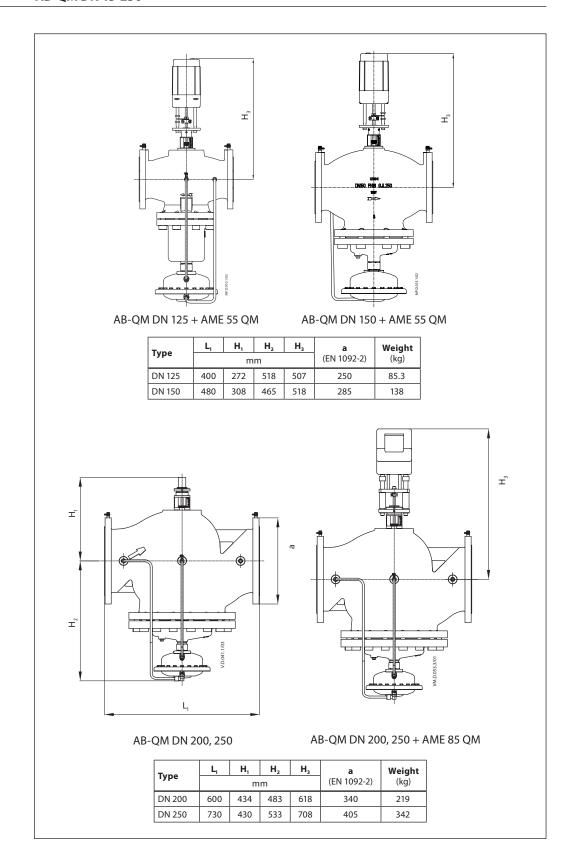




DN	L	H <sub>1</sub>	H <sub>2</sub>	a	Weight	
DN	mm			(EN 1092-2)	(kg)	
125	400	272	518	250	85.3	
150	480	308	465	285	138	



#### **Dimensions** (continuous)



#### Danfoss A/S

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