

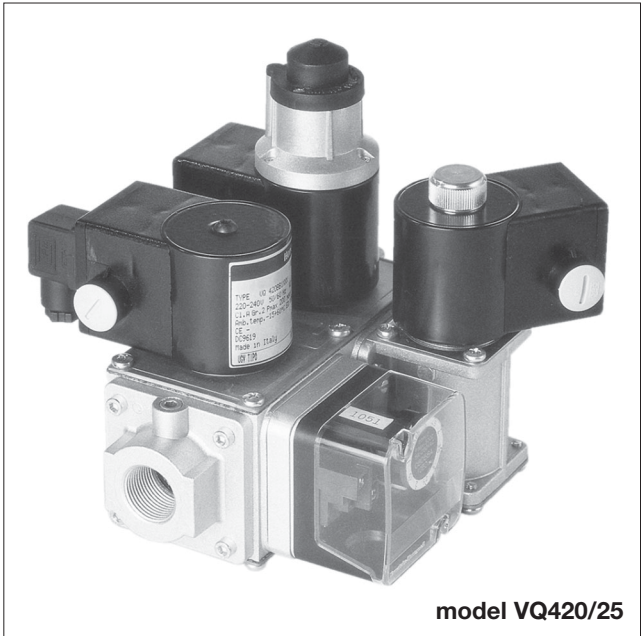
VQ400 Series

CLASS „A“ COMBINATION VALVES

PRODUCT HANDBOOK



model VQ440/50



model VQ420/25

APPLICATION

The VQ400 Series class „A“ safety combination valves are used for control and regulation of gaseous fluids in gas power burners, atmospheric gas boilers, melting furnaces, incinerators and other gas consuming appliances.

- These combination valves are available in two body sizes:
- model VQ420/25 (pipe sizes 3/4" and 1")
 - model VQ440/50 (pipe sizes 1 1/2" and 2")

The 1 1/4" connection is obtained by using a DN32 flange kit on a VQ440 body.
The features and specifications of both models are identical (unless specified otherwise).

Contents

General	
Description	2
Features	2
Technical	
Specifications	3
Performance characteristics	4
Capacity curves	5
Dimensional drawings	6
Installation and Operation	
Installation	8
Adjustments and final checkout	9
Construction and working principles	11
Various	
Standards and approvals	12
Ordering information	12
Standard configurations	14
Replacement parts and accessories	17

DESCRIPTION

The VQ400 Series combination valves are suitable for the control of gaseous fluids in gas consuming appliances according to international standards.

The VQ400 Series combination valves meet the class „A“ specification according EN161.

The VQ400 Series combination valves have straight flanged pipe connection from 3/4" up to 2".

The VQ400 Series combination valves are standard equipped with two main valves V1 and V2. Safety valve V1 is always fast opening/closing. The second valve (V2) can be either fast (= with flow regulation) or slow (= with flow regulation and adjustable opening).

At the main body (4) flange connections are provided to mount either an:

- internal by-pass valve to achieve high-low flame control
- internal or external pilot valve
- vent valve
- pressure switch (Min. or Max.)
- Valve Proving System (VPS) + pressure switch.

The VQ400xx6xxx series comes with 2 removable side flanges on V2 section to allow field connection of vent-, by-pass-, external pilot- and/or internal pilot valves on both sides.

FEATURES

- **Class „A“ safety combination valve for control of gaseous fluids in gas consuming appliances in accordance with international standards.**
- **Main body with two gas valves with single seat.**
- **Internal by-pass valve to achieve high-low flame control.**
- **internal or external pilot valve.**
- **Vent valve.**
- **Options for mounting flanged minimum and maximum pressure switches.**
- **Valve Proving System (VPS).**
- **Possibility of installing by-pass, external pilot, internal pilot or vent valves on the field**
- **Closing time: < 1 second.**
- **Coils field replaceable.**
- **Coils suitable for permanent energization.**
- **Fine mesh screen between inlet flange and main body.**
- **Various pressure tap points at main body available, when no additional valves or pressure switches are used.**
- **Second main valve, either with adjustable flow regulator (fast), or characterized opening mechanism (slow) with adjustable maximum flow rate and step pressure.**
- **Rectifier board with LEDs (VQ440/50 only) to indicate energization of coil**
- **Rectifier boards field replaceable.**
- **Plug connector according to DIN 43650: standard for VQ440/50, optional for VQ420/25.**
- **PG11 cable strain relief standard at VQ420/25.**
- **Optional mounting of Closed Position Indication switch (CPI) at bottom of safety valve V1 and for V2 (for specific request).**

SPECIFICATION

The specifications described in this chapter are related to the main gas valve, by-pass valve and pilot valve (see also Performance characteristics on page 4.).

Models

VQ420/25 (DN20 and DN25)

VQ440/50 (DN40 and DN50)

NOTE: DN32 connection is obtained with a flange kit on VQ440 body.

The main gas volume is adjustable at 2nd main valve.

The start flow is adjustable at slow open 2nd main valve.

Dimensions

See dimensional drawings and table on page 6 and 7.

Pipe sizes

Main body: Inlet and outlet straight flange connection 3/4", 1", 1 1/4", 1 1/2" and 2".

Pilot valve and vent valve: outlet 3/4" thread.

(all internal pipe thread according to ISO 7-1)

Capacity

Main body: see capacity curves on page 7.

Pilot valve and vent valve on VQ400 DN20 ... 50: as VE4020

By-pass on VQ400 DN20 ... 40: as VE4020

By-pass on VQ400 DN50: as VE4025

(see capacity curves VE4000 Series product handbook)

Maximum operating pressure

200 or 360 mbar, depending on the model

Connections

- Pressure taps at inlet and outlet flanges.
- Optional: 1/4" plug connection for Closed Position Indication switch (CPI) at bottom of safety valve V1.

At the main body (4) flange connections are provided to mount either an:

- internal by-pass valve to achieve high-low flame control
- internal or external pilot valve
- vent valve
- pressure switches (Min. or Max.)
- Valve Proving System (VPS).

By-pass valve/high-low valve

Two stage valve 3/4" is used at VQ420/425/440 series valves.

Two stage valve 1" is used at VQ450 series valves.

Torsion and bending stress

Pipe connections meet group 2 according to EN161 requirements.

Supply voltages

Line voltage: 220 ... 240 Vac, 50/60 Hz

200 Vac, 50/60 Hz

100/110 Vac, 50/60 Hz

24 ... 28 Vdc

Other voltages on request.

Electrical equipment

DC current coils with separated rectifier inside the cover.

Electrical connections

VQ420/25: standard plug connection according PG11 on main gas valves and additional valves.

Optional: three pin plug connector („DIN plug“) on main gas valves and additional valves.

VQ440/450: standard three pin plug connector („DIN plug“) on main gas valves.

Optional: three pin plug connector („DIN plug“) on additional valves.

Ambient temperature range

-15 ... 60 °C

Coil insulation solenoid valves

Insulation material according class F.

Enclosure

IP 54

IP65 (optional, only for VQ420/25)

Body material

aluminium alloy die cast

Strainer

AISI 303 steel

Closing spring

AISI 302 steel

Valve plunger

Chrome plated Fe 360B steel sliding on anti-friction bearing.

Seals and gaskets

Hydrocarbon resistant NBR rubber type

Flange kits

There are two different series of kits available:

O.S. Number	Size (PR)	Remarks
KTCOMB20	1/2"	with plug
KTCOMB25	3/4"	with plug
KTCOMB32	1 1/4"	intended for 440 body, with tap
KTCOMB40	1 1/2"	with tap
KTCOMB50	2"	with tap

The first series of kits consist of: 1 flange with sealing plug, 1 O-rings and 4 screws.

The second series of kits consist of: 1 flange with sealing plug or cast pressure tap, 1 strainer, 1 O-rings and 4 screws

O.S. Number	Size (PR)	Remarks
KTCOMS20	1/2"	with plug
KTCOMS25	3/4"	with plug
KTCOMS32	1 1/4"	intended for 440 body, with tap
KTCOMS40	1 1/2"	with tap
KTCOMS50	2"	with tap

Table 1. Power consumption (W) main valve VQ400 Series

Model	360 mbar									200 mbar								
	220 ... 240 Vac			100/110 Vac			24 ... 28 Vdc			220 ... 240 Vac			100/110 Vac			24 ... 28 Vdc		
	V1		V2	V1		V2	V1		V2	V1		V2	V1		V2	V1		V2
		F	S		F	S		F	S		F	S		F	S		F	S
VQ420Ax	14	14	14	14	14	14	17	17	17	14	14	14	14	14	14	17	17	17
VQ425Ax	20	20	20	18	18	18	24	24	24	20	20	20	18	18	18	24	24	24
VQ440Ax	41	41	41	48	48	48	64	64	64	40	40	40	47	47	47	67	67	67
VQ450Ax	60	60	60	65	65	65	67	67	67	41	41	41	48	48	48	64	64	64

Table 2. Power consumption (W) additional valves

Additional valve	360 mbar						200 mbar					
	220 ... 240 Vac		100/110 Vac		24 ... 28 Vdc		220 ... 240 Vac		100/110 Vac		24 ... 28 Vdc	
	3/4"	1"	3/4"	1"	3/4"	1"	3/4"	1"	3/4"	1"	3/4"	1"
by-pass valve	14	20	14	18	17	24	14	20	14	18	17	24
pilot valve	14	-	14	-	17	-	14	-	14	-	17	-
vent valve	14	-	14	-	17	-	14	-	14	-	17	-

PERFORMANCE CHARACTERISTICS

Opening time

The first valve (V1) opens in less than 1 second.

The second valve (V2), by-pass valve (Vb) and pilot valve (Vp) can be either a fast opening valve which opens in less than 1 second or a characterized opening valve which is adjustable from 1 up to 30 seconds, at rated capacity.

The opening characteristic is factory set at approximately 6 seconds at the following conditions:

- measured at 80 % of rated capacity
- 30 mbar supply pressure
- nominal voltage
- 20 °C
- 2,5 mbar pressure drop
- no step pressure

Due to the influence of ambient temperature (-15 ... 60 °C) the adjusted opening time of 6 seconds measured at 80% of adjusted flow rate can vary +/- 4 seconds.

Closing time (V1, V2 , Vb and Vp)

Less than 1 second for all four valves.

Maximum working frequency

1 cycle per minute

Duty cycle

Coil suitable for permanent energization

Operational voltage range

The combination gas valve will function satisfactory between 85% and 110% of the rated voltage.

Design life

Model	Number of cycles
VQ420AA	600.000
VQ425AA	600.000
VQ440AA	300.000
VQ450AA	300.000

CAPACITY CURVES

Capacity curve combination gas valves

Table 3. Capacity in m³/h air at Δp = 2,5mbar

(3/4") DN20	(1") DN25	(1 1/4") DN32	(1 1/2") DN40	(2") DN50
8	11	25	31	40

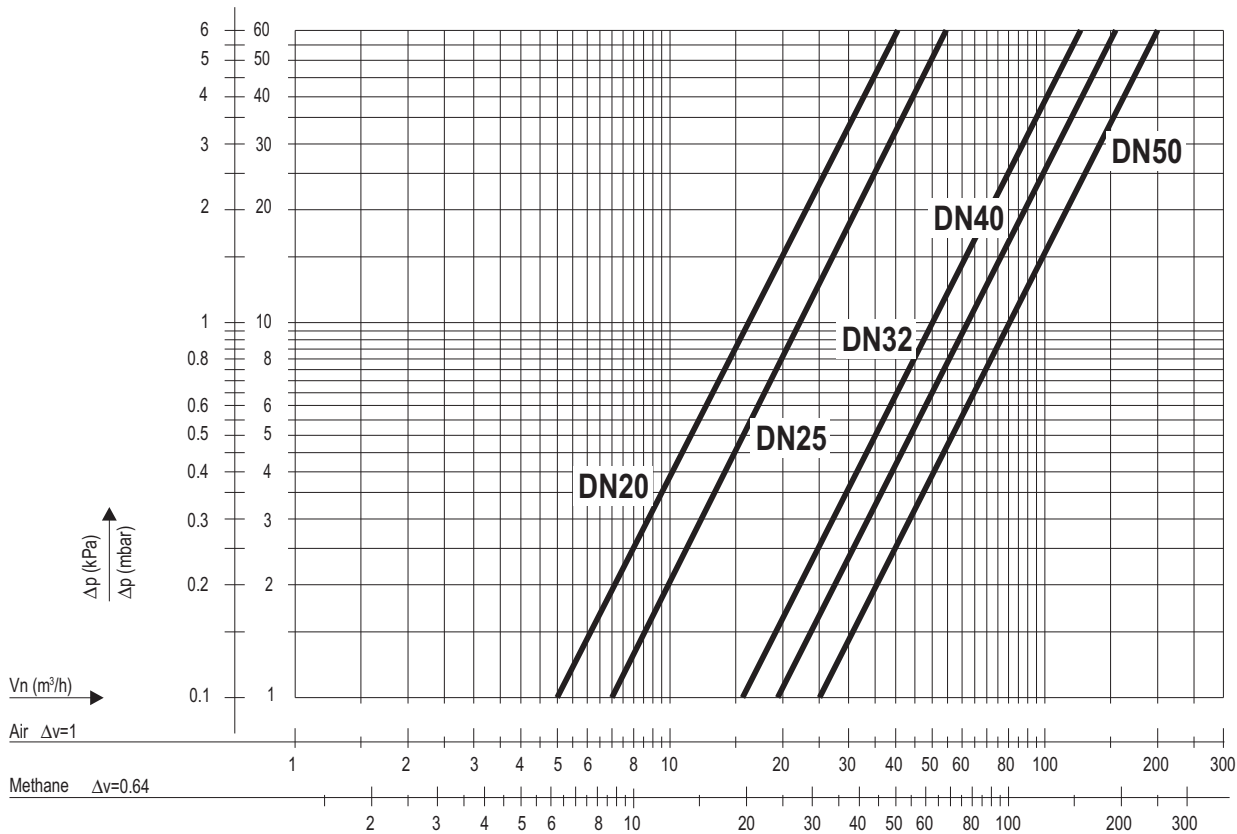


Fig. 1. Capacity curve for VQ400 Series class „A“ combination valves

DIMENSIONAL DRAWINGS VQ400 SERIES

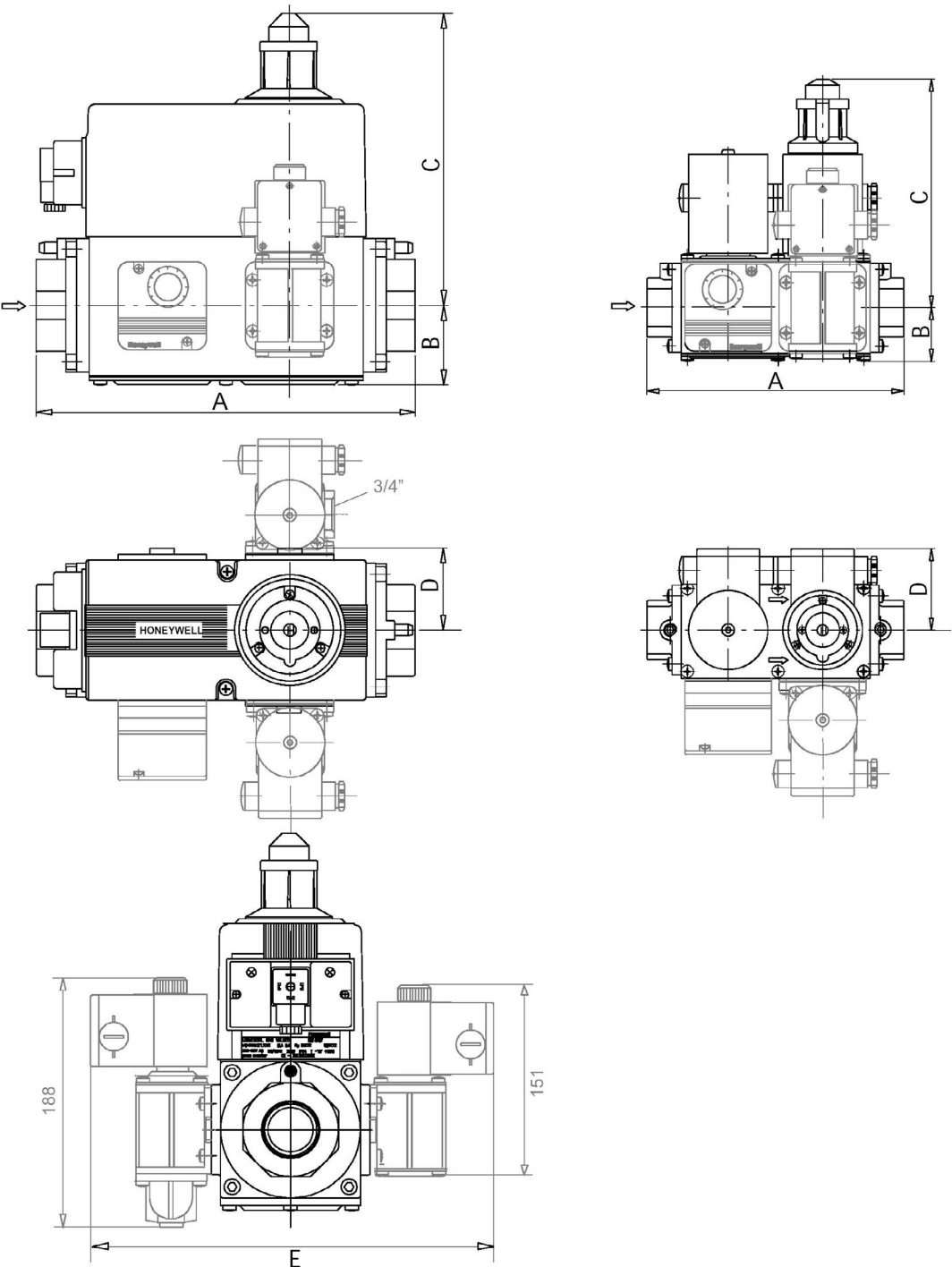


Fig. 2. Overall dimensions VQ400 Series (shown 2nd valve slow)

Table 4. Dimensions VQ400 Series (see also installation drawing)

Model	Connect. (inch)	Overall Dimensions (mm)						Weight (kg)
		A	B	C		D	E	
				2nd main valve				
				fast	slow			
VQ420Ax	3/4	204	42.5	111.5	157.5	60	108	3.5
VQ420Bx - Cx - Ex	3/4	204	42.5	112	157	60	177	4.8
VQ420Dx - Fx	3/4	204	42.5	112	157	60	247	6.1
VQ425Ax	1	204	42.5	135.5	181.5	64.5	108	5.0
VQ425Bx - Cx - Ex	1	204	42.5	136	181	64.5	177	6.3
VQ425Dx - Fx	1	204	42.5	136	181	64.5	247	7.6
VQ440Ax	1 1/2	297	62	174	228	63.5	119	10.7
VQ440Bx - Cx - Ex	1 1/2	297	62	174	228	63.5	209	11.9
VQ440Dx - Fx	1 1/2	297	62	174	228	63.5	300	13.5
VQ450Ax	2	297	62	174 (184)	228 (238)	63.5	119	12.1
VQ450Bx - Cx - Ex	2	297	62	174 (184)	228 (238)	63.5	209	14.1
VQ450Dx - Fx	2	297	62	174 (184)	228 (238)	63.5	300	16.4

(..) 360 mbar versions

DIMENSIONAL DRAWINGS VQ400 MODULAR VERSIONS

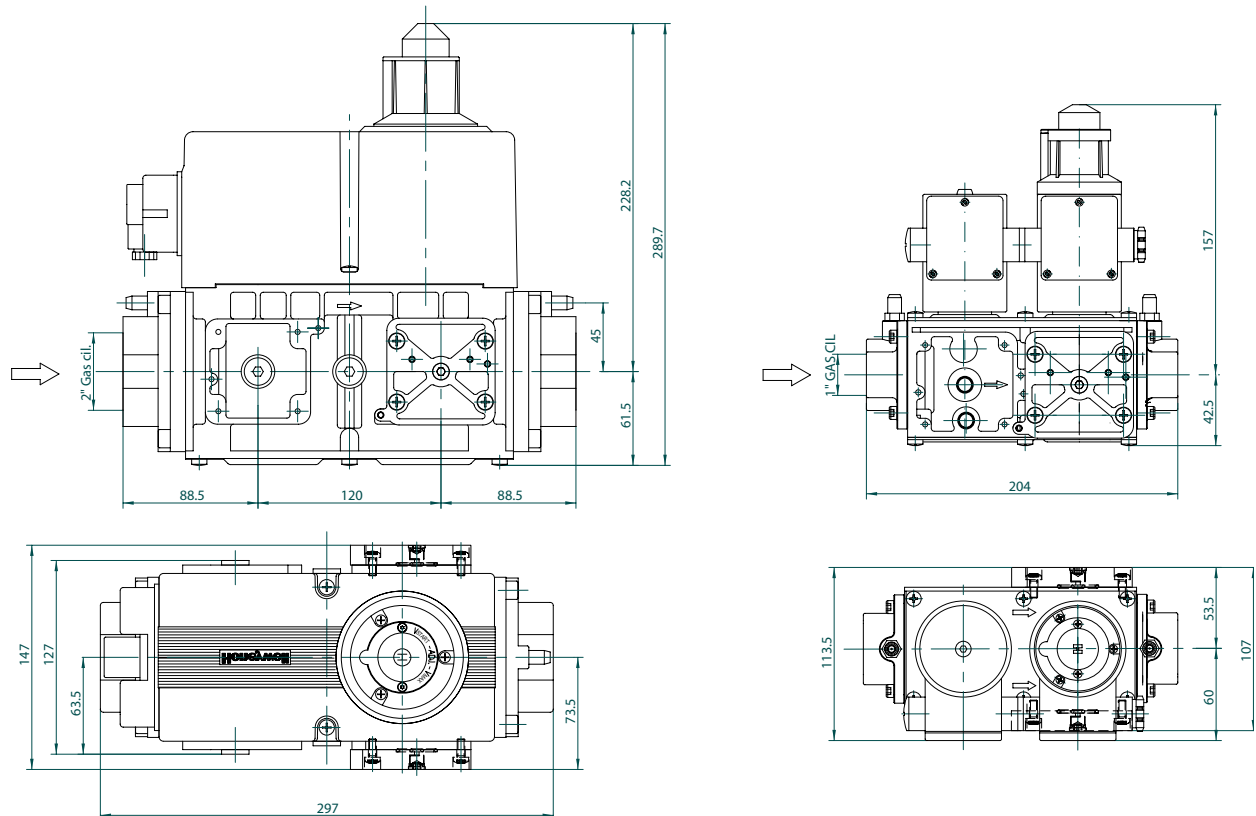


Fig. 3. Dimensions for VQ400 Modular versions

INSTALLATION

IMPORTANT

1. Read these instructions carefully. Failure to follow the instructions could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. The installation has to be carried out by qualified personnel only.
4. Carry out a thorough checkout when installation is completed.

! WARNING

- Turn off gas supply before installation.
- Disconnect power supply to the valve actuator before beginning the installation to prevent electrical shock and damage to the equipment.
- Do not remove the seal over valve inlet and outlet until ready to connect piping.
- The valve must be installed so that the arrow on the valve points in the direction of the gas flow (gas pressure helps to close the valve).

Mounting position

The gas valve can be mounted plus or minus 90 degrees from the vertical.

Mounting location

The distance between the gas valve and the wall/ground must be at least 30 cm.

Main gas connection flanged valves

1. Take care that dirt does not enter the gas valve during handling.
2. Remove the flanges from the valve.
3. Use a sound taper fitting with thread according to ISO 7-1 or new, properly reamed pipe free from swarf.
4. Apply a moderate amount of good quality thread compound to the pipe for fitting only, leaving the two end threads bare, PTFE tape may be used as an alternative.
5. Screw the flanges onto the pipes.
6. Ensure that inlet and outlet flanges are in line and separated from each other enough to allow the valve to be mounted between them without damaging the gasket.
7. Place gasket. If necessary grease it slightly to keep it in place.
8. Mount gas valve between flanges using the bolts for each flange.
9. Complete the electrical connections as instructed in the Electrical Connection section.

! WARNING

Tightness test after installation

- Spray all pipe connections and gaskets with a good quality gas leak detection spray.
- Start the appliance and check for bubbles. If a leak is found in a pipe connection, remake the joint. A gasket leak can usually be stopped by tightening the mounting screws, otherwise, replace the gas valve.

Electrical connection

! WARNING

- Switch off power supply before making electrical connections.
- All wiring must comply with local codes, ordinances and regulations.

Use lead wire which can withstand 105 °C ambient. The electric ON/OFF operator is provided with a terminal block for electrical connections.

Wiring

Follow the instructions supplied by the appliance manufacturer. Follow Fig.4. and Fig. 5.

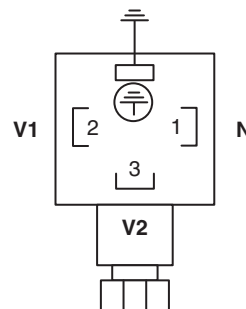


Fig. 4. Three pin electrical plug connector (according to ISO 4400)

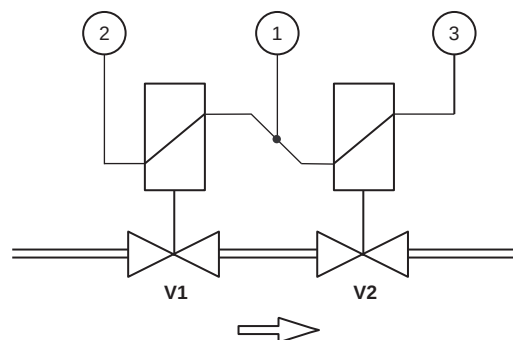


Fig. 5. Connection diagram VQ400

ADJUSTMENTS AND FINAL CHECKOUT

The procedures described in this chapter are related to the adjustments on the main gas valve, pilot valve and by-pass valve. For adjustments on the other additional functionalities (e.g. pressure switch), refer to the included instruction sheet of the product in question in the package.

⚠ CAUTION

- Adjustments must be made by qualified personnel only.
- To ensure a safe closing of the valves, it is essential that voltage over the terminals of operators is reduced to 0 Volts.

2nd main valve, pilot valve, by-pass valve and vent-valve fast opening

Flow rate adjustment (see Fig. 6.)

1. Remove the cap screw from top of the coil.
2. Place a socket head wrench into the adjustment nut.
3. Turn wrench counter-clockwise to increase or clockwise to decrease flow rate.
4. Replace cap screw.

2nd main valve, pilot valve and by-pass valve slow opening

The following characteristics can be adjusted:

- flow rate
- step pressure
- opening speed

IMPORTANT

To ensure a satisfactory setting of the valve the pressure drop over the valve should be at least 10% of the supply pressure or 2.5 mbar whichever is the greatest.

Flow rate adjustment (see fig. 8. and fig. 9.)

1. Remove the cap from top of the coil by loosening both screws.
2. Place a wrench on the adjustment hexagon nut.
3. Turn wrench counter-clockwise to increase or clockwise to decrease the flow rate .
4. Replace cap on top of the coil.

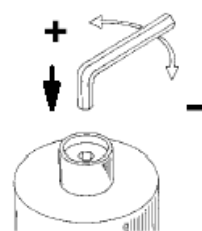


Fig. 6.

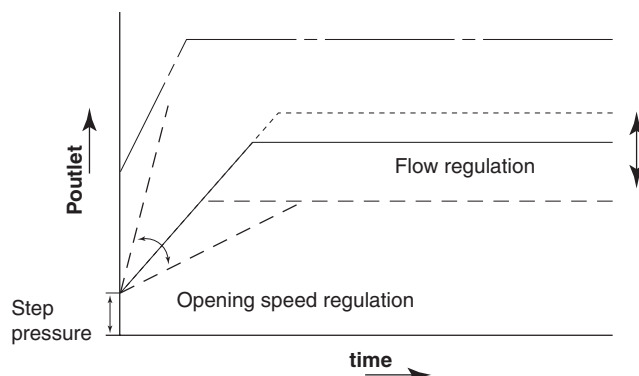


Fig. 7. Characterized opening.

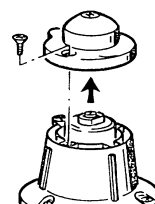


Fig. 8.

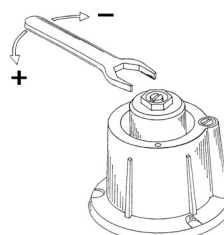


Fig. 9.

Step pressure adjustment (see fig. 10.)

1. Remove the cap from top of the coil by loosening both screws.
2. Place a screw driver in the slot of adjustment screw which is situated in center of the valve.
3. Turn screw driver counter-clockwise to increase or clockwise to decrease step pressure.
4. Replace cap on top of the coil.

Opening speed adjustment (see Fig. 11.)

1. Remove the cap from top of the coil by loosening both screws.
2. Place screw driver in the slot of adjustment screw which is of center line.
3. Turn screw driver counter-clockwise to increase the opening speed and therefore the time till full opening will decrease.
4. Turn screw driver clockwise to decrease the opening speed and therefore the time till full opening will increase.
5. Replace cap on top of the coil.

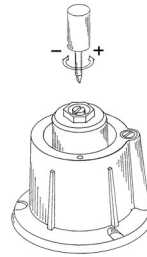


Fig. 10.

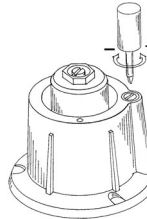


Fig. 11.

Final checkout of the installation

Set the appliance in operation after any adjustment and observe several complete cycles to ensure that all burner components function correctly.

OPTION INSTALLATION

Installation can be done by the OEM or by qualified personnel in field.

WARNING !

If additional hardware is installed on field, then installation personnel should take care, that the main gas flow to the appliance has been completely stopped by an upstream manual shut-off valve prior to the installation.

Installation

1. Remove the side flange from the valvebody
2. Take care that dirt can not enter the gas valve during handling
3. Install the screw-in additional hardware as required (vent, by-pass, external pilot valve)
4. Please refer to the relevant instruction sheet

CONSTRUCTION AND WORKING PRINCIPLES

The VQ400 combination gas valves are 2 x class „A“ fail safe shut-off valves.

The valve is opened by energizing the direct ON/OFF operator.

The direct ON/OFF operator consists of a coil and stop sleeve assy. Inside the top sleeve assy is a plunger which is able to move up and down and thus opening or closing the valve.

The plunger is gliding on two anti-friction bearings. Flow regulation is done by adjustable plunger stroke. A strainer made out of steel AISI 303 is incorporated between inlet flange and main body.

Valve closing spring is made out of steel AISI 302.

Seals and gaskets are manufactured out of hydrocarbon resistant NBR according to DIN 3535 and EN291.

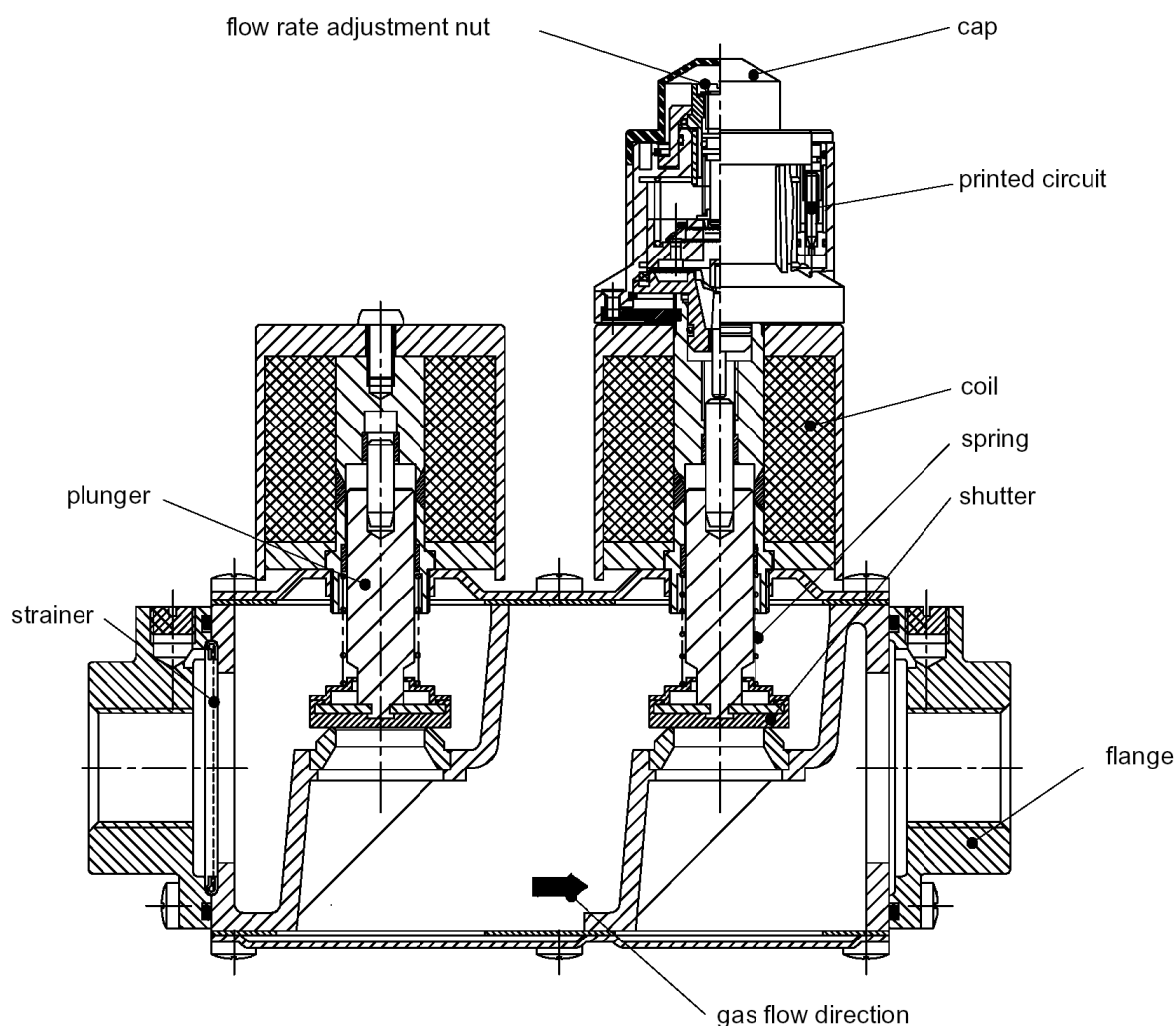


Fig. 12. Construction drawing VQ420/425

STANDARDS AND APPROVALS

Standards

The VQ400 Series combination valves have been designed to meet the European Standard EN161.

The safety shut-off valve meets class „A“ requirements.

According to bending stress the combination valve meets the highest requirements.

Regarding electric safety, the VQ400 Series combination valves can be used in appliances according to European Standard for a household electrical requirements EN60335 series and industrial applications.

The VQ400 Series combination valves also meet all Electro Magnetic Compatibility standards for non-industrial and industrial appliances.

Approvals

The VQ400 Series class „A“ combination valves conform with the following EC-directives:

- Gas Appliance Directive (90/396/EEC)
PIN: CE-0063AR1520
- Low Voltage Directive (73/23/EEC)
- Electro Magnetic Compatibility Directive (89/336/EEC)

The fact that the VQ400 Series combination gas valves are certified to European Standard EN161 means that this series meets more stringent requirements than laid down in the essential requirements stated in the directives and therefore meets the requirements in all EC and EFTA countries.

Details can be found in the Approvals List.

The registration number specific for each O.S. number is mentioned on the label of the control.

ORDERING INFORMATION

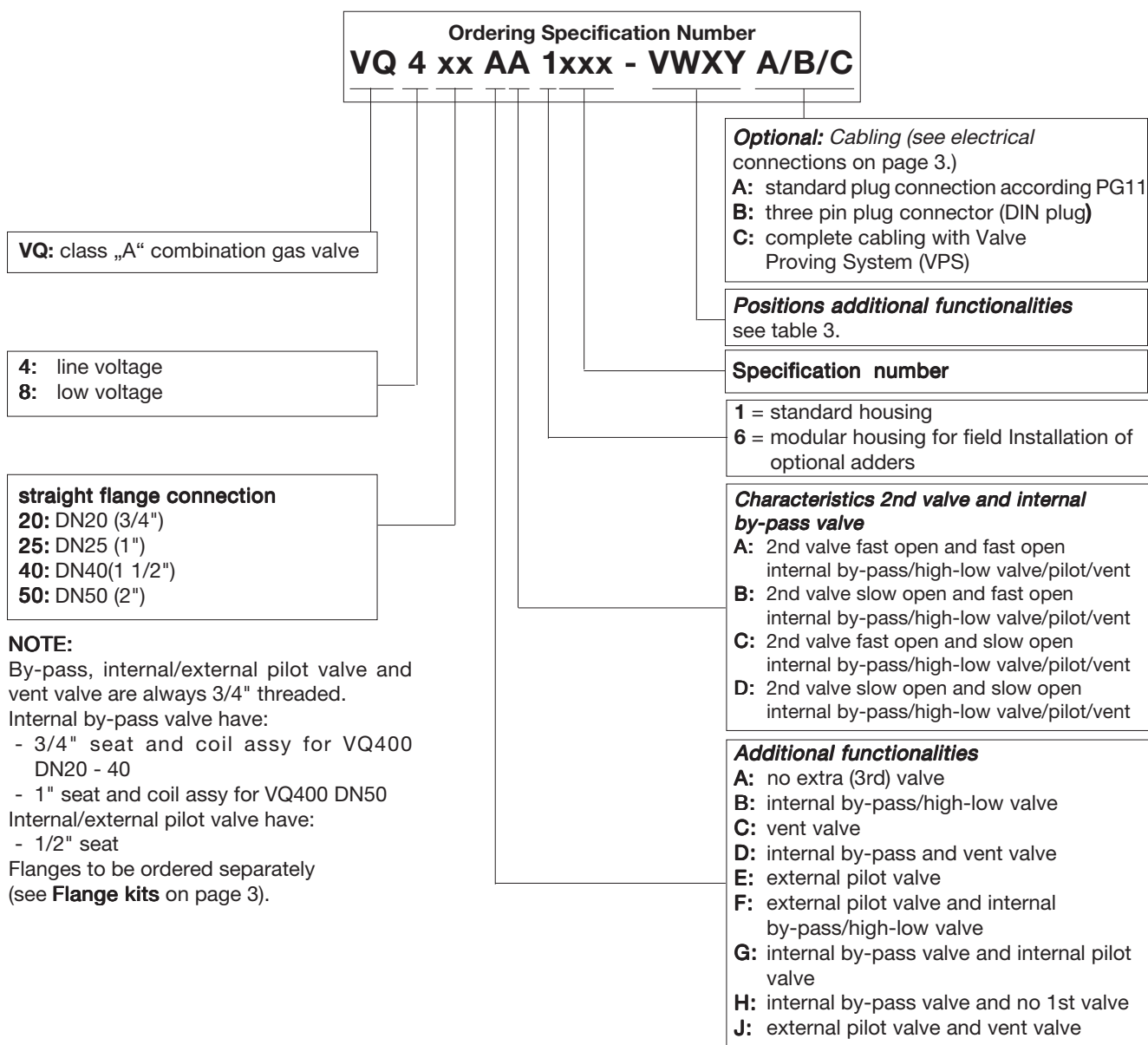


Fig. 13 Ordering information VQ400 Series combination valves

How to select your valve

Standard the VQ400 Series combination valves are equipped with two main valves V1 and V2. Safety valve V1 is always fast opening/closing. The second valve (V2) can be either fast (= with flow regulation) or slow (= with flow regulation and adjustable opening).

At the main body (4) flange connections are provided to mount either pressure switches (Min. or Max.), a by-pass valve, a pilot valve, a vent valve or a VPS + pressure switch.

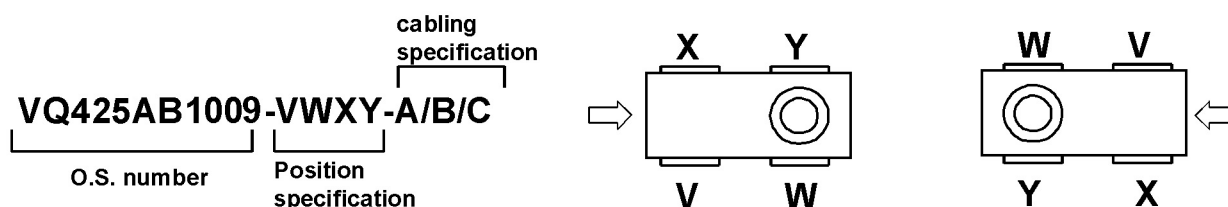
These additional functionalities can be mounted on various positions of the main body of the VQ400. The positions are specified by a letter code behind the O.S. number. With the table below you are able to compose your own customized combination valve to match your requirements exactly.

Ordering example

After you have decided the size and additional functionalities and their characteristics, continue with specifying the positions of the additional functionalities (see table 5.)

For example you want to order a VQ400 Series combination valve with the following specifications: 1" connection, second valve slow, a pressure switch (Min.) at position V a by-pass valve at position Y and DIN plug connections on all valves. From figure 13. you find i.e. O.S. number VQ425AB1009 Continue with specifying the code behind the O.S. number, starting with position V and end with Y, using the table 5. For the positions you don't use, place a 0 (plug). In our example the code behind the O.S. number is 1003B

Table 5. VQ400 Series positions additional functions chart

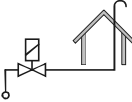


Type	Code	Positions			
		V	W	X	Y
Plug	0	●	●	●	●
C6097A2200 (2.5 ... 50 mbar)	1	●	● 3)	●	● 3)
C6097A2300 (30 ... 150 mbar)	2	●	● 3)	●	● 3)
By-pass valve	3		●		●
External Pilot	4		●		●
Internal Pilot	5		●		●
Vent Valve	6		●		●
A4021A + C6097A or C60VR	7	● 1)	● 2)	● 1)	● 2)
C6097A2400 (100 ... 500 mbar)	8	●	● 3)	●	● 3)
C60VR40040 (5 ... 40 mbar)	a	●	●	●	●
C60VR40110 (30 ... 110 mbar)	b	●	●	●	●
C60VR40300 (100 ... 300 mbar)	c	●	●	●	●

- 1) If **W** and **Y** both occupied by by-pass valve and pilot / vent valve then there is no possibility for the use of VPS.
- 2) C6097A can not be used for intermediate pressure in these position.
- 3) Not applicable in modular version.

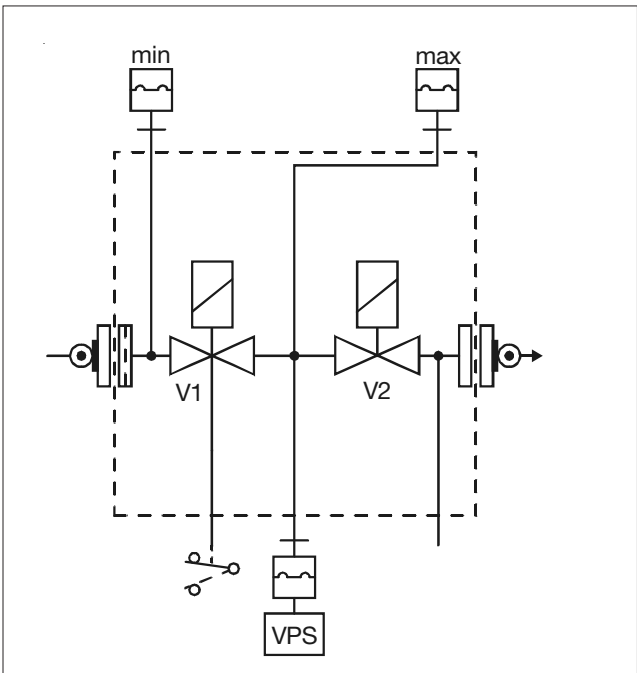
STANDARD CONFIGURATION

Symbols and abbreviations

	main valve V1 - V2		Closed Position Indication switch (CPI)
	internal by-pass / high-low valve Vb or internal pilot valve Vp		pressure tap
	external pilot valve Vp		flange with pressure tap
	vent valve Vv		Inlet strainer
	pressure switch min or max		
	Valve Proving System		

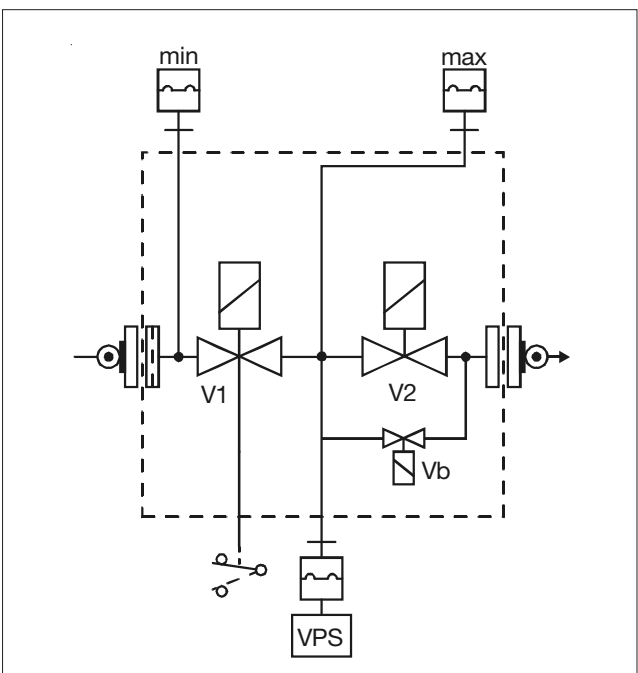
VQ400AA - VQ400AB series combination valves

Suffix	Characteristic		
	V1	V2	Vb
AA	Fast	Fast	-
AB	Fast	Slow	-



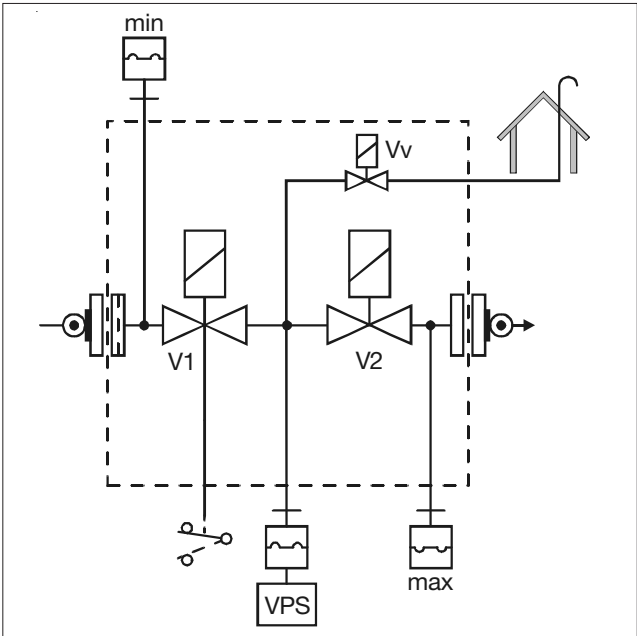
VQ400AB - VQ400BB - VQ400BC - VQ400BD series combination valves

Suffix	Characteristic		
	V1	V2	Vb
BA	Fast	Fast	Fast
BB	Fast	Slow	Fast
BC	Fast	Fast	Slow
BD	Fast	Slow	Slow



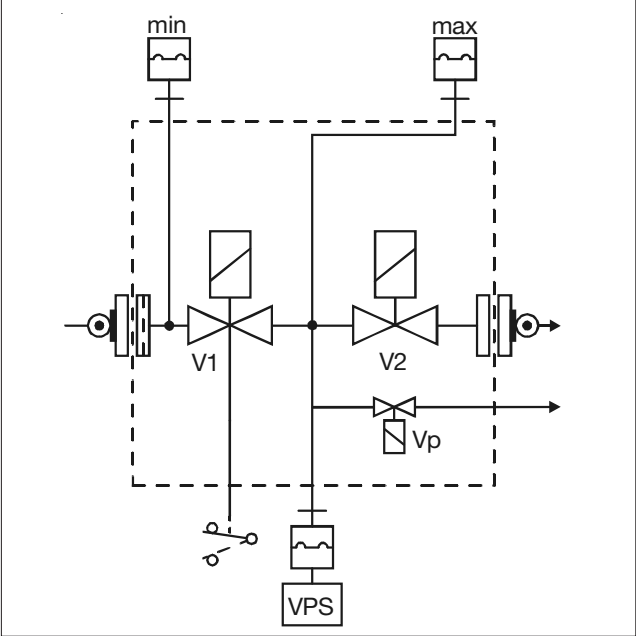
VQ400CA - VQ400CB series combination valves

Suffix	Characteristics		
	V1	V2	Vb
CA	Fast	Fast	-
CB	Fast	Slow	-



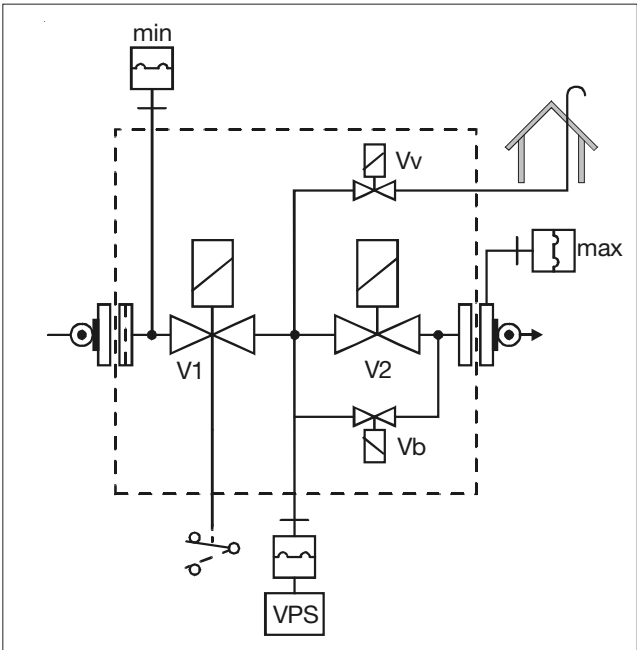
VQ400EA - VQ400EB series combination valves

Suffix	Characteristic		
	V1	V2	Vb
EA	Fast	Fast	-
EB	Fast	Slow	-



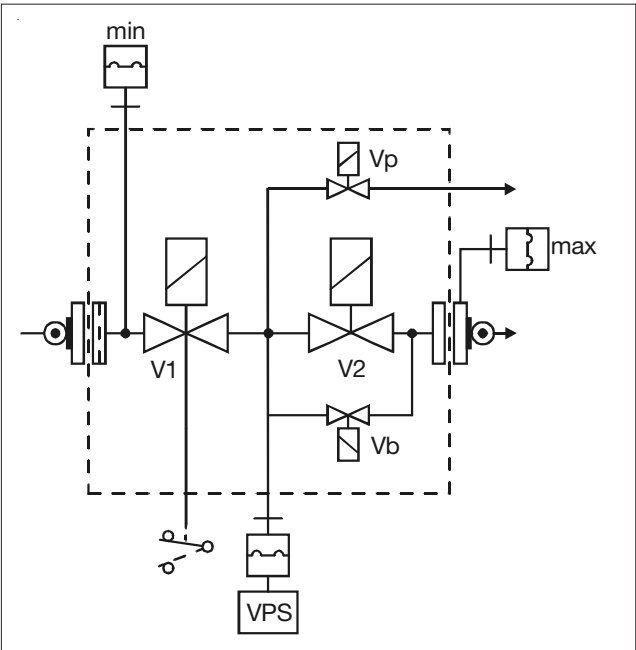
VQ400DA - VQ400DB - VQ400DC - VQ400DD series combination valves

Suffix	Characteristics		
	V1	V2	Vb
DA	Fast	Fast	Fast
DB	Fast	Slow	Fast
DC	Fast	Fast	Slow
DD	Fast	Slow	Slow



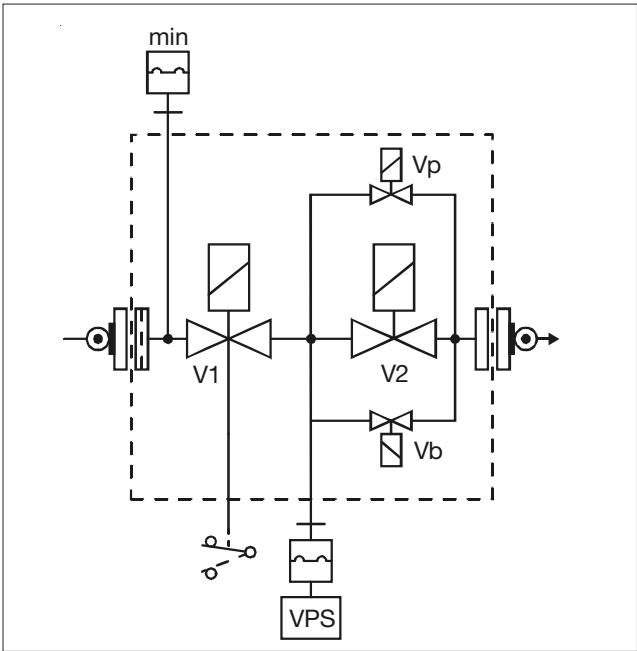
VQ400FA - VQ400FB - VQ400FC - VQ400FD series combination valves

Suffix	Characteristics		
	V1	V2	Vb
FA	Fast	Fast	Fast
FB	Fast	Slow	Fast
FC	Fast	Fast	Slow
FD	Fast	Slow	Slow



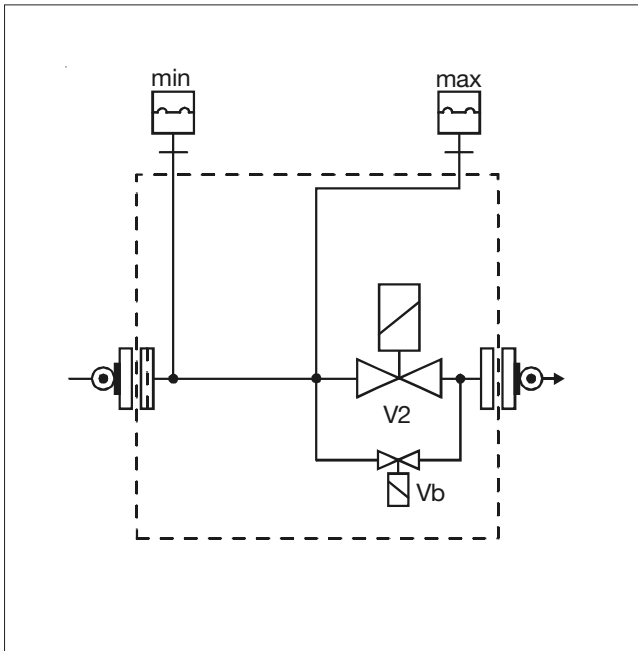
VQ400GA - VQ400GB - VQ400GC - VQ400GD
series combination valves

Suffix	Characteristics		
	V1	V2	Vb
GA	Fast	Fast	Fast
GB	Fast	Slow	Fast
GC	Fast	Fast	Slow
GD	Fast	Slow	Slow



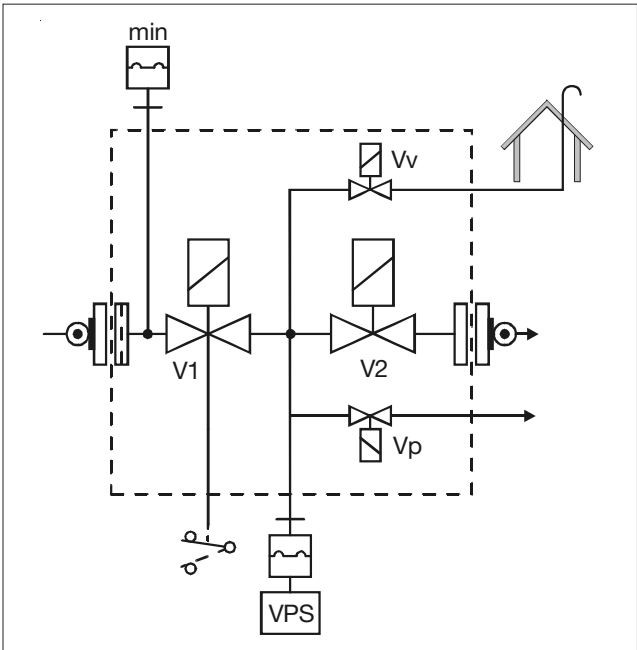
VQ400HA - VQ400HB - VQ400HC - VQ400HD
series combination valves

Suffix	Characteristics		
	V1	V2	Vb
HA	n/a	Fast	Fast
HB	n/a	Slow	Fast
HC	n/a	Fast	Slow
HD	n/a	Slow	Slow



VQ400JA - VQ400JB series combination valves

Suffix	Characteristic		
	V1	V2	Vb
JA	Fast	Fast	-
JB	Fast	Slow	-



REPLACEMENT PARTS AND ACCESSORIES

WARNING

- Take care that only qualified persons carry out the installation of parts, accessories, and add on components.
- Follow the installation instructions included in the package.
- Check that the selected part, accessory or add on component is the correct one for the application in question.
- Replace the old gaskets with the new ones supplied in the package and check for leakage when the supply is switched on again.
- After installation and/or replacement has been completed, a gas leak test must be carried out.
- Also check the gas valve for satisfactory operation after fitting accessories.

Table 6: Coils for VQ400 series

Model		O.S. number	rated Voltage (Vac)	200 mbar	100 mbar	Packing qty
VQ420	V1	BB052301	220 ... 240	●	●	1
		BB051101	110	●	●	1
	V2	BB152301	220 ... 240	●	●	1
		BB151101	110	●	●	1
VQ425	V1	BB052325	220 ... 240	●	●	1
		BB051125	110	●	●	1
	V2	BB152325	220 ... 240	●	●	1
		BB151125	110	●	●	1
VQ440	V1	BB052341	220 ... 240	●		1
		BB052304	220 ... 240		●	1
		BB051135	110	●		1
		BB051151	110		●	1
	V2	BB152327	220 ... 240	●		1
		BB152341	220 ... 240		●	1
		BB151135	110	●		1
		BB151151	110		●	1
VQ450	V1	BB052304	220 ... 240	●		1
		BB052305	220 ... 240		●	1
		BB051511	110	●		1
		BB051153	110		●	1
	V2	BB152341	220 ... 240	●		1
		BB152304	220 ... 240		●	1
		BB151151	110	●		1
		BB151154	110		●	1

Table 7: Rectifier boards for VQ400 series

Model	O.S. number	rated Voltage (Vac)	Packing qty
VQ420/425	CS020020	100 ... 200	1
	CS020070	220 ... 240	1
VQ440/450	CS020014	220 ... 240	1
	CS020015	110	1

Table 8: Characterized opening mechanism

Model	O.S. number	Packing qty
VQ420/425	GF050001	1
VQ440/450	GF050001	1

Table 9: Closed Position Indication (CPI) switch

Model	O.S. number	Lenght (L) (mm)	Packing qty
VQ420	MS062001	55	1
VQ425	MS062501	52	1
VQ440	MS064001	79	1
VQ450	MS065001	77,5	1

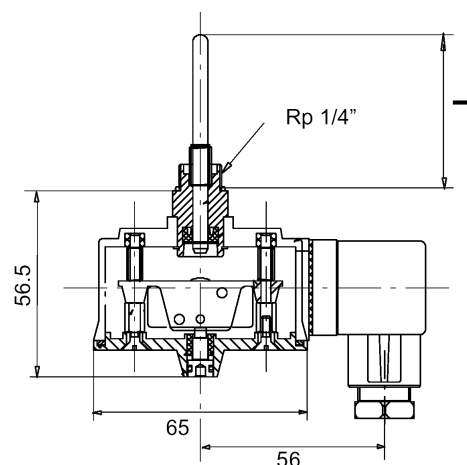


Fig. 14: Dimensional drawing Closed Position Indication (CPI) switch

Honeywell

Automation & Control Solutions

Control Product

Satronic AG

Honeywell-Platz 1

CH-8157 Dielsdorf

Phone: +41 1 855 22 11

Fax: +41 1 855 22 22