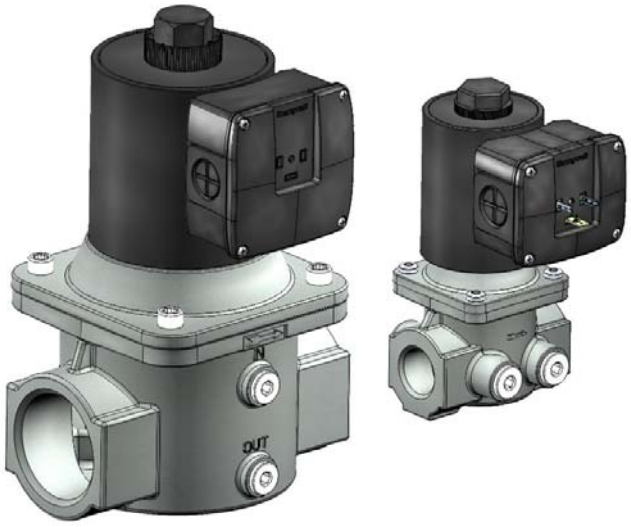
Honeywell

VE4000 & VE5000 SERIES

CLASS "A" GAS VALVES

INSTRUCTION SHEET



APPLICATION

These series class A gas 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

GENERAL

DESCRIPTION

VE4000 Series Gas Valve
The VE series gas valves offer a series of functionalities:

- Gas valves, Normally Closed.
- CPI switch optional
- Gas valves for use with Honeywell V4055, V4062 and V9055 fluid power actuators.
- Relief valves Normally Open.
- Adjustable opening characteristics optional

FEATURES

- The VExxxxX1xxx series gas valves have a wrench boss as well on inlet side as on outlet side for pipe fitting incorporated in the valve housing.
- The VExxxxXXX3xxx and VE5xxxXXX3xxx series gas valves are equipped at both sides with mounting holes to adapt a pilot solenoid valve combination, to allow either internal or external pilot gas. Furthermore these valves are equipped with two M6 mounting holes to adapt an A4020A electronic leak test The VExxxxBXX series gas valves have an adjustable flow rate regulator on top of the coil.
- For the VE series gas valves a series of field replaceable connection boxes (including circuits) are available
- The VExxxxCXX series gas valves have adjustments for step pressure flow rate and opening speed in hydraulic damper unit on top of the coil.
- The VExxxxSXX series gas valves normally open relief valves have no option for mounting a CPI switch
- The VE5xxxX3xxx series gas valves can be equipped with a wide range of Honeywell fluid power actuators. These fluid power actuators are field replaceable.

MODEL CHART

Options	1000/2000 series internal thread	3000/4000 series flange connection
DN10 / 3/8”	VExx10	
DN15 / 1/2”	VExx15	
DN20 / 3/4”	VExx20	
DN25 / 1”	VExx25	
DN32 / 1 1/4”	VExx32	
DN40 / 1 1/2”	VExx40	
DN50 / 2”	VExx50	
DN65 / 2 1/2”	VExx65	VExx65
DN80 / 3”	VExx80	VExx80
DN100 / 4”		VEx100
Non adjustable ON/OFF (VExxxxAXX)	Standard	Standard
Flow regulator (VExxxxBXX)	Optional	Optional 2)
Adjustable opening and flow regulator (VExxxxCXX)	Optional 1)	Not available
Motorized opening: ON/OFF (VE5xxxAxxxx)	Not available	VE5065A3xxx VE5085A3xxx VE5100A3xxx
Motorized opening: characterized (VE5xxxCxxxx)	Not available	VE5065C3xxx VE5085C3xxx VE5100C3xxx
Safety relief valve, ON/OFF, Normally Open, with or without position indication switch (VExxxxSxxxx)	Optional for: VE..20 VE..25	Not available

1) Except VExx65/VExx80
2) Except VE4100

TECHNICAL

SPECIFICATIONS

VE series solenoid gas valves
VExx10 (DN 10)
VExx15 (DN 15)
VExx20 (DN 20)
VExx25 (DN 25)
VExx32 (DN 32)
VExx40 (DN 40)
VExx50 (DN 50)
VExx65 (DN 65)
VExx80 (DN 80)
VEx100 (DN 100)

VE series suitable for fluid power actuators
VE5065 (DN 65)
VE5080 (DN 80)
VE5100 (DN 100)

Pipe sizes 1000/2000 series
Inlet and outlet G3/8" up to G21/2" internal parallel pipe thread according ISO 7-1

Pipe sizes 3000/4000 series
Flanged connection DN 65, DN 80 and DN100 according to DN 16 UNI 2223.

Torsion and bending stress
Pipe connections meet Group 2 according EN 161 requirements.

Ambient temperature
-15 °C ... 60 °C

Supply voltage
24 V, 50/60 Hz 1)*
100-120 V, 50/60 Hz
200-240 V, 50/60 Hz
The applicable voltage is led to the solenoid coil via a rectified circuit.
1): only for DN10 up to DN50

Operational voltage range
The gas valve will function between 85% and 110% of the rated voltage

Electrical connection VE4xxx/VE6xxx/VE8xxx
Option 1: Wiring on terminal block on circuit cables entering box via M20 Cable Gland
Option 2: Connection by means of DIN plug on DIN faced connection located on front cover according to ISO4400 / DIN EN 175301-803

Electrical connection VE5xxx series
See product literature fluid power actuators

Enclosure VE4xxx/VE6xxx/ VE8xxx
IP 65 when using supplied M20 gland and cable
diameter 7 – 13 mm for M20 version or using suitable DIN plug with gasket.

Capacity
See page 7 and 8

Maximum operating pressure

Inlet	Maximum operating pressure (mbar)
VE4010 VE6010 VE8010	200 or 360 360 200
VE4015 VE6015 VE8015	200 or 360 360 200
VE4020 VE6020 VE8020	200 or 360 360 200
VE4025 VE6025 VE8025	200 or 360 360 200
VE4032 VE6032 VE8032	200 or 360 360 200
VE4040 VE6040 VE8040	200 or 360 360 200
VE4050 VE6050 VE8050	200 or 360 360 200
VE4065/VE6065 VE8065 VE5065	200 or 360 200
VE4080/VE6080 VE8080 VE5080	200 or 360 200 500
VE4100 VE6100 VE5100	200 or 360 360 360

POWER CONSUMPTION (VA)

Power consumption (VA) 200 mbar versions

VExxxxXXL versions

Shut off valves

Model number		24 V 50/60 Hz Nominal	24 V 50/60 Hz 110% Nominal	200-240 V 50/60 Hz Nominal	200-240 V 50/60 Hz 110% Nominal
VExx10		15	16.5	11-16	12-17,5
VExx15		15	16.5	11-16	12-17,5
VExx20		21	23	17-24	19-26,5
VExx25		21	23	17-24	19-26,5
VExx32		50	55	31-44	34-48,5
VExx40		50	55	31-44	34-48,5
VExx50		49	54	35-51	38,5-53,5
VExx65		88	97	68-98	75-108
VExx80		88	97	68-98	75-108
VEx100	Start up	-	-	112-162	123-178
	Cont.	-	-	28-40	31-44

Power consumption (VA) 360 mbar versions

VExxxxXXH versions

Shut off valves

Model number		100-120 V 50/60 Hz Nominal	100-120 V 50/60 Hz 110% Nominal	200-240 V 50/60 Hz Nominal	200-240 V 50/60 Hz 110% Nominal
VExx10		13-19	14-21	11-16	12-17,5
VExx15		13-19	14-21	11-16	12-17,5
VExx20		17-24	19-26,5	17-24	19-26,5
VExx25		17-24	19-26,5	17-24	19-26,5
VExx32		41-59	45-65	35-51	38,5-53,5
VExx40		41-59	45-65	35-51	38,5-53,5
VExx50		53-76	58-84	48-70	53-77
VExx65	Start up	205-295	225-325	191-274	210-301
	Cont.	51-74	56-81	48-69	53-76
VExx80	Start up	205-295	225-325	191-274	210-301
	Cont.	51-74	56-81	48-69	53-76
VEx100	Start up	180-259	198-285	456-657	501-723
	Cont.	45-65	50-72	115-164	127-180

Power consumption (VA) 360 mbar versions

VExxxxSGH versions

Safety relief valves

Model number	24 V 50/60 Hz Nominal	24 V 50/60 Hz 110% Nominal	100-120 V 50/60 Hz Nominal	100-120 V 50/60 Hz 110% Nominal	200-240 V 50/60 Hz Nominal	200-240 V 50/60 Hz 110% Nominal
VExx20S	16	19	14	17	16	19

PERFORMANCE CHARACTERISTICS

Opening time (except VE5xxx series)
VExxxxAXX &,BXXX versions: less than 1 second
VExxxxCXX version: adjustable from 1 up to 30 seconds at rated capacity

Closing time
VExxxxAXX, BXX, CXX and S series (except VE5xxx series)
Less than 1 second

Maximum working cycles/minute

S versions:	20
DN10–DN 25 AXX & BXX versions:	20
DN10-DN25 C versions:	1
DN32-DN100:	1
VE5... series:	1 cycle per 2 minutes

Duty cycle
Coil suitable for permanent energization

INSTALLATION

WARNING

- Take care that installer is a trained experienced service man.
- Turn off gas supply before starting installation.
- Disconnect power supply to prevent electrical shock and/or equipment damage.

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.

WARNING

- The outlet of a pressure relief valve (VE4000S series) must always be connected to open atmosphere.

Main gas connection threaded valves

- Take care that dirt cannot enter the gas valve during handling.
- Ensure the gas flows in the same direction as the arrow on the housing of the gas valve.
- Use a sound taper fitting with thread according to ISO 7-1 (BS 21, DIN2999) or a piece of new, properly reamed pipe, free from swarf
- Do not thread or tighten the pipe or pipe fitting too far. Otherwise valve distortion and malfunction could result.
- Apply a moderate amount of good quality thread compound to the pipe or fitting only, leaving the two end threads bare. PTFE tape may be used as an alternative.
- In order to tighten the pipe in the valve, do not use the actuator as a lever but use a suitable wrench operating on the wrench bosses.

Main gas connection flanged valves

- Take care that dirt cannot enter the gas valve during handling.
- Ensure the gas flows in the same direction as the arrow on the housing of the gas valve.
- 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.
- Place gasket. If necessary grease it slightly to keep it in place.
- Mount gas valve between flanges using the bolts for each flange.

WARNING

Tightness test after installation

- Paint all pipe connections and gaskets with a strong soap and water solution..
- 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

CAUTION

- Switch off power supply before making electrical connections.
- Take care that wiring is in accordance with local 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.

Instructions Electrical connections

Connection instructions with PG gland

On each side of the connection box there are break out area's. See Fig 1. After removing the central part of one of these break outs, the PG gland (supplied with the valve) can be fitted.

Fig 1

After removing the nut from the gland, the gland can be placed in the break out. The nut needs to turned onto the gland inside the box and tightened as shown in Fig 2. Specified torque for the nut: 4 Nm. Mounted PG gland shown in Fig 3. Specified torque PG gland: 3 Nm.

Fig 2

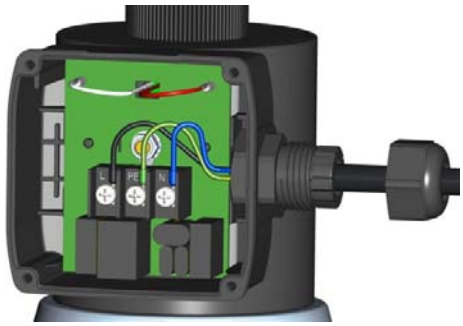


Fig 3

After connecting wires (L, N & PE) to dedicated connectors on connector block, the connection needs to closed by mounting the front cover. Before placing the cover, please check the correct position of seal as shown in Fig 4. The cover can only be mounted in one orientation. This is shown in Fig 5.
Specified torque for cover screw: 0.5 Nm.
Specified cable diameter for gland: 7 – 13 mm.

Fig 4

Fig 5

Connection instructions DIN plug

Specified torque for DIN connector screw: 0.2 Nm.

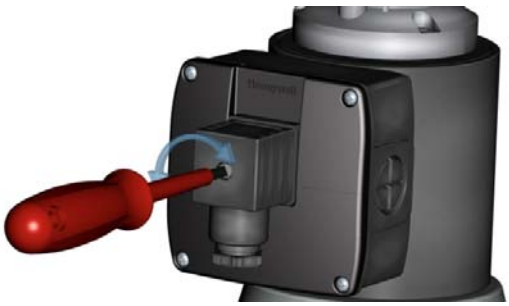


Fig 6

ADJUSTMENT AND FINAL CHECKOUT

WARNING

- Adjustments must be made by qualified persons only

CAUTION

- To ensure a safe closing of the valves, it is essential that voltage over the terminals of operators is reduced to 0 Volt.

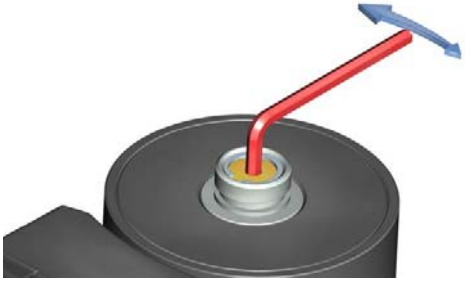
IMPORTANT

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 which ever is the greatest.

VExxxxB SERIES
(see fig 7.)

Flow rate adjustment

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



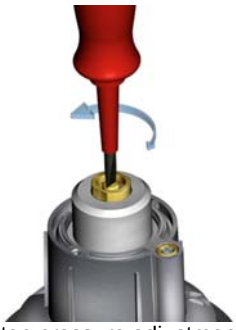
Flow adjustment fig 7

VExxxxC SERIES
(see fig. 8, 9 and 10)
The following characteristics can be adjusted:

- flow rate
- step pressure
- opening speed

Step pressure adjustment

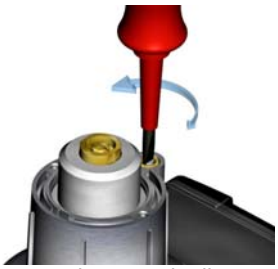
- Remove the cap from top of the coil by loosening both screws.
- Place a screw driver in the slot of adjustment screw which is situated in center of the valve.
- Turn screw driver counter--clockwise to increase or clockwise to decrease step pressure.
- Replace cap on top of the coil.



Step pressure adjustment. Fig 8

Opening speed adjustment

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



Opening speed adjustment. Fig 9
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Flow rate adjustment

- Remove the cap screw from top of the coil by loosening both screws
- Place a wrench onto the adjustment nut.
- Turn wrench counter--clockwise to increase or clockwise to decrease flow rate.
- Replace cap screw.

Flow rate adjustment. Fig 10

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

STANDARDS AND APPROVALS

Honeywell
THE POWER OF CONNECTED

CE

EU – Declaration of Conformity

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Branding	**Honeywell**		
Product	Automatic shut-off valves		
Type & Models	VE4xxx(N) A, B, C, S xxxx VE4xxx L/H, G/P, A, B, C, S xxxx VE5000 A, C xxxx		VE8xxx(N) A, B, C, S xxxx VE8xxx L/H, G/P, A, B, C, S xxxx
Product-ID-Number	CE-0063AP3075		
EU-Acts	90/396/EC 2016/426/EU 2014/35/EU 2014/30/EU	GAD GAR LVD EMC	**Till April 21'st 2018** **From April 21'st 2018** **Immunity** **Emision conformity can only be verified in combination with the appliance**
Standards	**EN161:2013**	**Automatic Shut off Valves**	
EU-Type Examination	(EU) 2016/426 Annex III paragraph 1 Kiwa Nederland B.V., Notified Body 0063		
Surveilance Procedure	(EU) 2016/426 Annex III paragraph 3 Kiwa Nederland B.V. Notified Body 0063		

In our capacity as manufacturer, we hereby declare:

Products labelled accordingly meet the requirements of the listed directives, regulations and standards. They correspond to the tested type samples. The production is subject to the stated surveillance procedure.
This products comply with the substance restrictions of RoHS II, but they are not in the scope of the directive RoHS II (2011/65/EU).

2017-11-09

Manager Standards and Approvals
J. Hepping

Honeywell Technologies Sàrl, Z.A. La Piéce, CH-1180 Rolle Switzerland

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.
Specification of data is given in the instruction leaflet in the package .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.

SPARE CONNECTION BOXES

Valve type	Voltage	Connect.	Ordering number
VExx10/VExx15	24	M20	KTBBE00-115
	100-120	M20	KTBBE00-115
	200-240	M20	KTBBE00-115
VExx10/VExx15	24	DIN	KTBBE00-215
	100-120	DIN	KTBBE00-215
	200-240	DIN	KTBBE00-215
VExx20/VExx25	24	M20	KTBBE00-120
	100-120	M20	KTBBE00-120
	200-240	M20	KTBBE00-120
VExx20/VExx25	24	DIN	KTBBE00-220
	100-120	DIN	KTBBE00-220
	200-240	DIN	KTBBE00-220
VExx32XXL / VExx40XXL	24	M20	KTBBE00-141
	100-120	M20	KTBBE00-140
	200-240	M20	KTBBE00-140
VExx32XXH / VExx40XXH	24	M20	-
	100-120	M20	KTBBE00-150
	200-240	M20	KTBBE00-150
VExx32XXL / VExx40XXL	24	DIN	KTBBE00-241
	100-120	DIN	KTBBE00-240
	200-240	DIN	KTBBE00-240
VExx32XXH / VExx40XXH	24	DIN	-
	100-120	DIN	KTBBE00-250
	200-240	DIN	KTBBE00-250

Valve type	Voltage	Connect.	Ordering number
VExx50	24	M20	KTBBE00-150
	100-120	M20	KTBBE00-150
	200-240	M20	KTBBE00-150
VExx50	24	DIN	KTBBE00-250
	100-120	DIN	KTBBE00-250
	200-240	DIN	KTBBE00-250
VExx65XXL / VExx80XXL	24	M20	KTBBE00-182
	100-120	M20	KTBBE00-180
	200-240	M20	KTBBE00-180
VExx65XXH / VExx80XXH	24	M20	-
	100-120	M20	KTBBE00-181
	200-240	M20	KTBBE00-181
VExx65XXL / VExx80XXL	24	DIN	KTBBE00-280
	100-120	DIN	KTBBE00-280
	200-240	DIN	KTBBE00-280
VExx65XXH / VExx80XXH	24	DIN	-
	100-120	DIN	KTBBE00-281
	200-240	DIN	KTBBE00-281
VEx100	100-120	M20	KTBBE00-100
	200-240	M20	KTBBE00-100
VEx100	100-120	DIN	KTBBE00-200
	200-240	DIN	KTBBE00-200

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