

## Gas Valves TYPE VOO...



### DESCRIPTION

The combination gas valves type **VOO...** have been developed for use in gas-fired domestic central heating boilers and water heating appliances with automatic ignition systems. The controls are also suited for use on a wide variety of gas-fired appliances.

Gas valves of this series, have a CE type Certificate (PIN No. 51DP5187) out according to annex III – **Module B** of the regulation (EU) 2016/426.

This EU type examination certificate is issued by IMQ as notified body for the regulation (EU) 2016/426.

### USE

- Compact design suitable for installation in small modern boilers and heaters.
- Specially designed for gas appliance with DBI system to light the main burner.
- Servo pressure regulator ensures stable outlet pressure.
- Pressure feedback ensures constant burner pressure.

### Functional options

- Fast and slow opening version for on/off control.
- Adjustable slow opening to ensure smooth light-up of burner.

### Mechanical options

- 2 shutoff valves.
- Servo pressure regulator.
- Inlet/outlet pressure test points.
- All adjustments are accessible from the top of valve.
- A fine-mesh screen is integrated at the inlet side.

## TECHNICAL FEATURES

General unit data:

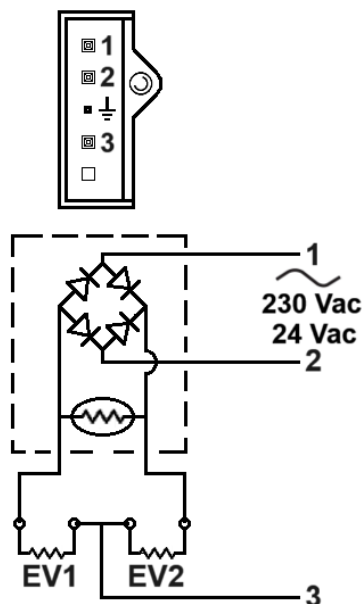
| Models                                                                               | VOO...                                                                                                                              |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Mounting position                                                                    | vertical or horizontal $\pm 5^\circ$                                                                                                |
| Type of gas                                                                          | gas families II and III                                                                                                             |
| Gas inlet pressure                                                                   | maximum 57.5 mbar / 5.75 kPa                                                                                                        |
| Operating temperature                                                                | - 20 °C ... + 60 °C                                                                                                                 |
| Operating voltage tolerance                                                          | gas valve operates correctly between 85 % and 110 % of the rated voltage                                                            |
| Degree of protection                                                                 | IP44 with optional connector                                                                                                        |
| Dimensions                                                                           | refer to "paragraph construction characteristics"                                                                                   |
| Inlet filter                                                                         | no. 100 fine mesh                                                                                                                   |
| Pipe connection inlet and outlet                                                     | refer to "paragraph Dimensions"                                                                                                     |
| Pressure feedback connection                                                         | 6.5 mm outside dia. for tube connection                                                                                             |
| Regulation capacity                                                                  | minimum 0.31 m³/h air                                                                                                               |
| Outlet pressure range for ON/OFF                                                     | 1...35 mbar / 0.1...3.5 kPa Controller                                                                                              |
| Valve class                                                                          | (in accordance with EN126):<br>1st safety shutoff valve class <b>B</b><br>2nd safety shutoff valve class <b>J</b> or class <b>C</b> |
| Class of regulator                                                                   | class <b>B</b> (in accordance with EN126)                                                                                           |
| Group                                                                                | <b>1</b>                                                                                                                            |
| Closing time of safety shutoff valves                                                | $\leq 1$ second                                                                                                                     |
| Capacity in m³/h air at pressure drop flow rate at pressure drop of 5 mbar / 0.5 kPa | 3.5 m³/h air                                                                                                                        |
| Weight                                                                               | approximates 750 g                                                                                                                  |
| Design service life                                                                  | over 10 years (shutdown valve life 500,000 times)                                                                                   |

## ELECTRICAL CONNECTION

### Note

The coils for the safety shutoff function of the **VOO...** gas valve are AC type.

Pin connections EV1 and EV2



## FLOW RATE DIAGRAM

Capacity in m<sup>3</sup>/h air at  
pressure differential

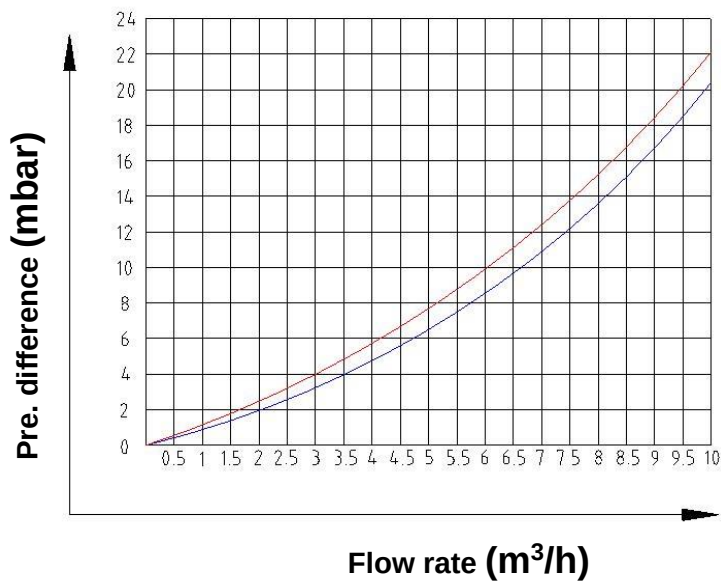
Solenoid valve class

Flow rate at a pressure drop of 5 mbar / 0.5 kPa

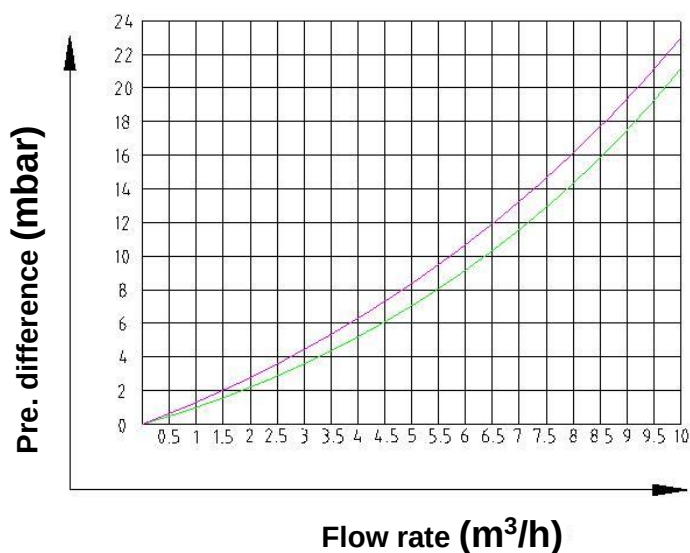
**B + (J or C)**

3.5 m<sup>3</sup>/h air

**VOO34...** classes **B + J** and **B + C**

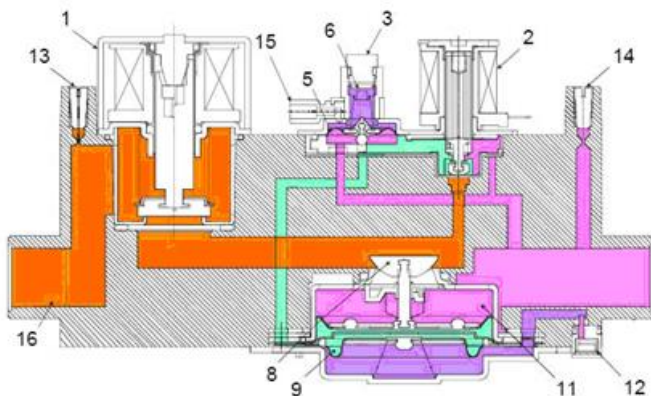


**VOO12...** classes **B + J** and **B + C**



## FUNCTION

Sectional view of **VOO...**



### Legend

- 1 1st shutoff valve (class B)
- 2 2nd shutoff valve
- 3 cap
- 4 not available
- 5 Servo membrane
- 6 Setting screw for servo pressure regulator
- 7 not available
- 8 Servo valve
- 9 Diaphragm for slow opening
- 10 not available
- 11 Main diaphragm
- 12 Adjusting screw for slow opening
- 13 Inlet pressure
- 14 Outlet pressure
- 15 Combustion chamber feedback pressure
- 16 Filter

## WARNING NOTES



To avoid injury to persons, damage to property or the environment, following warning notes must be observed !

**Do not open, interfere with or modify the valve!**

- All activities (mounting, installation, service work, etc.) must be performed by qualified staff.
- Before performing any wiring changes in the connection area of the **VOO...**, completely isolate the unit from the main supply (all-polar disconnection).
- Ensure protection against electric shock hazard by providing adequate protection for the connection terminals.
- Check to ensure that wiring is in an orderly state.
- Fall or shock can adversely affect the safety functions. Such valves must not be put into operation even if the unit does not exhibit any damage.

## MOUNTING NOTES

- Ensure that the relevant national safety regulations are complied with.

Outlet pressure of servo pressure regulator – on/off control.



- Check the inlet and outlet pressure using the pressure test points provided.
- Remove the protective cap,
  - turn the screw (white) clockwise to increase the outlet pressure.
  - turn the screw (white) counterclockwise to decrease the outlet pressure.
- Ensure that the outlet pressure is correctly adjusted before replacing the protective cap.

## INSTALLATION NOTES

### Main gas connection

- To prevent distortion and/or damage of the external thread, take care not to tighten the pipe fitting too far.
- Ensure that the gasket is properly placed in the right position.
- Ensure that the gas flow is in the same direction as the arrow on the valve body.

### Pressure test points

- The valve is provided with an inlet and outlet pressure test point.
- When checking the pressure, undo the screw one half turn and slip the tube over the nipple.

Note: Make sure the screw is retightened after making the test.

### Electrical connections

**Warning:** Switch off power supply before making the electrical connections. Wiring must be in accordance with local regulations. Follow the instructions supplied by the manufacture.

- Install power in accordance with the required pin connection (refer to Function).
- When making connections to the terminals of the valve, use wires and connectors which are suited for temperature up to 105°C.

### Checkout and

#### Installation

- After each adjustment, put the control into operation, run it through several complete cycles and check to ensure that all burner components function correctly.

## COMMISSIONING NOTES

- Prior to commissioning the plant, check to ensure wiring is in an orderly state.

## SERVICE NOTES

- Each time a unit had been replaced, check to ensure that wiring is in an orderly state.
- Check wiring and all safety functions each time a unit has been replaced.

### Important

Follow the appliance manufacturer's service and maintenance instructions.

### Gas leakage test

The gas valves are factory-tested for gas leakage. Only the main burner connection needs to be checked for gas leakage.

## ACCESSORIES

**Ignition Equipment**, combined with connecting cable.

The **PEC...** consists of a cable for connection to the safety shutoff valves of the **VOO...** gas valves and electronic **PEC...** ignition equipment for use on gas boilers with signal- or double-pole ignition.

Note Ignition Equipment has two types:

**PEC1** is used for gas valve with AC type.

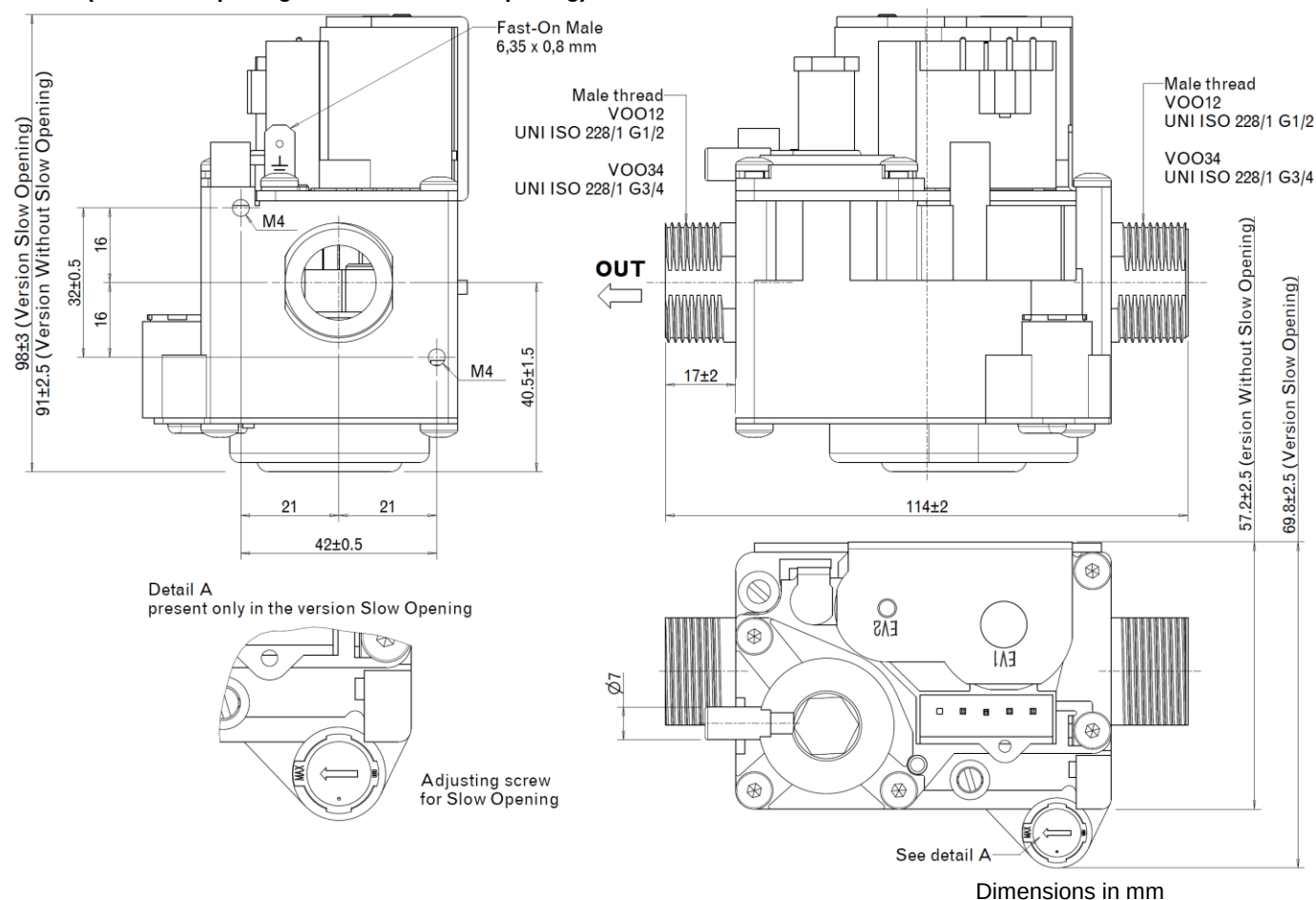
**PEC2** is used for gas valve with DC type.



**PEC...**

## DIMENSIONS

### VOO... (with slow opening and without slow opening)



## CONSTRUCTION CHARACTERISTICS

|                 |                                                                                                  |
|-----------------|--------------------------------------------------------------------------------------------------|
| Valve type:     | <b>VOO</b> ..... Fast and slow opening version for on/off control                                |
| Connection:     | <b>12</b> ..... Male thread UNI ISO 228/1 G1/2<br><b>34</b> ..... Male thread UNI ISO 228/1 G3/4 |
| slow opening:   | <b>01</b> ..... Fast opening<br><b>02</b> ..... Slow opening (Low voltage version only)          |
| Valve class 1st | <b>B</b> ..... Class safety shutoff <b>B</b>                                                     |
| Valve class 2nd | <b>J</b> ..... Class safety shutoff <b>J</b><br><b>C</b> ..... Class safety shutoff <b>C</b>     |
| Supply voltage: | <b>230 Vac 50 Hz</b><br><b>24 Vac 50 Hz</b>                                                      |

|                      |                                                  |
|----------------------|--------------------------------------------------|
| <b>Example:</b>      | <b>VOO3401BC 230 Vac 50 Hz</b>                   |
| <b>VOO</b>           | Fast and slow opening version for on/off control |
| <b>34</b>            | Male thread UNI ISO 228/1 G3/4                   |
| <b>01</b>            | Fast opening                                     |
| <b>B</b>             | Class <b>B</b> 1st safety shutoff valve          |
| <b>C</b>             | Class <b>C</b> 2nd safety shutoff valve          |
| <b>230 Vac 50 Hz</b> | Supply voltage                                   |



### NOTES FOR PRODUCT DISPOSAL

The device contains electronic components and cannot therefore be disposed of as normal household waste. For the disposal procedure, please refer to the local rules in force for special waste.

**ATTENTION → Company Brahma S.p.A. takes no responsibility for any damage resulting from Customer tampering with the device.**

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15/01/2025 Subject to amendments without notice