SIT Group

# 824 - 825 NOVA

MULTIFUNCTIONAL GAS CONTROL

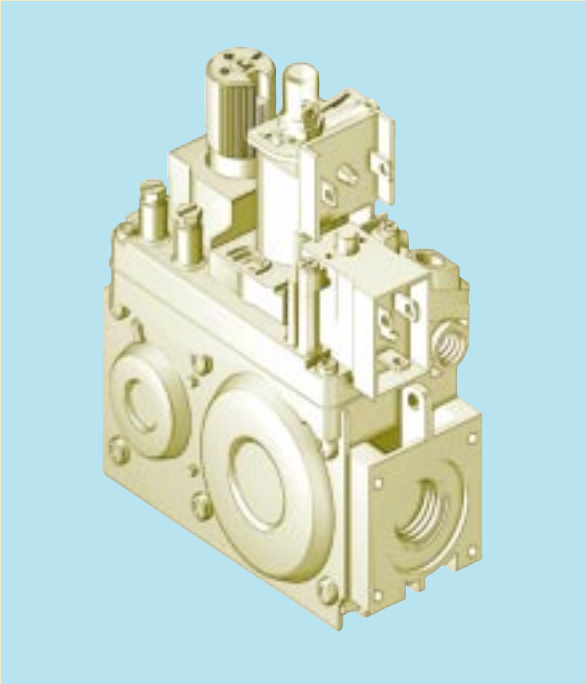
## MODULATING GAS FLOW CONTROL:
## STEPPED (824 NOVA) - CONTINUOUS (825 NOVA)

## THERMOELECTRIC SAFETY DEVICE

## AUTOMATIC SHUT OFF VALVE

PIN 63AP7060/2

# ELECTRICALLY MODULATED MULTIFUNCTIONAL CONTROL



*824-825 NOVA is suitable for appliances for catering, instant water heaters, boilers and convector heaters, which require the regulation of the gas flow as a function of the temperature.*

**Multifunctional control with thermoelectric safety device, fitted with: single control knob (off, pilot, on), electrically modulated stepped (NOVA 824) or continuous (NOVA 825) gas flow, restart interlock, servo-controlled pressure regulator, automatic on-off solenoid valve. On request, a step ignition device can be fitted.**

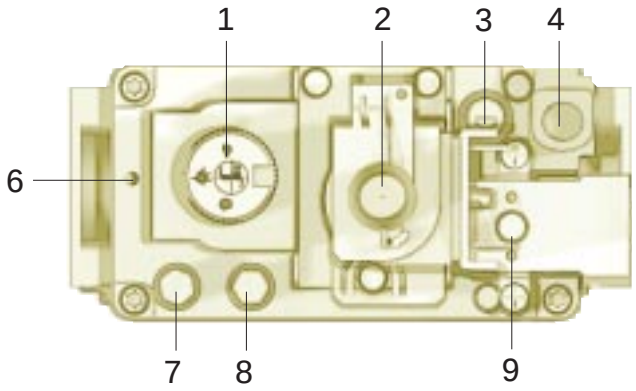
## MAIN FEATURES

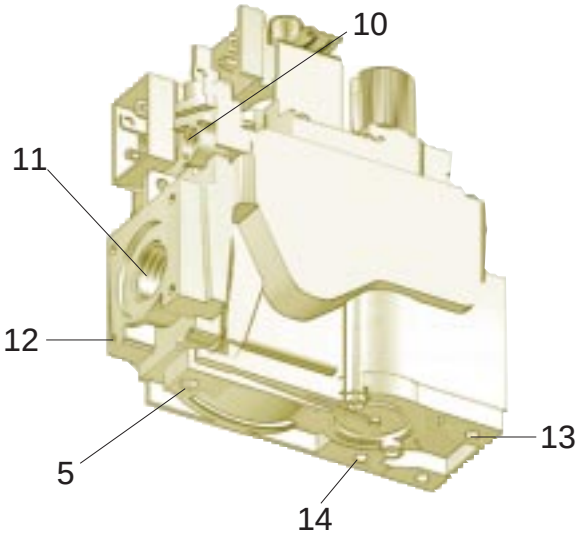
Electric gas flow modulating device with mechanical adjuster for minimum and maximum gas outlet pressure: stepped (824 NOVA) or continuous (825 NOVA).
Three position (off, pilot, on) control knob.
Thermoelectric flame failure device with restart interlock.
Near-silent automatic shut-off valve.
Servo-controlled pressure regulator.
Step ignition device (optional).
Pilot outlet with gas flow restrictor.
Inlet and pilot filters.
Inlet and outlet pressure test points.
Threaded gas inlet and outlet with provision for flange connection.
Connection for pressure regulator / combustion chamber compensation.

Data refer to EN 126

## DESCRIPTION

1 Control knob
2 Gas pressure modulating device
3 Adjustment screw for gas flow to the pilot
4 Thermocouple connector
5 Alternative thermocouple connector
6 Provision for accessories support bracket
7 Inlet pressure test point
8 Outlet pressure test point
9 ON-OFF solenoid valve
10 Pilot outlet
11 Main gas outlet
12 Holes (M5) for fixing flanges
13 Supplementary valve body fixing points
14 Connection for pressure regulator / combustion chamber compensation




## TECHNICAL DATA

- Gas connections: Rp 1/2 ISO 7
- Installation position: any position
- Gas families: I, II and III
- Maximum gas inlet pressure: 60 mbar
- Working temperature range: 0 ... 60°C
- Pressure regulator: Class B
- Automatic solenoid valve: Class D (class C on request)

• 824 NOVA
stepped modulating device - outlet gas pressure setting range:
- max. pressure 7 - 50 mbar
- min. pressure 2 - 45 mbar

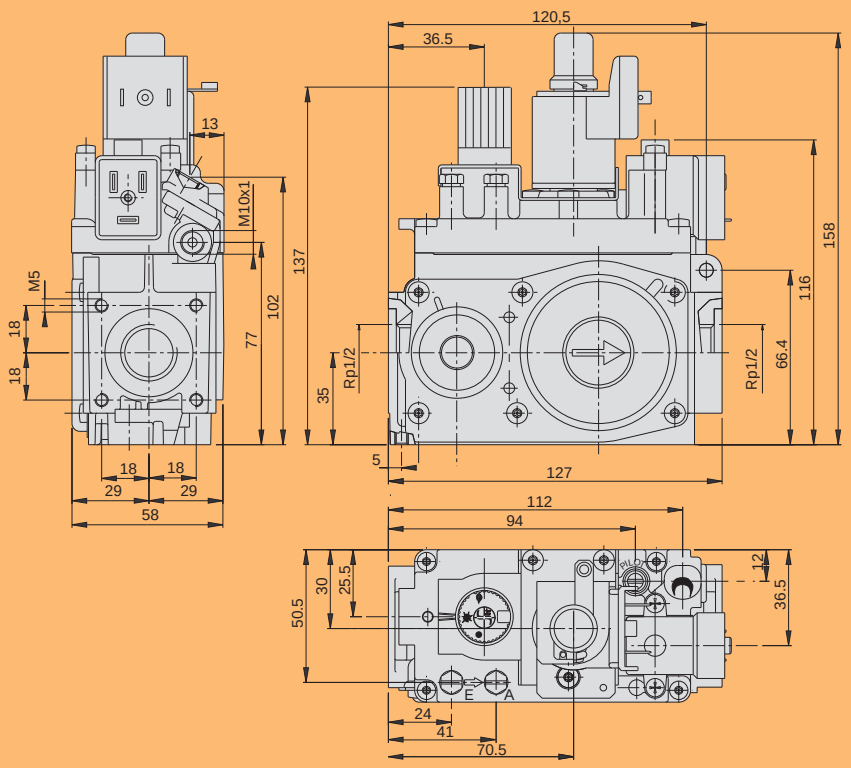
• 825 NOVA
continuous modulating device - outlet gas pressure setting range:
2 - 20 mbar (white screw)
5 - 37 mbar (red screw)
7 - 50 mbar (black screw)

**POWER SUPPLY**

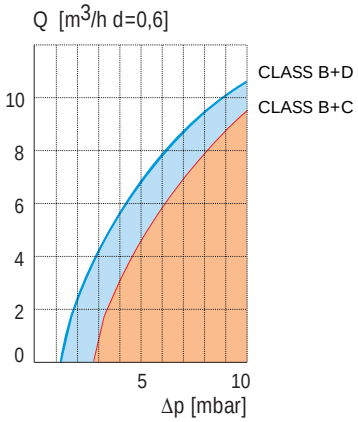
| SOLENOID VALVE | | STEPPED MODULATING DEVICE (824) | | CONTINUOUS MODULATING DEVICE (825) | |
|---|---|---|---|---|---|
| Voltage (AC) | Consumption (mA) | Voltage (rectified AC) | Consumption (mA) | Voltage (DC) | Consumption (mA) |
| 230 V 50 Hz | 23 | 230 V | 30 | 220 max | 25 max |
| 220 V 60 Hz | 25 | 24 V | 270 | 28 max | 165 max |
| 24 V 50 Hz | 210 | | | 16 max | 310 max |
| 24 V 60 Hz | 220 | | | | |
| *Electrical protection rating: IP54 using type 160 connectors with screw and gasket* | | *Electrical protection rating: IP54 using type 350 connectors with rectified integrated circuit, with screw and gasket* | | | |

Data refer to EN 126

# DIMENSIONS




# FLOW RATE AS A FUNCTION OF PRESSURE DROP




| | | | |
|---|---|---|---|
| | *CLASS B+D* | | |
| I | Family (d = 0.45) | Q = 7.5 $m^3$/h | Δp = 5 mbar |
| II | Family (d = 0.6) | Q = 6.5 $m^3$/h | Δp = 5 mbar |
| III | Family (d = 1.7) | Q = 8.1 kg/h | Δp = 5 mbar |

| | | | |
|---|---|---|---|
| | *CLASS B+C* | | |
| I | Family (d = 0.45) | Q = 5.3 $m^3$/h | Δp = 5 mbar |
| II | Family (d = 0.6) | Q = 4.6 $m^3$/h | Δp = 5 mbar |
| III | Family (d = 1.7) | Q = 5.8 kg/h | Δp = 5 mbar |

# OPERATION

***Pilot flame ignition***

Depress and turn the control knob to the pilot position ✸.
Depress the button and ignite the pilot flame while keeping the knob fully depressed for a few seconds (fig. 1).
Release the knob and check that the pilot flame stays lit. If it goes out, repeat the ignition operation.

*fig. 1*

***Main burner ignition***

Depress and turn the control knob to the ON position (fig. 2).
When the automatic solenoid valve is energized, passage to the main burner is opened and the outlet pressure now depends on the modulating device:

- 824 NOVA stepped modulating device:
  - current to the modulating device - maximum outlet pressure
  - current to the modulating device interrupted - minimum outlet pressure
- 825 NOVA continuous modulating device:
  - the outlet pressure varies with the variation of the supply current.

Valves with step ignition devices reach the maximum flow after about 10 seconds.

*fig. 2*

***Pilot position***

To keep the main burner closed and the pilot flame lit, depress and turn the control knob to the pilot position ✸.

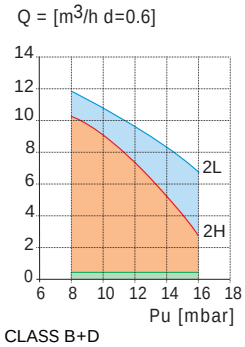
*fig. 3*

***Turning off***

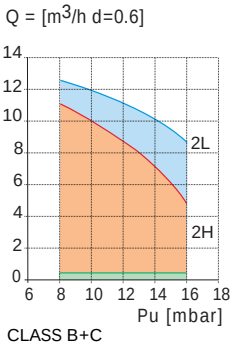
Depress and turn the control knob to the "off" position ● (fig. 3).

***CAUTION:*** the restart interlock device prevents ignition of the appliance until the flame failure device has stopped gas flow. At the end of this period (after closing the magnet unit) it is possible to carry out the re-ignition operation.

# REGULATED FLOW RATE IN ACCORDANCE WITH EN 88




CLASS B+D

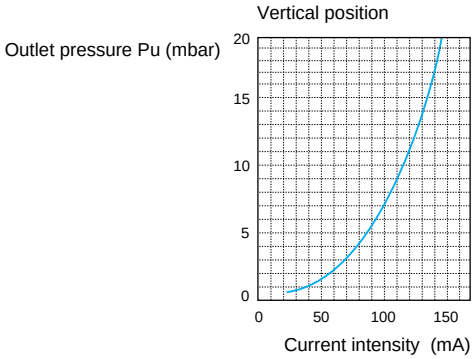


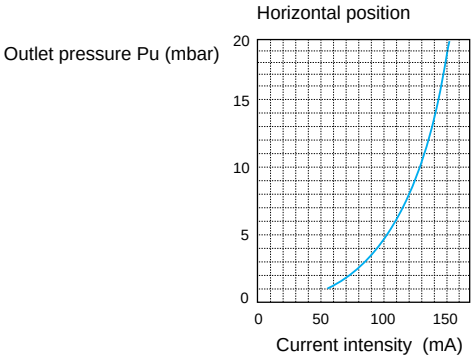

CLASS B+C

*CLASS B+D and CLASS B+C*

| Gas type | Inlet pressure range (mbar) | | |
|---|---|---|---|
| | Nominal | Max. | Min. |
| 2H | 20 | 25 | 17 |
| 2L | 25 | 30 | 20 |
| Outlet pressure tolerance +10%...-15% | | | |

# 825: MODULATING CHARACTERISTIC CURVES




VERSION 2...20 mbar

***Main gas connection***

The connection is made using gas pipes with Rp 1/2 ISO 7 threading. Torque: 25 Nm. If, alternatively, flanges (available on request) are used, first screw the pipes onto the flanges and then the flanges to the valve. Recommended torque for the flange fixing screws: 3 Nm.

***Connection to the pilot burner***

Pipes with a 4 mm, 6 mm or 1/4 diameter can be used. Use a nut and olive of appropriate dimensions. Tighten to 7 Nm torque.

***Connection to the combustion chamber***

Pressure regulator / combustion chamber compensation is possible when the latter is pressurized.
Use the special SIT hose connectors for this purpose. Torque: 1 Nm.

***Electrical connections***

Use the special connectors for connecting the versions powered by the mains voltage. To ensure that the valve is connected to the earth circuit of the appliance, use a power connector which includes an earth terminal, securing it by means of the screw provided.

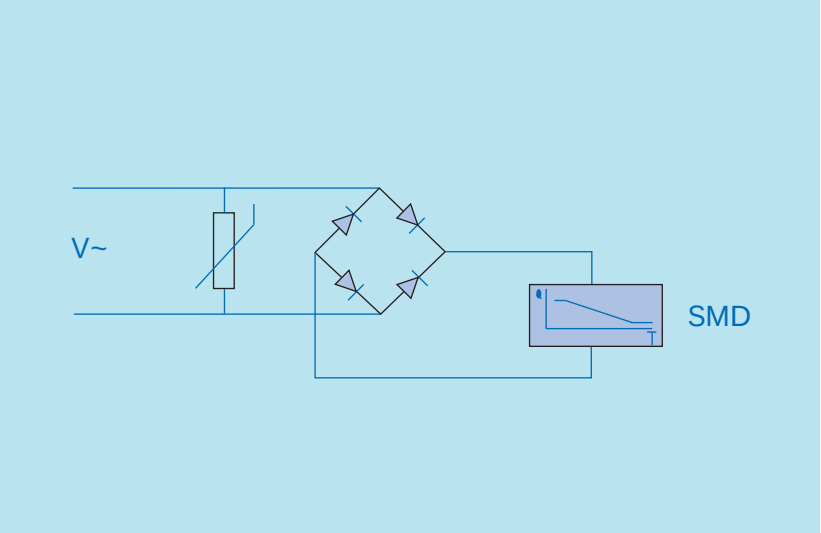
The 24Vac versions must be powered by means of an isolating transformer (with a very low safety voltage to EN 60742). Use terminals AMP 6.3 x 0.8 mm, DIN 46244 for the connection. Carry out the connections in accordance with the rules for the appliance.

The electrical safety cut-off devices (for example the limit thermostat, and the like) must cut off the power supply to the thermoelectric circuit of the safety magnet unit.

***Stepped modulating device connection (824 NOVA)***

The stepped modulating device must be powered by rectified voltage. Type 350 connectors with an integrated rectified circuit should be used; otherwise insert a diode bridge and a voltage limiter, appropriately dimensioned, into the circuit.

***CAUTION:*** after making the connections, check gas tightness and electrical insulation.




*STEPPED MODULATING DEVICE CONNECTION*

***Measurement of the inlet and outlet pressure***

The inlet and outlet pressures of the gas can be measured by unscrewing the provided test point sealing screws.
Replace screws with 2.5 Nm torque.

***Outlet pressure adjustment***

Maximum pressure: power the modulating device to the maximum condition - screw in the nut (B) to increase outlet pressure and screw it out to decrease it.
Minimum pressure (make this adjustment only after adjusting the maximum pressure): cut off the power supply to the modulating device and, keeping the nut (B) blocked, screw in the screw (A) to increase the pressure and unscrew it to decrease it. Put back the protective plastic plug (C).

***Gas flow-rate adjustment to the pilot***

Screw in the associated screw to reduce the flow or unscrew it to increase flow.

***Overriding gas flow-rate adjustment to the pilot***

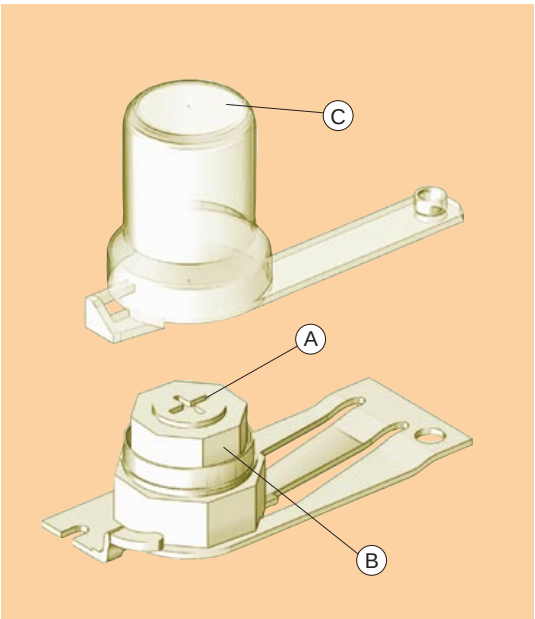
It is sufficient to screw the adjustment screw in flush and then screw it out two complete turns.

***Changing the gas family or group***

Check suitability for use with the gas family or group of interest.
Following the instructions given above, adjust the outlet pressure to the values indicated in the instruction booklet of the appliance.

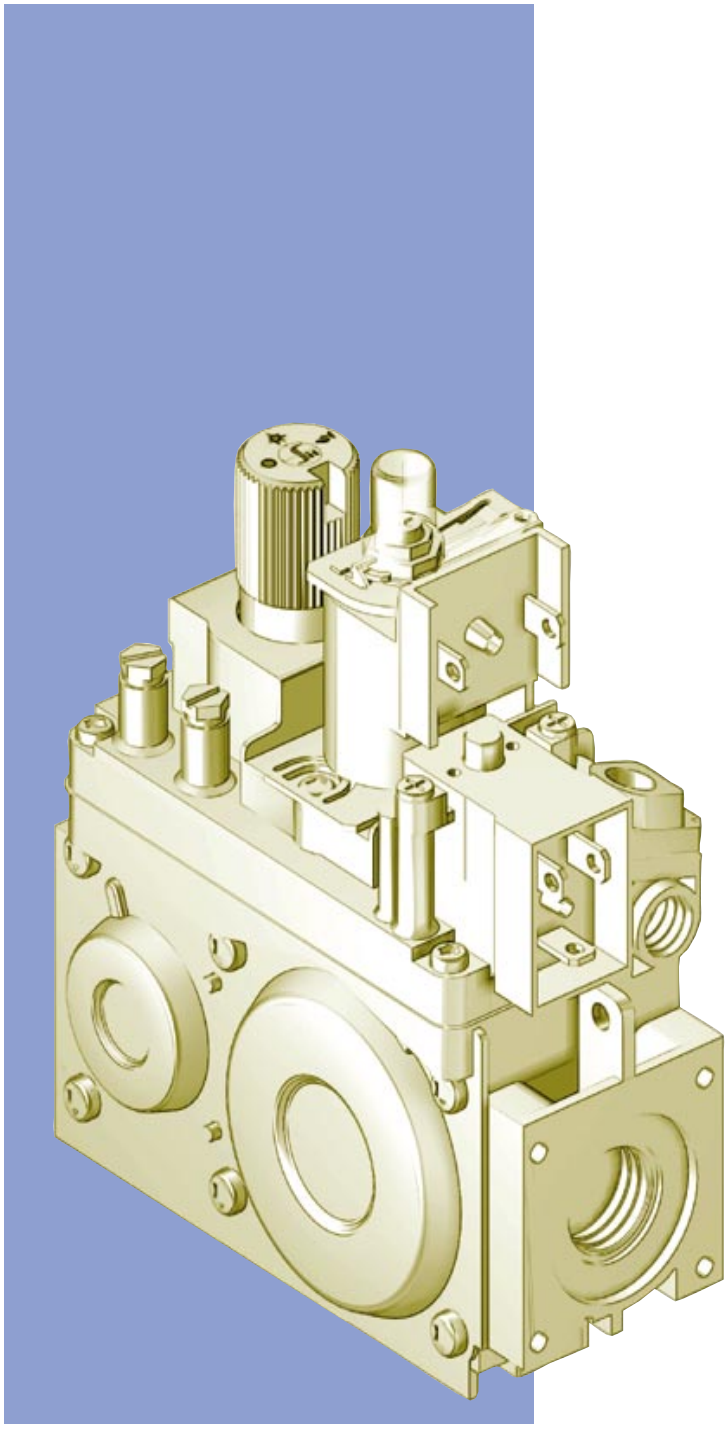
***CAUTION:***

Check tightness and efficiency and seal the adjustment devices.




*Outlet pressure adjustment*

# 824 - 825 NOVA



Multifunctional control with thermoelectric safety device, single control knob and electrical flow modulating device for gas appliances which require the regulation of the gas flow as a function of the temperature.

SIT La Precisa
Viale dell'Industria 31/33 35129 PADOVA - ITALY
Tel. 049/8293111 - Fax 049/8070093 - Telex 430130 SITEC I

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