

V7335A "4000 series"

ADD ON ELECTRIC MODULATING REGULATOR

INSTRUCTION SHEET



EN1R-9052 for W9335A Modulating Modureg Controller
 EN1R-9054 for T7335 Thermistor Temperature Sensor
 EN1R-9064 for W9335B Modulating Modureg Controller
 MU1R-9082 for VR46../VR86.. series gas controls
 EN1R-9162 for VK41.. series gas controls
 However the following information is deviating and replaces therefore the relevant information of that instruction sheet.

Model

Combination gas controls:
 Suffix M: fast opening with Modureg.
 Suffix N: slow opening with Modureg.

Modulating regulator:
 V7335A low voltage Modureg available in 28 VDC

Adjustment points and dimensions

See fig. 1.

Pressure feedback connection

The Modureg regulator has an M5 threaded hole for connection between regulator and combustion chamber of appliance.

Maximum operating pressure

The P_{max} indication on the housing of the combination gas control is the maximum pressure at which the gas control functions safely. However the maximum operating pressure is limited by the pressure range of the Modureg concerned. (See table below)

Pressure range (mbar)	Max. operating pressure (mbar)
2 ... 16	30
4 ... 37	45

Regulator output pressure range

Setting		Pressure range (mbar)	
		2 ... 16	4 ... 37
Min.	Sidewards	2 ... 5	4 ... 10
Min.	Upwards	2 ... 5	5 ... 10
Max.		10 ... 16	15 ... 37

Electrical rating

Voltage (VDC)	Direct current* (mA)	Resistance at 20 °C (Ohm)
28	15 ... 165	110

* Do not exceed above mentioned maximum current value

APPLICATION

The V7335 "4000 series" electric modulating regulator (Modureg), when installed on V4600/V8600, VR46../VR86.. and VK41.. series combination gas controls, expands their application versatility and provides the following extra functions:

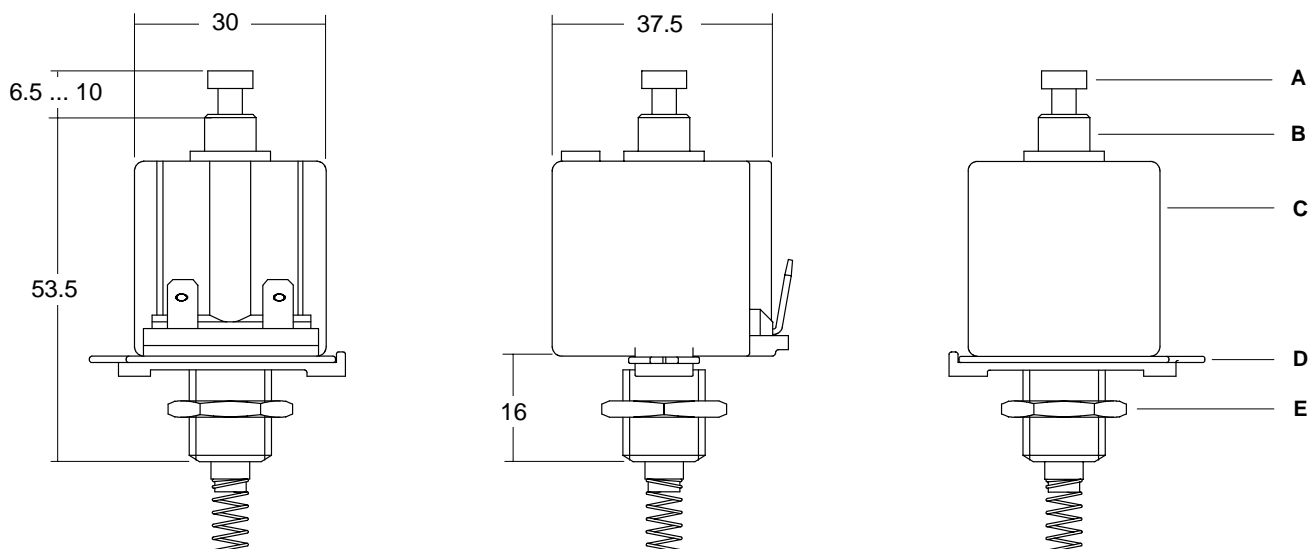
- **Servo pressure regulation**
 Outlet pressure is held at a constant value regardless of fluctuations of input pressure.
- **Modulating control**
 Between minimum and maximum outlet pressure gas supply to the appliance is dependent on the electrical signal to modulating coil.
- **Mechanical limitation of outlet pressure**
 The minimum and maximum burner pressures are mechanically adjusted to guarantee good burner performance in case the Controller should become out of range.

The V7335 is designed to work together with the W9335, W4115 modulating controllers, or with an advanced range of micro computer based modulating controllers in combination with T7335 thermistor temperature sensors.

SPECIFICATIONS

In general the specifications of the concerned combination gas controls are valid. See the corresponding instruction sheet:

MU1R-9020 for V4600/V8600 series gas controls



- A - Adjustment screw for minimum pressure setting
- B - Modulator assy
- C - Coil
- D - Spring clip
- E - Locknut

Fig. 1. Adjustment points and dimensions

Electrical connection

The Modureg is provided with quick connect terminals which are suitable for 6.3 mm (1/4") receptacles (e.g. "series 250" AMP fasteners).

- NOTE 1.: Good and reliable performance of the Modureg is not only dependent on the Modureg itself, but also upon the reliability of the Controller and Sensor used.
- NOTE 2.: Adjusting the maximum setting to a lower level will steepen the modulating curve slightly.
- NOTE 3.: Adjusting of minimum setting does not affect the modulating curve.

MOUNTING

Mount the add on Modureg on the top of the pressure regulator of the gas control concerned. (See fig. 2.)

- 1 Remove dust seal from pressure regulator housing.
- 2 Check if the regulator spring fits properly the modulator assy.
- 3 Screw the modulator assy into the pressure regulator housing and adjust the maximum pressure setting as described under Adjustment.
- 4 Adjust the minimum pressure setting as described under Adjustment.
- 5 Slip coil over the modulator assy and push it down till fixing spring fits the groove.
- 6 Place cap and connect pressure feedback connection (if applicable)
- 7 Wire Modureg in electrical circuit.

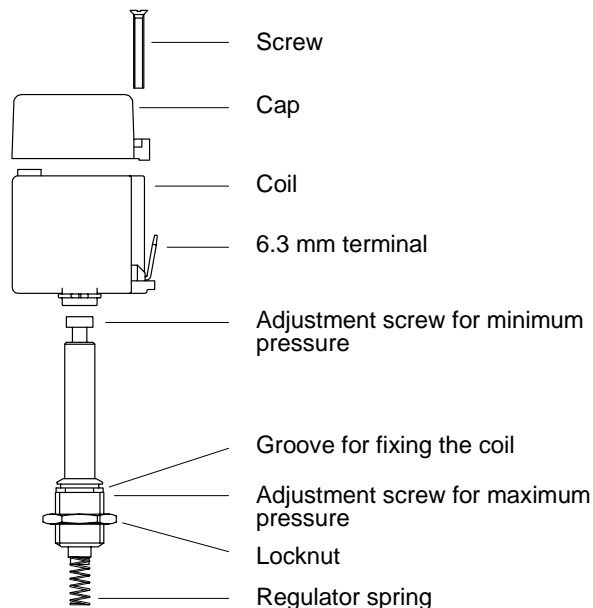


Fig. 2.

ADJUSTMENT

IMPORTANT

Adjustments should be made by qualified persons only.

If the appliance manufacturer supplies checkout and/or service and maintenance instructions, carefully follow them. If such instructions are not provided, then follow the procedure as outlined below.

Allow time for pressure to stabilize before making adjustments.

It is recommended that the Modureg is operated a few times to ensure correct setting.

First the maximum pressure setting must be adjusted because any adjustment of maximum pressure setting influences minimum pressure setting.

Adjusting maximum pressure setting (see fig. 2.)

- Disconnect pressure feedback connection (if applicable).
- Connect a suitable pressure gauge to pipe line or to outlet pressure tap of gas control concerned, to measure burner pressure (measuring point must be as near to burner as possible).
- Disconnect electrical connection of Modureg and remove modulating coil. Turn minimum adjustment screw clockwise **fully down**. Energize operator, set control in operation and wait until an outlet pressure is recorded on pressure gauge.
- Loosen locknut. Turn the maximum rate adjustment screw clockwise for increasing or counter-clockwise for decreasing the maximum pressure setting. Adjust maximum setting and fasten lock nut
- Readjust minimum pressure setting.
- Replace modulating coil
- Replace cap and reconnect pressure feedback connection (if applicable).

Adjusting minimum pressure setting (see fig. 2.)

- Disconnect pressure feedback connection and remove cap (if applicable).
- Connect a suitable pressure gauge to pipe line or to outlet pressure tap of gas control concerned, to measure burner pressure (measuring point must be as near to burner as possible).
- Disconnect electrical connection of Modureg.
- Energize operator, set control in operation and wait until an outlet pressure is recorded on pressure gauge.

- Turn the minimum rate adjustment screw clockwise for increasing or counter-clockwise for decreasing the minimum pressure setting.
- Check if main burner lights easily and reliable at minimum pressure.
- Replace cap and reconnect pressure feedback connection (if applicable).

If maximum and minimum pressures are set, wire Modureg in circuit.

Adjusting intermediate pressure setting

- Some controllers, such as W9335, are able to provide modulating control as well as a fixed setting. In case this intermediate pressure setting should be set, it is necessary to follow the suppliers instructions regarding the adjustment of the concerned controller. It deals with the switching from modulating mode to fixed setting mode which is in most cases is a potentiometer. The fixed setting mode is very often used for central heating, where on/off adjustable pressure to burner is required. This intermediate outlet pressure can in general be electrically set as follows:
 - Disconnect pressure feedback connection (if applicable).
 - Connect a suitable pressure gauge to pipe line or to outlet pressure tap of gas control concerned, to measure burner pressure (measuring point must be as near to burner as possible).
 - Energize operator, set control in operation and wait until an outlet pressure is recorded on pressure gauge.
 - Make sure Modureg is wired in circuit.
 - Bring system in fixed setting mode.
 - Adjust current as low as needed to obtain the lowest pressure by using pressure setting means of controller. Mechanical setting of Modureg will prevent too low setting.
 - Increase the current until desired pressure is obtained by using pressure setting means of controller.
 - Replace cap and reconnect pressure feedback connection (if applicable).

CHECKOUT AND MAINTENANCE

Checkout

After any adjustment, set appliance in operation and observe through a complete cycle to ensure that burner system components function correctly.

Maintenance

It is recommendable to check yearly the minimum and the maximum setting and readjust them if necessary.



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