

Inverter Control Gas Boosters

CE





Code	Model
29200073	Single RB200 Booster Inverter Control Panel
29200074	Single RB300 Booster Inverter Control Panel
29200130	VEGABAR 14 0-100 mbar Pressure Transducer

GBM010-0510

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INTRODUCTION

The Gas Booster Inverter Drive System is recommended for installations where the gas pressure at the booster outlet is required to be maintained at or near a constant level. This instruction deals only with the inverter drive control system installation and operation.

Please consult the Riello RB Booster 'Installation, use and maintenance instructions' manual for general details regarding installation requirements of the booster.

GAS BOOSTER INVERTER DRIVE SYSTEM INSTALLATION GUIDELINES

- A gas booster is an integral part of the burner(s), or other combustion equipment fuel supply and control system.
- Installation should only be carried out by competent persons.
- Reference should be made to the 'Institution of Gas Engineers Utilisation Procedures IGE/UP/2, Gas Installation Pipe-work, Boosters and Compressors on Industrial and Commercial Premises' and any subsequent additions and amendments.



SCHEMATIC ARRANGEMENT OF INSTALLATION

- Install all of the components as shown in the schematic arrangement above.
- Ensure that the non-return or check valve is fitted the correct way round and is horizontal.
- Maintain adequate space for access to the booster and components for maintenance.
- Fit anti-vibration mountings and flexible gas connections to booster.
- Ensure Pressure Transducer is installed as per separate instruction sheet.

ELECTRICAL INSTALLATION

See the wiring diagram schematic(s) attached as appendix to this instruction for connection between the inverter panel, pressure transducer and gas booster.

EXTERNAL WIRING

Use flexible cables in accordance with EN 60-335-1 regulations:

If Rubber Sheath use at least HO5-RR-F

If PVC Sheath use at least HO5-VV-F

Cable size 1.5mm² minimum for power connections.

Make connections between the Burner(s) or other combustion equipment, the Inverter Control Panel, and Booster using suitable cable or conduit. The final length of connection to the booster terminal box must be in flexible conduit/cable. Ensure the 3 Ph supply provided is adequate for the booster. Use suitable signal cabling between the Inverter Control Panel and the Pressure Transducer.

COMPONENT INSTALLATION SCHEMATIC



INVERTER CONTROL PANEL

Install on a solid wall or bracket adjacent to the booster. Use suitable fittings in the gland plate in the bottom of the panel. Ensure a good clean EARTH is connected to the panel and booster.

BOOSTER

Follow the instruction manual supplied with the booster for installation.

PRESSURE TRANSDUCER

Ensure the Pressure Transducer is positioned in a location where it is protected from any likelihood of physical damage.

The Pressure Transducer can be sited adjacent to the booster, or at the appliance location provided the distance between the Inverter Control Panel and the Pressure Transducer is within 50 m.

INVERTER CONTROL AND OPERATION

- The functioning of the inverter control system is to control the speed of rotation of the gas booster impellor in order to maintain a controlled downstream pressure as the gas flow rate varies, dependent on the load requirements of the appliances supplied by the booster.
- The inverter is able to modulate the booster drive motor speed by varying the supply frequency between limits of 20 60 Hz.
- At the control limits of 20 and 60 Hz the booster outlet pressure may slightly exceed or be below that which is required, dependent on gas flow.

Setting the Required Gas Pressure

- The Inverter has an integrated 3-term PID regulator as part of the system software.
- The effective setpoint (required gas pressure) for this PID control loop is set using the Potentiometer which is housed on the front of the Inverter Control Panel.
- Connect a manometer to a suitable tapping adjacent to the Pressure Transducer.
- Turn the AUTO MAN switch on the Control Panel door to the MAN position.
- The booster should now start. (Ensure rotational direction is correct. If incorrect switch off supply and interchange 2 of the incoming Ph wires.)
- Adjust the setting of the Potentiometer in the Control Panel fascia until the required pressure is achieved on the manometer.
- This has now set the required pressure and the potentiometer can be 'locked'.
- The manometer can be removed and the Inverter Control will now increase or decrease the booster motor speed to maintain the set pressure as the gas flow rate varies.
- Return the AUTO MAN switch to the AUTO position so that the booster is only activated as required.
- Appliances fed by the booster MUST be interlocked to the Inverter Control Panel using terminals P7 and P8.
- With the AUTO MAN in the AUTO position the booster will only run when the burner or other combustion equipment control thermostat is 'calling for heat'.

PANEL INDICATORS

PANEL LIVE LOW GAS PRESSURE	 Illuminated when the Panel control circuit is live. Illuminated if the gas supply pressure falls below the setting on the IP (Inlet Pressure Switch) of the booster. If the gas pressure is low the system will not operate and the booster will be prevented from running. (<i>Bypassing IP, even temporarily, is a breach of the Gas Act and could cause a serious safety hazard.</i>)
	To restart press the RESET button in the centre of the booster inlet gas pressure switch.
BOOSTER TRIPPED	- Illuminated in the case of booster motor overload.
BOOSTER RUN	 Illuminated when the booster is operating correctly.
	To restart press the overload reset button on the contactor/overload set inside the booster terminal panel.

BOOSTER COMMISSIONING

Follow the procedure given in the Installation, use and maintenance instruction manual for Riello RB Boosters. Operate the control in MAN mode for commissioning.

MAINTENANCE

Follow the procedure given in the Installation, use and maintenance instruction manual for Riello RB Boosters.

LOW INLET PRESSURE FAULT RESET

The inlet pressure switches fitted to the booster are Manual Reset type. If the system is stopped due to a LOW INLET PRESSURE fault, then once the cause of the fault is established and rectified, the system can be restarted by pressing the small reset button in the centre of the Inlet Pressure Switch.



IF IN DOUBT ASK



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