SITGroup

ACS II

AUTOMATIC CONTROL SYSTEM

Field of application

Gas fired fireplace or logset

Features

- Battery operated
- Remote ON/OFF control
- Remote setting of the flame height
- Manual mode

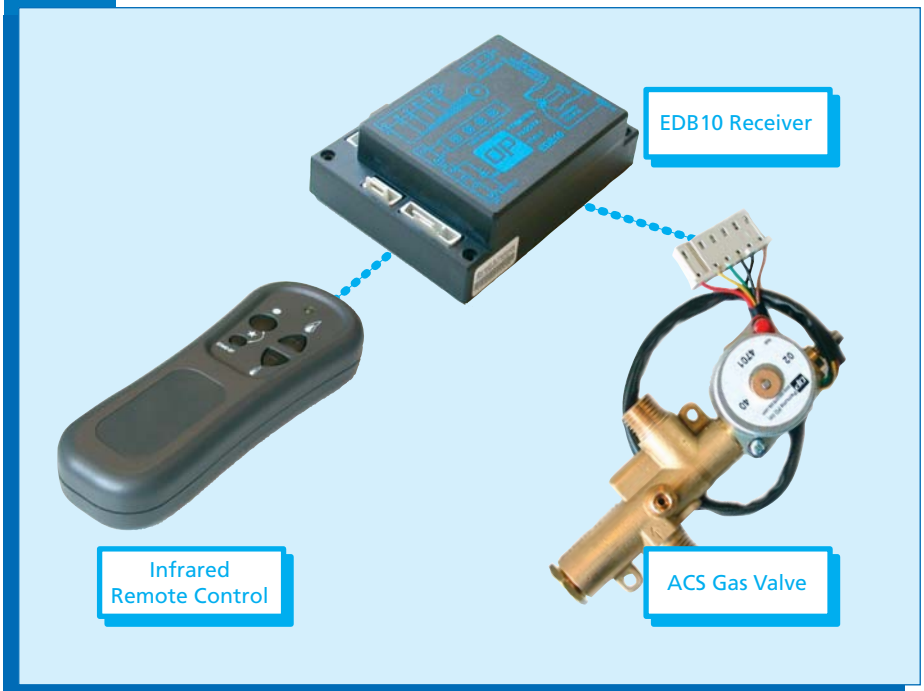
9.955.173 03

The ACS is a gas control equipped with a microprocessor that provides all working sequences of the gas appliance. It is designed for gas appliances that use a gas pilot (including ODS) or at least a thermocouple placed on the burner. All safety requirements are demanded on the thermocouple. The valve is suitable for a heat input of up to 8 kW Natural Gas with 2.5 mbar of drop pressure.

WORKING SEQUENCES

For a better understanding of the working sequences we can imagine the ACS with a Manual Control Panel. The working sequences are the same using other accessories.

- By pressing the first switch, this starts the ignition sequence (press & hold for 3 sec min). The gas to the pilot is open and the magnet unit pressed by the motor, the spark is generated. When the pilot flame presence is detected (ionization flame control) the system holds for 10 seconds to warm the thermocouple. When the thermocouple is able to hold the magnet unit the gas to the burner is open to maximum rate. In case of failure during pilot ignition, the EDB puts the system in safe mode. To restart the ignition sequence press the first switch.
- When the burner is working it is possible to have a pilot position only, press the 2nd switch. The appliance is now in stand-by mode and ready for main flame, press the 3rd switch.
- By pressing the 3rd switch the burner is light to the maximum rate and the input can be reduced (step-by-step) by press and hold the 4th switch. Vice versa for increasing the power, keeping pressed the 3rd switch, the power is increased progressively.
- The OFF position is reached by pressing the 1st button.



All commands are accepted by the microprocessor when the push button is pressed for a few seconds. Anytime a button (of control panel or handset) is pressed, an audible "beep" will say that the signal has been received.

ACS VALVE FULL MODULATION CONTROL

TECHNICAL DATA

Maximum flow rate	750 l/hr (air - 2.5 mbar)
Minimum flow rate	Adjustable
Body temperature range	0 - 80 °C
Maximum working pressure	60 mbar
Magnet unit connection	M8x1 or M9x1
Magnet unit drop out current	> 80 mA
Magnet unit hold in current	< 200 mA
Flame supervision device	Class B (according to EN 125)
Inlet and main outlet gas connection	M14x1.5 male
Inlet and main outlet pipe size	Ø 8 mm
Gas families	I ,II and III
Pilot gas connection	M8x1 male
Pilot pipe size	Ø 4 mm
Voltage supply	by Electr. Driv. Board type EDB 10
Power consumption	18 W (Peak)
Protection	IP 20 (with cover)
Working position	Multipoise
Torsion and bending resistance	Group 1

DESCRIPTION

ACS Valve. Gas valve, the magnet unit and the relevant connection for the thermocouple; it has an inlet and 2 outlets: pilot and burner. The gas valve is equipped with a by-pass screw for adjusting the minimum flow rate. The electric motor provides a means of adjustment of the burner gas flow through step-by-step sequences.

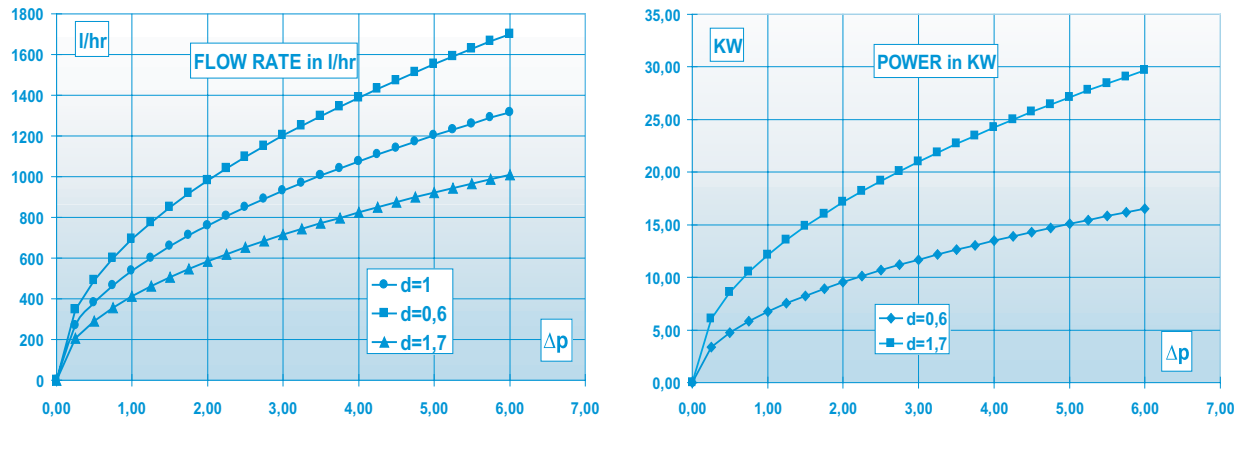


Fig. 1: ACS II flow rate Q and power P as functions of pressure drop capacity.

ELECTRONIC DRIVING BOARD

DESCRIPTION

Electronic Driving Board (EDB). The EDB, fed by a battery pack (6x1.5 V battery type AA or equivalent), has a built-in microprocessor and an electronic igniter.
The thermocouple from the pilot is connected to the EDB. The EDB monitors for generated mill voltage (interruption), this allows for the off position.

ELECTRONIC BOARD BATTERY SUPPLY OPTIONS

- 6 x size AA rechargeable batteries plus recharger (120 VAC or 230 VAC).
- 8 x size AA batteries alkaline type.
- 6 x size C.
- 2 x size D batteries lithium type (dedicated).

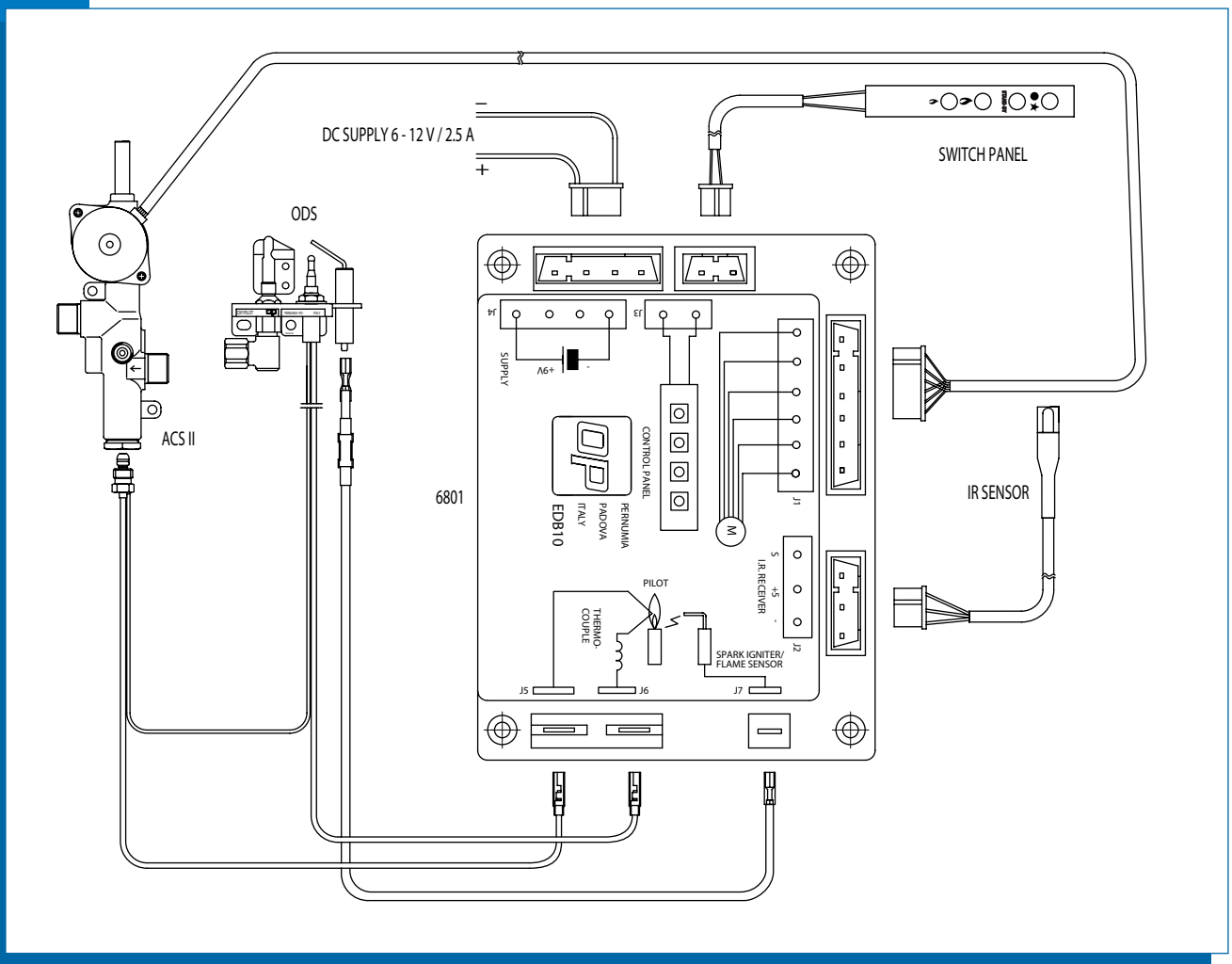


Fig. 2: ACS II connection scheme. According DD ENV 1954:1997 Safety Class A.

INSTALLATION

The Automatic Control System has to be installed in order to avoid excessive heat, humidity, dust, fat and oil. An excess of heat may damage the parts of the system and shorten the operational life. Furthermore it is convenient to use thermal screens when exposed to high temperature working conditions, as well as using the natural air draft of the appliance.
Installation on gas appliances should be verified to specific standards related to any particular gas appliance. It is recommended to not tamper with sealed parts and not remove any markings. Avoid any shock to the ACS. Do not exceed the advised mounting torques. Avoid the entrance of foreign parts into the device during assembly; in particular, verify the cleaning of gas pipes. To connect the device to gas pipes only use proper systems and tools, avoiding damaging of weak parts.

CONNECTIONS

Connection of device gas inlet is via the appropriately designed connection. Gas soundness and strength must be achieved through metallic parts, avoiding sealing compound or rubber part. Pipe connection to the first outlet (pilot burner and/or first section of main burner) using a nut (M8x1) and olive of 4 mm diameter. Pipe connection to main outlet (main burner outlet) using a nut (M14x1.5) and olive of 8 mm diameter. Push fully down the pipes and tight with a max torque of 7 Nm, using a wrench holding the device in the proper location, do not stress the device during this operation. Connect the thermocouple terminal by tightening manually and then applying a quarter turn by using a proper size wrench: no gas soundness is required at this connection. Refrain excessive torque in order to avoid damage to the magnet Unit. Connect the electric motor using the correct fast-on terminals.
Connect the single parts of the system to the EDB using connectors and cable available, or replicate this connecting scheme when using your own connectors (STELVIO/ STOCKO). All cables and connectors should be suitable for a max working temperature of 90 °C. For ignition use only high voltage cables complying with EN60335-1: avoid the continuous contact of this cable with a metallic surface, to prevent possible reduction of spark voltage.

ADJUSTING

Adjust the gas minimum rate by checking the minimum rate pressure to main burner through a pressure gauge or similar device.

USAGE

The device is operated pressing the ON button on the control panel. Automatically the system starts the ignition sequence (duration about 10 sec). If there is sufficient power generated by the thermocouple the magnet unit becomes energized and the system will operate at max rate. It is possible to start directly to MIN condition by pressing the MIN button immediately after the ON button. There is also the option to have the system in stand-by mode (pilot only). To change from MIN to MAX or MAX to MIN press the MIN or MAX button. The system is shut-off by pressing the OFF button. In the event of a power supply failure it is necessary to repeat the whole sequence of

ignition, as well as in case of safety shut-off.
All functions are achievable by remote control.
Filter available code: 4700-013.
The functions of the multifunctional control have been verified as being suitable for their application.
The control is according EN 126 and it is designed for 10000 FSD operation cycles.

MAINTENANCE

The system is not field serviceable. In case of malfunctioning substitute the failed component. Only authorized personnel can intervene on the complete system.

ACCESSORIES

There are different options available to operate this system. The ACS is designed to work using these options in order to give flexibility to the manufacturer or end user. The options available are:

- Manual Control Panel, 4 switch panel, which will be self-adhesive and have a fixing point. This can be mounted on the appliance (designed for trim mounting).
- Manual Wall Switch interface that allows use for fixed application (switch can be mounted on a wall).
- Thermostatic Interface (interface for using a standard mechanical thermostat).
- Remote Control Interface (kit for energizing the ACS using an infrared remote control. There are four switches on the hand piece as the standard switch panel).
- It is possible to convert one configuration to another but keep the same Electronic Driving Board.

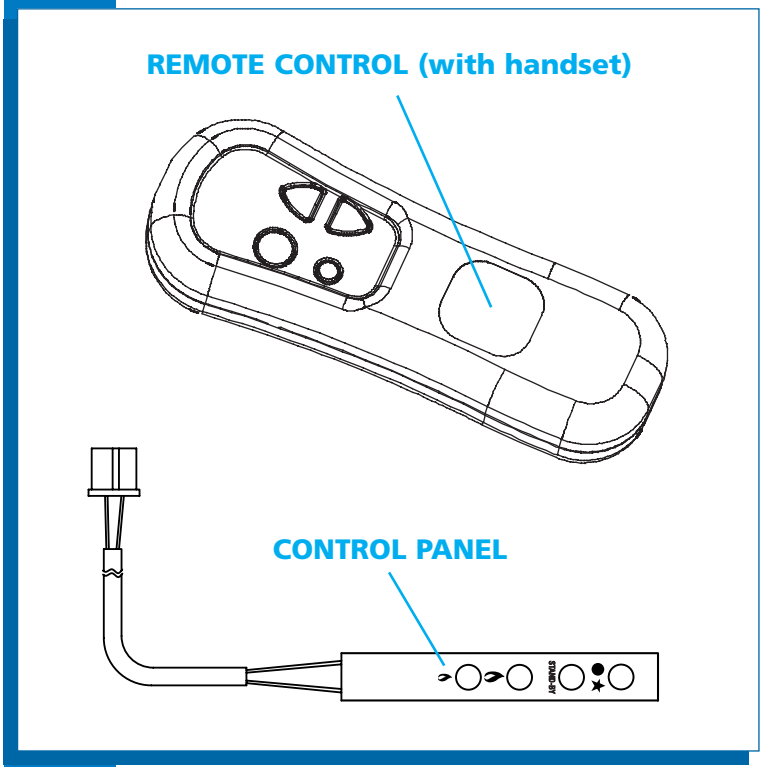
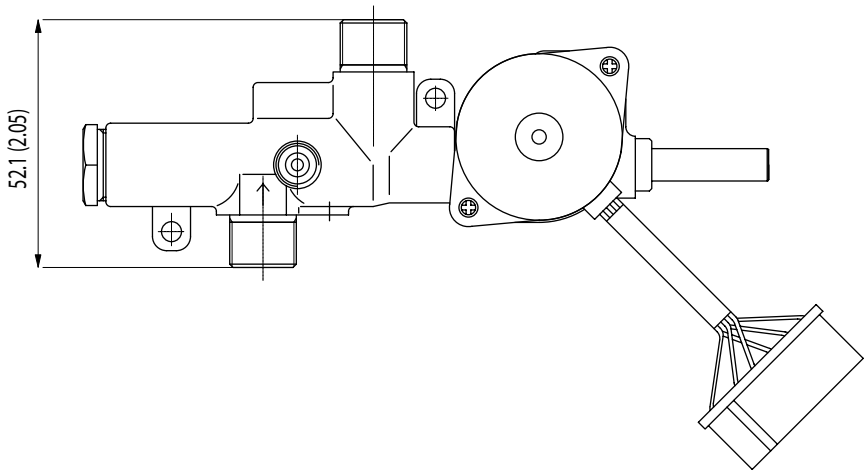
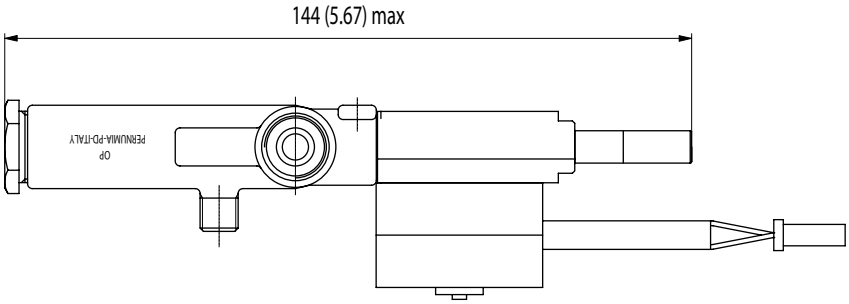
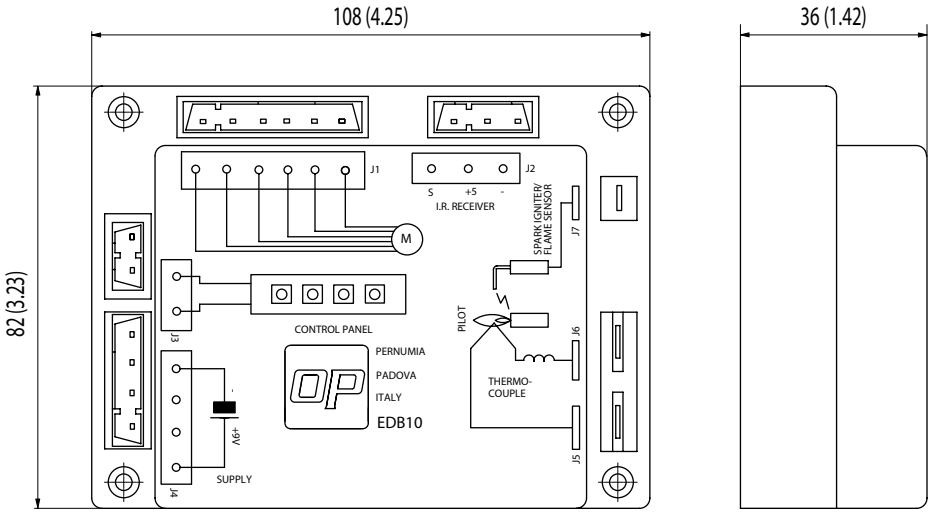


Fig. 3: ACS II Accessories.

DIMENSIONAL DRAWINGS







NOTE: All the dimensions are expressed in millimeters (inches).

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