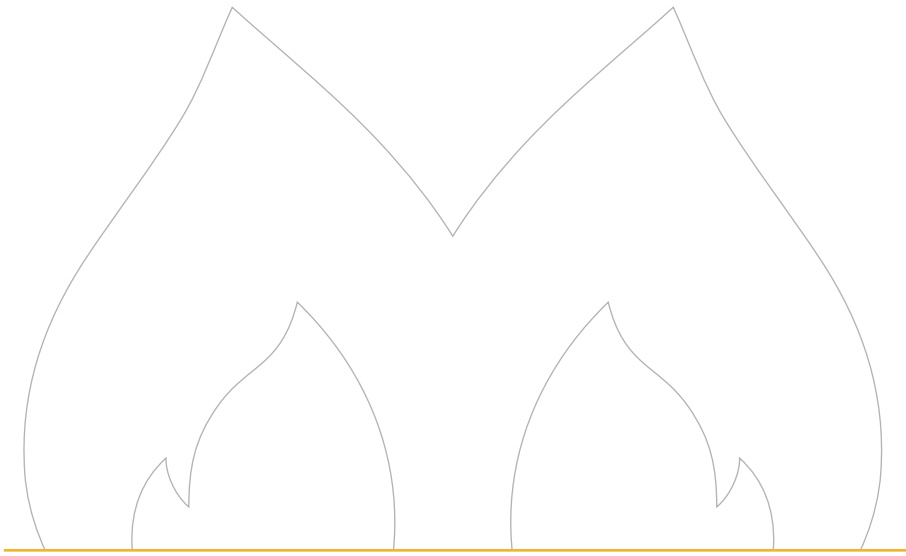




*INTEGRATED SYSTEM
FOR GAS BURNING APPLIANCES*


SIT 877 INTEGRA





Integrated system for gas burning appliances

Application

Domestic gas appliances using premix burner with electronic combustion control system like VestaSIT  with automatic ignition system.

Main features

- Brushless fan
- Two automatic shut-off valves
- Electrical modulator with low hysteresis
- High modulation range up to 1:20
- Mixer

Normative reference

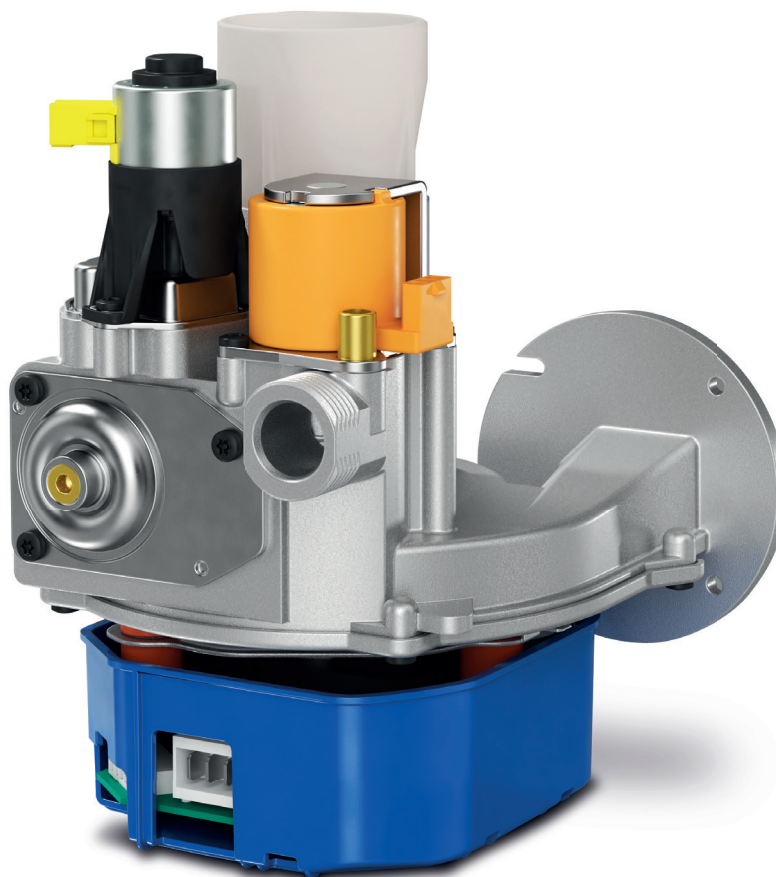
- EN 126 - Multifunctional controls for gas burning appliances
- EN 60335-1 - Household and similar electrical appliances- safety. Part 1: General requirements
- ISO 5801 - Industrial fans - Performance testing using standardized airways

Functional Description

877 INTEGRA is a system specifically designed to operate in appliances with premix burners and electronic combustion control. This system consists of a fan driven by a brushless motor with electronic controller, two automatic shut-off gas valves, modulator driven by linear actuator operated by a stepper motor and a mixing device. The fan generates the air necessary for the combustion

and can be operated at variable speed. The air flow passes through the mixer. When the coil (EV) is energized the gas valves open and allow the gas to flow through the pressure regulator (PR).

The gas flow rate is function of the number of linear actuator steps.



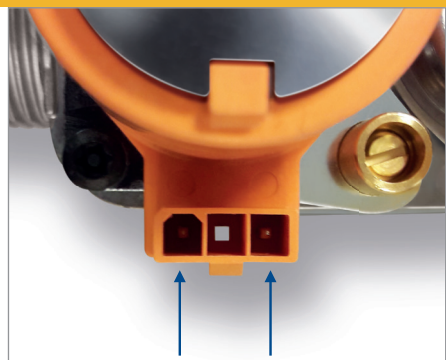
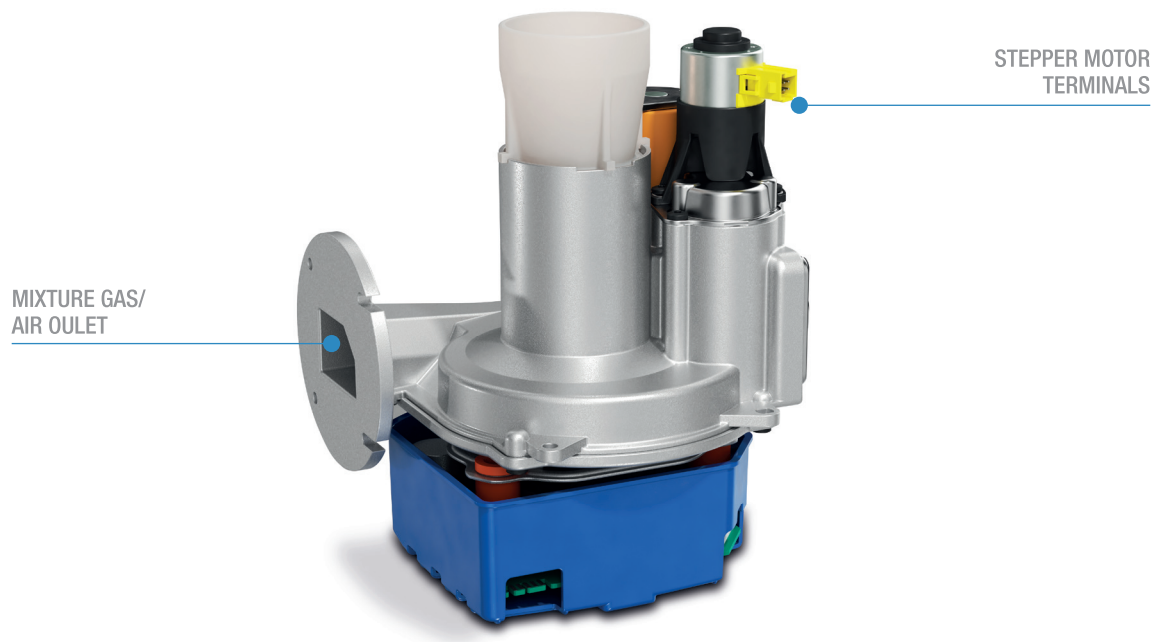
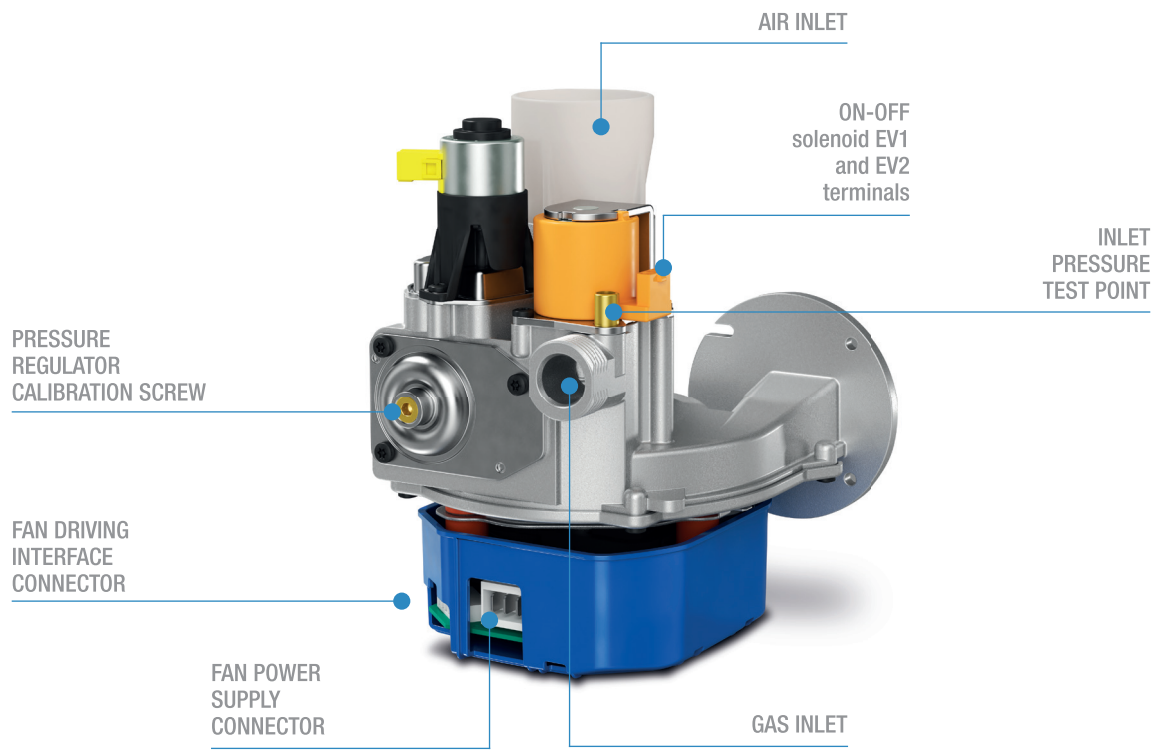


Figure 1 - EV electrical connection

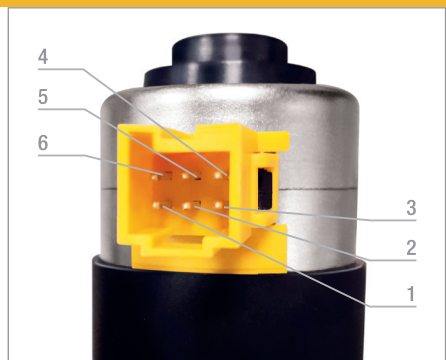


Figure 2 - Motor electrical connection



Construction Characteristics

- Strong integration of brushless fan, automatic shut-off gas valves, Electrical modulator with low hysteresis and mixer
- Compact and small size
- Aluminum body
- Inlet filter
- Inlet pressure test point

Use Specification

- Gas families _____ 2nd and 3^d
- Ambient temperature range _____ -15 to +70 °C
- Maximum gas inlet pressure _____ 60 mbar

Mechanical Connections

- Gas Inlet _____ G $\frac{3}{4}$ according to ISO 228
- Pressure test point _____ \varnothing 9 mm
- Air inlet _____ \varnothing 50 mm
- Mixture outlet _____ see dimensional drawing (other connections are available)

Electrical Connections

- Automatic shut-off valves _____ Male Molex Minifit 3 pins, see Figure 1
- Stepper motor _____ Male connector compatible to cable connector Stocko STO-GRID, MH 790-06-001 MH 790-06-001-118, see Figure 2
- Fan power supply _____ LUMBERG 3642-03, see Figure 3
- Fan driving interface _____ MOLEX Minifit 5569 – 05, see Figure 4

Electrical data

Automatic shut-off valves

- 22 VDC Pick & Hold
- 24 VDC
- 230 VRAC

Fan power supply

- 230 V / 50 Hz
- 24 V / 50 Hz
- 120 V / 60 Hz

Modulator

- Unipolar 24 VDC

Fan driving interface

- supply voltage 24 VDC
- PWM input/hall sensor output or, as alternative, other communication protocols available

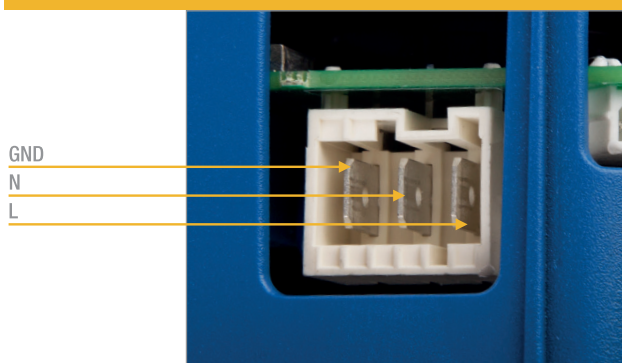


Figure 3 - fan power supply connector

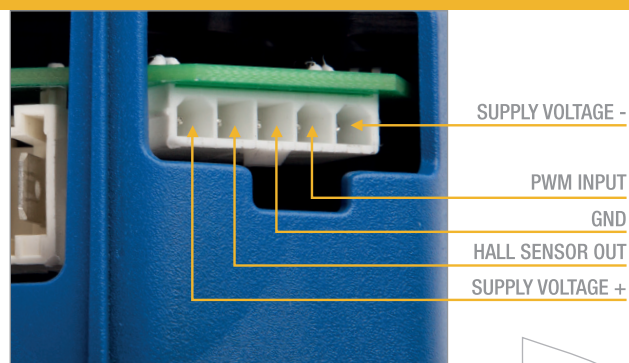


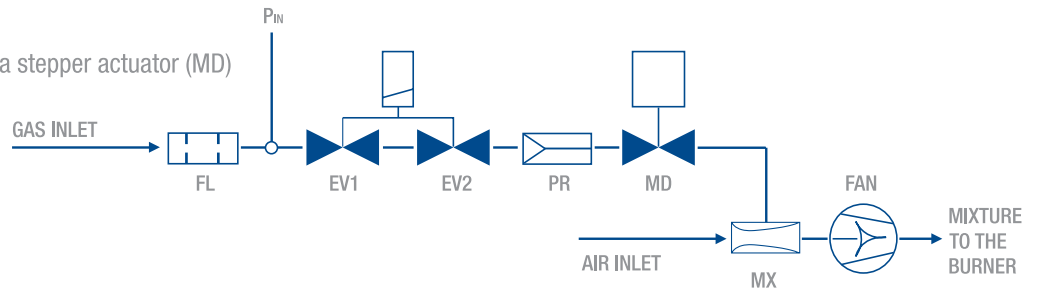
Figure 4 - fan driving interface



FUNCTIONAL DESCRIPTION

Main Features

- Two automatic shut-off valves, silent operation (EV1, EV2)
- Inlet pressure test point (P_{IN})
- Pressure regulator (PR)
- Modulating device driven by a stepper actuator (MD)
- Mixing device (MX)
- Brushless fan (FAN)
- Inlet filter (FL)



FUNCTIONS

Shut-Off

- First automatic shut-off valve (EV1) class C according to EN 126
- Second automatic shut-off valve (EV2) class C according to EN 126

Pressure Regulation

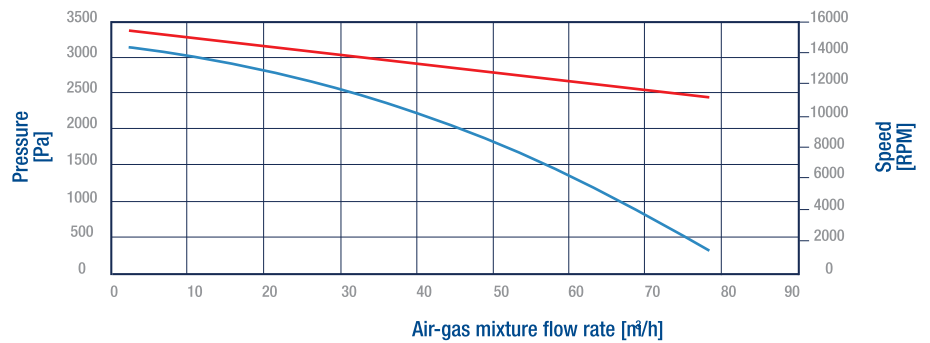
Direct compensated pressure regulator class C according to EN 126

Modulation

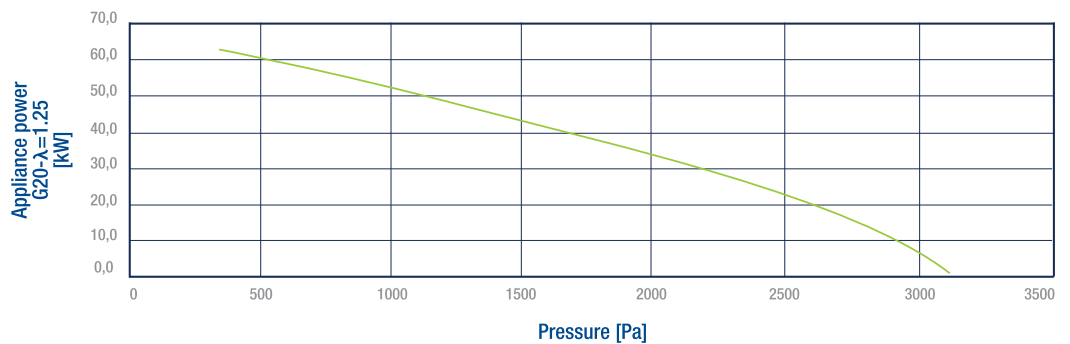
Air-gas modulation is given by the combined actions of the fan coupled with the modulator and the mixer.

Air-gas mixture outlet pressure vs. flow rate

- Fan speed [RPM]
- Pressure [Pa]

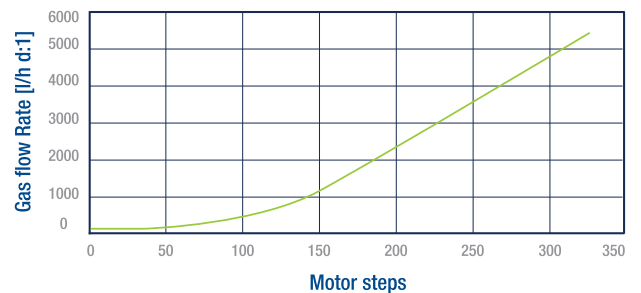


Appliance power vs. air-gas mixture outlet pressure

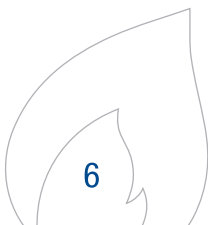


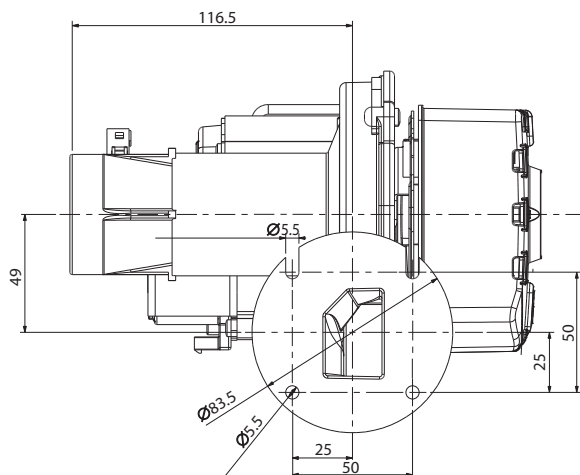
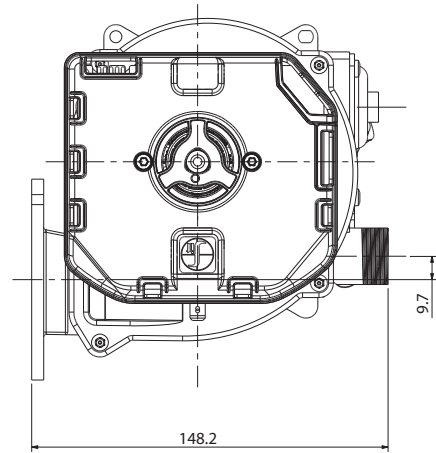
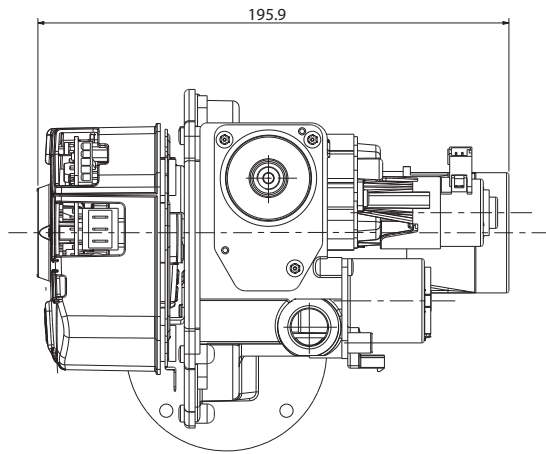
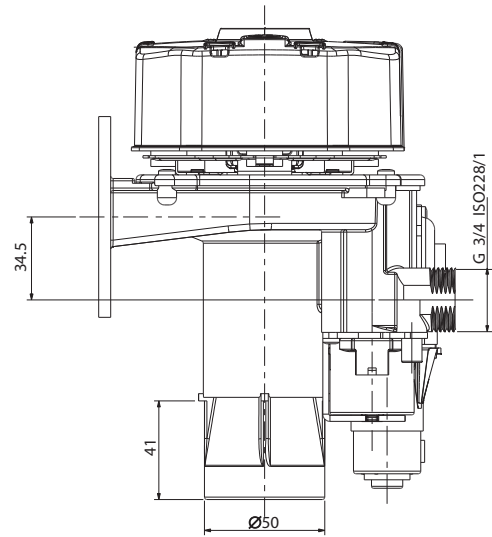
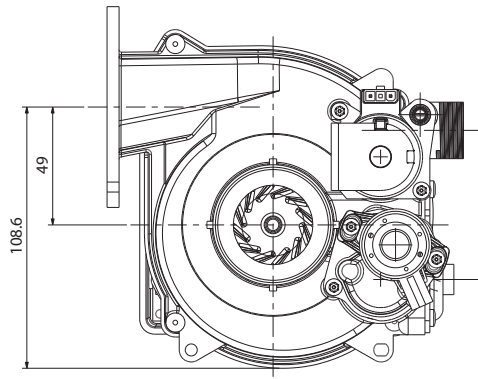
Gas flow vs. steps

The stepper linear actuator acts on the gas flow adjuster as shown in the graph aside.



Flow rate curve with $P_{in} = 20\text{bar}$ @ 20°C







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