PRODUCT RANGE

HEATING DIVISION

ENERGY AND CLIMATE CONTROL SOLUTIONS





SIT, through its two divisions Heating and Metering, creates intelligent solutions for the control of environmental conditions and consumption measurement for a more sustainable word. A market leading multinational company, listed on the MTA segment of Borsa Italiana, SIT aims to be the number one sustainable partner for energy and climate control solutions for its customers, focusing on experimentation and the use of alternative gases with low environmental profiles.

The company has production sites and research centers in Italy (Rovigo and Macerata), the Netherlands (Hoogeveen), Romania (Brasov), Tunisia (Tunisi), Portugal (Lisbon), Mexico (Monterrey) and China (Suzhou) and sales offices located in Europe, America, Asia and Australia with more than 2.100 employees worldwide. SIT Headquarters are in Padua (Italy).

SIT's Heating Division is a world leader in the combustion control systems for domestic heating, commercial cooking and large household appliances. The range of SIT solutions includes electromechanical and electronic gas controls, air/gas mixers, combustion sensors, pressure switches as well as electric fans and fume exhaust kits for atmospheric and condensing boilers and range hoods for domestic cooker hoods marketed under the trademark LN.

SIT offers a complete range of technologically advanced solutions, designed by specialists and certified by the world's most prestigious approval institutes.

SIT's solutions for safety, control and regulation are available for a large number of applications: wall-mounted and free-standing boilers, room heaters, fireplaces, patio heaters, instantaneous and storage water heaters, domestic and commercial cooking, heating system for recreational vehicles and appliances for catering like ovens, fryers, bain maries as well as pellet stoves, heat pumps, heat recovery and co-generation units.

Innovation, careful supervision of the manufacturing process and customer satisfaction are the services that SIT, the specialist in the sector, offers and guarantees at the highest level.





MULTIFUNCTIONAL CONTROLS ELECTRICAL ON-OFF

Automatic flame supervision
Thermoelectric flame supervision

8

MULTIFUNCTIONAL CONTROLS ELECTRICAL MODULATION

Thermoelectric flame supervision Automatic flame supervision

10

THERMOSTATIC CONTROLS

On-off thermostat

13

MANUAL CONTROLS

MIXERS

14

PRESSURE SWITCHES

19

MULTIFUNCTIONAL CONTROLS AIR-GAS MODULATION

12

THERMOSTATIC CONTROLS

Modulating and on-off thermostat Modulating thermostat

16

SYSTEMS

20

18





MULTIFUNCTIONAL CONTROLS ELECTRICAL ON-OFF

This group of products performs the ON-OFF control of the main gas flow using automatic shut-off valves supplied by thermopile, by batteries or by electrical energy. Versions are available with thermoelectric flame supervision device or controlled by the Automatic Burner Control. These controls are suitable for room heaters, fireplaces, central heating boilers, furnaces, water heaters and catering appliances.

AUTOMATIC FLAME SUPERVISION

880-886 PROFLAME

Multifunctional gas control with two battery operated automatic shut-off valves and servo pressure regulator.

880 Proflame - ON-OFF operation

886 Proflame - manual adjustment of the outlet pressure

Pilot flow adjustment is available, main outlet pressure (for 880 Proflame), minimum and maximum outlet pressure (for 886 Proflame) are factory set adjustable. Conversion kits are available to replace ON-OFF operation with the manual adjustment of the outlet pressure or with a modulating device operated by a stepper actuator.







822 NOVA

Multifunctional gas control with two automatic shut-off valves, servo pressure regulator and step opening device (optional) for light commercial appliances. The plungers of the automatic shut-off valves are protected by an oil bath allowing particularly silent operation of the valves. Various supply voltages to the shut-off valves are available. Pilot outlet flow and main outlet pressure adjustments are available.





840 SIGMA

Multifunctional gas control with two automatic shut-off valves and servo pressure regulator. Versions are available with and without slow opening. The plungers of the automatic shut-off valves are protected by an oil bath allowing a particularly silent operation of the valves. Various supply voltages to the shut-off valves are available. Main outlet pressure and slow opening pressure adjustments are available (only on versions with slow opening). Gas inlet and outlet are with male thread or, as alternative, with flange connections or female thread.























	SPACE HEATERS	STORAGE WATER HEATERS	INSTANTANEOUS WATER HEATERS	FREE STANDING BOILERS	STANDARD EFFICIENCY BOILERS	CONDENSING BOILERS	CATERING APPLIANCES	GAS FIREPLACES	PELLET STOVES
820 NOVA	•	•		•			•		
820 NOVA mV	•	•		•			•	•	
821 NOVA mV PoD								•	
822 NOVA		•		•			•		
840 SIGMA	•	•		•			•		
880-886 PROFLAME	•							•	

THERMOELECTRIC FLAME SUPERVISION







820 NOVA mV

Multifunctional gas control with operating knob (OFF, pilot, ON), thermoelectric flame supervision device, restart interlock, servo pressure regulator, automatic shut-off valve and step opening device (optional).

The automatic shut-off valve is supplied by thermopile.

Versions are available with ON-OFF operations or with manual Hi-Low adjustment of the outlet pressure.

Pilot outlet flow and main outlet pressure (only for ON-OFF operations) are adjustable. Minimum and maximum main outlet pressure (only for manual Hi-Low) are factory set adjustable.

The conversion kit is available to replace ON-OFF operation or the manual adjustment of the outlet pressure with a modulating device operated by a stepper actuator.







821 NOVA mV PoD

Multifunctional gas control with single operating knob (OFF, pilot, ON), thermoelectric flame supervision device, restart interlock, servo pressure regulator, manual adjustment of the outlet pressure, automatic shut-off valve and step opening device (optional). Pilot outlet flow is adjustable. Minimum and maximum main outlet pressure are factory set adjustable.

The gas control is also equipped with the Pilot on Demand feature: an on-board device that automatically turn-off the pilot burner after 7 days of inactivity of the main burner. The automatic shut-off valve is supplied by thermopile.

The conversion kit is available to replace the manual adjustment of the outlet pressure with a modulating device operated by a stepper actuator.



820 NOVA

Multifunctional gas control with single operating knob (OFF, pilot, ON), thermoelectric flame supervision device, restart interlock, servo pressure regulator, automatic shut-off valve and step opening device (optional)

The plunger of the automatic shut-off valve is protected by an oil bath allowing particularly silent operation of the valve. Various supply voltages to the shut-off valve are available.

Pilot outlet flow and main outlet pressure adjustments are available.



MULTIFUNCTIONAL CONTROLS ELECTRICAL MODULATION

In addition to one or two automatic shut-off valves, this family of products includes an electric device for the regulation of the gas flow (modulator). Versions are available with thermoelectric flame supervision device or controlled by the Automatic Burner Control. These controls are particularly suitable for low thermal inertia appliances where careful temperature control is required (instantaneous water heaters, combi boilers, etc.) or, in general, where it is required to change the gas flow by an electrical command.

THERMOELECTRIC FLAME SUPERVISION

824 NOVA

Multifunctional gas control with single operating knob (OFF, pilot, ON), thermoelectric flame supervision device, restart interlock, servo pressure regulator, automatic shut-off valve, electric device controlling the main gas flow by 2 levels modulation and step opening device (optional). The plunger of the automatic shut-off valve is protected by an oil bath allowing particularly silent operation of the valve. Various supply voltages to the shut-off





Multifunctional gas control with single operating knob (OFF, pilot, ON), thermoelectric flame supervision device, restart interlock, servo pressure regulator, automatic shut-off valve, electric device controlling the main gas flow by full modulation and step opening device (optional). The plunger of the automatic shut-off valve is protected by an oil bath allowing particularly silent operation of the valve. Various supply voltages to the shut-off valve and to the modulator are available.

Pilot outlet flow, minimum and maximum main outlet pressure adjustments are available.

829 NOVA mV

Multifunctional gas control with single operating knob (OFF, pilot, ON), thermoelectric flame supervision device, restart interlock, servo pressure regulator, automatic shut-off valve, modulating device operated by a stepper actuator and step opening device (optional).

The automatic shut-off valve is supplied by thermopile.

Pilot outlet flow is adjustable, minimum and maximum main outlet pressures are factory set adjustable.







	E = B		0		•••	•••			
	SPACE HEATERS	STORAGE WATER HEATERS	INSTANTANEOUS WATER HEATERS	FREE STANDING BOILERS	STANDARD EFFICIENCY BOILERS	CONDENSING BOILERS	CATERING APPLIANCES	GAS FIREPLACES	PELLET STOVES
824 NOVA	•	•		•			•		
825 NOVA	•		•		•		•	•	
829 NOVA mV	•							•	
843 SIGMA	•	•		•			•		
845 SIGMA	•		•		•		•	•	
877 ELEKTRA	•		•		•	•		•	
885 PROFLAME	•							•	

AUTOMATIC FLAME SUPERVISION



885 PROFLAME

Multifunctional control with two battery operated automatic shut-off valves, servo pressure regulator and modulating device operated by a stepper actuator controlling the main gas flow.

Pilot flow adjustment is available. Minimum and maximum main outlet pressure are factory set adjustable.



843 SIGMA

Multifunctional gas control with two automatic shut-off valves, servo pressure regulator and electric device controlling the main gas flow by 2 levels modulation.

The plungers of the automatic shut-off valves are protected by an oil bath allowing particularly silent operation of the valves. Various supply voltages to the shut-off valves and to the modulator are available.

Minimum and maximum main outlet pressure adjustments are available. Gas inlet and outlet are with male thread or, as alternative, with flange connections or female thread.



845 SIGMA

Multifunctional gas control with two automatic shut-off valves, servo pressure regulator and electric device controlling the main gas flow by full modulation.

The plungers of the automatic shut-off valves are protected by an oil bath allowing particularly silent operation of the valves. Various supply voltages to the shut-off valves and to the modulator are available.

Minimum and maximum main outlet pressure adjustments are available. Gas inlet and outlet are with male thread or, as alternative, with flange connections or female thread.



877 ELEKTRA

Multifunctional gas control with two automatic shut-off valves, pressure regulator and electric device controlling the main gas flow by full modulation. The modulator is operated by a stepper actuator allowing wide modulating range and low hysteresis.

A single coil operates the automatic shut-off valves simultaneously. Maximum outlet pressure adjustment is available.

877 Elektra is specifically designed to operate in appliances with premix burner and electronic combustion control and has an extremely high modulating range up to 1:50



MULTIFUNCTIONAL CONTROLS AIR-GAS MODULATION

SIT air-gas controls are equipped with an air-gas modulator: a pneumatic device that controls the gas flow in a proportion to the combustion air with 1:1 air-gas pressure ratio.

SIT air-gas controls are designed for high-efficiency appliances using premix burner that require an accurate control of combustion throughout the power range.

All the multifunctional controls are designed to be used in conjunction with the Automatic Burner Control.



848 SIGMA

Multifunctional gas control with two automatic shut-off valves, servo pressure regulator and air-gas modulator. The plungers of the automatic shut-off valves are protected by an oil bath allowing particularly silent operation of the valves. Various supply voltages to the shut-off valves are available.

Offset level and air-gas ratio adjustments are available.

Gas inlet and outlet are with male thread or, as alternative, with flange connections or female thread.



822 NOVAMIX

Multifunctional gas control with two automatic shut-off valves, servo pressure regulator and air-gas modulator for light commercial appliances. The plungers of the automatic shut-off valves are protected by an oil bath allowing particularly silent operation of the valves. Various supply voltages to the shut-off valves are available. Offset level and air-gas ratio adjustments are available.

				••• 🖫••					
	SPACE HEATERS	STORAGE WATER HEATERS	INSTANTANEOUS WATER HEATERS	FREE STANDING BOILERS	STANDARD EFFICIENCY BOILERS	CONDENSING BOILERS	CATERING APPLIANCES	GAS FIREPLACES	PELLET STOVES
822 NOVAMIX						•	•		
848 SIGMA						•	•		
390 MIXER						•	•		
391 AGM						•	•		
M30						•	•		
M150						•			

MIXERS

MIXERs are devices to mix gas and air necessary for the correct combustion of premix burners and generate the pressure (or under pressure) to operate air-gas multifunctional controls. All MIXERs are designed to be used in combination with SIT brushless blowers.





390 MIXER

Fully aluminum diecasted general purpose mixing device allowing standard modulating range.

Various mounting options to the fan and to the gas valve are available. Various venturi sizes are also available to better match the appliance maximum power.



391 AGM

Gas and air mixing device with compact dimensions and with an extremely straightforward integration onto the fan.

Different colours of the plastic ring identify different sections of air passage for a better adaptation to the maximum power of the appliance.

Versions with the air conveyer and the gas valve manifold are also available.









M30

Mixing device designed to be mounted with NG40 and NG40-E series brushless blowers. Different colour identifies different venturi size.



M150

Mixing device designed to be mounted with the NG150 series brushless blowers. Various venturi sizes are available to better match the appliance maximum power.



THERMOSTATIC CONTROLS

The products of this range are suitable to completely control the operations of water heaters, space heaters, gas radiators, furnaces, frvers, ovens, etc. All these products do not require the external electrical power supply.

ON-OFF THERMOSTAT

600 AC2

Multifunctional control with thermoelectric flame supervision device and ON-OFF thermostat with setting temperature knob. Versions are available with integral safety overheat thermostat (ECO) and with on board piezo igniter. This multifunctional control is particularly suitable for use in storage water heaters.









610 AC3

Multifunctional control with thermoelectric flame supervision device, pressure regulator, ON-OFF thermostat with setting temperature knob and safety overheat thermostat.

Pilot outlet gas flow adjustment and main outlet pressure adjustment with exclusion device are available. This multifunctional control is particularly suitable for use in storage water heaters.



630 EUROSIT SWH

Single-knob (OFF, pilot, temperature selection) multifunctional control with thermoelectric flame supervision device, restart interlock, ON-OFF thermostat, safety overheat thermostat, pressure regulator and piezo igniter (optional). Pilot gas flow and outlet pressure adjustments are available.

This multifunctional control is particularly suitable for use in storage water heaters and offers the possibility to separate the valve body from the thermostat flange, allowing a quick and reliable assembly on the appliance.



650 DELTA

Multifunctional control with thermoelectric flame supervision device, servo pressure regulator for main outlet, ON-OFF thermostat with setting temperature knob, safety overheat thermostat (ECO), independent pilot pressure regulator and optional piezo igniter.

Pilot and main outlet pressures are factory set adjustable.

This multifunctional control is particularly suitable for use in storage water heaters.

The plastic cover has an attractive design that can also be customised.





670 GAMA

Multifunctional control with thermoelectric flame supervision device and ON-OFF thermostat with setting temperature knob.

Versions are available with integral push button (670 GAMA ONETOUCH) to operate simultaneously the Magnet Unit of the thermoelectric flame supervision device and the remote electric igniter.

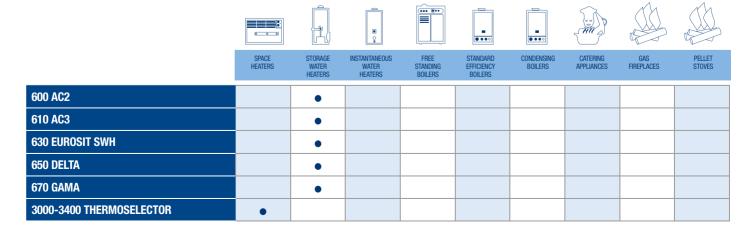
This multifunctional control is particularly suitable for use in storage water heaters.



3000-3400 THERMOSELECTOR

 $\mbox{ON-OFF}$ adjustable thermostat usually mounted downstream of a thermoelectric flame supervision device.

This control is particularly suitable for portable LP gas appliances and is available with low (3000) and high (3400) gas flow versions.





THERMOSTATIC CONTROLS

MODULATING AND ON-OFF THERMOSTAT

630 EUROSIT

Single-knob (OFF, pilot, temperature selection) multifunctional control with thermoelectric flame supervision device, restart or ignition interlock, modulating and ON-OFF thermostat, main pressure regulator or flow adjuster and piezo igniter (optional).

Pilot gas flow, minimum and maximum main outlet pressure adjustments are available.

Side or bottom inlet and outlet gas connections are available.

This multifunctional control is available with a wide range of thermostat settings and therefore is suitable to be used in a variety of appliances like space heaters, boilers, water heaters and professional cooking appliances.





630 Eurosit 120°

Single-knob (OFF, pilot, temperature selection) multifunctional control with thermoelectric flame supervision device and modulating ON-OFF thermostat.

Pilot gas flow, minimum and maximum main outlet flow adjustments are available.

Side or bottom inlet and outlet gas connections are available.

This multifunctional control is particularly suitable to be used in catering appliances; for this use the operating ambient temperature range is extended until 120 °C.

630 EUROSIT PLUS

Multifunctional control suitable for two independent burners, with thermoelectric flame supervision device and with restart interlock, pressure regulator or flow adjuster and piezo igniter (optional).

The main outlet is controlled by a modulating ON-OFF thermostat with temperature setting knob, the auxiliary outlet is operated manually with a sliding selector.

Pilot outlet gas flow, minimum and maximum main outlet pressure, minimum and maximum auxiliary outlet flow adjustments are available.

Side or bottom inlet and outlet gas connections are available.

This multifunctional control is particularly suitable to be used in appliances with main and decorative burners such as gas fireplaces.





710 MINISIT

Multifunctional control with thermoelectric flame supervision device with restart interlock, modulating ON-OFF thermostat with temperature setting knob, pressure

regulator or flow adjuster and piezo igniter (optional).

Pilot gas flow, minimum and maximum main outlet pressure (flow) adjustments are available.

In line inlet and outlet or bottom outlet gas connections are available.

This multifunctional control is available with a wide range of thermostat settings and therefore is suitable to be used in a variety of appliances like space heaters, boilers, water heaters and professional cooking appliances.

MODULATING THERMOSTAT



3200 THERMOSELECTOR

Modulating adjustable thermostat usually mounted downstream of a thermoelectric flame supervision device. This control is particularly suitable for portable LP gas appliances.

	E				••••				
	SPACE HEATERS	STORAGE WATER HEATERS	INSTANTANEOUS WATER HEATERS	FREE STANDING BOILERS	STANDARD EFFICIENCY BOILERS	CONDENSING BOILERS	CATERING APPLIANCES	GAS FIREPLACES	PELLET STOVES
630 EUROSIT	•			•			•	•	
630 EUROSIT 120°							•		
630 EUROSIT PLUS	•						•	•	
710 MINISIT	•			•			•		
3200 THERMOSELECTOR	•								



MANUAL CONTROLS

These products are suitable to equip many type of gas appliances like ovens, space heaters, barbecues, etc.



400 M1 - 420 B3

General purpose thermoelectric flame supervision devices with push button with pilot outlet (B3 series) or without (M1 series), available in a wide range of gas connections. Versions for high working temperature or high working pressure are available.

630 EUROSIT MANUAL

Single-knob (OFF, pilot, gas flow selection) multifunctional control with thermoelectric flame supervision device, restart interlock, pressure regulator or flow adjuster and piezo igniter (optional).

Pilot gas flow, minimum and maximum main outlet pressure (flow) adjustments are available. Side or bottom inlet and outlet gas connections are available.



	SPACE HEATERS	STORAGE WATER HEATERS	INSTANTANEOUS WATER HEATERS	FREE STANDING BOILERS	STANDARD EFFICIENCY BOILERS	CONDENSING BOILERS	CATERING APPLIANCES	GAS FIREPLACES	PELLET STOVES
400 M1	•						•	•	
420 B3	•						•	•	
630 EUROSIT MANUAL	•						•	•	

PRESSURE SWITCHES

The range includes air differential pressure switches, gas pressure switches, manually adjustable gas pressure switch and water pressure switches.

Versions with different mechanical connections, mounting solutions and setting pressure are available.



310 GAS



340 AQUA



360 PRESCAL



380 ARIA



SYSTEMS

These platform of control systems are specifically designed for all the appliances using the premix burner and provide higher performances and simpler appliance manufacturing operations.



877 INTEGRA

877 INTEGRA is an integrated system specifically designed to operate in domestic appliances with premix burners and electronic combustion control.

877 INTEGRA consists of a fan driven by a brushless motor with integral electronic driver, two automatic shut-off gas valves, gas pressure regulator, gas modulator driven by linear actuator operated by a stepper motor and an air-gas mixing device.

INTEGRA is particularly compact in dimensions and allows to get an extremely wide modulation range in the appliance, up to 1:20.



480 KAPPA

480 Kappa is an integrated system consisting of a fan with brushless motor, mixer and air-gas modulating valve for appliances using the premix burner.

Kappa is suitable for high efficiency and low emission boilers, warm air furnaces, storage water heaters and commercial cooking appliances including ultra-low NOx.



991 AEROTECH

AEROTECH is a combined system that consists of a multifunctional gas control with two automatic shut-off valves, an air-gas modulator with ratio adjuster (848 SIGMA) and a mixing device with air conveyer.

Various mounting options are available.



898 SIGMA

898 SIGMA is combined system that consists of a multifunctional gas control with two automatic shut-off valves, an air-gas modulator with ratio adjuster (848 SIGMA) and a mixing device.

	:		•		•••				
	SPACE HEATERS	STORAGE WATER HEATERS	INSTANTANEOUS WATER HEATERS	FREE STANDING BOILERS	STANDARD EFFICIENCY BOILERS	CONDENSING BOILERS	CATERING APPLIANCES	GAS FIREPLACES	PELLET STOVES
877 INTEGRA						•			
480 KAPPA						•			
991 AEROTECH						•			
898 SIGMA						•			



ELECTRONIC CONTROLS

SIT Automatic Burner Controls are digital controls for ignition and flame supervision of gas appliances like boilers, water heaters, space heaters, ovens, fryers, etc.

AUTOMATIC BURNER CONTROLS

579 DBC

579 Digital Burner Control is an electronic device specifically designed to be mounted on board of the SIGMA series multifunctional controls and therefore simplifies the connections to the automatic shut-off valves. There are versions suitable for both natural draught or fan assisted appliances.

The spark igniter is integral to the board and there are versions with single or double probe for ignition and flame supervision.





571 DBC

571 Digital Burner Control is a stand-alone and general purpose Automatic Burner Control. There are versions suitable for both natural draught or fan assisted appliances, versions with on board spark igniter or with external hot surface igniter, versions with single or double probe for ignition and flame supervision.

579 DBC MODBUS

579 Digital Burner Control is a general purpose Automatic Burner Control with insulated MODBUS communication port for burner remote control and serial port for diagnostic communication. 579 DBC MODBUS is supplied with extended range of line voltage (from 93 to 240 Vac 50/60 Hz), includes a temperature control using up to two sensors and can be configured for appliances using the atmospheric burner both with natural draught or fan assisted or also for appliances using a premix burner.

The following alternative options are available:

- suitable for both natural draught or fan assisted appliances
- with on board spark igniter or with external hot surface igniter
- with single or double probe for ignition and flame supervision
- with 0-10 V outlet for fan speed control or 0-165 mA for electrical modulator.



584 DFC



584 DFC is an Automatic Burner Control with Intermittent Pilot Ignition designed to operate 880, 885 or 886 Proflame multifunctional controls. 584 DFC is supplied at low DC voltage or by batteries. The serial port for diagnostic is available and Continuous Pilot Ignition, as alternative to IPI, can be selected by a switch. 584 DFC with Proflame series multifunctional controls is particularly suitable to be used in gas fireplaces.

	***			■			m		
	SPACE HEATERS	STORAGE WATER HEATERS	INSTANTANEOUS WATER HEATERS	FREE STANDING BOILERS	STANDARD EFFICIENCY BOILERS	CONDENSING BOILERS	CATERING APPLIANCES	GAS FIREPLACES	PELLET STOVES
571 DBC	•	•	•	•	•	•	•	•	
579 DBC	•	•	•	•	•	•	•	•	
579 DBC MODBUS	•	•	•	•	•	•	•		
584 DFC	•							•	

SIT Boiler Integrated Controls (BIC) are customized electronic boards for the managements of standard efficiency and condensing appliances. All BICs integrate the Automatic Burner Control for ignition and flame supervision along with the temperature control of the central heating and domestic hot water, the operations of water pump(s), 3-way water valve, fan, etc and are suitable to be connected to a low voltage room thermostat or to an OpenTherm compatible room control. All BICs have the UART serial port to connect a PC for the diagnostic or, alternatively, for the connection of the WIFI dongle: the device that connects the board to the WIFI router for the remote control of the appliance. The boards listed below are examples of SIT production and have the scope to demonstrate SIT technology and the versatility of SIT products.

BOILER INTEGRATED CONTROLS



BIC 211

Integrated Control for standard efficiency fan assisted combination boilers with on board display and 5 push buttons. Other features include the control of line voltage for variable speed fan (in combination with the hall sensor) and the possibility to connect the external sensor for the optimization of the central heating water temperature. Options are available for 3-way water valve supplied at line voltage, low voltage ac or low voltage stepper motor. Other options are positive 3 digits LCD display with orange backlight or negative 3 digits LCD display with green backlight. The control board is designed to be used in combination with 845 SIGMA multifunctional control and with GOLD fan.

BIC 150/1/2



Series of Integrated Controls for combination boilers with on board User Interface with 5 touch pad keyboard, LCD display with green backlight. The boards can be configured to equip combi boilers with atmospheric or premix burner, with instantaneous production of domestic hot water or with storage and for the use of water flow sensor or flow switch. Other features include, together with the accessory OpenTherm interface board cod. 0599001, the possibility to connect the Zone Valve and the Water Filling Valve. Model 150 equips standard efficiency combi boilers with 2 separate heat exchangers, model 152 for boilers with double heat exchangers, both models are designed to be used in combination with 845 SIGMA multifunctional control and with GOLD blower. Model 151 equips combi boilers using premix burner with double heat exchangers therefore is designed to be used in combination with 848 SIGMA multifunctional control and with NG40 or NG40-E blowers.

	E								
	SPACE HEATERS	STORAGE WATER HEATERS	INSTANTANEOUS WATER HEATERS	FREE STANDING BOILERS	STANDARD EFFICIENCY BOILERS	CONDENSING BOILERS	CATERING APPLIANCES	GAS FIREPLACES	PELLET STOVES
BIC 211						•			
BIC 150/1/2						•			



ELECTRONIC CONTROLS

BOILER INTEGRATED CONTROLS



BIC 601

Series of Integrated Control for boilers using premix burner. Versions are available for instantaneous domestic hot water production or for storage of hot water.

The board is supplied with extended range of line voltage (from 93 to 240 Vac 50/60 Hz) and with a double insulated low voltage (24 Vac -50/60 Hz).

Using an RS485 port, the board, with the cascade program built in, is suitable for connecting several boilers (also with different rated power) in the cascade configuration with master redundancy.

Other features include the automatic Night Setback and the separate User Interface with graphic LCD display (code 0585579).

The User Interface, connected to the main board with a RS 232 port, has the following main functions: programmable thermostat, cascade management, setup of many boiler parameters, download of drive parameters and diagnostic log via 2 separated USB ports furthermore shows the status and alarms of the appliance.

BIC 180

Integrated Control for combination boilers using premix burner. The board can be set to drive boilers with instantaneous domestic hot water production or for storage of hot water.

The board is supplied with extended range of line voltage (from 93 to 240 Vac 50/60 Hz) and with a double insulated low voltage (24 Vac -50/60 Hz). Other features include the possibility to connect the water flow sensor, the option to drive the gas valve supplied at line voltage or low voltage and the option for the external Hot Surface Igniter or the on-board igniter.

Using an RS485 port, the board, with the cascade program built in, is suitable for connecting several boilers (also with different rated power) in the cascade configuration with master redundancy.

An additional RS232 port is used to connect the optional LCD display unit (code 0.585.566).





BIC 186

Integrated Control for boilers using premix burner. Versions are available for instantaneous domestic hot water production, for storage of hot water or connection to solar panels.

The board is supplied with extended range of line voltage (from 93 to 240 Vac 50/60 Hz) and with a double insulated low voltage (24 Vac - 50/60 Hz).

Using the RS485 port, the board, with the cascade program built in, is suitable for connecting several boilers (also with different rated power) in the cascade configuration with master redundancy.

Other features include one I2C bus and one RS-232 port for dedicated expansion boards, the possibility to drive up to three water pumps, two of them modulating and the option to drive the gas valve supplied at line voltage or low voltage.

One Modbus Serial Interface (RS 485) is used for the dedicated LCD display connection.



BIC 603

Integrated Control for boilers using 4 stages premix burners. The board can drive 4 gas valves (one for each burner) and 2 modulating blowers with 2 Hot Surface Igniters and 2 flame probes.

Other features include the possibility to drive three modulating water pumps, the option to drive the gas valve supplied at line voltage or low voltage and the ability to accurately control the appliance by using a variety of sensors.

A dedicated HMI can be connected to the board and one RS 485 port is available for Building Management System.



BIC 19x

Series of Integrated Controls for stage boilers. The boards can drive up to four gas valves, two pilot valves, two modulating fans and two flame sensing probes. Versions are available for appliances using premix or atmospheric burners. The board is supplied with extended range of line voltage (from 93 to 240 Vac 50/60 Hz) and with a double insulated low voltage (24 Vac -50/60 Hz).

The board includes two RS 485 ports for Cascade Appliances and for Building Management System and two RS 232 ports for diagnostic and a dedicated HMI: a colour dot matrix touch display.

Options are available for on-board spark igniter or for two external hot surface igniters.

Other features include the possibility to drive up to three water pumps and the management up to 9 inputs for safety devices.



BIC 257 FCMS

Series of Integrated Controls for combination boilers using premix burner. The boards can be configured for pneumatic air-gas control or for electronic combustion control where fan and gas valve are driven to optimize the combustion in every operating condition and varying the gas type. The board includes the power driver for the fan, allows the automatic filling of the water circuit using a line powered water valve and a water pressure sensor. An additional RS 232 port is used to connect the User Interface 0585567 with positive LCD blue backlight and 5 pushbuttons. Options are available for water pump and 3-way water valve or two independent CH and DHW pumps; the board can drive line powered on/off or modulating pumps. The boards are designed to be used in combination with 848 SIGMA (for pneumatic air-gas) or 877 Elektra (for electronic air-gas) multifunctional controls and with NG40-E blowers.



BIC 260 ECMS

Series of Integrated Controls for combination boilers using premix burner with on board User Interface with 2.2" LCD display and 7 membrane buttons. The boards can be configured for pneumatic air-gas control or for electronic combustion control where fan and gas valve are driven to optimize the combustion in every operating condition and varying the gas type. The board allows the automatic filling of the water circuit using a line powered water valve and a water pressure sensor. Options are available for water pump and 3-way water valve or two independent CH and DHW pumps; the board can drive line powered on/off or modulating pumps.

The boards are designed to be used in combination with 848 SIGMA (for pneumatic air-gas) or 877 Elektra (for electronic air-gas) multifunctional controls and with NG40 or NG40-E blowers.

	SPACE HEATERS	STORAGE WATER HEATERS	INSTANTANEOUS WATER HEATERS	FREE STANDING BOILERS	STANDARD EFFICIENCY BOILERS	CONDENSING BOILERS	CATERING APPLIANCES	GAS FIREPLACES	PELLET STOVES
BIC 601						•			
BIC 180						•			
BIC 186						•			
BIC 603						•			
BIC 19x					•	•			
BIC 257 ECMS						•			
BIC 260 ECMS						•			



ELECTRONIC CONTROLS

DISPLAY UNITS

2.2" DISPLAY

LCD 2.2" display is designed to be mounted on the BIC, the appliance main board and has 13 icons and 3 alpha numerical digits with backlight.



585 3.5" DISPLAY SERIES

General purpose full colored LCD 3.5" TFT dot matrix display is a stand-alone device with backlight and 5 control buttons to be connected to the BIC, the appliance main board. Symbols and icons can be customized.





585 HMI

General purpose User Interface with display and touchscreen technology connected to the main appliance board via RS232 serial port.

585 HMI series are available in two models:

- **5" display** with 800x480 resolution, 16 million colors, resistive touch panel
- 7" display with 800x480 resolution, 16 million colors, resistive touch panel

585 HMI series include the following optional hardware functionalities:

- Ethernet Connection
- Wifi Plug-in
- Bluetooth
- USB pen drive
- SD Card
- Multi-Protocol Support
- USB PC Connection



- Monitor of main running appliance parameters
- Change of the control parameters
- Log failures
- Download/upload parameters and log by USB pen drive
- Full support for SIT link
- Changeable custom graphics (colors and icons)







WI-FI Dongle Plus is the device that plugged to the diagnostic port of SIT electronics allows the connection to the WIFI router for the remote control of the appliance.

Wi-Fi dongle supports most common protocols: Modbus, uart, SPI, etc. and is secure thanks to SSL encryption (the same used by Google).



BIC 241 SWH

Integrated control specifically designed for storage water heater using premix burner with on board display and 4 push buttons.

The board is supplied with extended range of line voltage (from 93 to 240 Vac 50/60 Hz) and drives a line voltage hot surface igniter. Features include the possibility to connect several sensors: the outside sensor for the optimization of the water temperature, the flammable vapor sensor, the water leakage detector and the exhaust temperature.

The control board is designed to be used in combination with 848 SIGMA or 822 Novamix multifunctional controls, with NG40, NG40-E or NG150 blowers or, alternatively, with 480 KAPPA integrated system.





With SIT LINK, appliances can send information and receive commands, typically over the Internet using the home Wi-Fi network or, alternatively, using a cable and a local modem. The appliance communicates with a data server that the user can access from a remote terminal such as a Smartphone, Tablet or Personal Computer.

In this way, the end user can remotely control the appliance using a browser or a specific App and can access a range of functions such as switching the appliance on or off, setting operating temperatures, programming weekly thermostat settings, monitoring operational status, etc.

Similarly, the installer can remotely monitor an appliance, access current and historical operating parameters and, if necessary, change operational settings and carry out preventive maintenance, improving service and increasing client satisfaction.



	E 3			8.0					
	SPACE HEATERS	STORAGE WATER HEATERS	INSTANTANEOUS WATER HEATERS	FREE STANDING BOILERS	STANDARD EFFICIENCY BOILERS	CONDENSING BOILERS	CATERING APPLIANCES	GAS FIREPLACES	PELLET STOVES
WI-FI DONGLE PLUS	•	•	•	•	•	•	•	•	
580 BIC SWH		•							
SIT LINK	•	•	•	•	•	•	•	•	



ELECTRONIC CONTROLS

Proflame is a modular remote control system that drives the many functions of today's hearth appliances. In its basic form, it is designed to control the on/off operation of the main burner and to provide thermostatic control of the appliance. The system can be upgraded to include the control of the flame height, the fan speed, a remote actuated 120V auxiliary outlet. Comfort control is advanced by the Smart thermostat feature which automatically modulates flame height optimizing temperature management and room ambiance.

E CONTROL OF THE PARTY OF THE P

584 PROFLAME GT series

584 Proflame GT series are battery powered controls designed to work in combination with 584 Remote Control or 584 Wall Mount Thermostat for the control of the heart appliances.

Two versions are available:

- GTM to turn ON and OFF the main burner, to adjust flame levels and to provide Smart Thermostatic Control of the room
- **GTMS** to turn ON and OFF the main burner, to adjust flame levels and to provide Smart Thermostatic Control of the room. In addition, this version also controls 540 Split-Flow, the device that operates a double burner system into the same appliance

Proflame GT series are designed to be used together with one of the following multifunctional controls:

- 820 NOVA mV or 821 NOVA mV PoD
- 820 NOVA mV or 821 NOVA mV PoD, both converted with the step motor modulating kit or 829 NOVA mV
- 880, 886 or 885 Proflame in combination with 584 DFC, the battery operated Automatic Burner Control.



584 PROFLAME FCM

584 Proflame Fan Control Module is designed to work in conjunction with 584 PROFLAME GT series and controls the comfort fan through six levels of speed, switches ON and OFF a line voltage power AUX outlet and has a constantly powered outlet. Fan speed and AUX outlet are controlled via 584 Remote Control or 584 Wall Mount thermostat.



540 SPLIT FLOW

540 Split Flow is a device that operates a double burner system into the same appliance such as gas fireplaces and shall be installed downstream a multifunctional control with flame supervision like 820 NOVA mV or 88x Proflame series. Split Flow allows the gas to pass to the primary burner and controls the ON-OFF operation of the secondary burner.

Split Flow is supplied at low voltage and can be operated by batteries.

				8.0					
	SPACE HEATERS	STORAGE WATER HEATERS	INSTANTANEOUS WATER HEATERS	FREE STANDING BOILERS	STANDARD EFFICIENCY BOILERS	CONDENSING BOILERS	CATERING APPLIANCES	GAS FIREPLACES	PELLET STOVES
584 PROFLAME GT series	•							•	
584 PROFLAME FCM	•							•	
540 SPLIT FLOW	•							•	

The IFC (Integrated Fireplace Control) is a modular control system that directs the functions of a hearth appliance. It is available in Basic, Standard or Complete configurations.



584 IFC basic

584 IFC basic version is an Automatic Burner Control with Intermittent Pilot Ignition designed to operate 880 or 886 Proflame multifunctional controls. IFC basic is powered by line voltage with optional battery backup. The serial port for diagnostic is available and Continuous Pilot Ignition, as alternative to IPI, can be selected by a switch.

IFC basic is operated by a (wall) switch or by a wall thermostat.



584 IFC

584 IFC is an Integrated Fireplace Control with Intermittent Pilot Ignition designed to operate 885 Proflame multifunctional controls and 540 Split-Flow, the device that operates a double burner system into the same appliance. IFC is operated by 584 Remote Control or 584 Wall Mount thermostat and provides control of the flame height and features Smart Thermostatic Control of the hearth appliance.

IFC is powered by line voltage with optional battery backup. The serial port for diagnostic is available and Continuous Pilot Ignition, as alternative to IPI, can be selected by a switch. In addition, IFC controls the comfort fan through six levels of speed, switches ON and OFF a line voltage AUX outlet and has a constantly powered outlet.

Versions are available with Proflame Connect feature (green wiring on the box), the feature that allows the connection to the Wi-Fi home network to control the appliance with smart devices and optionally with Smart Start, the feature that facilitates the ignition in difficult environmental conditions.



Two models are available:

- 584 IFC standard for natural draft appliances
- 584 IFC complete for power vent appliances also controlling the combustion blower with associated Air Pressure Switch.

	.			8.0					
	SPACE HEATERS	STORAGE WATER HEATERS	INSTANTANEOUS WATER HEATERS	FREE STANDING BOILERS	STANDARD EFFICIENCY BOILERS	CONDENSING BOILERS	CATERING APPLIANCES	GAS FIREPLACES	PELLET STOVES
584 IFC BASIC								•	
584 IFC STANDARD								•	
584 IFC COMPLETE								•	



ELECTRONIC CONTROLS



584 REMOTE CONTROL SERIES

584 Remote Control is a radio frequency transmitter that directs the functions of the heart appliance with ergonomically positioned push buttons, large LCD display and back light. All the versions are designed to work in combination with 584 Proflame GT series or with 584 IFC series. The full options version includes the following features: control of the flame height (6 levels), (Smart) Thermostatic Control of the hearth appliance, child lock, control of the comfort fan through six levels of speed, turn ON and OFF a line voltage power AUX outlet.

Versions are available as stand alone devices or as part of the Proflame Connect system.



584 WALL MOUNT TRANSMITTER

584 Wall Mount Transmitter is a radio frequency remote control battery operated that directs the functions of the heart appliance with push buttons, large LCD display and back light. All the versions are supplied by batteries and are designed to work in combination with 584 Proflame GT series or with 584 IFC series. The full options version includes the following features: control of the flame height (6 levels), (Smart) Thermostatic Control of the hearth appliance, child lock, control of the comfort fan through six levels of speed, turn ON and OFF a line voltage power AUX outlet.

Versions are available as stand alone devices or as part of the Proflame Connect system.

	<u> </u>			(*** B**)					
	SPACE HEATERS	STORAGE WATER HEATERS	INSTANTANEOUS WATER HEATERS	FREE STANDING BOILERS	STANDARD EFFICIENCY BOILERS	CONDENSING BOILERS	CATERING APPLIANCES	GAS FIREPLACES	PELLET STOVES
584 REMOTE CONTROL	•							•	
584 WALL MOUNT TRANSMITTER	•							•	

SENSORS

THERMOCOUPLES

Available in standard version for domestic hobs (fast or ultra quick ignition time) and for high-capacity appliances (where a fast cooling time is required). All the models are also available for the connection of a safety overheat thermostat (interrupted thermocouples) and with aluminized tip to protect against soot.

Wide range of lengths and sleeves suits almost every pilot burner.



Available in standard version for domestic hobs (fast or ultra quick ignition time) and for high-capacity appliances (where a fast cooling time is required). All the models are also available for the connection of a safety overheat thermostat (interrupted thermocouples) and with aluminized tip to protect against soot.

Wide range of lengths and sleeves suits almost every pilot burner.



Available in standard version for domestic hobs (fast or ultra quick ignition time) and for high-capacity appliances (where a fast cooling time is required). All the models are also available for the connection of a safety overheat thermostat (interrupted thermocouples) and with aluminized tip to protect against soot.

Wide range of lengths and sleeves suits almost every pilot burner.

OXYPILOT

Available in standard version for domestic hobs (fast or ultra quick ignition time) and for high-capacity appliances (where a fast cooling time is required). All the models are also available for the connection of a safety overheat thermostat (interrupted thermocouples) and with aluminized tip to protect against soot.

Wide range of lengths and sleeves suits almost every pilot burner.

SENSING ELEMENTS

Thermo mechanical devices used for sensing temperature in safety shut off systems or in temperature control devices (thermostats).

Two versions available:

- 1000 Series: membrane sensing element for displacements shorter than 1.3 mm
- 2000 Series: bellow-sensing element for displacements longer than 1 mm













BLOWERS

These series of blowers are specifically designed for appliances using premix burners. They are fitted with brushless DC motor with on board driving electronics equipped with programmable microcontroller managing several functional curves therefore all the blowers can be easily fitted to a wide range of applications. The design of the scroll case allows the use in appliances with zero governor and positive pressure air-gas systems.

PREMIX GAS APPLIANCES





NG40 - NG40m

NG40 series blower is specifically designed for domestic appliances. Versions are available with supply voltage of 230 Vac and 120 Vac.

NG40m series consists of NG40 with on-board air-gas mixer and, to better fit the appliance rated power, various mixer sizes are available identified by different colour.

NG40-E

NG40-E series blower is specifically designed for domestic appliances and can guarantee a wide turn down ratio above 10:1 Versions are available with various supply voltage and without driving electronics (hall sensor only).

NG40-E m21 and NG40-E m28 are suitable to mount the air-gas mixer and, to better fit the appliance rated power, various mixer sizes are separately available identified by different colour.









NG150

The blowers of the NG150 series are specifically designed for commercial appliances using premix burners and can guarantee wide turn down ratio above 10.1

Versions are available with supply voltage of 230 Vac and 120 Vac.

STANDARD EFFICENCY GAS APPLIANCES

GOLD

GOLD series are fans for fume extraction designed to be used in standard efficiency gas fired appliances.

These blowers are equipped with a shaded poles motor with power of 25 W up to 65 W and can be easily fitted to a wide range of applications thanks to the numerous possible combinations of fixing points, scroll case and impeller sizes.

Versions are available with aluminized sheet metal scroll case or with diecasted aluminum.

Different pressure sensors are available: venturi, Pitot tube, straight probe.





	8			**************************************		m ••••			
	SPACE HEATERS	STORAGE WATER HEATERS	INSTANTANEOUS WATER HEATERS	FREE STANDING BOILERS	STANDARD EFFICIENCY BOILERS	CONDENSING BOILERS	CATERING APPLIANCES	GAS FIREPLACES	PELLET STOVES
NG40 – NG40m						•	•		
NG40 – E						•	•		
NG150						•			
GOLD	•	•	•	•	•		•	•	



BLOWERS

FOR PELLET AND BIOMASS STOVES AND BOILERS

FUME EXTRACTOR





PL10

PL10, designed for use mainly in appliances with power up to 10 kW, is a particularly small fume extractor with shaded-pole motor, scroll case in aluminized sheet metal and with AISI 430 stainless steel impeller.

Featuring insulation class H, TP thermal protection and 80 mm diameter outlet, the fan is available in versions with straight or offset outlet otherwise without casing.





PL20

Fan for fumes extraction suitable for appliances with power up to 20 kW, equipped with capacitor motor, aluminized steel scroll case and AISI 430 stainless steel impeller. Featuring insulation class F, TP thermal protection and 80 mm diameter outlet, the fan is available with integral elbow, straight outlet or offset outlet. Versions with integral Hall sensor for speed control are also available.





PL21

Fan for fumes extraction suitable to equip appliance with power up to 20 kW, equipped with shaded poles motor, aluminized steel scroll case and AlSI 430 stainless steel impeller. Featuring insulation class H, ZP or TP thermal protection and 80 mm diameter outlet, the fan is available with integral elbow or alternatively with straight outlet or offset outlet. Versions with integral Hall sensor for speed control are also available.





PL30

Fan for fumes extraction suitable to equip appliance with power up to 40 kW, equipped with capacitor motor, aluminized steel scroll case and AISI 430 stainless steel impeller. Featuring insulation class F, TP thermal protection and 100 mm diameter outlet, the fan is available in versions with straight, elbow or offset outlet otherwise without casing.



Versions are available with clockwise and counter clockwise rotation and with integral Hall sensor for speed control.

WARM AIR DISTRIBUTION

EVA - EVA GOLD

EVA series blowers are equipped with shaded poles motor with various power, aluminized steeel scroll case and aluminum impeller. Featuring insulation class H and TP or ZP thermal protection. Versions with integral Hall sensor for speed control are available.

- EVA is available with squared outlet and with both clowise and counterclockwise impeller rotation.
- EVA GOLD is available with round outlet 80 mm diameter





μGT

 μ GT series blowers have extremely compact size with double intake and are equipped with a single speed capacitor motor, aluminized steel scroll case and aluminum impeller. Featuring insulation class F and TP thermal protection, the μ GT can be provided with or without the outlet flange.



GT

The GT fan is equipped with single speed capacitor motor, painted sheet metal scroll case and plastic impeller. Featuring insulation class F and TP thermal protection, the GT fan has flanged output.



	SPACE HEATERS	STORAGE WATER HEATERS	INSTANTANEOUS WATER HEATERS	FREE STANDING BOILERS	STANDARD EFFICIENCY BOILERS	CONDENSING BOILERS	CATERING APPLIANCES	GAS FIREPLACES	PELLET STOVES
PL20									•
PL21									•
PL30									•
EVA-EVA GOLD									•
ματ									•
GT									•



FLUE EXHAUST SYSTEMS

These products are designed for use in various types of gas heating installation.

The range includes extensions, elbows with different curvatures and various adapters specifically designed to comply with the safety standards of the various gas appliances and meeting also with the most stringent aerodynamic requirements. Few examples of these products are shown below.

CONDENSING APPLIANCES



Extensions

Made of PPs/ZCSteel or PPs/Al male-female concentric pipes of various lengths and with diameters 60/100 or 80/125 mm

Versions are also available with condensate drain connections.

Outlet terminals

Made of PPs/ZCSteel or PPs/PP-PVC anti-ice, flue systems for condensing appliances are available for both concentric and separate ducts with vertical roof outlet and horizontal wall outlet.







Roof terminals

Aluminium flat roof flashing and Lead and PPs pitched roof flashing.





Elbow

Made of PPs/Al male-female concentric elbow of 90 degree or 45 degree available with various diameters with and without test point.

The flue systems for condensing appliances are available for both concentric and separate ducts with vertical outlet (roof piping) and horizontal outlet (wall duct). Products are available in various materials such as self-extinguishing plastic, aluminum, aluminized or galvanized sheet metal (with natural finish or painted in various colors) and stainless steel. All the materials used are in conformity with the present standards for chimneys and flue systems. Non-return valve for cascade appliances, condensate traps of various sizes, fittings, adapters and plugs are also available.

Adapters

Flanged concentric adaptor made of PPs/Al or Al/Al, flange-female connections with test point.

Concentric "T" element made of PPs/Al or male-female 90° with inspection.

Concentric Adapter element from male diameters 60/100 to female diameters 80/125 made of PPs/AI or AI/AI.

Adapter from flanged concentric 60/100 to two diameters 80-80 female made of PPs/Nylon.



Clapè-cascade

Non return valve for cascade appliances up to 50 kW made of polypropylene.

The needed pipes will have diameters ranging from 110 mm to 200 mm.



Condensate traps

A wide range of siphons is available for collecting and discharging condensate from boilers and other appliances.

The range includes siphons with and without float. The purpose of the float is to maintain the tightness of the combustion chamber even when the liquid in the siphon has evaporated with the appliance off for a long time or in the case of the first ignition.





FLUE EXHAUST SYSTEMS

The flue systems for appliances with atmospheric burner are available for both concentric and separate ducts with vertical outlet (roof piping) and horizontal outlet (wall duct). Products are available in various materials such as aluminum, aluminized or galvanized sheet metal (with natural finish or painted in various colors) and stainless steel. All the materials used are in conformity with the present standards for chimneys and flue systems.

STANDARD EFFICIENCY APPLIANCES





VERTICAL TWIN





TELESCOPIC HORIZONTAL

ACCESSORIES



Harness to supply coils of the automatic shut-off valves and electrical modulators



Flanges for multifunctional controls



Piezo igniters



Fittings and injectors for pilot burners



Viale dell'Industria, 31-33 - 35129 Padova - ITALY Tel. +39 049 8293111 - Fax +39 049 8070093 www.sitgroup.it - info@sitgroup.it