



AKN
Condensing boiler

ApenGroup®

RESEARCH, ECOLOGY AND ENERGY SAVING

OVERVIEW

APEN GROUP S.p.A. is a leading manufacturer of heating systems, and offers a wide range of products: condensing boilers, condensing heat exchangers, suspended warm air heaters, and floor standing condensing warm air heaters.

Apem Group has always been an innovation leader thanks to constant product and process development, and continuous research of advanced solutions in technology.

OUR VISION

We consider 'caring for the environment' (environment, persons, relationships, cooperation) our way towards the excellence.

OUR MISSION

Designing, manufacturing and marketing of HVAC products that stand out for their quality and for their compliance with environmental standards. Our R&D staff is deeply committed to the setup of products that assure low polluting emissions, high efficiency and minimum consumption, thereby assuring optimum heating and conditioning, from small residential spaces to large industrial buildings.

A LEADING COMPANY

Our modern facility is built on an area of 30,000 sqm, 11,000 of which encompass headquarters, manufacturing and research facilities. Easy and timely intercompany communication is provided through an IBM AS400 server with a fully integrated Server Windows NT PC network.

The website www.apengroup.com and e-mail apen@apengroup.com, allow to communicate easily with all entities outside the company (eg. Customers, suppliers, associations).

CUSTOMER SERVICE

To be truly customer-oriented, a service must satisfy custom's requests from the clients.

APEN GROUP can meet any project need by developing custom products. Its flexibility in the manufacturing process and the availability of state-of-the-art machinery for metal sheet processing guarantee cost effective products.

Cost effectiveness is another basic characteristic of APEN GROUP products, besides a high potential for technology, commercial and industrial development.

TECHNOLOGY EXCELLENCE

A qualified team of engineers and researchers, these committees for the development of standards UNICIG, researches and develops products using CAD computer systems, translating into production the best that you obtained from the research, studying cutting-edge technical and manufacturing solutions.

ENVIRONMENT

Environment protection is essential for present and next generations' quality of life.

Apem Group's challenge is investing in research and development activities which grant the design and the production of environment friendly products.

Such a concern is well resumed in the current slogan "Apem Group caring for environment" and it involves all the company organization: from research of suppliers and partners who share this same goal, to staff personnel, natural source optimization and definition of any prevention control and correction so to respect the fixed quality goals and environment deference.

MANUFACTURING EXCELLENCE

Each product is tested, checked, and commissioned to guarantee that combustion parameters, efficiency levels, and component reliability fully comply with quality standards required for user comfort and satisfaction.

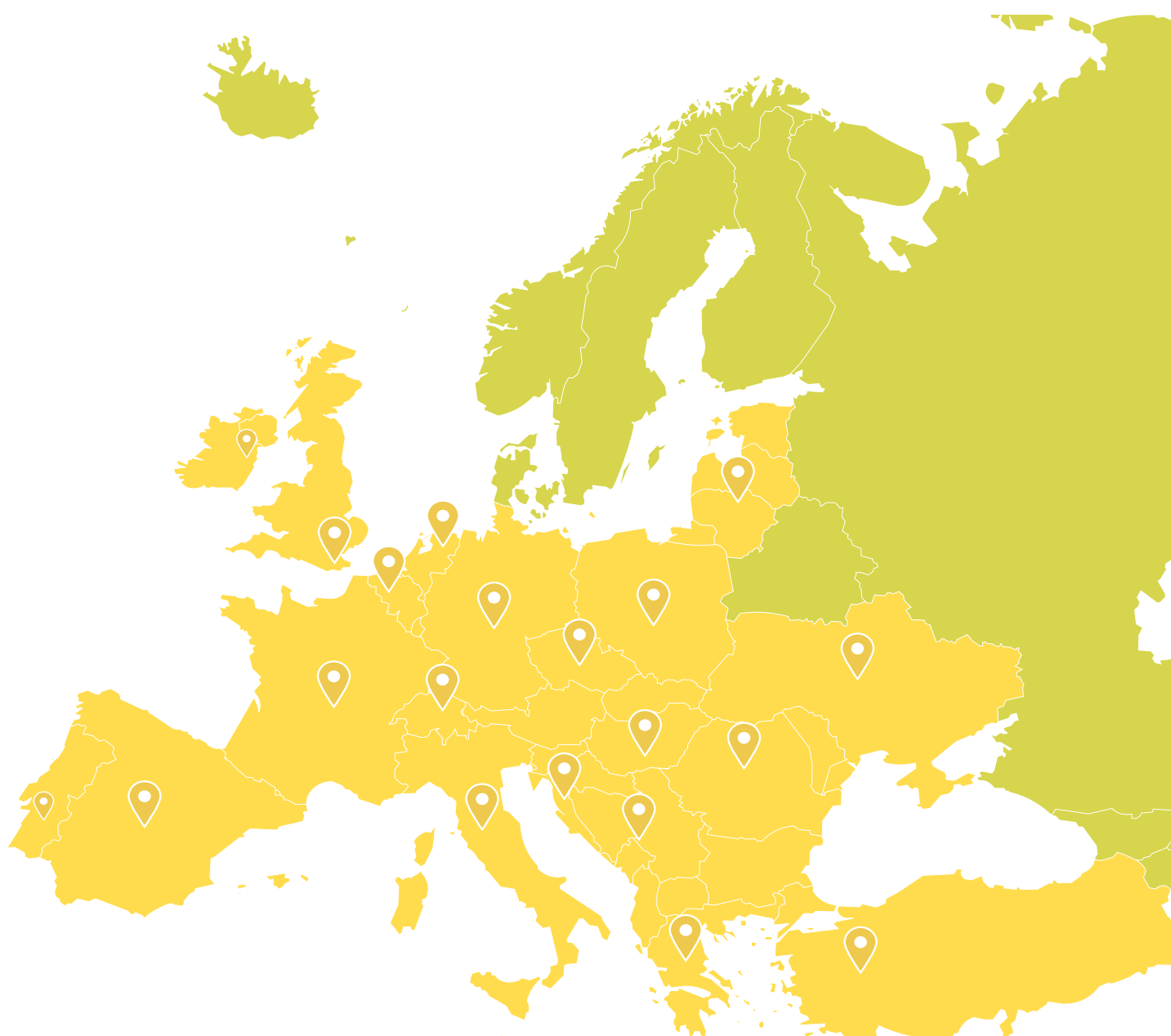
The manufacturing of our products takes advantage of ultimate, state-of-the-art planning and organization methods, which include: Digital control equipment. Welding robots. Forming robots. Computer assisted test lines. Advanced automation assures top-quality products as well as manufacturing flexibility and timely deliveries. Innovation, reliability, and originality are built-in features of each of our products.


SALES EFFICIENCY

Apem Group operates nationally and internationally: it is present in Italy thanks to an efficient and well distributed organization: professional agents, consultants, engineers and designers are ready to match the demands of customers always and everywhere.

Abroad, distributors, dealers, joint ventures with foreign partners, share with the company the principles of distribution of highly qualified equipment in relation to the needs of different countries.

2	COMPANY PRESENTATION
3	INDEX
4	COMPANY HISTORY
6	AKN
14	SMART X



 ApenGroup has an international presence. Contact us at **export@apengroup.it** to get our distributor's name in your country, or to become our partner.

HISTORY

1967

THE ORIGINS: THERMOVÜR

The company - founded under the name Thermovür - began its great adventure with the production and sale of oil and gas burners. The founding partners are two brothers-in-law having the same name - Angelo Rigamonti - with the assistance and great professionalism of their father/father-in-law Emilio Rigamonti.

1973

AERMAX

Thermovür is supported by the company AERMAX for the marketing of floor-standing warm air heaters and burners, particularly for the foreign market.

1980'S

EXPERIENCE AND KNOW-HOW

The heating sector is evolving rapidly, the building boom and the need to keep everyone warm leads to the need for new and different products: floor-standing boilers, wall-hung boilers, gas burners, gas-fired wall-mounted warm air heaters, gas radiators.

1991

APENGROUP IS BORN

The two companies create a single company, which will benefit from the wealth of knowledge of the two brands and the know-how now internalised by the company: APEN GROUP SPA is born, a group of companies for new energies. Apen Group today.

2000'S

NEW PROJECTS, NEW PRODUCTS

In 2008, confirmation of the company's technical capabilities in the field of air conditioning was confirmed by the introduction on the market of the Kondensa product (condensing warm air heater), air handling units and RoofTop monobloc machines with built-in condensing heat exchanger.

2017

50 YEARS OF LOVE FOR THE CLIMATE!

We are proud to have celebrated our first 50 years in business. In the book "La storia siamo Noi" (We are history), we have recounted the main events that have marked the most important milestones which have made us grow in terms of competence and technological know-how in the heating sector. A continuous evolution, because progress is a never ending process.



2024

RESEARCH, INNOVATION AND ECOLOGY

We are always evolving.

The market, the experiences, the difficulties have made us stronger and more committed to facing new challenges, new technologies, new countries.

We want to defend the values we believe in to be able to improve environmental comfort, attention to people and the use of energy. We also want our company to contribute to a better future!

CERTIFIED QUALITY

APEN GROUP S.p.A. ranges among the first Italian companies to be certified by an industry- wide acknowledging system at European level. We have been audited and certified to be in compliance with the quality standards defined in UNI EN ISO 9001:2015 protocol.

Certification has been obtained for the design, manufacturing, marketing and service of hybrid systems, of warm air heaters, condensation heaters and exchangers, condensing boilers, water fan units, air destratifiers, air handling central units, and burners. The commitment to quality took by the company dates back to the beginning of our history, and it is confirmed by the following milestones:

In 1988 APEN GROUP was certified by DVGW Deutscher Verein Des Gas Und Wasserfaches E.V. and it was approved as a trading partner for suspended heaters in Germany. Then approvals for the sale of these heaters in other markets followed, such as France, Switzerland, the Netherlands, and Belgium.

In 1995 all the gas-fired appliances we manufacture were certified according to EC Directives.

In 1991 we were the first Italian company in the HVAC industry to be registered in accordance with UNI EN ISO 9003 requirements. In 1993 the auditing was extended to include compliance with UNI EN ISO 9002 standards.

In 2003, we were acknowledged to be compliant with UNI EN ISO 9001:2000, and the registration was confirmed in 2006.

In 2013 the Board of Directors has adopted the organizational model 231.

In 2017 we obtained the certification in compliance with the UNI EN ISO 9001:2015.

INTERNATIONAL CERTIFICATES

Apén Group's products have been tested and certified by Gastec-Kiwa CERMET, the famous Dutch Notified Body, with test labs accredited by the EC.



AKN

CONDENSING GAS BOILERS



OPTIONAL
SMART X CONTROLS



ELECTRONIC
FAN HEATERS



CLASS
A



AKN SYSTEM

Condensing boilers

AKN SYSTEM, OUTDOOR BOILER WITH INDOOR WATER FAN HEATER

The AKN system consists of an outdoor condensing boiler with low NOx burner that can be combined with indoor water fan heaters.

The project was conceived and realised with the aim of obtaining a product of the highest quality in terms of technology, design and ecology.

STANDARD-PROOF HEAT

The AKN system is the ideal solution for heating all environments that fall under the activities regulated by the Ministerial Decree of 16 February 1982, (activities at risk of fire) such as garages, body shops, carpentries, printing houses, textile and paper industries, public and commercial premises.

It does not require fire prevention practice even in systems in which the sum of the power of the appliances installed exceeds 116 kW (activity No. 91 M.D. 16/02/1982).

SECTORS OF USE

- Body shops
- Workshops with all types of processing
- Carpenter's workshops
- Shopping malls
- Facilities
- Sheds
- Public environments
- Barracks
- Meeting and Conference Rooms
- Data Processing Centres
- Theatres and Conference Centres
- Exhibition and Dancing Rooms
- Tanneries
- Pools and Gyms
- Churches and Oratories
- Any other environment with fire-risk activities

A CLASS

High combustion efficiencies of up to 108% ensure significant fuel savings compared to traditional non-condensing systems.

Class A Energy efficiency (according to Reg. 811/2013/EC). Premixed burner in NOx 6 class according to EN15502-1.

CERTIFIED QUALITY

The AquaKond AKN heating system is built to the highest standards in accordance with the UNI, UNICIG, CEI technical standards and is certified by the Kiwa-Gastec approval body in accordance with the Gas Appliances Regulation (EU) 2016/426.

NO NEED FOR THERMAL STATION

The AKN system does not require special technical rooms for positioning.

In fact, in addition to being installed in the room or in a technical compartment, the boilers (IPX5D protection) can be installed outside, avoiding the use of "operating" space inside the room itself.

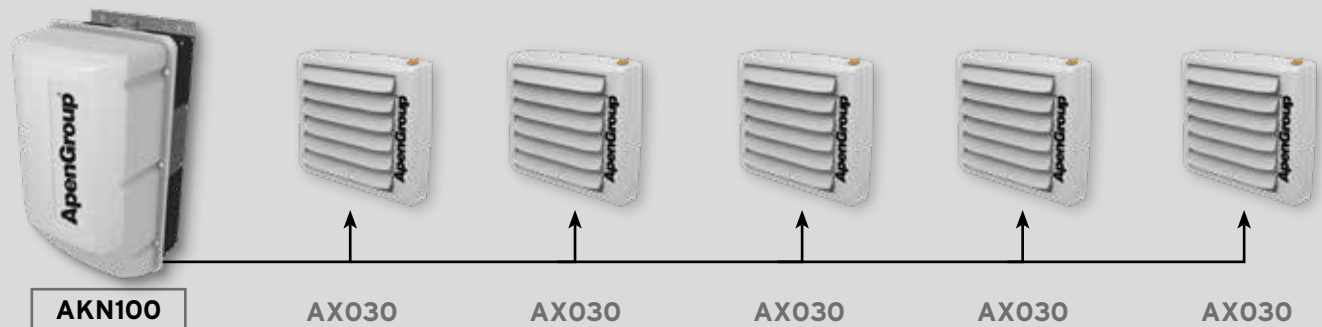
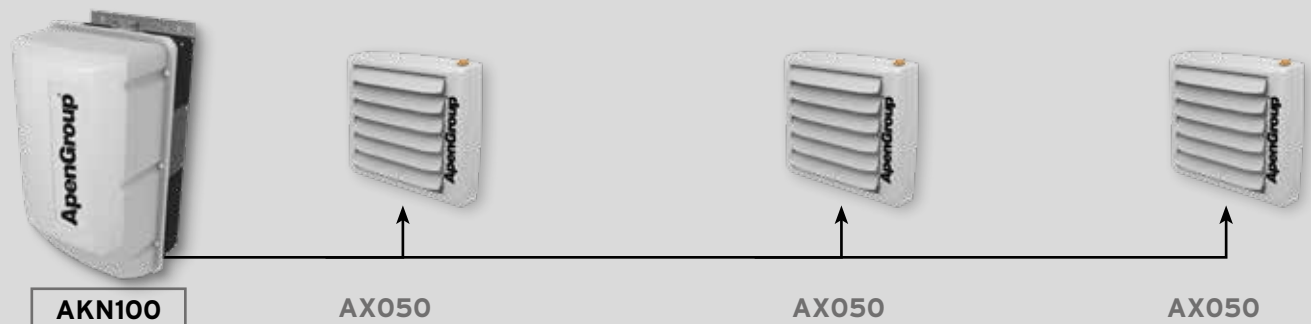
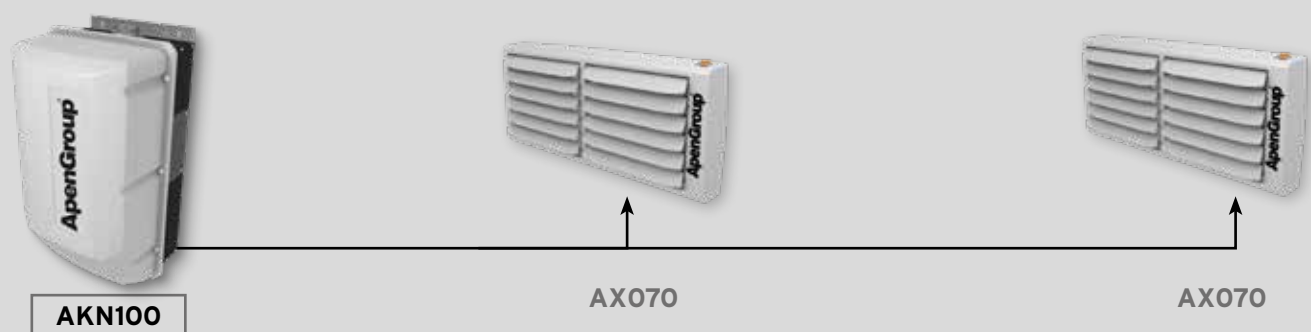
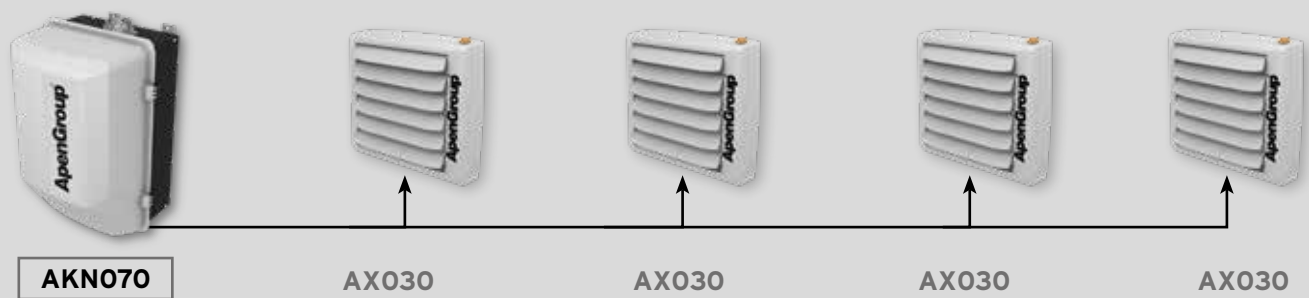
SYSTEM MODULARITY

The subdivision of the total thermal heat output on several installed appliances, allows to obtain a greater rationalisation of the system: "zone" management of the thermal power supply and the integration of thermal heat output is limited to the installation of new appliances.

COMBINATIONS BETWEEN AKN BOILERS AND AX WATER FAN HEATERS



COMBINATIONS BETWEEN AKN BOILERS AND AX WATER FAN HEATERS



AKN SERIES BOILERS

TECHNICAL FEATURES

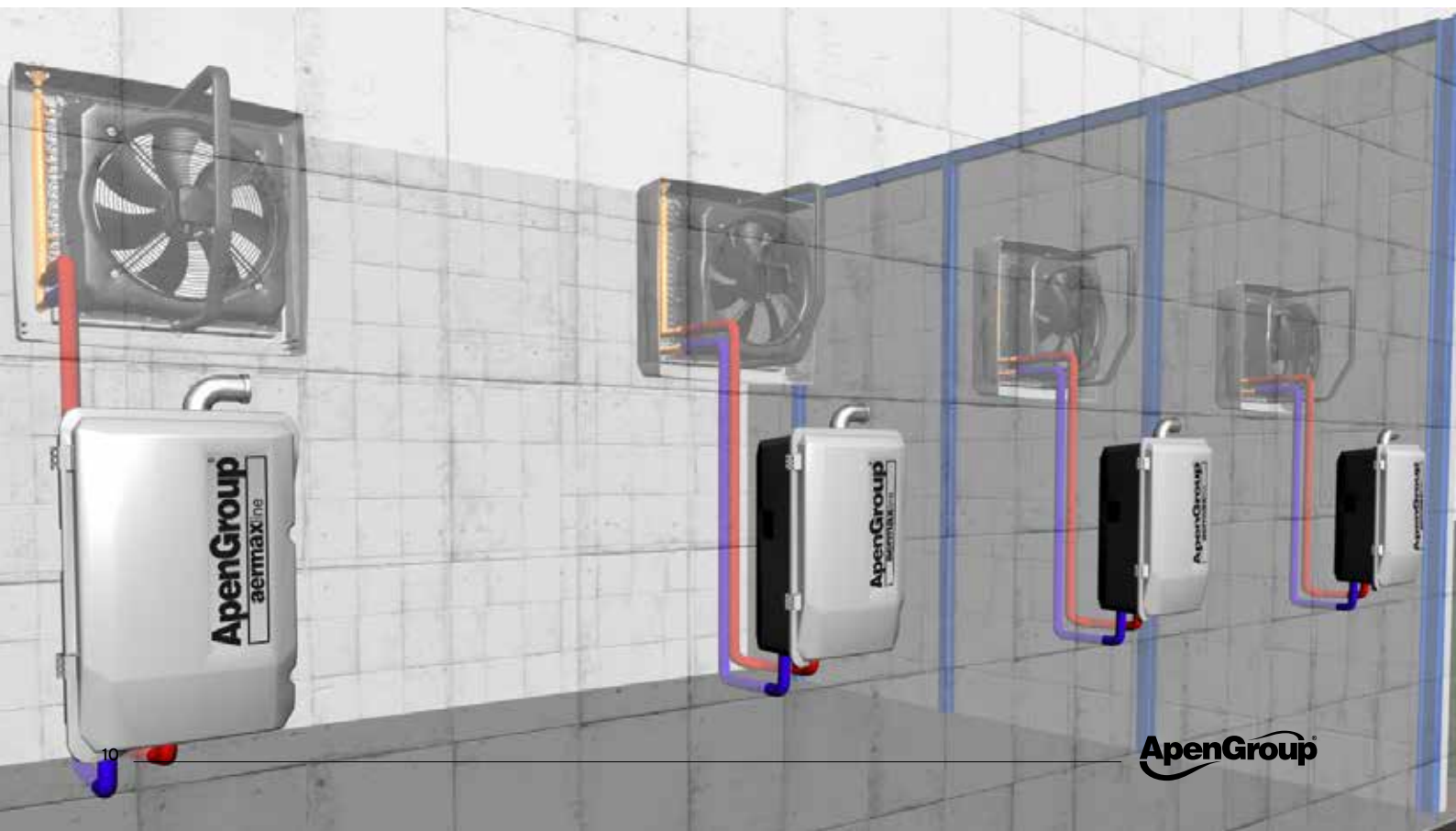
- Casing made of ABS methacrylate.
- Very high useful efficiency up to 108% (Class A Energy efficiency according to Regulation 811/2013/EC).
- Low NOx modulating pre-mixed burner, class 6 in accordance with Regulation EN15502-1.
- Modulating air/gas valve.
- Stainless steel heat exchanger with low carbon content.
- 10-litre expansion tank.
- Integrated condensate drain.
- Forced flue gas outlet.
- Control and safety equipment.
- Electronic ignition.
- ELECTRONIC high-pressure variable flow rate circulator with automatic air separator (degasser), minimum system pressure sensor, safety valve set at 3bar incorporated - only for AKN034.
- Pressure gauge for hydraulic circuit.
- NTC probe for boiler water temperature regulation.
- Safety thermostat.
- Flow meter to control water circulation in the system.
- Heat exchanger temperature control thermal fuse.
- Flue gas temperature control thermal fuse.
- IPX5D Protection degree.
- Microprocessor electronic equipment with self-testing to manage all burner command and control operations.
- Multifunctional LCD display for boiler control and diagnostics.
- Possibility to set the antifreeze safety on SMART X (Easy and Web) remote controls.
- Possibility of cascade management.

STANDARD ACCESSORIES

- Hydraulic circuit needs to be filled with a mix of water and 30% glycol. It can resist temperatures as low as -15°C (-62°F). If the glycol percentage increases to 40%, it can reach -22°C (-78°F).
AKN is not supplied with a glycol refill, but it's possible to order our glycol can with anti-freeze.
- Gas valve and connections kit.
- Stainless steel flexible pipes for blower-to-boiler connection.
- System filling valve.
- Drilling template.
- Kit for conversion to LPG.

SAFETY, PROTECTION AND CONTROL DEVICES (STANDARD) FOR AKN050, AKN070, AND AKN100

- Certified safety valve.
- Min. and max. water circuit safety pressure switch with manual reset.
- Flowmeter control for water circulation system.
- Thermometer.
- Manometer for hydraulic circuit.
- Well for control thermostat.
- Well for fuel cut-off valve.
- Three-way tap with flange for control manometer.



AKN SYSTEM AND NETWORK: MODULATION BOARD

APEN GROUP has designed this innovative modulation board with the main function of ROOM COMPENSATION.

The purpose of the compensation function is to achieve greater comfort with less consumption. When the room temperature approaches the desired temperature, the modulation board varies the rotation speed of the burner

motor, decreasing the air flow and consequently the gas flow. This causes a decrease in the temperature of the water circulating in the water fan heater and consequently in the supply air temperature. By decreasing the air stratification in the room, the heat loss of the building is significantly reduced.



SMART X EASY AND SMART X WEB CONTROLS

The Apen Group remote control of the new SMART X EASY or SMART X WEB series acts as a stand-alone chronothermostat and can be used in a system that controls a zone in which one up to a maximum of 15 machines can be installed at the same time.

Connection via 4 polarised cables is very simple. Installation can be built-in or flush with the wall. It is possible to install up to 3 remote probes in addition to the one on board the control.

The controls are easy to use thanks to a 4.3" colour display and a very intuitive management menu. The user program is multilingual (9 languages). The simplicity of connection, the clear and intuitive management menu and the possibility of reading up to 4 temperature points within the controlled zone make these chronothermostats versatile and suitable for different needs and types of system.



BASIC REMOTE CONTROL

The simple remote control contains the on/off control and the release button with relative signalling.



SIMPLE INSTALLATION

The particular conformation of the hydraulic circuit of the boiler and fan heaters allows multiple types of installation, both in terms of height and distance, between the indoor units and the outdoor unit. The positioning of the pipe outlet for connection to the fan heater in the lower part of the boiler guarantees:

- Installation of the external boiler at an accessible height, both in terms of positioning and maintenance

- Positioning of the fan heater at the correct height for the room to be heated
- Reduced connection path, between the external boiler and the fan heater, with immediate advantages due to low pressure drops and high water flow rates on the battery

HIGH EFFICIENCY

The Apen Group fan heaters have been suitably sized with a large exchange surface area in order to be able to work with a maximum boiler water temperature of 70°C, allowing the efficiency of 101% to be exceeded even at maximum output.

AKN SERIES / TECHNICAL DATA

Boiler - External Module		AKN034		AKN050		AKN070		AKN100	
Energy efficiency class		A		A		A		A	
NOx class [EN 15502-1]		6		6		6		6	
		Max	Min	Max	Min	Max	Min	Max	Min
Useful heat output	kW	35,4	7,0	50,6	8,5	70,5	12,3	97,6	17,3
Nominal heat input	kW	34,8	6,8	49,9	8,4	69,6	11,8	96,6	16,6
Efficiency		101,8	103,5	101,5	101,7	101,3	104,0	101,0	104,0
Supply voltage	V	230V-50 Hz single phase		230V-50 Hz single phase		230V-50 Hz single phase		230V-50 Hz single phase	
Rated power	W	125	48	177	74	186	7	378	180
Operating Temperatures	°C	da -15°C a +50°C		da -15°C a +50°C		da -15°C a +50°C		da -15°C a +50°C	
Protection Rating	IP	IPX5D		IPX5D		IPX5D		IPX5D	
Operating weight	kg	39		45		51		90	

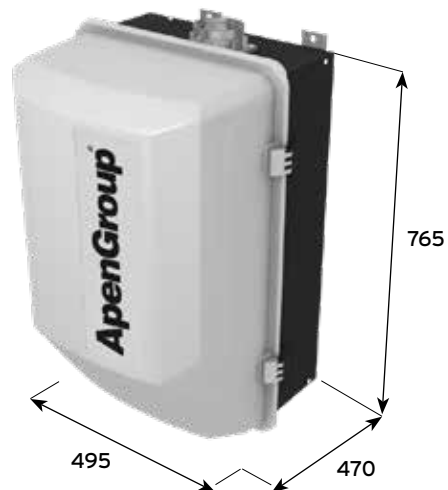


AKN SERIES / DIMENSIONS

AKN034



AKN050



AKN070



AKN100



SMART X SYSTEM

REMOTE CHRONOTHERMOSTATS



ADVANCED
ELECTRONICS



WATER FAN
HEATERS



AIR
DESTRATIFIERS



GUARANTEED
EFFICIENCY



GAS CONDENSING
BOILERS



WALL-MOUNTED
HEATERS



SMART X SYSTEM

Remote chronothermostats

SMART X EASY AND SMART X WEB CONTROLS

Being touch-screen chronothermostats, the Apen Group SMART X EASY and SMART X WEB control all Apen Group products, guaranteeing operation with maximum efficiency and minimum energy consumption.

These user-friendly controls allow a wide choice of adjustments and a clear reading of the operating parameters as well as the resolution of any technical interventions.

PRODUCT CONTROL

- AKN gas condensing boilers.
- AQUAPUMP HYBRID system, hybrid heat pump with gas boiler.
- AX-EC electronic water fan heaters.
- QUEEN-EC Air destratifiers.
- LK and LKN wall-mounted condensing warm air heaters.
- LRP and LRN wall-mounted warm air heaters.
- AH and AH-SPORT modular heating units.
- PK and PK-SPORT floor standing warm air heaters.

SIMPLE INSTALLATION

Connection via 2 power cables and 2 modbus cables is very simple. Installation can be built-in or flush with the wall.

MULTITASKING CONTROL

It acts as a stand-alone chronothermostat and can be used by one to a maximum of 15 machines simultaneously.

CONTROL VERSATILITY

It is possible to install up to 3 remote probes in addition to the one on board the control.

TOUCH SCREEN TECHNOLOGY

The controls are easy to use thanks to a 4.3" colour TFT display and a very intuitive management menu. The user program is multilingual (9 languages).

SMART X WEB

With the SMART X WEB version (through the connection to an intranet network) it is possible to carry out the complete management of the plant remotely via browser on a computer or via http address.

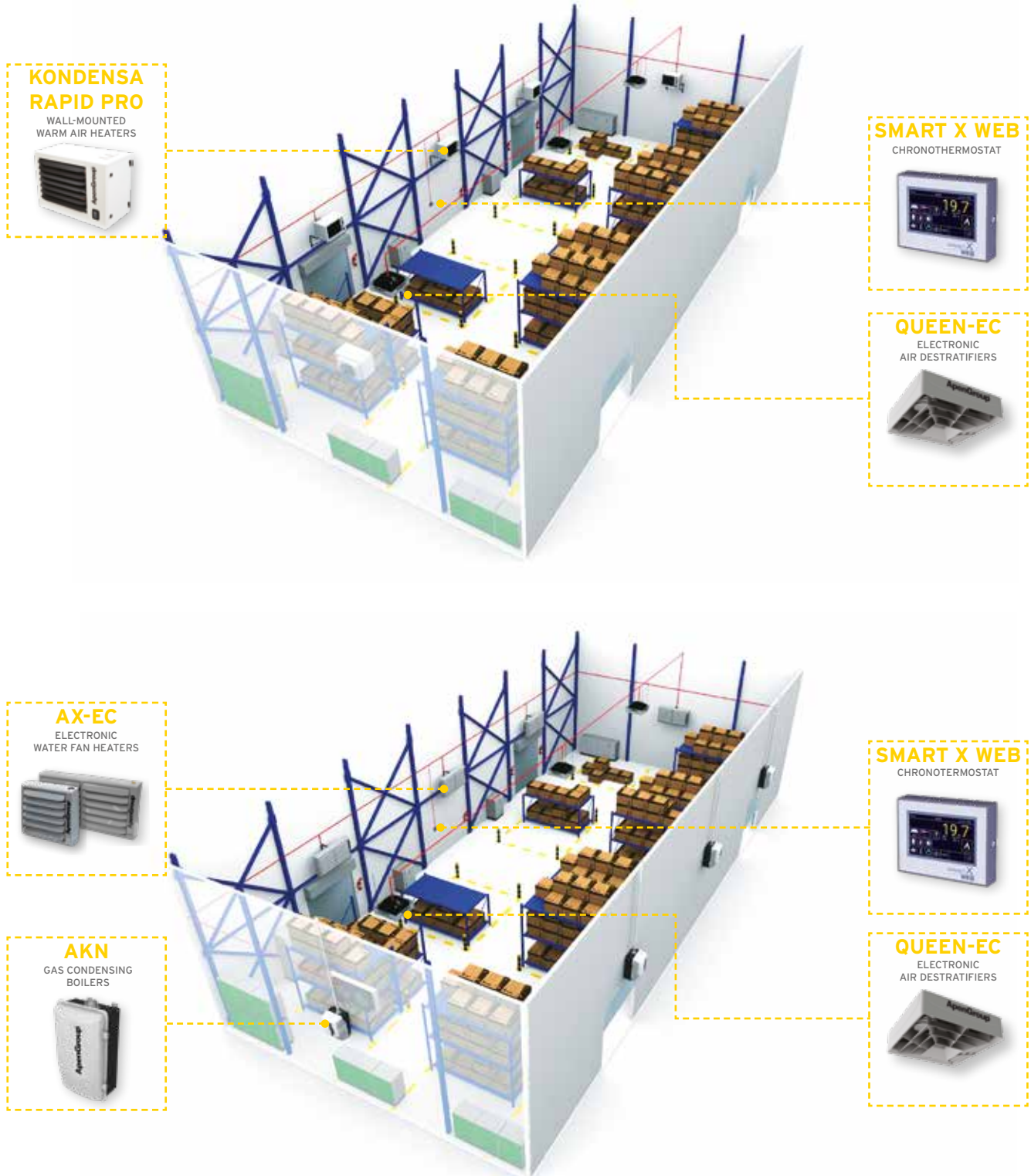
FAN MODE

Ventilation mode management for combination of AX-EC water fan heaters with AKN boilers.

SMART X SYSTEM

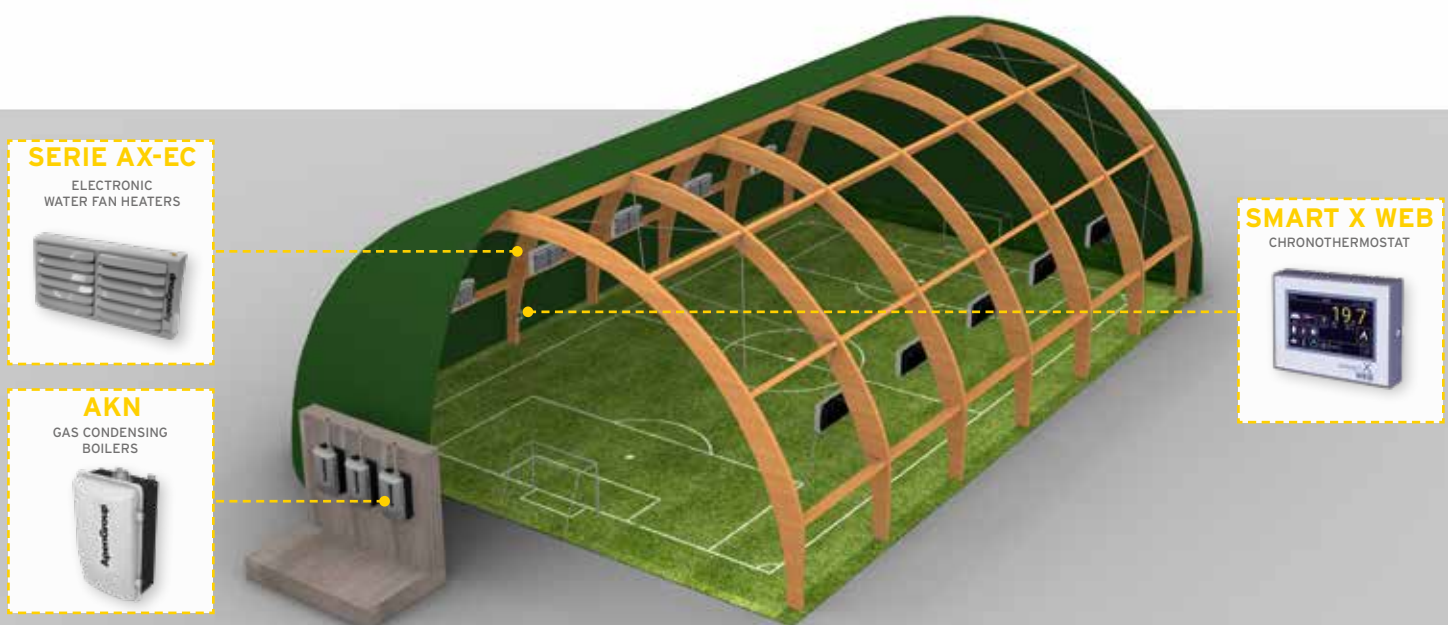
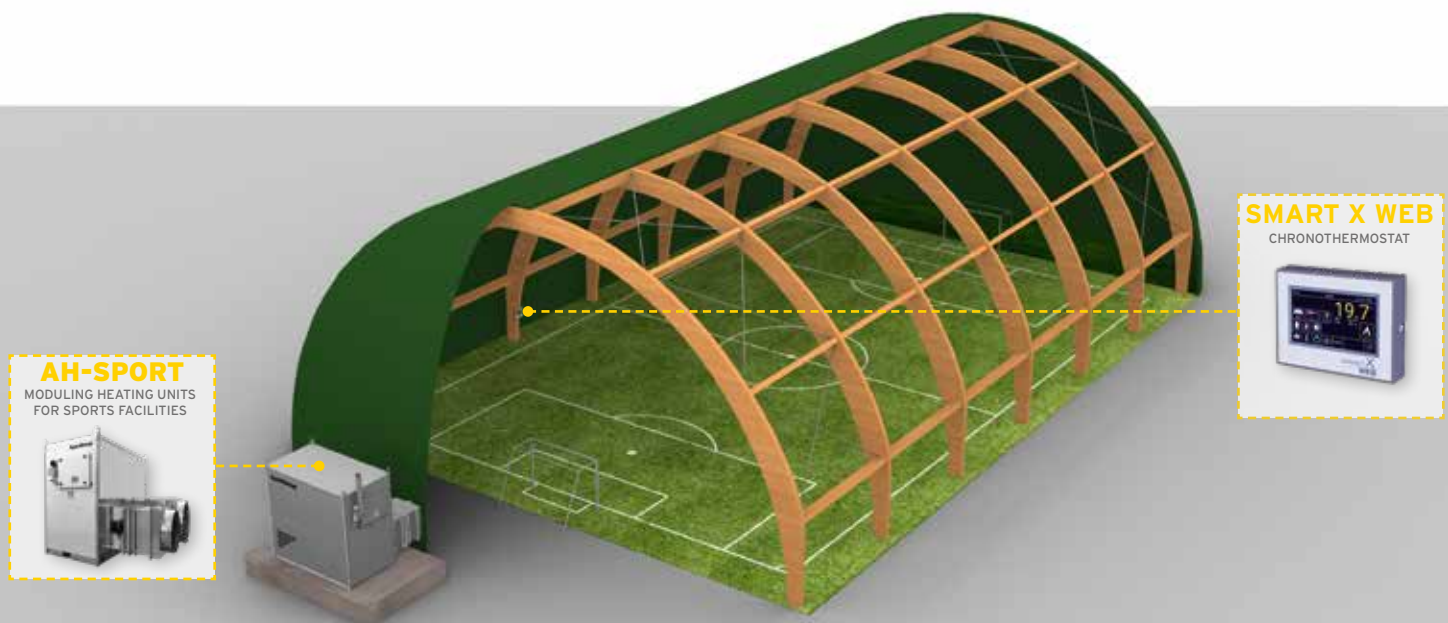
THERMOSTAT CONFIGURATION FOR CONTROL OF:

- AKN Gas condensing boilers.
- AX-EC Electronic water fan heaters.
- QUEEN-EC Electronic air destratifiers.
- KONDESA LK-LKN Wall-mounted condensing warm air heaters.
- RAPID PRO LRP-LRN Wall-mounted warm air heaters.



THERMOSTAT CONFIGURATION FOR CONTROL OF:

- AH-SPORT Moduling heating units.
- AKN Gas condensing boilers.
- AX-EC Electronic water fan heaters.





APEN GROUP S.p.A.
Via Isonzo, 1 - Pessano con Bornago
20042 (Milan) - Italy
Tel +39 02 95 96 931 Fax +39 02 95 74 27 58
www.apengroup.com apen@apengroup.com
Code X03701.01GB ed. 2402
The contents of this catalogue may be edited without prior notification.

