ThermoKey®
Heat Exchange Solutions

Company profile

100% aluminium

TKSmart is the new range of remote condensers with the TKMicro exchanger core. The maximum expression of microchannel technology.

Doing business with ThermoKey is a pleasure.

3.5 billion apples

Our unit coolers preserve every year more than 500 thousand tons of apples in the world: 1 apple every 2 inhabitants of the planet.

32,263 Megawatt

Our Dry Coolers installed all around the world could cool down the temperature of 5 degrees of the Po, the longest river in Italy.

1.0 billion € market

The heat exchangers represent an important market which is globally continuously growing. They influence the environmental resources and the quality life level. Every kW used to cool daily living locations, 4 kW are for food cold storage and transportation and for the industry.

Performance for global wealth

We are a state-of-the-art company playing an active role in the sector. We are committed to increase the performance in terms of energy consumption, use of recyclable materials, safety, always maintaining the highest certificated standards of quality.

The market complexity is solved with intelligence, with the capacity of identifying the most efficient solution in the time at your disposal. Our strenght is to work with smart people; our value is to put each single person in the conditions of expressing at their best their own personal talent.

Giorgio Visentini — CEO, ThermoKey Spa

VISION / AMBITION

We want to be **a reference point in the heat-exchange technology and knowledge**: an innovative company which participates to the most ambitious projects, proposing the best products and the most efficient management and consumption-monitoring systems. Thanks to this, we want to worldwide expand and consolidate our leader role, creating value not only for the shareholders but for the territory where we work.

MISSION / ROLE

Thermokey is the ideal partner in the **research of the most efficient product, manufactured and delivered as shortly as possible**.
Themokey has reached this capacity thanks to a 25 year long experience, to a flexible informatic and productive process, to a sales and technical team oriented to the Customers' needs and to the fact of being at the centre of worldwide most important productive area in the heat exchanger market. Thank to all this, Thermokey is able to supply the best solutions for air-conditiong, refrigeration and industrial process cooling.

A plant designed to be leader in the market

32,000 m² OF PRODUCTION SPACE

- **A Headquarters / Production** - 14,000 m²
- **B TKMicro production** - 10,000 m²
- **C Coils production** - 8,000 m²

STRATEGICAL LOCATION

1. **Corridor 5** - Lisbon→Kiev
2. **Corridor 1** - Palermo→Berlin
3. **Highway to Vienna**
4. **Port of Venice**
5. **Port of Trieste**

NORTH-EAST ITALY INDUSTRIAL DISTRICT

- 80% chillers
- Know-how Hub
- Logistics platform

DISTINGUISHING FACTORS

- Thanks to our experience, we are able to offer the best solutions for air conditioning, refrigeration and process cooling.
- Thanks to TKMicro we are the only company in Europe producing microchannel cores for HVAC/R with dimensions that can reach up to 6 meters.
- We can offer “taylor made” solutions.

QUALITY CERTIFICATES

- Since 2000 **TÜV Certificate on Industrial Unit Cooler**
- Since 2002 **UNI EN ISO 9001:2008 Quality System**
- Since 2005 **UNI EN ISO 14001:2004 Environmental Management System**
- Since 2008 **TÜV Certificate on Turbo-Line Condenser**
- Since 2009 **TÜV Certificate against Legionella for ThermoKey Air Fresh System**
- Since 2010 **BS OHSAS 18001:2007 Occupational Health and Safety Management System**
- Since 2015 **Certificate of Conformity of the Custom Union (Tr Ts Certification)**
- Since 2015 **Certificate of Compliance for CSA (TKMicro MPE 32)**

25 years of success

1991 — ESTABLISHMENT

ThermoKey was founded to produce heat exchangers for commercial and industrial use, expanding continuously in the years its range of products.

1995 — CORES IN STAINLESS STEEL TUBES

First company in Italy able to produce cores in stainless steel tubes with TIG orbital welding technology.

2005 — THERMOKEY DEUTSCHLAND GMBH

The German subsidiary company was founded to face at its best the most important and demanding market in terms of performance and manufacturing quality. Opening of Representative Offices in Russia, Poland and France.

2008 — “GREEN” REFRIGERANT R744

The refrigerant R744 (CO_2) was added to the range of natural refrigerants already used (amongst the others NH3) through a new specific series of unit coolers.

2009 — INDUSTRIAL DRY COOLER

A new range was created for the disposal of the heat process generated from the power plants. For this application a “new Internal Cleaning System” has been specifically developed for a safe and fast cleaning of the finned pack of the industrial coolers.

2010 — MICROCHANNEL HEAT EXCHANGER

The first company in the world able to braze a 6 meter long aluminium core for HVAC/R by a controlled atmosphere brazing line furnace for microchannel heat exchanger (TKMicro).

2010 — THERMODYNAMIC CALCULATION SOFTWARE

Development of our **own thermodynamic calculation software** for microchannel cores with finite element analysis software, sperimental validation by “wind tunnel”, and test by certified laboratory in Munich (TUV). Project in co-operation with Oregon University, Wien University, Padua University.

2013 — NEW INVESTMENTS

Thanks to the entry of new investors and a renewed Governance, ThermoKey becomes independent and launches a new plan for growth through the development of always more efficient and “green” products, using the well-known aluminium technology.

2014 — INNOVATION AT THERMOKEY

ThermoKey starts the production of MCHX cores with 25 mm MPE and introduces an innovative adiabatic cooling system called Wet Fin System (WFS).

2015 — TK SMART NEW INDUSTRIAL DUAL FLOW UNIT COOLERS

ThermoKey has developed a new range of Microchannel Condensers (TKSmart) and a new range of Industrial Dual Flow Unit Coolers.

ThermoKey solutions

Hundreds of customers have been choosing us for years for our expertise on several fields of application in all sectors (food, energy, health...) thanks to our wide range of products.

	ENERGY & PROCESS COOLING	AIR CONDITIONING	REFRIGERATION
POWER-LINE DRY COOLERS	■	■	
POWER-J DRY COOLERS	■	■	
SUPER POWER-J DRY COOLERS	■	■	
MICROCHANNEL CONDENSERS - **NEW TKSMART**		■	■
TURBO-LINE CONDENSERS		■	■
TURBO-J CONDENSERS		■	■
LIGHT CUBIC UNIT COOLERS			■
COMMERCIAL DUAL FLOW UNIT COOLERS			■
INDUSTRIAL UNIT COOLERS			■
NEW INDUSTRIAL DUAL FLOW UNIT COOLERS			■
BLAST FEEZER UNIT COOLERS			■
FRUIT COOLERS			■
RADIAL UNIT COOLERS			■
ROUND TUBE COILS	■	■	■
MICROCHANNEL CORES		■	■

Needs

- Taylor-made products
- Reliability and easy maintenance
- High capacity

Needs

- People wellness
- Proper practicality of equipment by removing generated heat
- High energy efficiency

Needs

- Preservation of food freshness and properties
- Continuous performance over time
- Sanitisable products

Product range

Dry Coolers

Every detail, even the smallest one, is designed to achieve the best Dry Cooler solution which meets the customer needs.

Dry Coolers

Through the ambient air and a closed circuit — without wasting water — they dissipate the heat generated and not usable by production processes, power plants, engines, moulds.

POWER-LINE DRY COOLERS

Area of use Heat rejection

Performance range Capacity from 8 to 1100 kW
(Ethylene glycol 35%, Tw1= 40 °C, Tw2= 35 °C, T1= 25 °C)

Fans Diameter Ø 500, 630, 800, 900, 1000 mm, AC or EC motor

Benefits High efficiency geometry
Modular design, 1-16 fans
8 sound levels
Piping in copper or stainless steel AISI 304 or AISI 316L
Finned pack available in a wide range of materials
Complete range of accessories
Casing in galvanized steel, powder painted

POWER-J DRY COOLERS

Area of use Heat rejection

Performance range Capacity from 70 to 1600 kW
(Ethylene glycol 35%, Tw1= 40 °C, Tw2= 35 °C, T1= 25 °C)

Fans Diameter Ø 800, 900, 1000 mm, AC or EC motor

Benefits High efficiency geometry
Modular design, 2-16 fans
8 sound levels
Piping in copper or stainless steel AISI 304 or AISI 316L
Finned pack available in a wide range of materials
Complete range of accessories
AFS (Air Fresh System) or WFS (Wet Fin System) available upon request
Casing in galvanized steel, powder painted

SUPER POWER-J DRY COOLERS

Area of use Heat rejection

Performance range Capacity from 290 to 2220 kW
(Ethylene glycol 35%, Tw1= 40 °C, Tw2= 35 °C, T1= 25 °C)

Fans Diameter Ø 800, 900, 1000 mm, AC or EC motor

Benefits Maximum performance, minimum footprint
High efficiency geometry
Modular design, 8-20 fans
8 sound levels
Piping in copper or stainless steel AISI 304
Finned pack available in a wide range of materials
Complete range of accessories
AFS (Air Fresh System) or WFS (Wet Fin System) available upon request
Casing in galvanized steel, powder painted

Power plant

Seven Power is a new 824 MW gas-fired generation station at Uskmouth, near Newport South Wales.
Contractor: Siemens

NEED

Cooling down auxiliary circuits of Seven Power, a natural gas-fired power plant.

SOLUTION

ThermoKey has provided SPX with **40 Dry Coolers V-Shape**, model JGL1690BY/4EIFS

Data center

The Dry Coolers have been specifically designed to provide the best and most efficient solution.

NEED

ThermoKey has been chosen to provide the cooling system of a major 6.1 MW data center.

SOLUTION

16 V-Type Dry Coolers model JGH2390CZ2/6QIEMAF(EC)(AFS)S and 2 **V-Type Dry Coolers** model JWQ1290A3/8QIEMAF(EC)(AFS)S with electronic fans, adiabatic and self-cleaning system

Remote condensers

Used as condensing external units in HVAC/R contribute to the optimization of air-conditioning systems in hospitals, hotels, shopping centers, data centers, supermarkets, cold rooms.

MICROCHANNEL CONDENSERS (MPE 25mm, 32mm)

Area of use Gas condensation

Performance range Capacity from 5 to 560 kW (R404A, Tc= 40 °C, T1= 25 °C)
TKSmart Capacity from 13 to 98 kW (R404A, Tc= 40 °C, T1= 25 °C)

Fans Diameter Ø 300, 400, 450, 500, 630, 800, 900 mm, AC or EC motor
TKSmart Diameter Ø 400, 500, 630 mm, AC or EC motor

Benefits Innovative high efficiency microchannel heat exchanger
+30% capacity vs same foot-print traditional condenser
Modular design, 1-8 fans (mpe 32 mm)
Reduced dimensions and weight
No galvanic corrosion through Long-Life-Alloy
Reduced refrigerant charge
Low noise and low electrical power consumption
Complete range of accessories (mpe 32 mm)
TKSmart Modular design, 1-3 fans (mpe 25 mm)
TKSmart Accessories: wiring, shock absorber

TURBO-LINE CONDENSERS

Area of use Gas condensation

Performance range Capacity from 10 to 1200 kW (R404A, Tc= 40 °C, T1= 25 °C)

Fans Diameter Ø 500, 630, 800 mm, AC or EC motor

Benefits High efficiency geometry
Modular design, 1-16 fans
Piping in copper or stainless steel AISI 304
Finned pack available in a wide range of materials
Complete range of accessories, 8 sound levels
Premium series available for fans Ø 500 and 630 mm
Casing in galvanized steel, powder painted

TURBO-J CONDENSERS

Area of use Gas condensation

Performance range Capacity from 100 to 1915 kW (R404A, Tc= 40 °C, T1= 25 °C)

Fans Diameter Ø 900 mm, AC or EC motor

Benefits Maximum performance, minimum footprint
High efficiency geometry,
Modular design, 2-16 fans
Piping in copper or stainless steel AISI 304
Finned pack available in a wide range of materials
Complete range of accessories, 8 sound levels
AFS (Air Fresh System) available upon request
Casing in galvanized steel, powder painted

Wind farm

An offshore wind farm (a wind power project) in the north of Europe.

NEED

The wind farm and substation includes 78 wind turbines with a total capacity of 312 MW. It will be producing green electricity for around 320,000 households every year.

SOLUTION

ThermoKey has supplied 19 **Turbo line condensers** model KH1150, which are completely (fins, tubes, casing etc.) in stainless steel 316L and equipped with C5M fans.

Vegetables storage

The company is one of the biggest Polish producers of broccoli, cauliflower, onion, root vegetables and cruciferous vegetables. Storage capacity includes cooling chambers allowing storage of up to 13 thousand tons of vegetables.

NEED

The Polish company production of root vegetables reaches level 5.600.000 kg, brassica vegetables at 770.000 kg, onions 3.000.000 kg (data from 2013).

SOLUTION

Thermokey has supplied to a Polish company 8 **microchannel condensers** model MKH1480.BDH and 40 Unit Cooler model IMT450.76DA

Unit coolers

Used for food preservation in cold rooms, fast freezing tunnels, greenhouses temperature control and other applications.

NEW 2016

NEW INDUSTRIAL DUAL FLOW UNIT COOLERS

Area of use Medium and large cold rooms and large refrigerated warehouses to preserve fresh or frozen products. Medium and large processing rooms.

Performance range
Direct Expansion operation: capacity up to 115 kW
(R404A, Te= -8° C, T1= 0° C, RH = 85%)
Brine Operation: capacity up 160 kW
(Glycol 30%, TW1= -10 °C, T1= 0 °C, RH = 85%)
Ammonia Operation: capacity up 170 kW
(NH3, Te= -8 °C, T1= 0 °C, RH = 85%)

Fans Diameter Ø 500-560-630 mm, AC motor.

Benefits
Modular design, 1-5 fans
Piping in copper or in AISI 304 stainless steel
Finned pack available in a wide range of materials
Fin spacing: 4.5 mm - 7 mm
Various defrosting systems available
Casing available in AISI 304 stainless steel or RAL 9010 painted aluminium

INDUSTRIAL UNIT COOLERS

Area of use Medium and large cold rooms

Performance range
Direct Expansion operation: capacity from 7 to 209 kW
(R404A, Te= -8° C, T1= 0° C, RH = 85%)
Fin spacing: 4,5 -7,0-11,0 mm
Brine Operation: capacity from 7 to 240 kW
(Glycol 30%, TW1= -10 °C, T1= 0 °C, RH = 85%)
Fin spacing: 4,5 -6,0-8,0 mm
Ammonia Operation: capacity from 8 to 262 kW
(NH3, Te= -8 °C, T1= 0 °C, RH = 85%)
Fin spacing: 4,5 -7,0-11,0 mm

Fans Diameter Ø 500, 560, 630 and 800 mm, AC or EC motor

Benefits
Modulary design, 1-5 fans
Piping in copper or in stainless steel AISI 304
Finned pack available in a wide range of materials
Various defrosting systems available
Casing: aluminium, available in stainless steel AISI 304 or painted RAL 9010

BLAST FREEZER UNIT COOLERS

Area of use Fast freezing applications

Performance range Capacity from 14 to 107 kW (Te = -40 °C, T1 = -35 °C, RH = 90%)

Fans Diameter Ø 630 mm

Benefits
External static pressure of 100 Pa (standard) can arrive at 400 Pa with special tubular fans
Piping in copper or in stainless steel AISI 304
Finned pack available in a wide range of materials
Fin spacing 12 mm
Various defrosting systems available
Casing: aluminium, available in stainless steel AISI 304 or painted RAL 9010

Cold rooms

Cold rooms for the preservation of apples in Poland.

NEED

Keeping a constant temperature and preserve the freshness of 14,000 tons of apples (40 cold rooms).
Required capacity: 3,680 kW.

SOLUTION

80 **Brine Unit Coolers** model BFT550.66PA.

Green-house

Greenhouse of orchids, installation in Bleiswijk, Holland.

NEED

Controlling precisely the temperature in a greenhouse with a total surface of 23,500 m² for the growth of 2 million orchid plants.

SOLUTION

21 **Brine Unit Coolers** model BHT250.310P6AS equipped with Ec fans.

FRUIT COOLERS

Area of use Fruit and vegetables storage

Performance range Capacity from 21 to 50 kW
(R404A, Te= -8 °C, T1= 0 °C, RH= 85%)

Fans Diametery Ø 400 and 450 mm

Benefits Modular design, 3-6 fans
Fin spacing: 6.0 mm
Electric defrosting system available on request
Solid frame in galvanized steel painted RAL9010

RADIAL UNIT COOLERS

Area of use Air ducting

Performance range **Direct Expansion operation:** capacity from 10 to 115 kW
(R404A, Te= 2 °C, T1= 12 °C, RH= 75%)
Brine Operation: capacity from 7 to 135 kW
(Glycol 30%, Tw1= 0 °C, Tw2= 4 °C, T1= 12 °C, RH= 75%)

Fans Radial ducted fans, Diameter Ø 560, 630 mm

Benefits Fin spacing: 4.5 - 7.0 mm
Piping in copper or in stainless steel AISI 304
External static pressure of 150 Pa
Modular design, 1-4 fans
Electric defrosting system available on request
Casing in aluminium, available casing in galvanized steel painted RAL 9010

COMMERCIAL DUAL FLOW UNIT COOLERS

Area of use Small and medium cold rooms

Performance range Capacity from 1,5 to 20 kW (R404A, Te = -8 °C, T1= 0 °C, RH = 85%)

Fans Mono-phase, Ø 350 mm

Benefits Modular design, 1-4 fans
Fin spacing: 3,0 mm 6,0 mm
Electric defrosting system available on request
Casing in aluminium, available casing in stainless steel AISI 304 or painted RAL 9010

LIGHT CUBIC UNIT COOLERS

Area of use Small and medium cold rooms

Performance range **Direct Expansion operation:** capacity from 1,44 to 47 kW
(R404A, Te= -8° C, T1= 0° C, RH= 85%)
Brine Operation: capacity from 1 to 20 kW
(Glycol 30%, TW1= -10 °C, T1= 0 °C, RH = 85%)

Fans Diameter Ø 300, 350, 400 and 450 mm

Benefits High efficiency in compact sizes
Modular design, 1-4 fans
Fin spacing: 4 mm, 6 mm or 8mm
Solid frame in galvanized steel, cowlings in ABS (on request complete unit in galvanised steel) RAL 9010
Electric defrosting system available on request

Food freezing

Fast Freezing systems for fish processing industry in Bushehr, Iran. The plant will be able to freeze 40 tons of fish per day.

NEED

Processing cold storage or fast cooling plants where high capacity and high air flow are needed.

SOLUTION

3 **industrial Blast Freezer** unit cooler for NH3 with highly resistant structural casing and with stainless steel heat exchangers

Fast freezing

Plant for ice-cream deep-freezing in Austria.

NEED

Fast freezing ice-cream temperature from -6 °C to -15 °C. Deep-freezing capacity: 1,400 Kg/h. Work cycle: about 16 hours. Average treatment time: 120 min. Required capacity: 90 kW.

SOLUTION

Blast Freezer Unit with electric defrosting system and 150 Pa external static pressure.

Round tube coils

ThermoKey has been designing and manufacturing finned pack heat exchangers (coils) for more than 20 years, both for its own units and for the most important chiller manufacturers in the HVAC/R field.

AVAILABLE SOFTWARES

TK Coil for the thermodynamic calculation of coils.

AVAILABLE SURFACE TREATMENTS

- Cataphoresis
- Thermoguard
- Blygold
- Heresite
- Tinning
- Steel Pipes

GEOMETRICAL FEATURES

Staggered geometry		27	28	20	30	32	42	46	52	56
External tube diameter		7.2 mm	5/16”	3/8”	3/8”	12 mm	12 mm	5/8”	12 mm	5/8”
Tube spacing [mm]		25	25	25	30	30	42	42	50	50
Row spacing [mm]		21.65	21.65	21.65	25.98	25.98	36.4	36.4	43.3	43.3
Fin spacing	Min [mm]	1.6	1.6	1.6	1.6	1.6	1.8	1.8	2.1	2.1
	Max [mm]	2.8	2.8	2.8	4	4	4	4	12	12
N°of tubes in height	Max	97	97	97	80	80	58	58	48	48
N°of rows	N°	12	12	12	12	12	12	12	12	12
Copper round tube			ok	ok	ok	ok	ok	ok	ok	ok
Aluminium round tube		ok		ok	ok	ok	ok			
Stainless steel round tube										ok

TK Micro NEW25

The most reliable and efficient microchannel on the market

“In the next 5 years aluminium microchannel cores will replace 50% of the copper coils for HVAC/R application. We are ready to take on the role of key player.”

Giuseppe Visentini

Executive Board Member — COO, ThermoKey Spa

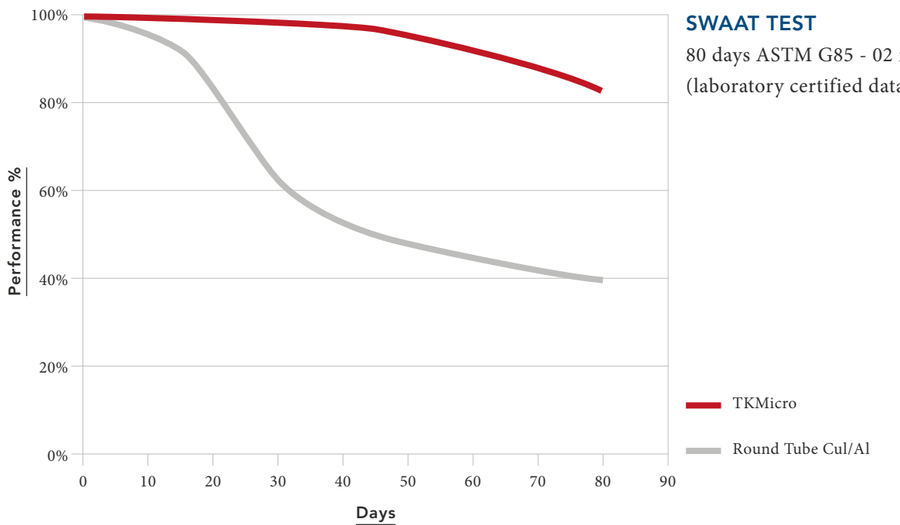
TKMicro
the best solution for HVAC/R

THE THERMOKEY MICROCHANNEL TECHNOLOGY

- The highest resistance of aluminium LLA (Long Life Alloy) to corrosion (Swaat Test over 80 days in accordance with the ASTM G85-02 norm) ensures reliability and performance.
- Thickness and configuration, unique on the market, make it more resistant to vibrations, water hammer and corrosive environments.
- The peculiar header shape reduces the pressure drops on the refrigerant side and allows the use of a single circuit.
- Suitable for all standard refrigerants (R410A, R134a, R22, R407C, R404A, R290, R507A, R245fa ect).
- The low pressure drops of TKMicro cores available in every size (up to 6 meter) allow to satisfy the needs of high-performance chiller manufacturers.
- Easy cleaning and maintenance.
- In case of need ThermoKey can provide a kit for a quick and easy repair to be used directly on site.

More reliability

Constant performance over time even in the most aggressive environments.
Comparison between round tube technology and TKMicro.



SWAAT TEST

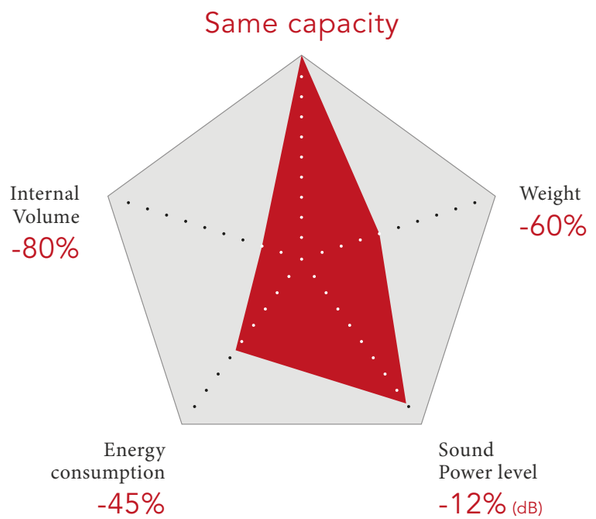
80 days ASTM G85 - 02 norm
(laboratory certified data).

100% ALLOY DETAILS DESIGNED FOR MAXIMUM PERFORMANCE

ThermoKey engineers have optimized the design of all the geometrical details of the 100% alloy cores in order to ensure the best compromise between thermodynamics performance, pressure drops and lightness. These features make ThermoKey cores the most efficient in the market.
Thermodynamics performance, pressure drops and lightnen.

More efficiency

In comparison to the top quality 4 rows round tube coil, TKMicro offers great advantages in terms of performance.



DOUBLE VERSION, SAME RELIABILITY

TKMicro has been designed in two versions: 32mm MPE and the new one 25mm MPE mantaining same top quality.

PRECONDITIONS

Face Area (H x L)	1.200mm x 2.000mm
Air Flow	25.000 m^3/h
Delta Temperature	15°C

TK Accessories

NEW 2016 Electrical Panel EC Fans

W1E - JUNCTION BOX FOR 400V-3-50HZ EC FANS

Electric box for EC fans with plastic casing.

W2E - JUNCTION BOX FOR 400V-3-50HZ EC FANS

Electric box for EC fans with plastic casing and fan switches (1x2).

W3E - THREE-PHASE ELECTRICAL PANEL FOR 400V-3-50HZ EC FANS

Electrical panel for EC fans with plastic casing, fuse protection for groups of fans and external control 0-10V.

Q1E - THREE-PHASE ELECTRICAL PANEL FOR 400V-3-50HZ EC FANS

Electrical panel for EC fans with paint coated metal casing. Protected by automatic switches (circuit breakers) connected to groups of fans, external control 0-10V.

Q2E - THREE-PHASE ELECTRICAL PANEL FOR 400V-3-50HZ EC FANS

Electrical panel for EC fans with paint coated metal casing, controller mounted inside the box, protected by automatic switches (circuit breakers) connected to groups of fans, fan regulation control MODBUS RS485.

Q3E - THREE-PHASE ELECTRICAL PANEL FOR 400V-3-50HZ EC FANS

Electrical panel for EC fans with paint coated metal frame, controller mounted inside the box, protected by automatic switches (circuit breakers) connected to groups of fans, fan regulation control MODBUS RS485, internal anti condensate heating element.

Q4E - THREE-PHASE ELECTRICAL PANEL FOR 400V-3-50HZ EC FANS

Electrical panel for EC fans with paint coated metal casing, controller mounted inside the box, protected by automatic switches (circuit breakers) connected to groups of fans, fan regulation control MODBUS RS485. Panel-mounted switches (1 switch every 2 fans) (1x2).

REGULATION FOR DRYCOOLERS AND CONDENSERS EC FANS

EB - EC BASIC SPEED CONTROLLER

The EC BASIC Eb is a multifunction and multiple-input unit for the regulation of speed of three-phase electronically commutated motors installed on axial fans, which is designed to regulate different EC motors, in a simultaneous and coordinated way, using programmable input signals.

EP - EC PLUS SPEED CONTROLLER

The EC PLUS Ep is a multifunction and multiple-input unit for the regulation of speed of three-phase electronically commutated motors installed on axial fans, which is designed to regulate different EC motors, in a simultaneous and coordinated way, using programmable input signals.

WFS WET FIN SYSTEM

After a long experience in the production of units equipped with Air fresh system (AFS), R&D ThermoKey engineers have designed an innovative system called "Wet Fin System" (WFS) for satisfying the most critical conditions in industrial cooling applications.

Thanks to the new construction of the unit and the special spray nozzles assembly, ThermoKey can provide a wider range of performances.

Advantages

- increase of cooling power
- Number of spraying hours: up to 1000 h/a
- Energy saving on electricity consumption

AFS AIR FRESH SYSTEM

ThermoKey has developed an automatic system of "adiabatic" cooling AFS (Air Fresh System) which allows the heat exchanger to maintain the nominal performance even when the air temperature is higher than the one of the project.

The physical phenomenon of adiabatic cooling consists in creating a uniform diffusion of micro-drops of water (MISTING effect). The air which blows through these drops is cooled thanks to the evaporation of the water. The combination of high pressure water, the nebulization effect of the nozzles and a specially designed electronic control system represent the innovative principle of AFS system.
Thanks to this system the risk of contamination with Legionella is avoided (Certificate TÜV SÜD Industrie Service GmbH Munich).

Advantages

- To eliminate peak air temperatures higher than the design temperature
- To reduce the size of the unit with an optimized exchange surface

TREATMENTS AND COATINGS

ThermoKey offers to its customers a wide range of treatments of the finned pack in order to protect the fins from corrosion (when needed) and to maintain the constant energetic efficiency.

- Cataphoresis
- Thermoguard
- Blygold
- Heresite
- Tinning treatment
- Double layer fins
- Hydrophobic fins
- Prepainted fins

SCS SPRAY J CLEANING SYSTEM

ThermoKey offers the "Spray J" cleaning system for its V-type condensers and Dry Coolers (J) which allows the safe and easy cleaning of the finned pack. A system of nozzles which guarantees a uniform cleaning.

REGULATION FOR DRY COOLERS AND CONDENSERS - AC FANS

- **R** The R series device has been designed to vary the three-phase Ac voltage thanks to the 23 Heat Exchange Solutions ThermoKey phase cutting principle, in order to regulate the rotational speed of three-phase asynchronous high-slip motors. Modbus communication available.
- **P** The controller P is used for continuous speed adjustment on variable voltage 3 motors used to drive fans. Modbus and Lon communication available.
- **G** The G device (6 vac Steps +2 ON/OFF) is an electronic digital Vac steps controller which uses on two phases a pair of single phase autotransformers with 5 outlets, while the third phase is connected directly to the main power supply.
- **Z** Inverter is designed for a stepless control of fans without additional (electromagnetic) motor noise.

ARCHIMEDE SOFTWARE

All you have to do is enter the required application data into the user friendly interface.

Based on your indicated operating conditions (desired refrigerant or coolant, ambient humidity, evaporator and condenser temperatures) and the accessories required, the software will perform an exact thermodynamic calculation (even for unusual applications).

ARCHIMEDE - Air heat exchangers selection

Direction
Acrobatik
—
Photography
Cover: **Eugenio Novajra**
Pag 02-03: **Eugenio Novajra**
Pag 09: **Emiliano Lucchetta**
Pag 19: **Emiliano Lucchetta**

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Printed in Italy by
Grafiche Filacorda
—
CP0116EN

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