

ROENEST

HEAT EXCHANGERS NATURALLY



AN ENEX TECHNOLOGIES COMPANY

Release June 2022

HEAT REJECTION

Remote Condensers

The complete range of remote condensers compatible to work with all synthetic refrigerants (including A2L) and propane, offering a wide range of capacities from 10 to 1540 kW



ROEN EST presents its wide range of REMOTE CONDENSERS, which ranks among the most complete in Europe, suitable for all commercial, industrial and process, air conditioning, heat recovery and refrigeration applications. ROEN EST is the solution provider for the design, manufacturing and supply of heat exchangers and complete units with particular focus in HVAC&R.

Founded in 1983 for the production of finned pack coils, today the company is a reference point for technology and capacity for solutions in air conditioning, refrigeration, heating and cogeneration. The Group's production structure is divided into two locations in Italy and Slovakia: two complementary and strategic factories, centers of excellence for the production of specific products. The Italian headquarters represents the heart of the company and is the driving force of innovation and technological development.

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LEADING IN THE HEAT REJECTION PROFESSIONAL SOLUTIONS

The term “remote condensing unit” or “remote condenser” means a factory-made assembly of refrigerating components designed to receive and liquefy a specific refrigerant that is remotely compressed from the refrigerated equipment normally with one or more refrigerant compressors. ROEN EST remote condensers are designed to be suitable for any application also with all of the new HFC and HCFC refrigerants. The indicated air flows and power consumptions are verified at our manufacturing plants as per EN327 normative.

Present document is fully dedicated to remote condensers which can be segmented into 4 main types:

Type	Fans diameter
	[mm]
COMPACT	172, 200, 230, 254, 300
COMMERCIAL SERIES	450, 500, 630
INDUSTRIAL SERIES	800, 900
V-SHAPE	800, 900

MAIN FEATURES

ROEN EST offers to customers a wide spectrum of benefits coming from an history of design, production and distribution of more than 35 years in over 50 countries, consolidated in the following main features (non-exhaustive list):

- ❖ Compatible with all synthetic refrigerants (including A2L) and propane;
- ❖ Cat. II PED certification available;
- ❖ Different thickness of tubes according to the PS required;
- ❖ Maximum pressure up to 45 bars;
- ❖ Turbo version available for maximum performances (inner grooved tubes and louvered fins);
- ❖ Wide customization possibilities thanks to different materials available for the fins, for the frame and optimization of the number of circuits to obtain maximum performance based on the working conditions;
- ❖ EC fans available as option;
- ❖ Many options available;
- ❖ 10 surface treatments available, to increase the life of the product in aggressive environments.

ROEN EST: Remote condensers solutions for all Commercial & Industrial applications: Cooling, Refrigeration & Air Conditioning

MATERIALS & FINISHING

Coils

The condensers consist of heat exchangers (coils) made of corrugated aluminium fins and copper tubes. The supporting side plates are made of aluminium. The units are designed and assembled according to strict company specifications regarding production and quality, in order to prevent tube damages. Tubes are tested at 1,43 times the PS per Pressure Equipment Directive 2014/68/EU and pre-charged with nitrogen, to ensure the absence of leaks, humidity and debris in the refrigeration circuit. The T-shaped welding of the inlet and outlet headers guarantees perfect longlasting hold. Headers are equipped with two Schrader valves.

Casing & finishing

The condenser's casing consists of an internal self-supporting frame made of galvanized or stainless steel, while all of the visible parts and finishing are made of white pre-painted aluminium (color code RAL9010), which gives the unit a clean and polished look. Condensers are supplied with protective films on all pre-painted surfaces. Supports and floor brackets can be assembled on both sides of the condenser, enabling connections on either right or left side. These production materials make the product:

- light in weight;
- non-toxic and devoid of polluting particles;
- highly resistant to mechanical stress and corrosion.

	Copper	Aluminium	Alu. Prepaint	Stainless steel
Tubes	✓			
Fins	✓	✓	✓	
Frame		✓	✓	✓

Fan motors

All models are supplied with standard fan motors, certified by our suppliers and tested at our plants. The fan guards and fasteners are made of black painted steel (color code RAL9005) and are manufactured according to the strictest safety standards.

Electrical components

Fan motors and casing are fitted for grounding. All electrical components, cables, terminals, and junction boxes are selected and wired according to European standards.

Packing

All condensers are packed individually in fully enclosed wooden crates. All units are supplied with label and technical specifications, user and maintenance manual, certificate of inspection, manufacturer's statement, and cable wiring sheet.

Certifications

ROEN EST, depending on the country of destination of the goods, has several certifications and homologations available such as (non-exhaustive list): UL, PED, GOST, TÜV SÜD, etc.

PRODUCT RANGE OVERVIEW

Compact

ROEN EST "Compact" condenser are designed to be installed inside refrigeration units where often, space is limited. Thanks to the compact frame it can be installed very easily and the increased fin spacing allows to delay the packing of the finned pack due to the presence of dust in the air.

Main characteristics are:

- ❖ Capacity range: from 0.5 kW up to 7 kW;
- ❖ Fans diameter 172 mm, 200 mm, 230 mm, 254 mm, 300 mm;
- ❖ Single and double fan versions;
- ❖ Fan motor voltage 230 V / 1 ph. / 50 & 60 Hz;
- ❖ Fins spacing 3 mm and 4 mm;
- ❖ 7 mm tubes to reduce the internal volume;
- ❖ Compatible with all synthetic refrigerants (including A2L) and propane.



The image is for illustrative purpose and it is referred to a Compact unit

Commercial

ROEN EST remote condensers "Commercial series" are the best-selling units of the remote condensers range. They are designed to ensure maximum performance with minimum costs. Thanks to the many options available it is possible to customize the product according to your needs.

Main characteristics are:

- ❖ Capacity range: from 14 kW up to 280 kW;
- ❖ Fans diameter 450 mm, 500 mm, 630 mm;
- ❖ Single and double fan rows;
- ❖ Fan motor voltage 1 & 3 ph., 50 & 60 Hz;
- ❖ Fins spacing from 2.1 mm as standard;
- ❖ Available vertical and horizontal versions;
- ❖ Turbo version available for maximum performances (inner grooved tubes and louvered fins).



The image is for illustrative purpose and it is referred to a Commercial unit

Industrial

ROEN EST remote condensers "Industrial series" are the models that allow to meet the needs of large plants. They are designed to ensure maximum capacity while remaining within the available space. The high mouthpiece design ensures maximum fan efficiency and minimum possible noise. Main characteristics are:

- ❖ Capacity range: from 40 kW up to 905 kW;
- ❖ Fans diameter 800 mm, 900 mm;
- ❖ Single and double fan rows;
- ❖ Fan motor voltage 3 ph., 50 & 60 Hz;
- ❖ Reinforced external and internal frame;
- ❖ Available vertical and horizontal versions;
- ❖ Turbo version available for maximum performances (inner grooved tubes and louvered fins).



The image is for illustrative purpose and it is referred to a Industrial unit

V-Shape

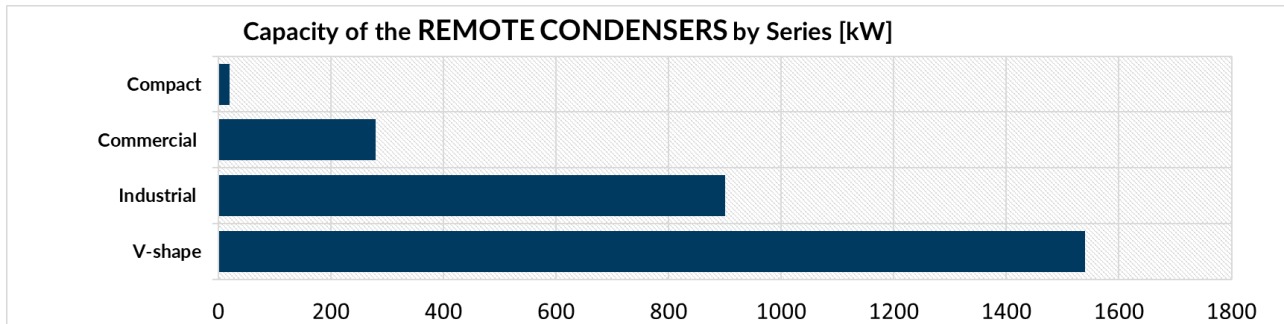
ROEN EST Roen Est remote condensers "V-shape" are the largest products in the range of remote condensers. Thanks to the "V" configuration they allow to obtain all the necessary capacity from the condensing coils with a reduced footprint of the unit. The ratio between air flow and secondary surface is shifted towards the second factor in order to obtain thermal exchanges also in situations of very low ΔT . Main characteristics are:

- ❖ Capacity range: from 202 kW up to 1540 kW;
- ❖ Fans diameter 800 mm, 900 mm;
- ❖ Fan motor voltage 3 ph., 50 & 60 Hz;
- ❖ Up to 16 fans;
- ❖ Turbo version available for maximum performances (inner grooved tubes and louvered fins);
- ❖ Structure designed for naval container transport.



The image is for illustrative purpose and it is referred to a V-Shape unit

PRODUCT LINE-UP BY CAPACITY & RANGES



OPTIONS

What makes ROEN EST range of "Remote Condensers" extremely appreciated by customers is for sure the high flexibility of the range due to unlimited combinations of options and accessories.

	Compact Series	Commercial Series	Industrial Series	V-Shape Series
EC fans	✓	✓	✓	✓
Wiring		✓	✓	✓
EC Speed controller		✓	✓	✓
Inverter		✓	✓	✓
Phase cut regulator		✓	✓	✓
Motor protection		✓	✓	✓
Service switch		✓	✓	✓
Casing AISI304	✓	✓	✓	✓
Surface treatments	✓	✓	✓	✓
Extended legs	✓	✓	✓	✓
Spray system			✓	✓
No fans	✓	✓	✓	✓

SURFACE ANTICORROSION PROTECTIONS & TREATMENTS

Strong attention is devoted to anticorrosion protections available to cover all customer requirements, such as (non-exhaustive list):

- ❖ Heresite
- ❖ Heresite + UV
- ❖ Epoxy painting – Pulver
- ❖ Epoxy painting – Cataphoresis
- ❖ Epoxy painting – Cataphoresis + UV
- ❖ Electrofin
- ❖ Electrofin + UV
- ❖ Thermoguard fanguard
- ❖ Blygold

RANGE OVERVIEW

Compact



Commercial



Industrial



V-Shape



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