Fandis
colors of engineering

Cooling solutions

CLIMATE CONTROL SYSTEMS

bordos
cooling units

CCU SERIES | WALL-MOUNTED INDOOR COOLING UNITS

Air conditioners are an optimal solution when the external temperature is too high for ventilation alone, and it is necessary to keep the electrical panel separate from the surrounding environment. The wall-mounted indoor CCU line is made with high-quality components and ensures high technical and safety standards.

EASE OF INSTALLATION
Machine-applied polyurethane foam gasket on the rear panel

FRONT FILTER
Front filter with cloth to safeguard internal components

TEMPERATURE CONTROL
Via electronic thermostat with LED display

VERSIONS
Inox AISI 304/AISI 316 versions upon request

Details that make the difference

Dual quick-connect connector

Integrated condensate evaporator

Machine-applied polyurethane gasket

CCU SERIES | WALL-MOUNTED OUTDOOR COOLING UNITS

The wall-mounted outdoor air conditioners are designed to ensure efficient cooling of electrical panels in different applications, both outdoors and in demanding indoor environments, with reliable operation between -20°C and +55°C. The two-component sealing system provides excellent protection against dust and water infiltration (IP55).

FINISHES
Standard RAL 7035. AISI 304 and AISI 316 stainless steel versions available upon request.

CCU SERIES | ROOF-MOUNTED INDOOR COOLING UNITS

Roof-mounted air conditioners are particularly suitable for cooling battery cabinets or in applications where space around the sides of the electrical panel is especially limited. All models come equipped with a digital thermostat, standard filter, and machine-applied foam gasket, reducing installation time.

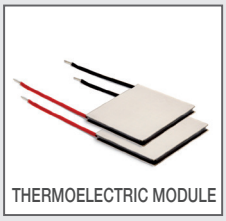
CONDENSATE CONTROL AND MANAGEMENT SYSTEM
External condensate discharge and machine shutdown device in case of malfunction.

What is a thermoelectric unit?

A thermoelectric unit is a device for the transfer of heat. Such units come ready for fitting and cool using electrical energy only.
Thermoelectric units achieve the same results as traditional compressor systems without the use of gas or moving components (except fans, if applicable).

HOW DO THERMOELECTRIC UNITS WORK?

Thermoelectric units are simply small static heat pumps, which use the so-called "Peltier" effect. Heat is transferred as a result of a flow of electrical current through thermoelectric modules, which are the main components in the system.
Heat is absorbed by one side of the unit (the cold side) and as a result the temperature drops. The other side dissipates the heat into the surrounding environment (hot side). The process can be reversed by simply inverting the direction of the current flow.


THERMOELECTRIC MODULE

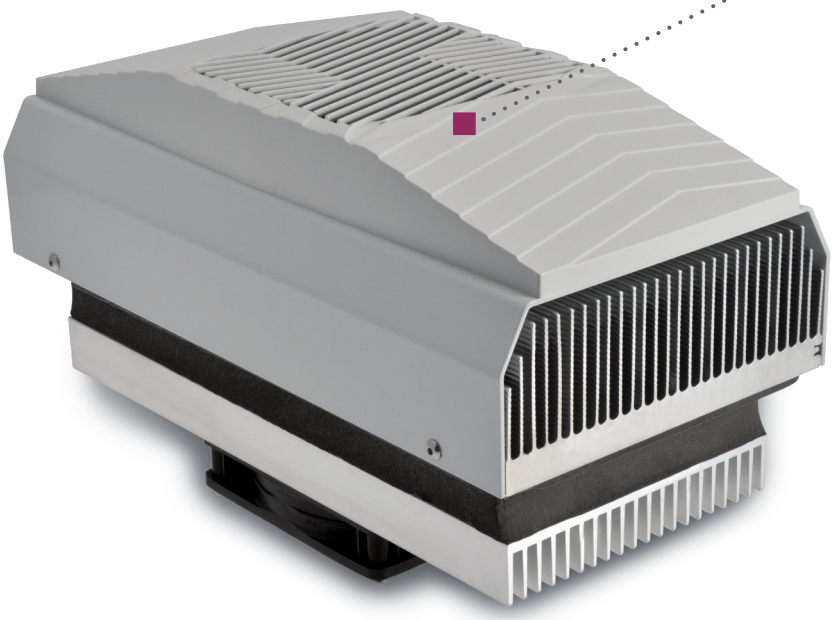
WHAT ARE THE ADVANTAGES COMPARED TO A COMPRESSOR SYSTEM?

Thermoelectric units have no moving mechanical parts (except fans, if applicable) and are therefore extremely reliable, have an almost unlimited life span and require no maintenance.
The fact that they are "static" makes them immune to vibration meaning they can be used in any position, which makes them particularly suitable for applications where they are mounted on systems in motion.
They contain no pollutants such as CFC or other gases, which can harm the environment ambient and have simpler and more compact structure than compressor systems.

Thermoelectric cooling units are used to cool and dehumidify the air inside electrical cabinets and to separate the internal and exterior environments.
Air conditioners are usually used when outside temperatures are unfavorable i.e. over 35°C and the atmosphere is contaminated by oil or dust.

TCU SERIES | THERMOELECTRIC UNITS IN AC-DC

Thermoelectric units are based on the Peltier effect heat pump principle and are used for air-conditioning small panels and electrical equipment. They do not use a compressor or other moving parts (except for the fan). They do not use gases, such as CFC or others, and are insensitive to vibrations. DC and AC versions available.



DUAL EFFECT
Heating and cooling conversion by reversing polarity

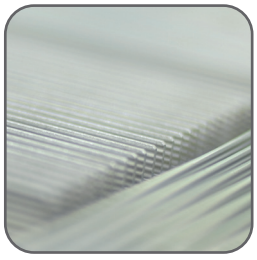
QUIET OPERATION
Compressor-free and no moving parts, except for the fan

REFRIGERANT-FREE
No dangerous fluids exploiting the Peltier effect cooling system

IP55
High protection from moisture and dust

Development of customized projects and thermoelectric modules on request

Details that make the difference


Efficient heat sink


Peltier module


Custom design

Model numbering system for CCU SERIES COOLING UNITS

description	CCU	03	A	23	1	W	N	I	U	X	description
SERIES **CCU**											**Approvals** **X** = CE **U** = UL
1040 **03** = 300 W **12** = 1200 W **05** = 500 W **15** = 1500 W **08** = 800 W **20** = 2000 W **09** = 900 W **40** = 4000 W **10** = 1000 W											**Color Housing** **U** = RAL 7035 **4** = Inox 304 **6** = Inox 316 **8** = Inox 316 (Type 4x)
Voltage **A** = AC **I** = AC Inverter											**Application** **I** = Indoor **O** = Outdoor
Rated Voltage **12** = 115 V a.c. **23** = 230 V a.c. **40** = 400 V a.c.											**Option Type** **S** = Slim **N** = Standard
Phase **1** = Single-phase **2** = Two-phase **3** = Three-phase											**Mounting** **W** = Wall **R** = Roof

Model numbering system for DC THERMOELECTRIC UNITS

description	TCU	100	24	40	IP55	-	7035	description
FAMILY **TCU**								**COLOUR** **7035** = grey RAL 7035
COOLING POWER **50** = 50 W **100** = 100 W **200** = 200 W								IP protection degree of the external side
VOLTAGE **12** = 12 Vd.c. **24** = 24 Vd.c. **48** = 48 Vd.c.								**SERIES** **40** = standard

Model numbering system for AC THERMOELECTRIC UNITS

description	TCU	200	AC	40	-	SIP	description
FAMILY **TCU**							**CUSTON SERIES** **S**** = custom version
COOLING POWER **200** = 200 W							
VOLTAGE **AC** = Va.c.							**SERIES** **40** = standard

CCU series wall mounting indoor cooling units

- Cooling power range from 300W to 4kW
- IP54 protection degree on cabinet side
- Digital thermostat
- Pre-mounted polyurethane foam gasket laid by machine to reduce installation time
- Condensation evaporator on all models
- Standard filter with cloth for a greater protection against external agents
- Material: RAL 7035 painted galvanized steel
- Stainless steel AISI 304 and AISI 316 versions available on request
- Equipped with terminal block for power supply and management of alarm and door opening signals

IP 54 External mount

Model	Dimensions	Rated Voltage	Cooling Capacity L35L35
	mm	V	W
CCU03A231WNIUX	501x283x180	230 V a.c.	325/355
CCU05A231WNIUX	596x283x220	230 V a.c.	525/575
CCU08A231WNIUX	631x283x270	230 V a.c.	855/935
CCU08A402WNIUX	631x283x270	380/400/440/460/480 V a.c. 2 ~ at 50/60 Hz	825/895
CCU10A231WNIUX	949x404x237	230 V a.c.	1015/1115
CCU15A231WNIUX	949x404x237	230 V a.c.	1415/1555
CCU15A402WNIUX	1051x404x237	380/400/440/460/480 V a.c. 2 ~ at 50/60 Hz	1415/1555
CCU20A231WNIUX	949x404x237	230 V a.c.	1955/2145
CCU20A402WNIUX	1051x404x237	380/400/440/460/480 V a.c. 2 ~ at 50/60 Hz	1955/2145
CCU30A403WSIUX	1651x405x218	380/400 V a.c. 3 ~ at 50 Hz; 440/460/480 V a.c. 3 ~ at 60 Hz	2795/3075
CCU40A403WSIUX	1651x405x218	380/400 V a.c. 3 ~ at 50 Hz; 440/460/480 V a.c. 3 ~ at 60 Hz	3845/4035

CCU series wall mounting outdoor cooling units

- Cooling power range from 800W to 4kW
- IP55 protection degree on cabinet side
- Digital thermostat
- Pre-mounted polyurethane foam gasket laid by machine to reduce installation time
- Material: galvanized steel painted RAL 7035
- Stainless steel AISI 304 and AISI 316 versions available on request
- Equipped with terminal block for power supply and management of alarm and door opening signals

IP 55 External mount

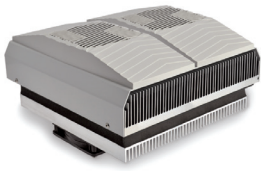
Model	Dimensions	Rated Voltage	Cooling Capacity L35L35
	mm	V	W
CCU08A231WNOUX	601x302x289	230 V a.c.	855/935
CCU08A402WNOUX	601x302x289	380/400/440/460/480 V a.c. 2 ~ at 50/60 Hz	855/935
CCU15A231WNOUX	951x403x238	230 V a.c.	1415/1555
CCU15A402WNOUX	951x403x238	380/400/440/460/480 V a.c. 2 ~ at 50/60 Hz	1415/1555
CCU40A403WNOUX	1101x504x337	380/400 V a.c. 3 ~ at 50 Hz; 440/460/480 V a.c. 3 ~ at 60 Hz	3995/4195

CCU series roof mounting indoor cooling units

- Cooling power capacity: 900W and 2kW
- IP54 protection degree on cabinet side
- Digital thermostat
- Pre-mounted polyurethane foam gasket laid by machine to reduce installation time
- Condensation evaporator standard on all models
- Safety condensate drain outside the electrical cabinet
- Standard filter with cloth for a greater protection against external agents
- Material: galvanized steel painted RAL 7035

IP 54 Top mount

Model	Dimensions	Rated Voltage	Cooling Capacity L35L35
	mm	V	W
CCU09A231RNIUX	335x600x333	230 V a.c.	975/1075
CCU09A402RNIUX	412x600x323	380/400/440/460/480 V a.c. 2 ~ at 50/60 Hz	975/1075
CCU20A231RNIUX	455x602x402	230 V a.c.	1955/2145
CCU20A402RNIUX	455x602x402	380/400/440/460/480 V a.c. 2 ~ at 50/60 Hz	1955/2145



DC thermoelectric units

- Solid-state device with Peltier technology
- Suitable for any plate thickness
- No chlorofluorocarbons (CFC) and compressor
- Reversible process heat/cool
- Operation in any orientation
- Not sensitive to vibration
- Virtually free maintenance - no moving parts (except for the fans)

Model	Rated Voltage	Operating Voltage	Rated Current	Max Current	Rated Cooling Power
	V	V	A	A	W
TCU1002440IP55-7035	24 V d.c.	17-27 V d.c.	4,7	5,7	101
TCU1004840IP55-7035	48 V d.c.	34-54 V d.c.	2,4	3,0	101
TCU2002440IP55-7035	24 V d.c.	17-27 V d.c.	9,5	11,5	201
TCU2004840IP55-7035	48 V d.c.	34-54 V d.c.	4,8	6,0	201
TCU501240IP55-7035	12 V d.c.	7-13 V d.c.	5,0	5,8	57
TCU502440IP55-7035	24 V d.c.	10-27,6 V d.c.	2,4	2,8	57

AC thermoelectric units

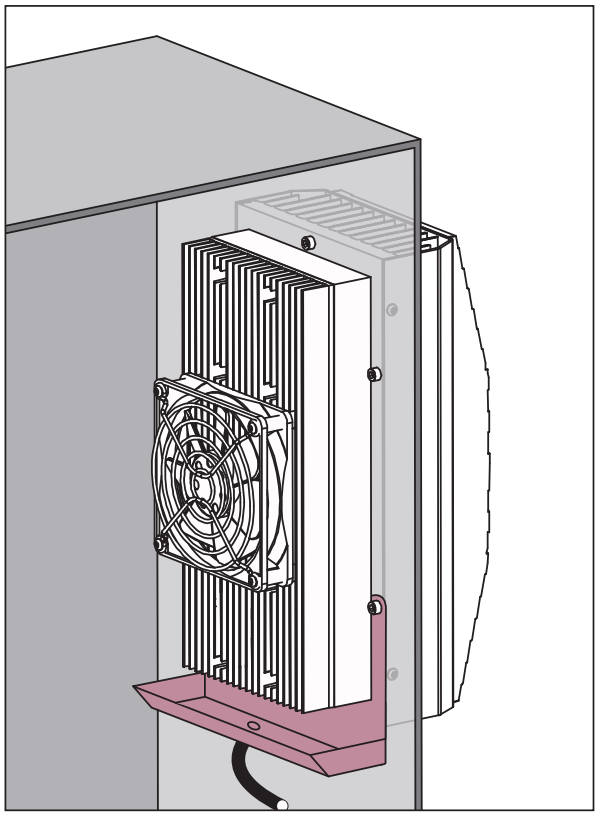
- Solid-state device with Peltier technology
- Suitable for any plate thickness
- Stainless steel external cover
- Integrated AC/DC power supply on the other cover
- No chlorofluorocarbons (CFC) and compressor
- Operation in any orientation
- Not sensitive to vibration
- Virtually free maintenance - no moving parts (except for the fans)

Model	Operating Voltage	Rated Power	Max Power	Rated Cooling Power
	V	W	W	W
TCU200AC40-SIP	88-264 V a.c.	245	306	201

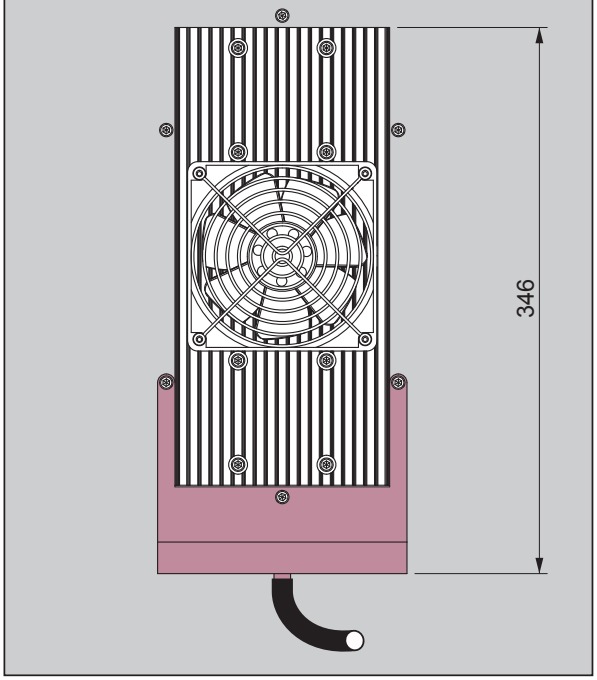
Accessories - Drip trays

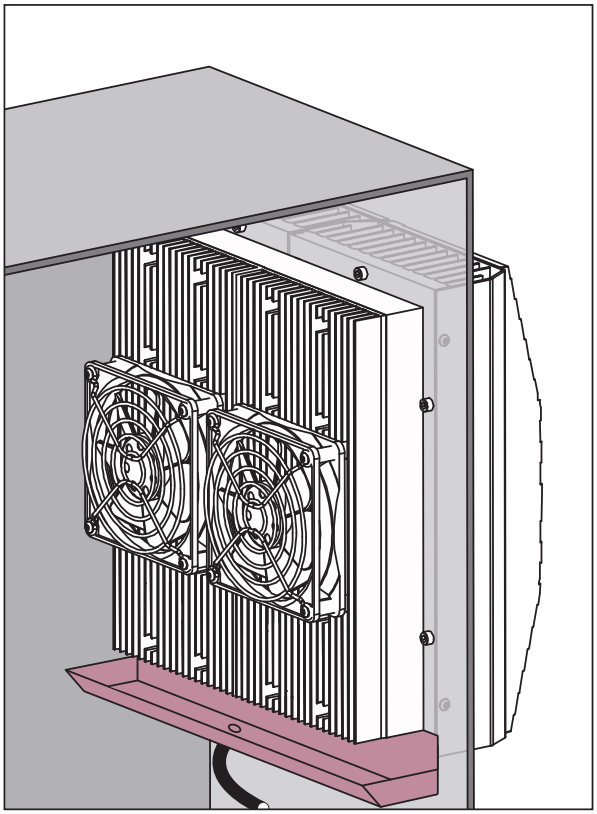
- Stainless steel accessories used to collect the condensate generated on the cold heat sink inside the enclosure
- Suitable for vertical installation of the thermoelectric units

Model	Suitable for TE units
RC-TCU100-1001	TCU100
RC-TCU200-1001	TCU200
RC-TCU50-1001	TCU50

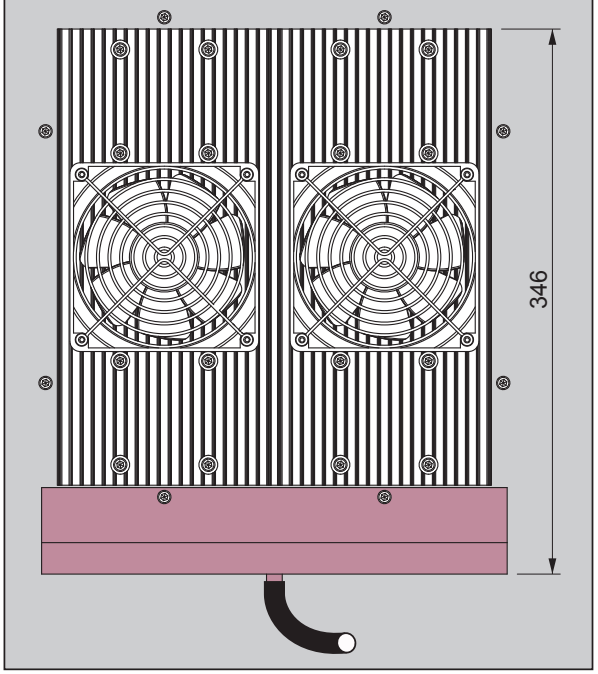


TCU50 and TCU100
max. height with drip tray





TCU200 / TCU200AC
max. height with drip tray



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