

MADE IN FRANCE

R290

R32

R513A







This unit uses 2 scroll compressors corresponding to 2 fully independent and secure cooling circuits. From 7 to 18HP depending on the model, with a total cooling capacity between 16 to 47 kW.

RTX Premium Roof Top AC



MADE IN FRANCE

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RTXs are high-quality industrial air conditioners prepared for intensive use. This unit uses 2 SCROLL compressors corresponding to 2 fully independent and secure cooling circuits. From 7 to 18HP depending on the model, with a total cooling capacity of up to 47 kW for the 16HP R32 unit. It offers a wide range of options, including reversibility, temperature and humidity control, and ventilation. This rooftop air conditioner version is available in different configurations, from hot desert climates to tropical, continental and cold climates. We use different types of gas, compressors and components o adapt our product to your application and location.

The riveted aluminum construction of the body and frame guarantees high structural rigidity for minimum weight. Aluminum increases durability, resisting corrosion and abrasion from sandy winds in desert areas. The design is also engineered to withstand high winds in hurricane zones.

This refrigeration design is ultra-classic, and the components used for the NAYCH air conditioners are premium standards recognized by the refrigeration market for rapid interchangeability worldwide. RTX are equipped with doubled safety chain for greater reliability.

INTENSIVE COOLING

The COOLING architecture and sizing of the RTX have been designed to ensure intensive operation. This means that the quality of the selected components allows for high demands on this equipment.

ENERGY EFFICIENCY

The RTX's energy-efficient performance is due to the selection of advanced generation components such as compressor motors and fans. This selection is coupled with optimized control logic to save every kilowatt.

ADAPTABILITY

The plenums of the RTX allow for adjusting the direction of air flows to meet various cooling and heating requirements.



PARTNERSHIP

NAYCH builds its AC with well-known industrial manufacturers in the fields of refrigeration and air conditioning.







The build quality of the RTX integrates a requirement for durability, in mechanical, refrigeration, and electrical terms. The components of the RTX are CE

Application

TEMPERATURE AND HUMIDITY STABILITY



INDUSTRIAL

SMART, ROBUST AND EFFICIENT COOLERS

The reliability of the manufacturing process, designed for intensive operation in all latitudes, makes RTX coolers essential for integrators in the energy sector.

TRANSFORMERS SUBSTATIONS BATTERY STORAGE CONVERTERS IT COMPUTING TELECOM CONTROL ROOMS SPECIAL MACHINES MILITARY APPS



COMMERCIAL

RELIABLE, FLAT AND OBTRUSIVE DESIGN

RTXs can be integrated into commercial buildings thanks to their compact dimensions and limited height. Their reliability and ease of maintenance also ensure the durability and safety of commercial operations.



WORKSHOPS STORAGE BUILDING SHOPS & MALLS RESTAURANTS FACTORIES HALLS GYMNASIUMS AIRPORTS RAIL STATIONS

Ergonomic design







SPECIFIC DIMENSIONS

THE RTX ORIGINS

The RTX was initially designed to be installed on shipping containers in **compliance with the ISO 668 (2020)** standards.

LENGTH	2.737 mm		
HEIGHT	684 mm		
FIXING POINTS WIDTH (axis to axis)	2300 to 2380 mm		
TOTAL WIDTH	2.244 mm		
TOTAL WIDTH (with feet)	2.437 mm		
TOTAL WEIGHT (KG)	780 to 880 kg		
FIXING TYPE AND QUANTITY	M 14 x 8		

FULL EXTERNAL ACCESS

FOR SAFE MAINTENANCE

The complete maintenance can be fully performed from the outside without the need to access the interior of the container.

The RTX features front access to the electrical panel, regulation system, and compressors. The entire refrigeration circuit is accessible from the top, and the evaporator fans are accessible from the rear.

SUSTAINABLE MATERIALS

CYCLONE, AIR SALINITY, DUST CLOUDS

The basement is made of **AINSI 316 stainless steel**, the structure and casing are made of aluminum. The insulation is made of 30mm compressed rock wool, corresponding to a **thermal resistance of 0.83 m²·K/W**.

For coastal areas, the **basic treatment of the RTX is of type C3: Moderate salinity**, while higher treatments of type C4: High salinity can be done upon request.

Container application









STRUCTURAL CONCEPTION

ADAPTED SUPPORT POINTS AND LOAD

RTXs are initially designed for roof-mounting on CSC-compliant sea containers of all sizes, 20' - 40' - 45', ST/HC. The feet are adjusted so that the air conditioner rests on the corner angles flush with the container's side walls, in line with the container's structural rigidity.

HARSH ENVIRONMENT RESISTANT

STRONG MADE AC

The construction structure and bodywork protect the operation of the air conditioner against climatic hazards such as cyclones and hurricanes when strong winds that can exert a pressure force equivalent to **6000N**, but also dust clouds, projectiles, snow and ice.

For coastal areas, materials and painting thickness, special treatments and components are selected to withstand the salinity of the air.

WATERPROOFING

EASY AND SAFE INSTALLATION

The roof is not affected by the weight of the air conditioner, and retains its rotundity to cope with run-off stresses caused by weather, rain, condensation, frost or snow.

The connection system is an ultra-simple male-female joint to ensure installation in just a few minutes.

The sealant height is a minimum of **120mm** and is additionally covered by the air conditioner to ensure a perfect seal.

RTX roof top for commercial buildings



COOLING HEATING VENTILATION DEHUMIDIFYING



EUROPEAN F-GAS REGULATION

ON FLUORINATED GREENHOUSES GASES AND CLIMATE NEUTRALITY

For the European market, according to the new EuropeanF-GAS regulation (2024/573), until 2027, all RTX units, regardless of power, are equipped with compressors using R513A (HFC - GWP 631) and R32 (HFC - GWP 675 - A2L class).

Starting in 2027 and already in place, R290 (GWP 3 -A3 class) will be standardized across the entire RTX product range.



SUITABLE FOR AIR DUCTING

AND LARGE VOLUME BUILDINGS

The RTX is adjustable from the bottom for air intake from the rooms and for blowing into the duct system. The power of its two coupled radial fans provides a **static pressure on the air of up to 800 Pa** to meet the demands of high ceiling heights or extensive duct networks.

PUBLIC ACCESS BUILDINGS

CONVENTIONAL SAFETY RULES

The RTX units are equipped with smoke detectors, gas concentration detectors in case of refrigerant leaks, aluminum ventilation spirals, and the materials are classified M0 (self-extinguishing). Dry contacts for immediate shutdown and alarm relay are also standard.



SIMPLIFIED MAINTENANCE FULL EXTERNAL ACCESS

The RTX has been designed with a very conventional technical architecture.

To ensure simple and reliable maintenance, all technical, electrical, mechanical, and refrigeration components subject to preventive or corrective maintenance are accessible from the outside.

Performances designed







SILENT OPERATION

The RTX features reinforced double-layer insulation, backed with compressed rock wool to provide part of the acoustic attenuation. **The sound level of 58 dBA** (measured at 3 meters in free field) is achieved through the fan speed variation system and the regulation of condensation pressure.

ULTRA FLAT & UNOBTRUSIVE

The RTX is a low-profile air conditioner, **measuring just 680mm**, allowing it to be concealed on the roof by the parapets. Its sleek casing allows for discreet integration on rooftops.

LONG TERM DURABILITY

The RTX is designed for an exceptionally long operational lifespan. The materials are chosen to last for decades, and the technical components are interchangeable with others. This responsible design aims to ensure a **lower long-term** carbon footprint.

SMART & EFFICIENT

The intelligent regulation of the RTX ensures cost-effective operation through parameters that optimize each sequence of the air conditioner, in addition to the high energy efficiency of its components a perfect seal.

CE

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Compliant with the CE marking and EN 378 standards, ensuring adherence to European safety and performance requirements.

All components of the RTX machines are UL listed. The product as a whole is not certified.

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RTX specifications

EXTREME CLIMATE

Operability limits



COOLING Efficient intensive use



HEATING Heat pump & Heaters



ENERGY EFFICIENCY

Reduced consumption



AIR FLOW Speed & pressure



HUMIDITY CONTROL

Dehumidifier & dew point



RTX air conditioners can operate in cooling mode up to **56°C (133°F)** outside for WCC (warm climate conditions) versions. They can also operate in cooling mode at low outdoor temperatures of **-20°C (-4°F)** for versions equipped with proportional condensation control.

The RTX provides a **cooling capacity reaching 99% sensible heat**. The RTX features a classic refrigeration architecture with **2 compressors** for 2 independent and separate circuits. This ensures 2 complementary operating stages to adjust power and ensure cooling safety.

The RTX is equipped with **a dual heating system**. The RTX can operate in heating mode either with electric heaters to provide a low-capacity heating supplement or for frost protection, or in heat pump mode to provide powerful and economical heating.

The RTX is equipped with premium components offering high efficiency and performance. A **full parametric logic controller** ensures system control with an accuracy of 0.1°C to adjust power according to the demand and save every unnecessary kilowatt.

The RTX features 2 variable-speed EC radial fans, **operating from 20% to 100%**. The nominal air pressure of 400 Pa can be increased to **reach up to 800 Pa** to meet complex air handling requirements.

RTX has a very high ventilation capacity ranging **from 5000** to 9000 m³/h, depending on the model.

The RTX measures the relative humidity at the air return and can operate in **dehumidification mode between 35% to 100%** by limiting its airflow in cooling mode. It also controls a parameter related to the discharge temperature to avoid the dew point and the risk of condensation. The main functions of the RTX air conditioner are managed by programmable controller using the HVAC MAYA 2.0 software from NAYCH.



(1) Data conditions are full operating cooling capacity stabilized at constant heat load. Indoor conditions are 21°CDB with a relative humidity of 35%RH, evaporator at 7,2°C. Gas superheat is setted and stabilized at 11,1°K on evaporator coil, gas condensing temperature is 45°C and subcooling is setted and stabilized at 8,3°K on condenser coil. Altitude is + 26m corresponding to 1013HPa. Values are obtained with perfect state of cleanliness of the exchangers.

(2) Data conditions are full operating cooling capacity stabilized at constant heat load. Indoor conditions are 21°CDB with a relative humidity of 35%RH, evaporator at 7,2°C. Gas superheat is setted and stabilized at 11,1°K on evaporator coil, gas condensing temperature is 54,4°C and subcooling is setted and stabilized at 8,3°K on condenser coil. Altitude is +26m corresponding to 1013HPa. Values are obtained with perfect state of cleanliness of the exchangers.

Local and Remote control Control the temperatures, operating states, and your consumption. Local ModBus **VPN** Router **Cloud Access** VPN Router Remote sites Local AC IP access remote Local TCP / IP network TCP / IP network CANBus ModBus TCP / IP The RTX units are equipped as standard with ModBus TCP/IP connectivity to ensure full communication with your air conditioner. Local RS485 RTU ModBus (127 max)

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INPUTS 1	\times
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DI07Q1-A NO 🗆	
DI06 CDF-ANC 🗖	
DI10LP1-ANC 🗆	
DI11 RHP-A NO 🗖 🛛	N

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D1-Alarmes	

DI-HIArmes //
Q1-A THERMAL
COMP-A OFF BY ALARM
HPT_A ALARM
Reset Alarm.

RTX COMPLETE MANAGEMENT

The RTX air conditioner can be fully controlled locally or remotely with access to a wide range of parameters. The settings pages are categorized by usage type, such as USER - MAINTAINER - MANUFACTURER.

In addition to the local wired remote control, the air conditioner's internal programmable logic controller features the same front display to ensure operation control during maintenance periods when the remote control is not accessible.

PROPBAND HEAT 0.0°C MIN SPEED 0.0 ECO SP COOL 0.0°C ECO SP HEAT 0.0°C MODE SELECT COOL 1	CONTROL 1 X NEUTRAL ZONE 0.0 °C PROPBAND COOL 0.0 °C PROPBAND HEAT 0.0 °C	FAN MAX SPEED MIN SPEED	0.0 0.0	SETTING 1 SP COOL SP HEAT ECO SP COOL ECO SP HEAT MODE SELECT [0.0°C 0.0°C 0.0°C 0.0°C 0.0°C
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PARAMETERS LIST ON PAGES

- Mode selector or auto change-over
- Setpoints adjustment
- Eco Setpoint adjustment
- Neutral zone adjustment
- Proportional bands adjustment
- Differentials setting
- Fan speeds setting
- Warning temperatures limits setting
 Warning pressures limits setting
- Warning pressures infits setting
 Warning humidity limits setting
- Filters running time setting and alarm
- Auto-restart setting
- Activation of additional functions
- Clock setting
- Scheddule setting

CONTROL POINTS ON PAGES

- Operating status
- Air intake temperature and humidity
- Air outlet temperature
- External temperature
- Neutral zone adjustment
- Superheat temperature (A & B circuit)
- Subcooling temperature (A & B circuit)
- Superheat gas pressure (A & B circuit)
- Subcooling gas pressure (A & B circuit)
- Alarms and warning status
- Clock time

OPTIONAL

- LON or BacNet communication card
- Graphic Touch Screen display
- Custom SCADA design

Colours and treatments

Primary treatment

The aluminum substrate is chemically treated before painting before application of an 80µ -thick coat of AKZO NOBEL INTERPON REDOX PLUS anti-corrosion primer.

Protective coating

Application of a complementary topcoat of AKZO NOBEL D25-25 - RAL 7047 type for mechanical strength, UV resistance and abrasion resistance, with a thickness of between 100μ and 120 μ. This application process represents a C4M index according to ISO12944-1, considering an aluminum application.



The main optional colors for industrial, urban, rural, and military applications are as follows:



SPECIAL COLOURS

Upon request and as an option, we can also create custom colors for your projects.



PIPING COATING

As an option, we apply a polymer-based anti-corrosion agent on the copper tubes, ensuring resistance to corrosion and abrasion. It withstands up to 350°C at peak temperature without degradation.

COILS PROTECT COAT

As an option, the coils can be immersed in a special protective polymer and copper powder coating bath, with performance degradation limited to 2.6%. This treatment provides an additional 1-year warranty on the coil.

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NAYCH TECHNOLOGIES SAS

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