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Ярославль (4852)69-52-93

Россия +7(495)268-04-70
Казахстан +7(7172)727-132
Киргизия +996(312)96-26-47

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NTW-NTWD

Outdoor monobloc units

NTW-NTWD

for shelters designed for technological equipment

Range: 8.6-22 kW

The conditioners of the NTW-NTWD series are monobloc units designed for the air conditioning of small- and medium-sized telephone exchange centres. Designed for external wall mounting, they are suitable for conditioning control centres with limited internal space or space entirely taken up by technological equipment. The rational layout of the components, combined with the wide range of accessories available, make the units easy to install and suitable for different shelter configurations; the accurate thermodynamic and aeraulic design enhances energy efficiency.

Main advantages

Easier scheduled maintenance

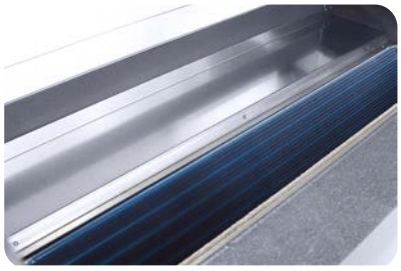
The unit has been painstakingly designed to ensure frontal access to components even with the unit running. This aspect, combined with the fully removable filters and Free-Cooling damper, is particularly advantageous for routine maintenance operations.

Simple and fast installation

The monobloc construction ensures fast installation with no on-site refrigeration piping requirements. Thanks to the Plug & Play configuration, wall mounting and electrical connection of the unit are considerably simplified: rain shields to be installed on the external wall are available on request.

Maximised Redundancy

Where coupled with DUAL power supply (mains+DC power system), the operating mode according to the Free-Cooling system maintains the environmental thermal conditions unaltered even in the event of a power failure. This will ensure uninterrupted operation of the IT equipment.

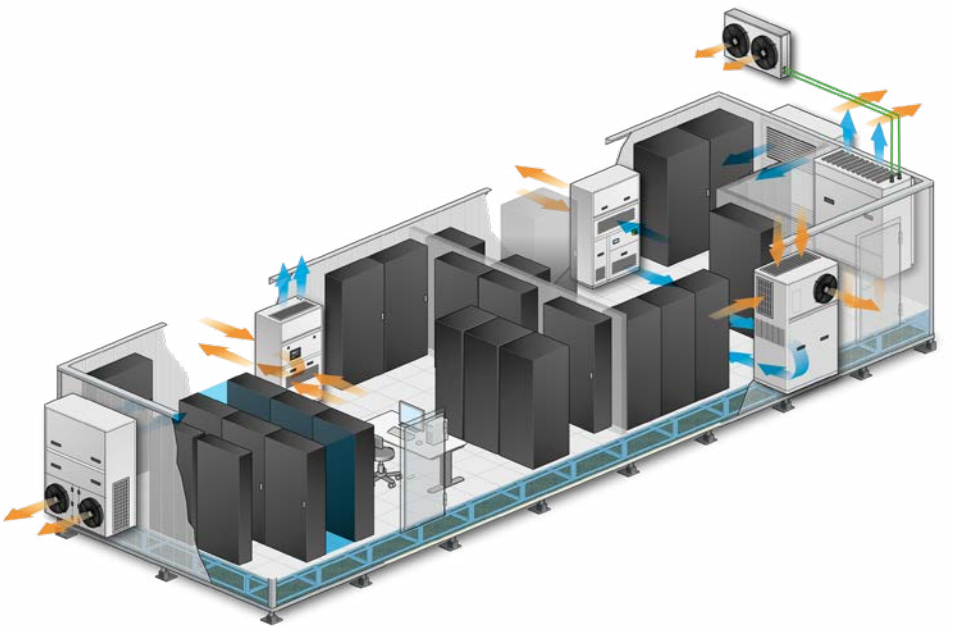


Shelter safety

All models in the outdoor monobloc units range feature hydrophilic coating. This special coating - together with adequate adjustment of air through-flow speeds - helps condensate collection during the dehumidification process, avoiding dripping on the inside and outside of the unit.

Maximised shelter internal space

The units of the NTW-NTWD series are designed to be installed externally to the shelter: in this way, all the available internal space can be used for IT equipment installation.



Maximised energy saving with direct Free-Cooling

The units can be equipped (on request) with a direct Free-Cooling module. This system, which can also be retrofitted on site on units already in place, reduces compressor work requirements (partial Free-Cooling) and, under full Free-Cooling conditions, allows the compressor to be turned off, with major effects on the system PUE (Power Usage Effectiveness).

Efficiency and precision

The range uses the Brushless DC compressors. As cooling demand varies, the integrated microprocessor allows combined modulation of air flow – via control of the EC fans (supplied as standard for the NTS unit) and of the cooling capacity, via speed control of the DC inverter compressors (supplied as standard). This ensures not only accurate adjustment of ambient hygrothermal parameters, but also maximised energy savings at partial loads, particularly if in combination with direct free cooling.

Unit suitable for any kind of climate and environment

Depending on the environment in which the unit is installed, different outfitting layouts and configurations are available.

The high temperature version with R134a refrigerant and specific condensing fan is suitable for applications with outdoor air temperature above 45°C. The unit is capable of starting even in extreme conditions (60°C indoors and 60°C outdoors).

In the case of extremely cold climates (down to -40 C), a version for low outdoor temperatures is available, equipped with silicone cables, Free-Cooling damper with own servomotor and heated with electric heating elements, dual casing heater and electrically heated control panel.

For aggressive environments, dedicated metalwork can be ordered with 160 µm double paint coating or made of AISI 316 stainless steel alloy.

Technological components

Multi-protocol communication interface

HiRef units can be integrated with the customer's external supervision Building Management System (BMS), using the most popular communication protocols, including Modbus RTU, Modbus/IP, BacNet, LonWorks, SNMP.

EC Radial Fans

Radial or centrifugal fans are characterised by backward blades. Air is taken in the axial direction, parallel to the rotation axis and delivered radially, perpendicular to the rotation axis. This type of fan does not require an external screw, has a high head and is suitable for use in indoor units where the air is often ducted and recirculated. They are driven by electronically commutated (EC) brushless permanent-magnet (BLDC) synchronous motors. The use of these motors reduces unit consumption, noise and footprint, improves the efficiency and life cycle of the system through accurate control of speed and acceleration, resulting in less heat dissipation. In addition, inrush currents and sparks are eliminated.

Inverter driven compressors

Inverter-driven compressors allow compressor rotation speed and efficiency to be controlled, by modulating the frequency and the supply voltage of the motor. They are driven by electronically commutated (EC) brushless permanent-magnet (BLDC) synchronous motors. The use of these motors reduces unit consumption, noise and footprint, improves the efficiency and life cycle of the system through accurate control of speed and acceleration, resulting in less heat dissipation. In addition, inrush currents and sparks are eliminated.

Corrosion resistant material

The HiRef outdoor units are protected by a metal structure resistant to corrosion and weathering. They are also made of galvanised steel sheet, with epoxy-polyester powder coating, oven-polymerised at 180°C, to offer a C3 degree of protection. On request, it is possible to order specific paint finishing treatments or a metalwork structure built entirely in stainless steel, to obtain a higher degree of protection from high impact adverse weather events.

Types of system

AIR/AIR

Additional benefits

- Refrigerant R410A. Also available with R513A and R134a
- Version available with dual power supply for emergencies: 230/400V network and 24/48VDC backup supply
- Stainless steel condensate drain pan
- Evaporating and condensing side fans available with EC motor
- Epoxy powder painted structural metalwork supplied as standard
- De-humidify function

Technical table

NTW-NTWD		0851	1101	1451	2001
AIR TEMPERATURE 27°C - RELATIVE HUMIDITY 40% / OUTDOOR AIR TEMPERATURE 35°C					
COOLING CAPACITY	kW	8.6	9.7	12.5	21.3
TOTAL POWER INPUT	kW	2.7	3.3	4.5	8.8
SHR	-	1	0.92	1	0.91
EER	-	4.53	3.88	3.54	2.69
AIR TEMPERATURE 30°C - RELATIVE HUMIDITY 35% / OUTDOOR AIR TEMPERATURE 35°C					
COOLING CAPACITY	kW	9.1	10	13.3	22
TOTAL POWER INPUT	kW	2.7	3.3	4.5	8.8
SHR	-	1	1	1	1
EER	-	4.69	3.96	3.69	2.75
AIR FLOW	m^3/h	2300		3020	4400
POWER SUPPLY	-	230/1/50		400/3+N/50	
SOUND PRESSURE LEVEL at 2 meters free field	dB	66			65
DIMENSIONS [LxHxD]	mm	847x1580x500		1047x1840x605	1150x2250x655

Performance data relating to Upflow versions. | Also available with 60 Hz power supply. | Units also available in Downflow models except size 2001.

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