

HiRef

Innovators above
the standards

TELECOMMUNICATIONS



Indoor monobloc units **HTD-HTU-HTX**

for shelters designed for IT equipment

Range: 4.4-28.9 kW



Our HTD, HTU and HTX series conditioners are indoor monobloc units designed for equipment rooms and low power telecom shelters. Thanks to their three different air flow configurations, they are suitable for installation in multiple ways. Thanks to the various configurations available, the range is very versatile and thus suited to many system set-ups, plus the accurate thermodynamic and air distribution 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.

Maximised Redundancy

When 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.

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 where the outside air temperature is higher than 45°C. The unit is capable of starting even in extreme conditions (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.

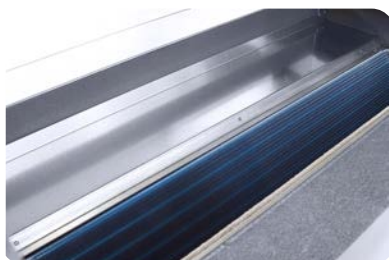
For aggressive environments, dedicated metalwork can be ordered with 160 µm double paint coating or made of AISI 316 stainless steel alloy.

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).

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.



Shelter safety

All models in the HTD-U-X range feature evaporating coils with hydrophilic coating. This special coating - together with an adequate adjustment of air throughflow speeds - helps condensate collection during the dehumidification process, avoiding dripping on the inside and outside of the unit.

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.

Types of system



AIR/AIR

Additional benefits

- R410A refrigerant, also available with R134a and R513a
- Version available with dual power supply for emergencies: 230/400V network and 24/48VDC backup supply
- Evaporating and condensing side fans available with EC motor
- Stainless steel condensate drain pan
- Dehumidification function
- Epoxy powder painted structural metalwork supplied as standard

Technical table

HTD-HTU-HTX		0451	0561	0731	0901	1051	1201	1501	1701	1801	2001	2201	2501	
AIR TEMPERATURE 27°C - RELATIVE HUMIDITY 40% / OUTDOOR AIR TEMPERATURE 35°C														
COOLING CAPACITY	kW	4.4	6	7	10.7	10.9	12.7	15	16.4	18.4	22.1	24.9	27.6	
SHR	-	1	0.9	0.95	0.99	0.98	0.92	0.98	0.94	1	0.99	0.99	0.95	
EER	-	4.26	3.54	3.26	3.28	3.71	2.81	3.39	2.93	4.71	3.79	3.84	3.5	
AIR TEMPERATURE 30°C - RELATIVE HUMIDITY 35% / OUTDOOR AIR TEMPERATURE 35°C														
COOLING CAPACITY	kW	4.6	6.2	7.4	11.4	11.6	13.3	15.9	17.2	19.6	23.5	26.3	28.9	
SHR	-	1	0.95	1	1	1	0.96	1	0.99	1	1	1	0.99	
EER	-	4.47	3.61	3.38	3.45	3.88	2.91	3.54	3.02	4.99	3.99	4.03	3.63	
AIR FLOW	m³/h	1450		2100		3020		3800		5500		6500		
POWER SUPPLY	-	230/1/50				400/3+N/50								
SOUND PRESSURE LEVEL at 2 meters free field	dB	55				58				66		67		68
DIMENSIONS [LxHxD]	mm	800x1850x550			1000x1850x550			1160x1850x550			1500x2050x800			

Performance data relating to Downflow versions with R410A refrigerant. | Also available with 60 Hz power supply.

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