

 HiRef

Split

TELECOMMUNICATIONS

HTS

SPLIT UNIT FOR SHELTERS DESIGNED FOR IT EQUIPMENT

2.9–40.7 kW



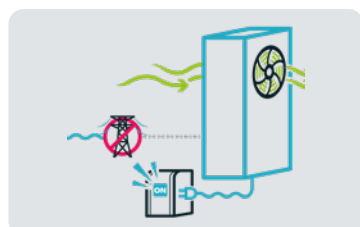
Indoor unit



Outdoor unit

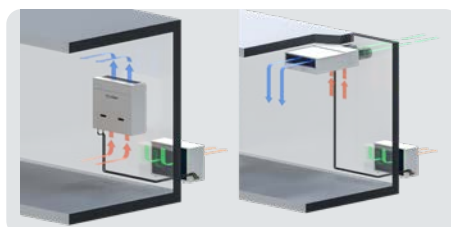
The air conditioners of the HTS series are units specially designed for telephone exchange facilities and shelters. Designed **for ceiling or wall mounting**, they are suitable for air conditioning of control centres with limited internal space or space entirely taken up by technological equipment. The rational layout of the internal components makes **unit installation easy**, also thanks to the many accessories available, making HTS **suitable for different shelter configurations**. The units have been accurately designed in **thermodynamic and aeraulic terms** to ensure **maximum energy efficiency**.

- R410A refrigerant, alternatively available with R513A and R134a
- 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
- Standard stainless steel condensate drain pan
- Evaporating coils with hydrophilic coating supplied as standard equipment
- Dehumidification function on request
- Electric lamination valve with optional electronic control
- Epoxy powder painted structural metalwork supplied as standard
- Electric heating function on request
- Temperature control through heating and post-heating systems with electric heaters (on request)



Maximised Redundancy

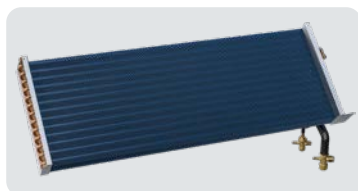
If **dual power supply** (mains + DC UPS) is provided, unit control and ventilation always remain active, **even in the event of a mains failure**. If the unit is configured as a Free-Cooling version (upon request), the damper will continue to operate, too, and this guarantees **operational continuity for the conditioning system**.



Maximised shelter internal space

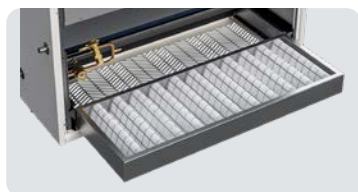
The units of the HTS series are designed for **ceiling or wall mounting**: in this way, all the available internal space can be **entirely and efficiently used** for IT equipment installation.





Shelter safety

All models in the split range feature evaporating coils with hydrophilic coating. This special coating - together with adequate adjustment of air through-flow speeds - **helps condensate collection during the dehumidification process, preventing any dripping on the inside and outside of the unit.**



Easier scheduled maintenance

The unit has been accurately designed to ensure **frontal access to components.** This aspect, combined with full extractability of filters and Free-Cooling damper (if any), **facilitates routine maintenance operations.**



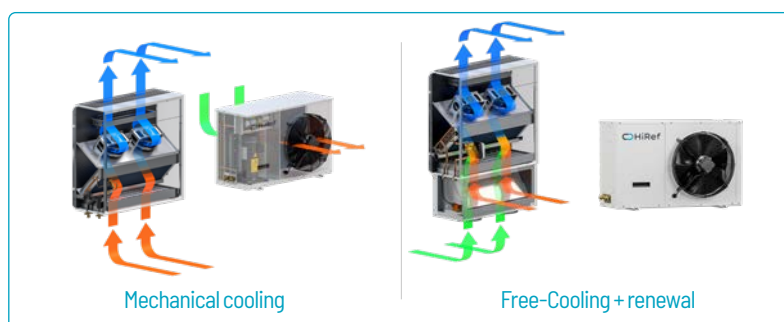
Maximised energy saving with direct Free-Cooling

The units can, on request, be equipped 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 benefits for the system's PUE (Power Usage Effectiveness).**

Unit suitable for any kind of climate and environment

Different configurations and layouts are available, suitable for the setting in which the unit is to be installed.

- **The high temperature version with R134a refrigerant and specific condensing fan** is suitable for facilities or systems with outside 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 external temperatures is available.** In this option, the outdoor unit is equipped with special condensing fans to be able to operate at low temperatures, an electrically heated switchboard, double compressor casing heaters, and condenser coil flooding system.
- In case of exposure to aggressive atmospheric agents such as sand or sunlight, the **outdoor unit metalwork can be ordered with double 160 µm paint finishing layer or in AISI 304 stainless steel alloy.** An epoxy powder painted condensing coil is also available.



HTS		0251	0351	0451	0561	0731	0901	1051	1201	1451	3101	3811
Air temperature 27°C - Relative humidity 40% / Outdoor Air Temperature 35°C												
Cooling capacity	kW	2.9	4	4.7	6.2	7.5	9.9	10.6	13.4	15.4	31.4	39.1
Total absorbed power	kW	1	1.5	1.4	2.1	2.7	3.1	3.5	4.9	6.2	10.6	13
SHR		1	0.99	1	0.89	0.96	0.92	0.89	0.92	0.86	0.97	0.88
EER		4.44	3.38	4.62	3.78	3.28	3.77	3.82	3.29	2.84	3.45	3.57
Air temperature 30°C - Relative humidity 35% / Outdoor air Temperature 35°C												
Cooling capacity	kW	3.1	4.2	5	6.5	7.9	10.3	11	14.1	16	33.1	40.7
Total absorbed power	kW	1	1.5	1.4	2.1	2.7	3.1	3.5	4.9	6.3	10.7	13.1
SHR		1	1	1	0.95	1	0.97	0.94	0.97	0.91	1	0.92
EER		4.65	3.47	4.88	3.93	3.44	3.92	3.99	3.41	2.93	3.6	3.69
Indoor unit air flow rate	m³/h	950	930	1400	1400	2300	2300	2300	3200	3200	7750	7750
Outdoor unit air flow rate	m³/h	2300	2050	3450	3350		5100		5580	5450	9300	16280
Power supply		230/1/50						400/3+N/50				
Sound pressure at 2 m in free field	dB	56	56	59	59	59	59	59	61	61	63	63
Sound pressure at 10 m in free field	dB	34	37	37	39	40	37	42	40	42	45	47
Indoor unit dimensions [LxHxD]	mm	650x350x936				1050x350x936				1150x410x1026		
Outdoor unit dimensions [LxHxD]	mm	624x541x410				1003x633x420				1121x1128x579		
										1565x1275x605		
										1585x685x1096		
										1965x1490x950		

Performance data relating to versions with R410A refrigerant. | Also available with 60 Hz power supply. | Indoor unit can only be installed on the ceiling for sizes 3101-3811.

TELECOMMUNICATIONS

NTS

**SPLIT UNIT
WITH MODULATING COMPRESSORS
FOR SHELTERS DESIGNED FOR IT EQUIPMENT**

9-38 kW



Indoor unit

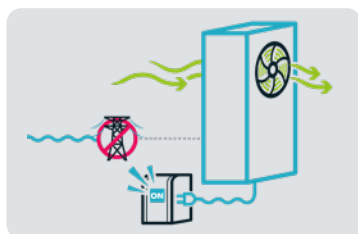


Outdoor unit



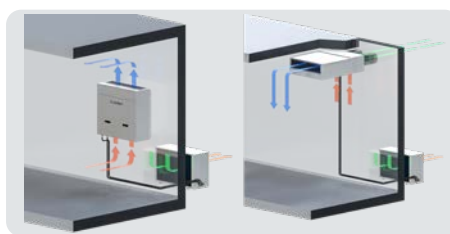
The air conditioners of the NTS series are units specially designed for telephone exchange facilities and shelters. Designed for **ceiling or wall mounting**, they are suitable for air conditioning of control centres with limited internal space or space entirely taken up by technological equipment. The rational layout of the internal components makes **installation easy**. Thanks to the wide range of available accessories, the NTS units are **suitable for different shelter configurations**. The **meticulous thermodynamic and aeraulic design boosts energy efficiency**.

- Refrigerant R410A.
- Version available with dual power supply for emergencies: 230/400V network and 24/48VDC backup supply
- Fans on evaporating side with standard EC motor
- Condensing side fans available with EC motor
- Standard stainless steel condensate drain pan
- Evaporating coils with hydrophilic coating supplied as standard equipment
- Dehumidification function on request
- Electric lamination valve with optional electronic control
- Epoxy powder painted structural metalwork supplied as standard
- Electric heating function on request
- Temperature control through heating and post-heating systems with electric heaters (on request)



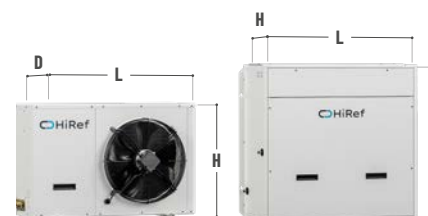
Maximised Redundancy

If **dual power supply** (mains + DC UPS) is provided, unit control and ventilation always remain active, **even in the event of a mains failure**. If the unit is configured as a Free-Cooling version (upon request), the damper will continue to operate, too, and this guarantees **operational continuity for the conditioning system**.



Maximised shelter internal space

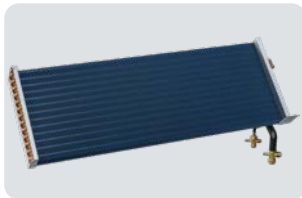
The units of the NTS series are designed for **ceiling or wall mounting**: in this way, all the available internal space can be **entirely and efficiently used** for IT equipment installation.





Easier scheduled maintenance

The unit has been accurately designed to ensure **frontal access to components**. This aspect, combined with full extractability of filters and Free-Cooling damper (if any), **facilitates routine maintenance operations**.



Shelter safety

All models in the split range feature evaporating coils with hydrophilic coating. This special coating - together with adequate adjustment of air through-flow speeds - **helps condensate collection during the dehumidification process, preventing any dripping on the inside and outside of the unit**.



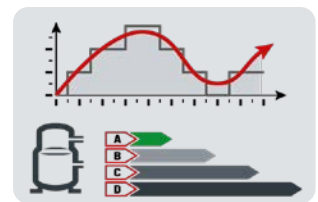
Maximised energy saving with direct Free-Cooling

The units can, on request, be equipped 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 benefits for the system's PUE (Power Usage Effectiveness)**.

Unit suitable for any kind of climate and environment

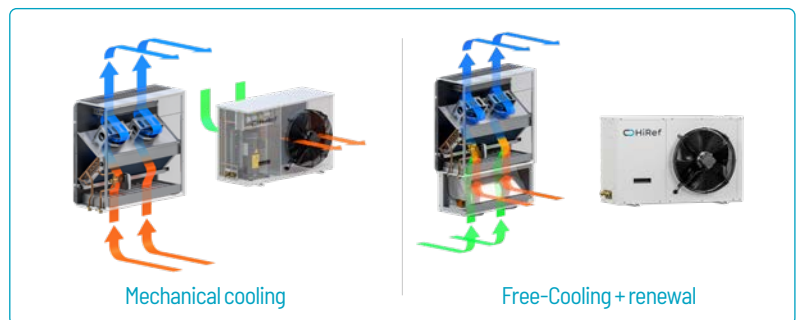
Different configurations and layouts are available, suitable for the setting in which the unit is to be installed.

- In the case of extremely cold climates (down to -40°C) **a version for low external temperatures is available**. In this option, the outdoor unit is equipped with special condensing fans to be able to operate at low temperatures, an electrically heated switchboard, double compressor casing heaters, and condenser coil flooding system.
- In case of exposure to aggressive atmospheric agents such as sand or sunlight, **the outdoor unit metalwork can be ordered with double 160 μm paint finishing layer or in AISI 304 stainless steel alloy**. An epoxy powder painted condensing coil is also available.



Efficiency and precision

The range includes compressors with Brushless DC motors. As the thermal load changes, the integrated microprocessor allows combined modulation of air flow - via control of the EC fans and cooling capacity, by managing the speed 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**.



NTS		0851	1101	1601	3101
Air temperature 27°C - Relative humidity 40% / Outdoor Air Temperature 35°C					
Cooling capacity	kW	9.5	10.9	18.3	34.4
Total absorbed power	kW	3.1	3.9	6.8	11
SHR		0.99	0.9	0.85	0.95
EER		3.9	3.29	2.97	3.81
Air temperature 30°C - Relative humidity 35% / Outdoor air Temperature 35°C					
Cooling capacity	kW	10	11.4	19.1	36.2
Total absorbed power	kW	3.2	3.9	6.9	11.1
SHR		1	0.94	0.92	1
EER		4.03	3.38	3.07	3.98
Indoor unit air flow rate	m ³ /h	2300	2300	3200	7750
Outdoor unit air flow rate	m ³ /h	5100	5580		16300
Power supply		230/1/50		400/3+N/50	
Sound pressure at 2 m in free field	dB	65	65	64	63
Sound pressure at 10 m in free field	dB	43	44	47	46
Indoor unit dimensions [LxHxD]	mm	1050x350x936		1150x410x1026	
Outdoor unit dimensions [LxHxD]	mm	1305x648x490		1121x1128x579	
				1965x950x1322	

Also available with 60 Hz power supply. | Indoor unit that can only be installed on the ceiling for size 3101.