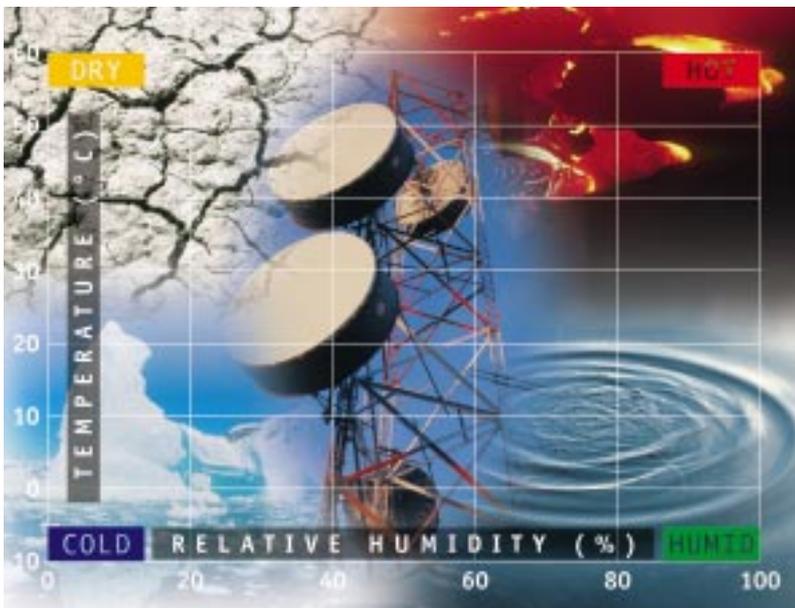


Hiross for Telecom



*Thermal Management for
BTS & Remote Nodes*

Why is conditioning essential?



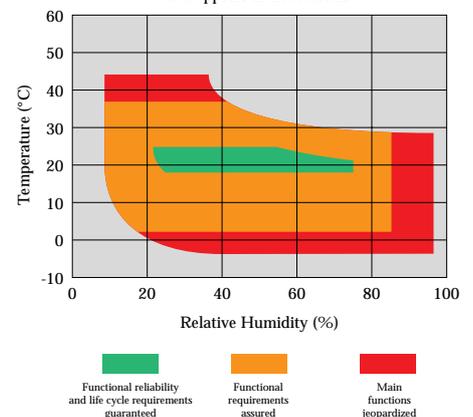
Maintaining precise environmental conditions guarantees long-lasting and efficient operation of electronic equipment for telecommunication.

Optimum operating conditions ensure user satisfaction without loss of traffic and image, especially for critical sites in densely populated areas or where access is difficult.

These situations become more and more problematic as the networks grow.

Additionally, the increased working life of the equipment allows maximum return on investment.

Electronic equipment is very sensitive to temperature, as it appears in ETSI norms



How to condition?

For anyone running a telecommunication network, the best option is to use specific solutions developed by companies able

to assist the operator, from the project initiation to the network operation. The use of solutions specifically designed

for the telecommunications market provides maximum flexibility in every type of site and condition.



PACKAGE OUTDOOR

The packaged air conditioner for outdoor installation is easy and quick to install and specially designed to resist harsh weather conditions.



PACKAGE INDOOR

The packaged air conditioner for indoor installation minimises visual impact on the environment. Ideal for use in urban areas where it is not possible to install outdoor units.

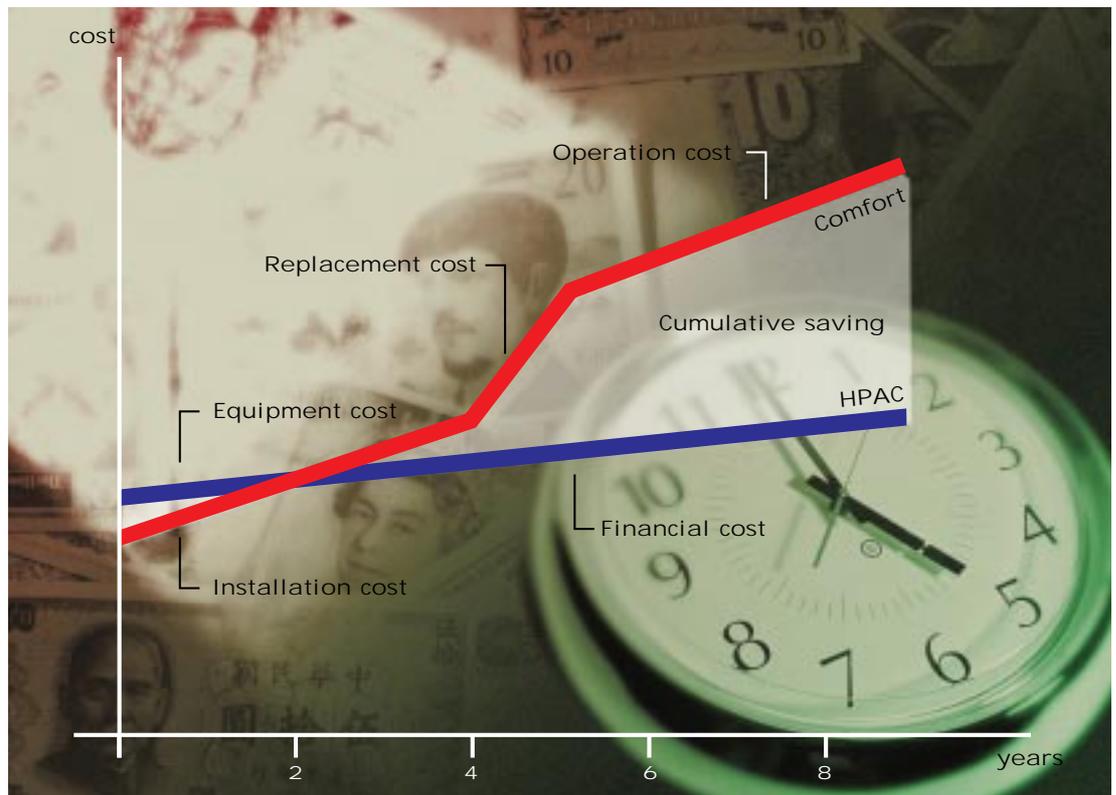


SPLIT SYSTEM

The split air conditioner may be installed on a ceiling or a wall to obtain maximum versatility of use.

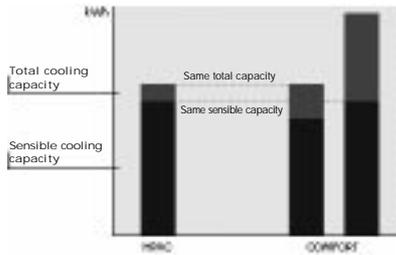


What does it cost?



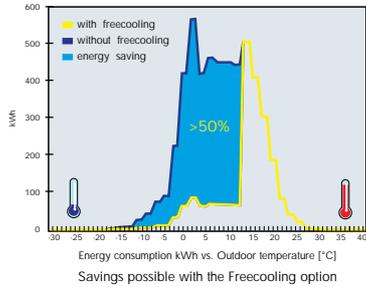
It has been demonstrated that the running costs of dedicated High Performance Air Conditioning solutions are distinctly lower than those using comfort air conditioners. Because comfort air conditioners are not designed for continuous

operation, they have a short operating life and require replacement often. They also have higher installation costs, higher running costs due to lower efficiency, more frequent maintenance requirements and excessive consumption of spare parts.

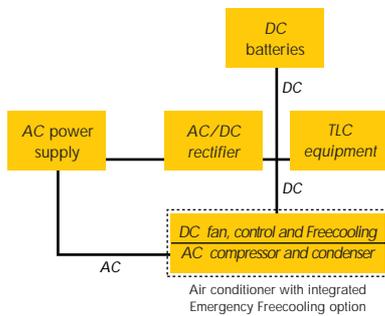


Energy Saving

Designed for Telecom applications, the units are equipped with high efficiency compressors (scroll or rotary type) and wide surface coils, for high sensible/total ratios; a comfort unit with higher total capacity is required to achieve the same sensible cooling.



The units are available with a Freecooling option which, through a modulating damper, provides fresh air inlet, allowing considerable energy savings, and reduces wear of the compressor. In combination with the high efficiency system, this represents the best solution in terms of value for money.



Emergency Operation

In the event of a break in the mains supply of AC power, the units can utilise an emergency DC power supply, guaranteeing ventilation and possible cooling with the integrated Freecooling system. This avoids the need to install other accessories (for example external fans, additional control systems, etc.).

Continuous, Quiet Operation

Continuous duty for Hiross units: because of their critical application, non-stop operation is assured 24 hours per day, 365 days per year. The fan speed modulation on the condenser expands the operating range and guarantees silent running especially during night-time.



Longer lifetime

The solid construction and use of high quality components optimized for Telecom applications, increase significantly the durability of the units.

Intelligent Control

Hiross units are equipped with Microface or Hiromatic microprocessors designed and made by Hiross. These microprocessors precisely monitor 24 hours a day all environmental and operating data, and also control functions such as stand by, rotation and subdivision of the load between several units. Both Microface and Hiromatic may also be integrated in the supervision systems of telecommunication networks. As a unique characteristic, Microface is able to send text messages (SMS) about either the status of the unit or alarms directly on the display of GSM mobile phones, allowing quick and cost efficient maintenance.



Ease of Maintenance

A complete range of dedicated accessories makes the installation easier and faster. The majority of components are mounted in the front of the unit and arranged in separated compartments: this means complete accessibility for regular maintenance of the units.

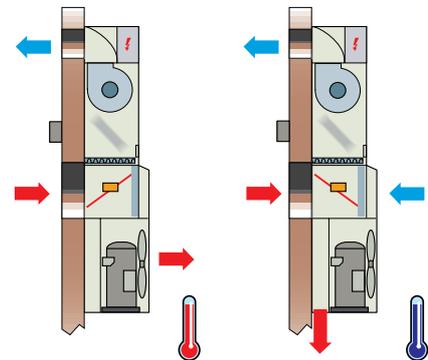
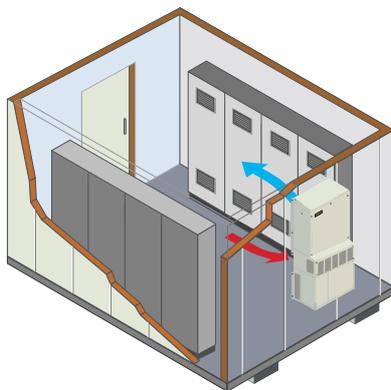


Hiwall



The Hiwall PO series (Package Outdoor unit) combines the traditional features of compactness and ease of installation with unparalleled versatility of use.

Designed to operate in harsh climate conditions, the standard features offered by Hiwall conditioners include anti-vandalism protection and heavy duty construction for optimum installation outside telecommunications shelters. The Freecooling and the Emergency Operation options are built into the unit, that only needs to be put in position and connected to the electric power supply.



Cooling with compressor.

Freecooling operation.

Performances and technical data

MODEL		PO04	PO05	PO06	PO08	PO10	PO14
Cooling capacity ⁽¹⁾							
total	kW	4.5	5.5	6.3	8.2	10.7	14.7
sensible	kW	4.4	4.9	5.6	8.2	10.2	14.1
Airflow	m ³ /s	0.42	0.42	0.42	0.74	0.74	1.10
Electrical power supply	V/Ph/Hz	230V/1/50Hz			400V/3/50Hz		
Compressor		Rotary			Scroll		
Electrical heating (opt.)	kW	3			6		
Dimensions							
width/depth/height	mm	800/410/1585			1055/500/2095		

Note: (1) Outdoor temperature 35°C; return air conditions 27°C/47% R.H.

Hisp

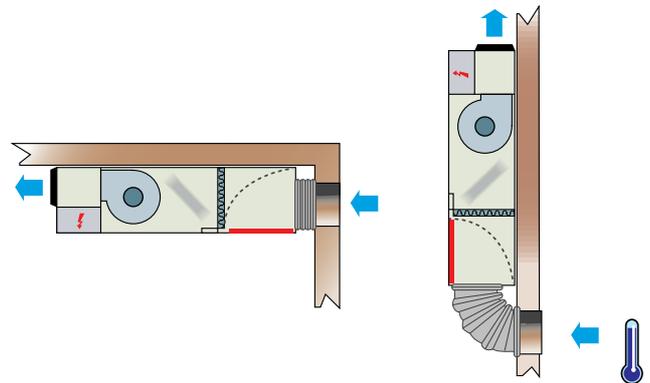
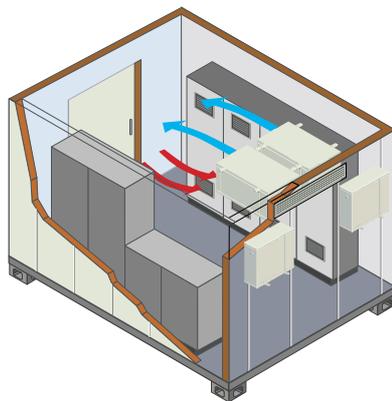


Hisp conditioners are the split-level solutions for technological rooms and telecommunications sites: they are composed of an internal evaporating unit (SE, Split Evaporating) and a external single-condensing section (SC, Split Condensing).

The SE evaporating unit presents an innovative modular concept, being available in a compact version for cooling only or in a Freecooling Version with an additional module for the Freecooling option.

The air conditioners may be installed either on a ceiling or on a wall, allowing maximum flexibility of use in the available space.

The display, which may be remote controlled, allows flexibility in positioning the control interface.



From left to right: horizontal and vertical installation. Units in Freecooling mode as example.

Performances and technical data

MODEL		SE+SC 04	SE+SC 05	SE+SC 06	SE+SC 08	SE+SC 10	SE+SC 14
Cooling capacity ⁽¹⁾							
total	kW	4.5	5.5	6.3	8.2	10.7	14.7
sensible	kW	4.4	4.9	5.6	8.2	10.2	14.1
Airflow indoor unit SE	m ³ /s	0.42	0.42	0.42	0.74	0.74	1.10
Electrical power supply	V/Ph/Hz	230V/1/50Hz			400V/3/50Hz		
Dimensions indoor unit SE ⁽²⁾							
width/depth/height	mm	800/800/310			1055/1095/395		
Dimensions outdoor unit SC							
width/depth/height	mm	800/285/530			1055/500/695		

Note: (1) Outdoor temperature 35°C; return air conditions 27°C/47% R.H.

(2) Dimensions of the basic version; the Freecooling optional module is 250 mm depth (04, 05, 06 models) and 300 mm depth (08, 10, 14 models). Weight is for only cooling version.

Hiline



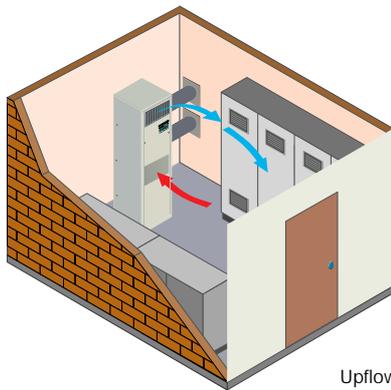
The Hiline PI series (Package Indoor unit) is the modular packaged solution for installation inside the area to be conditioned.

Available in upflow, downflow and displacement versions, the Hiline makes use of innovative ventilators with a high available pressure, for direct channeling towards the outside or through flexible pipes.

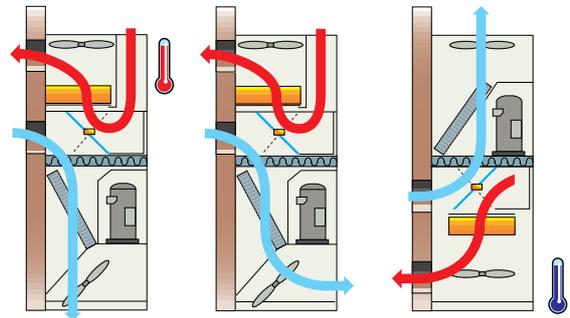
The direct expansion cooling circuit makes use of a scroll compressor with an integrated condensing section, with the direct Freecooling option by means of a modulating gate valve and expulsion of the internal air.

The units are pre-filled with refrigerant and completely regulated and tested in the factory.

Where there is minimum space, the compactness of the Slim version solves this problem. In the space normally occupied by a "Telecom rack" it is possible to install two Hiline Slim units, one of which can be in stand-by mode; these are also available with the Freecooling option.



Upflow version as example.



From left to right: Downflow, Displacement, Upflow versions. Units in Freecooling mode as example.

Performances and technical data

MODEL ⁽¹⁾		PKS3	PKS4	PI05U/O	PI07U/O	PI10U/O	PI12U/O	PI15U/O
Cooling capacity ⁽²⁾								
total	kW	3.9	4.4	5.4	7.3	10.5	12.6	14.2
sensible	kW	3.3	3.6	5.2	7.0	10.3	12.3	13.6
Airflow	m ³ /s	0.28	0.28	0.61	0.61	0.83	1.15	1.15
Elec. power supply				230V/1/50Hz			400V/3/50Hz	
Compressor		Rotary			Scroll			
Electrical heating (opt.)	kW	3		4.5		6		
Dimensions								
width/depth/height	mm	295/600/2000		650/650/1990			900/750/2050	

Note: (1) PKS3 and PKS4 are available with front air discharge only. The other models (PI05-15) are available in Downflow (Under), Displacement or Upflow (Over) versions.

(2) Outdoor temperature 35°C; return air conditions 27°C/47% R.H.

Hiross: your partner for an easier network roll-out

Thermal consulting

Over 35 years of experience in precision air conditioning, available right from the preliminary study of the project.

Project co-ordination

From definition of the best solution to planning of delivery and installation.

Dedicated key-account

Expert, skilled personnel provide dedicated interface between the client and the project.

Competitive solutions

High quality solutions with tangible benefits in standard and customised versions.

Flexible production

Semi-automated production lines in several factories to guarantee the best deliveries, managed by an advanced forecasting system based on client and project demand.

Worldwide Service

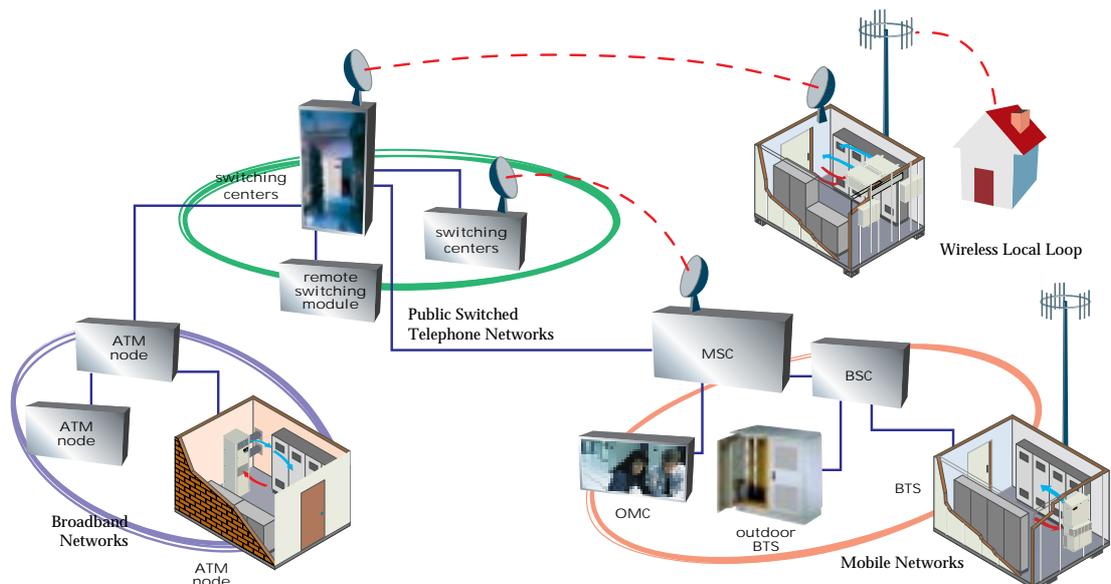
From installation to maintenance (standard or tailor-made programs) with regularly scheduled and emergency call-out service, supported by telemonitoring software.

Quality

ISO 9001 certification from design to dispatch, and the guaranteed performance of the Eurovent programme.

Training

Training courses are available for customers, on topics ranging from the basics of thermodynamics and regulation to special programmes for air conditioning technicians, with dedicated structures and practical demonstrations.



The Quality Management System of the Close-Control Air Conditioning Division of Hiross SpA is certified by Lloyd's Register Quality Assurance to ISO 9001:1994.



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