






# Cristo'Control2

Control and remote monitoring of your thermal systems with energy storage



CRISTOPIA Energy Systems is a subsidiary of the CIAT Group specialising in thermal energy storage (STL) and system control. Its team of multidisciplinary engineers designs, manufactures and develops the Cristo'Control2 and commissions it on-site, taking into account the specific requirements of each system.

Thanks to its supervision platform, which enables it to remotely monitor the operation of systems controlled by the Cristo'Control2, CRISTOPIA provides customers of the CIAT Group with services and service contracts which allow them to modify or optimise the operation of their system.

-  PERFORMANCE BOOSTER
-  SIMPLE & ERGONOMIC
-  ENERGY SAVINGS



## Cristo'Control2

The Cristo'Control2 has been designed to optimise the use of the STL and monitor the performances of the system, guaranteeing users maximum savings. Because these operational savings need to be made over several years, the control system is also subject to a quality policy. It is with this in mind that the Cristo'Control2 has been developed to satisfy users over many years.

It automatically manages operating modes and controls the thermal system by monitoring all the thermal production components: chillers and heat pumps, dry coolers, valves, pumps, etc.



The Cristo'Control2 is commissioned by CRISTOPIA technicians. They check the connection of equipment to the Cristo'Control2 on-site, the control of the equipment, daily and seasonal programming, setpoint configuration, monitoring connections, transmission to the BMS, etc. to ensure that the system is operating optimally.

The Cristo'Control2 also manages the transmission of alarms, faults, equipment statuses and operating parameters by sending data to the CMS (Modbus, LON or other protocol as an option) and via remote monitoring using its communication functions (ADSL, LAN, RTC, GPRS or 3G, etc.).

## Remote monitoring of your system!

From [www.cristocontrol.com](http://www.cristocontrol.com), users can monitor:

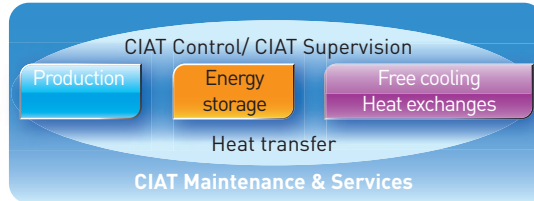
- Overall system operation
- System performance
- The equipment in operation
- Alarms, faults and deviations
- Changes in the requirements

It also gives users easy access to curves, control panels and diagrams prepared using information contained in the log. CRISTOPIA offers customers service contracts and provides services to help them use their system efficiently.

## End user benefits: Comfort & Energy efficiency

The Cristo'Control2 offers end users the benefits of a turnkey solution with standard equipment perpetuated by the manufacturer and the possibility to adapt the solution in response to customer requirements and increases in energy prices.

CRISTOPIA can easily adapt the Cristo'Control2 program remotely in order to respond to changes requested by the user or customer.



STORAGE

SMART GRID

The result of over 20 years' experience, Cristo'Control2 was specially developed by CIAT and CRISTOPIA to ensure optimal use of all the possibilities offered by a thermal energy production system with a storage facility. The remote monitoring and control system is easy to install and use, and allows users to view the operation of the system at a glance thanks to its HMI with colour touch screen.

It ensures and maintains optimal overall performance of the system both in terms of energy and economy.

The combination of CRISTOPIA latent heat thermal energy storage (exclusive to CIAT) with production using properly sized water chillers, free cooling dry coolers and high-performance heat exchangers enables consumption and operating costs to be cut while significantly reducing the carbon footprint of the building and the quantity of greenhouse gases.



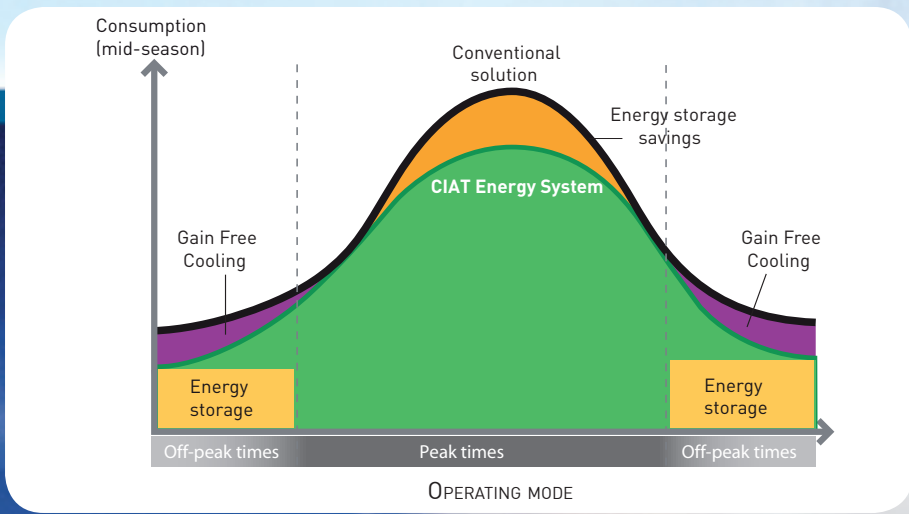
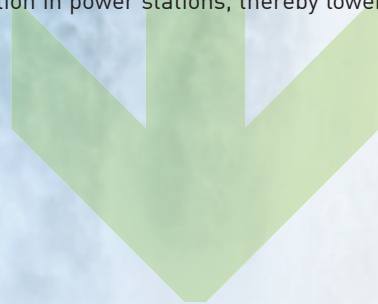
# Thermal energy storage... guaranteed benefits!

The Cristo'Control2 is manufactured by CRISTOPIA Energy Systems, the world leader in STL thermal energy storage systems. STL ("STockage Latent" [latent storage]) is a highly energy efficient latent heat thermal energy storage system. By spreading the production of thermal energy over 24 hours, STL can reduce the contract power and the cooling capacity to be installed by up to 70%.

STL stores energy during the cheapest periods (off-peak times) then supplies it during the most expensive ones (prime and peak times). Reducing the electrical power and transferring electricity consumption to periods when the price of electricity is at its cheapest results in much lower electricity bills.

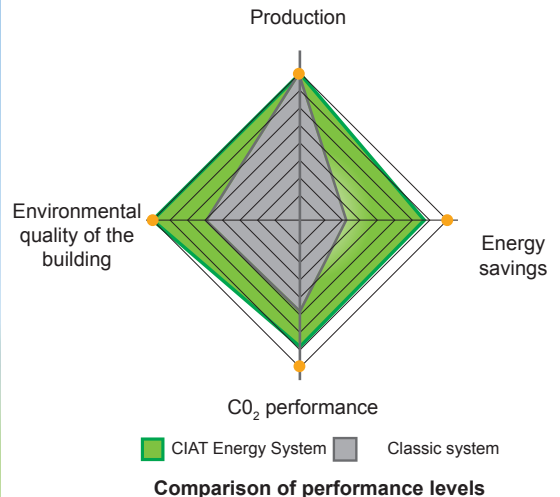
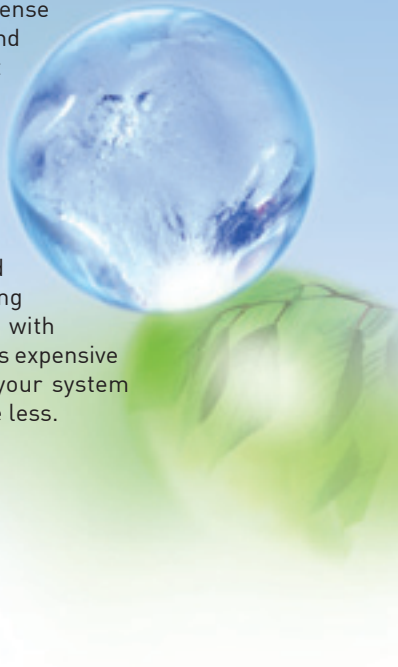
On a national scale, by helping to smooth the electrical load curve, thermal energy storage encourages the use of power stations that offer the best performance.

The technology is highly effective in terms of promoting electricity efficiency, and as such fits perfectly into sustainable development strategies. In fact, the transfer of daytime electricity consumption (prime and peak times) to night-time (off-peak times) leads to a reduction in primary energy consumption in power stations, thereby lowering CO<sub>2</sub> emissions.



## CIAT Energy system: improve production for increased preservation

CIAT's Energy System is a common-sense concept which allows commercial and industrial sectors that require vast amounts of cooling and heating to reduce their consumption. It combines CRISTOPIA's latent heat thermal energy storage system (exclusive to CIAT) with production using suitably sized chillers, heat pumps, free cooling dry coolers and Cristo'Control2 supervision. By using the solution during off-peak hours with energy that is lower in carbon and less expensive and using fine production control, your system will be more efficient and will pollute less.





Over 3000 customers around the world benefit from our technology to improve both their energy efficiency and environmental protection. Thanks to the Cristo'Control2, it is now possible to remotely monitor and optimise the performance of a system with STL thermal energy storage.



# CRISTO'CONTROL2

Protection rating	IP54
Dimensions in mm (L * H * D)	1000 x 800 x 300
Control unit power supply	24VDC (+/- 10%), 5A
Signals available	0 / 10 V; 4 / 20 mA; dry contacts
Types of temperature sensor	PT100 or PT1000 (2 or 3 wires)
2 Modbus communication ports	
MODBUS, LON and BACnet communication	
Web server	
Customer alerts	
Remote access	WAN, ADSL, RTC, 3G
Real-time supervision with system overview, events, curves and operations reports	
Maintenance support	
Commissioning by CRISTOPIA	
Service contracts	



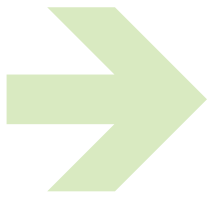
WAN, ADSL, RTC or 3G



## CRISTO'CONTROL2, 100% Smart Grid technology!

By shutting down electricity-hungry energy producers on demand and forcing the discharge of CRISTOPIA's STL thermal energy, the Cristo'Control2 can respond to peak electricity alerts on the power grid.

As part of the first ever Smart Grid operational experiment, which is taking place in France's PACA region (PREMIO project), the Cristo'Control2 is already incorporating future requirements relating to the development of Smart Grids.



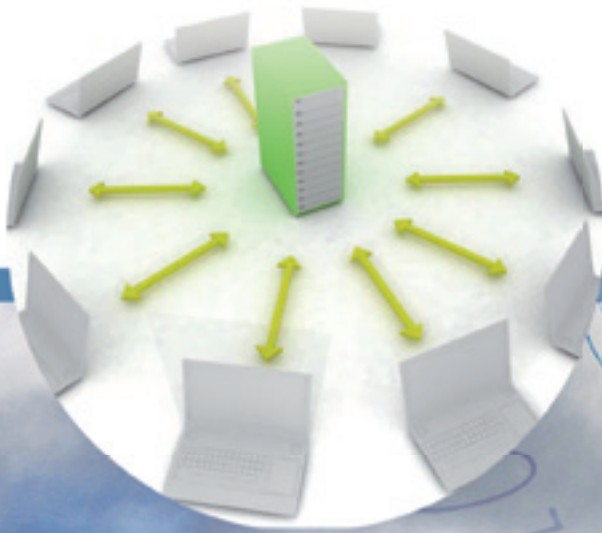
## Self-Regulating Management Module (only with service contract)

The Cristo'Control2 Self-Regulating Management Module (exclusive to CRISTOPIA) helps to optimise the use of energy stored in the STL on a day to day basis, by discharging it irrespective of the prevailing conditions and season.

To do this, the Cristo'Control2 estimates the demand of the day ahead based on information contained in its log and

constantly adapts the system's operation to respond to changes in this demand in order to make optimal use of the energy from the STL.

The Cristo'Control2 Self-Regulating Management Module can be remotely activated depending on the system equipment and provided a service contract has been taken out.



CRISTOPIA  
SERVER

INTERNET

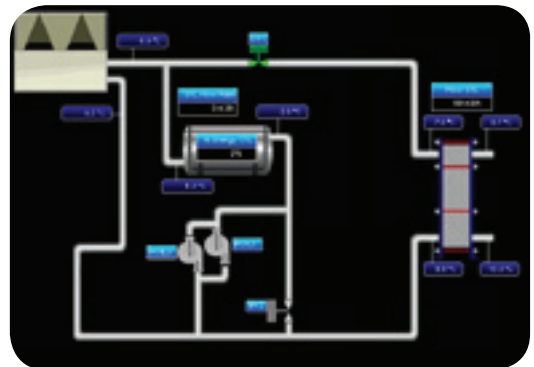
CUSTOMER



## Hydraulic diagram

A hydraulic diagram adapted to the customer requirements is vital to achieving an efficient system. CIAT enables your engineers to benefit from the capability of its teams in order to combine your "requirements" expertise with our "system" expertise.

The Cristo'Control2 incorporates the 4 main groups of hydraulic diagrams (parallel with variable flow, parallel with 3-way valve, downstream series and upstream series) as standard, with the option to manage dry coolers in free cooling mode, as well as heat recovery from chillers for the preparation of domestic hot water (DHW).



# Satisfied customers



Mauritius Commercial Bank  
Ile Maurice



Hospital Centre, Dôle  
France



Nichol Grove Business Center  
South Africa



Valenciennes University Hospital  
France



REAL hypermarket  
Romania



National Bank of Poland  
Poland



Charleroi airport  
Belgium



**Cristo'Control2**



Auchan,  
Russia



Annemasse-Bonneville Intercommunal Hospital Centre, France

# The innovative capacity of a major industrial group present in over 70 countries



The CIAT Group is a major name boasting 75 years of proven experience in HVAC engineering. The industrial strength of CIAT stems from 9 production sites around the world, including a vast complex in France's Rhone-Alpes region. The CIAT Group's solutions are backed by the many skilled experts who work at one of the largest private Research and Innovation Centres specialised in heat transfer technology in Europe. The CIAT group is now present in over 70 countries in Europe, the Middle East, Africa, Latin America and the Asia-Pacific region. 2300 employees are constantly dedicated to achieving energy optimisation for over 100,000 customers.

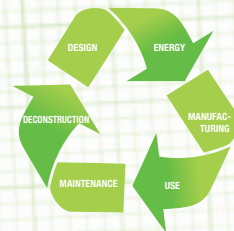


## Continual commitment to environmental action

CIAT has always believed that HVAC-R equipment must be designed and manufactured to offer ever-greater energy efficiency and help to protect our planet for present and future generations.

These objectives are achieved in three ways:

- ISO 14001 and OHSAS 18001 certifications.
- Ecodesign approach.
- Product life cycle analysis.



## CIAT services and networks

To guarantee maximum and sustainable performance of our solutions, we have developed a range of exclusive services, including preventive maintenance, training and spare parts. Alongside this, our network and teams of experts offer consultancy services to industry sectors using our equipment: Offices, Hotels, Shopping Centres, Healthcare, Industry and Residential.



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