

pCO<sup>2</sup>

pCO sistema

**CAREL**  
Technology & Evolution



## pCO<sup>2</sup>

The pCO<sup>2</sup> series is the new line in the range of Carel programmable controls for Air-conditioning and Refrigeration. The unique performance of the new pCO<sup>2</sup> series is guaranteed by its advanced electronics, together with CAREL's experience in HVACR applications.

By using pCO<sup>2</sup> components with "EasyTools" and "pLAN", the OEM can create a System capable of offering made-to-measure solutions. We have called this the "pCO sistema".

By using the "pCO sistema", each manufacturer can develop its own customised controls, from both a functional and aesthetic point of view, for the regulation of units and plants, using standard components which ensure excellent performance, maximum reliability and competitive prices.



**Advanced technology for customised, reliable and flexible controls.**

The *pCO sistema*, first developed by Carel in 1984, now offers many more benefits to the manufacturer of Air-Conditioning and Refrigeration units and plants, thanks to the introduction of the new *pCO<sup>2</sup>* series controls, which allow:

- **reduced assembly and wiring times**, with new DIN-rail mounting plastic cases;
- **real time management of even the fastest transients**, using a powerful 16-bit microprocessor;
- **possibility to save events** (alarms, temperatures, pressure, ...) even for long periods, in Flash RAM memory;
- **greater flexibility in the definition of functions and algorithms**, thanks to the new 32 bits *EasyTools* development software and the multi-standard inputs;
- **flexible and customised appearance**, thanks to compatibility with the numerous Carel LCD or LED, graphic or alphanumeric user interfaces;
- **simple connection to the more common communication standards** using embedded multiprotocol software;
- **excellent price/performance ratio**, due to the wide range of controls available.



## Saving of events and alarm log

Thanks to the high capacity flash memory (expandable up to 6 Mbytes) and the clock with back-up battery, all active alarms, the values of the main regulated measurements (temperature, pressure, humidity, ...) and the status of the controlled devices (compressors, fans, pumps, ...) can be stored for very long periods.



## Programmability

The exclusive Carel *EasyTools* development system allows quick software customisation.

The Flash RAM technology used in the pCO<sup>2</sup> now makes this process even simpler. The software can be transferred directly from a Personal

Computer, or using an electronic "plug & play" key.

All or part of the software can also be updated via modem, thus avoiding operations on-site.



## High execution

A 16-bit microprocessor ensures execution speed and efficient interfaces and the expansion boards, as well as the handling of even the fastest transients.



## Multi-standard

The inputs on the pCO<sup>2</sup> can accept the more common types. By simply changing a software, the characteristics of the inputs are the more common market standards: PT1000, 0-1V, 0-10V, 0-20mV

## Speed

...res high program  
...t management of the



## Reduced assembly and wiring times

The new  $pCO^2$  series boards feature a plastic case which guarantees an excellent physical protection of the board and reduces the risk of electrostatic discharges due to incorrect handling. It also allows quick DIN rail mounting, thus reducing the assembly and wiring times.

The case is also available with built-in user interface.



## Excellent price/performance ratio

The  $pCO^2$  series offers the control with the best price/performance ratio for each application.

Three different sizes are available, differentiated by the number of inputs/outputs:

- $pCO^2$  Small
- $pCO^2$  Medium
- $pCO^2$  Large

Furthermore, additional expansion boards can be added to manage more complex units.

## Inputs

...be configured  
...ypes of sensor.  
...re parameter,  
...ts can be adapted to  
...andards (NTC,  
...A, 4-20mA, ON/OFF).



## pCO sistema

Offers the manufacturers of Air-Conditioning and Refrigeration units and plants a range of controls and accessories, communication interfaces and development software which allow the right solution to be found in terms of appearance, functions and price.



**pCO sistema**

## Flexibility and modularity

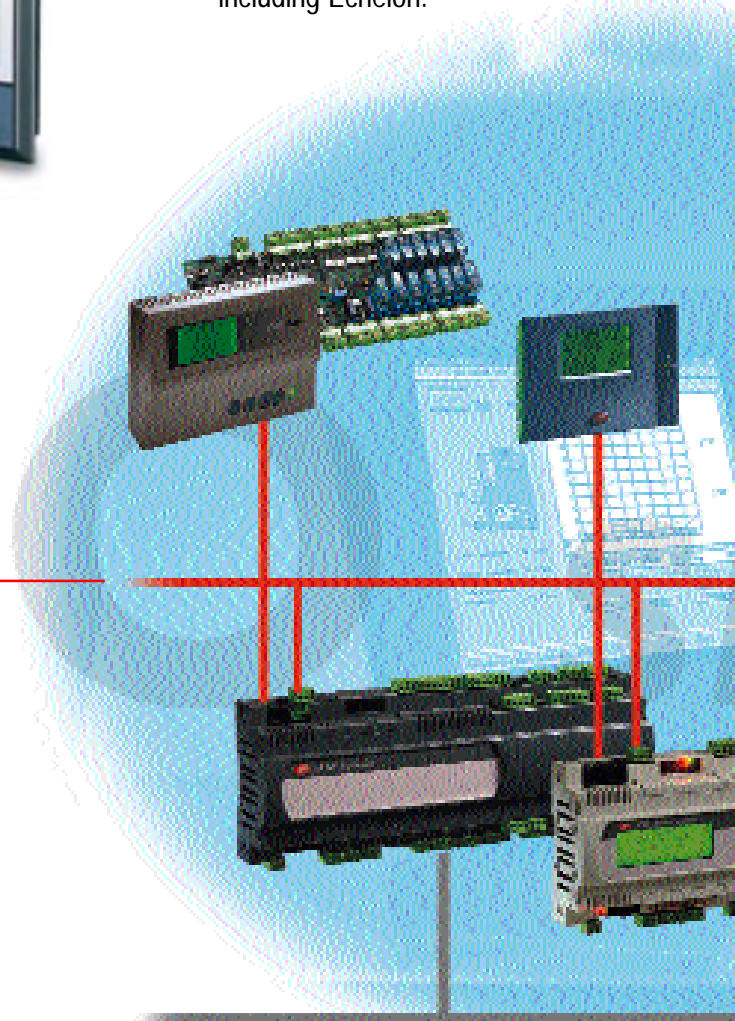
Numerous components can be integrated into the *pCO sistema* for the control and regulation of HVACR systems:

- single-phase or three-phase speed regulators for fans, pumps, ...;
- drivers for optimal management of electronic expansion valves;
- low cost controls for direct expansion units;
- programmable thermostats with built-in clock.



## Communication standa

In HVACR compatibility with the supervisory *pCO sistema* can interface to the more common protocols developed by Carel (Modbus, BacNet, ...). The *pCO<sup>2</sup>* series can be connected to an external gateway, to various protocols including Echelon.



Supervisor network (RS485 - up to 19.2kbit)

## The pLAN local network

All the components in the *pCO sistema* can be managed thanks to the *pLAN* local network. This allows for easy system management.

rds

systems is becoming ever more important. The  
common communication standards using gateways

Thanks to its multiprotocol software,  
directly, without requiring an  
communication standards,



## The EasyTools development software

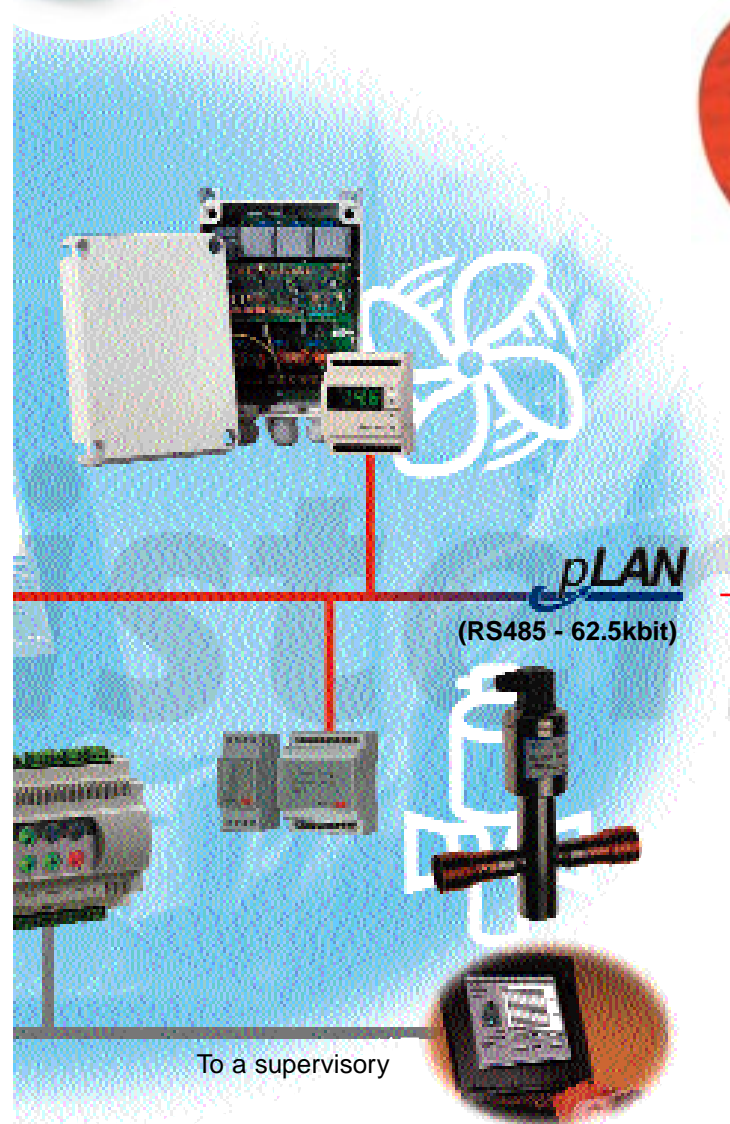
One of the strong points of the *pCO sistema* is the exclusive *EasyTools* software.

With *EasyTools*, customised programs for any HVACR application (Chillers,

Air-Handling Units, Compressor Packs, ... ) can be created quickly and easily.

*EasyTools* is simple, thanks to its graphic programming language, reliable,

thanks to its tested software modules, and is transportable onto other controls of the *pCO sistema*, even those yet to be developed.



## EasyTools components

*EasyTools* offers the HVACR manufacturer four software packages:



- **WinCad**, for customising algorithms.
- **WinMask**, for customising the user interface or for creating customised supervisory software in Windows™

operating systems.

- **WinNet**, for *pLAN* applications.
- **WinSim**, for debugging the software on a normal PC.



can be easily and quickly connected to each other  
via a shared and reliable regulation for optimal



[www.carel.com](http://www.carel.com)

CAREL srl Via dell'Industria, 11 35020 Brugine (PD) Italy - Tel. (+39) 0499 716611 - Fax (+39) 0499 716600

Cod. +302238211 rel. 1.0 01/10/99