Lancio Nuovo Prodotto
New Product Launch

*p*Chrono

Dear Colleagues,
The concept of "**RETAIL, THE ONE SOLUTION**" presented at ChillVenta 2012 clearly expresses how the Retail business unit intends to propose complete solutions that also include integration with NON-FOOD devices.
*p*Chrono is part of this new strategy, and has been designed to represent the 'added extra' that completes a store's 'energy structure', something that until now has not been managed, or has only been managed when explicitly requested by customers.
*p*Chrono, together with the new integration solutions, completes **the standard Retail Sistema solution**, making it into a truly integrated proposal for complete store management.

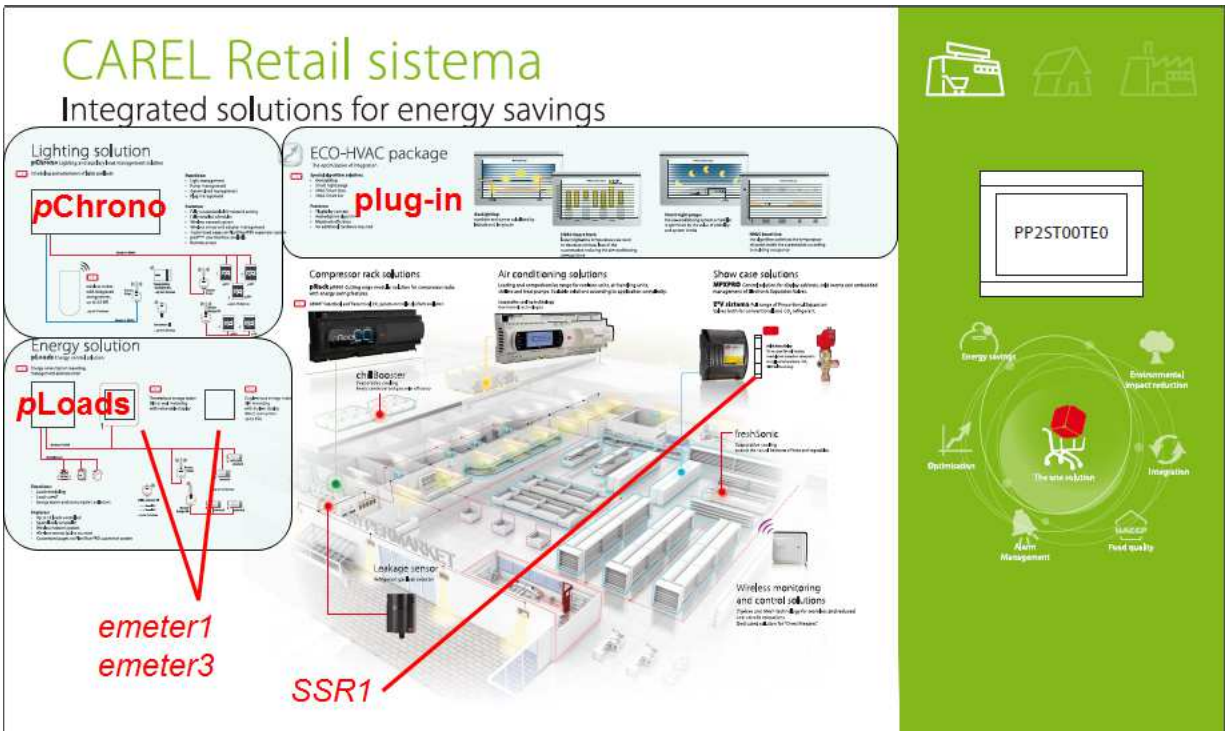

Figure 1 – Panel from the ChillVenta exhibition showing the Carel RETAIL sistema; example of a supermarket operating on 100% Carel technology. Highlighted are the new proposals for integrating NON-FOOD devices.

1. What we have developed

*p*Chrono is the new product in the Retail range designed for managing supermarket lights. However that's not all: it can also manage pumps, timed devices and 10A power sockets, integrating generic logic that is increasingly required to complete a supermarket-system.
Featuring a simple and intuitive graphic interface, its architecture comprises a series of main functions. Configuration is fast and very user friendly.
Special focus has been given to data display on PlantVisorPRO; indeed, a standard *p*Chrono model is available to let users display the complete hardware architecture on the supervisory system; details of the I/Os are available for each type of load configured.

2. Application

Functions

1. Lighting management
2. Pump management
3. Generic timed device management
4. 10A power socket management
5. Generic functions

Architecture

*p*Chrono is available in two versions: Small and Large. Up to 10 I/Os can be added using standard pCOe expansion modules. A range of wireless devices complete the architecture, so as to create a modular, flexible and expandable structure, without compromises. Both sizes come with the same configuration.
The diagram shown below illustrates the maximum extension of the solution. Two RS485 FieldBus serial lines are highlighted:

- Red: FBus2 (built-in), for the pCOe I/O expansion modules
- Blue: FBus1 (with optional card), for the wireless devices

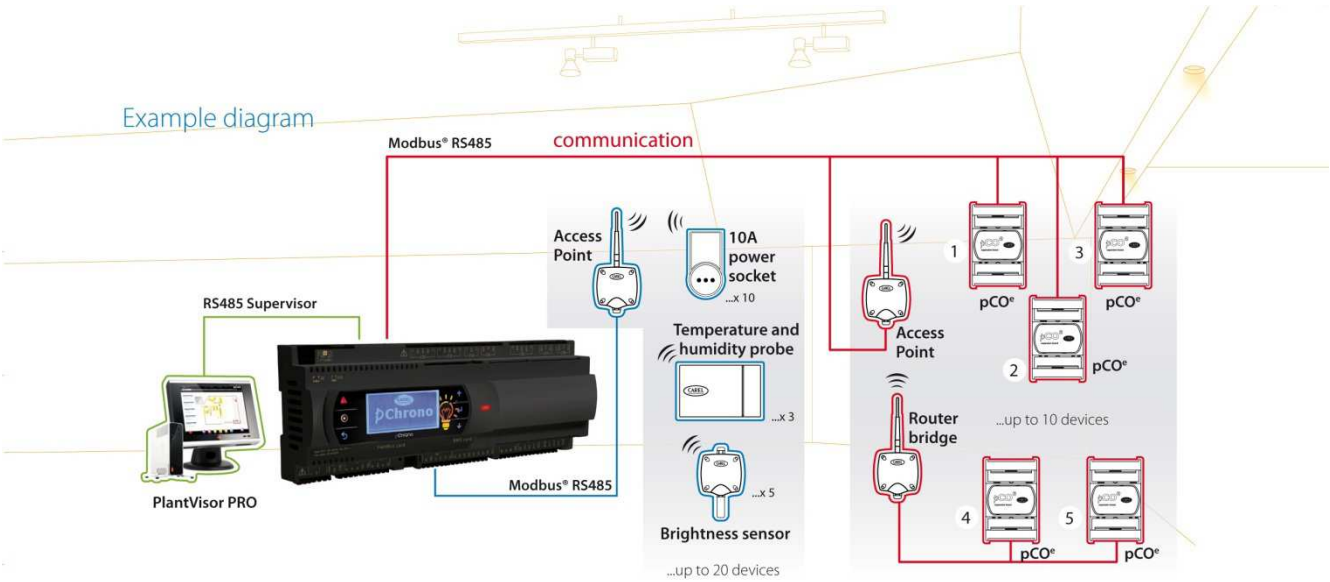

Figure 2 – Example diagram of the pChrono system hardware architecture.

The following devices are illustrated in the example diagram above:

*p*Chrono, maximum system architecture	
Device	**Number of devices managed**
*p*Chrono	1 Small or Large
Access Point	1 device on FBus1 (blue line) and 1 device on FBus2 (red line)
Router bridge	1 device on FBus1(red line)
pCOe I/O board	Up to 10 devices on FBus2 (red line)
Brightness sensor	Up to 5 devices on FBus1 (blue line)
Temperature / humidity probe	Up to 3 devices on FBus1 (blue line)
10A socket / 10A switch	Up to 10 mixed devices on FBus1 (blue line)

3. Hardware features

Product range

List of part numbers available:

*p*Chrono, part number		
P/N	**Size**	**Description**
PCH550S31UB00	S	*p*Chrono Small, pGD1 built in, Fbus/BMS opto, USB (up to 8 direct loads)
PCH550L31UB00	L	*p*Chrono Large, pGD1 built in, Fbus/BMS opto, USB (up to 18 direct loads)

connector kit for all part numbers

*p*Chrono, options / wireless devices	
P/N	**Description**
PCO100FD10	PCO1 RS485 FIELD BUS SERIAL CARD (for FieldBus port 1)
WS01AB2M20	RTM SE ACCESS POINT 12/24 Vac – MODBUS
WS01RB2M20	RTM SE ROUTER-BRIDGE RB 12/24 Vac – MODBUS
WS01F01M00	RTM SE WIRELESS SENSOR INDUSTRIAL MOUNTING SI THL -20T70G – MODBUS
WS01G01M00	RTM SE WIRELESS SENSOR WALL MOUNTING SA TH -10T60G – MODBUS
WS01C010*0	RTM WIRELESS ELECTRICITY METER AND REMOTE CONTROL 10A / 230VAC IT PLUG - MODBUS (I=IT, G=GB, F=FR, E=EU (Schuko), Z=ZA, A=AU)
WS01C010X0	RTM WIRELESS ELECTRICITY METER AND REMOTE CONTROL 10A / 230VAC UNIV. SWITCH - MODBUS

Price list and availability

The table shows product list prices and availability:

*p*Chrono, price list			
P/N	**Description**	**Availability**	**List price**
PCH550S31UB00	PCHRONO SMALL, USB, BUILT-IN DISPLAY, BMS/FBUS OPTO, CONNECTOR KIT, HKSTDmPCHP5+	January 2013 IT/EN (other languages on request)	€ 670
PCH550L31UB00	PCHRONO SMALL, USB, BUILT-IN DISPLAY, BMS/FBUS OPTO, CONNECTOR KIT, HKSTDmPCHP5+		€ 890
pChrono model	pChrono model for PlantVisorPRO; the model supports both pChrono P/Ns listed above	Starting from PlantVisorPRO version 2.1.0 IT/EN (other languages on request)	-

Software signature

*p*Chrono is sold as a complete "parametric" solution, with hardware & software not manageable separately.

General scheduler
The main scheduler, common throughout the entire software structure, offers:

- 20 daily time bands ("hh:mm" Start - "hh:mm" Stop)
- 10 time periods ("DD/MM" Start - "DD/MM" Stop)

Each load can therefore be enabled for the days of the week when this needs to be managed.

Lighting management
In the maximum extension of the architecture (controller + expansions), *p*Chrono can manage up to 60 points of light divided into 20 areas; each area can manage a maximum of 4 points of light. Lighting is configured by 'area', allowing individual points of light to be managed with the following settings:

- Scheduler only
- Scheduler + Switch
- Scheduler + Switch + Button
- Scheduler + Supervisor
- Scheduler + Supervisor + Button
- Scheduler + Lux
- Scheduler + Lux + Button

Each point of light features a maximum of 3 daily time bands and 3 time periods, chosen from those available in the general scheduler. Each 'area' can be managed in steps (up to 4) or alternatively via analogue output.
Partial lighting can be managed via time band, or using the wireless LUX sensor.

Pump management
One or two pumping units can be configured; each unit can manage one or two pumps with on/off operation. A digital output is available for switching the pumping unit on/off, rotating the pumps, plus digital inputs for overload switches, rotation times, etc.

Generic timed device management
Air curtains, dampers, lawn sprinklers, etc. can be easily managed and monitored using *p*Chrono. The main scheduler can be used to manage these types of loads. In the same way as for the lights, 3 daily time bands and 3 time periods are available, selected from the main scheduler.

10A socket management
The wireless network can be used to manage a maximum of 10 wireless devices to integrate energy meter functions. The loads connected to these, such as coffee machines, drinking fountains, plug-in showcases for special promotions, etc. can be scheduled to switch on/off based on system requirements, and monitored for energy and power consumption.

Generic functions
*p*Chrono provides up to 5 completely configurable functions that use free analogue or digital inputs, either on-board or wireless.

3. Other features

As mentioned above, *p*Chrono features a dedicated model for the PlantVisorPRO supervisory system.
The interface reflects the I/O configuration on *p*Chrono. The name assigned to the lighting 'areas', for example, is also shown on PlantVisorPRO for better comprehension.

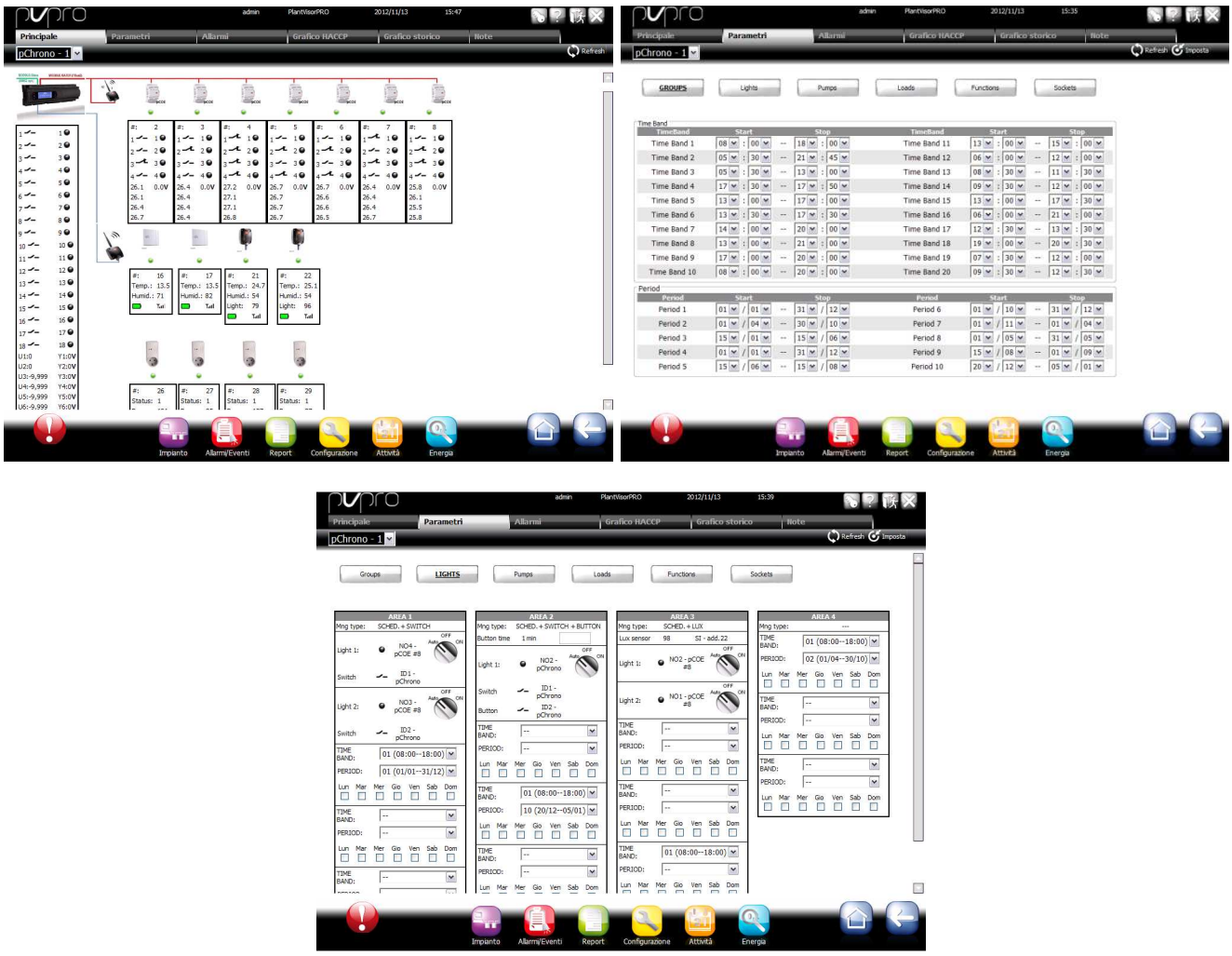

Figure 3 – Screenshots of some of the pages relating to the pChrono model. In detail: the main screen, the general scheduler and part of the lighting management page.

The simplicity of *p*Chrono makes it versatile for many applications. The structure, divided into functions, means the entire hardware network can be managed using just a few, comprehensive screens. All the information is provided clearly, and users are guided through the parameter settings and readings of the I/O.
The controller can be configured using the built-in display and on the PlantVisorPRO interface.
There is no commissioning tool for offline configuration, however the parameters can be copied between devices using SmartKey (PCOS00AKY0).

Please do not hesitate to contact us for any further information.
Best regards.