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PERSONAL AUTOMATION

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automation, supervision and energy monitoring

OPEN YOUR GARAGE TO THE NEW INTEGRATED PLATFORM

WebGarage is the latest evolution of automation and remote supervision for building services equipment:

- Ensures continuity of existing installations with the integration of new generation devices and remote management
- Collects, controls and integrates data**
- Optimises the performance of a building for its occupants in terms of **comfort, productivity, energy efficiency and sustainability**

USABILITY: THE AUTOMATION EVOLUTION



Main features:

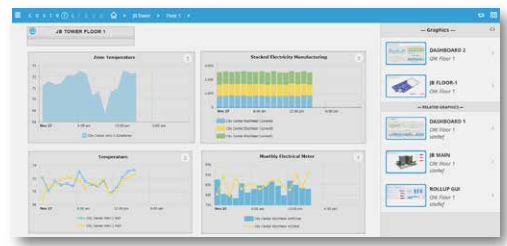
- Includes all the functionality** of a Building Automation & Control System (BACS) that supervises and controls HVAC
- Additionally provides the **benefits** of a Building Operating System to govern, display and enhance relevant data
- Based on the **Haystack open standard** and provides advanced functionality and potential through tagging and data-modelling
- Enables easier **dashboard creation**
- Advanced analytics** functions for fault diagnostics and optimisation of building performance
- Open to all possible integrations** and solutions from the Haystack collaborative community

SERIES X • Y • Z

With WebGarage the **X series**, **YLC series** and **Z series** controllers can now be integrated into a single platform using **the native protocols of the devices**

ENERGY AND ENVIRONMENTAL MONITORING VIEW

- Fully integrated within the platform
- Customisable for each user
- Total control over building performance: comfort and energy efficiency.



FROM THE PAST TO THE FUTURE

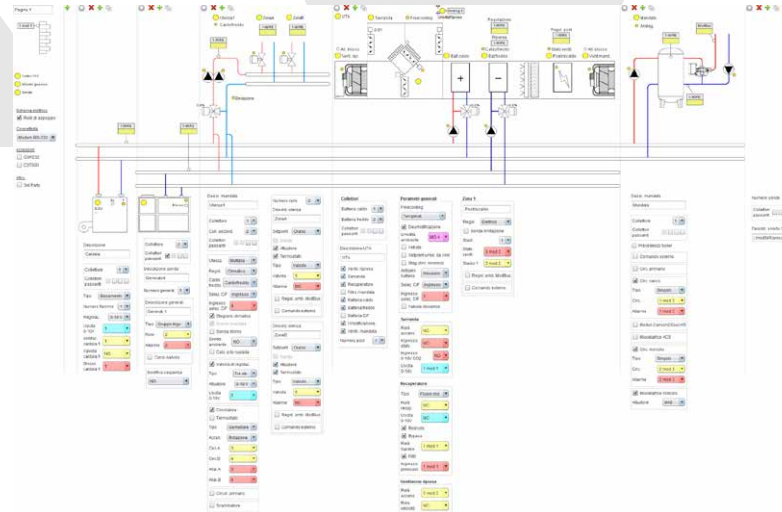
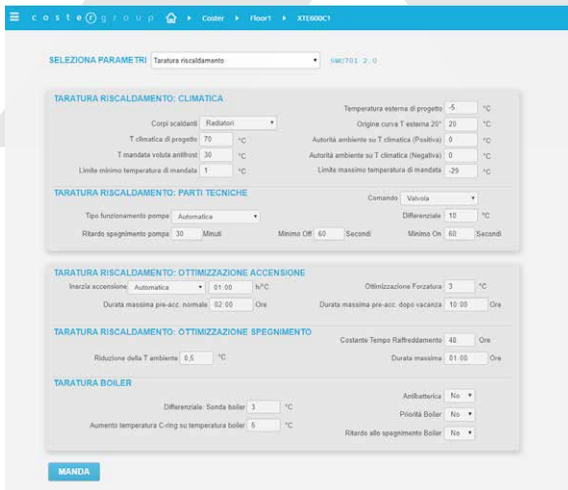


ADVANCED FEATURES

- Supervisor for BACS
- Lighting & blind control
- KNX global control
- IoT data management
- Gateway to cloud applications
- Application specific controllers
- Fire system integration
- Renewable energy management
- Energy management
- Cloud hosted applications
- Legacy Niagara™ integration
- HVAC plant control

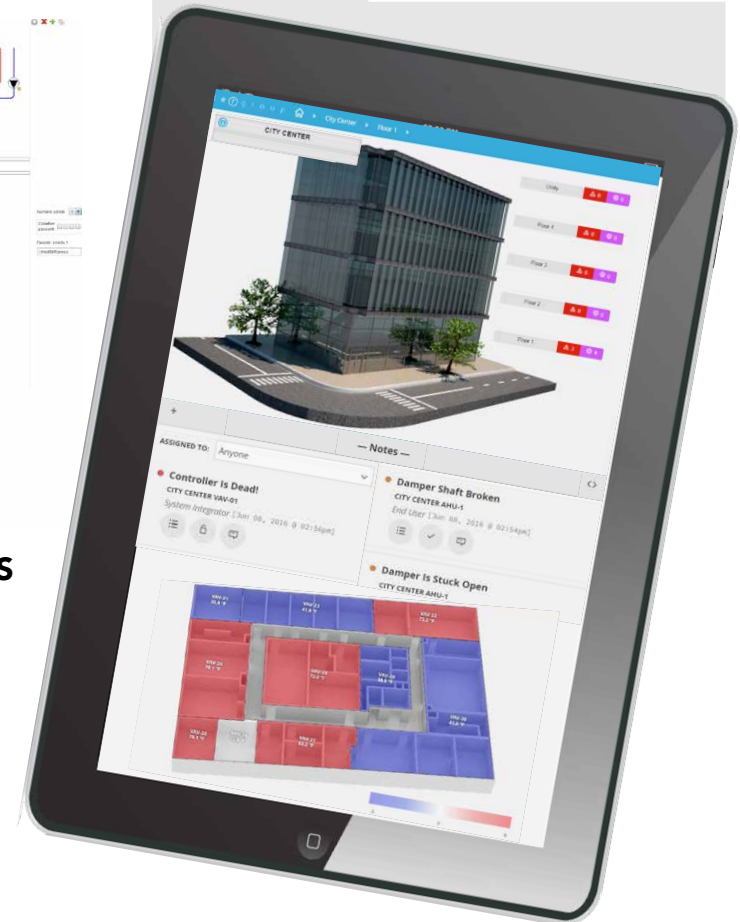
SIMPLICITY, INTEGRATION AND BUSINESS CONTINUITY

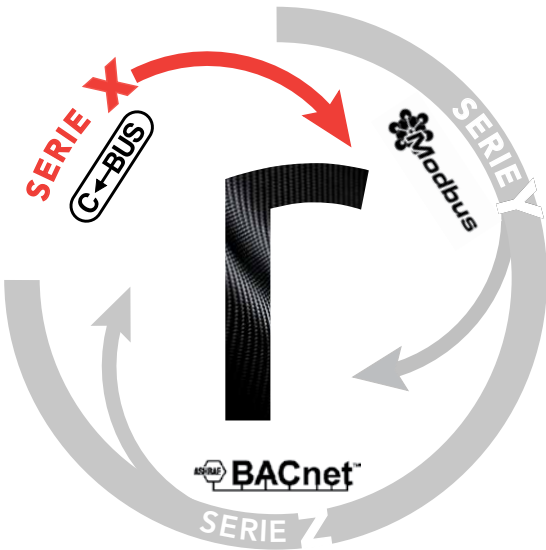
- Easy **integration of Coster Group native systems** – and third-party devices – through a simple, guided process.
- Dedicated functionalities for **communication with C-BUS** – X-series devices
- Complete **integration of standard Building Automation communication protocols** including BACnet, Modbus, KNX and MQTT
- **Importing control logic through exclusive CosterCAD software, which allows to configure complex systems through simplified operations that do not require IT skills**



ADVANCED GRAPHICS

- **Licences from 200 to 10,000 points**
- Custom graphic pages with association of physical points to advanced and customisable graphic components
- Intuitive and immediate plant performance check
- Create ad-hoc views for instant data comparison through *drag and drop points*
- Possibility to share custom views with a simple URL
- Representation of buildings and their multiple zones through complete and intuitive thermographic maps
- Optimized and responsive user experience for every device: *smartphones, tablets and PC browsers.*





XTC 638

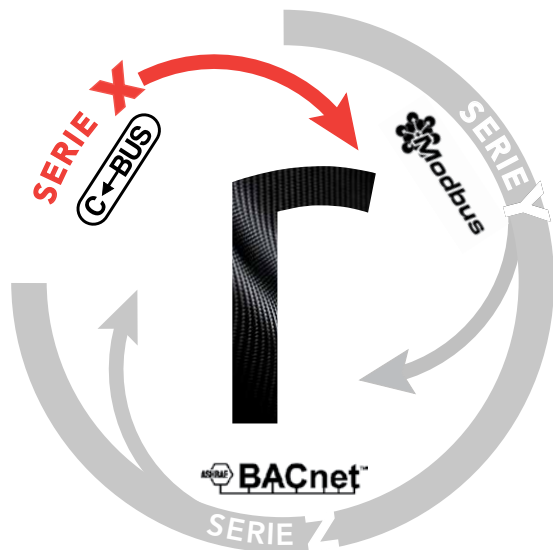


**Tele-manageable climate optimiser programmed to control a 1, 2-stage or modulating burner;
 Particularly suitable for condensing boilers
 Mixer valve control (only for single plant, boiler primary) Boiler control with load pump or other
 (except if boiler secondary)**

Digital microprocessor controller for:

- Temperature control of the boiler(s) in SEQUENCE with fixed or variable point according to the outside temperature or the request of the various users (if the controllers are COSTER).
- Control of a 1 or 2-stage burner, or modulating burner.
- Sequence control for up to 7 burners of any type.
- Climate control of the heating plant (only available in single-flow plants).
- all optimisations for heating start/end and for the plant circulation pump.
- full range of room temperature choices.
- daily, weekly, yearly clock.
- Domestic hot water storage tank temperature control (only one for each plant).
- independent daily, weekly, yearly clock.
- priority and antibacterial function.
- Automatic correction of summer time.
- Summer antilocking plant exercise of valves and pumps.
- Metering of degree-days and of operating hours of burner and number of times it is switched on.
- Alarms for detector short or open circuits and for irregular operation of plant and controller.





XTE 611

XTE 600

XTE 602



Programmable tele-manageable controllers for heating plants ON-OFF control for domestic hot water (DHW) boiler feed pump

XTE 611 digital microprocessor controller for:

- digital microprocessor controller for:
- climate control, or at a constant value, of a boiler with single- or two-stage burner or two single-stage burners in sequence (without shut-off valves).
- climate control, with or without room authority, of the heating circuit. Three-wire control of the motorised valve and On-Off control of the pump.
- constant value (or hourly program) temperature control of an additional circuit (DHW, boiler, unit heaters, etc.). On-Off control of plant component.
- acquisition of status and/or alarms regarding plant components.

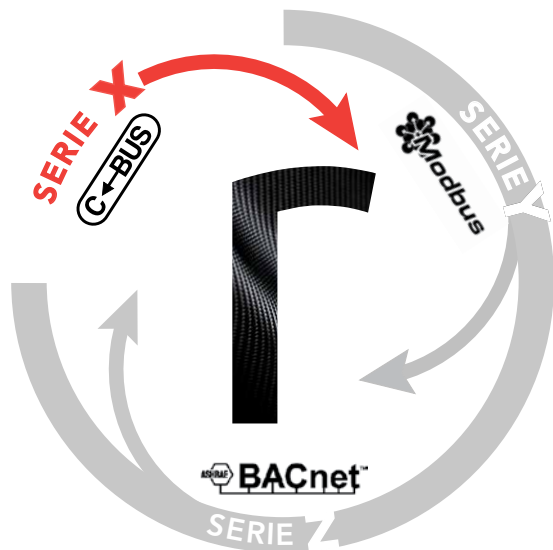
XTE 600 digital microprocessor controller for:

- climate control, with or without room authority, of a heating circuit. Three-wire control of motorised valve or On-Off control of single- or two-stage burners and On-Off control of circulation pump.
- constant value (or hourly program) temperature control of an additional circuit (DHW, boiler, unit heaters, etc.). On-Off control of plant component.
- acquisition of status and/or alarms regarding plant components.

XTE 602 digital microprocessor controller for:

- climate control, with/without room authority, of two heating circuits. Three-wire control of motorised valve and On-Off control of circulation pumps.
- acquisition of status and/or alarms regarding plant components.





XSE 600

XSE 602



Expansion controllers that can be combined with a "Primary" controller via C-Ring Telemanagement

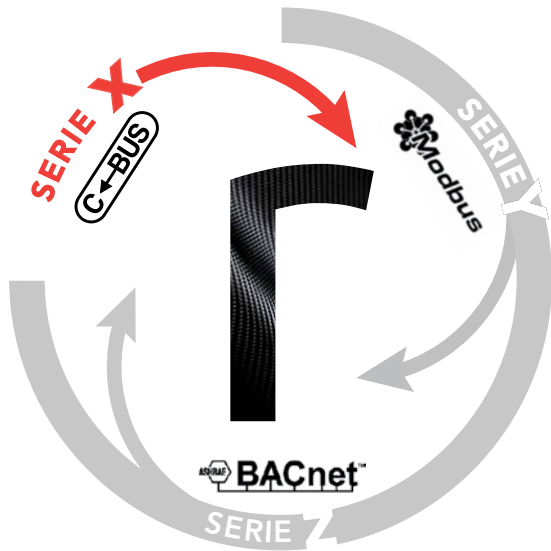
XSE 600 digital slave microprocessor controller requires to be combined with a main controller (XCC or XTE); suitable for:

- climate control, with/without room authority, of a heating circuit. Three-wire control of motorised valve or On-Off control of single- or two-stage burners and On-Off control of circulation pump.
- constant value (or hourly program) temperature control of an additional circuit (DHW, boiler, unit heaters, etc.). On-Off control of plant component.
- acquisition of status and/or alarms regarding plant components.

XSE 602 digital slave microprocessor controller requires to be combined with a main controller (XCC or XTE); suitable for:

- climate control, with/without room authority, of two heating circuits. Three-wire modulating control of motorised valves and On-Off control of circulation pumps.
- acquisition of status and/or alarms regarding plant components.





IET 71.. IET 73..



- Heating and cooling energy metering
- Energy and volume impulse relaunch
- Domestic hot and cold water consumption metering

“Universal” counter **IET 71.. with impulse relaunch and IET 73..**,

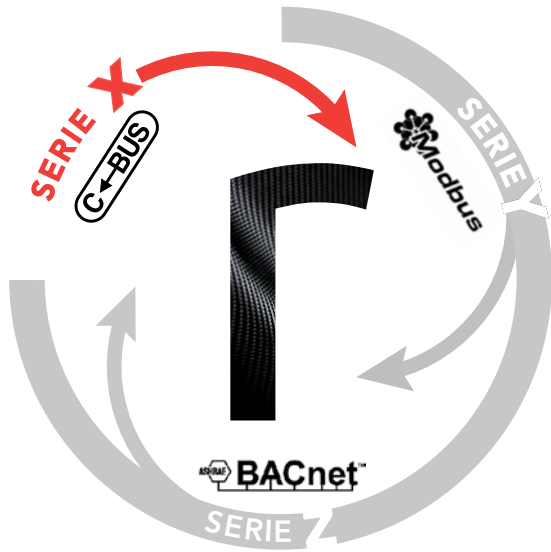
“Universal” counter **IET 73..**

It can be combined with a volumetric counter and temperature sensors,
for calculation of the thermal and/or cooling energy used in heating and/or air conditioning plants.

Power supply 24V or 230V.

serie





Equipment to be integrated in the near future



XTT 608 Controller for district heating substations



XTT 618 Controller for district heating substations



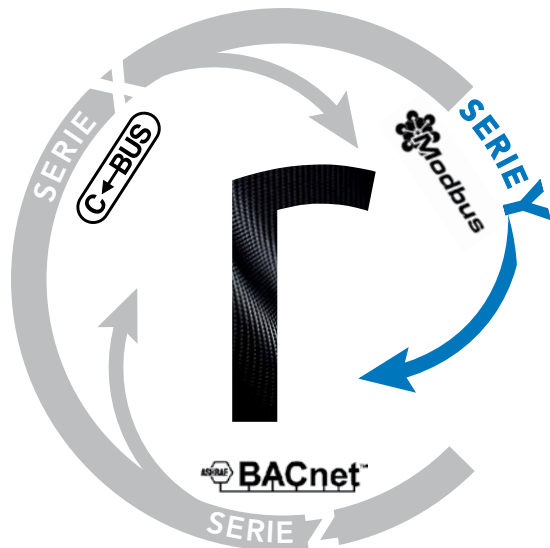
XPT 678 Controller and Room Temperature Optimisation for 5 user circuits and boiler

UAC 32. Alarm collection unit (ON-OFF inputs)

ULT 3.. 2 and 4 temperature measurement

serie X





YHC 700



This Modbus connected network manager device is an integral part of the YLC Series plant control and monitoring system. It allows data exchange between the YLC 880 controller and alarm transmission, enabling remote access to field devices through MDM 232 or via Ethernet cable.

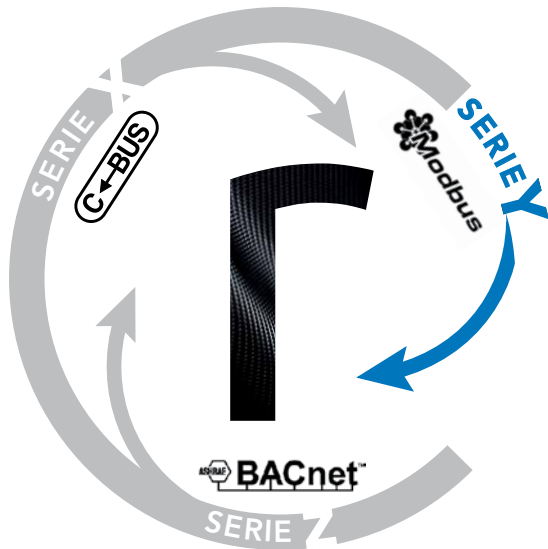
- Supports the periodic sending of data to the Cloud through HTTPS
- Can communicate with the supervisor in ModBus/TCP-IP or ModBus/RTU
- Works either with Internet access and in local network only.
- Can be connected to CDP 180 and 120, for the integration of M-BUS devices
- Records monitored data periodically, with CSV format data export option
- Remotely and locally upgradeable software

- 1 6 module wide DIN rail housing
- 1 RS232 port
- 2 RS485 ports
- 1 Ethernet port
- 1 USB micro port
- 1 USB port
- 1 12 V DC Power supply

Usable in three types of system:

- Control with YLC 740/880
- Energy monitoring
- Hybrid or Mixed (control and monitoring)





YHC CWE



This Modbus connected network manager device is an integral part of the platform for YLC Series plant control and monitoring system. It provides WEB ACCESS WITH 200 POINT EMBEDDED LICENSE.

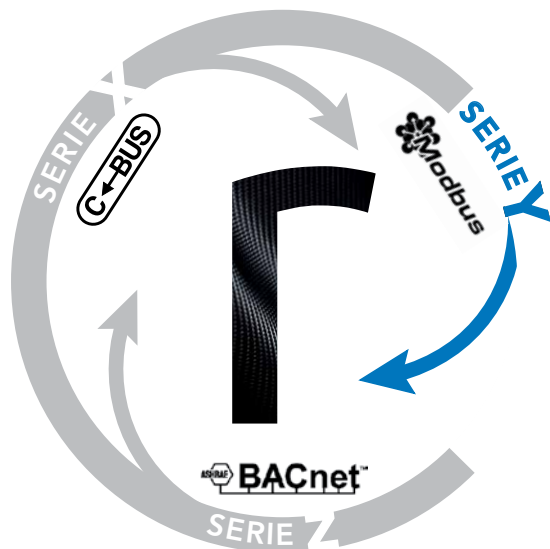
- Same features as the YHC 700, combining the advantages of the supervision platform, integrated on a compact hardware platform.
- Includes simple customised graphics that enable data to be reviewed through a user-friendly web browser interface
- Remotely and locally upgradeable software

Usable in three types of system:

- Control with YLC 740/880
- Energy monitoring
- Hybrid or Mixed (control and monitoring)

- 1 WEB GARAGE License 200 embedded points
- 1 6 module wide DIN rail housing
- 1 RS232 port
- 2 RS485 ports
- 1 Ethernet port
- 1 USB micro port
- 1 USB port
- 1 12 V DC power supply





YLC 880



Multi-configurable controller in heating plants, cooling plants, domestic hot water production, air treatment and automation in BMS area
 It records the plant behaviour, storing the operating parameters and settings, allowing the analysis and detection of faults.

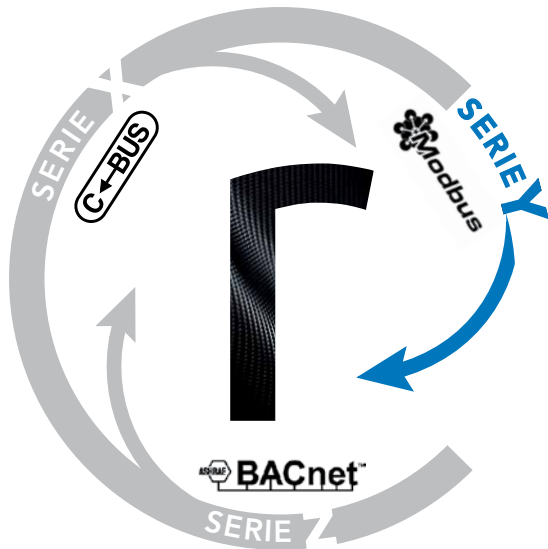
Programmable through **costercad**[®]

FLEXIBILITY: a single product that can be adapted to any type of plant, from the simplest thermal plant to the most complex systems;
SCALABILITY: the expansion modules allow to increase the number of inputs and outputs referred to the single controller. Furthermore, if a plant consists of several individually controlled technical rooms, it is possible to create a communication between the various control units through YHC;
SIMPLICITY: the programming menu is intuitive and it can maintain the same structure on any type of plant through YHC;

ACCESSIBILITY: with a MDM 232, 3G modem or connection with YHC it is possible to carry out remote control of the controller, know the plant status and configure the sending of specific alarm messages.

- 1 8 module wide DIN rail housing**
- 8 230V Output relays**
- 2 0...10 V Outputs**
- 8 Analogue/digital inputs**
- 1 RS232/RS485 port**
- 1 Ethernet port**
- 1 USB micro port**
- 1 Bus 1-wire**
- 1 Bus RS485 bus for connection to the expansion modules bus (Modbus)**
- 1 12 V DC power supply**





PEU 002



Analogue output expansion module 0-10V, able to communicate with YLC 740/880 control units. The module is provided with RS485 port that makes communication possible through the Modbus RTU 485 protocol.

- 1 3 module wide DIN rail housing
- 1 12V DC power supply
- 2 Outputs 0...10 Volts
- 1 RS485 bus for connection to the expansion modules bus (Modbus)

CST 800

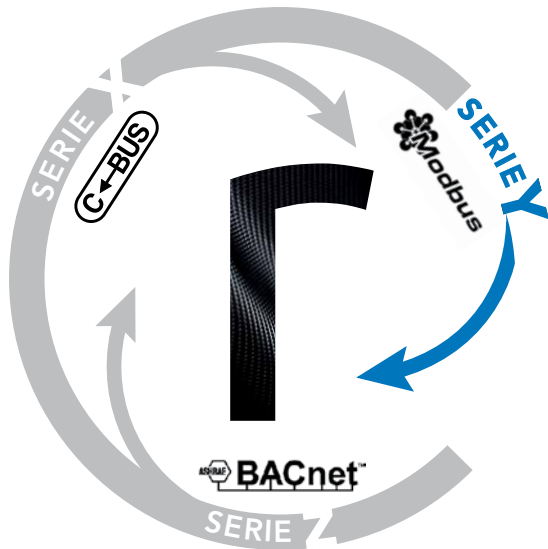


Analogue input expansion module (temperature sensors), able to communicate with YLC 740/880 control units.

The maximum number of CST 800 units that can be connected to each YLC is 2 for a total of 16 sensors.

- 1 3 module wide DIN rail housing
- 1 12V DC power supply
- 8 inputs for PT 1000 sensors
- 1 RS485 bus for connection to the expansion modules bus (Modbus)





BRG 868C

Receiver that allows to create a radio connection with one or more BRG 868 (up to 32) in turn connected to field devices through RS485 bus. The Receiver guarantees bidirectional communication between the elements connected to it..

The result is a flexible and intelligent management of resources, aimed at using the potential offered by each instrument involved in the control.

- 1 1 module wide DIN rail housing
- 1 12V DC power supply
- 1 RS485 serial port for connection to the master
- 1 SMA antenna connector
- Upgradeable firmware

costergroup.eu



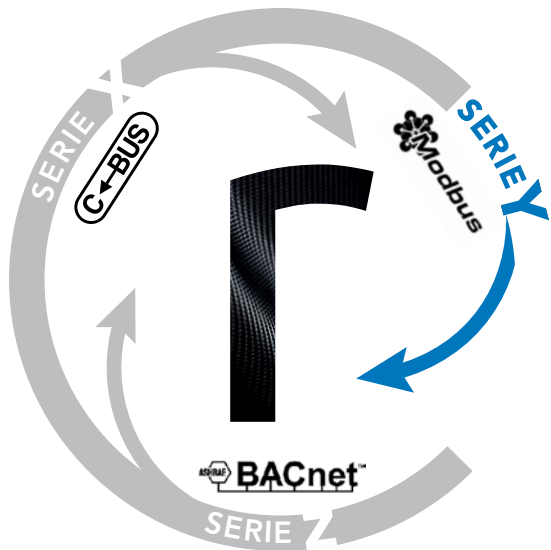
BRG 868

Bridge module that allows to create a radio connection between the BRG 868C Bridge Receiver and one or more field devices.

The BRG 868 module ensures bidirectional communication between the elements connected to it. The module allows wireless communication between the elements of a control system (e.g. communication between YLC 880 and expanders).

- 1 1 module wide DIN rail housing
- 1 12V DC power supply
- 1 RS485 serial port for connection to the master
- 1 SMA antenna connector





CSW 868

The wireless sensor receiver allows to create a radio connection between a Master and one or more radio sensors (up to 40).

Bidirectional communication with the radio sensors. The result is a flexible and intelligent management of resources, aimed at using the potential offered by each instrument involved in the control..

- 1 1 module wide DIN rail housing
- 1 12V DC power supply
- 1 RS485 serial port for connection to the master
- 1 SMA antenna connector

THP 868



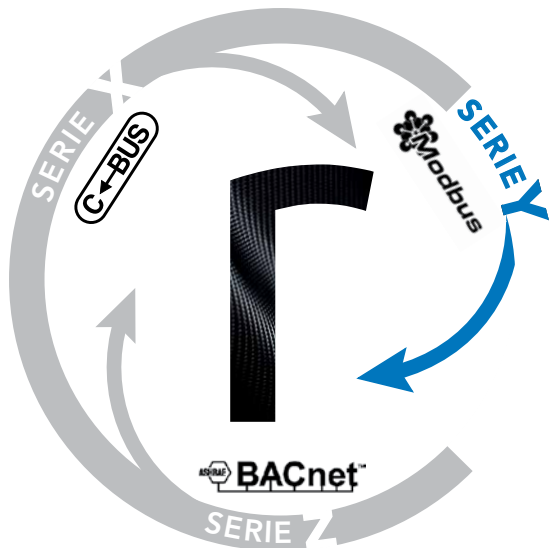
The wireless sensors are able to acquire and transmit to the CSW 868 Receiver the temperature and relative humidity values acquired by the system in which they are installed.

- 1 Container 80 x 80 x 25 (mm)
- 1 Acquisition button
- 1 Internal RTC
- 1 Signalling LED
- 1 Micro-USB port for data logger download
- 1 Integrated antenna
- 1 Wall mounting plate

Waterproof versions also available

STT 868H - STU 868H





MDM 232



The 3G modem guarantees bidirectional communication between the field devices (YLC, YHC700) and the control station.

It is possible to:

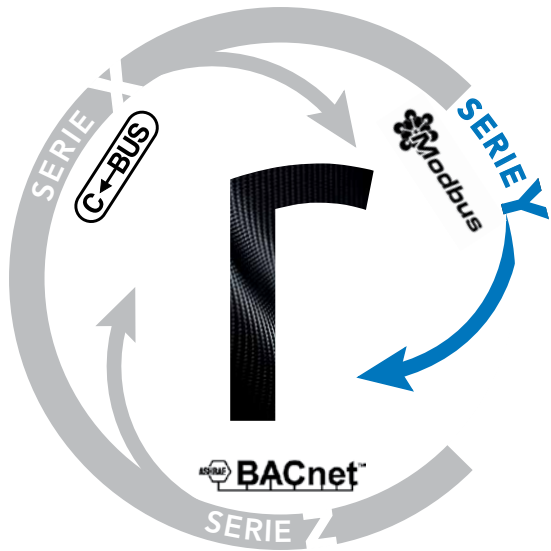
- monitor the system status (temperatures, alarms, ...);
- change the operating times;
- program extraordinary suspensions and switch on;
- start, change or stop the operation of any user;
- configure the sending of specific alarm messages.

NOTE: GPRS/TCP connection is available only if the SIM card inserted in the modem allows the use of a public IP (it must be verified with the operator from whom the SIM card is purchased).

- 1** 1 module wide DIN rail housing
- 1** 12V DC power supply
- 1** Digital input for sending alarms (text messages and/or e-mail)
- 1** RS232 serial port
- 3** LED di segnalazione
- 1** Slot for inserting the SIM card

serie





CDP 120

CDP 180

MBus/ModBus protocol converter for thermal energy counter data acquisition.

CDP 120 for a maximum of 2 thermie/volume meters CDP 180 for a maximum of 8 thermie/volume meters

Each MBUS/MODBUS converter module can read data from a bus unit load of up to 2 or 8 metres (1 unit load corresponds to a current consumption of 1.5 mA of one participant depending on the converter type. The values to be read are freely configurable and are automatically queried in selectable time periods.

It can be combined with YLC 740 and YHC 700



- 1 1 module wide DIN rail housing
- 1 RS 232 serial port
- 1 signalling LED



serie



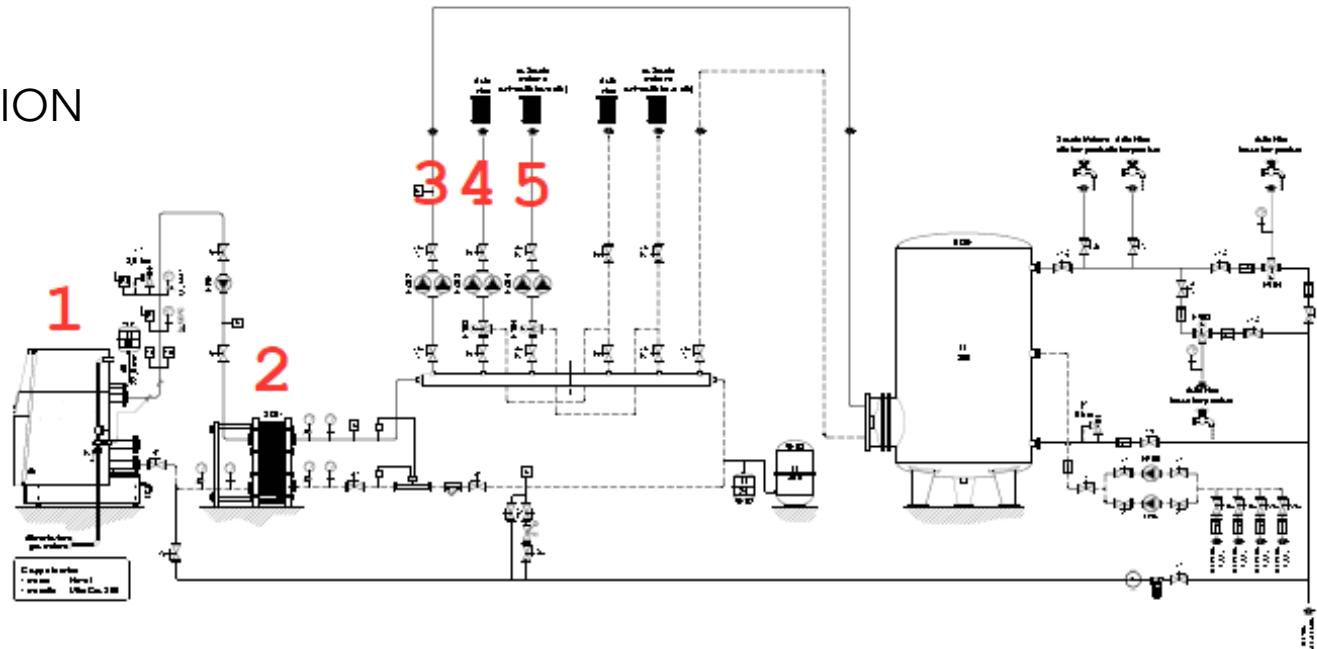
Full adjustment, easily programmable, web-based plant supervision

costercad[®] Full adjustment, easily programmable, web- based plant supervision

Software to program the YLC controllers simply by drawing the hydraulic diagram of the plant to be controlled. The hydraulic modules must be assembled together.

A GENERIC PLANT CONSISTS OF THREE PARTS: PRODUCTION, DISTRIBUTION, USERS.

1. **BOILER:** PRODUCTION
2. **EXCHANGER:** DISTRIBUTION
3. **DHW:** UTILITY
4. **CLIMATE:** MIXED USERS
5. **CLIMATE:** MIXED USERS



costercad[®]

Each item selected from the menu is interpreted by the software as a tile of the control system. The file generated by CAD provides the device with the necessary information to control the plant, communicate with the outside, configure the user interface, recognize and send alarms.

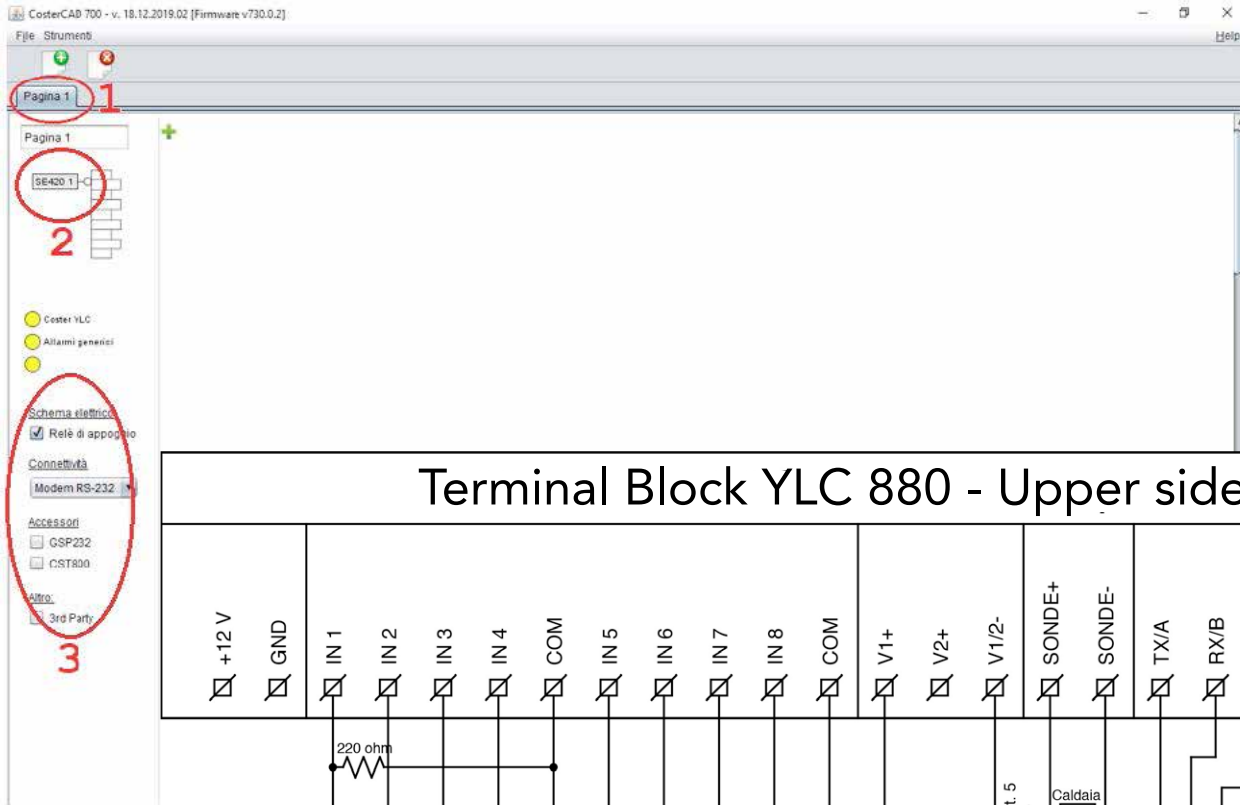
If a plant to be automatically controlled is drawn with CosterCad, the following will be generated:

- the YLC control program;
- the synoptic, used by ClimaOffice and WebGarage for telemanagement;
- the wiring diagram for the control system field wiring;
- instructions for configuring the YLC controller menu from keypad;
- the map of modbus registers, for interfacing the YLC controller with third party software and devices (SCADA, PLC, ...).

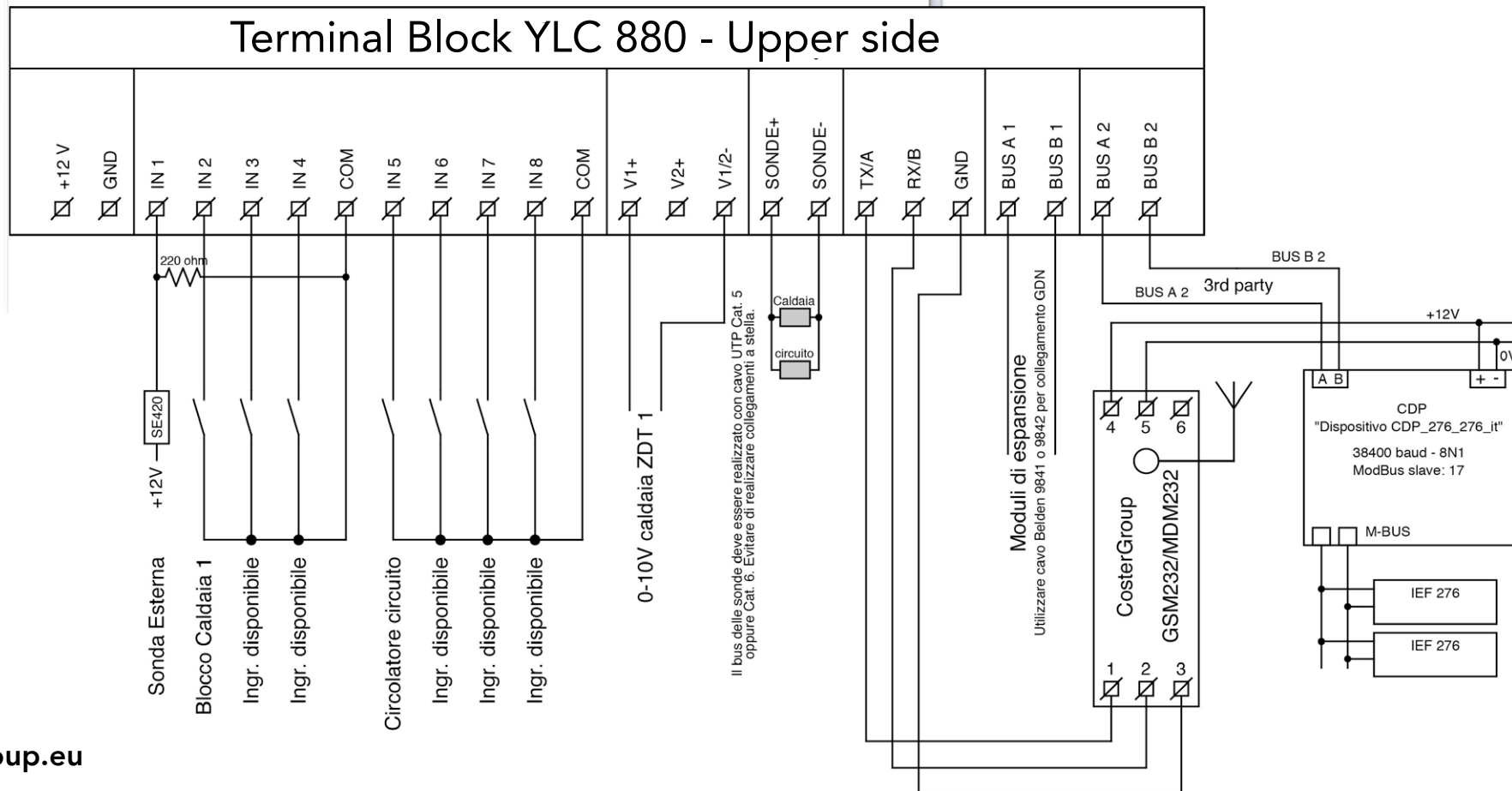


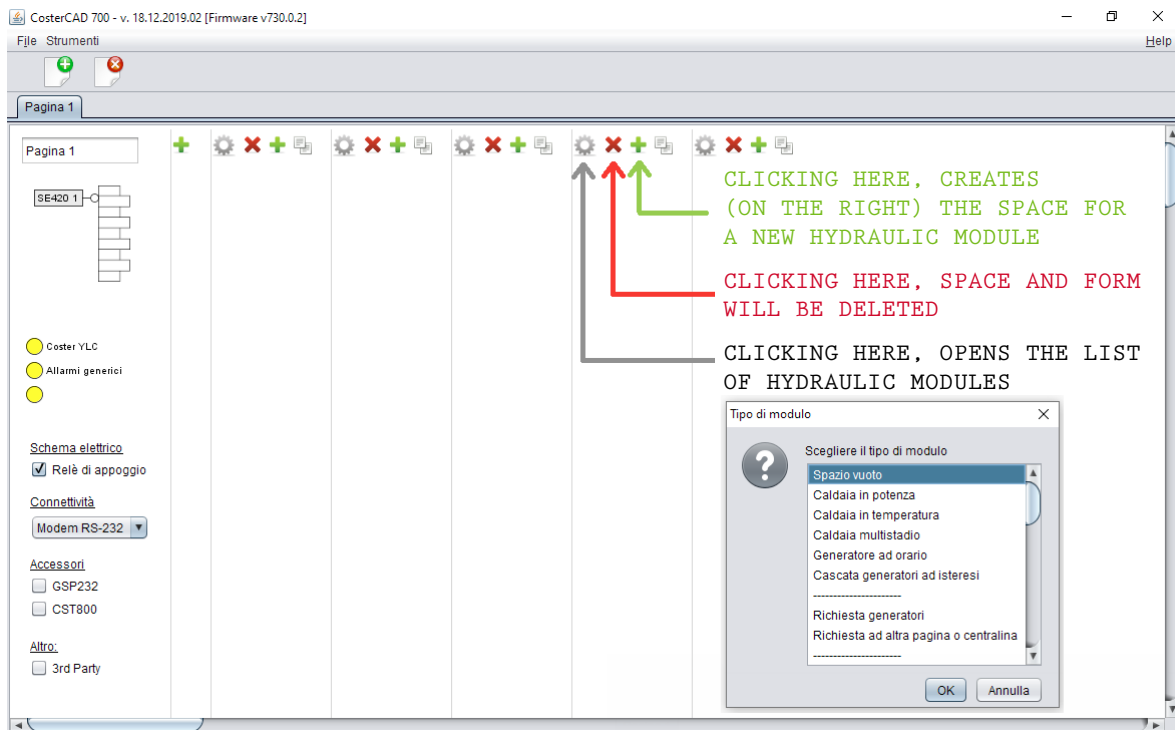
One click on CosterCad to start a new project or open a project to be changed





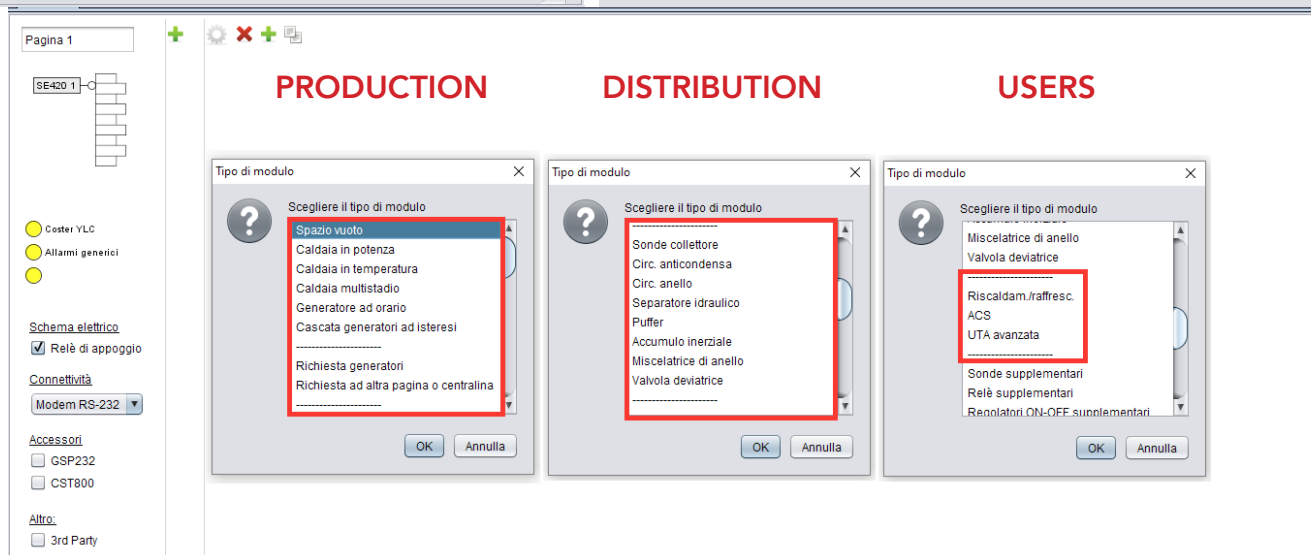
- 1) Page number: it is possible to divide the synoptic into several pages
- 2) Outside sensor (configurable)
- 3) Accessories: the support relays and devices for connecting the YLC with the outside world (MDM, Ethernet, RS485, etc.) can be selected. The selected devices will be included in the wiring diagram.





A few simple guiding steps allow you to replicate each thermotechnical project by linking the control logic to the designed object.

There are different types of modules that can be selected from a practical drop-down menu.



After the modules have been configured, the plant looks like this

Assignment of inputs and outputs

The screenshot displays the Costercad software interface for configuring a heating plant. On the left, a schematic diagram shows the plant layout with components: a Generator (Generatore), a Separator (Separatore), two heating zones (ZONA 1 and ZONA 2), and a Domestic Hot Water (ACS) system. Red lines represent inputs, yellow lines represent relay outputs, and blue lines represent 0-10V outputs. The right side of the interface contains configuration panels for each component, with various settings such as relay outputs, valve types, and control modes.

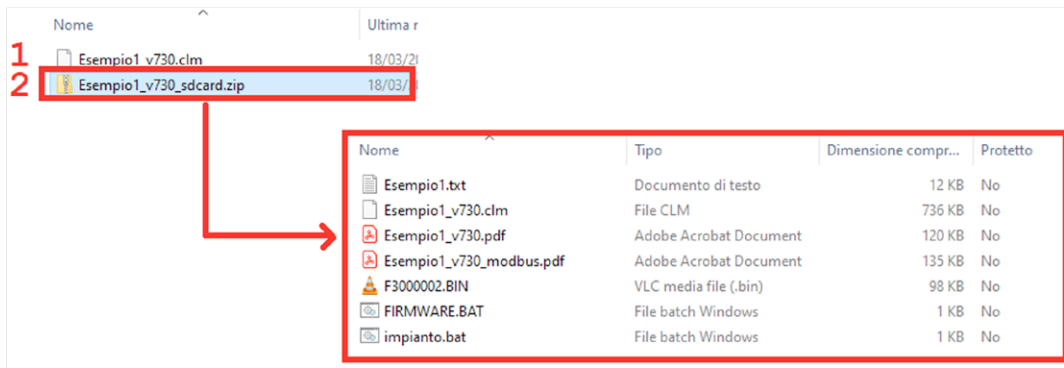
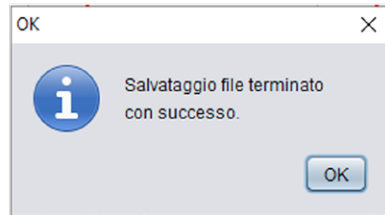
Component	Relè	Alarme	Uscita 0-10V	Circ.	Allarme
Generatore	1	1	1	2	2
Separatore	-	-	-	-	-
ZONA 1	-	-	-	-	-
ZONA 2	-	-	-	-	-
ACS	-	-	-	-	-

At this stage, the following are assigned:

- Relay outputs (YELLOW) > YLC, PEC
- Outputs 0-10V (BLUE) > YLC, PEU
- The inputs (RED):
- Analog > YLC
- On/Off > YLC, PEC
- The recirculation mix: the MAS is a modbus controller connected to the expansion module bus.



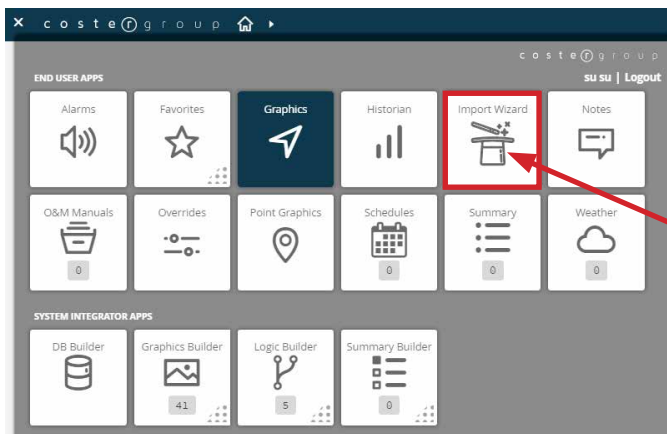
costercad[®] Saving the project



During saving, 2 files are generated:

1. A .clm file that encloses the project. The controlling can be changed by re-opening the .clm file.
2. A sdcard.zip folder containing 7 files:
4 files necessary for programming the YLC controller,
1 copy of the .clm file and 2 .pdf documentation files.

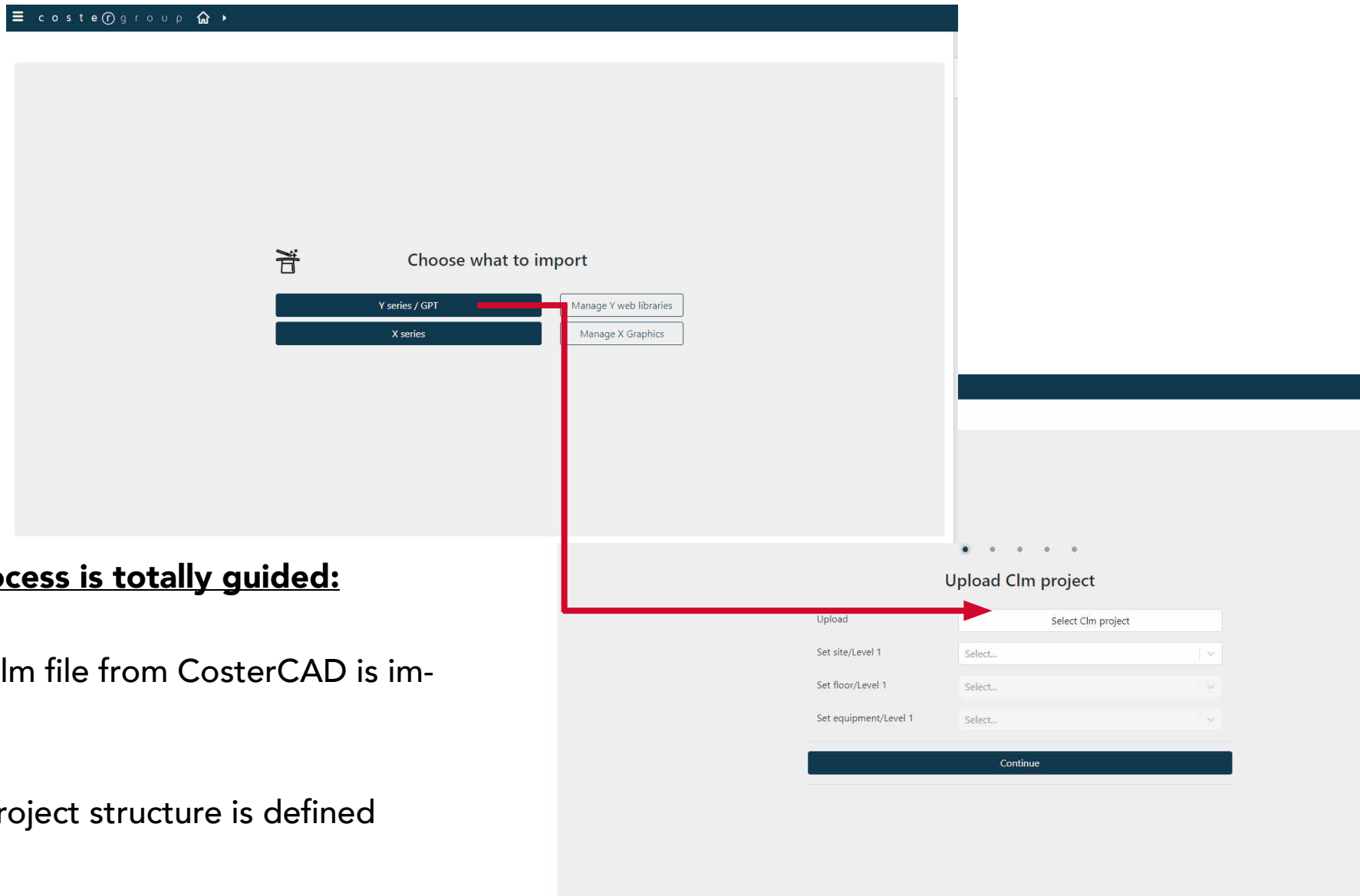
Import costercad[®] in WEBGARAGE



Through the "Import Wizard" application, it will be possible to import in projects created with the Tool costercad[®]



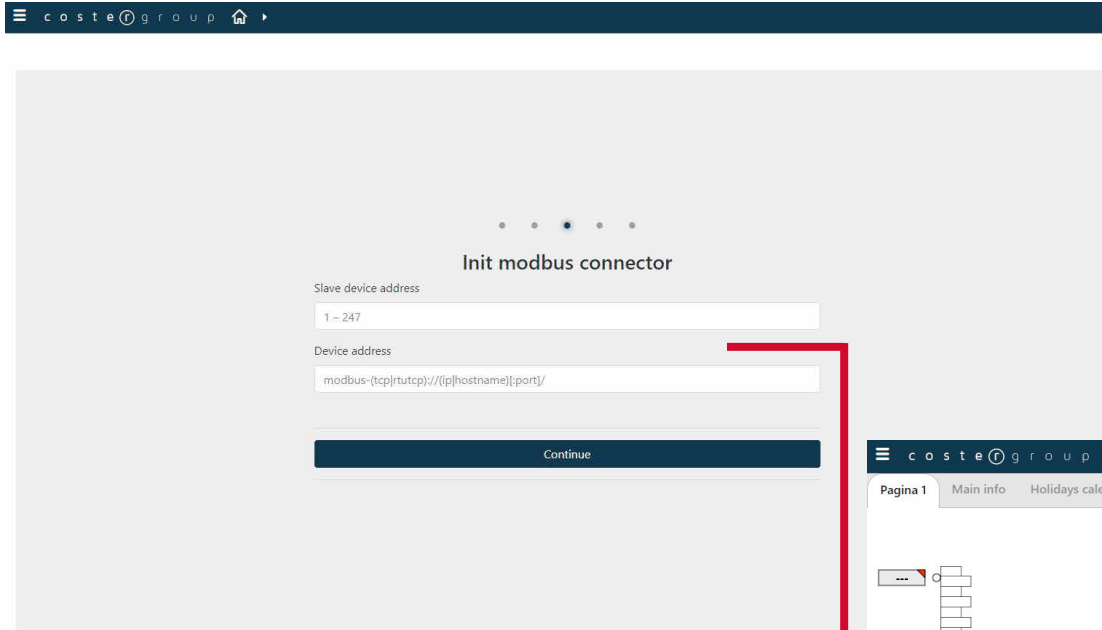
Import costercad[®] in WEBGARAGE



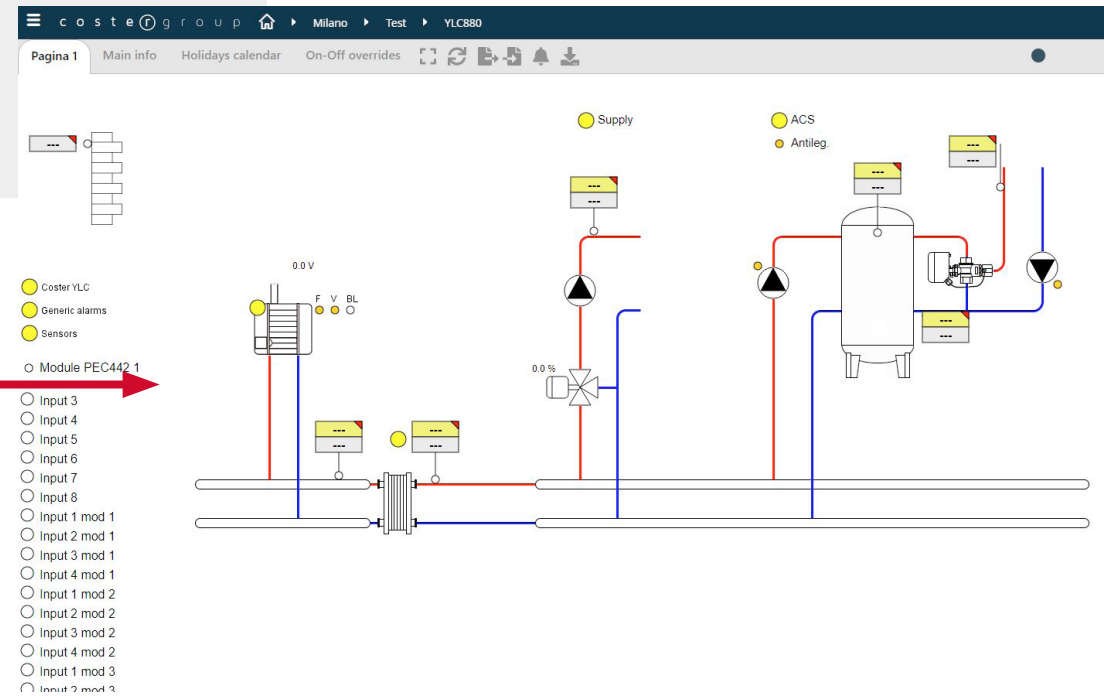
The process is totally guided:

- The .clm file from CosterCAD is imported
- The project structure is defined

Import costercad[®] in WEBGARAGE



- The communication parameters are entered and the synoptic is displayed through the process.
- The plant is ready to be controlled remotely!



1 Application opening
IMPORT WIZARD

2 Display selection
Y series and X series and
wizard start

3 Plant data entry

costergroup Milano Test YLC880

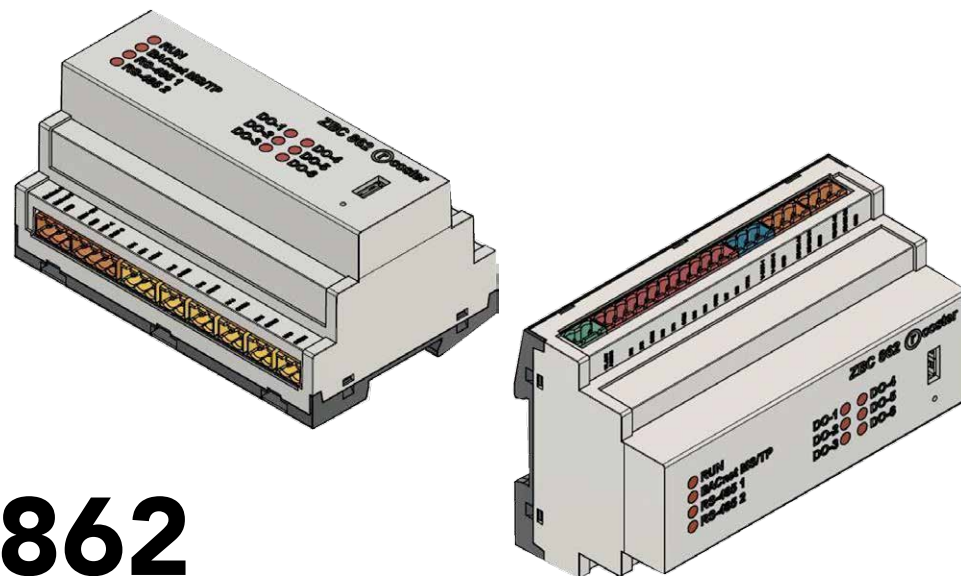
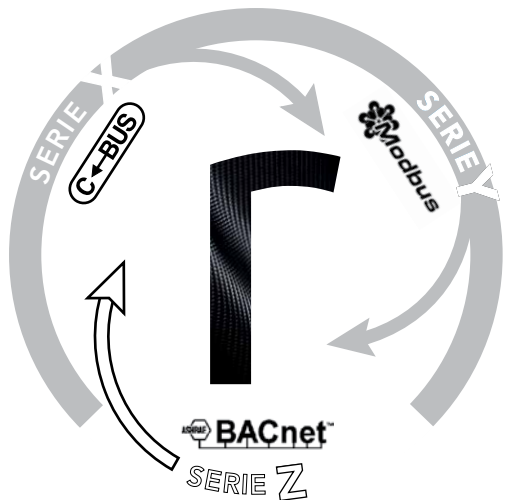
Pagina 1 Main info Holidays calendar On-Off overrides Reading... (15/125)

4 Screen display

IMPORT WIZARD

- Simple and guided
- Choice of default settings (point historization and alarm management) for Plug&Play® plant management
- No need for customised graphics for complete plant management





ZBC 862

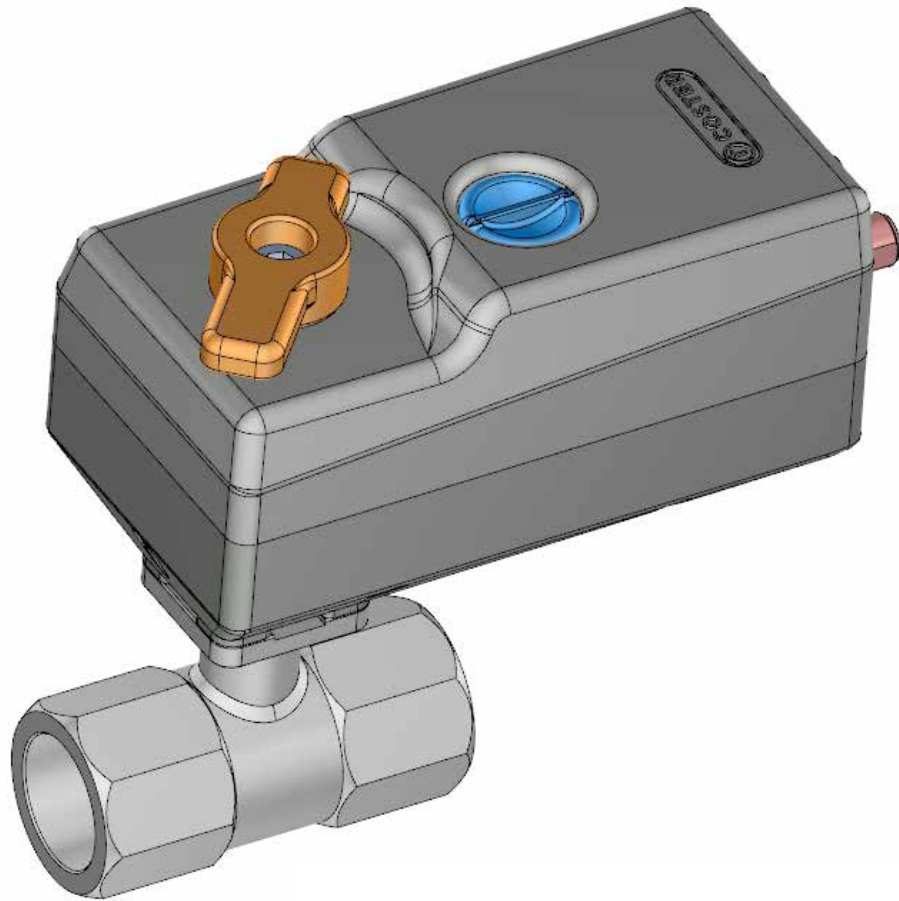
Configurable and freely programmable BACnet/MSTP controller

- Configurable and freely programmable through CosterCAD software.

The application can be downloaded through USB or remotely through BACnet/MSTP port;

- Terminals coloured according to their type and in analogy to CosterCAD programming;
- 12V DC or 24V AC power supply;
- 2 Serial Ports: dedicated for Costergroup expander communication (PEC442, ESP442, CST800, CSW868) and 3rd party device integration;
- 6 DO/digital outputs (6A Relay) – 1 NC (normally closed) and 6 NO (normally open);
- 2 AO/analogue outputs 0-10 V DC;
- 8 UI/Universal Inputs (NTC10k, NTC1K, PT1000 passive sensors, 0-10V DC and 4-20 mA signals acquisition and DI contacts);
- Compact controller size 8-DIN;
- 6 LEDs for digital output status indication (Relay);
- 4 LEDs for operation signalling:
 - Device status (information on power supply, alarms, application loading etc.)
 - BACnet/MSTP port communication status to BMS
 - Costergroup expansion modules communication status
 - 3rd party RS485 system integration communication status.





Intelligent control with 230 V power supply installed on a two-way or three-way equipercental ball control valves with ISO 5211:2017 - F03 connection.

Driving and check via Modbus protocol or with 0-10V DC or three-point signal.

Possible connection in BUS with Modbus/ RTU protocol; integration and display of signals detected by the control (limit switches, universal input measurement, etc.).

Actuator release knob to allow manual movement of the valve and quick re-engagement of the kinematic chain.

Up to three universal inputs available on the single control (PT1000 resistive sensors, NTC, digital and analogue inputs).

Expandable with I/O modules from the YLC controller family. The control provides power supply and bus connection.

Actuator limit switch auxiliary contacts (total open/close position).

ace®

