Supervisor and Monitoring Solutions

Systems for the management of retail environments and HVAC/R applications

COPELAND
Engineered for Sustainability

Supervisor and monitoring solution

The **XWEB PRO** system family is an innovative solution for optimal management of retail environments and HVAC/R applications. Its powerful hardware ensures peak performance, boasting high processing speeds and an exceptional visualization experience via the web user interface. The interface has been carefully crafted to provide easy and swift access to critical information, whether local, remote, or mobile. With its Wi-Fi optional interface, the system facilitates fast, seamless, and secure accessibility from your mobile device, eliminating the need for cabled network infrastructures.

The XWEB PRO system family offers precise control over devices and utilizes dedicated algorithms to optimize site performance and reduce energy consumption. It is rationally designed to achieve energy savings, thus reducing operational costs and contributing to environmental preservation. Our solutions are synonymous with quality, user-friendliness, and efficiency, as they are tailored to meet the needs of end users.

The scalable solutions

The series offers maximum adaptability suitable for every kind of application, from petrol station, to hypermarket, convenience stores and restaurant chains.

Petrol stations

Shops

Restaurants

Supermarkets

Hypermarkets

XWEB300D
Alarm management and controlling

XWEB500D & XWEB500B
Monitoring, controlling and energy optimization

XWEB1000D
Monitoring, controlling also in CO_2 applications

XWEB5000
Monitoring, controlling, energy optimization and supervision also in CO_2 applications

Wi-Fi connection and responsive web pages

XWEB PRO enables Wi-Fi connectivity through the optional NANO-Wi-Fi dongle (with optional CAB/USB15: 1.5m USB extension). This feature allows for connecting XWEB PRO to an existing Wi- Fi network or creating a dedicated Access Point, enabling access via common mobile devices (Smartphone, Tablet, or PC) without the necessity of wired network infrastructures. Designed with maintenance technicians and system managers in mind, this feature facilitates quick and secure connections, avoiding the need for intrusive access to the shop or warehouse network.
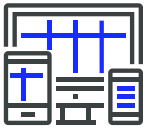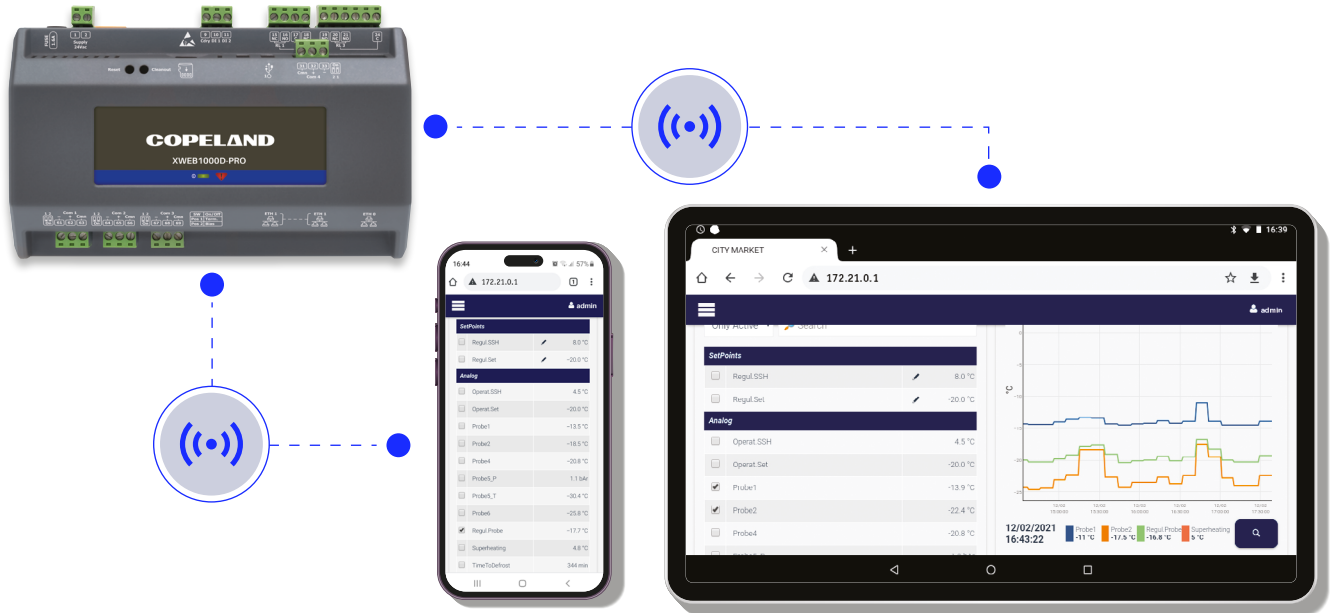
The web user interface, including graphics, floor plans and HACCP reports is accessible on devices of any screen size, such as smartphones, tablets, and PCs. Thanks to the responsiveness of the pages, they automatically adjust to the device being used, ensuring the user always enjoys the best possible view without needing to manually adjust the screen size.

Simplified and enhanced fieldbus

A distinguishing feature of the XWEB PRO family is the availability of multiple serial lines, which vary depending on the model (up to 4 for XWEB1000D), enabling the management of distinct instrument networks with tangible benefits for installers, maintenance technicians, and plant managers.

- Improved data communication speed between controllers and the XWEB system

- Reduction of interferences caused by possible malfunctions in one section, while ensuring the proper operation of the remaining sections to prevent a complete blackout

- Simplified drafting and configuration of networks in the workshop; for example, one network for refrigeration, one for HVAC, and one for lighting management

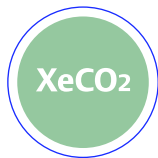- BMS communication for both parameter reading and modifications
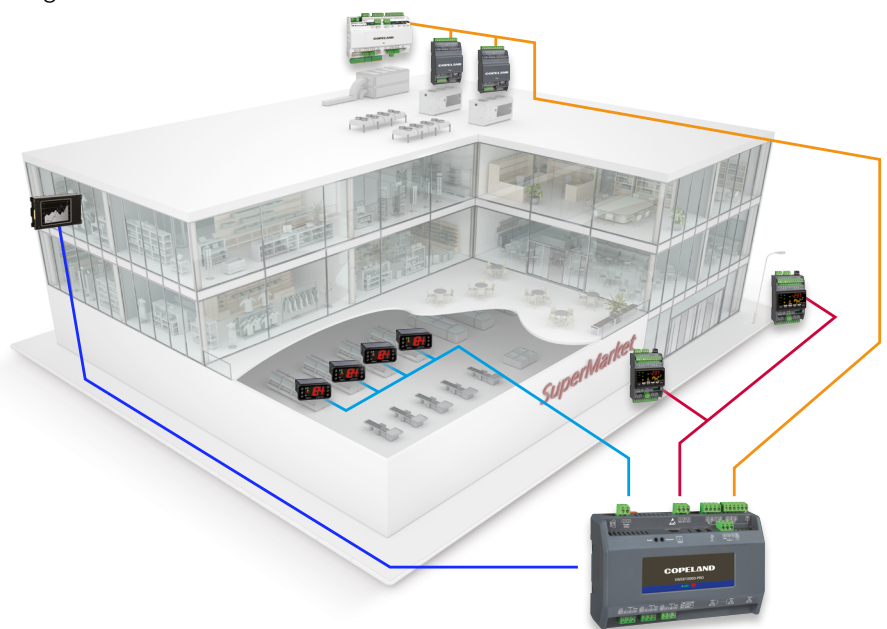
Energy saving

XWEB PRO systems feature advanced algorithms designed to optimize application efficiency, resulting in increased energy savings. Among the most significant solutions are: the $XeCO_2$ system, the CRO function and the Dew Point for anti-sweat heater control.

$XeCO_2$

$XeCO_2$ is a comprehensive and innovative system that enables safe operation with overfeed evaporators while optimizing CO_2 plant management. Through seamless integration with XWEB PRO, XM700 (refrigerated cabinets), and iProRACK (compressor racks), their coordinated operation enhances both efficiency and safety. Users can benefit from:

- consistent performance across all seasons, including warmer climates;
- utilization of the complete evaporator surface to enhance cabinet cooling capacity;
- elevation of evaporation pressure to reduce compression ratio and compressor energy consumption.
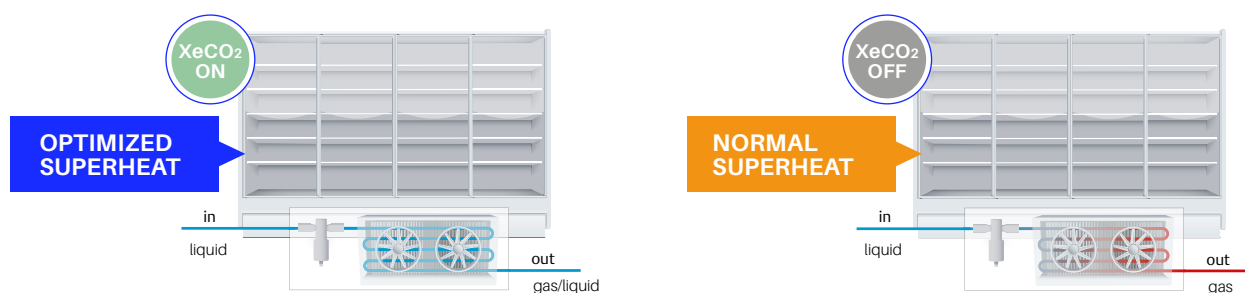
$XeCO_2$ has the capability to reduce the superheat set-point of the medium-temperature line cabinets, while also preventing overfeeding of evaporators and enhancing the cooling capacity of the system, thereby ensuring maximum system security.

CRO function

The CRO algorithm (Compressor Rack Optimization) combines the complexity of the cooling system with the simplicity of parameters that the user must set. It operates based on two fundamental parameters: higher cooling demand and suction pressure, ensuring optimal adjustment of the refrigerator. XWEB PRO provides up to 5 CRO motors, offering significant flexibility for the system.

Dew point for anti-sweat heater control

XWEB PRO manages the intelligent activation of anti-sweating heaters in refrigeration units to reduce electrical consumption. This algorithm calculates and distributes the dew point temperature setpoint, a value close to which moisture forms on the display cases' counters due to air condensation, enabling subsequent local management.

Compressor safety

In centralized systems and standard condensing units, the formation of liquid in the suction line can lead to compressor failure. Through integration with XWEB PRO, XM700 (refrigerated cabinets), and iProRACK (compressor racks), the "Compressors Guard" function provides protection for compressors against the risk of liquid infiltration. The system synchronizes cabinet operations with compressors availability.
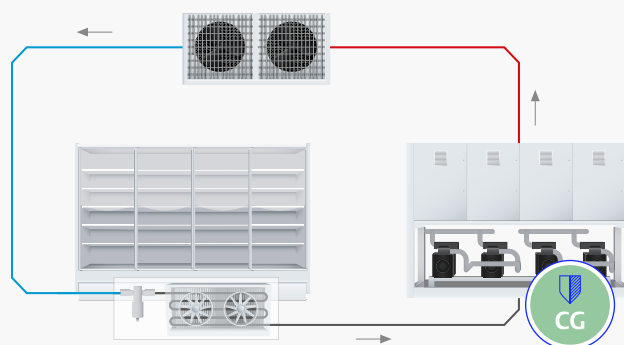
Enhanced remote analysis

Tailored for the analysis of rapidly fluctuating variables like superheat or pressures, the updated polling management system enables enhanced sampling time (as low as 2 seconds) for preset variables. Enhanced data analysis is invaluable during the commissioning of a new plant or when assessing potential critical scenarios.
This feature is specifically designed for installers and maintenance technicians, who can reap significant benefits from it.

The advanced alarm management system is one of the strengths of the XWEB PRO family. It allows for alarm notification emails that embed the enhanced data analysis mentioned earlier, thereby facilitating the remote identification of malfunction reasons by the technical support staff as soon as they occur.
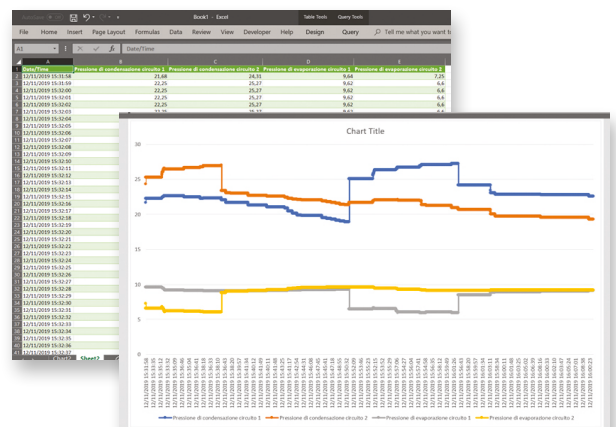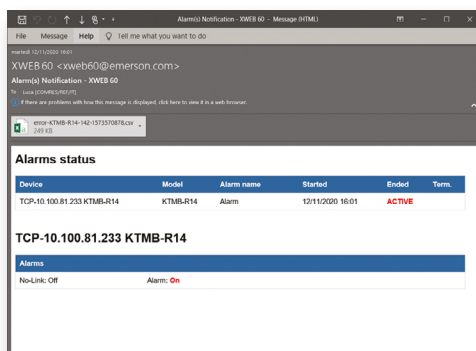
Centralized user management

Experience seamless remote user authentication with XWEB PRO's advanced functionality.
Our solution harnesses the strength and widespread adoption of the industry-standard LDAP protocol, enabling secure and efficient authentication of users from any location.
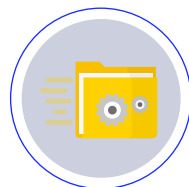
General functions

### Alarm management

An effective alarm management system detects and signals alarm statuses promptly, allowing for swift intervention to restore optimum application functioning.

Commissioning

The ability to generate XWEB pre-configuration archives enables expedited commissioning by encompassing devices, networks, systems, users, and more, while the ability to create comprehensive backups of all instrumentation parameters further accelerates the commissioning process.
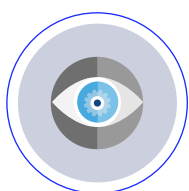
Supervision

Interventions can be made by sending commands to monitored units, utilizing algorithms devised by the installer to manage aspects such as plant lights, internal or external signage, and battery charge/discharge.

Faster and reactive user experience

The powerful CPU and RAM deliver optimal processing speed and swift access to data via reports and web pages using a standard web browser. Operations such as downloads and parameter changes are executed rapidly, enhancing service efficiency.

Food safety

Continuous data recording, HACCP reports, and timely alarm notifications guarantee the high quality of fresh and frozen food, resulting in reduced waste and compliance with UNI EN 12830 regulations.

Parameter management

This feature enables control and quick modification of device parameters connected to XWEB PRO, ensuring optimal and flexible management of the regulation.

Security

The software complies with advanced security requirements, preventing unauthorized access, attacks, or other threats through dedicated protection and control functions and protocols.

Environmentally friendly

Our eco-friendly solutions prioritize innovation and efficiency, promoting environmental respect by optimizing consumption.
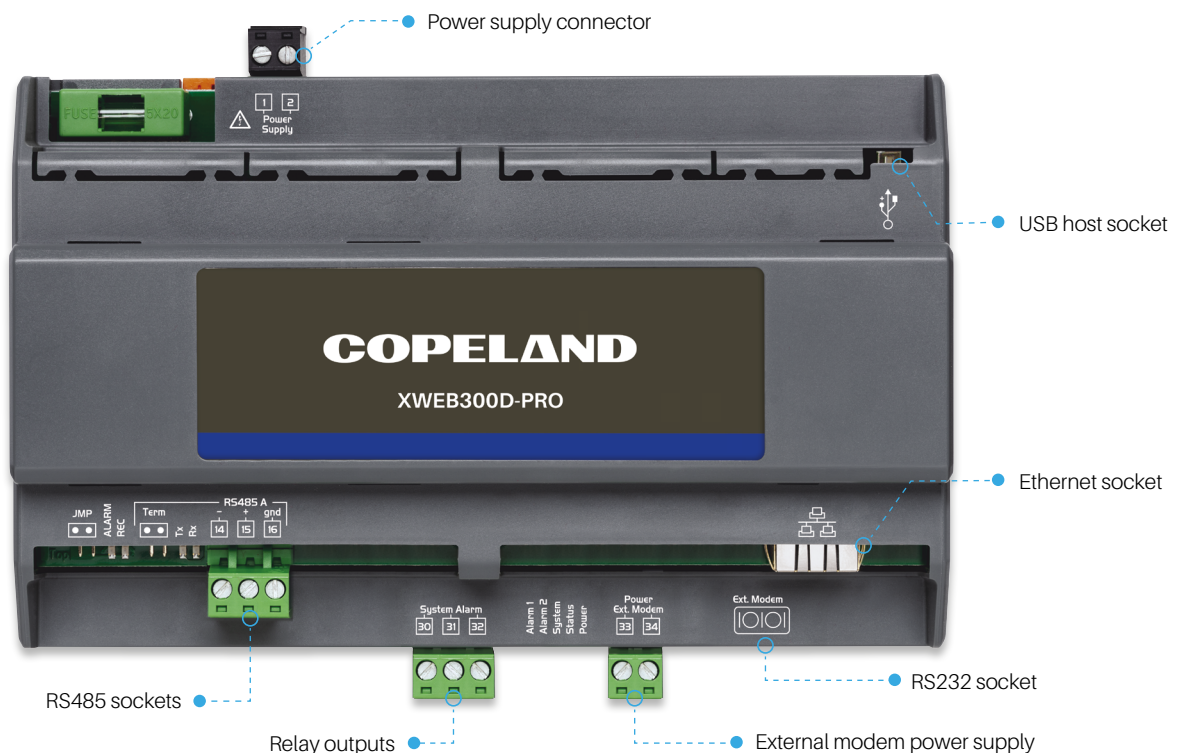
XWEB300D PRO

Alarm management and controlling web server

It is highly suitable for installations with 6 or 18 devices, such as petrol stations, mini-markets, and small storage centers. It serves as the perfect solution for remote plant assistance. The XWEB300D is a 10-DIN Rail module that can be directly mounted inside the control panel using brackets.

- Up to 1 year of temperature recording
- Optimized visualization of controller values through "Single View" and "Overview" options
- Possibility to remotely modify parameters of connected devices
- Automatic data export to a USB pendrive
- Alarm notifications via SMS or email

CG

up to 4 engines

Power supply connector

USB host socket

Ethernet socket

RS232 socket

RS485 sockets

Relay outputs

External modem power supply

XWEB500D PRO

Monitoring and controlling web server

It is the ideal solution for medium installations comprising up to 36, 50, or 75 devices, including petrol stations, supermarkets, and storage centers. Its innovative and practical features render it ideal for various applications, such as production and storage in goods centers.
The XWEB500D is a 10DIN Rail module that can be easily mounted inside the control panel using brackets.
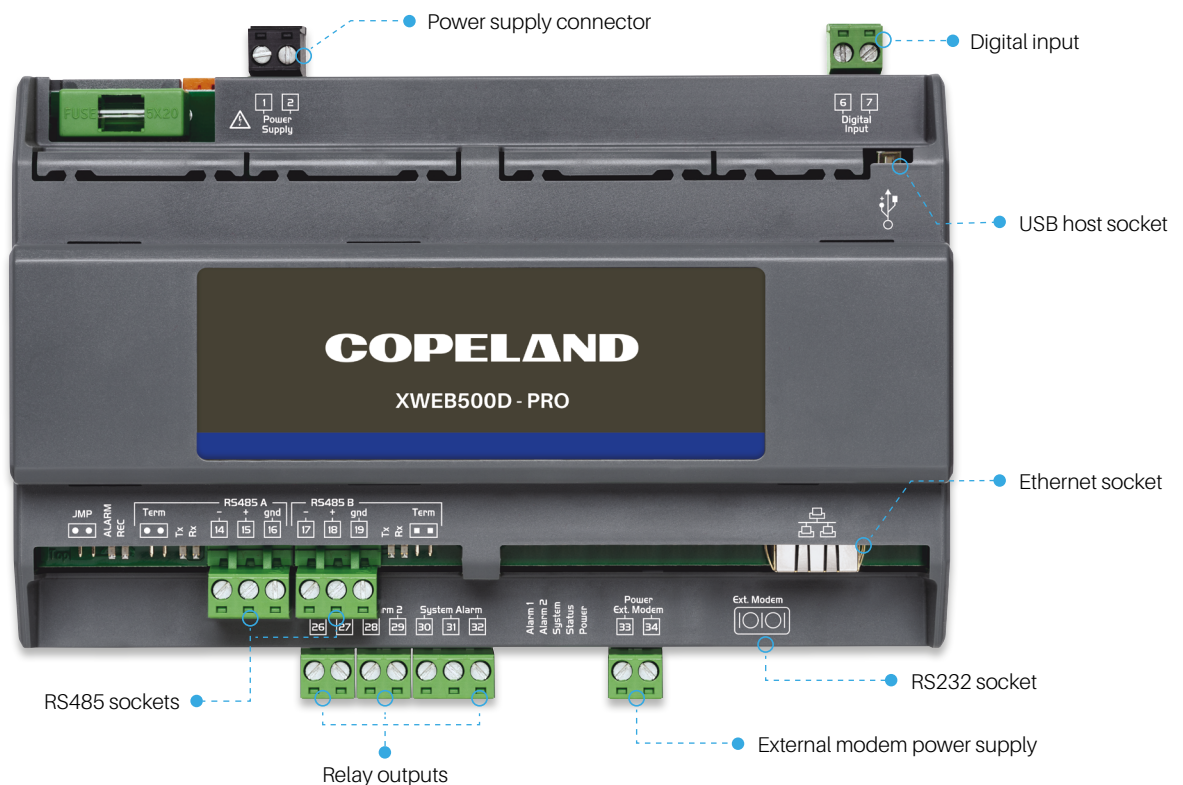
- Up to 1 year temperature recording
- Optimized visualization of controller values through "Single View" and "Overview" options
- Possibility to remotely modify the parameters of connected devices
- Customizable web user interface (layout)
- Performance meter for cooling demand control
- Automatic data export to USB pendrive
- Easy plant management by means of the "Scheduler" to send commands according to a custom calendar
- Alarm notification via SMS or e-mail
- HACCP report print-out in pdf format
- CRO for compressor rack optimization
- Firmware update of the connected controllers (only for compatible devices)

CRO
up to 3 engines

CG
up to 4 engines

Power supply connector

Digital input

USB host socket

Ethernet socket

RS232 socket

External modem power supply

RS485 sockets

Relay outputs

XWEB500B PRO

Monitoring and controlling web server

It is the ideal solution for medium installations up to 36, 50 or 75 devices, such as petrol stations, supermarkets or storage centers. The XWEB500B PRO is designed for use in offices and commercial spaces. Its integrated LCD display simplifies the initial configuration process, displays the most important functional parameters and working conditions of the monitored units, and allows for immediate reading and understanding of any anomalies in the adjustment of devices connected to the network.

Connection from PC is made simply using standard web browser; the information is displayed as web pages.
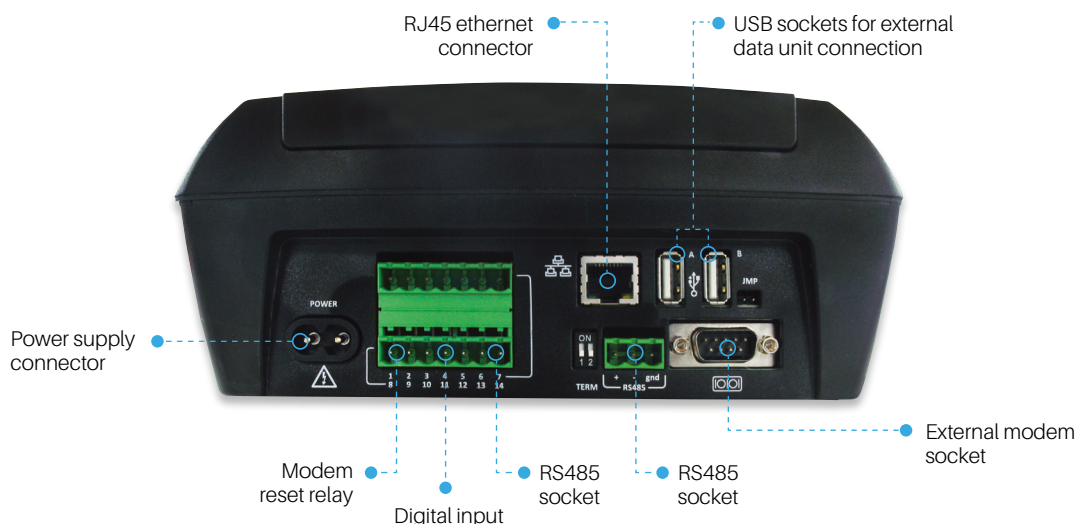
- Stand alone usage thanks to the back lit LCD local display and keyboard
- Fexible 2-meter power cable (EU plug and C7 connector) suitable for wall mounting or to be used as a desk instrument
- Dual USB port to connect a memory stick (data backup, updates, etc.) and a Wi-Fi dongle for wireless connectivity
- Dual RS485 serial port to simplify wiring operation and to ensure a stable and fast communication
- Up to 1 year temperature recording
- Optimized visualization of controller values through "Single View" and "Overview" options
- Possibility to remotely modify parameters of connected devices
- Customizable web user interface (layout)
- Performance meter for cooling demand control
- Automatic data export to a USB pendrive
- Easy plant management by means of the "Scheduler" to send commands according to a custom calendar
- Alarm notification via SMS or e-mail
- HACCP report print-out in pdf format
- CRO for compressor rack optimization
- Firmware update of the connected controllers (only for compatible devices)

CRO up to 3 engines

CG up to 4 engines

RJ45 ethernet connector

USB sockets for external data unit connection

Power supply connector

Modem reset relay

Digital input

RS485 socket

RS485 socket

External modem socket

XWEB1000D PRO

Monitoring and controlling web server also suitable for CO$_2$ applications

It is designed for medium to large installations, accommodating up to 100 or 150 devices. These installations include supermarkets, hypermarkets, large storage and distribution centers, as well as production and storage facilities like fast-food restaurants and catering services. Optimized coordination between the compressor rack and cabinets makes it an ideal solution for retail environments utilizing CO$_2$ applications, delivering both efficiency and safety enhancements. The XWEB1000D is a 10DIN Rail module that can be mounted on the control panel using brackets.

- USB port to connect a memory stick (data backup, updates, etc.) or a Wi-Fi dongle for wireless connectivity
- 4 RS485 serial port to simplify wiring operation and to ensure a stable and fast communication
- Up to 1 year temperature recording
- Optimized visualization of controller values through "Single View" and "Overview" options
- Possibility to remotely modify parameters of connected devices
- Customizable web user interface (layout)
- Performance meter for cooling demand control
- Automatic data export to a USB pendrive
- Easy plant management by means of the "Scheduler" to send commands according to a custom calendar
- Alarm notification via SMS or e-mail
- HACCP report print-out in pdf format
- CRO for compressor rack optimization
- XeCO$_2$ for CO$_2$ plant efficiency improvement
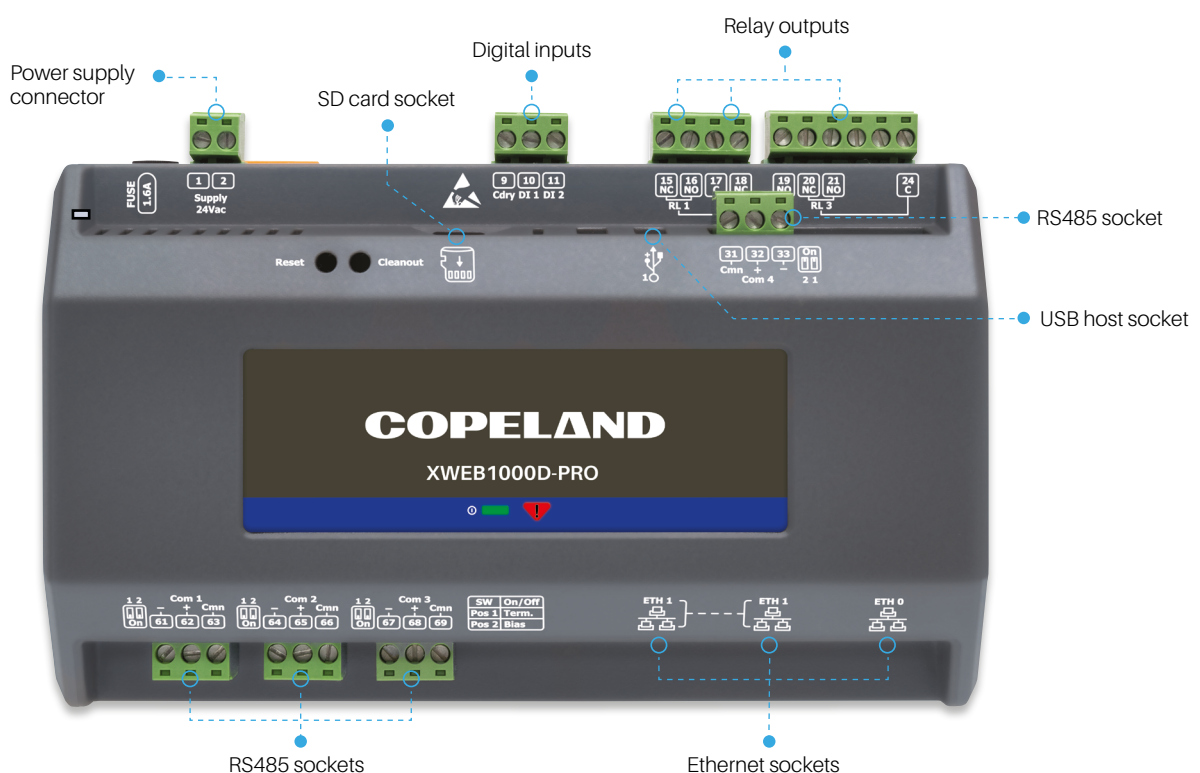- Firmware update of the connected controllers (only for compatible devices)

XeCO2	CRO	CG
up to 2 engines	**up to 5 engines**	**up to 8 engines**

Power supply connector

SD card socket

Digital inputs

Relay outputs

RS485 socket

USB host socket

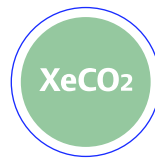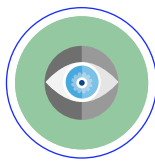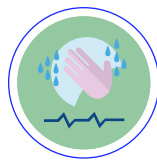**COPELAND**

XWEB1000D-PRO

RS485 sockets

Ethernet sockets

XWEB5000 PRO

Supervisor, monitoring and controlling web server also suitable for CO_2 applications

Tailored for extensive installations accommodating up to 494 devices, including supermarkets, hypermarkets, large storage and distribution centers, as well as production and storage facilities for goods processing like fast-food, restaurants, and catering. Its optimized coordination between compressor rack and cabinets renders it an ideal solution for retail environments utilizing CO_2 applications, achieving efficiency and safety enhancements.
Users can regulate temperature, generate reports, and perform other functions without the need for a PC, simply by connecting it to a monitor, keyboard, and mouse.

- USB port to connect a memory stick (data backup, updates, etc.) or a Wi-Fi dongle for wireless connectivity
- 2 RS485 serial port to simplify wiring operation and to ensure a stable and fast communication
- Up to 1 year temperature recording
- Optimized visualization of controller values through "Single View" and "Overview" options
- Possibility to remotely modify parameters of connected devices
- Customizable web user interface (layout)
- Performance meter for cooling demand control
- Automatic data export to a USB pendrive
- Easy plant management by means of the "Scheduler" to send commands according to a custom calendar
- Alarm notification via SMS or e-mail
- HACCP report print-out in pdf format
- CRO for compressor rack optimization
- $XeCO_2$ for CO_2 plant efficiency improvement
- Supervision module for custom regulations
- Dew point control for anti-sweat door heaters management
- Firmware update of the connected controllers (only for compatible devices)
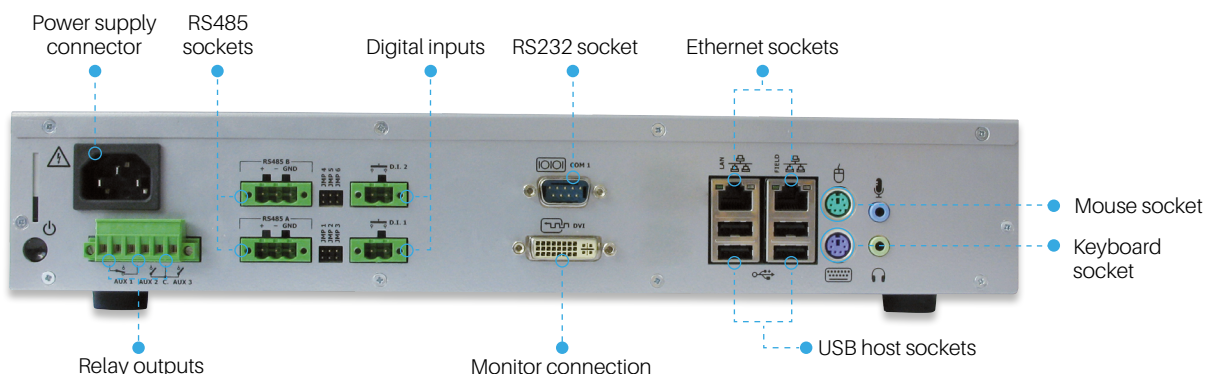
		XeCO₂	**CRO**	**CG**
		up to 2 engines	up to 5 engines	up to 8 engines

Power supply connector — RS485 sockets — Digital inputs — RS232 socket — Ethernet sockets — Mouse socket — Keyboard socket — Relay outputs — Monitor connection — USB host sockets

Layout

The powerful graphic editor makes XWEB layout the ideal solution for creating tailored floor plans according to customer needs. With this feature, users can quickly access controller data and even send commands to a controller.
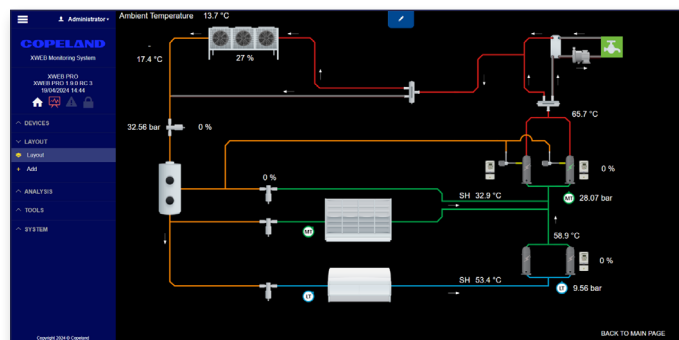
Device view

The device view tool provides users with real-time access to the current status of an individual controller. It also enables them to send commands to the controller, adjust the set point, and modify its parameters. The parameter map can be propagated to other controllers and exported in various formats, including CSV, XLS, and WIZMATE, allowing for backup and reuse on a different system.
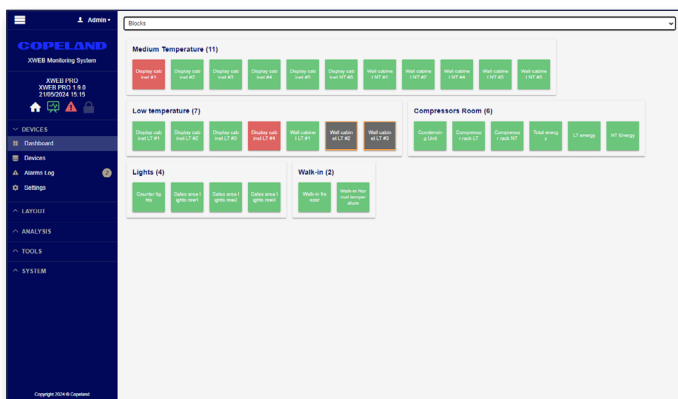
Energy consumption

The user can easily retrieve consumption data using the bar charts and quickly analyze the plant's energy efficiency.

Dashboard

The dashboard enables users to select from various layout options available on XWEB, enhancing navigation for greater ease and responsiveness.

Connections

Local connections

XWEB PRO systems can be connected directly to a PC. Furthermore, XWEB5000 PRO can be used in stand-alone mode through a monitor, keyboard and mouse connection because of its complete and powerful hardware platform.
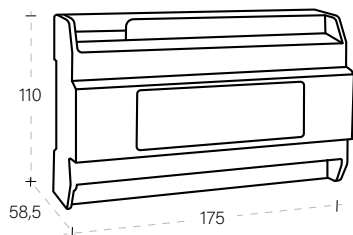
Remote connections

XWEB PRO can be remotely accessed using several methods:
- by Wi-Fi with mobile devices;
- by Ethernet network with standard net connector RJ45;
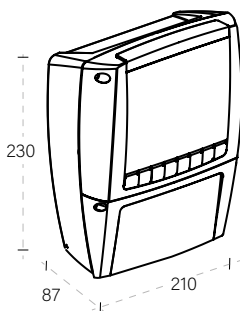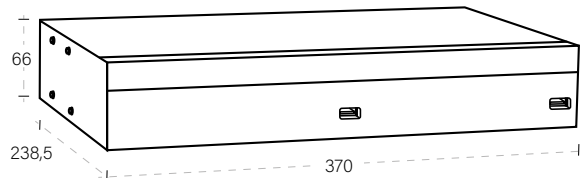- by Internet connection, once provided a public IP address.
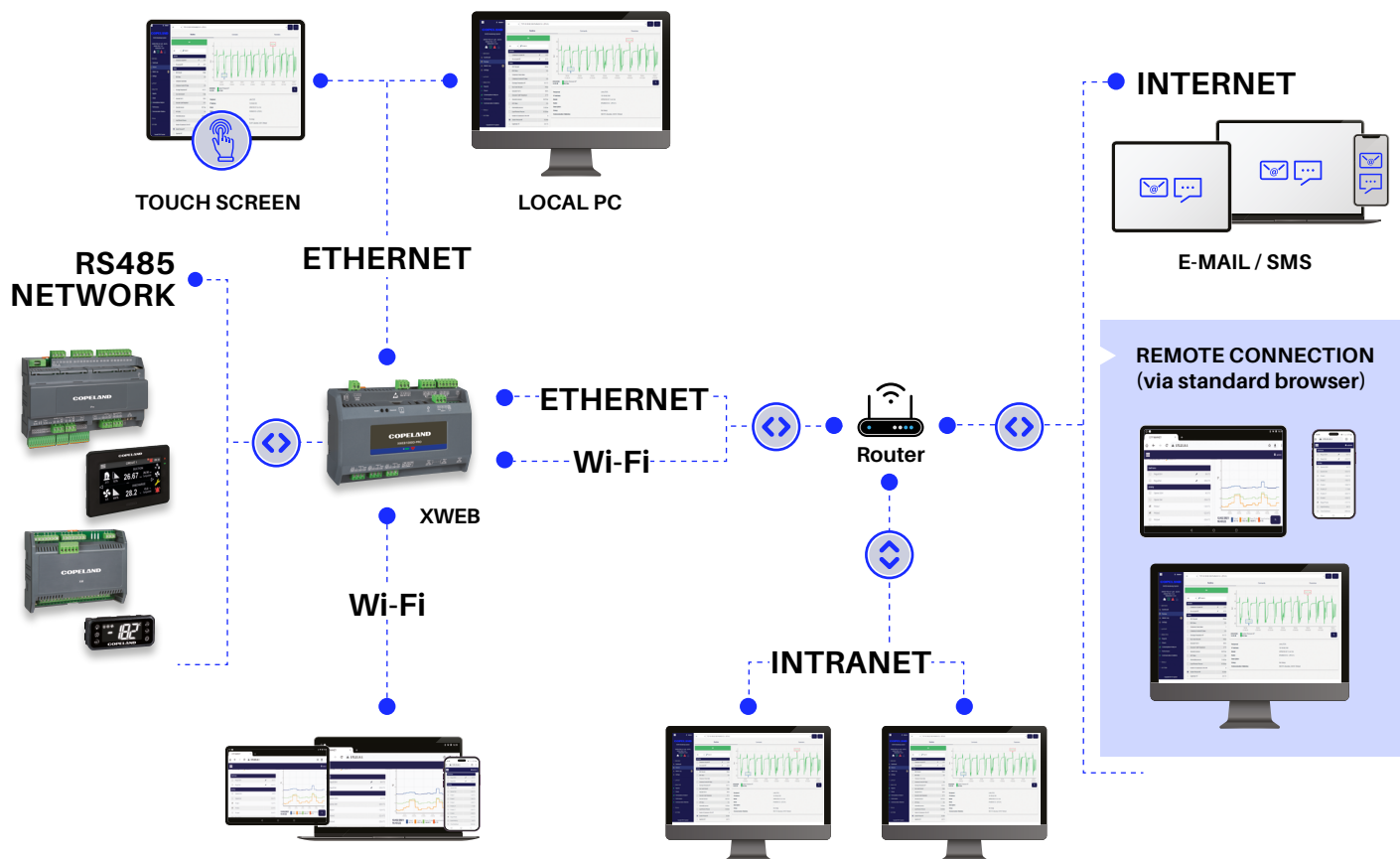
Dimensions

XWEB300D
XWEB500D
XWEB1000D

XWEB500B

XWEB5000

Technical features & functions

MODELS	XWEB300D PRO	XWEB500D PRO	XWEB500B PRO	XWEB1000D PRO	XWEB5000 PRO
Applications	small	medium	medium	large	large with supervision
Format	10 DIN Rail	10 DIN Rail	210x230x87h	10 DIN Rail	370x238,5x66h
Power supply	110÷230Vac	110÷230Vac	230Vac	24Vac/dc from TF20D	110÷230Vac
Display			LCD 4x20 characters		
N° of instruments	6 - 18	36 - 50 - 75	36 - 50 - 75	100 - 150	494
USB host sockets	1	1	2	1	6
Relay outputs	1	3	4	3	3
Digital inputs		1	1	2	2
Ethernet sockets	1	1	1	2	2
RS485 sockets	1	2	2	4	2
RS232 socket	1	1			1
SD card socket				1	
Secured navigation & data management	•	•	•	•	•
Multi-serial port management		•	•	•	•
Centralized user management	•	•	•	•	•
Language management	•	•	•	•	•
Alarms on XJR40D module		•	•	•	•
High frequency data management	•	•	•	•	•
Circular graphics	6 h	6 h	6 h	6 h	48 h
Minimum interval of temperature log	1 min	1 min	1 min	1 min	30 sec
Realtime device visualization	•	•	•	•	•
Parameters programming, commands and setpoint modification	•	•	•	•	•
Alarm setup	•	•	•	•	•
System logs	•	•	•	•	•
Charts	•	•	•	•	•
Data report	•	•	•	•	•
HACCP report	•	•	•	•	•
Food quality report	•	•	•	•	•
Global commands		•	•	•	•
Consumption analysis	•	•	•	•	•
Performance meter		•	•	•	•
Diagnostic for communication quality	•	•	•	•	•
Management of scheduled events		•	•	•	•
Calendar	•	•	•	•	•
Automatic export module	•	•	•	•	•
Backup/Restore	•	•	•	•	•
Layout		•	•	•	•
ModBUS TCP/IP gateway	•	•	•	•	•
OpenAPI protocol	•	•	•	•	•
Wireless connection with Wi-Fi dongle	•	•	•	•	•
Compressor Guard system	•	•	•	•	•
CRO system		•	•	•	•
XeCO$_2$ system				•	•
Dew Point module					•
Supervision module					•

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