

# Programmable solutions

*Programmable controllers and development  
tools for HVAC/R applications*





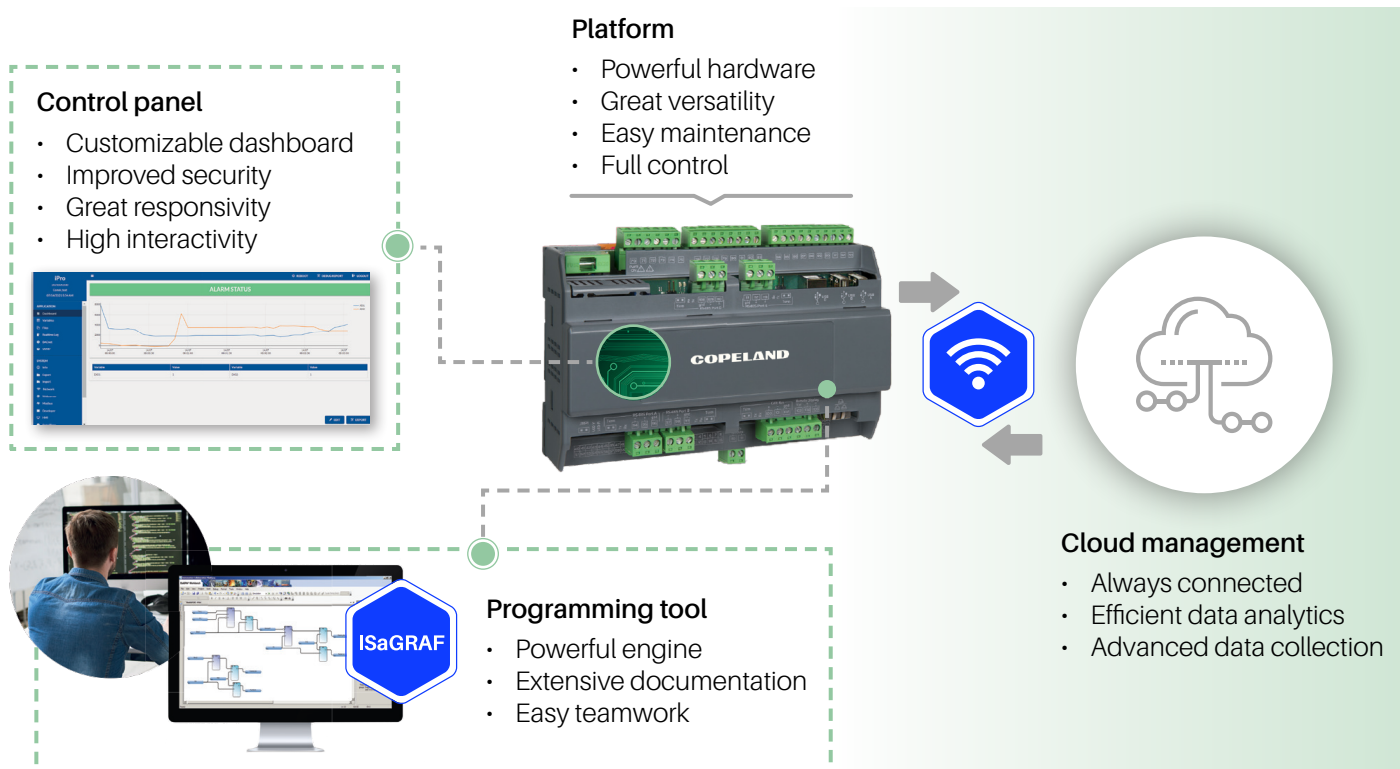


## Programmable controllers and development tools for HVAC/R applications

The iPro platform of programmable controllers offers complete solutions for the management of HVAC/R applications. These controllers are suited for compressor racks, chillers, heat pump units, AHU, all applications in PLC word including shopping centers, hospitals, airports, and more. This range consists of programmable controllers, expansion modules, user interfaces, enhanced development tools, and cloud management.

The iProGENIUS series is designed for all retail and food service needs, as well as for HVAC applications. This renewed family stands out for its powerful hardware platform and ease of external connectivity and programmability, while offering local or remote monitoring control.

A smart approach to develop applications is a key point for this range of products; to allow this, we provide: a powerful platform, advanced programming tools, a responsive control panel and the Cloud management. This is the new iPro system, enabling the iProAcademy team to promote continuous growth of the iPro globally.

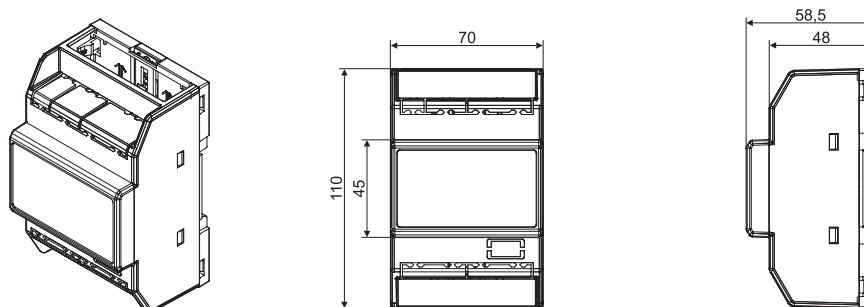


## Programmable controllers in 4 DIN Rail format and connectivity module



Features	IPG108D	IPG108E	IPG208D	IPG208E	IPL500D
<b>Format</b>	4 DIN Rail	4 DIN Rail	4 DIN Rail	4 DIN Rail	4 DIN Rail
<b>Display</b>		dual + icons		dual + icons	
<b>Power supply</b>	24V AC/DC from TF40D	24V AC/DC from TF40D	24V AC/DC from TF40D	24V AC/DC from TF40D	24V AC/DC from TF40D
<b>Probe inputs</b>	6 config	6 config	6 config	6 config	
<b>Optoinsulated digital inputs</b>	11 config	11 config	11 config	11 config	
<b>Configurable relay outputs</b>	8x5A	8x5A	8x5A	8x5A	
<b>Other outputs</b>					
0÷10V or 4÷20mA	4 config	4 config	4 config	4 config	
RS485	pres	pres	pres	pres	pres
USB	pres	pres	pres	pres	pres
LAN/RS485	pres	pres	pres	pres	pres
CANbus					pres
Ethernet	via USB-ETH-CONV	via USB-ETH-CONV	via USB-ETH-CONV	via USB-ETH-CONV	pres
<b>Other</b>					
Remote display output	pres	pres	pres	pres	pres
Real time clock	pres	pres	pres	pres	pres
Flash memory	512MB	512MB	512MB	512MB	512MB
Connections	disconnectable + screw	disconnectable + screw	bayonet + screw	bayonet + screw	screw
Connection kit	DWS30-KIT, IP-FC108	DWS30-KIT, IP-FC108	IP-FC108	IP-FC108	IP-FC108
BACnet protocol	opt	opt	opt	opt	opt

### 4 DIN Rail dimensions



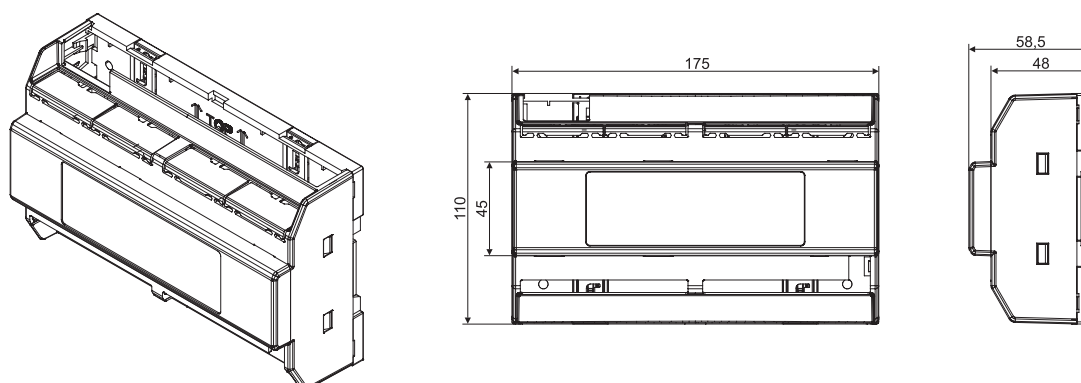
## Enhanced programmable controllers in 10 DIN Rail format

High performances  
for complex unit



Features	IPG115D	IPG215D	IPG315D	IPG808D
<b>Format</b>	10 DIN Rail	10 DIN Rail	10 DIN Rail	10 DIN Rail
<b>Power supply</b>	24V AC/DC from TF20D	24V AC/DC from TF20D	24V AC/DC from TF20D	24V AC/DC from TF20D/TF40D
<b>Probe inputs</b>	10 config	10 config	10 config	7 config
<b>Optoinsulated digital inputs</b>	20 config	20 config	20 config	6 config
<b>Configurable relay outputs</b>	12x5A + 3x8A or 9x5A + 1x8A + 5xSSR	15x5A	15x5A or 10x5A + 5xSSR	5x16A + 3x8A
<b>Other outputs</b>				
PWM/0÷10V/4÷20mA				1 config
0÷10V or 4÷20mA	2 config	2 config	2 config	2 config
0÷10V	4	4	4	
RS485	2	2	2	pres
USB	1 host	1 host	1 host	1 host
RS232	opt	opt	opt	
LAN/RS485				pres
CANbus	pres	pres	pres	
Ethernet	pres	pres	pres	via USB-ETH-CONV
<b>Other</b>				
Remote display output	pres	pres	pres	pres
Unipolar valve output				pres
Real time clock	pres	pres	pres	pres
Flash memory	512MB	512MB	512MB	512MB
Connections	disconnectable	bayonet + screw	disconnectable + screw	screw
Connection kit	DWB30-KIT	IP-FC215CP	DWB315-KIT, IP-FC315	IP-FCXB800
BACnet protocol	opt	opt	opt	opt

### 10 DIN Rail dimensions





# Full programmable controllers in 10 DIN Rail format

*Maximum connectivity  
to control all the devices  
in the field*



Features	IPG115D	IPG215D	IPG315D
<b>Format</b>	10 DIN Rail	10 DIN Rail	10 DIN Rail
<b>Power supply</b>	24V AC/DC from TF20D	24V AC/DC from TF20D	24V AC/DC from TF20D
<b>Probe inputs</b>	10 config	10 config	10 config
<b>Optoinsulated digital inputs</b>	20 config	20 config	20 config
<b>Configurable relay outputs</b>	12x5A + 3x8A or 9x5A + 1x8A + 5xSSR	15x5A	15x5A or 10x5A + 5xSSR
<b>Other outputs</b>			
PWM/0÷10V/4÷20mA			
0÷10V or 4÷20mA	2 config	2 config	2 config
0÷10V	4	4	4
RS485	4	4	4
USB	2 host + 1 device	2 host + 1 device	2 host + 1 device
RS232	opt	opt	opt
LAN/RS485			
CANbus	pres	pres	pres
Ethernet	pres	pres	pres
<b>Other</b>			
Remote display output	pres	pres	pres
Unipolar valve output			
Real time clock	pres	pres	pres
Flash memory	512MB	512MB	512MB
Connections	disconnectable	bayonet + screw	disconnectable + screw
Connection kit	DWB30-KIT	IP-FC215CP	DWB315-KIT, IP-FC315
BACnet protocol	opt	opt	opt



## Expansion modules



Features	IPX106D	IPX115D	IPX125D	IPX206D
<b>Format</b>	10 DIN Rail	10 DIN Rail	10 DIN Rail	4 DIN Rail
<b>Power supply</b>	24V AC/DC from TF10D	24V AC/DC from TF20D	24V AC/DC from TF20D	24V AC/DC from TF10D
<b>Probe inputs</b>	7 config	10 config	10 config	7 config
<b>Optoinsulated digital inputs</b>	3 config	20 config	20 config	3 config
<b>Configurable relay outputs</b>	6x5A	12x5A + 3x8A	18x5A + 3x8A + 4xSSR	5x5A + 1x8A or 4x5A + 1x8A + 1xSSR
<b>Other outputs</b>				
0÷10V or 4÷20mA		2 config	2 config	
0÷10V	3	4	4	3
LAN	pres	pres	pres	pres
CANbus	pres	pres	pres	pres
<b>Other</b>				
Dip switch for address set	pres	pres	pres	pres
Connections	disconnectable	disconnectable	disconnectable	bayonet + screw
Connection kit	DWEX60-30KIT	DWX115-30KIT	DWEX70-30KIT	IP-FCEX60

## Interfaces

### IPCH



- Programmable LED keyboard
- 3 digits + icons
- Panel mounting

### V2IPG



- LCD with 240x96 pixels
- Power supply: from controller
- On board temperature/humidity probe (optional)
- Visokey output
- Buzzer (optional)
- ASCII or UNICODE
- Wall or panel mounting

### VTIPG



- Programmable TFT touch screen displays
- 4.3" display—480x272 pixels
- 256 (8 bit) colors
- Power supply: 12-24V AC/DC
- RS485 output
- LAN port
- USB output
- Buzzer
- Wall or panel mounting





Features	IPX215D	IPX225D	IPX306D	IPX315D	IPX325D
<b>Format</b>	10 DIN Rail	10 DIN Rail	4 DIN Rail	10 DIN Rail	10 DIN Rail
<b>Power supply</b>	24V AC/DC from TF20D	24V AC/DC from TF20D	24V AC/DC from TF10D	24V AC/DC from TF20D	24V AC/DC from TF20D
<b>Probe inputs</b>	10 config	10 config	7 config	10 config	10 config
<b>Optoinsulated digital inputs</b>	20 config	20 config	3 config	20 config	20 config
<b>Configurable relay outputs</b>	15x5A	21x5A + 4xSSR	5x5A + 1x8A or 4x5A + 1x8A + 1xSSR	15x5A or 10x5A + 5xSSR	21x5A + 4xSSR or 16x5A + 9xSSR
<b>Other outputs</b>					
0÷10V or 4÷20mA	2 config	2 config		2 config	2 config
0÷10V	4	4	3	4	4
LAN	pres	pres	pres	pres	pres
CANbus	pres	pres	pres	pres	pres
<b>Other</b>					
Dip switch for address set	pres	pres	pres	pres	pres
Connections	bayonet + screw	bayonet + screw	disconnectable + screw	disconnectable + screw	disconnectable + screw
Connection kit	IP-FCX215	IP-FCX70	DWEX60-30KIT, IP-FCX306	DWX315-30KIT, IPFCX315	DWX325-30KIT, IPFCX325

## EEV drivers

### XEV20D



Driver for 1 or 2 unipolar and bipolar stepper electronic expansion valves.

- Format: 4 DIN Rail
- Power supply: 24V AC/DC (from TF20D/TF40D)
- Probe inputs: 4 config
- LAN output
- CANbus output
- Dip switch address selection
- DWXEV30 connection kit

### XEC



XEC EVO and XEC PRO are the backup modules for valve closing and for the power supply of iPro controllers in case of blackout.

- Format: 4 DIN Rail
- Power supply: 24V AC/DC (XEC EVO), 24V AC (XEC PRO) Wall or panel mounting

# ***iProAcademy world: the smart approach to develop applications***

## ***The iProAcademy team***

The iProAcademy is a center of excellence that combines innovation requests received from the market with technological opportunities, guaranteeing continuous growth of the iPro platform.

The iProAcademy team creates, trains, coordinates, and supports developers.

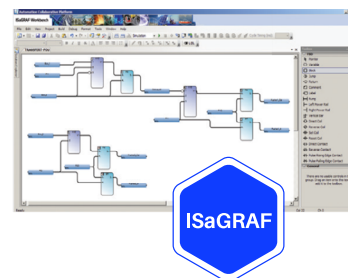
This constant support is given by the team through several instruments that allow iPro users to develop their applications from the beginning to the market release.

## ***Advanced programming tools***

Easy-to-use programming tools allow users to work independently to create applications for iPro controllers.

The iPro tool includes manuals and the ISaGRAF, Wizmate and Visoprog (optional) software. In particular, the ISaGRAF tool contains a modern philosophy of an open environment, based on the concept that each element is a plugin; the new version offers:

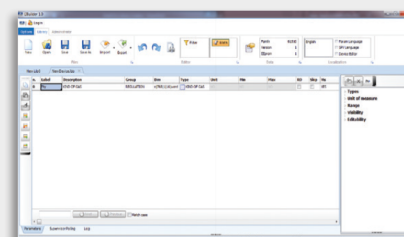
- Powerful engine
- Exhaustive manuals (complete ISaGRAF guide, Bios functionalities guide, FAQ short-guide, and more)
- Modular architecture that allows the highest level of customization
- Possibility to work on different projects at the same time
- Reduced writing-time of the code



## ***Programming tools***

### **Lib builder**

Programming tool designed to create parameter maps in an easy and fast way for third-party devices for XWEB Pro and Wizmate.



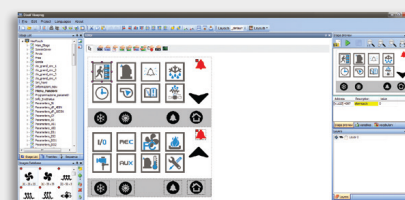
### **Wizmate prog-tool kit**

Tool developed to modify programming parameters of the instrument in an easy and fast way by Wizmate software.



### **Visoprog**

Programming tool designed to develop user interfaces for Visograph and Visotouch. Thanks to the many available functions it is possible to create very simple and intuitive user interfaces based on customer's needs.







## ***Tailored efficiency trainings***

We organize focused trainings depending on different levels and needs using advanced training methods: online, classroom, on-demand trainings. All iPro users can attend specific trainings concerning template, platform, function blocks and applications, directly from their desk, significantly reducing related costs of time and travel.

- Access to recorded session so no details are missed
- Live sections to attend in real-time
- Training material always available online

## ***Dedicated section on iProAcademy website***

The importance of gathering all information together is a key element to maintain constant connection with all developers. This need has been translated in a fully dedicated section on the new iProAcademy website, that allows users to be always up-to-date, choose the right training, and easily enroll and download the required material.

## ***Control panel with a customizable dashboard***

iPro users can decide how to show relevant values of their application by customizing the brand-new first page of the control panel, without having to develop an HTML interface.

## ***Available applications***

### **Rack app**

The compressor RACK application is designed for the management of racks with standard refrigerants, CO<sub>2</sub> subcritical applications and transcritical CO<sub>2</sub> booster systems controlling heat recovery system and parallel compression. It manages compressor racks with up to 2 circuits and 12 compressors per circuit.

Controllers: IPR208D/IPRC208D,  
IPR215D/IPRC215D/IPRC315D  
Expansions: IPX206D & IPX215D  
Interfaces: V2IPR & VTIPR



### **AHU app**

The application for AHU ensures optimal control of the temperature, humidity, pressure, air quality and flow, for accurate regulation both in conditioning and in process. The complete management of the most advanced construction technologies (heat exchanger, variable flow rate, and more...) ensures high energy-efficiency performance.

Controllers: IPG208D A01 & IPG215D A01  
Expansions: IPX206D & IPX215D  
Interfaces: V2IPG & VTIPG  
Probes: AP



### **Chiller & heat pump app**

The Chill application for all chiller and heat pump units up to 4 circuits and 16 compressors, is the ideal solution also for the most complex units and can manage system such as: air/air, air/water and motor condensing.

Controllers: IPC108D/IPC108E &  
IPC115D/IPC315D  
Expansions: IPX106D & IPX306D  
Interfaces: V2IPC & VTIPC



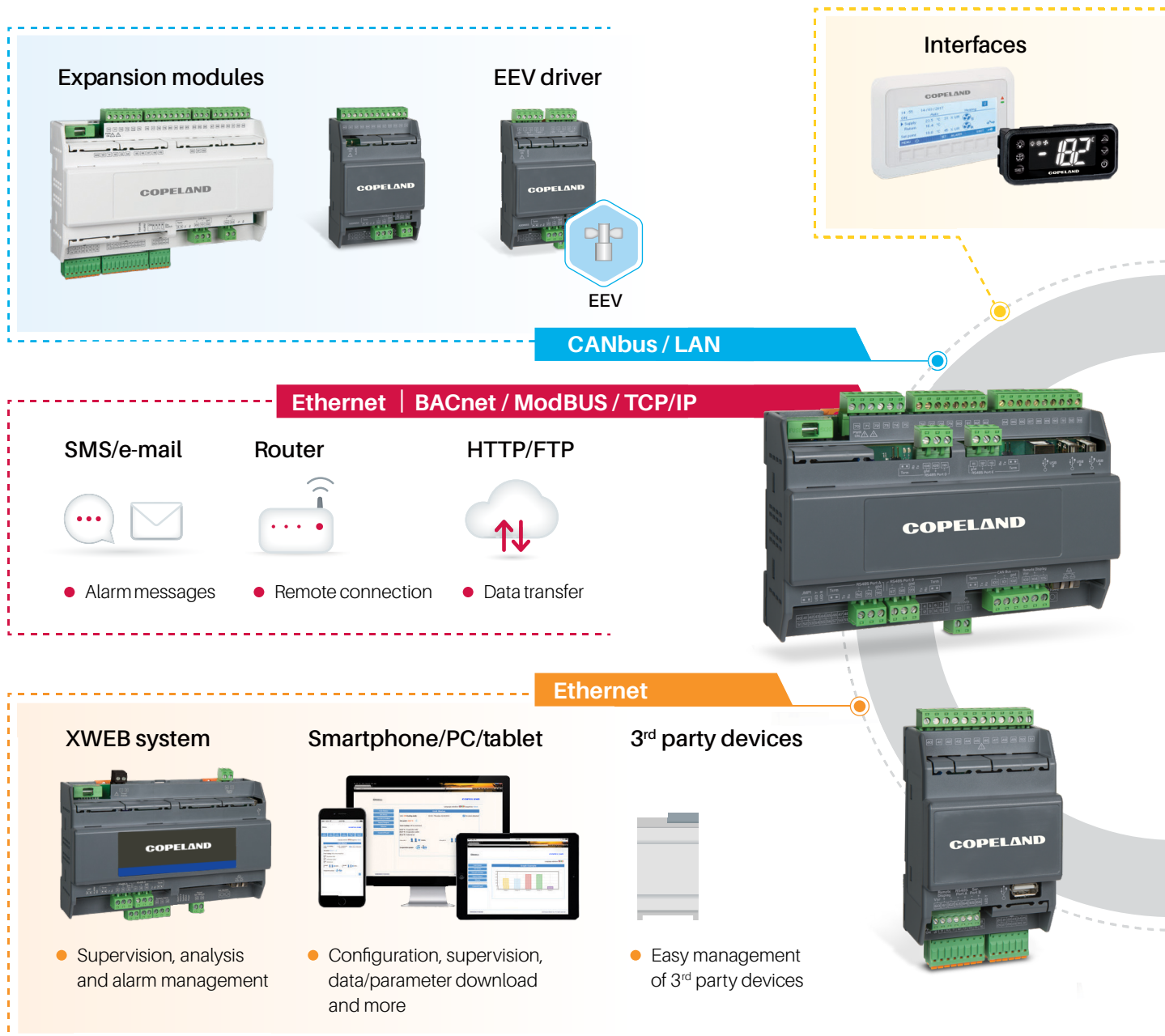
### **Dry cooler app**

The application for the control of dry cooler units add to the regulation of ventilation a high-performing management of pump stations, adiabatic cooler and heat exchanger. The flexibility of the application allows to use it in several application combinations.

Controllers: IPG208D W01 & IPG215D W01  
Expansions: IPX206D & IPX215D  
Interfaces: V2IPG & VTIPG



## High connectivity



## Accessories

### Universal kit simulator



Universal simulator for inputs and outputs designed to test the applications developed in the HVAC/R world. Thanks to this device and to its wide range of available wirings, it is possible to test several boards changing only the wiring that is connected to the simulator. 110 or 230V AC power supply.

### Probes and accessories



A complete family of probes, transducers, leak detectors and accessories (transformers, connectors and more) ensures for every need the right solution.





Touch



## USB



- Data download
- Upgrade
- Storage memory
- Nano Wi-Fi connection (only for 10 DIN format)
  - SMS/e-mail
  - Connection to Wi-Fi network



Charts

## Internal web site

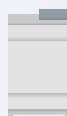
- Customizable web pages
- HTML and Javascript supported
- CGI available for variables management

## RS485 / RS232 | BACnet / ModBUS

### Energy meter



- Consumption data/analysis
- Electrical data



### 3<sup>rd</sup> Party devices

- Easy management of 3<sup>rd</sup> party devices

### Gateways



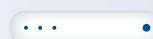
- LON

### Master/slave



- Up to 10 slave units

### Modem



- Internet connection
- SMS/e-mail

## Adapters

### USB-ETH-CONV



USB-Ethernet adapter for iPro controllers in 4 DIN format (not for IPL500D)

### XJ485USB-Kit



USB-RS485 converter (2 wires) which allows to monitor one or more controllers networked to a computer

### NANO-Wi-Fi



USB-Wi-Fi adapter for Wi-Fi network connection (only for 10 DIN format)



## ***About Copeland***

Copeland is a global leader in sustainable heating, cooling, refrigeration and industrial solutions. We help commercial, industrial, refrigeration and residential customers reduce their carbon emissions and improve energy efficiency. We address issues like climate change, growing populations, electricity demands and complex global supply chains with innovations that advance the energy transition, accelerate the adoption of climate friendly low GWP (Global Warming Potential) and natural refrigerants, and safeguard the world's most critical goods through an efficient and sustainable cold chain. We have over 18,000 employees, with feet on the ground in 50 countries - a global presence that makes it possible to serve customers wherever they are in the world and meet challenges with scale and speed. Our industry-leading brands and diversified portfolio deliver innovation and technology proven in over 200 million installations worldwide. Together, we create sustainable solutions that improve lives and protect the planet today and for future generations. For more information, visit [copeland.com/en-gb](https://copeland.com/en-gb).

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