IC100 EVO

Parametric controllers for air conditioning

PN 10/18 JULY

Dixell introduces its new family of controllers **IC100 EVO** available in 32x74mm (panel mounting) and 4 DIN formats. The great flexibility allows its use in several types of single circuit machine, from simple chiller up to heat pump with domestic hot water production.
This series of controllers comes with lots of new features compared to the current IC100CX series;

the possibility to configure up to 3 compressors, to manage 4 ventilation steps, to manage one water pump with speed modulation, the availability of several new functions and the possibility to connect the IEV electronic expansion driver, allow an improved control of the unit.

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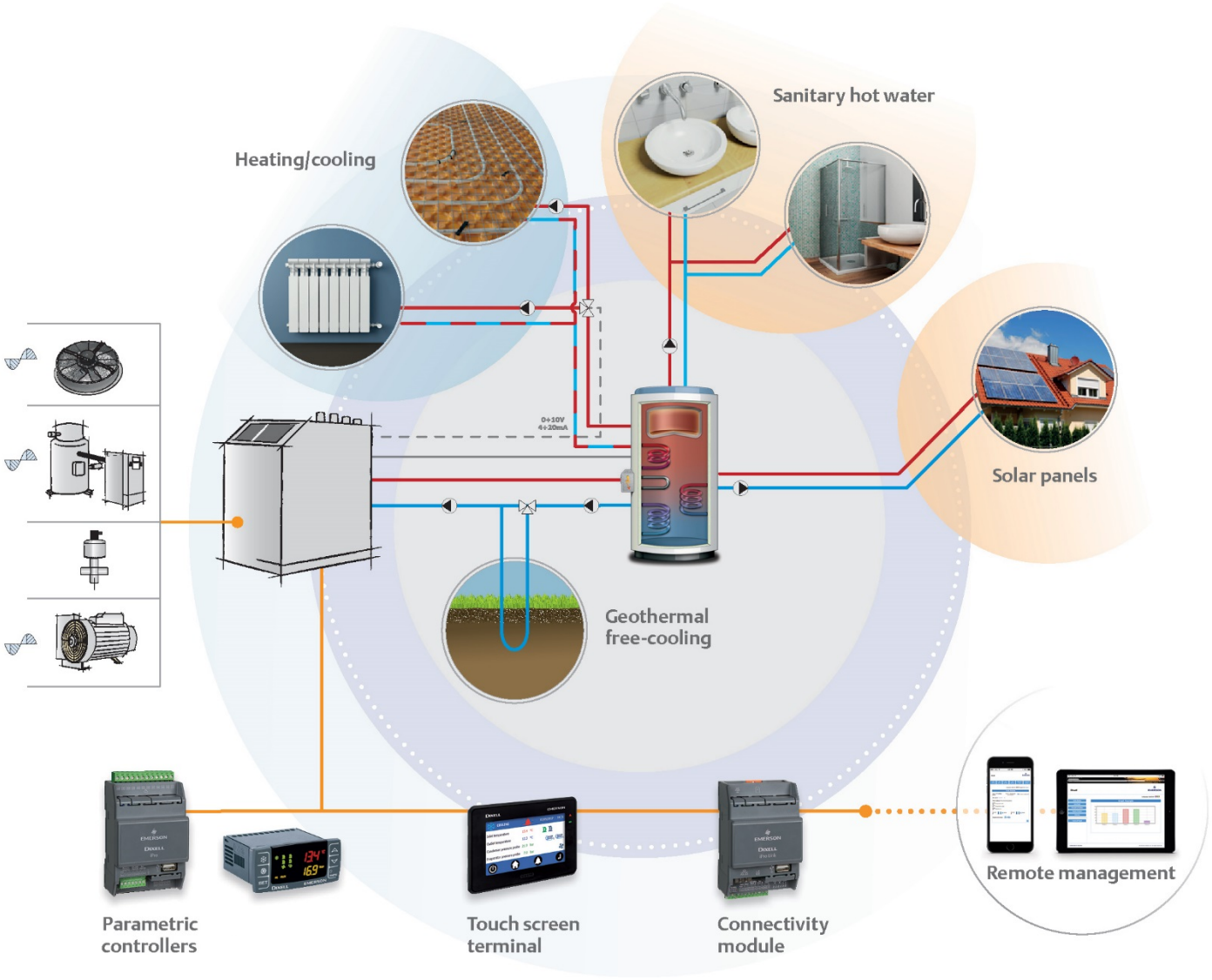
1. Main applications

IC100 EVO controllers can be used in applications such as chillers or heat pumps for cooling or heating of residential or commercial buildings, and for industrial applications.

This controller's exceptional versatility allows its use in heat pumps for domestic water heating or in chillers also with the integration of the geothermal free cooling.



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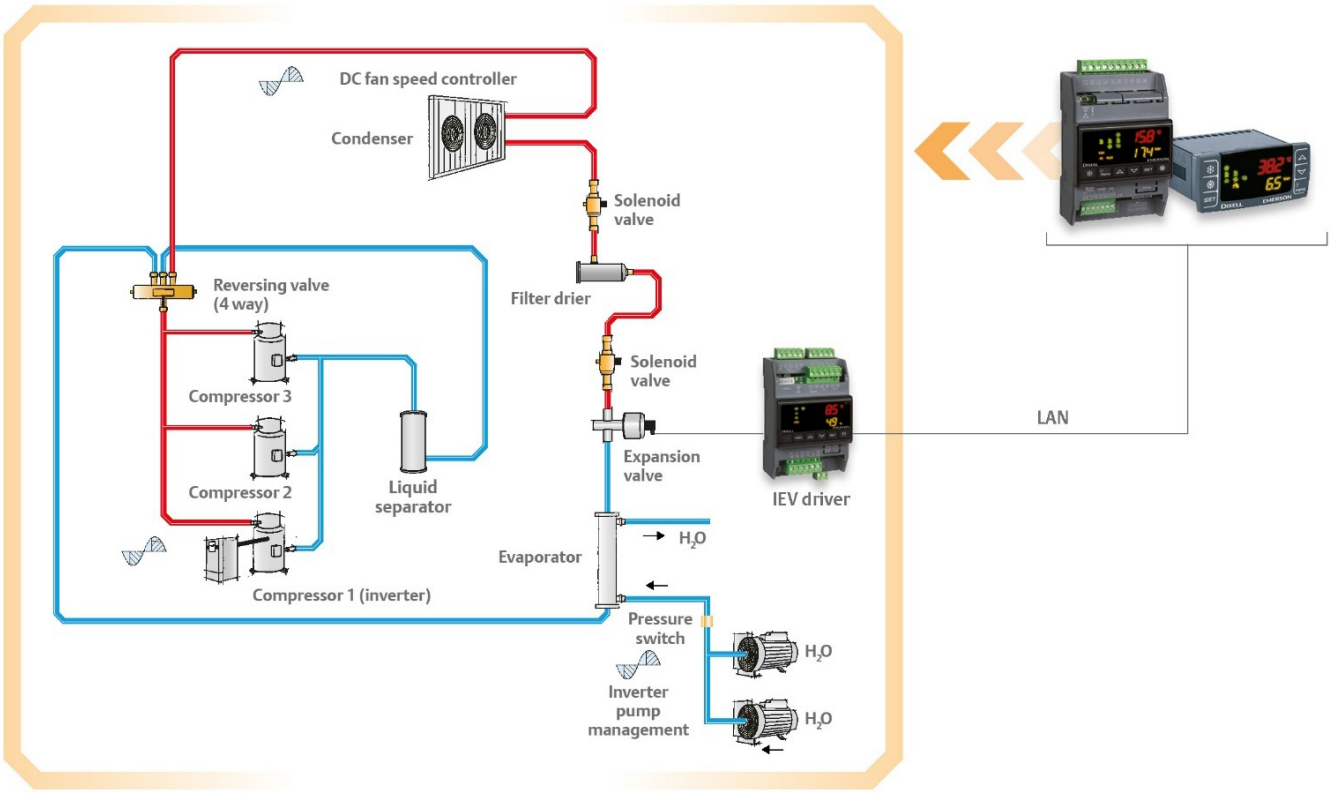
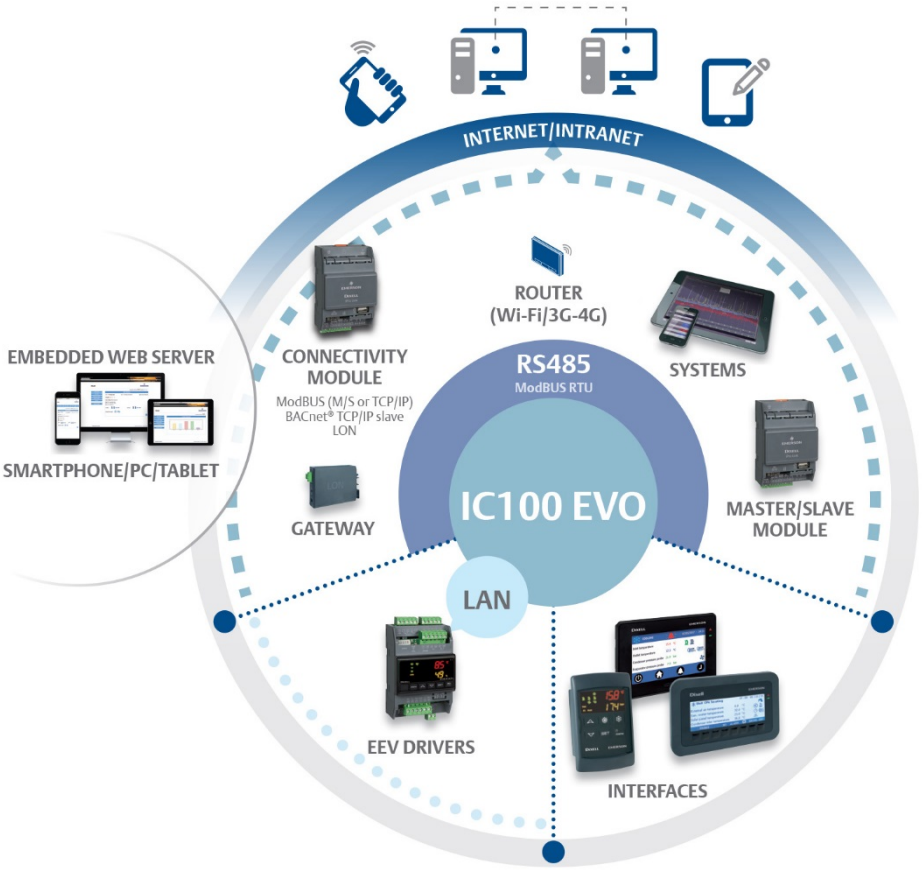
1.1 Application for single circuit heat pump with 3 compressors



2. Main features

IC100 EVO parametric controllers are available in 2 different formats: 32x74mm for panel mounting and 4 DIN designed to be placed directly inside the machine's panel board. The connection to the IEV driver for the management of the electronic expansion valve and the connection to the remote keyboards with LED or LCD or Touchscreen display allow to have a complete solution for the management of single circuit units.



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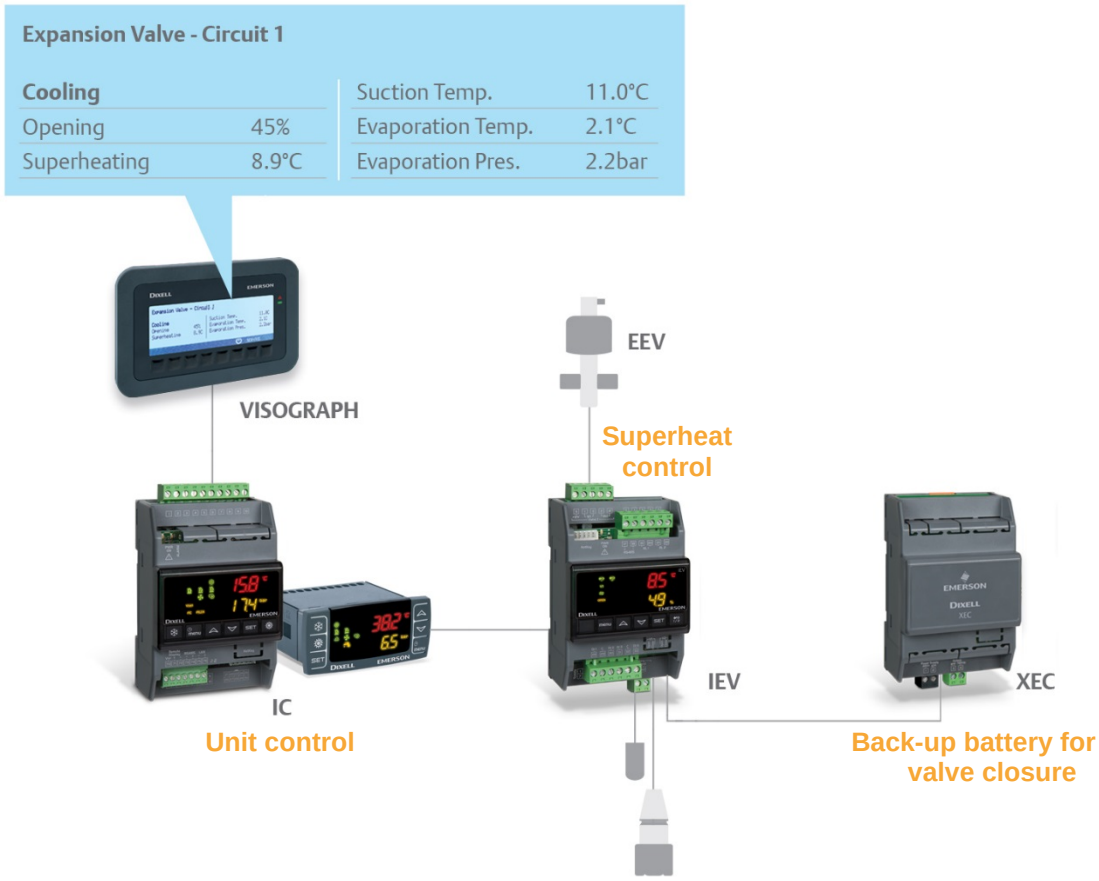
2.1 Flexibility

Thanks to the appropriate parameters configuration it is possible to use the controller in several applications. Every analogue and digital input and every relay and analogue output can be configured as one of the several options to satisfy the application's needs and make the installation in the switchboard easier.
Visualization and management of the machine functioning status are immediate thanks to the display with dedicated icons that identify the compressors, fans, water pump status and possible alarms.
In case of connection to the IEV driver and with VISOGRAPH graphic display, information concerning driver functioning are displayed in detail on the VISOGRAPH interface.



2.2 Main functions

2.2.1 Management of compressor types

ICHILL100 EVO can control ON-OFF, screw (with 50%, 75% and 100% partialization valves) and inverter compressors. Different functions for machine and compressor functioning optimization are available for every compressor.

2.2.2 Regulation type

Two regulation types are available: neutral or proportional zone. New functions for the compressor optimization are available; for example, in the neutral zone regulation an additional compressor is forced if the regulation is static, or the compressor rotation occurs if the regulation temperature remains in the neutral zone for a long time.

2.2.3 Unloading function

The unloading function allows the power partialization (by reducing the active compressors, or inserting partializations in case of screw compressors or reducing the inverter compressor speed) in case of malfunction (for example: to avoid high pressure alarm).

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2.2.4 Compressors number limitation

In specific situations, such in the case of heat pumps for domestic hot water with dedicated exchanger, the power of the machine is oversized for the used exchanger. There is the possibility of reducing the number of compressors used for domestic hot water production and therefore solve this problem.

2.2.5 Heaters and water pumps with anti-freezing function

The water pump and the anti-freeze heaters can be used to avoid the anti-freezing alarm; by setting the temperature thresholds it is possible to manage the water pump and heaters activation.

2.2.6 Condensing units control

The condensing units control has been enhanced with the possibility to manage a compressor's call by letting the controller choose the one to activate or by setting the direct call of one specific compressor.

2.2.7 Exchanger fan speed optimization during defrost

The management of fans during defrost mode has been optimized thanks to the delineation of specific thresholds for this mode, concerning both temperature/pressures for modulation control and maximum speed.

2.2.8 Domestic water and anti-legionella cycle

The IC100 EVO allows to manage heat pumps also integrated with domestic hot water production, both in 2 or 4 pipes installations (with dedicated exchanger for domestic water circuit).

Several useful functions are available; some of them are listed below:

- possibility of suspending domestic hot water production due to high temperature;
- definition of a threshold to maintain the minimum temperature;
- use of heaters as an integration for the heat pump;
- anti-legionella cycle management, at time bands or at intervals;
- management of the pump reserved for domestic water with related water flow switch.

2.2.9 Password-protected alarm menu

IC100 EVO series give the possibility to decide whether to freely access the alarm menu or to set a password for the access. Password-protected access avoids possible alarm resets carried out by unauthorized personnel.

2.2.10 Further functions

- Management of compressors with different capacity
- Power reduction via digital input (reduction of compressor number or reduction of the inverter compressor frequency)
- Plant water pump with variable speed control via inverter
- Maximum speed reduction for fans via digital input or time band
- Data Logger up to 100 alarms with time and day registration (only for models with clock on board)
- Double Set point function with daily activation with 3 different time bands
- Dynamic set point based on outdoor air temperature or analog signal 4÷20mA.

2.3 Supervision

XWEB EVO is Dixell's family of controlling and supervising systems that control remotely the IC100 EVO functioning and therefore the controlled machine. Among available functioning there is the possibility of reading temperature and pressure of probes that are connected to the ICHILL, the load status, the diagnostic through sms or email, and more.

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3. Hardware features

3.1 Technical features

Housing	Self-extinguishing ABS
Power absorbtion	10VA max
Data maintenance:	On non-volatile storage (EEPROM)
Kind of action:	1B
Software class:	A
Operating temperature:	-10÷55°C (14÷131°F)
Storage temperature:	-30÷85°C (22÷185°F)
Relative humidity:	20÷85% non-condensing
Measuring and regulation range:	**NTC:** -50÷110°C (-58÷230°F) resolution 0,1°C (1°F) **PTC:** -50÷150°C (-58÷302°F) resolution 0,1°C (1°F) **0÷5V/4÷20mA:** 0÷50bar (0÷302PSI) resolution 0,1bar (1PSI)

	IC107D		IC108CX
Display	double	not present	double
Supply	12 or 24Vac/dc	12 or 24Vac/dc	12 or 24Vac/dc
Configurable probes inputs	5xNTC/PTC/ID and 3xNTC/PTC/ID/4÷20mA/0÷10V	5xNTC/PTC/ID and 3xNTC/PTC/ID/4÷20mA/0÷10V	4xNTC/PTC/ID and 2xNTC/PTC/ID/4÷20mA/0÷10V
Configurable digital inputs	9 free of voltage	9 free of voltage	11 free of voltage
Configurable relay outputs	7x5A	7x5A	8x5A
Configurable analog outputs	2xPWM/ UD/4÷20mA/0÷10V and 1xUD/0÷10V	2xPWM/ UD/4÷20mA/0÷10V and 1xUD/0÷10V	2xPWM/ UD/0÷10V and 2xUD/0÷10V
Other outputs	RS485 LAN TTL Remote display*	RS485 LAN TTL Remote display *	LAN TTL Remote display *
Other	Buzzer RTC (opt)	Buzzer RTC (opt)	Buzzer RTC (opt)
Certifications	CE, UL**	CE, UL**	CE, UL

*: up to 2 keyboards VI613 or 1 V2I810 or 1 VTIC10

**: not for models with 12Vac/dc power supply

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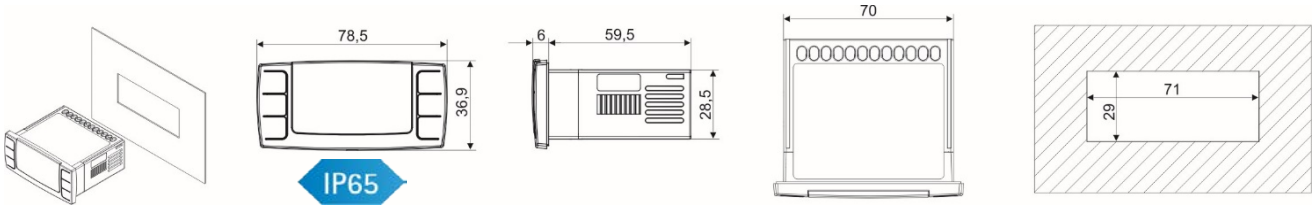
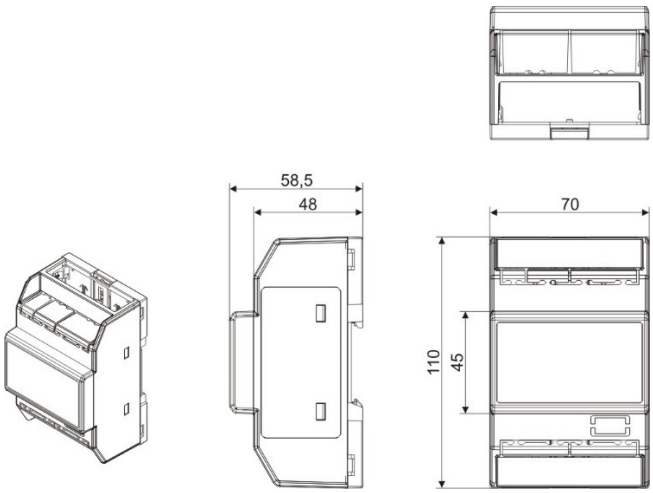
3.2 Dimensions

3.2.1 CX format

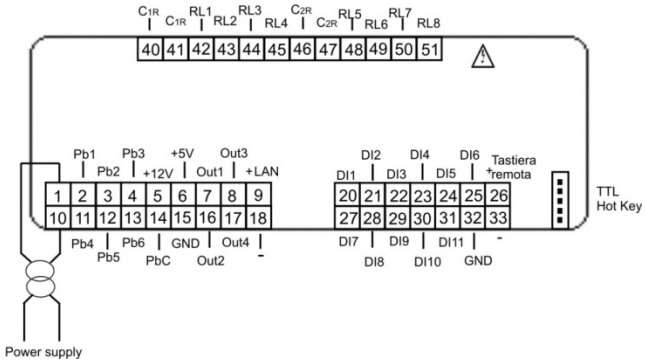


3.2.2 D format

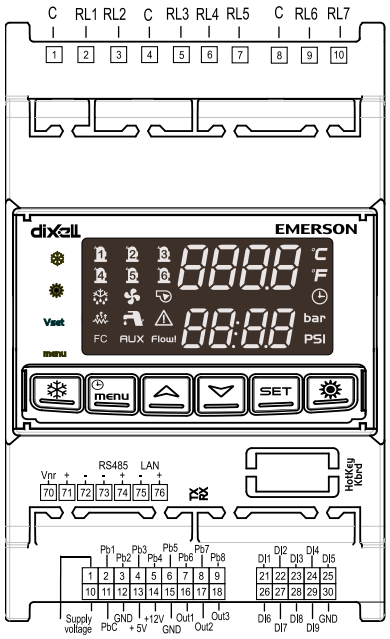


3.3 Wiring diagrams

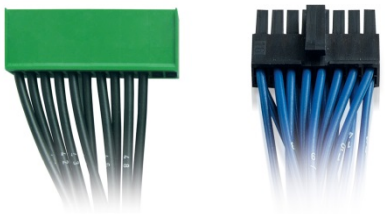
IC108CX



IC107D



4. Main accessories

	**VTIC10** Touch screen display with high connectivity level, available in horizontal version with panel or wall mounting
	**V2I810** LCD graphic keyboard available in panel or wall mounting, in black or white color and with built-in temperature probe (on request)
	**VI613** LED keyboards in vertical format available with built-in temperature probe (on request)
	**CWCXB15-KIT** Wiring for IC108CX - 1,5m **CWCXB30-KIT** Wiring for IC108CX - 3m **DWDE15-KIT** Wiring for IC107D - 1,5m **DWDE30-KIT** Wiring for IC107D - 3m
	**XV05PK & XV05D** Modules for chopped fan speed control, single-phase, power 500W, 2A **XV10PK** Modules for chopped fan speed control, single-phase, power 1000W, 4A **XV22PK** Modules for chopped fan speed control, single-phase, power 2200W, 9,5A
	**XV300K** Family of three-phase fan speed controllers, available in different models from 8A to 60A

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	**HOT-KEY64** Key for parameter programming
	**WIZMATE PROG-TOOL-KIT** Tool developed to modify programming parameters of the instrument in an easy and fast way by WIZMATE software. • reading and writing of controller's parameters • maps saving for storage • maps export in excel file format • comparison between two or more maps
	**XJ485USB-KIT** Converter from USB to RS485 serial (2 wires) which allows to monitor one or more controllers networked to a computer equipped with an USB communication port and where WIZMATE software is installed
	**TF10** Transformer with 10VA power and available in 230/12Vac and 110/12Vac versions **TF10D** Transformer in 2 DIN Rail with 10VA power and available in 230/24Vac and 110/24Vac versions
	**RT314-KIT** Expansion relay module (12A/250Vac) with support for DIN bar (if needed, analogue outputs of the controller can be used to manage an external relay)
	**Probes** A complete series of probes and transducers available on Dixell catalogue guarantees the final user the right level of precision and the most appropriate answer time in every situation
	**UNIVERSAL SIMULATOR KIT** Simulator of inputs and outputs to test the applications developed for IC100 EVO controllers. The simulator has 230Vac power supply and it is equipped with dedicated wirings both for CX and DIN format

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5. How to order

5.1 Controllers

I C 1 0 8 C X – A 1 C 0 0

I C 1 0 7 D – A B C 0 0

A		B		C	
Power supply		**Display**		**RTC**	
1	12Vac/dc	**0**	No	**0**	No
2	24Vac/dc	**1**	Yes	**1**	Yes

5.2 Keyboards

V I 6 1 3 – A B 0 0 0

A		B	
Probe		**Buzzer**	
0	No	**0**	No
1	Yes	**1**	Yes

V 2 I 8 1 0 – A B C 0 0

A			B		C	
Buzzer		**Probes**	**Type of mounting**		**Color**	
0	No	No	**P**	No	**0**	White
1	Yes	No	**W**	Yes	**2**	Black
2	No	Yes				
3	Yes	Yes				

V T I C 1 0 – 0 B 0 0 0

B	
Type of mounting	
0	Panel
1	Wall

6. Prices

Please contact our sales department for prices and further information.

7. Availability and orders

The models are available; please contact our sales department for delivery time.

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