IPM500D

Belluno / Italy

September 2015

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EMERSON™
Climate Technologies

IPM500D

Available from March 2016

Master/Slave Module for HVAC Applications

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IPM500D Overview

- The IPM500D was designed to allow the creation and control of more complex circuits
- The idea is to have one master unit which is able to control different kinds of machines and to add more features to the regulation
- One master is able to control up to 10 HVAC units made with the iCHILL controllers
- It also has the possibility to connect one expansion in order to enable extended features

IPM500D Overview

Main Controller

IPM500D

Optional Expansions

IPX106D
IPX206D
IPX306D

Display Options

Visograph

Visograph 2.0
(next step)

Visotouch
(next step)

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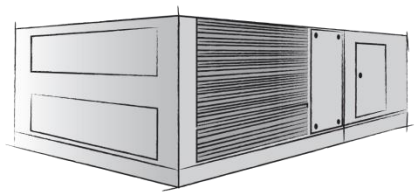
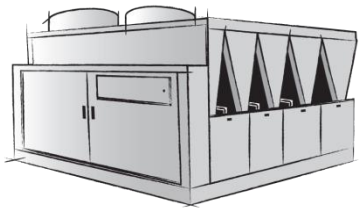
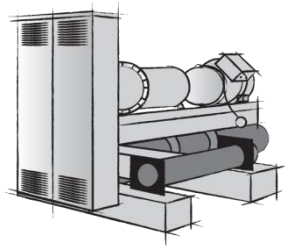
Applications

Heat pump applications:

- air / air
- air / water unit
- water / water unit







IC208CX

Resources controlled per unit:

- single circuit: up to 4 ON\OFF compressors
- double circuit: 2 ON\OFF compressors per circuit

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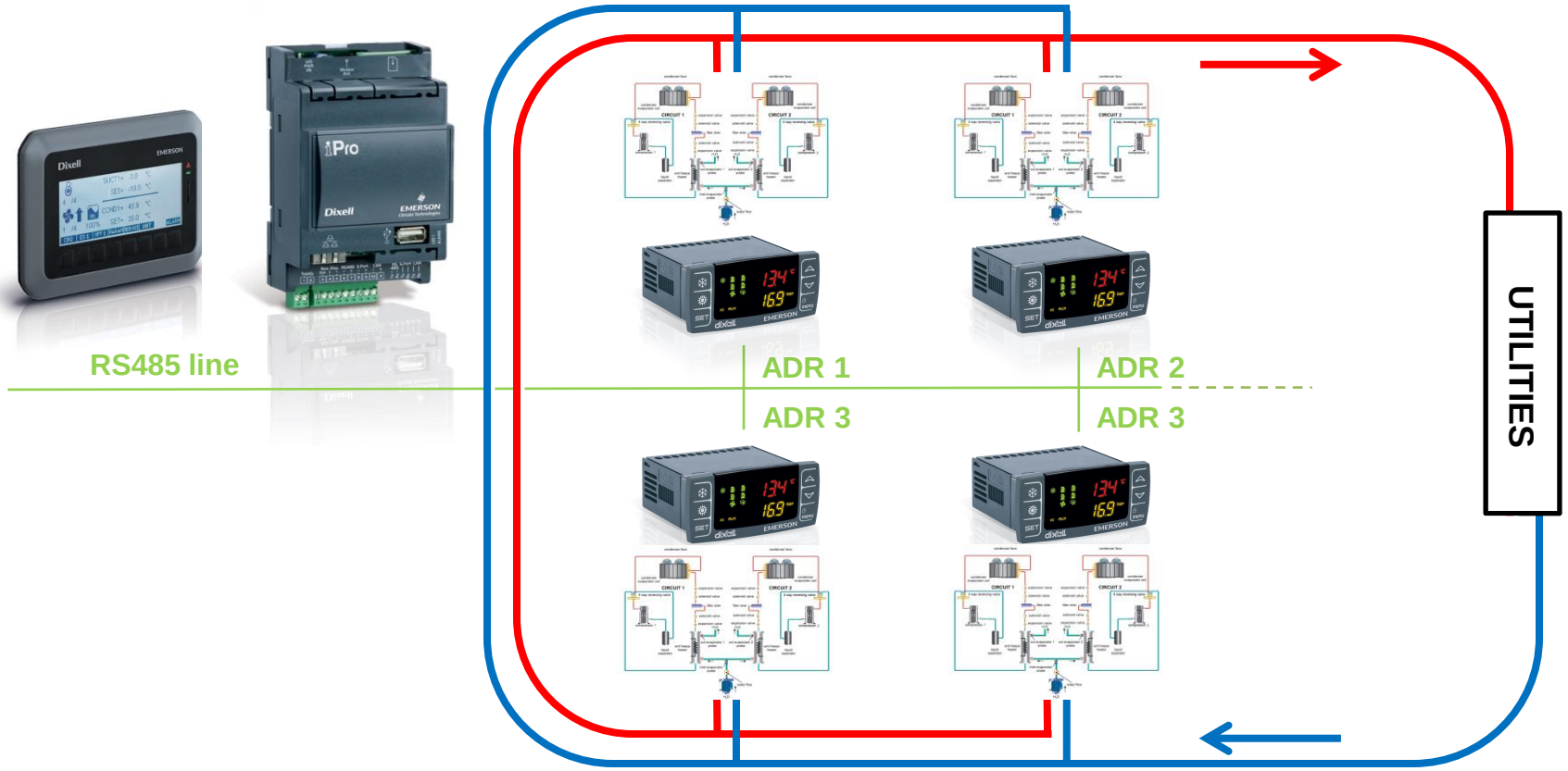
Main Features

- Up to 10 slave units working together
- Regulation made on the average of the active units' probes
- Proportional or neutral zone regulation
- Automatic defrost synchronization
- Possibility to have a back up unit
- Whole system information in one screen

Example of Application



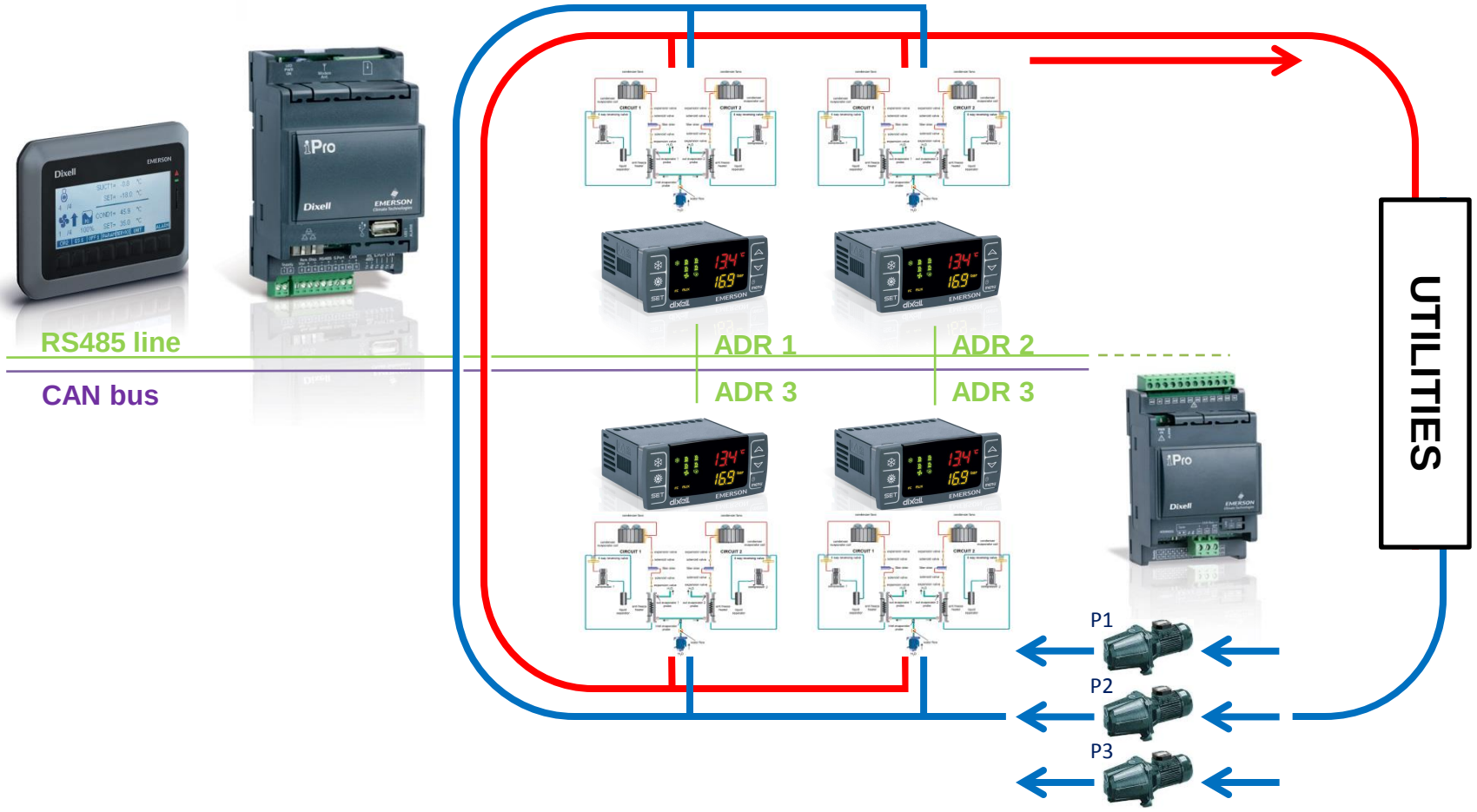
The units work as a single machine

The regulation is made on the average of the single units' probes

Additional Functions with Expansion Modules

- Regulation made with the expansion probes
- Up to 3 On\Off water pumps management
- Up to 2 flow swicthes and 1 pressure switch configurable
- Power limiter function
- Power overboost function
- Changeover function through digital input

Example of Application



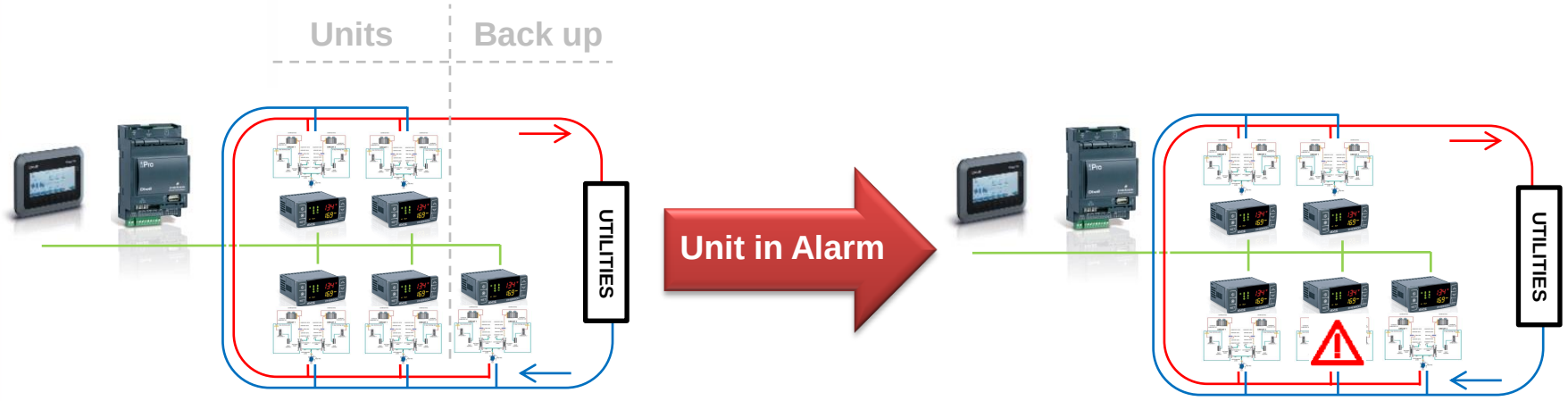
The expansion can manage water pumps, flow switches and pressure switch

The regulation can be done with the average of the single units' probes or with the expansion probes

Back-Up Unit Functionality

One of the units can be set as a back-up unit. This unit will start working when:

- Another unit is in alarm (to compensate the active power steps number)
- To perform the units' rotations (to extend the units' life)
- To erogate extra power when needed (overboost function)



4 units + 1 Back Up unit

4 units active + 1 in alarm

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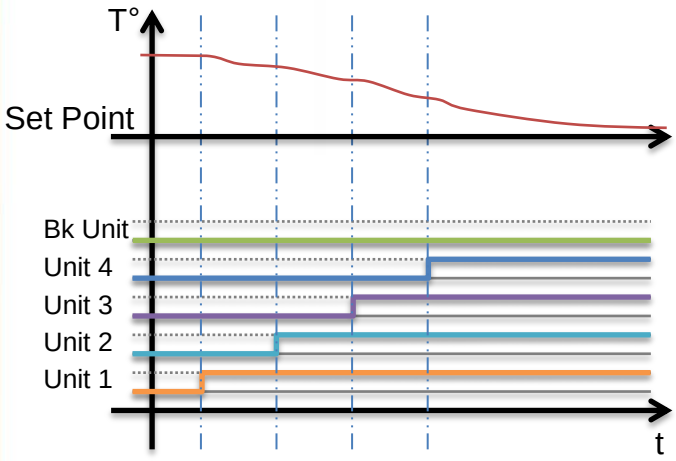
Overboost Function

The overboost functionality allows the system to reach the Set Point faster

- There is the possibility to enable the function manually or with a time delay

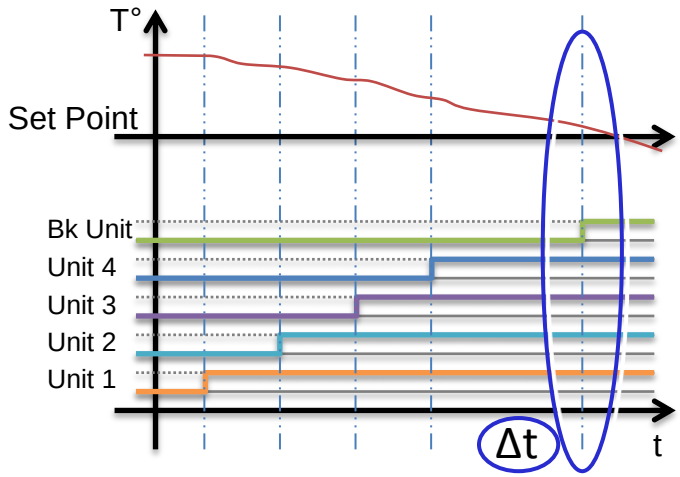
Without overboost



The power supplied is not enough to reach the set point in time

OVERBOOST

With overboost by time



The back up unit supplies extra power to reach the set point

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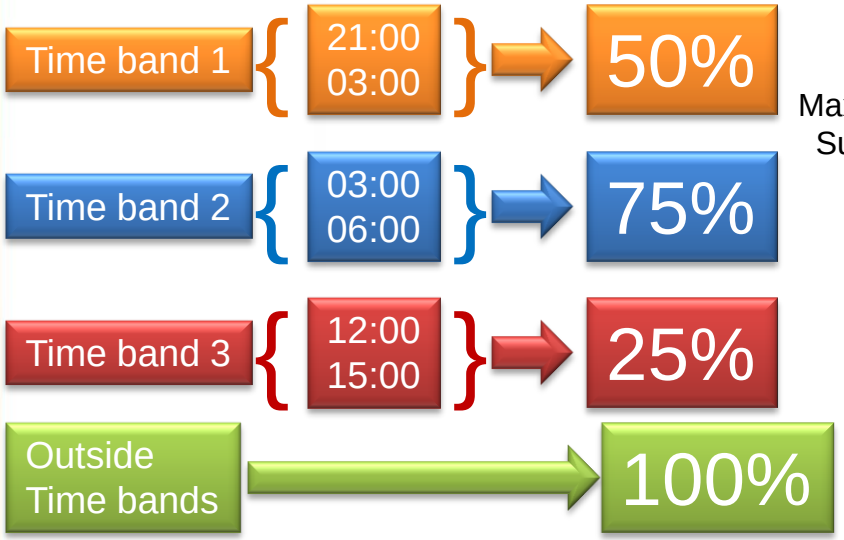
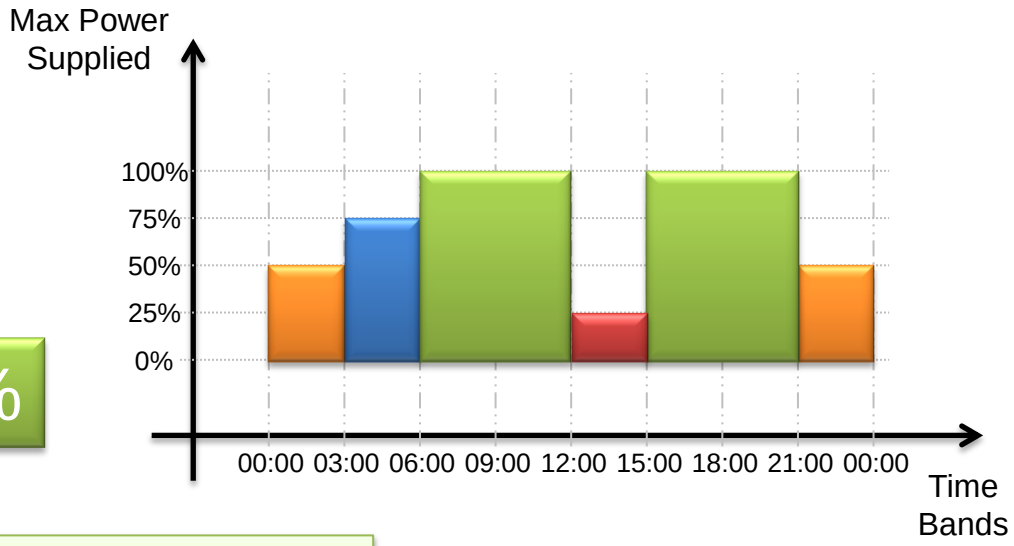
Limiter Function

The limiter functionality allows the system to limit the power usage

- There is the possibility to enable the function manually or through time bands





Power consumption limit

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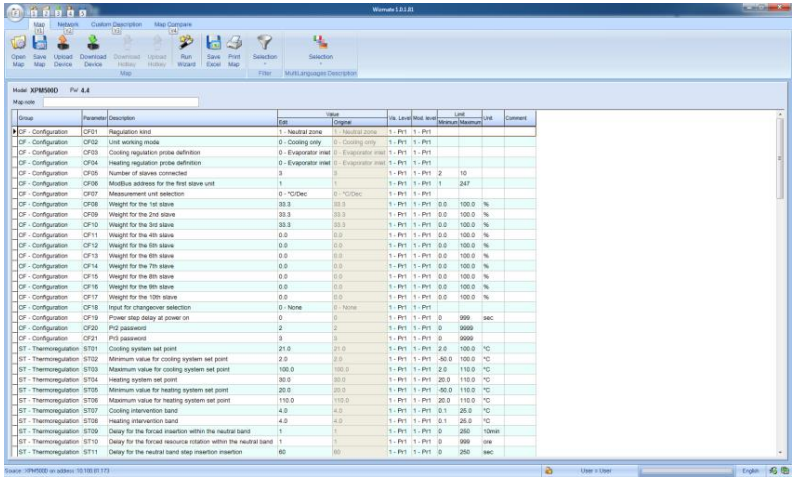
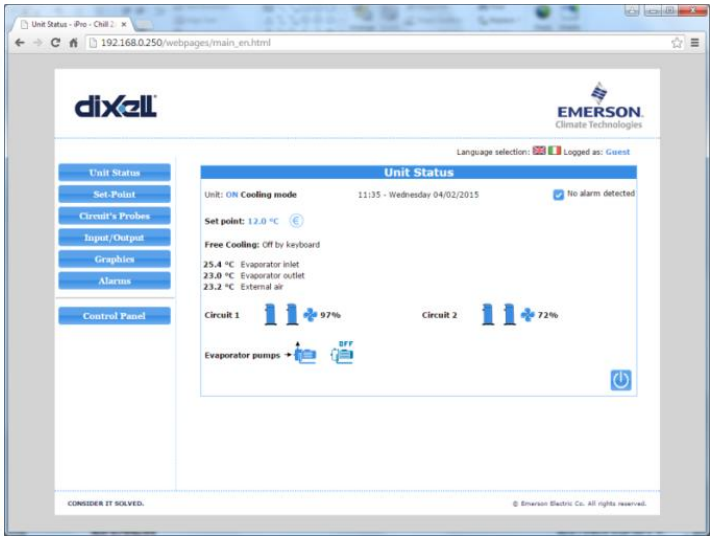
Saving energy and money

Extra Features

Wizmate supports the programming of the master and the slaves





Possibility to develop custom web pages for a master web interface

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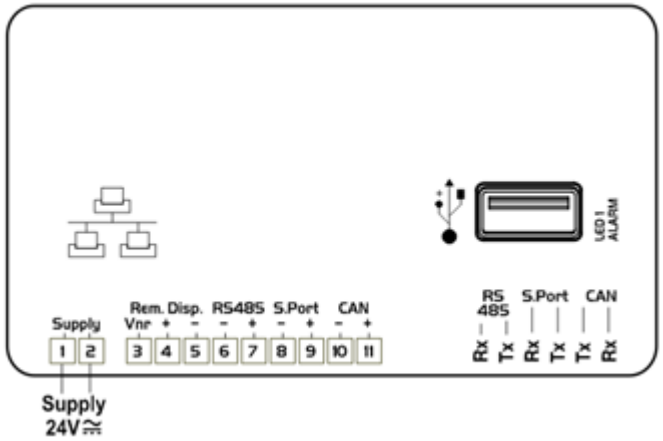
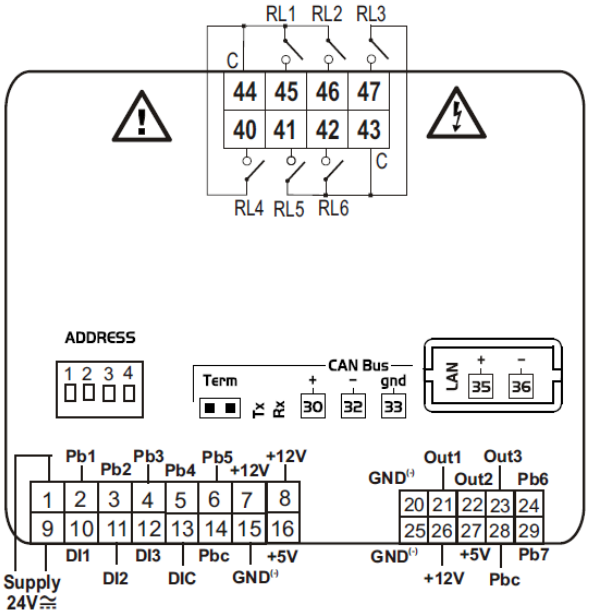
IPM500D Connections



Connectors	Reference	Description
	Ethernet	Ethernet connector
	USB	USB stick connector

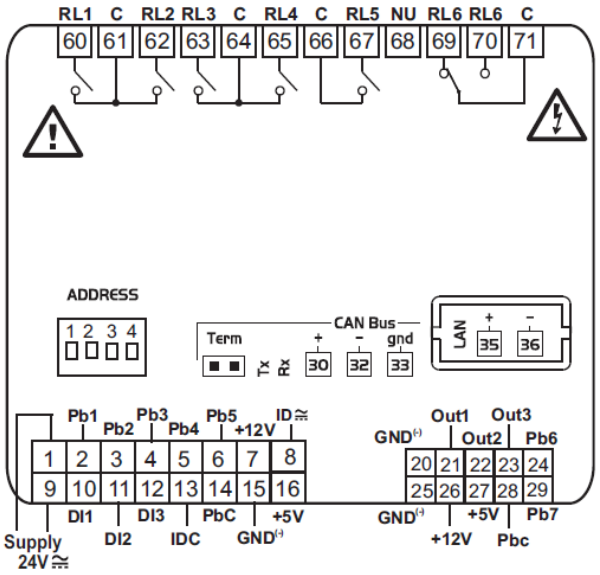
Terminal	Reference	Description
1	Supply	Reference “-“/GND power (24Vac or 24Vdc)
2	Supply	Reference “+“ power supply (24Vac or 24Vdc)
3	Disp. VNR	Connection for VISOGRAPH remote terminal (Vnr)
4	Disp. +	Connection for VISOGRAPH remote terminal (+)
5	Disp. –	Connection for VISOGRAPH remote terminal (-)
6	485 –	RS485 Slave connection (-)
7	485 +	RS485 Slave connection (+)
8	S.Port –	RS485 MASTER Connection (-)
9	S.Port +	RS485 MASTER Connection (+)
10	Can –	CANBUS connection (-)
11	Can +	CANBUS connection (+)

IPX106D Connections



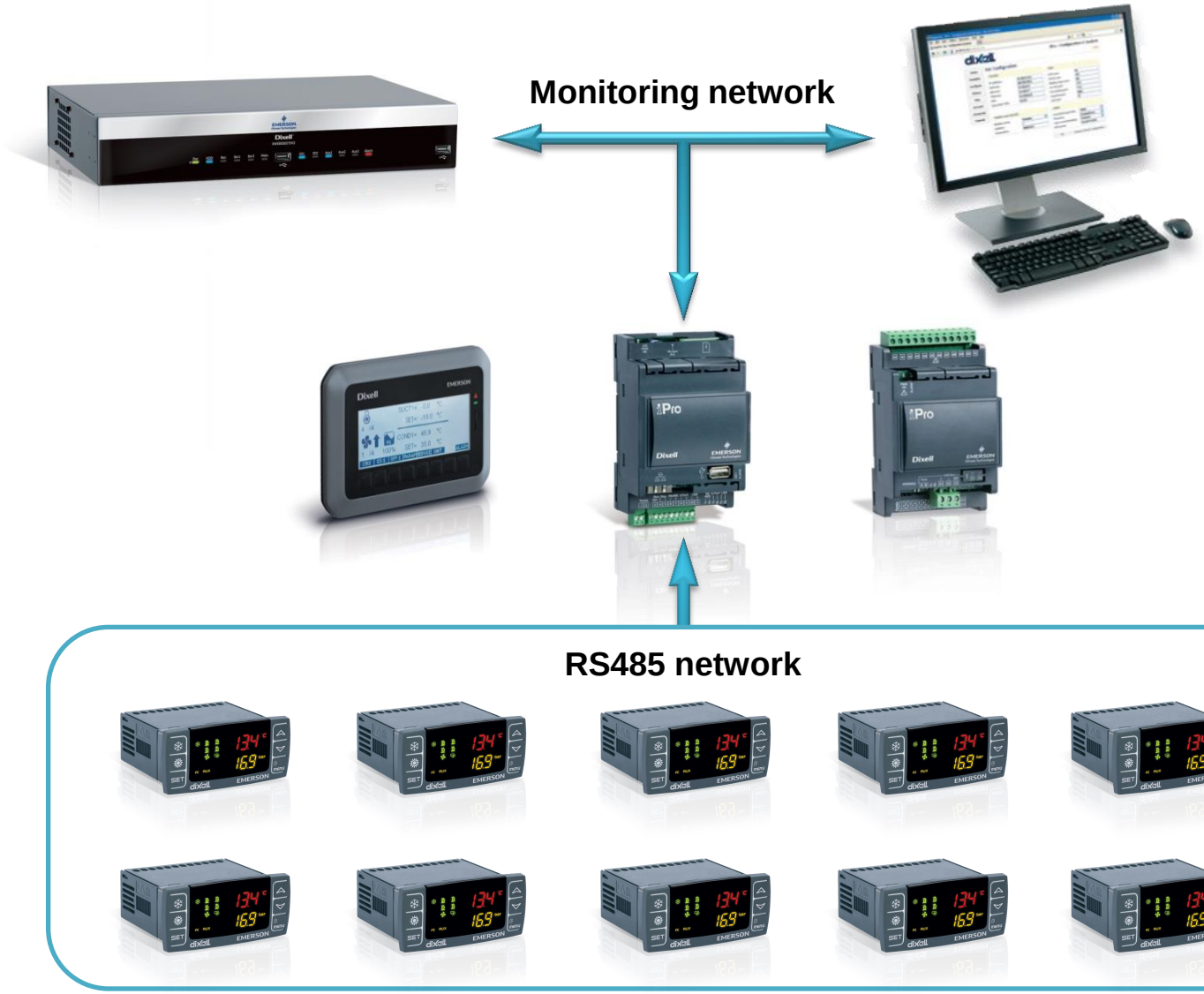
Term.	Ref.	Description	Term.	Ref.	Description
1	Supply	Reference "-"/GND power (24Vac or 24Vdc)	24	Pb6	Configurable analogue input 6
2	Pb1	Configurable analogue input 1	25	GND	GND reference for analogue outputs
3	Pn2	Configurable analogue input 2	26	+12V	+12Vdc reference for analogue inputs supply
4	Pb3	Configurable analogue input 3	27	+5V	+5Vdc reference for analogue inputs supply
5	Pb4	Configurable analogue input 4	28	PbC	Common analogue inputs
6	Pb5	Configurable analogue input 5	29	Pb7	Configurable analogue input 7
7	+12V	+12Vdc reference for analogue inputs supply	30	CAN +	CAN Bus connection (+),
8	+12V	Additional power +12Vdc	32	CAN –	CAN Bus connection (-),
9	Supply	Reference "+" power supply (24Vac or 24Vdc)	33	CAN gnd	CAN Bus connection (gnd)
10	DI1	Digital input 1	35	LAN +	LAN connection (+)
11	DI2	Digital input 2	36	LAN –	LAN connection (-)
12	DI3	Digital input 3	40	RL4	Relay 4 no contact
13	DIC	Common digital inputs	41	RL5	Relay 5 no contact
14	PbC	Common analogue inputs	42	RL6	Relay 6 no contact
15	GND	GND reference for analogue inputs supply	43	C	Common for relays 5, 6 and 3 (MAX 6A)
16	+5V	+5Vdc reference for analogue inputs supply	44	C	Common for relays 1, 2 and 4 (MAX 6A)
20	GND	GND reference for analogue outputs	45	RL1	Relay 1 no contact
21	Out1	Analogue output 1 0 - 10V	46	RL2	Relay 2 no contact
22	Out2	Analogue output 2 0 - 10V	47	RL3	Relay 3 no contact
23	Out3	Analogue output 3 0 - 10V			

IPX206D-IPX306D Connections



Term.	Ref.	Description	Term.	Ref.	Description
1	Supply	Reference "-"/GND power (24Vac or 24Vdc)	25	GND	GND reference for analogue outputs
2	Pb1	Configurable analogue input 1	26	+12V	+12Vdc reference for analogue inputs supply
3	Pn2	Configurable analogue input 2	27	+5V	+5Vdc reference for analogue inputs supply
4	Pb3	Configurable analogue input 3	28	PbC	Common analogue inputs
5	Pb4	Configurable analogue input 4	29	Pb7	Configurable analogue input 7
6	Pb5	Configurable analogue input 5	30	CAN +	CAN Bus connection (+),
7	+12V	+12Vdc reference for analogue inputs supply	32	CAN –	CAN Bus connection (-),
8	ID	Common digital inputs line contact	33	CAN gnd	CAN Bus connection (gnd)
9	Supply	Reference "+" power supply (24Vac or 24Vdc)	35	LAN +	LAN connection (+)
10	DI1	Digital input 1	36	LAN –	LAN connection (-)
11	DI2	Digital input 2	60	RL1	Relay 1 no contact
12	DI3	Digital input 3	61	C	Common for relays 1 and 2
13	DIC	Common digital inputs free voltage	62	RL2	Relay 2 no contact
14	PbC	Common analogue inputs	63	RL3	Relay 3 no contact
15	GND	GND reference for analogue inputs supply	64	C	Common for relays 3 and 4
16	+5V	+5Vdc reference for analogue inputs supply	65	RL4	Relay 4 no contact
20	GND	GND reference for analogue outputs	66	C	Common for relay 5
21	Out1	Analogue output 1 0 - 10V	67	RL5	Relay 5 no contact
22	Out2	Analogue output 2 0 - 10V	69	RL6	Relay 6 nc contact
23	Out3	Analogue output 3 0 - 10V	70	RL6	Relay 6 no contact
24	Pb6	Configurable analogue input 6	71	C	Common for relay 6

Generic Connection Scheme



Thank you!

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