ECP**202** EXPERT + BASE

Use and maintenance manual

READ AND KEEP

Rel. Software: 26

ELECTRICAL BOARDS FOR REFRIGERATING INSTALLATIONS

Pego

CONTENTS

CHAPTER 1: INTRODUCTION

1.1 GENERAL

The electronic controllers of the **ECP202 EXPERT + BASE** series have been designed to control static or ventilated cold rooms.

The **ECP202 EXPERT + BASE** electronic board allows the user to control all the components on a refrigeration unit such as compressor, evaporator fans, defrosting elements and cold room light.

The applications are:
- single-phase static or ventilated refrigeration systems up to 2 HP, with off-cycle or electrical defrosting.
- out of room unit to be connected to power board for compressor, defrosting and fan start.
- single-phase evaporator control unit with cold solenoid consensus or remote condensing unit consensus.

The ABS box is easy to install on the wall as the **ECP202 EXPERT + BASE** has a minimum footprint and IP65 protection degree.

1.2 PRODUCT ID CODES

200202EXBCS

Control and management of the compressor, defrosting heaters, evaporator fans and cold room light. Two configurable auxiliary relays. 16A differential magnetothermic protection.

OVERALL DIMENSIONS   1.3

IDENTIFICATION DATA   1.4

The unit described in this manual has an ID plate on the side showing all the relevant identification data:

- Name of Manufacturer
- Code of the panel
- Serial number
- Date of production
- Power supply
- IP protection rating
- Operating temperature

CHAPTER 2: INSTALLATION

2.1	IMPORTANT INFORMATION FOR THE INSTALLER

1. Install the device in places where the protection rating is observed and try not to damage the box when drilling holes for wire/pipe seats.

2. Do not use multi-polar cables in which there are wires connected to inductive/power loads or signalling wires (e.g. probes/sensors and digital inputs).

3. Do not fit power supply wiring and signal wiring (probes/sensors and digital inputs) in the same raceways or ducts.

4. Minimise the length of connector wires so that wiring does not twist into a spiral shape as this could have negative effects on the electronics.

5. Fit a general protection fuse upstream from the electronic controller.

6. All wiring must be of a cross-section suitable for relevant power levels.

7. When it is necessary to make a probe/sensor extension, the wires must have a cross-section of at least 1mm^2. Probes extension or shortening could alter their factory calibration; then proceed with the verification and calibration, using an external thermometer.

2.2	STANDARD ASSEMBLY KIT

The **ECP202 EXPERT + BASE** electronic controller, for assembly and use, is equipped with:

- Nr 3 seals, to be fitted between the fixing screws and the box back panel;
- Nr 1 user's manual.

2.3	INSTALLING THE UNIT

Fig. 1: Raise the transparent cover that shields the magneto-thermal cut-out switch and remove the screw cover on the right-hand side.

Fig. 2: Undo the 4 fixing screws at the front of the box.

Fig. 3: Close the transparent cut-out switch cover.

Fig. 4: Open the front of the box, lift it and slide the two hinges out as far as they will go.

Fig. 5: Press on the sides of the hinges to remove them from their seats and so remove the front panel completely.

Fig. 6: Use the three existing holes to fix the box back panel to the wall: use three screws of a length suitable for the thickness of the wall to which the panel will be attached. Fit a rubber washer (supplied) between each screw and the box backing.
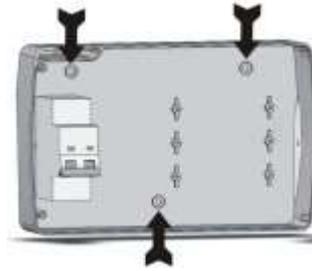
Fig. 7: Hook the frontal panel back up to the lower part of the box by inserting the two hinges in their seats and, bending them, rotate downwards 180° to gain access to the electronic board.
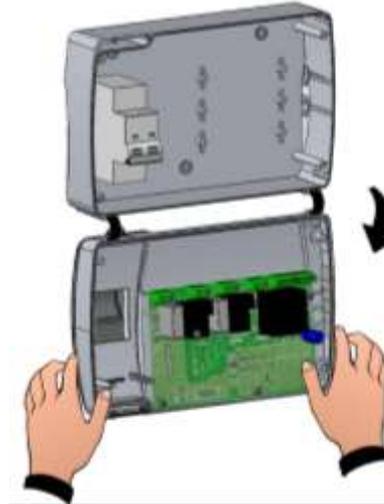
Make all electrical connections according to diagram A2.
To carry out the electrical connections reliably and maintain the degree of protection of the box, we recommend using suitable cable glands and / or pipe clamps to tightly seal all the wiring.
It is advisable to distribute the cables within the panel as neatly as possible. In particular, keep the power cables away from the signal cables. Use any sealing strips.

Fig. 8: Close the front panel, making sure that all the wires are inside the box and that the box seal sits in its seat properly. Tighten the front panel using the 4 screws.
Give power supply to the panel and carry out a scrupulous reading / programming of all the parameters set.

Be careful not to over-tighten the closing screws as they could cause deformation of the box and alter the correct operation and tactile effect of the panel keyboard.
On all loads connected to the ECP202 EXPERT + BASE electronic controller, install overcurrent protection devices for short-circuits, to avoid damaging the device. Every operation and / or maintenance operation must be carried out by disconnecting the panel from the power supply and from all the possible inductive and power loads to which it is connected; this to guarantee the maximum safety condition for the operator.

CHAPTER 3: FUNCTIONS

3.1   ECP202 EXPERT + BASE PANEL FUNCTIONS

- Cold room temperature displaying and regulation with decimal point.

- Evaporator temperature with decimal point displaying from parameter.

- Plant control activation/deactivation.

- Plant alarms signalling (probe error, minimum and maximum temperature alarm, compressor protection, door alarm).

- LED indicators and large display illustrate system status.

- User-friendly keypad.

- Evaporator fans management.

- Manual and automatic defrost (static, through heaters, through heaters with temperature control, through cycle reversal).

- Direct or pump-down management and control of condensing unit up to 2HP.

- Cold room light activation through key on the panel or through door-switch.

- Direct control of compressor, defrosting elements, evaporator fans, room light with outputs directly connectable to the various units.

- Air recirculation management.

- 2 auxiliary relays which are configured by parameter.

- RS485 to connect to a TeleNET supervision system or a MODBUS-RTU network.

- Emergency operation in the event of a faulty probe environment.

- Smart defrost (energy saving).

- Reduced set (night set) from digital input.

- Can be configured for hot or cold applications.

- Configurable digital inputs.

CHAPTER 4: TECHNICAL CHARACTERISTICS

TECHNICAL CHARACTERISTICS   4.1

Power supply	
Voltage	230 V~ ± 10% 50/60Hz
Max power (only electronics)	~ 7 VA
Rated current (with all loads connected)	16A

Cold room conditions	
Working temperature	-5T40°C <90% R.H. non condensing
Storage temperature	-10T70°C <90% R.H. non condensing

General characteristics	
Type of sensors that can be connected	NTC 10K 1%
Resolution	0,1 °C
Sensor read precision	± 0,5 °C
Read range	-45 ÷ +99 °C

Output characteristics (voltage free contacts)

Description	Installed relay	Card output characteristics	Note
Compressor	(Relay 30A AC1)	10A 250V~ (AC3) (2HP) (100000 cycles)	The sum of contemporary absorptions of these outputs **has not to exceed 16A**
Elements	(Relay 30A AC1)	16A 250V~ (AC1)	
Fans	(Relay 16A AC1)	2,7A 250V~ (AC3	
Room light	(Relay 16A AC1)	16A 250V~ (AC1)	
Aux 1	(Relay 5A AC1)	5(3)A 250V~	
Aux 2	(Relay 5A AC1)	5(3)A 250V~	
Insulation between relay outputs: 1500V			

General electrical protection	Differential magnetothermic circuit breaker 16A Id = 300mA (Id = 30mA, on request) Disconnecting power 4.5 kA

Dimensional characteristics	
Dimensions	18cm x 9.6cm x 26.3cm (HxPxL)

Insulation / mechanical characteristics	
Box protection rating	IP65
Box material	self-extinguishing ABS
PTI of insulation materials	Printed circuits 175
Type of insulation	Class II
Type of action and disconnection	Relay contacts 1B (micro disconnection)
Environmental pollution	2, normal situation
Ball pressure test temperature	75°C for the plastic cover and 100°C for the plastic components that carry electricity.

4.2	WARRANTY TERMS

The **ECP202 EXPERT + BASE series** products are covered by a 24-months warranty against all manufacturing defects as from the date indicated on the product ID code.

In case of defect the product must be appropriately packaged and sent to our production plant or to any authorized Service Center <u>with the prior request of the Return Authorization Number</u>.

Customers are entitled to have defective products repaired, spare parts and labor included. The costs and the risks of transport are at the total charge of the Customer.
Any warranty action does not extend or renew its expiration.

The Warranty does not cover:
• Damages resulting from tampering, impact or improper installation of the product and its accessories.
• Installation, use or maintenance that does not comply with the instructions provided with the product.
• Repair work carried out by unauthorized personnel.
• Damage due to natural phenomena such as lightning, natural disasters, etc…

In all these cases the costs for repair will be charged to the customer.

The intervention service in warranty can be refused when the equipment is modified or transformed.

Under no circumstances **Pego S.r.l.** will be liable for any loss of data and information, costs of goods or substitute services, damage to property, people or animals, loss of sales or earnings, business interruption, any direct, indirect, incidental, consequential, damaging, punitive, special or consequential damages, in any way whatsoever caused, whether they are contractual, extra contractual or due to negligence or other liability arising from the use of the product or its installation.

Malfunction caused by tampering, bumps, inadequate installation automatically declines the warranty. It is compulsory to observe all the instructions in this manual and the operating conditions of the product.

Pego S.r.l. disclaims any liability for possible inaccuracies contained in this manual if due to errors in printing or transcription.

Pego S.r.l. reserves the right to make changes to its products which it deems necessary or useful without affecting its essential characteristics.

Each new release of the Pego product user manual replaces all the previous ones.

As far as not expressly indicated, is applicable the Law and in particular the art. 1512 C.C. (Italian Civil Code).

For any controversy is elected and recognized by the parties the jurisdiction of the Court of Rovigo.

CHAPTER 5: PARAMETER PROGRAMMING

CONTROL PANEL	5.1

FRONT KEYPAD	5.2

❶ AUX **AUXILIARY RELAY CONTROL**
(controls the relays manual if parameter AU1/AU2 = 2/-2)

❷ **UP / MUTE BUZZER ALARM**

❸ **STAND BY** (if the system shuts down the LED flashes)

❹ room temperature **SETTING**

❺ **DOWN / MANUAL DEFROST**

❻ **ROOM LIGHT**

LED DISPLAY 5.3

❼ **Cold room temperature / parameters**

❽ **Stand-by (flashes on stand-by. Outputs are deactivated)**

❾ **Room light (flashes if door switch activated)**

❿ **Cold (indicates activation of compressor)**

⓫ **Fans**

⓬ **Defrosting**

⓭ **Auxiliary (indicates AUX relay calling if AU1/AU2=+/-2 or +/-3)**

⓮ **Alarm / warning**

⓯ **Decimal point (flashing in night mode)**

⓰ **Hot mode (resistance call signaling)**

5.4   GENERAL

To enhance safety and simplify the operator's work, the **ECP202 EXPERT + BASE system** has two programming levels; the first level (Level 1) is used to configure the frequently modified **SETPOINT** parameters. The second programming level (Level 2) is for general parameter programming of the various controller work modes.

It is not possible to access the Level 2 programming directly from Level 1: you must exit the programming mode first.

5.5   SYMBOLOGY

For purposes of practicality the following symbols are used:

- **(▲)** the UP key is used to increase values and mute the alarm.

- **(▼)** the DOWN key is used to decrease values and force defrosting.

5.6   SETTING AND DISPLAYING THE SET POINT

1. Press the **SET key** to display the current **SETPOINT** (temperature).
2. Hold down the **SET key** and press the **(▲)** or **(▼)** keys to modify the **SETPOINT**.
3. Release the **SET key** to return to cold room temperature display: the new setting will be saved automatically.

LEVEL 1 PROGRAMMING (User level) **5.7**

To gain access to the Level 1 configuration menu proceed as follows:
1. Press the (▲) and (▼) keys simultaneously and keep them pressed for a few seconds until the first programming variable appears on the display.
2. Release the (▲) and (▼) keys.
3. Select the variable to be modified using the (▲) or (▼) key.
4. When the variable has been selected it is possible:
    • To display the setting by pressing SET key.
    • To modify the setting by pressing the SET key together with the (▲) or (▼) key.
When configuration values have been set you can exit the menu by pressing the (▲) and (▼) keys simultaneously for a few seconds until the cold room temperature reappears.
5. The new settings are saved automatically when you exit the configuration menu.

5.8 **LIST OF LEVEL 1 VARIABLES (User level)**

VARIABLES	MEANING	VALUE	DEFAULT
r0	**Temperature difference** compared to main SETPOINT	0,2 ÷ 10,0 °C	2,0 °C
d0	**Defrost interval** (hours) If d0 = 0 cyclical defrosts Off	0 ÷ 24 hours	4 hours
d2	**End-of-defrost setpoint**. Defrost is not executed if the temperature read by the defrost sensor is greater than d2 (if the sensor is faulty defrosting is timed).	-35 ÷ 45 °C	15°C
d3	**Max defrost duration** (minutes)	1 ÷ 240 min	25 min
d7	**Drip duration** (minutes) At the end of defrost the compressor and fans remain at standstill for time d7, the defrost LED on the front panel flashes.	0 ÷ 10 min	0 min
F5	**Fan pause** after defrosting (minutes) Allows fans to be kept at standstill for a time F5 after dripping. This time begins at the end of dripping. If no dripping has been set the fan pause starts directly at the end of defrost.	0 ÷ 10 min	0 min
A1	**Minimum temperature alarm** Allows user to define a minimum temperature for the room being refrigerated. Below value A1 an alarm trips: the alarm LED flashes, displayed temperature flashes and the buzzer sounds to indicate the problem.	-45 ÷ (A2-1) °C	-45°C
A2	**Maximum temperature alarm** Allows user to define a maximum temperature for the room being refrigerated. Above value A2 an alarm trips: the alarm LED flashes, displayed temperature flashes and the buzzer sounds to indicate the problem.	(A1+1) ÷ 99 °C	+99°C
tEu	**Evaporator sensor temperature display** (displays nothing if dE=1)	Temperature	read only

| LEVEL 2 PROGRAMMING (Installer level) | 5.9 |

To access the second programming level, proceed as follows:

1. Press the UP (▲) and DOWN (▼) keys and the LIGHT key simultaneously for a few seconds. When the first programming variable appears the system automatically goes to stand-by.
2. Release the three keys.
3. Select the variable to be modified by pressing the UP (▲) and DOWN (▼) keys. When the parameter has been selected it is possible to:
   - View the setting by pressing the SET key.
   - Modify the setting by holding the SET key down and pressing the (▲) or (▼) key.
4. When configuration settings have been completed you can exit the menu by pressing the (▲) and (▼) keys simultaneously and keeping them pressed until the room temperature reappears.

Changes are saved automatically when you exit the configuration menu.

Press the STAND-BY key to enable electronic control.

| LIST OF LEVEL 2 VARIABLES (Installer level) | 5.10 |

VARIABLES	MEANING	VALUES	DEF.
F3	**Fan status with compressor off**	0 = Fans run continuously 1 = Fans only run when compressor is working 2 = Fans disabled	1
F4	**Fan pause during defrost**	0 = Fans run during defrost 1 = Fans do not run during defrost	1
F6	**Evaporator fans activation for air recirculation.** The fans activate for a time defined by F7 if they have not started working for the F6 time. If activation time coincides with the defrosting time, end of defrosting is awaited.	0 ÷ 240 minutes 0 = (function not activated)	0 min
F7	**Evaporator fans duration for air recirculation.** Fans working time for F6	0 ÷ 240 seconds	10 sec
dE	**Sensor presence** If the evaporator sensor is disabled defrosts are carried out cyclically with period d0: defrosting ends when an external device trips and closes the remote defrost contact or when time d3 expires.	0 = evaporator sensor present 1 = no evaporator sensor	0
d1	**Defrost type**, cycle inversion (hot gas) or with heater elements	0 = heating element 1 = hot gas 2 = heater with temperature control	0
dPo	**Defrost at Power On**	0 = disabled 1 = defrost at power-on (if possible)	0
dSE	**Smart defrost**	0 = disabled 1 = enabled	0
dSt	**Smart defrost Setpoint (if dSE=1)** The counting of the time between the defrost is incremented only if the compressor is ON and the evaporator temperature is less than dSt.	-30 ÷ 30 °C	1 °C

dFd	**Display viewing during Defrost**	0 = current temperature 1 = temperature at the start of the defrost 2 = "DEF"	1
Ad	**Net address** for connection to TeleNET supervision system or Modbus.	0 ÷ 31 (with SEr=0) 1 ÷ 247 (with SEr=1)	0
SEr	**RS-485 communication protocol**	0 = TeleNET protocol 1 = Modbus-RTU protocol	0
Bdr	**Modbus baudrate**	0 = 300 baud 3 = 2400 baud 6 = 14400 baud 1 = 600 baud 4 = 4800 baud 7 = 19200 baud 2 = 1200 baud 5 = 9600 baud 8 = 38400 baud	5
Prt	**Modbus parity check**	0 = none 1 = even 2 = odd	0
Ald	**Minimum and maximum temperature** signalling and alarm display delay.	0 ÷ 240 min	120 min
C1	Minimum time between shutdown and **subsequent switching on of the compressor**.	0 ÷ 15 min	0 min
CAL	**Cold room sensor value correction**	-10,0 ÷ +10,0 °C	0,0 °C
CE1	**Duration of compressor ON time in the case of faulty ambient probe** (emergency mode). If CE1=0 the emergency mode in the presence of error E0 remains disabled, the compressor remains off and defrosting is prevented in order to conserve the remaining cold.	0 ÷ 240 min 0 = disabled	0 min
CE2	**Duration of compressor OFF time in the case of faulty ambient probe.** (emergency mode).	5 ÷ 240 min	5 min
doC	**Compressor safety time for door switch.** When the door is opened, the evaporator fans shut down and the compressor will continue working for time **doC**, after which it will shut down.	0 ÷ 5 min	0 min
tdo	**Compressor restart time after door opening.** When the door is opened and after tdo time, it's setted back the normal functioning giving door open alarm (Ed). If the door switch is closed and the light stays on for a longer time than tdo light cell alarm is signaled (E9). With tdo=0 the parameter is disabled.	0 ÷ 240 min 0 = disabled	0 min
Fst	**FAN shutdown TEMPERATURE** The fans will stop if the temperature value read by the **evaporator** sensor is higher than this value.	-45 ÷ +99 °C	+99 °C
Fd	**Fst differential**	+1 ÷ +10 °C	2 °C
LSE	**Minimum value attributable to setpoint.**	-45 ÷ (HSE-1) °C	-45 °C
HSE	**Maximum value attributable to setpoint.**	(LSE+1) ÷ +99°C	+99 °C

AU1	**Auxiliary/alarm relay 1 control**	-6 (NC) = relay de-energised during stand-by -5 (NC) = Contact for casing element control (AUX relay closed with compressor output inactive). -4 (NC) = pump down function (NC, see CHAP 5.16) -3 (NC) = automatic auxiliary relay managed by StA temp. setting with 2°C differential (NC) -2 (NC) = manual auxiliary relay controlled via AUX key (NC) -1 (NC) = alarm relay (NC) 0 = relay deactivated 1 (NO) = alarm relay (NO) 2 (NO) =manual auxiliary relay controlled via AUX key (NO) 3 (NO) = automatic auxiliary relay managed by StA temp. setting with 2°C differential (NO) 4 (NO) = pump down function (NO, see CHAP 5.16) 5 (NO) = free voltage contact for condensing unit (AUX relay and compressor relay in parallel) 6 (NO) = relay excited during stand-by	-1
AU2	**Auxiliary/alarm relay 2 control**	- Same legend of AU1 values -	5
StA	**Temperature setting for auxiliary relay**	-45 ÷ +99°C	0 °C
nSC	**Correction factor for the SET button during night operation** (energy saving) (with In1 or In2 = 8 or -8) During night operation the control set is: Set Control = Set + nSC In night mode decimal point flashes.	-20,0 ÷ +20,0 °C	0,0 °C
In1	**INP-1 input setting**	8 = Night mode digital input (energy saving, N.O.) 7 = Stop defrosting remotely (N.O.) (reads rising edge of impulse) 6 = Start defrosting remotely (N.O.) (reads rising edge of impulse) 5 = Stand-by remotely (N.O.) (In order to indicate Stand-By mode, the display shows 'In5' alternating with the current view) 4 = Pump-down pressure switch (N.O.) 3 = Man-in-room alarm (N.O.) 2 = Compressor protection (N.O.) 1 = Door switch (N.O.) 0 = disabled -1 = Door switch (N.C.) -2 = Compressor protection (N.C.) -3 = Man-in-room alarm (N.C.) -4 = Pump-down pressure switch (N.C.) -5 = Stand-by remotely (N.C.) (In order to indicate Stand-By mode, the display shows 'In5' alternating with the current view) -6 = Start defrosting remotely (N.C.) (reads falling edge of impulse) -7 = Stop defrosting remotely (N.C.) (reads falling edge of impulse) -8 = Night mode digital input (energy saving, N.C.)	2
In2	**INP-2 input setting**	- Same legend of In1 values -	1
bEE	**Buzzer enable**	0 = disabled 1 = enabled	1

mOd	**Thermostat functioning mode**	0 = Cold function 1 = Hot function (in this mode defrosting and fan disable Fst are excluded)	0
P1	**Password type of protection** (active when PA is not equal 0)	0 = only display set point 1 = display set point, AUX, light access 2 = access in programming not permitted 3 = access in second level programming not permitted	3
PA	**Password** (see P1 for the type of protection)	0...999 0 = not active	0
reL	**release software**	indicates software version	26 (read only)

5.11   SWITCHING ON THE ECP202 EXPERT + BASE ELECTRONIC CONTROLLER

After wiring the electronic controller correctly, power up at 230 V AC; the display panel will immediately emit a beep and all the LEDs will come on simultaneously for a few seconds.

5.12   COLD/HOT ACTIVATION/DEACTIVATION CONDITIONS

In cold mode (mOd=0), the **ECP202 EXPERT + BASE** controller activates the compressor when cold room temperature exceeds setting+differential (r0); it deactivates the compressor when cold room temperature is lower than the setting.
If Pump-Down function is selected (Parameter AU1/AU2 = 4/-4), see chapter 5.16 for compressor activation/deactivation conditions.
In hot mode (mOd=1), the **ECP202 EXPERT + BASE** controller activates the heat output (COMPR output) when cold room temperature drops below setting-differential (r0); it deactivates the heat output (COMPR output) when cold room temperature is higher than the setting.

5.13   MANUAL DEFROSTING ACTIVATION/DEACTIVATION

To defrost just press the dedicated key (see section 5.2) to activate the elements relay. Defrosting will not take place if the end-of-defrost temperature setting (d2) is lower than the temperature detected by the evaporator sensor. Defrosting ends when the end-of-defrost temperature (d2) or maximum defrost time (d3) is reached, or due to forced manual defrost termination (end of defrost button or digital input).

5.14   DEFROST WITH HEATER AND TEMPERATURE CONTROL

Set the parameter d1=2 for the management of heater defrost by time with temperature control. During the defrost the output is activated when the evaporator's temperatures are lower than d2. Defrost stops after d3 minutes. It allows energy saving and a better defrost process.

5.15   HOT GAS DEFROSTING

Set parameter d1=1 to defrost in cycle inversion mode.

The compressor relay and defrost relay are activated throughout the defrost phase.

To ensure proper control of the system the installer must use the defrost output: this must allow opening of the cycle inversion solenoid valve and closure of the liquid solenoid valve. For capillary systems (without thermostat valve) it is only necessary to control the cycle inversion solenoid valve via the defrost relay control.

5.16   PUMP DOWN FUNCTION

Pump down function is activated when parameter AU1/AU2 = 4 / -4.

Connect pump down pressostat on the digital input configured as pump down (In1 or In2 = 4 / -4). The compressor is directly controlled by pressostat. Connect evaporator solenoid valve on the AUX1 (or AUX2) relay. The solenoid is controlled directly by thermostat.

5.17   PASSWORD FUNCTION

When parameter PA is setting with value different to 0 the protection function is activated.

See parameter P1 for the different protection.

When PA is setting the protection start after two minutes of inactivity. On display appear 000. With up/down modify the number, with set key confirm it.

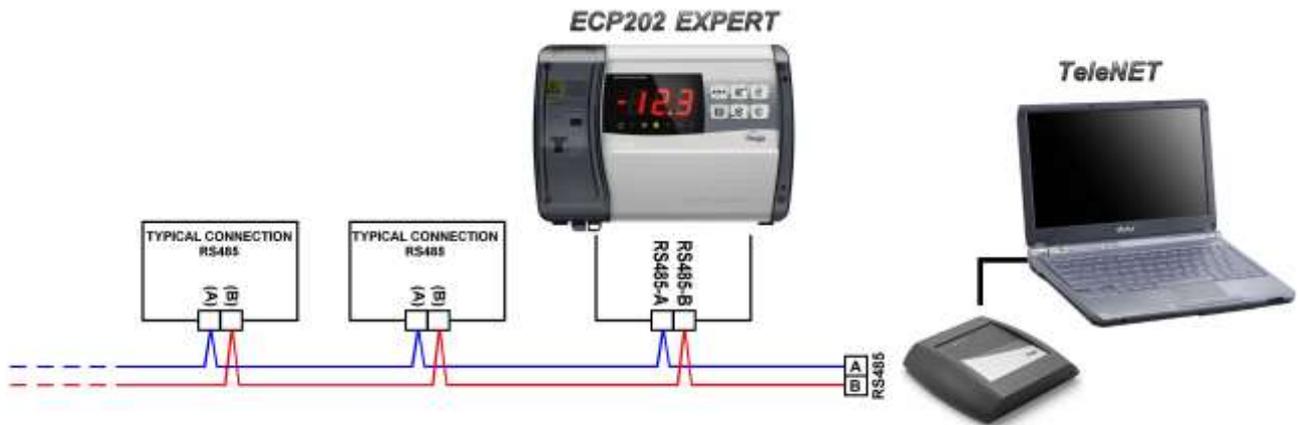Use universal number 100 if you don't remember the password.

CHAPTER 6: OPTIONS

6.1 **TELENET MONITORING AND SUPERVISION SYSTEM**

For **TeleNET** connections follow the scheme below. Refer to **TeleNET** user manual for instrument configuration.

WARNING: During configuration, at entry "Module" to select the entry "Instrument ECP Base Series / ECP Expert Series rel. 25 or higher".

6.2 **NET CONFIGURATION WITH MODBUS-RTU PROTOCOL**

For **RS485** connections with **Modbus-RTU** protocol follow the scheme below.
Refer to MODBUS-RTU_ECP202EXP user manual (available on Pego Internet web site) for MODBUS-RTU communication protocol specification.
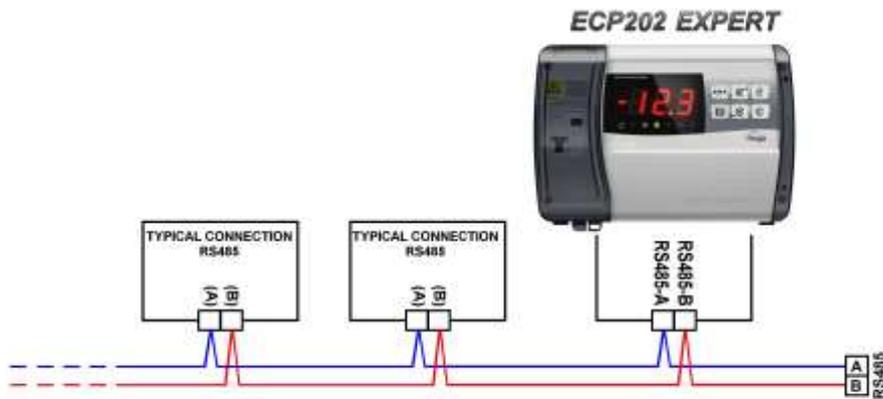
CHAPTER 7: TROUBLESHOOTING

| 7.1 | TROUBLESHOOTING |

In the event of any anomalies the **ECP202 EXPERT + BASE** in case of anomalies, it notifies the operator by means of the alarm codes displayed on the display and an audible signal emitted by a buzzer inside the control panel. The EL and EH temperature alarms remain visible even after their return (alarm icon lights on) until their acquisition (by pressing the key tacit). If an alarm condition occurs, one of the following messages will be displayed on the display:

ALARM CODE	POSSIBLE CAUSE	SOLUTION
E0	*Cold room temperature sensor not working properly*	• Check that cold room temperature sensor is working properly • If the problem persists, replace the sensor
E1	*Defrost sensor not working properly* (In this case defrosts will last time d3)	• Check that defrost sensor is working properly • If the problems persists, replace the sensor
E2	*Eeprom alarm* An EEPROM memory alarm has been detected (the outputs are all disabled, except for the auxiliary ones)	• Switch unit off and back on
E8	*Man in cold room alarm*	• Reset the alarm input inside the cold room
Ec	*Compressor protection tripped* (e.g. thermal protection or max pressure switch) (the outputs are all disabled, except for the auxiliary ones)	• Check that compressor is working properly • Check compressor absorption • If the problem persists, contact the technical assistance service
Ed	*Open door Alarm*. When the door is opened and after tdo time, it's setted back the normal functioning giving door open alarm (Ed)	• Check door switch status • Check door switch connections • If the problem persists, contact the technical assistance service
E9	*Cell light alarm.* The light of the cell has been on for a time greater than tdo.	• Turn off the light
EH	*Maximum temperature alarm.* The temperature inside the cold room has exceeded the max. temperature alarm setting (see variables A2, user programming level)	• Check that the compressor is working properly. • Sensor not reading temperature properly or compressor start/stop control not working.
EL	*Minimum temperature alarm.* The temperature inside the cold room has exceeded the min. temperature alarm setting (see variables A1, user programming level)	• Check that the compressor is working properly. • Sensor not reading temperature properly or compressor start/stop control not working.

APPENDICES

A.1	**EU DECLARATION OF CONFORMITY**

LA PRESENTE DICHIARAZIONE DI CONFORMITA' E' RILASCIATA SOTTO LA RESPONSABILITA' ESCLUSIVA DEL FABBRICANTE:
THIS DECLARATION OF CONFORMITY IS ISSUED UNDER THE EXCLUSIVE RESPONSIBILITY OF THE MANUFACTURER:

PEGO S.r.l. a socio unico - Via Piacentina 6/b, 45030 Occhiobello (RO) – Italy –
Società soggetta all'attività di direzione e coordinamento di Castel S.r.l.

DENOMINAZIONE DEL PRODOTTO IN OGGETTO / *DENOMINATION OF THE PRODUCT IN OBJECT*

   MOD.:   **ECP202 EXPERT + BASE**

IL PRODOTTO DI CUI SOPRA E' CONFORME ALLA PERTINENTE NORMATIVA DI ARMONIZZAZIONE DELL'UNIONE EUROPEA:
THE PRODUCT IS IN CONFORMITY WITH THE RELEVANT EUROPEAN HARMONIZATION LEGISLATION:

Direttiva Bassa Tensione (LVD):   **2014/35/UE**
Low voltage directive (LVD):   *2014/35/EU*

Direttiva EMC: **2014/30/UE**
Electromagnetic compatibility (EMC): *2014/30/EU*

LA CONFORMITA' PRESCRITTA DALLA DIRETTIVA E' GARANTITA DALL'ADEMPIMENTO A TUTTI GLI EFFETTI DELLE SEGUENTI NORME:
THE CONFORMITY REQUIRED BY THE DIRECTIVE IS GUARANTEED BY THE FULFILLMENT TO THE FOLLOWING STANDARDS:

Norme armonizzate: **EN 60730-1:2016, EN 60730-2-9:2010, EN 61000-6–1:2007, EN 61000-6–3:2007**
European standards: *EN 60730-1:2016, EN 60730-2-9:2010, EN 61000-6–1:2007, EN 61000-6–3:2007*

IL PRODOTTO E' COSTITUITO PER ESSERE INCORPORATO IN UNA MACCHINA O PER ESSERE ASSEMBLATO CON ALTRI MACCHINARI PER COSTITUIRE UNA MACCHINA CONSIDERATE DALLA DIRETTIVA: 2006/42/CE "Direttiva Macchine".
THE PRODUCT HAS BEEN MANUFACTURED TO BE INCLUDED IN A MACHINE OR TO BE ASSEMBLED TOGHETER WITH OTHER MACHINERY TO COMPLETE A MACHINE ACCORDING TO DIRECTIVE: EC/2006/42 "Machinery Directive".

Firmato per nome e per conto di:
Signed for and on behalf of:
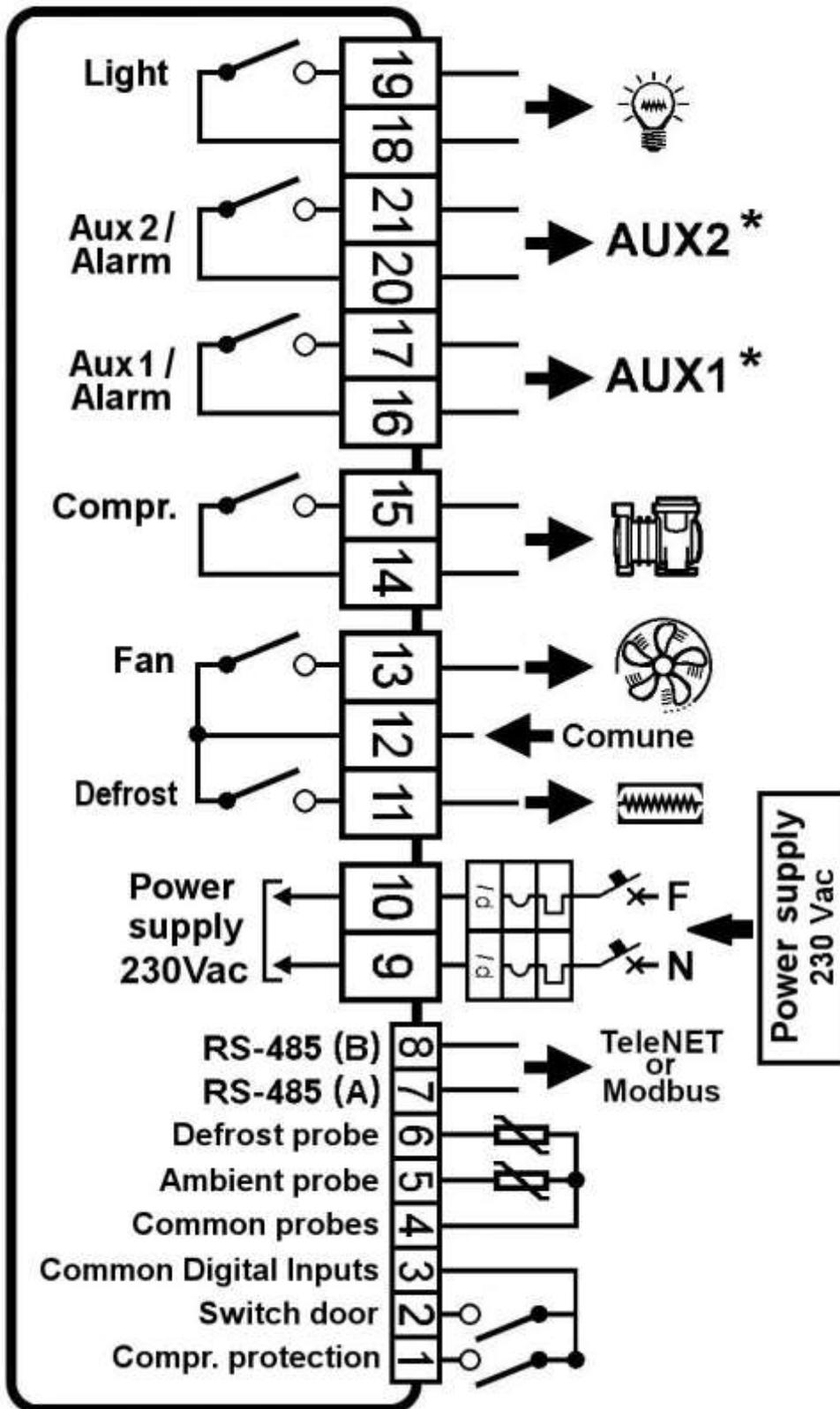
Pego S.r.l.
Martino Villa
Presidente

Luogo e Data del rilascio:
Place and Date of Release:

Occhiobello (RO), 01/01/2020

ECP202 EXPERT + BASE WIRING DIAGRAM   **A.2**

ECP202BASE

Light — 19 18 → 💡

Aux 2 / Alarm — 21 20 → AUX2 *

Aux 1 / Alarm — 17 16 → AUX1 *

Compr. — 15 14 →

Fan — 13 →

— 12 ← Comune

Defrost — 11 →

Power supply 230Vac — 10 / F

Power supply 230Vac — 9 / N — Power supply 230 Vac

RS-485 (B) — 8 → TeleNET or Modbus

RS-485 (A) — 7

Defrost probe — 6

Ambient probe — 5

Common probes — 4

Common Digital Inputs — 3

Switch door — 2

Compr. protection — 1
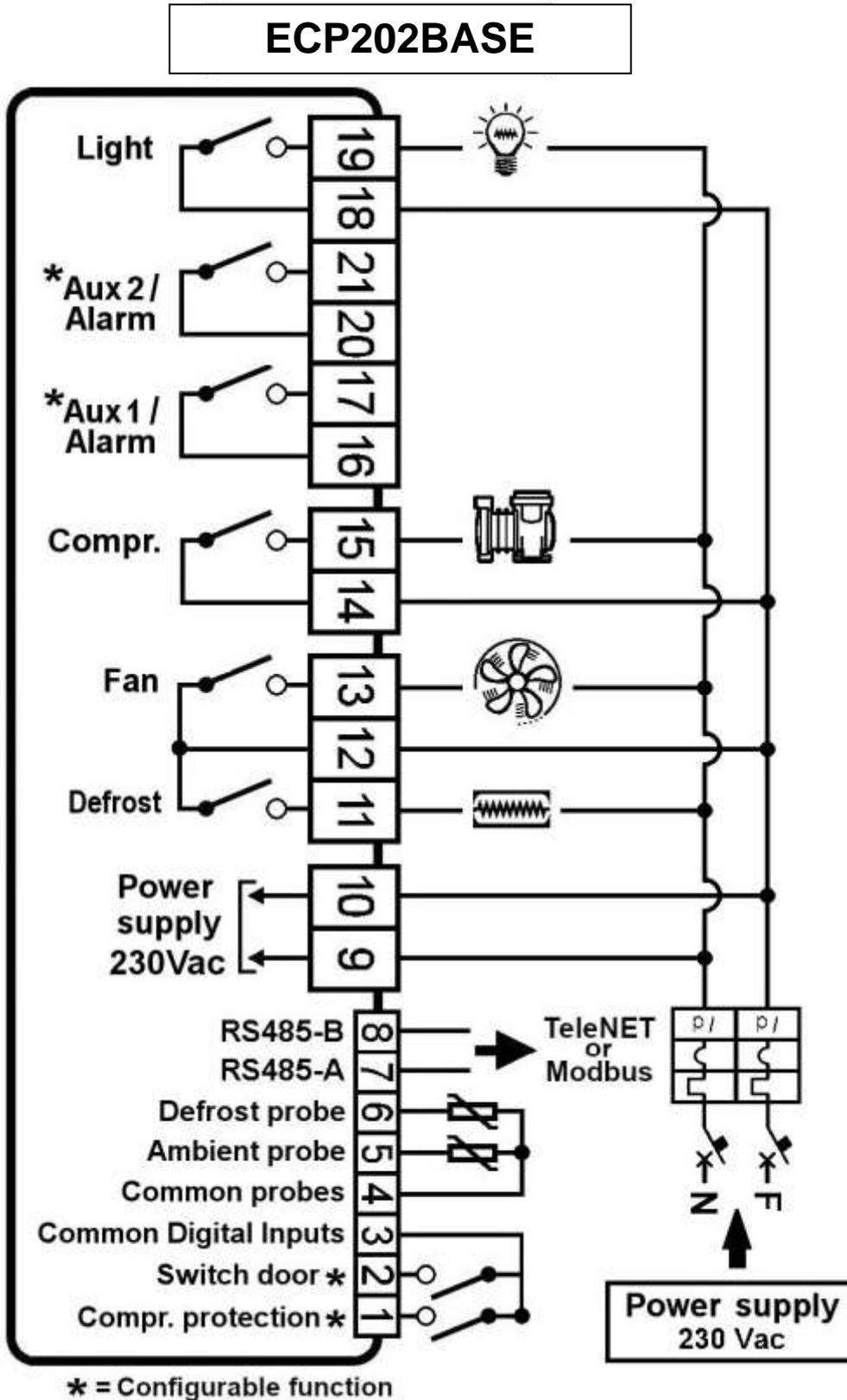
✱ = Configurable function

A.3   CONNECTION EXAMPLE (1) - ECP202 EXPERT + BASE

Connection with outputs powered for <u>direct control of functions</u>.

ECP202BASE

✱ = Configurable function

| A.4 | CONNECTION EXAMPLE (2) - ECP200 EXPERT + BASE |

Mixed connection with on/off contact to enable towards condensing unit power board and fan, light and defrost outputs powered for direct control.

ECP202BASE

* = Configurable function
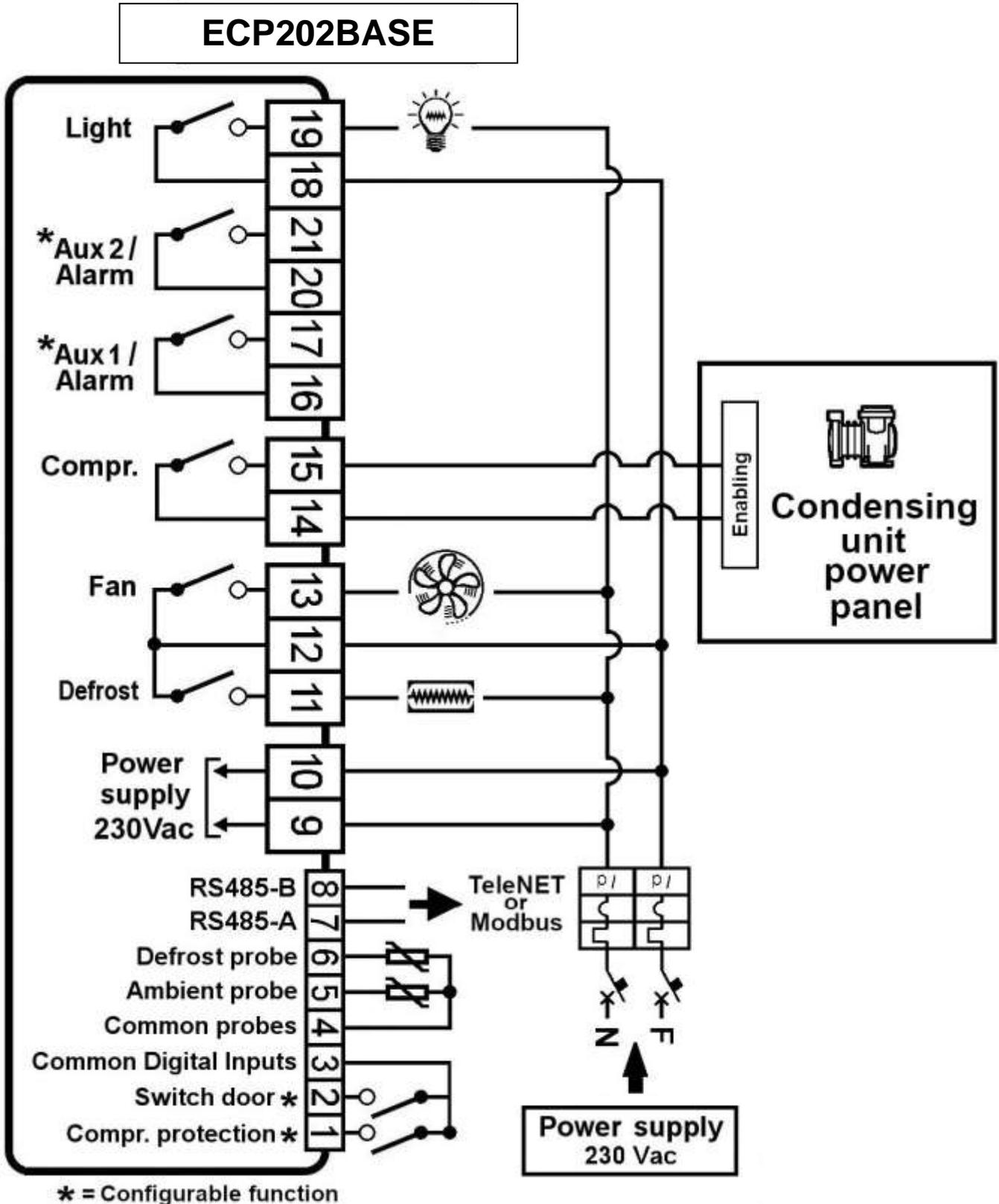
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