CATALOGUE 2015

ELECTRICAL BOARDS FOR REFRIGERATION

Electrical Boards Pego®

PRODUCTS INDEX

COOL
HOT
SMALL.

EXPERT NANO

NEW FROM EXPERT
GENERATION

Stand-by
Set

EXPERT NANO

EXPERT NANO 1LT

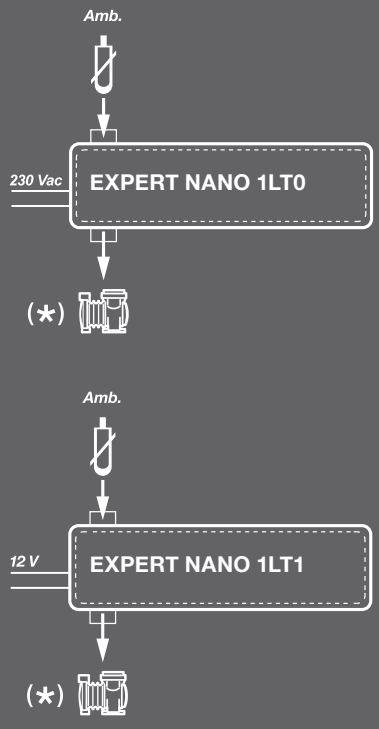
The EXPERT NANO 1LT is a 1 relay electronic thermoregulator designed to control static refrigeration units operating at normal temperature with off-cycle defrosting (to stop compressor). It is fitted with one analogic input for NTC/PTC temperature probes and one relay for the control of the compressor. The regulator can be also configured for heat application.

APPLICATIONS

- Control of refrigerated counters, display windows and refrigeration units.

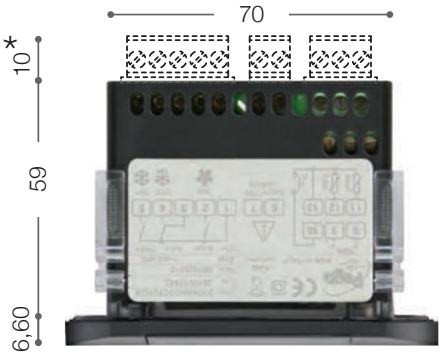
CONNECTION DIAGRAMS

(*) = Configurable function



MAIN CHARACTERISTICS

- Can be configured for hot or cold applications.
- Off-cycle defrosting can be set on the basis of frequency or duration.
- Key operated manual START/STOP defrosting.
- Key operated ON/OFF.
- Display/adjustment of temperature with decimal point.
- Flat front surface for easy cleaning anc keys of ample dimension which can be customized with various colours (on request).
- High brightness display with increased icons and figures.
- PEGO programming philosophy guaranteeing immediate start-up.
- IP65 front protection. Two-fold fastening options: clips / screws.
- Relay capacity and power depending on model.



(*) Only for EXPERT NANO 1LT02 and 1LT12

TECHNICAL CHARACTERISTICS	EXPERT NANO 1LT01	EXPERT NANO 1LT02	EXPERT NANO 1LT11	EXPERT NANO 1LT12
DIMENSIONS	93 X 37 mm depth 59 mm			
DRILL HOLE TEMPLATE	71 X 29 mm (+0,2/-0,1 mm)			
INSTALLATION	In front of board by means of rear fastening clips or two front screws			
CASING	Plastic PC+ABS UL94 V-0 body, PC transparent front, Key panel PC or PC+ABS			
INSULATION TYPE	Class II			
FRONT PROTECTION RATING	IP65 with front board installation			
POWER SUPPLY	230 VAC ~ +10/-15% 50/60 Hz		12 VAC ~ +10/-15% 50/60HZ 12 VDC +10/-15% class 2	
ABSORBED POWER	3 VA max			
OPERATING TEMPERATURE	-5÷55°C - humidity < 90% Rel. Hum. Not condensing			
STORAGE TEMPERATURE	-20÷70°C - humidity < 90% Rel. Hum. Not condensing			
UNSUITABLE OPERATING ENVIRONMENTS	Environments with strong vibrations or impacts; aggressive, polluted or corrosive atmospheres, exposure to direct solar radiation, explosive atmospheres or flammable gas.			
DISPLAY	3-Digit with sign, decimal point and LED status indicators			
RESOLUTION	0,1 °C.			
PROBE PRECISION (electronic)	± 0,5 °C			
READING RANGE	-45÷99 °C			
CONNECTIONS	Screw fixed clamps	Screw removable clamps	Screw fixed clamps	Screw removable clamps
SOFTWARE CLASS	A / Parameters saved on non-volatile memory (EEPROM)			
	INPUTS			
ANALOGUE INPUTS	1 Inputs for NTC probes NTC (10KΩ 1% at 25°C) / PTC			
	OUTPUTS			
COMPRESSOR RELAY (DO1)	N.O. 16(6)A / 250 VAC	N.O. 16(6)A / 250 VAC	N.O. 16(6)A / 250 VAC	N.O. 16(6)A / 250 VAC

EXPERT NANO

EXPERT NANO 3CF

The EXPERT NANO 3CF is 3 relays electronic thermoregulator designed to control refrigerated counters, display windows and static or ventilated refrigeration units with off-cycle or electrical defrosting. It is fitted with two analogue inputs for NTC/PTC temperature probes, one digital input, three relays for the compressor control, fans and defrosting function (the defrosting relay can be configured as light command) and buzzer. The regulator can be also configured for heat Application.
Available version for real time clock defrost.

APPLICATIONS

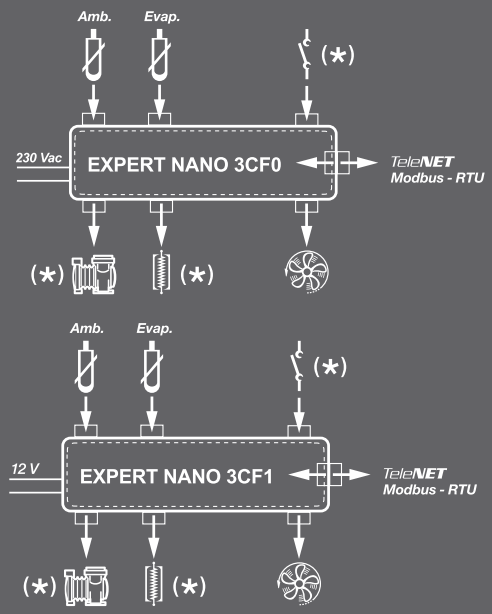
- Control of refrigerated counters, display windows and refrigeration units.

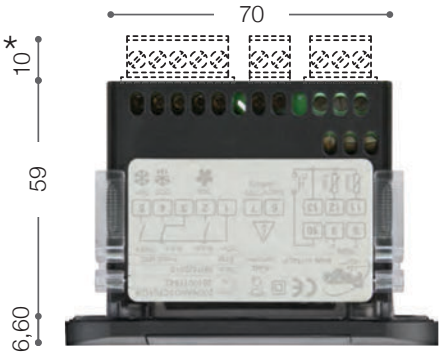
MAIN CHARACTERISTICS

- Can be configured for hot or cold applications.
- Defrosting can be configured for off-cycle, heating element or cycle inversion and frequency and duration can be set. End-of-defrosting can be based on time or temperature.
- Clock for programmed defrost (RTC) (on some models).
- Relay for controlling the compressor, evaporator fans and defrosting elements (defrost output can be configured like light output).
- Key operated manual START/STOP defrosting.
- Key operated ON/OFF.
- Cold room light ON/OFF switch with key or by means of door switch (if defrost output is configured like cold room light).
- Display/adjustment of temperature with decimal point.
- Internal buzzer for acoustic signals.
- Flat front surface for easy cleaning anc keys of ample dimension which can be customized with various colours (on request).
- High brightness display with increased icons and figures.
- PEGO programming philosophy guaranteeing immediate start-up.
- IP65 front protection. Two-fold fastening options: clips / screws.
- RS485 serial connection with Modbus-RTU or Telenet protocol.
- Voltage, relay capacity and terminal type depending on model.
- External transformer for model 3CF11 (optional).

CONNECTION DIAGRAMS

(*) = Configurable function





(*) Only for EXPERT NANO 3CF02

TECHNICAL CHARACTERISTICS	EXPERT NANO 3CK01	EXPERT NANO 3CF01	EXPERT NANO 3CF02	EXPERT NANO 3CF11
DIMENSIONS	93 X 37 mm depth 59 mm			
DRILL HOLE TEMPLATE	71 X 29 mm (+0,2/-0,1 mm)			
INSTALLATION	In front of board by means of rear fastening clips or two front screws			
CASING	Plastic PC+ABS UL94 V-0 body, PC transparent front, Key panel PC or PC+ABS			
INSULATION TYPE	Class II			
FRONT PROTECTION RATING	IP65 with front board installation			
POWER SUPPLY	230 VAC~ +10/-15% 50/60Hz			12VAC~ +10/-15% 50/60HZ 12VDC +10/-15% class 2
ABSORBED POWER	3 VA max			
OPERATING TEMPERATURE	- 5÷55°C - humidity < 90% Rel. Hum. Not condensing			
STORAGE TEMPERATURE	-20÷70°C - humidity < 90% Rel. Hum. Not condensing			
UNSUITABLE OPERATING ENVIRONMENTS	Environments with strong vibrations or impacts; aggressive, polluted or corrosive atmospheres, exposure to direct solar radiation, explosive atmospheres or flammable gas.			
DISPLAY	3-Digit with sign, decimal point and LED status indicators			
RESOLUTION	0,1 °C.			
PROBE PRECISION (electronic)	± 0,5 °C			
READING RANGE	- 45÷99 °C			
CONNECTIONS	Screw fixed clamps	Screw fixed clamps	Screw removable clamps	Screw fixed clamps
SOFTWARE CLASS	A / Parameters saved on non-volatile memory (EEPROM)			
INPUTS				
ANALOGUE	2 inputs for NTC probes (10KΩ 1% a 25°C)	2 inputs for NTC probes (10KΩ 1% a 25°C) / PTC		
DIGITAL	1 input (free voltage contact)			
OUTPUTS				
COMPRESSOR RELAY (DO1)	(DO1) N.O. 16(6)A / 250V~ (HP2 ON REQUEST)			
HEATING ELEMENTS RELAY (DO2)	(DO2) N.O. 8(3)A N.C. 6(3)A / 250V~			
FAN RELAY (DO3)	(DO3) N.O. 8(3)A / 250V~			
BUZZER	PRESENT			
SUPERVISION SYSTEM	TELENET / MODBUS-RTU			
OPTIONS				
CLOCK (RTC)	Present	NO	NO	NO

EXPERT NANO

EXPERT NANO 4CK

The EXPERT NANO 4CK is a 4 relays electronic thermoregulator designed to control refrigerated counters, display windows and static or ventilated refrigeration units with off-cycle or electrical defrosting in real time (RTC). It is fitted with three analogue inputs for NTC temperature probes, one of which is configurable as a digital input, an additional digital input, four relays for the compressor control, fans, defrosting function and alarm (the defrosting relay can be configured as light command and the alarm relay as light/AUX) and buzzer. As option the connection to an echo temperature repetition.

APPLICATIONS

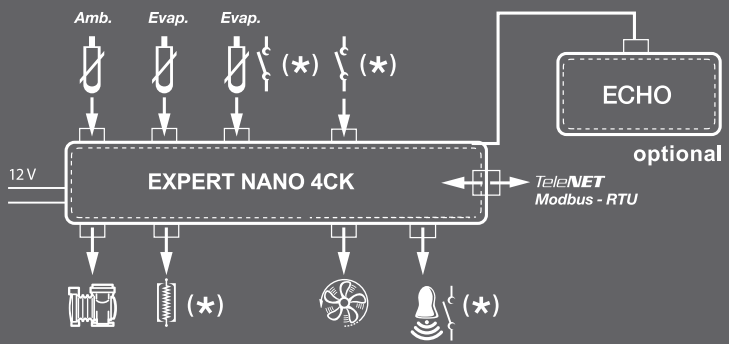
- Control of refrigerated counters, display windows and refrigeration units.
- Control of two evaporators with two temperature probes of end defrost.

MAIN CHARACTERISTICS

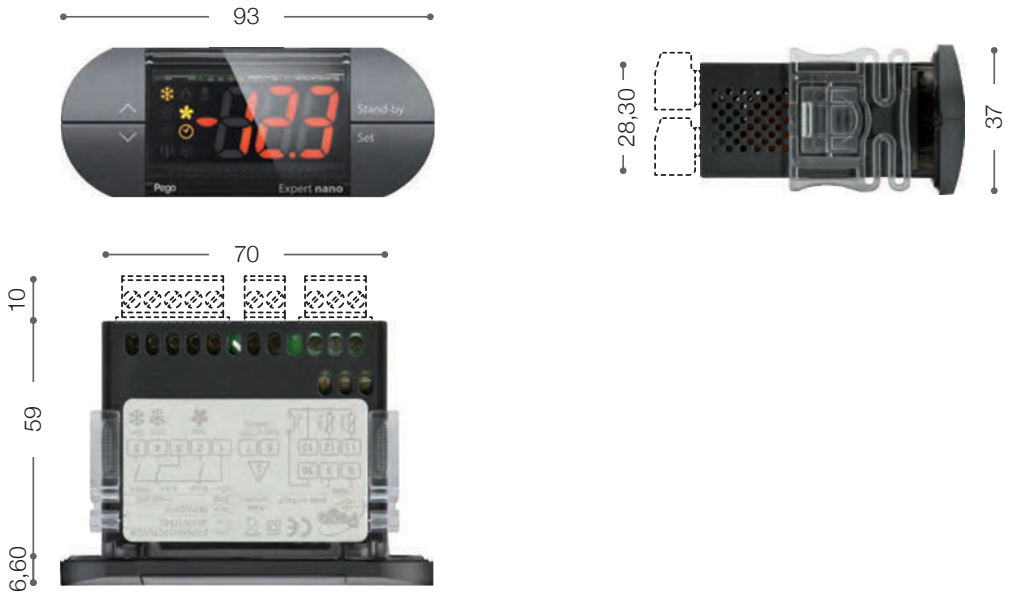
- Can be configured for hot or cold applications.
- Can be configured for managing day / night (automatic modification of the setpoint for energy saving) activated by time mode (real time clock) or by means of the digital input.
- Can be configured to manage two evaporators with dual temperature sensor for defrost termination.
- Defrosting can be configured for off-cycle, heating element or cycle inversion and frequency and durationcan be set. End-of-defrosting can be based on time or temperature.

CONNECTION DIAGRAM

(∗) = Configurable function



- Clock for programmed defrost (RTC).
- Relay for controlling the compressor, evaporator fans, defrosting resistance and alarm (defrost and alarm outputs can be configured like light output).
- Key operated manual START/STOP defrosting.
- Key operated ON/OFF.
- Cold room light ON/OFF switch with key or by means of door switch (if one output is configured like cold room light).
- Display/adjustment of temperature with decimal point.
- Internal buzzer for acoustic signals.
- Flat front surface for easy cleaning anc keys of ample dimension which can be customized with various colours (on request).
- High brightness display with increased icons and figures.
- PEGO programming philosophy guaranteeing immediate start-up.
- IP65 front protection. Two-fold fastening options: clips / screws.
- Extractable terminals.
- RS485 serial connection with Modbus-RTU or Telenet protocol.
- External transformer (optional).
- Temperature repeater (optional).



TECHNICAL CHARACTERISTICS	EXPERT NANO 4CK13
DIMENSIONS	93 X 37 mm depth 59 mm
DRILL HOLE TEMPLATE	71 X 29 mm (+0,2/-0,1 mm)
INSTALLATION	In front of board by means of rear fastening clips or two front screws
CASING	Plastic PC+ABS UL94 V-0 body, PC transparent front, Key panel PC or PC+ABS
INSULATION TYPE	Class II
FRONT PROTECTION RATING	IP65 with front board installation
POWER SUPPLY	12VAC +10/-15% 50/60HZ | 12VDC +10/-15% class 2
ASSORBED POWER	3 VA max
OPERATING TEMPERATURE	- 5÷55°C - humidity < 90% Rel. Hum. not condensing
STORAGE TEMPERATURE	- 20÷70°C humidity < 90% Rel. Hum. not condensing
UNSUITABLE OPERATING ENVIRONMENTS	Environments with strong vibrations or impacts; aggressive, polluted or corrosive atmospheres, exposure to direct solar radiation, explosive atmospheres or flammable gas.
DISPLAY	3-Digit with sign, decimal point and LED status indicators
RESOLUTION	0,1 °C.
PROBE PRECISION (electronic)	± 0,5 °C
READING RANGE	- 45÷99 °C
CONNECTIONS	Screw removable clamps
SOFTWARE CLASS	A / Parameters saved on non-volatile memory (EEPROM)
CLOCK (RTC)	PRESENT
	INPUTS
ANALOGUE	2 inputs for NTC probes (10KΩ 1% a 25°C)
DIGITAL	1 input (the voltagecontact)
CONFIGURABLE	1 input for NTC probes (10KΩ 1% at 25°C) or digital input (free voltage contact)
	OUTPUTS
COMPRESSOR RELAY (DO1)	(DO1) N.O. 16(6)A / 250V~
HEATING ELEMENTS RELAY (DO2)	(DO2) N.O. 8(3)A N.C. 6(3)A / 250V~
FAN RELAY (DO3)	(DO3) N.O. 8(3)A / 250V~
ALARM/AUX RELAY	(DO4) N.O. 8(3)A / 250V~
BUZZER	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU

EXPERT NANO

EXPERT NANO 2ZN

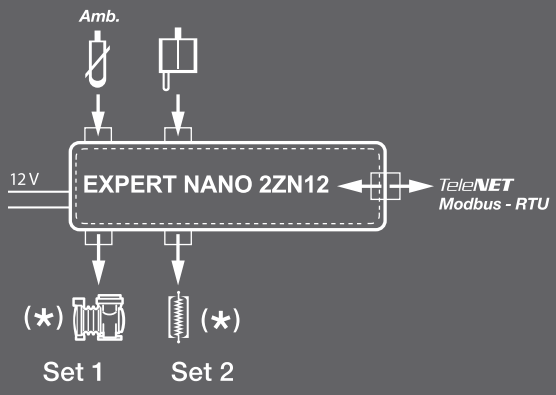
The Expert NANO 2ZN is an electronic thermoregulator with two relays for hot/cold or humidifies/dehumidifies in neutral zone. It can be used also for a double setpoint with two separated outputs. It has one analogue input for NTC temperature probe, one analog input for humidity probe, two relays with separate contacts and RS485 output for monitoring system (TeleNet or Modbus-RTU). Buzzer is included and the power supply depending on model.

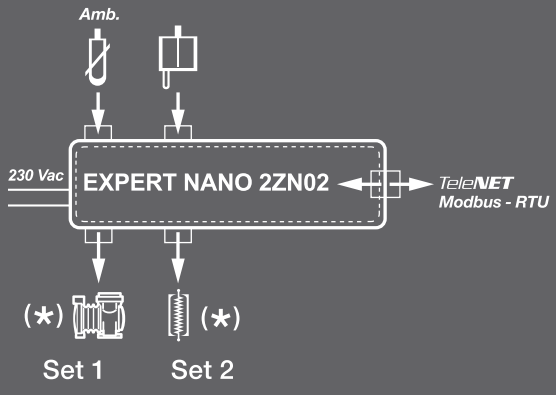
APPLICATIONS

- Management of climatic storage rooms.

CONNECTION DIAGRAM

(*) = Configurable function





MAIN CHARACTERISTICS

- Configurable for hot/cold call or humidifies/ dehumidifies call in neutral zone or as double set-point with distinct outputs.
- Key operated ON/OFF.
- Display/adjustment of temperature with decimal point.
- Flat front surface for easy cleaning anc keys of ample dimension which can be customized with various colours (on request).
- Internal buzzer for acoustic signals.
- High brightness display with increased icons and figures.
- PEGO programming philosophy guaranteeing immediate start-up.
- RS485 serial connection with Modbus-RTU or Telenet protocol.
- IP65 front protection. Two-fold fastening options: clips / screws.

TECHNICAL CHARACTERISTICS	EXPERT NANO 2ZN12	EXPERT NANO 2ZN02
DIMENSIONS	93 X 37 mm depth 59 mm	
DRILL HOLE TEMPLATE	71 X 29 mm (+0,2/-0,1 mm)	
INSTALLATION	In front of board by means of rear fastening clips or two front screws	
CASING	Plastic PC+ABS UL94 V-0 body, PC transparent front, Key panel PC or PC+ABS	
INSULATION TYPE	Class II	
FRONT PROTECTION RATING	IP65 with front board installation	
POWER SUPPLY	12VAC~ +10/-15% 50/60Hz | 12VDC +10/-15% class 2	230 V~ +10/-15% 50/60Hz
ASSORBED POWER	3 VA max	
OPERATING TEMPERATURE	- 5÷55°C - humidity < 90% Rel. Hum. not condensing	
STORAGE TEMPERATURE	- 20÷70°C humidity < 90% Rel. Hum. not condensing	
UNSUITABLE OPERATING ENVIRONMENTS	Environments with strong vibrations or impacts; aggressive, polluted or corrosive atmospheres, exposure to direct solar radiation, explosive atmospheres or flammable gas.	
DISPLAY	3-Digit with sign, decimal point and LED status indicators	
RESOLUTION	0,1 °C	
PROBE PRECISION (electronic)	± 0,5 °C	
READING RANGE	- 45÷99 °C	
CONNECTIONS	Screw fixed clamps	Screw fixed clamps
SOFTWARE CLASS	A / Parameters saved on non-volatile memory (EEPROM)	
	INPUTS	
ANALOGUE	1 input for NTC probes (10KΩ 1% a 25°C) 1 input for humidity probe (4-20mA/0-100% Rh)	
	OUTPUTS	
COLD RELAY	(DO1) N.O. 16(6)A / 250V~	
HEATERS RELAY	(DO2) N.O. 8(3)A / 250V-	
BUZZER	PRESENT	
SUPERVISION SYSTEM	TELENET / MODBUS-RTU	

EXPERIENCE

The experience reached manufacturing every type of electrical panels in refrigeration field is our best reference.

ECP200 EXPERT

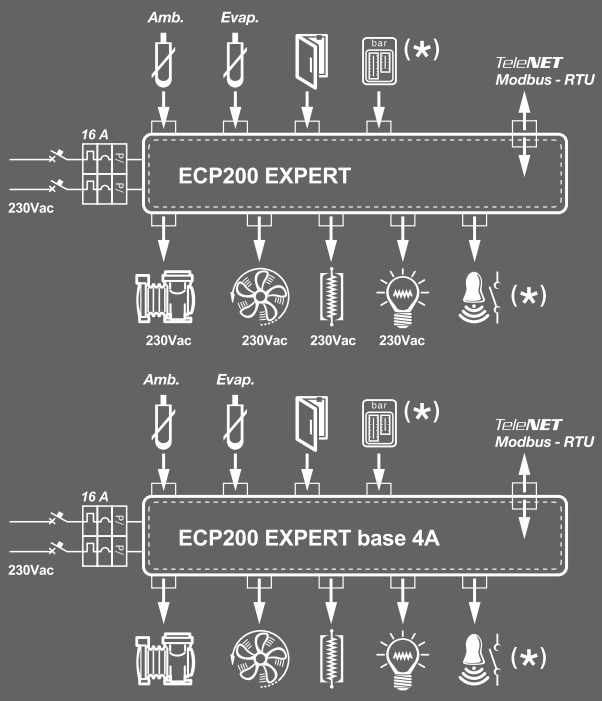
Control panel for cold rooms with single-phase compressor up to 2 HP, specially designed to provide safety, protection, control and easy-installation – all in one unit.
It allows a complete control of all the components on a refrigeration system.

APPLICATIONS

- Complete control of single-phase static or ventilated refrigeration systems up to 2 HP, with off-cycle or electrical defrosting and direct or pump-down compressor stop.
- Control of evaporating unit only with freon solenoid or remote motor condenser enabling.

CONNECTION DIAGRAMS

(*) = Configurable function



MAIN CHARACTERISTICS

- Direct control of compressor, defrosting heaters, evaporator fans and room light with live outputs directly connectable to the various devices or free voltage contacts for control of condensing unit with its own electrical panel.
- Built-in differential magnetothermic breaker for protection and cut-off of refrigeration unit.
- Innovative, stylish design. Transparent cover for access to magnetothermic breaker, all with IP 65 protection rating.
- Auxiliary relay with parameter-configured activation (alarm, temperature set-point, direct control via frontal pushbutton, door heater elements, remote motor condenser unit enabling, freon solenoid control enabling where compressor pump-down operation is applied).
- RS485 for connection to TeleNET industrial supervision network or Modbus-RTU standard protocol.
- Easy installation and opening thanks to new hinged cover.

262

168

97

TECHNICAL CHARACTERISTICS	ECP 200 EXPERT	ECP 200 EXPERT BASE 4A
DIMENSIONS	262 x 168 x 97 mm	262 x 168 x 97 mm
WEIGHT	0,6 Kg	0,6 Kg
POWER SUPPLY		
VOLTAGE	230 V AC ± 10% 50/60 HZ	230 V AC ± 10% 50/60 HZ
MAX ABSORBED POWER (ELECTRONIC CONTROL)	~ 7 VA	~ 7 VA
AMBIENT CONDITIONS		
WORKING TEMPERATURE	-5 ÷ +50°C	-5 ÷ +50°C
STORAGE TEMPERATURE	-30 ÷ +70°C	-30 ÷ +70°C
RELATIVE HUMIDITY	< 90% Rh	< 90% Rh
GENERAL CHARACTERISTICS		
CONNECTABLE SENSOR TYPES	NTC 10 kΩ	NTC 10 kΩ
RESOLUTION	0,1 °C	0,1 °C
PROBE READ PRECISION	± 0,5 °C	± 0,5 °C
READ RANGE	-45 ÷ +45 °C	-45 ÷ +45 °C
OUTPUT CHARACTERISTICS		
COMPRESSOR	1500 W (2HP)	1500 W (2HP) FREE VOLTAGE CONTACT
DEFROST	3000 W (AC1)	3000 W (AC1) FREE VOLTAGE CONTACT
FANS	500 W (AC3)	500 W (AC3) FREE VOLTAGE CONTACT
ROOM LIGHT	800 W (AC1)	800 W (AC1) FREE VOLTAGE CONTACT
CONFIGURABLE ALARM CONTACT / AUX (VOLTAGE-FREE CONTACT)	PRESENT	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU
GENERAL ELECTRIC PROTECTION		
BIPOLAR DIFFERENTIAL MAGNETOTHERMIC CIRCUIT BREAKER	16A Id = 300 mA Switching power 4,5 kA Id = 30 mA (on request)	16A Id = 300 mA Switching power 4,5 kA Id = 30 mA (on request)
INSULATION AND MECHANICAL CHARACTERISTICS		
BOX PROTECTION RATING	IP 65	IP 65
BOX MATERIAL	SELF-EXTINGUISHING ABS	SELF-EXTINGUISHING ABS
INSULATION TYPE	Class II	Class II

ECP200 EXPERT D7.5

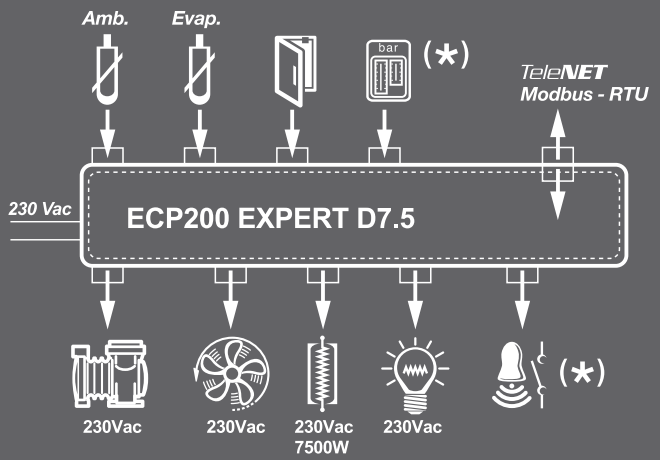
Control panel for cold rooms with single-phase compressor up to 2 HP and single-phase or three-phase electrical defrosting up to 7500W, specially designed to provide safety, protection, control and easy-installation – all in one unit. It allows a complete control of all the components on a refrigeration system or the control of units only.

APPLICATIONS

- Complete control of single-phase static or ventilated refrigeration systems up to 2 HP, with off-cycle or electrical defrosting up to 7500W and direct or pump-down compressor stop.
- Management of single-phase evaporating unit alone with electric defrosting up to 7,500W and with Freon solenoid consent or remote motor condensation unit consent.

CONNECTION DIAGRAMS

(*) = Configurable function



MAIN CHARACTERISTICS

- Direct control of compressor, defrosting heaters, evaporator fans and room light with live outputs directly connectable to the various devices or free voltage contacts for control of condensing unit with its own electrical panel.
- Innovative, stylish design. Transparent cover for access to magnetothermic breaker, all with IP 65 protection rating.
- Auxiliary relay with parameter-configured activation (alarm, temperature set-point, direct control via frontal pushbutton, door heater elements, remote motor condenser unit enabling, freon solenoid control enabling where compressor pump-down operation is applied).
- RS485 for connection to TeleNET industrial supervision network or Modbus-RTU standard protocol.
- Easy installation and opening thanks to new hinged cove.
- Electrical defrosting up to 7500W.
- Possibility of using defrosting contactor control fans or light.

262

97

TECHNICAL CHARACTERISTICS	ECP 200 EXPERT D7.5
DIMENSIONS	262 x 168 x 97 mm
WEIGHT	0,6 Kg
POWER SUPPLY	
VOLTAGE	230 V AC ± 10% 50/60 HZ 400 V AC 3/N ±10% 50/60 Hz
MAX ABSORBED POWER (ELECTRONIC CONTROL)	~ 7 VA
AMBIENT CONDITIONS	
WORKING TEMPERATURE	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C
RELATIVE HUMIDITY	< 90% Rh
GENERAL CHARACTERISTICS	
CONNECTABLE SENSOR TYPES	NTC 10 KΩ
RESOLUTION	0,1 °C
PROBE READ PRECISION	± 0,5 °C
READ RANGE	-45 ÷ +45 °C
OUTPUT CHARACTERISTICS	
COMPRESSOR	1500 W (2HP)
DEFROST	7500 W (2500 W x 3) (⚹)
FANS	500 W (AC3) (⚹⚹)
ROOM LIGHT	800 W (AC1) (⚹⚹)
CONFIGURABLE ALARM CONTACT / AUX (VOLTAGE-FREE CONTACT)	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU
INSULATION AND MECHANICAL CHARACTERISTICS	
BOX PROTECTION RATING	IP 65
BOX MATERIAL	SELF-EXTINGUISHING ABS
INSULATION TYPE	CLASS II

(⚹) = 3000 W if the contactor is used for other functions.
(⚹⚹) = For this output the defrosting contactor can be used to increase power.

ECP200 EXPERT 2EV

ECP 200 EXPERT 2EV control panel increases the range 200 EXPERT with a controller for cold rooms with single-phase compressor up to 2 HP and **two evaporators**, specially designed to provide safety, protection, control and ease-of-installation – all in one unit. It allows a complete control of all the components on a refrigeration system with new features added.

APPLICATIONS

- Complete control of single-phase static or ventilated refrigeration systems up to 2 HP, with off-cycle or electrical defrosting and direct or pump-down compressor stop.
- Control of two evaporators with two temperature probes of end defrost.
- Control of evaporating unit (single or double evaporator) only with freon solenoid consensus or remote motor condenser consensus.

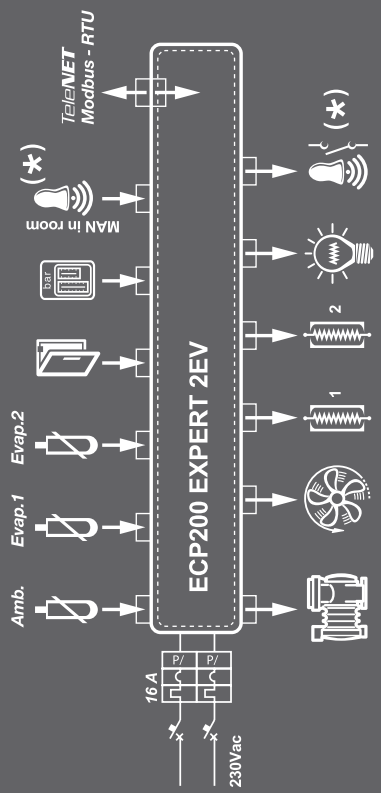
MAIN CHARACTERISTICS

- Defrost with real time clock.
- Indipendent and separated functions for alarm relay, condensing unit enable and TeleNET monitoring system.
- HACCP function with memory of the last alarm and number of alarm counter.
- Direct control of compressor, defrosting heaters, evaporator fans and room light with free-voltage outputs.
- Built-in differential magnetothermic breaker for protection and cut-off of refrigeration unit.
- Innovative, stylish design. Transparent cover for access to magnetothermic breaker, all with IP 65 protection rating.
- Auxiliary relay with parameter-configured activation (alarm, temperature set-point, direct control via frontal pushbutton, thermostat-holder demisting element, remote motor condenser unit consensus, freon solenoid control consensus where compressor pump-down operation is applied).
- Dedicated enabling of condensing unit in single evaporator configuration.
- RS485 for connection to TeleNET industrial supervision network or Modbus-RTU standard protocol.
- Simple wiring.
- Easy installation and opening thanks to new hinged cover.
- Simple, flexible programming gives extreme versatility of use.
- Compressor can be run in pump-down stop mode.
- Installation times and costs reduced thanks to incorporation of control and protection in a single room-dedicated unit.

TECHNICAL CARACTERISTICS	ECP 200 EXPERT 2EV
BOX DIMENSIONS	262 x 168 x 97 mm
WEIGHT	2 Kg
PROTECTION RATING	IP65
POWER SUPPLY	230VAC ±10% 50/60HZ
LOAD TYPE	SINGLE PHASE
WORKING TEMPERATURE	- 5 ÷ + 50 °C
STORAGE TEMPERATURE	- 10 ÷ + 70 °C
RELATIVE AMBIENT TEMPERATURE	< 90% RH
MAIN SWITCH - GENERAL PROTECTION	2 POLES DIFFERENTIAL MAGNETOTHERMIC 16A
CONTROL	PEGO
DEFROSTING	ELECTRICAL
COMPONENT STATUS INDICATORS	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER
REAL TIME CLOCK DEFROST	PRESENT (RTC)
INPUTS	
AMBIENT PROBE	NTC 10K 1%
EVAPORATOR PROBE 1	NTC 10K 1%
EVAPORATOR PROBE 2	NTC 10K 1%
DOOR SWITCH	PRESENT
HIGH/LOW PRESSURE SWITCH	PRESENT
MAN IN COLD ROOM ALARM	PRESENT
COMPRESSOR WORK MODE SELECTION	PUMP-DOWN / THERMOSTAT
OUTPUTS	
COMPRESSOR	1500W (AC3)
EVAPORATOR FANS	500W (AC3)
DEFROSTING HEATERS 1	1500W (AC1)
DEFROSTING HEATERS 2	1500W (AC1)
ROOM LIGHT	800W (AC1) RESISTIVE LOAD
SOLENOID VALVE	PRESENT
AUXILIARY RELAY OR ALARM	100 W
SUPERVISION SYSTEM	TELENET / MODBUS-RTU

CONNECTION DIAGRAM

(*) = Configurable function



ECP200 EXPERT PULSE

Electrical panel for **cold room control with differential magnetothermic circuit breaker** and with integrated **command of pulse electronic expansion valve 230Vac On/Off** and single-phase compressor up to 2HP. This panel can be used also only for the control of the evaporating unit.

APPLICATIONS

- Complete control of single-phase static or ventilated refrigeration systems up to 2 HP, with off-cycle or electrical defrosting and direct or pump-down compressor stop.
- Thought for systems with evaporator managed by ON/OFF electronic expansion valve at 230 Vac.
- Utility for managing the single-phase evaporating unit with electronic expansion valve only ON/OFF at 230 Vac.

MAIN CHARACTERISTICS

- Defrost with real time clock.
- Indipendent and separated functions for alarm relay and TeleNET or Modbus-RTU standard protocol.
- Control of electronic expansion valve ON/OFF with 230 VAC coil.
- **The integration of the valve control permits its programming and a simplified management with the same display, enabling an immediate start-up of the system.**
- Direct control of compressor, defrosting heaters, evaporator fans and room light with free-voltage outputs.
- Built-in differential magnetothermic breaker for protection and cut-off of refrigeration unit.
- Innovative, stylish design. Transparent cover for access to magnetothermic breaker, all with IP 65 protection rating.
- Auxiliary relay with parameter-configured activation (alarm, temperature set-point, direct control via frontal pushbutton, thermostat-holder demisting element).
- RS485 for connection to TeleNET industrial supervision network or Modbus-RTU standard protocol.
- Easy installation and opening thanks to new hinged cover.
- Simple, flexible programming gives extreme versatility of use.
- Compressor can be run in pump-down stop mode.
- Installation times and costs reduced thanks to incorporation of control and protection in a single room-dedicated unit.

262

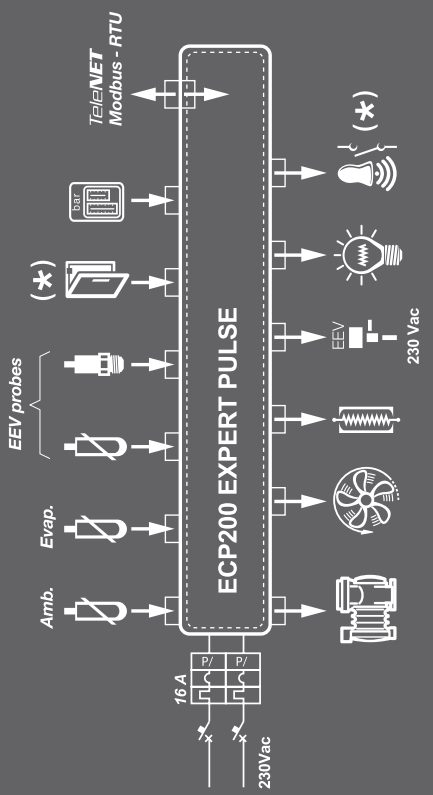
168

97

TECHNICAL CARACTERISTICS	ECP 200 EXPERT PULSE
BOX DIMENSIONS	262 x 168 x 97 mm
WEIGHT	2 Kg
PROTECTION RATING	IP65
POWER SUPPLY	230VAC ±10% 50/60HZ
LOAD TYPE	SINGLE PHASE
WORKING TEMPERATURE	- 5 ÷ + 50 °C
STORAGE TEMPERATURE	- 10 ÷ + 70 °C
RELATIVE AMBIENT TEMPERATURE	< 90% RH
MAIN SWITCH - GENERAL PROTECTION	2 POLES DIFFERENTIAL MAGNETOTHERMIC 16A
CONTROL	PEGO
DEFROSTING	ELECTRICAL
COMPONENT STATUS INDICATORS	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER
DEFROST	PRESENT (RTC)
INPUTS	
AMBIENT PROBE	NTC 10K 1%
EVAPORATOR PROBE	NTC 10K 1%
SUCTION PROBE	NTC 10K 1%
EVAPORATION PRESSURE PROBE	4-20mA / 0-5V RATIO
DOOR SWITCH	PRESENT
HIGH/LOW PRESSURE SWITCH	PRESENT
MAN IN COLD ROOM ALARM	PRESENT
COMPRESSOR WORK MODE SELECTION	PUMP-DOWN / THERMOSTAT
OUTPUTS	
COMPRESSOR	1500W (AC3) FREE VOLTAGE CONTACT
EVAPORATOR FANS	500W (AC3) FREE VOLTAGE CONTACT
DEFROSTING HEATERS	3000W (AC1) FREE VOLTAGE CONTACT
ELECTRONIC VALVE	PULSE 230 VAC
ROOM LIGHT	800W (AC1) FREE VOLTAGE CONTACT
AUXILIARY RELAY OR ALARM	100 W FREE VOLTAGE CONTACT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU

CONNECTION DIAGRAM

(*) = Configurable function



ECP300 EXPERT VD

ECP300 Expert VD 4 | ECP300 Expert VD 7

A line of power and control panels for refrigeration systems with three-phase compressor up to 7,5 HP, for the complete management of cold room.
Magnetothermic protection and motor circuit breaker for the compressor accessible from the front panel linked to an innovative form makes it a perfect and functional choice.

Available version with PULSE electronic valve integrated control.

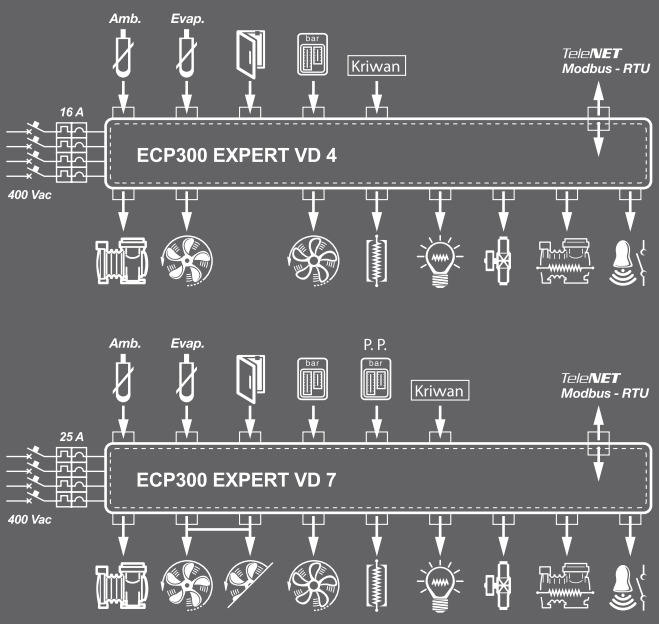
APPLICATIONS

- Control of three-phase refrigeration plant up to 7.5 HP, static or ventilated, with off-cycle or electrical defrosting.

OPTIONS

- Hot-gas defrost control.

CONNECTION DIAGRAMS



MAIN CHARACTERISTICS

- Direct control of the compressor, condenser fans, compressor oil heater, defrosting heaters, evaporator fans, solenoid valve, room light and all standard-compliant electrical safeguards.
- General magnetothermic circuit breaker accessible from the front panel, which cuts the general power supply.
- Adjustable motor circuit breaker for compressor protection accessible from the front panel.
- Easy wiring on the internal terminal block.
- Selection of functioning mode for the compressor (pump-down / thermostat).
- Auxiliary relay with activation configurable by parameter.
- Transparent cover for access to magnetothermic circuit breaker, all with IP 65 protection rating.
- Electronic control with wide LED display and easy to use buttons.
- Signaling with LED icons of the plant status.
- RS485 for connection to TeleNET industrial supervision network or Modbus-RTU standard protocol.

TECHNICAL CHARACTERISTICS	ECP300 EXPERT VD 4	ECP300 EXPERT VD 7
BOX DIMENSIONS	400 X 300 X 135 mm	400 X 300 X 135 mm
WEIGHT	9 Kg	10 Kg
PROTECTION RATING	IP 65	IP 65
POWER SUPPLY	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz
LOAD TYPE	THREE-PHASE	THREE-PHASE
WORKING TEMPERATURE	-5 ÷ +40°C	-5 ÷ +40°C
STORAGE TEMPERATURE	-25 ÷ +55°C	-25 ÷ +55°C
RELATIVE AMBIENT HUMIDITY	30% - 90% Rh W/OUT CONDENSATE	30% - 90% Rh W/OUT CONDENSATE
RANGE OF READING	-45 ÷ +45°C	-45 ÷ +45°C
MAIN SWITCH / GENERAL PROTECTION	4 POLES MAGNETOTHERMIC 16A	4 POLES MAGNETOTHERMIC 25A
COMPRESSOR PROTECTION	MOTOR CIRCUIT BREAKER	MOTOR CIRCUIT BREAKER
CONTROL	PEGO	PEGO
DEFROSTING	ELECTRICAL	ELECTRICAL
STATUS INDICATORS	LED + DISPLAY	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER	LED + BUZZER
INPUTS		
AMBIENT PROBE	NTC 10K Ω	NTC 10K Ω
EVAPORATOR PROBE	NTC 10K Ω	NTC 10K Ω
DOOR SWITCH	PRESENT	PRESENT
HIGH/LOW PRESSURE SWITCH	PRESENT	PRESENT
KRIWAN® CONNECTION	PRESENT	PRESENT
COMPRESSOR FUNCTIONING MODE SELECTION	PUMP-DOWN / THERMOSTAT	PUMP-DOWN / THERMOSTAT
OUTPUTS		
COMPRESSOR	370 W ÷ 3000 W (0,5 ÷ 4 HP)	3000 W ÷ 5500 W (4 ÷ 7,5 HP)
CONDENSER FANS OUTPUT 1	800 W (1PH)	800 W (1PH) TOTAL (1PH)
CONDENSER FANS OUTPUT 2 (SEPARATED)		(1PH)
EVAPORATOR FANS	500 W (1PH)	2000 W (1PH / 3PH)
DEFROSTING HEATERS	6000 W (AC1) EQ. RESISTIVE LOAD	9000 W (AC1) EQ. RESISTIVE LOAD
ROOM LIGHT	800 W (AC1) RESISTIVE LOAD	800 W (AC1) RESISTIVE LOAD
SOLENOID VALVE	PRESENT	PRESENT
COMPRESSOR OIL HEATER	PRESENT	PRESENT
ALARM RELAY	PRESENT	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU

ECP300 EXPERT U VD

ECP300 Expert U VD 6 | ECP300 Expert U VD 12

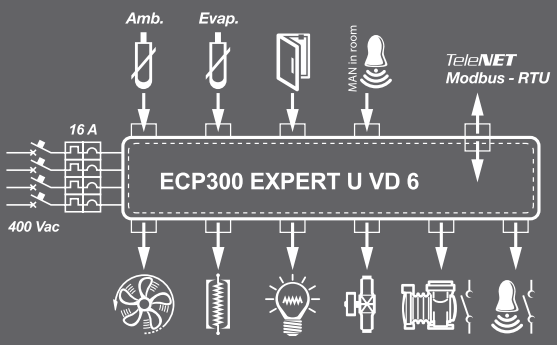
A line of power and control panels for refrigeration systems to control only the three-phase evaporating unit where units are served by a central refrigerator or remote condenser unit.
Magnetothermic and differential protection for room light accessible from the front panel linked to an innovative form makes it a perfect and functional choice.

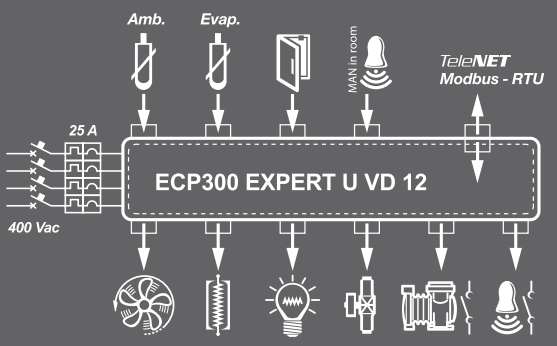
Available version with PULSE electronic valve integrated control.

APPLICATIONS

- Control of evaporating unit with electrical defrost up to 12 kW.

CONNECTION DIAGRAMS





MAIN CHARACTERISTICS

- Enable for motor condenser unit, defrosting elements, evaporator fans, solenoid valve, room light and all standard-compliant electrical safeguards.
- Magnetothermic circuit breaker accessible from the front panel, which cuts the general power supply.
- Differential magnetothermic Id=30mA dedicated to room light accessibile from the front panel (see the table).
- Easy wiring on the internal terminal block.
- Auxiliary relay with activation configurable by parameter.
- Transparent cover for access to all the protections, all with IP 65 protection rating.
- Electronic control with wide LED display and easy to use buttons.
- Signaling with LED icons of the plant status.
- RS485 for connection to TeleNET industrial supervision network or Modbus-RTU standard protocol.

TECHNICAL CHARACTERISTICS	ECP300 EXPERT U VD 6	ECP300 EXPERT U VD 12
BOX DIMENSIONS	400 X 300 X 135 mm	400 X 300 X 135 mm
WEIGHT	9 Kg	10 Kg
PROTECTION RATING	IP 65	IP 65
POWER SUPPLY	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz
LOAD TYPE	THREE-PHASE	THREE-PHASE
WORKING TEMPERATURE	-5 ÷ +40°C	-5 ÷ +40°C
STORAGE TEMPERATURE	-25 ÷ +55 °C	-25 ÷ +55 °C
RELATIVE AMBIENT HUMIDITY	30% - 90% Rh W/OUT CONDENSATE	30% - 90% Rh W/OUT CONDENSATE
RANGE OF READING	-45 ÷ +45°C	-45 ÷ +45°C
MAIN SWITCH / GENERAL PROTECTION	4 POLES MAGNETOTHERMIC 16A	4 POLES MAGNETOTHERMIC 25A
ROOM LIGHT PROTECTION	DIFFERENTIAL MAGNETOTHERMIC CIRCUIT BREAKER (OPTIONAL)	DIFFERENTIAL MAGNETOTHERMIC CIRCUIT BREAKER
CONTROL	PEGO	PEGO
DEFROSTING	ELECTRICAL	ELECTRICAL
STATUS INDICATORS	LED + DISPLAY	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER	LED + BUZZER
INPUTS		
AMBIENT PROBE	NTC 10K Ω	NTC 10K Ω
EVAPORATOR PROBE	NTC 10K Ω	NTC 10K Ω
DOOR SWITCH	PRESENT	PRESENT
MAN IN COLD-ROOM ALARM	AVAILABLE	AVAILABLE
OUTPUTS		
EVAPORATOR FANS	550 W (1PH)	2000 W (1PH / 3PH)
DEFROSTING HEATERS	6000 W (AC1) EQ. RESISTIVE LOAD	12000 W (AC1) EQ. RESISTIVE LOAD
ROOM LIGHT	800 W (AC1) RESISTIVE LOAD	1200 W (AC1) RESISTIVE LOAD
SOLENOID VALVE	PRESENT	PRESENT
ENABLE CONDENSING UNIT	PRESENT	PRESENT
CONFIGURABLE ALARM RELAY	PRESENT	PRESENT
DOOR HEATER	PRESENT	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU

PLUS200 EXPERT – DATALOGGER

PLUS200 Expert | PLUS200 Expert CR

Control board for complete control of cold rooms with single-phase compressor up to 2 HP and Datalogger function.

A large backlit LCD allows for simultaneous display of ambient temperature, evaporator temperature, calendar and all other refrigeration system information. The temperature recorder is independent from the controller used to manage the refrigeration system and can record (for up to 1 year) ambient temperature and relative alarms through an electronic circuit equipped with autonomous power and temperature sensor (as per EN 12830). The recorder can be removed or replaced without any interruption to normal cold room operation. Moreover, defrosts can be carried out in real time clock mode and it is possible to connect up to the TeleNET supervision system.

APPLICATIONS

- Complete control of single-phase static or ventilated systems up to 2 HP, off-cycle or electrical defrost, direct or pump-down mode compressor stop together with Datalogger function.
- Control of single-phase evaporating unit only with freon solenoid enabling or remote motor condenser enabling, together with Datalogger function.

OPTIONS

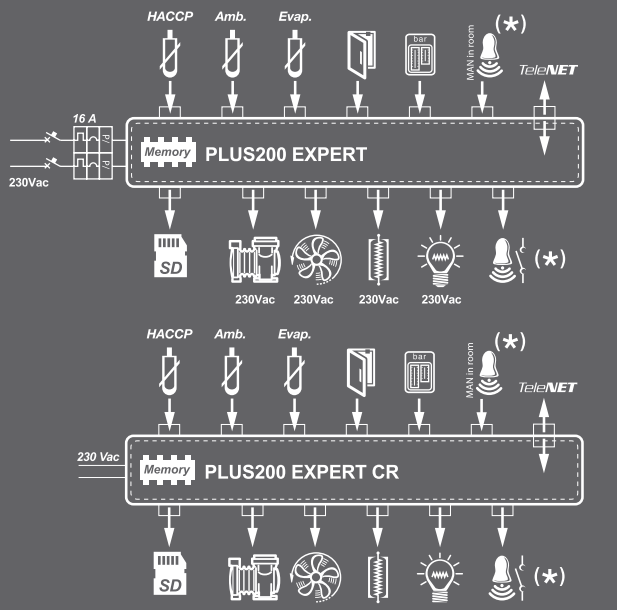
- SD (Secure Digital™) memory for transfer of temperature recordings onto Personal computer.
- CR version with free-voltage contacts to remotely control a power panel.

MAIN CHARACTERISTICS

- Direct control of compressor, defrost heaters, evaporator fans, room light with 230Vac contacts directly connectable to various devices.
- Control electronics with large backlit LCD and user-friendly keypad.
- Simultaneous display on LCD of ambient temperature, evaporator temperature, calendar and system status.
- Recording of ambient temperature and relative alarms (up to 1 year) with recorder independent from cold room system control.
- Secure Digital™ slot built into controller for data downloads.
- Defrosts can be carried out in real time clock mode.
- RS485 for connection to TeleNET industrial supervision network.
- Safety and protection guaranteed and certified thanks to incorporated differential magnotothermic circuit breaker, which cuts the power supply.
- Easy installation and opening thanks to new hinged cover.
- Auxiliary relay with parameter-configurable activation.
- Registration probe with calibration certificate included.
- TeleNET SD software to download data on personal computer (provided free of charge with product).

CONNECTION DIAGRAM

(*) = Configurable function



SD CARD

TECHNICAL CHARACTERISTICS	PLUS200 EXPERT	PLUS200 EXPERT CR
DIMENSIONS	262 X 168 X 97 mm	262 X 168 X 97 mm
WEIGHT	1 Kg	1 Kg
POWER SUPPLY		
VOLTAGE	230 V AC ± 10% 50/60 HZ	230 V AC ± 10% 50/60 HZ
MAX ABSORBED POWER (ELECTRONIC CONTROL)	~ 7 VA	~ 7 VA
AMBIENT CONDITIONS		
WORKING TEMPERATURE	0 - 50 °C	0 - 50 °C
STORAGE TEMPERATURE	-20 ÷ +60°C	-20 ÷ +60°C
RELATIVE HUMIDITY	< 90% Rh	< 90% Rh
GENERAL CHARACTERISTICS		
CONNECTABLE SENSOR TYPES	NTC 10K Ω	NTC 10K Ω
RESOLUTION	0,1 °C	0,1 °C
RANGE OF READING	-45 ÷ +45 °C	-45 ÷ +45 °C
RECORDING CHARACTERISTICS		
MAXIMUM NUMBER OF READINGS WITHOUT OVERWRITE	1 YEAR (CYCLIC MEMORY)	1 YEAR (CYCLIC MEMORY)
OUTPUT CHARACTERISTICS - MAX APPLICABLE LOAD (230 V AC)		
COMPRESSOR	1500 W (AC3)	1500 W (2HP) FREE VOLTAGE CONTACT
DEFROST	3000 W (AC1)	3000 W (AC1) FREE VOLTAGE CONTACT
FANS	500 W (AC3)	500 W (AC3) FREE VOLTAGE CONTACT
ROOM LIGHT	800 W (AC1)	800 W (AC1) FREE VOLTAGE CONTACT
CONFIGURABLE ALARM CONTACT (VOLTAGE-FREE CONTACT)	PRESENT	PRESENT
SUPERVISION SYSTEM	TELENET	TELENET
GENERAL ELECTRIC PROTECTION		
BIPOLAR DIFFERENTIAL MAGNETOTHERMIC CIRCUIT BREAKER	16A ID = 300 MA SWITCHING POWER 4.5 KA ID = 30 MA (ON REQUEST)	
INSULATION AND MECHANICAL CHARACTERISTICS		
BOX PROTECTION RATING	IP 65	IP 65
BOX MATERIAL	SELF-EXTINGUISHING ABS	SELF-EXTINGUISHING ABS
TYPE OF INSULATION	CLASS II	CLASS II
DESIGNATION		
STANDARD REFERENCE	EN 12830	EN 12830
SUITABILITY	S (STORAGE)	S (STORAGE)
LOCATION	A	A
ACCURACY CLASS	1	1

PLUS300 EXPERT VD DATALOGGER

PLUS300 Expert VD 4 | PLUS300 Expert VD 7

Control board for complete control of cold rooms with three-phase compressor up to 7,5 HP and Datalogger function.
A large backlit LCD allows for simultaneous display of ambient temperature, evaporator temperature, calendar and all other refrigeration system information. The temperature recorder is independent from the controller used to manage the refrigeration system and can record (for up to 1 year) ambient temperature and relative alarms through an electronic circuit equipped with autonomous power and temperature sensor (as per EN 12830). The recorder can be removed or replaced without any interruption to normal cold room operation. Moreover, defrosts can be carried out in real time clock mode and it is possible to connect up to the TeleNET supervision system.
Magnetothermic protection and motor circuit breaker for the compressor accessible from the front panel linked to an innovative form makes it a perfect and functional choice.

APPLICATION

- Control of three-phase refrigeration plant up to 7.5 HP, static or ventilated, with off-cycle or electrical defrosting.

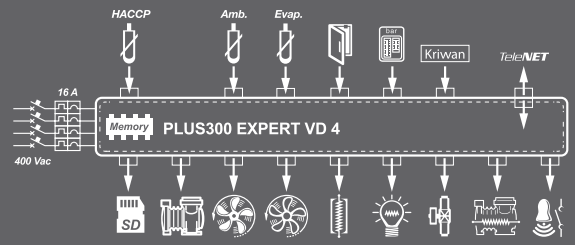
OPTIONS

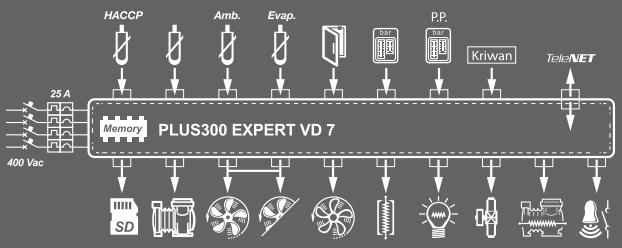
- SD (Secure Digital™)memory for transfer of temperature recordings onto Personal computer.
- RS version with thermostat door heater and discharge heater.

MAIN CHARACTERISTICS

- Direct control of the compressor, condenser fans, compressor oil heater, defrosting heaters, evaporator fans, solenoid valve, room light and all standard-compliant electrical safeguards.

CONNECTION DIAGRAMS





- General magnetothermic circuit breaker accessible from the front panel, which cuts the general power supply.
- Adjustable motor circuit breaker for compressor protection accessible from the front panel.
- Easy wiring on the internal terminal block.
- Selection of functioning mode for the compressor (pump-down / thermostat).
- Auxiliary relay with activation configurable by parameter.
- Transparent cover for access to magnetothermic circuit breaker, all with IP65 protection rating.
- Control electronics with large backlit LCD and user-friendly keypad.
- Simultaneous display on LCD of ambient temperature, evaporator temperature, calendar and system status.
- Recording of ambient temperature and relative alarms (up to 1 year) with recorder independent from cold room system control.
- Secure Digital™ slot built into controller for data downloads.
- Defrosts can be carried out in real time clock mode.
- RS485 for connection to TeleNET industrial supervision network.
- TeleNET SD software to download data on personal computer (provided free of charge with product).

TECHNICAL CHARACTERISTICS	PLUS300 EXPERT VD 4	PLUS300 EXPERT VD 7
BOX DIMENSIONS	400 X 300 X 135 mm	400 X 300 X 135 mm
WEIGHT	9 Kg	10 Kg
PROTECTION RATING	IP 65	IP 65
POWER SUPPLY	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz
LOAD TYPE	THREE-PHASE	THREE-PHASE
WORKING TEMPERATURE	-5 ÷ +40°C	-5 ÷ +40°C
STORAGE TEMPERATURE	-25 ÷ +55°C	-25 ÷ +55°C
RELATIVE AMBIENT HUMIDITY	30% - 90% Rh W/OUT CONDENSATE	30% - 90% Rh W/OUT CONDENSATE
MAIN SWITCH / GENERAL PROTECTION	4 POLES MAGNETOTHERMIC 16A	4 POLES MAGNETOTHERMIC 25A
COMPRESSOR PROTECTION	MOTOR CIRCUIT BREAKER	MOTOR CIRCUIT BREAKER
CONTROL	PEGO	PEGO
DEFROSTING	ELECTRICAL	ELECTRICAL
STATUS INDICATORS	DISPLAY LCD WITH BACKLIGHT	DISPLAY LCD WITH BACKLIGHT
ALARM SIGNALS	DISPLAY LCD + BUZZER	DISPLAY LCD + BUZZER
INPUTS		
AMBIENT PROBE	NTC 10K Ω	NTC 10K Ω
EVAPORATOR PROBE	NTC 10K Ω	NTC 10K Ω
DATALOGGER PROBE	NTC 10K Ω	NTC 10K Ω
DOOR SWITCH	PRESENT	PRESENT
HIGH/LOW PRESSURE SWITCH	PRESENT	PRESENT
KRIWAN® CONNECTION	PRESENT	PRESENT
COMPRESSOR FUNCTIONING MODE SELECTION	PUMP-DOWN / THERMOSTAT	PUMP-DOWN / THERMOSTAT
OUTPUTS		
COMPRESSOR	370W÷3000W (0,5-4HP)	3000 W ÷ 5500 W (4 ÷ 7,5 HP)
CONDENSER FANS OUTPUT 1	800W (1PH)	800 W (1PH)
CONDENSER FANS OUTPUT 2 (SEPARATED)		TOTAL (1PH)
EVAPORATOR FANS	500W (1PH)	2000W (1PH / 3PH)
DEFROSTING HEATERS	6000W (AC1) EQ. RESISTIVE LOAD	9000W (AC1) EQ. RESISTIVE LOAD
ROOM LIGHT	800W (AC1) RESISTIVE LOAD	800W (AC1) RESISTIVE LOAD
SOLENOID VALVE	PRESENT	PRESENT
COMPRESSOR OIL HEATER	PRESENT	PRESENT
ALARM RELAY	PRESENT	PRESENT
SUPERVISION SYSTEM	TELENET	TELENET
DATALOGGER		
DATALOGGER	INDEPENDENT CIRCUIT	INDEPENDENT CIRCUIT
MAX. NUMBER OF READINGS WITHOUT OVERWRITE	1 YEAR (CYCLIC MEMORY)	1 YEAR (CYCLIC MEMORY)
DESIGNATION		
STANDARD REFERENCE	EN 12830	EN 12830
SUITABILITY	S (STORAGE)	S (STORAGE)
LOCATION	A	A
ACCURACY CLASS	1	1

PLUS300 EXPERT U VD DATALOGGER

PLUS 300 Expert U VD 6 | PLUS 300 Expert U VD 12

A line of power and control panels for refrigeration systems to control only the three-phase evaporating unit where units are served by a central refrigerator or remote condenser unit and Datalogger function.
A large backlit LCD allows for simultaneous display of ambient temperature, evaporator temperature, calendar and all other refrigeration system information. The temperature recorder is independent from the controller used to manage the refrigeration system and can record (for up to year) ambient temperature and relative alarms through an electronic circuit equipped with autonomous power and temperature sensor (as per EN 12830). The recorder can be removed or replaced without any interruption to normal cold room operation. Moreover, defrosts can be carried out in real time clock mode and it is possible to connect up to the TeleNeT supervision system.
Magnetothermic protection and motor circuit breaker for the compressor accessible from the front panel linked to an innovative form makes it a perfect and functional choice.

APPLICATIONS

- Control of evaporating unit with electrical defrost up to 12 kW.

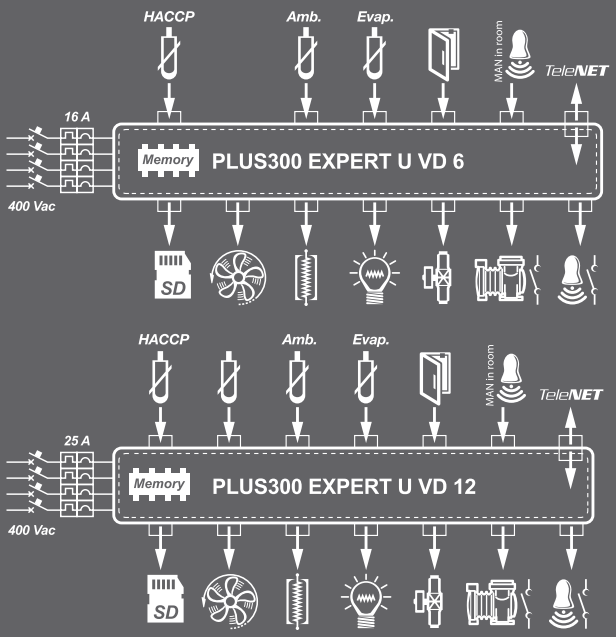
OPTIONS

- SD (Secure Digital™) memory for transfer of temperature recordings onto personal computer.
- RS version with thermostat door heater and discharge heater.

MAIN CHARACTERISTICS

- Enable for motor condenser unit, defrosting elements, evaporator fans, solenoid valve, room light and all standard-compliant electrical safeguards.
- Magnetothermic circuit breaker accessible from the front panel, which cuts the general power supply.
- Differential magnetothermic Id=30mA dedicated to room light accessibile from the front panel (see the table).
- Easy wiring on the internal terminal block.
- Auxiliary relay with activation configurable by parameter.
- Transparent cover for access to all the protections, all with IP 65 protection rating.
- Control electronics with large backlit LCD and user-friendly keypad.
- Simultaneous display on LCD of ambient temperature, evaporator temperature, calendar and system status.
- Recording of ambient temperature and relative alarms (up to 1 year) with recorder independent from cold room system control.
- Secure Digital™ slot built into controller for data downloads.
- Defrosts can be carried out in real time clock mode.
- RS485 for connection to TeleNeT industrial supervision network.
- TeleNET SD software to download data on personal computer (provided free of charge with product).

CONNECTION DIAGRAMS



TECHNICAL CHARACTERISTICS	PLUS300 EXPERT U VD 6	PLUS300 EXPERT U VD 12
BOX DIMENSIONS	400 X 300 X 135 mm	400 X 300 X 135 mm
WEIGHT	9 Kg	10 Kg
PROTECTION RATING	IP 65	IP 65
POWER SUPPLY	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz
LOAD TYPE	THREE-PHASE	THREE-PHASE
WORKING TEMPERATURE	-5 ÷ +40°C	-5 ÷ +40°C
STORAGE TEMPERATURE	-25 ÷ +55 °C	-25 ÷ +55 °C
RELATIVE AMBIENT HUMIDITY	30% - 90% Rh W/OUT CONDENSATE	30% - 90% Rh W/OUT CONDENSATE
RANGE OF READING	-45 ÷ +45°C	-45 ÷ +45°C
MAIN SWITCH / GENERAL PROTECTION	4 POLES MAGNETOTHERMIC 16A	4 POLES MAGNETOTHERMIC 25A
ROOM LIGHT PROTECTION	DIFFERENTIAL MAGNETOTHERMIC CIRCUIT BREAKER (OPTIONAL)	DIFFERENTIAL MAGNETOTHERMIC CIRCUIT BREAKER
CONTROL	PEGO	PEGO
DEFROSTING	ELECTRICAL	ELECTRICAL
STATUS INDICATORS	DISPLAY LCD WITH BACKLIGHT	DISPLAY LCD WITH BACKLIGHT
ALARM SIGNALS	BUZZER + DISPLAY LCD	BUZZER + DISPLAY LCD
INPUTS		
AMBIENT PROBE	NTC 10K Ω	NTC 10K Ω
EVAPORATOR PROBE	NTC 10K Ω	NTC 10K Ω
DATALOGGER PROBE	NTC 10K Ω	NTC 10K Ω
DOOR SWITCH	PRESENT	PRESENT
MAN IN COLD-ROOM ALARM	AVAILABLE	AVAILABLE
OUTPUTS		
EVAPORATOR FANS	550 W (1PH)	2000 W (1PH / 3PH)
DEFROSTING HEATERS	6000 W (AC1) EQ. RESISTIVE LOAD	12000 W (AC1) EQ. RESISTIVE LOAD
ROOM LIGHT	800 W (AC1) RESISTIVE LOAD	1200 W (AC1) RESISTIVE LOAD
SOLENOID VALVE	PRESENT	PRESENT
ENABLE CONDENSING UNIT	PRESENT	PRESENT
CONFIGURABLE ALARM RELAY	PRESENT	PRESENT
DOOR HEATER	PRESENT	PRESENT
SUPERVISION SYSTEM	TELENET	TELENET
DATALOGGER		
DATALOGGER	INDEPENDENT CIRCUIT	INDEPENDENT CIRCUIT
MAX. NUMBER OF READINGS WITHOUT OVERWRITE	1 YEAR (CYCLIC MEMORY)	1 YEAR (CYCLIC MEMORY)
DESIGNATION		
STANDARD REFERENCE	EN 12830	EN 12830
SUITABILITY	S (STORAGE)	S (STORAGE)
LOCATION	A	A
ACCURACY CLASS	1	1

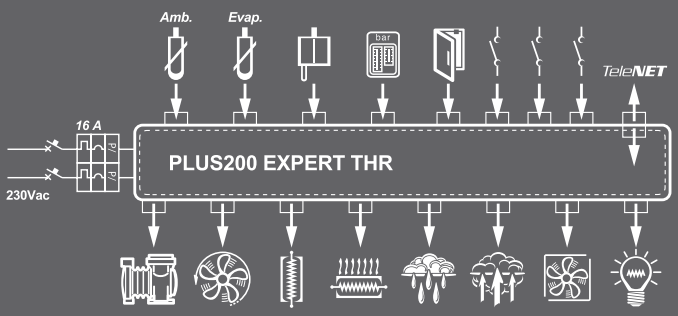
PLUS200 EXPERT THR

Single-phase electrical panel with control of temperature and humidity for single-phase compressor up to 2HP and electrical heaters for hot.
Differential magnetothermic circuit breaker protection accessible from the front panel added to an innovative form makes this panel a perfect and functional choice to provide safety, protection, control of temperature and humidity with specific seasoning functions. Programming up to five recipes, of seven phases each, settable and customizable. Included all the function of VISION THR controller.

APPLICATIONS

- Seasoning/drying rooms.
- Germination rooms with day/night phases.
- Storage rooms with or without humidity control.

CONNECTION DIAGRAMS



MAIN CHARACTERISTICS

- Built-in circuit breaker protecting and isolating unit housed below transparent door with IP65 protection.
- Control electronics with large backlit LCD and user-friendly keypad.
- Time and date clock.
- Manual or automatic operation.
- Up to a maximum of 5 fully custom-made recipes.
- Automatic management of 7 phases for each recipe.
- Simple programming and selection of set recipes.
- Possibility of uniting more than one recipe to go beyond the limit of 7 phases.
- Possibility of excluding heat and humidity to manage storage room alone activating defrosting.
- Temperature with decimal point.
- Password for key locking.
- Day/night cycle for germination plants with double temperature set-point.
- Simple wiring.
- RS485 for connection to TeleNET industrial supervision network.

262

168

97

TECHNICAL CHARACTERISTICS	PLUS 200 EXPERT THR
DIMENSIONS	262 x 168 x 97 mm
WEIGHT	1 Kg
PROTECTION RATING	IP65
POWER SUPPLY	230Vac ±10% 50/60Hz
LOAD TYPE	SINGLE-PHASE
WORKING TEMPERATURE	- 5 ÷ + 50 °C
STORAGE TEMPERATURE	- 10 ÷ + 70 °C
RELATIVE AMBIENT HUMIDITY	30%-90% RH WITHOUT CONDENSATE
READING RANGE	-45 ÷ +45 °C
CONTROL	PEGO THR (INTEGRATED)
STATUS INDICATORS	DISPLAY LCD WITH BACKLIGHT
ALARM SIGNALS	DISPLAY + BUZZER
GENERAL ELECTRIC PROTECTION	
BIPOLAR DIFFERENTIAL MAGNETOTHERMIC CIRCUIT BREAKER	16A ID=300MA SWITCHING POWER 4,5 KA
INPUTS	
AMBIENT PROBE	NTC 10K Ω
EVAPORATOR PROBE	NTC 10K Ω
HUMIDITY PROBE	4 ÷ 20 MA (0 ÷ 100% RH)
OVERLOAD PROTECTION	PRESENT
DOOR SWITCH	PRESENT
OUTPUTS	
COMPRESSOR	1500W (2 HP)
EVAPORATOR FANS	500W
DEFROSTING HEATERS	1500W
HOT HEATERS	1500W
ENABLE HUMIDIFIERS	500W
ENABLE DEHUMIDIFIERS	500W
AIR CHANGE	500W
PAUSE	500W
ROOM LIGHT	800W (AC1)
ALARM RELAY	PRESENT
SUPERVISION SYSTEM	TELENET

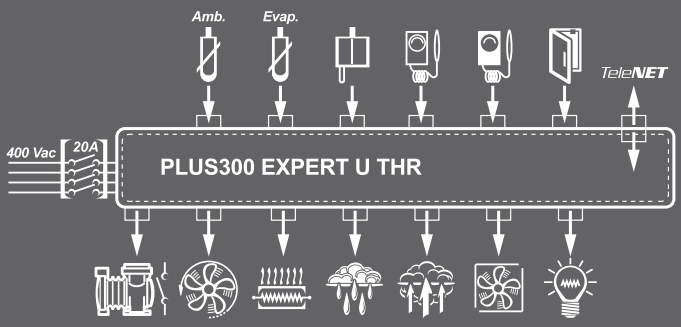
PLUS300 EXPERT U THR

Three-phase electrical panel for temperature and humidity control for evaporating unit with electrical heaters for hot. To match with a compressor rack or a remote condensing unit. Magnetothermic circuit breaker protection accessible from the front panel added to an innovative form makes this panel a perfect and functional choice to provide safety, protection, control of temperature and humidity with specific seasoning functions.
Programming up to five recipes, of seven phases each, settable and customizable. Included all the function of VISION THR controller.

APPLICATIONS

- Management of the evaporating unit alone for seasoning/drying rooms.
- Management of the evaporating unit alone for germination rooms with day/night phases.
- Management of the evaporating unit alone for storage rooms with or without humidity control.

CONNECTION DIAGRAMS



MAIN CHARACTERISTICS

- Transparent cover for access to all the protections, all with IP65 protection rating.
- Magnetothermic circuit breaker accessible from the front panel, which cuts the general power supply.
- Backlit LCD display.
- Time and date clock.
- Manual or automatic operation.
- Up to a maximum of 5 fully custom-made recipes. Automatic management of 7 phases for each recipe (first dripping phase, last seasoning/storage). Simple programming and selection of set recipes. Possibility of uniting more than one recipe to go beyond the limit of 7 phases.
- Possibility of excluding heat and humidity to manage storage room alone activating defrosting.
- Temperature with decimal point.
- Password for key locking.
- Day/night cycle for germination plants with double temperature set-point.
- Dehumidifying programming with cold or hot call.
- RS485 for connection to TeleNET industrial supervision network.

TECHNICAL CHARACTERISTICS	PLUS 300 EXPERT U THR
DIMENSIONS	400 x 300 x 135 mm
WEIGHT	6 Kg
PROTECTION RATING	IP65
POWER SUPPLY	400V ±10% 50/60Hz
LOAD TYPE	THREE-PHASE
WORKING TEMPERATURE	- 5 ÷ + 50 °C
STORAGE TEMPERATURE	- 10 ÷ + 70 °C
RELATIVE AMBIENT HUMIDITY	30%-90% RH WITHOUT CONDENSATE
RANGE OF READING	-45 ÷ +45 °C
CONTROL	PEGO THR (INTEGRATED)
STATUS INDICATORS	DISPLAY LCD WITH BACKLIGHT
MAIN SWITCH GENERAL PROTECTION	4 POLES MAGNETOTHERMIC 20A
INPUTS	
AMBIENT PROBE	NTC 10K Ω
EVAPORATOR PROBE	NTC 10K Ω
HUMIDITY PROBE	4 ÷ 20 MA (0 ÷ 100% RH)
DOOR SWITCH	PRESENT
MIN. TEMPERATURE SENSOR	PRESENT
MAX TEMPERATURE SENSOR	PRESENT
OUTPUTS	
ENABLE CONDENSING UNIT	PRESENT
EVAPORATOR FANS	800W (1 HP)
DEFROST	OFF CYCLE
HOT HEATERS	7500W (AC1)
ENABLE HUMIDIFIERS	PRESENT
ENABLE DEHUMIDIFIERS	PRESENT
AIR CHANGE	PRESENT
PAUSE	PRESENT
ROOM LIGHT	PRESENT
ALARM RELAY	PRESENT
SUPERVISION SYSTEM	TELENET

PLUS1000 THR

Three-phase electric panel with control of temperature and humidity plus seasoning functions.
Flexible programming also makes it suitable for simple storage purposes.
Programming up to five recipes, of seven phases each, settable and customizable.

APPLICATIONS

- Seasoning/drying rooms.
- Germination room with day/night phases.
- Storage rooms with or without humidity control.

AVAILABLE CONFIGURATIONS

- **Plus1000 THR** power board with integrated electronics.
- **Plus100 THR + Plus1000 THR CR** with remote keyboard/display separate from power board (THR CR).

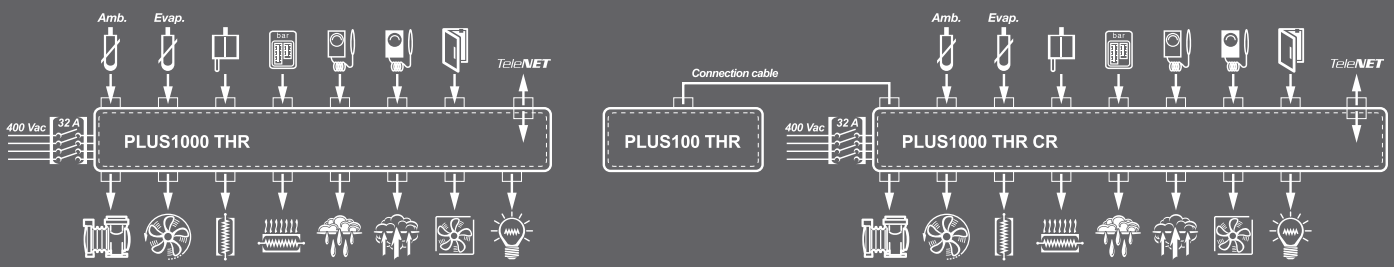
OPTIONS

- **Plus1000 THR SE** version with electric defrost.
- **Plus1000 THR M** single-phase version.
- Special boards available for dedicated applications.

PLUS THR ELECTRONIC CONTROLLER FUNCTIONS

- Backlit LCD display.
- Clock and calendar function.
- Manual or automatic work mode.
- Up to 5 recipes completely customazible. Automatic management of 7 phases for each recipe (dripping first phase, seasoning/ conservation last phase). Simple programming and selection of set recipes. Possibility of joining together more recipes for exceeding the 7 phases limit.
- Heat and humidity can be excluded so as to manage storage room only with activation of defrosts.
- Temperature to one decimal point.
- Keypad lock password.
- Day/night cycle for germination systems with double temperature set-point.
- Dehumidification programming with cold or heat call.

CONNECTION DIAGRAMS



PLUS100 THR

PLUS1000 THR (CR)

TECHNICAL CHARACTERISTICS	PLUS1000 THR	PLUS100 THR + PLUS1000 THR CR
DIMENSIONS	210 x 110 x 35 mm	350 x 450 x 160 mm
WEIGHT	6 Kg	5.5 Kg (+0.7 Kg KEYBOARD/DISPLAY)
PROTECTION RATING	IP 65	IP 65
STATUS INDICATORS	DISPLAY LCD WITH BACKLIGHT	DISPLAY LCD WITH BACKLIGHT
ALARM SIGNALS	DISPLAY LCD + BUZZER	DISPLAY LCD + BUZZER
CONTROL	PEGO THR (INTEGRATED)	PEGO THR (REMOTE)
POWER SUPPLY	400 V AC ±10% 50/60 Hz	OTHER CHARACTERISTICS SUCH AS **PLUS1000 THR**
LOAD TYPE	THREE-PHASE	
WORKING TEMPERATURE	-5 ÷ +50°C	
STORAGE TEMPERATURE	-10 ÷ +70°C	
RELATIVE AMBIENT HUMIDITY	< 90% Rh	
RANGE OF READING	-45 ÷ +45 °C	
MAIN SWITCH	32 A	
OVERLOAD PROTECTION	THERMAL RELAY	
GENERAL PROTECTION	FUSES	
DEFROSTING	OFF-CYCLE (ELECTRICAL ON REQUEST)	
INPUTS		
AMBIENT PROBE	NTC 10 KΩ	
EVAPORATOR PROBE	NTC 10 KΩ	
HUMIDITY PROBE	4 ÷ 20 MA 0 ÷ 100% RH	
DOOR SWITCH	PRESENT	
HIGH/LOW PRESSURE SWITCH	PRESENT	
MIN. TEMPERATURE SENSOR	PRESENT	
MAX. TEMPERATURE SENSOR	PRESENT	
OUTPUTS		
COMPRESSOR	2200 W (0,5 ÷3 HP)	
EVAPORATOR FANS	800 W (1 PH)	
DEFROST	ON REQUEST	
HOT HEATERS	4000 W (AC1)	
ENABLE HUMIDIFIERS	PRESENT	
ENABLE DEHUMIDIFIERS	PRESENT	
AIR CHANGE	PRESENT	
PAUSE	PRESENT	
ROOM LIGHT	PRESENT	
ALARM RELAY	PRESENT	
SUPERVISION SYSTEM	TELENET	

PLUS100 THR

PLUS1000 THR CR

SLIM BASE KIT

The quickest, most economic cold room control solution.
Out-of-room unit complete with assembly kit for direct control of compressor up to 1 HP or to remote control of the power board.

APPLICATIONS

- Single-phase system with compressor up to 1 HP.
- Out-of-room unit for remote control of power board.

MAIN CHARACTERISTICS

- Self-extinguishing ABS keyboard/display with IP55 protection rating.
- Compact.
- Innovative design.
- Complete assembly kit.

SLIM BASE2 K

Suitable for single-phase systems with programmable off-cycle defrost.
Controls:

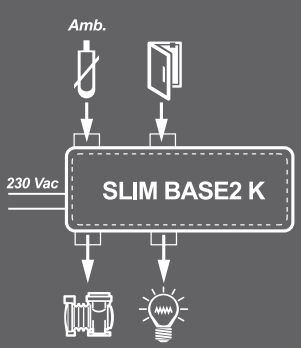
- Room light ON/OFF (door switch).
- System ON/OFF.
- Compressor enabling.
- Warning buzzer.

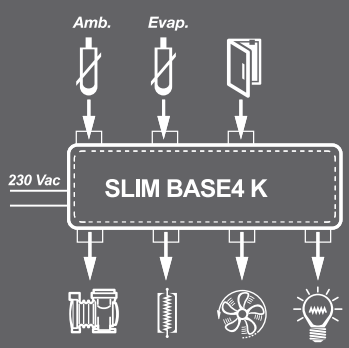
SLIM BASE4 K

Suitable for single-phase systems with programmable electrical defrost.
Controls:

- Room light ON/OFF (door switch).
- System ON/OFF.
- Compressor enabling.
- Defrost elements.
- Evaporator fans.
- Warning buzzer.

CONNECTION DIAGRAMS





TECHNICAL CHARACTERISTICS	SLIM BASE2 K	SLIM BASE4 K
DIMENSIONS	215 x 74 x 83 mm	215 x 74 x 83 mm
WEIGHT	0,7 Kg	0,8 Kg
PROTECTION RATING	IP 55	IP 55
POWER SUPPLY	230 V AC ±10% 50/60Hz	230 V AC ±10% 50/60Hz
LOAD TYPE	SINGLE-PHASE	SINGLE-PHASE
WORKING TEMPERATURE	-5 ÷ +50 °C	-5 ÷ +50 °C
STORAGE TEMPERATURE	-10 ÷ +70 °C	-10 ÷ +70 °C
RELATIVE AMBIENT HUMIDITY	< 90% Rh	< 90% Rh
RANGE OF READING	-45 ÷ +45 °C	-45 ÷ +45 °C
DEFROST	OFF-CYCLE	ELECTRICAL
STATUS INDICATORS	LED + DISPLAY	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER	LED + BUZZER
INPUTS		
AMBIENT PROBE	NTC 10 KΩ	NTC 10 KΩ
EVAPORATOR PROBE		NTC 10 KΩ
DOOR SWITCH	PRESENT	PRESENT
OUTPUTS		
COMPRESSOR	750 W (1 HP)	750 W (1 HP)
EVAPORATOR FANS		250 W
DEFROST		1500 W (AC1)
COLD ROOM LIGHT	400 W (AC1)	400 W (AC1)

The compact case contains everything required by the installer and a practical assembly guide.

ECP200 BASE

A line of control panels for cold rooms with single-phase compressor up to 2 HP, specially designed to provide greater flexibility at a competitive cost.

ECP200 BASE2

Allows user to control compressor and cold room light. Configurable auxiliary relay or alarm output also available on the ECP200 Base 2A version.

Applications:

- Single-phase system up to 2 HP, off-cycle defrosting.
- Remote control for compressor enabling to be linked to power board.

ECP200 BASE4

Allows user to control all the components on the refrigeration system: compressor, evaporator fans, defrosting heaters and room light. Configurable auxiliary relay or alarm output also available on the ECP200 Base 4A version.

Applications:

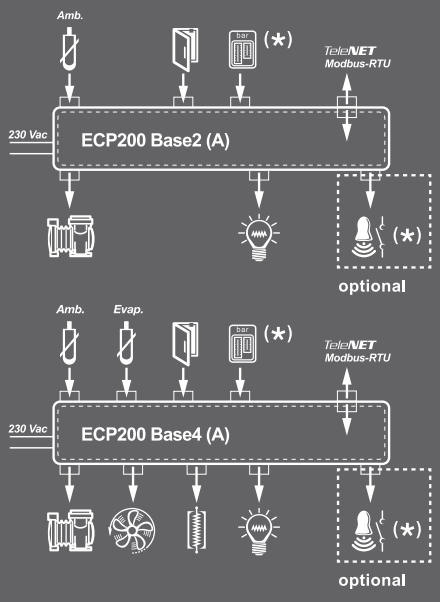
- Single-phase static or ventilated system up to 2 HP, off-cycle or electrical defrosting with direct compressor shutdown (or in pump-down mode, on the ECP 200 BASE4 A version).
- Remote control for compressor, defrosting and fans enabling to be linked to power board.
- Device of single-phase evaporating unit with cold solenoid valve or remote motor condenser unit enabling.

MAIN CHARACTERISTICS

- Direct control of compressor, defrosting heaters, evaporator fans and room light using free-voltage contacts.
- Compact, self-extinguishing ABS housing with IP65 protection rating.
- On “A” versions there is an auxiliary relay with parameter-configurable activation (alarm, temperature set-point, direct frontal pushbutton control, door heater elements, freon solenoid control where pump-down compressor operation is applied).
- RS485 for connection to TeleNET industrial supervision network or Modbus-RTU standard protocol.

CONNECTION DIAGRAM

(*) = Configurable function



TECHNICAL CHARACTERISTICS	ECP200 BASE2	ECP200 BASE4
DIMENSIONS	203 x 193 x 79 mm	203 x 193 x 79 mm
WEIGHT	0,5 Kg	0,5 Kg
PROTECTION RATING	IP 65	IP 65
POWER SUPPLY	230 V AC ±10% 50/60Hz	230 V AC ±10% 50/60Hz
LOAD TYPE	SINGLE-PHASE	SINGLE-PHASE
WORKING TEMPERATURE	-5 ÷ +50°C	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90% Rh	< 90% Rh
RANGE OF READING	-45 ÷ +45 °C	-45 ÷ +45 °C
DEFROST	OFF-CYCLE	ELECTRICAL
STATUS INDICATORS	LED + DISPLAY	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER	LED + BUZZER
INPUTS		
AMBIENT PROBE	NTC 10 KΩ	NTC 10 KΩ
EVAPORATOR PROBE		NTC 10 KΩ
OVERLOAD PROTECTION	PRESENT	PRESENT
DOOR SWITCH	PRESENT	PRESENT
OUTPUTS		
COMPRESSOR	1500 W (2 HP)	1500 W (2 HP)
DEFROST		3000 W (AC1)
EVAPORATOR FANS		500 W
COLD ROOM LIGHT	800 W (AC1)	800 W (AC1)
ALARM RELAY / AUX (VOLTAGE FREE CONTACT)	PRESENT (ON “A” VERSIONS ONLY)	PRESENT (ON “A” VERSIONS ONLY)
SUPERVISION SYSTEM	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU

ECP__ BASE4 VD

ECP300 Base4 VD | ECP400 Base4 VD
ECP750 Base4 VD | ECP1000 Base4 VD

A line of control panels for cold rooms with three-phase compressor up to 10 HP, specially designed for complete cold room management.
Together with the various options, the different power ranges allow the user to select a unit that is “custom-made” to suit the refrigeration system.

APPLICATIONS

- Complete control of three-phase static or ventilated refrigeration systems up to 10 HP, off-cycle or electrical defrosting.

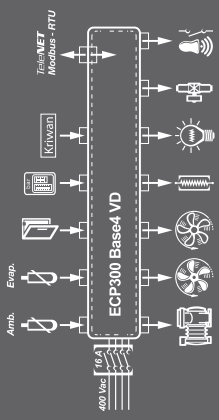
OPTIONS

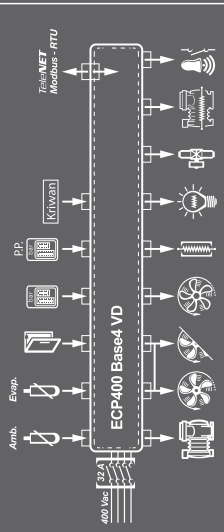
- Installation of magnetothermic protection devices instead of fuses.
- Alarm output with free-voltage contact to activate further warning devices such as siren or dialler.
- Pump-down compressor stop.
- Hot-gas defrost control.

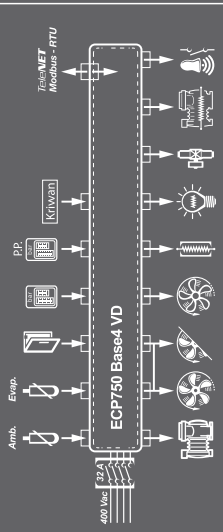
MAIN CHARACTERISTICS

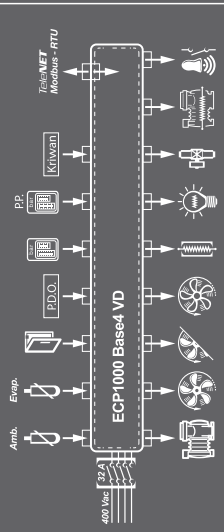
- Direct control of compressor, condenser fans, compressor oil heater, defrosting heaters, evaporator fans, solenoid valve, room light and all standard-compliant electrical protection devices.
- Compact, self-extinguishing ABS housing with IP65 protection rating and frontal circuit-breaker.
- Electronic control with wide LED display and user-friendly keypad.
- System status indicated by icons.
- RS485 for connection to TeleNET industrial supervision network or Modbus-RTU standard protocol.

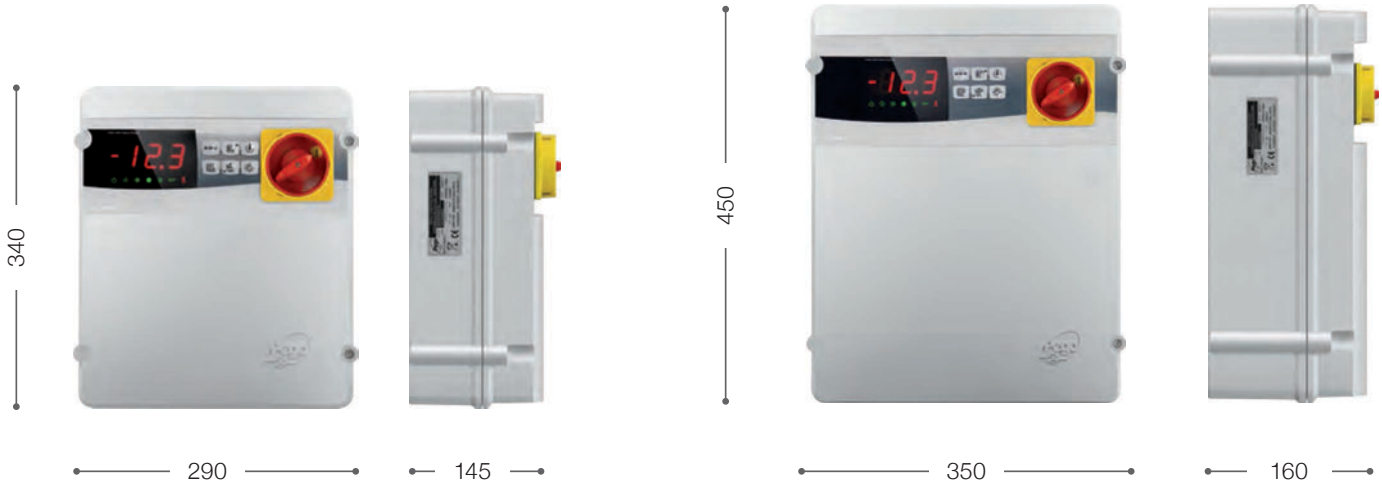
CONNECTION DIAGRAMS











TECHNICAL CHARACTERISTICS	ECP300 BASE4 VD	ECP400 BASE4 VD	ECP750 BASE4 VD	ECP1000 BASE4 VD
BOX DIMENSIONS	290 X 340 X 145 mm	350 X 450 X 160 mm	350 X 450 X 160 mm	350 X 450 X 160 mm
WEIGHT	5 Kg	6 Kg	6 Kg	7 Kg
PROTECTION RATING	IP 65	IP 65	IP 65	IP 65
POWER SUPPLY	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz
LOAD TYPE	THREE-PHASE	THREE-PHASE	THREE-PHASE	THREE-PHASE
WORKING TEMPERATURE	-5 ÷ +50°C	-5 ÷ +50°C	-5 ÷ +50°C	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C	-10 ÷ +70°C	-10 ÷ +70°C	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90% Rh	< 90% Rh	< 90% Rh	< 90% Rh
RANGE OF READING	-45 ÷ +45 °C	-45 ÷ +45 °C	-45 ÷ +45 °C	-45 ÷ +45 °C
MAIN SWITCH	16 A	32 A	32 A	32 A
OVERLOAD PROTECTION	THERMAL RELAY	THERMAL RELAY	THERMAL RELAY	THERMAL RELAY
GENERAL PROTECTION	FUSES	FUSES	FUSES	FUSES
CONTROL	PEGO	PEGO	PEGO	PEGO
DEFROSTING	ELECTRICAL	ELECTRICAL	ELECTRICAL	ELECTRICAL
INSULATION TRANSFORMER		PRESENT	PRESENT	PRESENT
STATUS INDICATORS	LED + DISPLAY	LED + DISPLAY	LED + DISPLAY	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER	LED + BUZZER	LED + BUZZER	LED + BUZZER
INPUTS				
AMBIENT PROBE	NTC 10 KΩ	NTC 10 KΩ	NTC 10 KΩ	NTC 10 KΩ
EVAPORATOR PROBE	NTC 10 KΩ	NTC 10 KΩ	NTC 10 KΩ	NTC 10 KΩ
DOOR SWITCH	PRESENT	PRESENT	PRESENT	PRESENT
OIL DIFFERENTIAL PRESSURE SWITCH				PRESENT
HIGH/LOW PRESSURE SWITCH	PRESENT	PRESENT	PRESENT	PRESENT
KRIWAN® CONNECTION	PRESENT	PRESENT	PRESENT	PRESENT
OUTPUTS				
COMPRESSOR	2200 W (0,5÷3 HP)	2200÷3000 W (3÷4 HP)	3000÷5500 W (4÷7,5 HP)	5500÷7500 W (7÷10 HP)
CONDENSER FANS OUTPUT 1	800 W (1 PH)	800 W TOTAL (1 PH)	800 W TOTAL (1 PH)	2000 W (1 PH / 3PH)
CONDENSER FANS OUTPUT 2 (SEPARATED)		(1 PH)	(1 PH)	2000 W (1 PH / 3PH)
EVAPORATOR FANS	800 W (1 PH)	2000 W (1 PH)	2000 W (1 PH)	2000 W (1 PH / 3PH)
DEFROSTING HEATERS	4000 W (AC1)	7500 W (AC1)	9000 W (AC1)	12000 W (AC1)
ROOM LIGHT	PRESENT	PRESENT	PRESENT	PRESENT
SOLENOID VALVE	PRESENT	PRESENT	PRESENT	PRESENT
COMPRESSOR OIL HEATER		PRESENT	PRESENT	PRESENT
ALARM RELAY	PRESENT (ON REQUEST)	PRESENT (ON REQUEST)	PRESENT (ON REQUEST)	PRESENT (ON REQUEST)
SUPERVISION SYSTEM	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU

ECP__ BASE4 U VD

ECP300 Base4 U VD | ECP400 Base4 U VD
ECP750 Base4 U VD | ECP1000 Base4 U VD

A line of power and electronic control panels to manage the three-phase evaporating unit only where devices are served by a compressor rack.
Various power ranges and a wide range of optionals allow you to choose the panel best suited to your system.

APPLICATIONS

- Control of evaporating unit only with electrical defrost up to 12 kW.

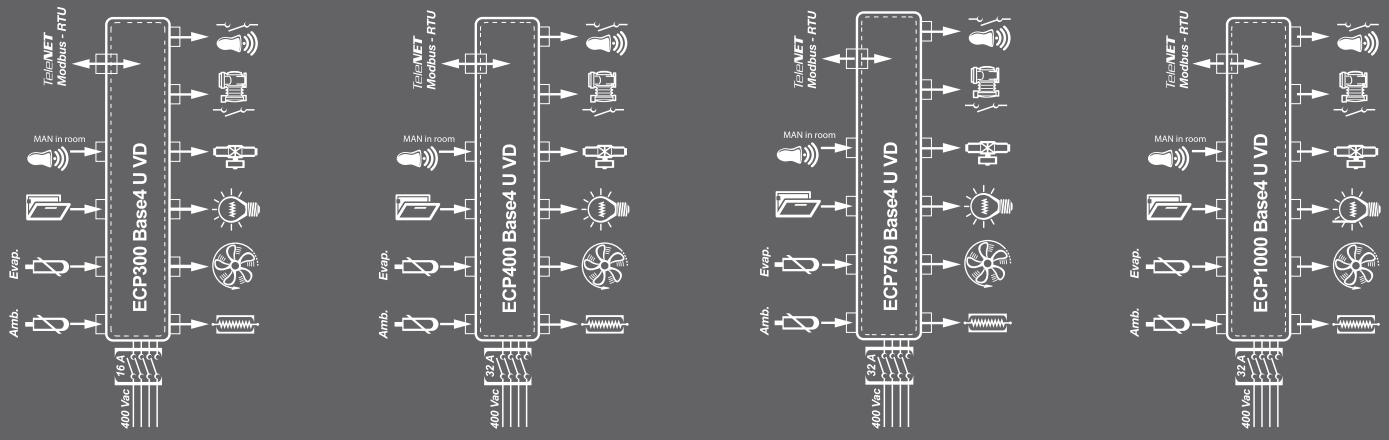
OPTIONS

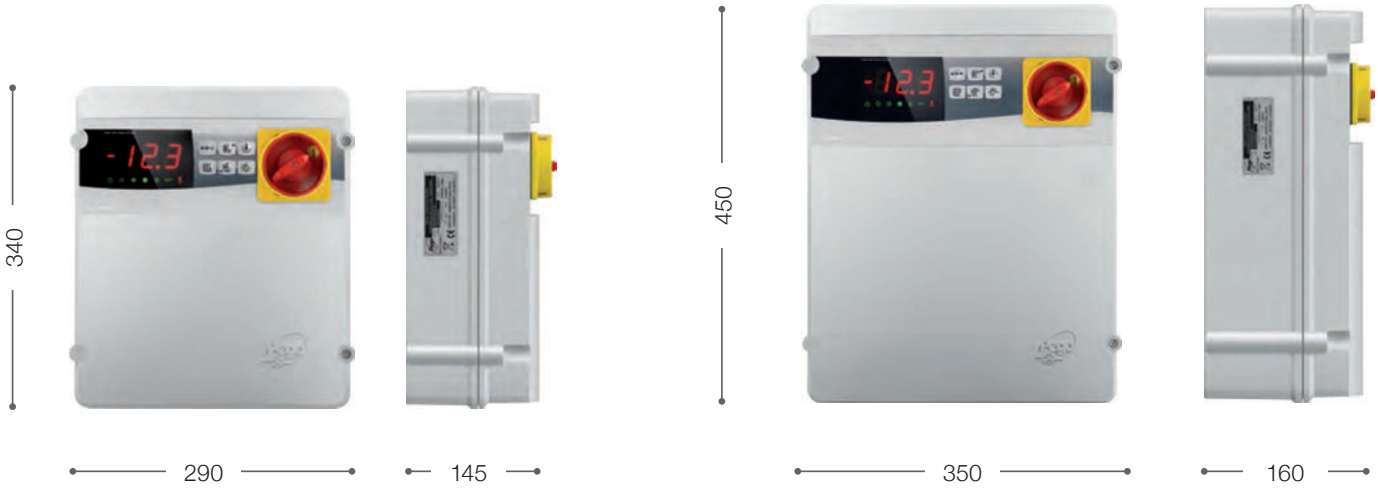
- Magnetothermic circuit breakers installed instead of fuses.
- Free-voltage contact alarm output to activate other warning devices such as sirens or dialers.

MAIN CHARACTERISTICS

- Enabling for condensing unit, defrosting elements, evaporator fans, solenoid valve, room light and all standard-compliant electrical safeguards.
- Compact, self-extinguishing ABS housing with IP65 protection rating and circuit breaker on front of panel.
- Control electronics with large backlit LCD and user-friendly keypad.
- LED system status indicators.
- RS485 for connection to TeleNET industrial supervision network or Modbus-RTU standard protocol.

CONNECTION DIAGRAMS





TECHNICAL CHARACTERISTICS	ECP300 BASE4 U VD	ECP400 BASE4 U VD	ECP750 BASE4 U VD	ECP1000 BASE4 U VD
BOX DIMENSIONS	290 X 340 X 145 mm	350 X 450 X 160 mm	350 X 450 X 160 mm	350 X 450 X 160 mm
WEIGHT	5 Kg	6 Kg	6 Kg	7 Kg
PROTECTION RATING	IP 65	IP 65	IP 65	IP 65
POWER SUPPLY	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz
LOAD TYPE	THREE-PHASE	THREE-PHASE	THREE-PHASE	THREE-PHASE
WORKING TEMPERATURE	-5 ÷ +50°C	-5 ÷ +50°C	-5 ÷ +50°C	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C	-10 ÷ +70°C	-10 ÷ +70°C	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90% Rh	< 90% Rh	< 90% Rh	< 90% Rh
RANGE OF READING	-45 ÷ +45 °C	-45 ÷ +45 °C	-45 ÷ +45 °C	-45 ÷ +45 °C
MAIN SWITCH	16 A	32 A	32 A	32 A
GENERAL PROTECTION	FUSES	FUSES	FUSES	FUSES
CONTROL	PEGO	PEGO	PEGO	PEGO
DEFROSTING	ELECTRICAL	ELECTRICAL	ELECTRICAL	ELECTRICAL
INSULATION TRANSFORMER		PRESENT	PRESENT	PRESENT
STATUS INDICATORS	LED + DISPLAY	LED + DISPLAY	LED + DISPLAY	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER	LED + BUZZER	LED + BUZZER	LED + BUZZER
INPUTS				
AMBIENT PROBE	NTC 10 KΩ	NTC 10 KΩ	NTC 10 KΩ	NTC 10 KΩ
EVAPORATOR PROBE	NTC 10 KΩ	NTC 10 KΩ	NTC 10 KΩ	NTC 10 KΩ
DOOR SWITCH	PRESENT	PRESENT	PRESENT	PRESENT
MAN IN COLD-ROOM ALARM	AVAILABLE	AVAILABLE	AVAILABLE	AVAILABLE
OUTPUTS				
EVAPORATOR FANS	500 W (1 PH)	2000 W (1 PH)	2X 2000 W (1 PH)	3X 2000 W (1 PH / 3PH)
DEFROSTING HEATERS	4000 W	7500 W	9000 W	12000 W
ROOM LIGHT	PRESENT	PRESENT	PRESENT	PRESENT
SOLENOID VALVE	PRESENT	PRESENT	PRESENT	PRESENT
ENABLE CONDENSING UNIT	PRESENT	PRESENT	PRESENT	PRESENT
ALARM RELAY	PRESENT (ON REQUEST)	PRESENT (ON REQUEST)	PRESENT (ON REQUEST)	PRESENT (ON REQUEST)
SUPERVISION SYSTEM	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU

ECP 04

ECP 04 | ECP 04 M

A simple, compact solution for control of the condensing unit: single-phase up to 2 HP and three-phase up to 3 HP.
The call can be generated by pressure switch (compressor shutdown in pump-down mode), thermostat or free-voltage contact.

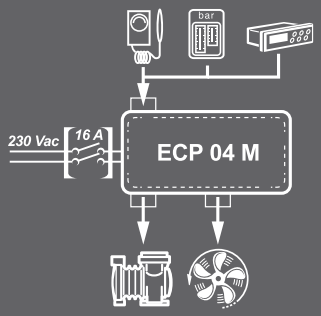
APPLICATIONS

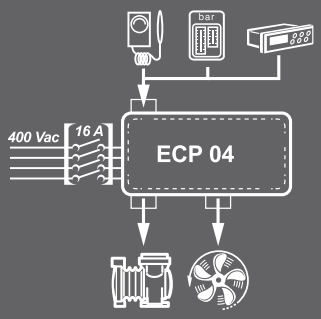
- **ECP 04 M** Control of condensing unit with single-phase compressor up to 2 HP.
- **ECP 04** Control of condensing unit with three-phase compressor up to 3 HP.

MAIN CHARACTERISTICS

- Direct control of compressor, condenser fans and all standard-compliant electrical safeguards.
- Compressor call by pressure switch, thermostat or free-voltage contact.
- Compact unit with self-extinguishing ABS panel and IP65 protection rating plus circuit breaker on front of panel.
- System status indicated by LED icon.

CONNECTION DIAGRAMS





TECHNICAL CHARACTERISTICS	ECP 04 M	ECP 04
BOX DIMENSIONS	210x260x145 mm	210x260x145 mm
WEIGHT	4 Kg	4 Kg
PROTECTION RATING	IP 65	IP 65
POWER SUPPLY	230 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz
LOAD TYPE	SINGLE-PHASE	THREE-PHASE
WORKING TEMPERATURE	-5 ÷ +50°C	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90% Rh	< 90% Rh
MAIN SWITCH	16 A	16 A
OVERLOAD PROTECTION		THERMAL RELAY
GENERAL PROTECTION	FUSES	FUSES
CONTROL	EXTERNAL PRESSURE SWITCH	EXTERNAL PRESSURE SWITCH
PUMP-DOWN STOP	PRESENT	PRESENT
STATUS INDICATORS	LED	LED
INPUTS		
THERMOSTAT OR PRESSURE SWITCH	PRESENT	PRESENT
OUTPUTS		
COMPRESSOR	1500 W (2 HP) (1 PH)	2200 W (3HP) (3PH)
CONDENSER FANS	800 W (1 PH)	800 W (1PH)

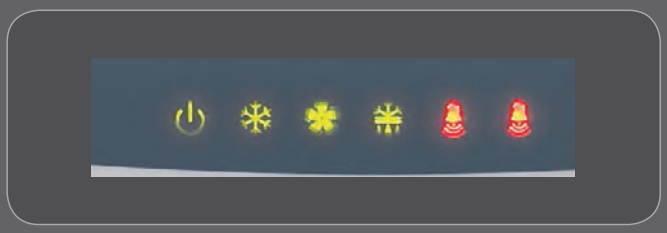
ECP 07 10 15

ECP 07 | ECP 10 | ECP 15

A simple, compact solution for control of three-phase condensing units up to 20 HP.
The call can be generated by pressure switch (compressor shutdown in pump-down mode), thermostat or clean contact.

APPLICATIONS

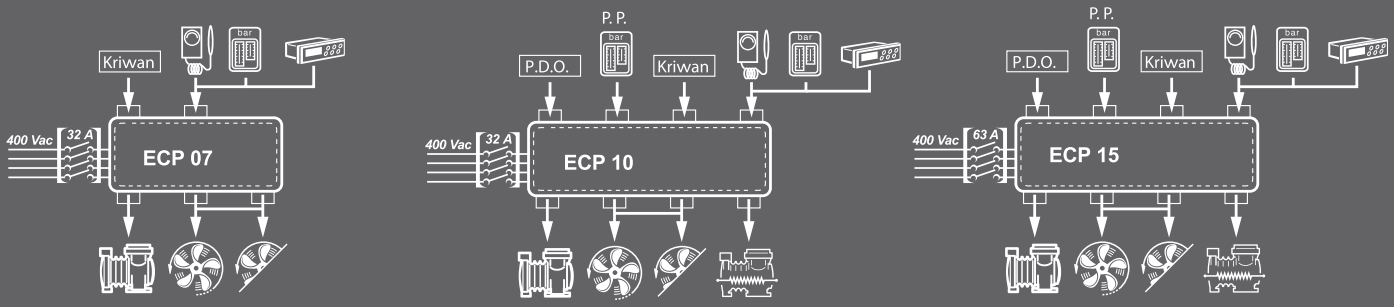
- **ECP 07** Control of condensing unit with three-phase compressor up to 7 HP.
- **ECP 10** Control of condensing unit with three-phase compressor up to 10 HP.
- **ECP 15** Control of condensing unit with three-phase compressor up to 20 HP.

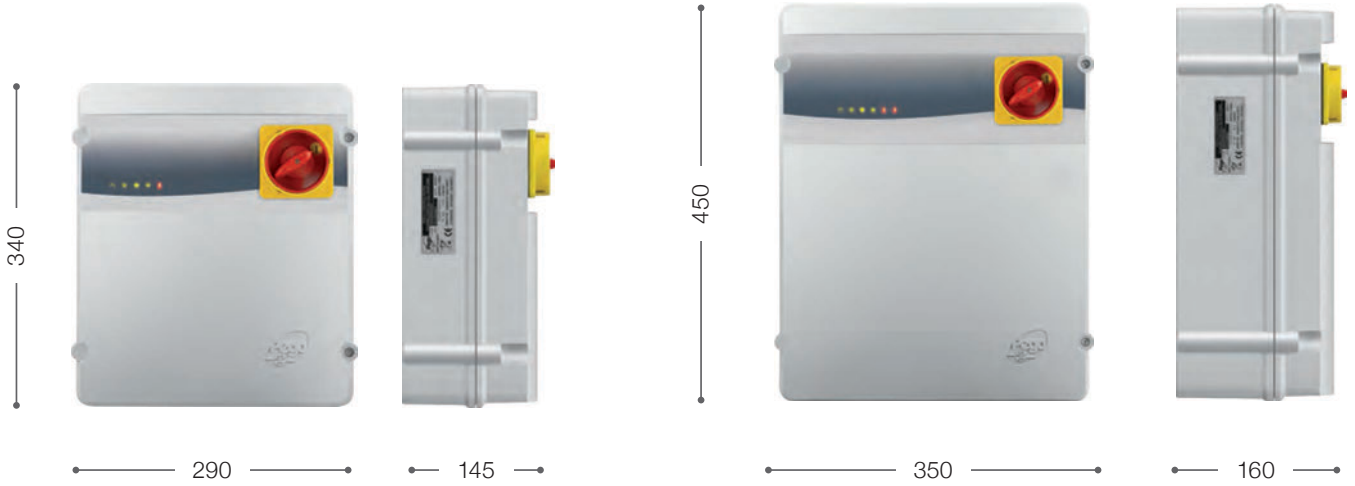


MAIN CHARACTERISTICS

- Direct control of compressor, condenser fans and all standard-compliant electrical safeguards.
- Compressor call by pressure switch, thermostat or clean contact.
- Compact unit with self-extinguishing ABS panel and IP65 protection rating plus circuit breaker on front of panel.
- System status indicated by LED icon.

CONNECTION DIAGRAMS





TECHNICAL CHARACTERISTICS	ECP 07		ECP 10	ECP 15
BOX DIMENSIONS	290 X 340 X 145 mm		290 X 340 X 145 mm	350 X 450 X 160 mm
WEIGHT	4 Kg		6 Kg	7 Kg
PROTECTION RATING	IP 65		IP 65	IP 65
POWER SUPPLY	400 V AC ±10% 50/60 Hz		400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz
LOAD TYPE	THREE-PHASE		THREE-PHASE	THREE-PHASE
WORKING TEMPERATURE	-5 ÷ +50°C		-5 ÷ +50°C	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C		-10 ÷ +70°C	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90% Rh		< 90% Rh	< 90% Rh
MAIN SWITCH	32 A		32 A	63 A
OVERLOAD PROTECTION	THERMAL RELAY		THERMAL RELAY	THERMAL RELAY
GENERAL PROTECTION	FUSES		FUSES	FUSES
CONTROL	EXTERNAL PRESSURE SWITCH		EXTERNAL PRESSURE SWITCH	EXTERNAL PRESSURE SWITCH
PUMP-DOWN STOP	PRESENT		PRESENT	PRESENT
INSULATION TRANSFORMER	PRESENT		PRESENT	PRESENT
STATUS INDICATORS	LED		LED	LED
INPUTS				
THERMOSTAT OR PRESSURE SWITCH	PRESENT		PRESENT	PRESENT
OIL DIFFERENTIAL PRESSURE SWITCH			PRESENT	PRESENT
KRIWAN® CONNECTION	PRESENT		PRESENTE	PRESENT
CONDENSER FANS REGULATOR PRESS. SWITCH (R.P.S.)			PRESENT	PRESENT
OUTPUTS				
COMPRESSOR	2200÷5500 W (3÷7 HP)		5500÷7500 W (7÷10 HP)	7500÷15000 W (10÷20 HP)
CONDENSER FANS OUTPUT 1	800 W (1 PH) TOTAL	(1 PH)	2000 W (1PH/ 3PH)	2000 W (1PH/ 3PH)
CONDENSER FANS OUTPUT 2 (SEPARATED)		(1 PH)	2000 W (1PH/ 3PH)	2000 W (1 PH / 3PH)
COMPRESSOR OIL HEATER			PRESENT	PRESENT

ECP__ VD

ECP300 VD | ECP400 VD
ECP750 VD | ECP1000 VD

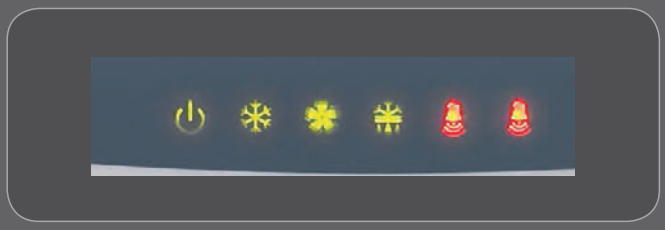
A line of power boards for refrigeration systems with three-phase compressors up to 10 HP to be linked to a thermostat, thermo-regulator or out-of-room control unit.
An electromechanical timer is incorporated for timed defrosts.

APPLICATIONS

- Control of three-phase static or ventilated refrigeration units up to 10 HP, with electric or off-cycle defrost linked to a thermostat, thermo-regulator or out-of-room control unit that issues a cold request.

OPTIONS

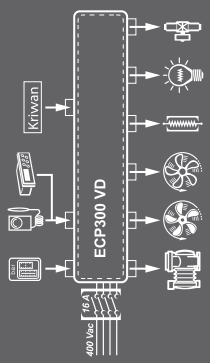
- Installation of magnetothermic circuit breakers instead of fuses.
- Compressor shutdown in pump-down mode.

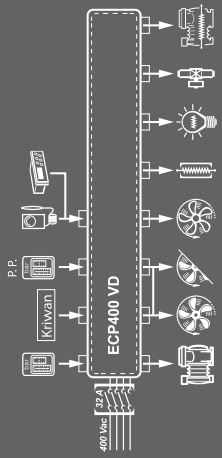


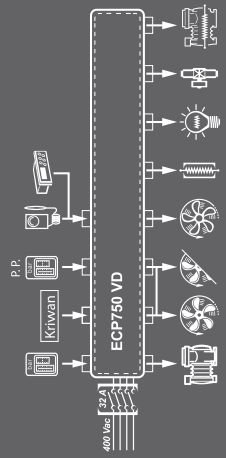
MAIN CHARACTERISTICS

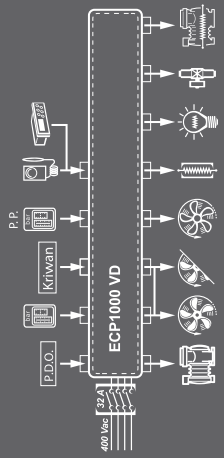
- Enabling for motor condenser unit, defrosting elements, evaporator fans, solenoid valve, room light, door element and all standard-compliant electrical safeguards.
- Compact unit with self-extinguishing ABS housing panel and IP65 protection rating plus circuit breaker on front of panel.
- Electromechanical timer for timed defrosts
- System status indicated by LED icon.
- Can be controlled by thermostat, thermo-regulator or out-of-room control unit
- Can house thermo-regulator on front of panel.

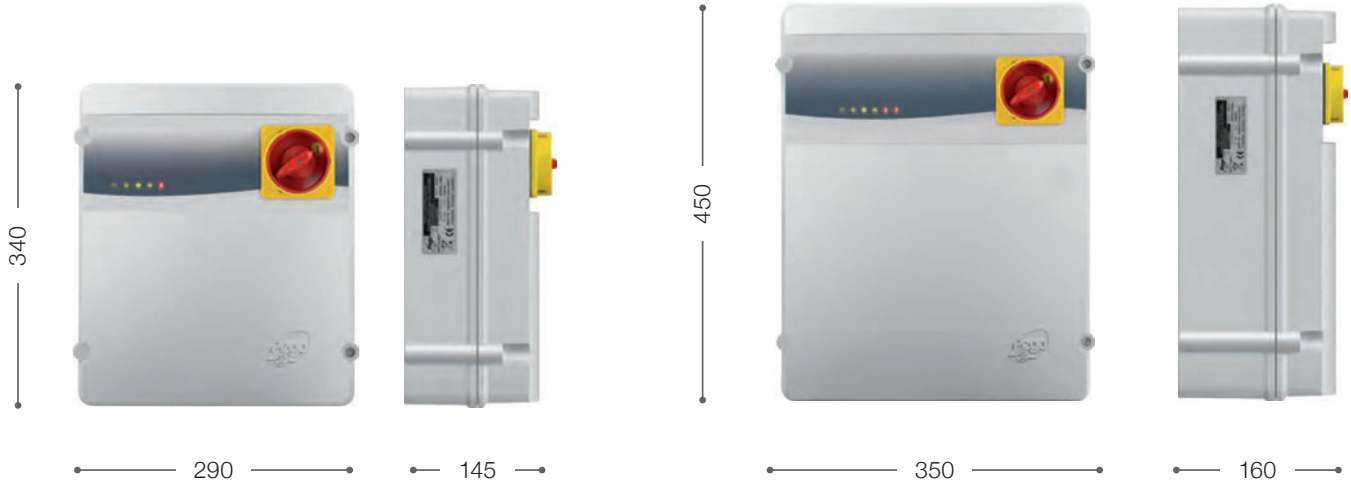
CONNECTION DIAGRAMS









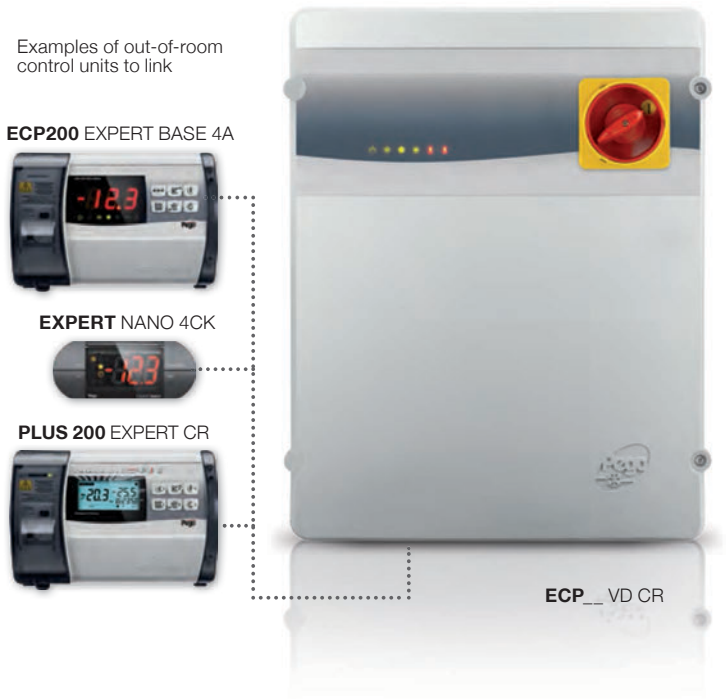


TECHNICAL CHARACTERISTICS	ECP300 VD	ECP400 VD	ECP750 VD	ECP1000 VD
BOX DIMENSIONS	290 X 340 X 145 mm	350 X 450 X 160 mm	350 X 450 X 160 mm	350 X 450 X 160 mm
WEIGHT	5 Kg	6 Kg	6 Kg	7 Kg
PROTECTION RATING	IP 65	IP 65	IP 65	IP 65
POWER SUPPLY	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz
LOAD TYPE	THREE-PHASE	THREE-PHASE	THREE-PHASE	THREE-PHASE
WORKING TEMPERATURE	-5 ÷ +50°C	-5 ÷ +50°C	-5 ÷ +50°C	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C	-10 ÷ +70°C	-10 ÷ +70°C	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90% Rh	< 90% Rh	< 90% Rh	< 90% Rh
MAIN SWITCH	16 A	32 A	32 A	32 A
OVERLOAD PROTECTION	THERMAL RELAY	THERMAL RELAY	THERMAL RELAY	THERMAL RELAY
GENERAL PROTECTION	FUSES	FUSES	FUSES	FUSES
CONTROL	EXTERNAL ON /OFF EXTERNAL THERMOREGULATOR REMOTE CONTROL PANEL	EXTERNAL ON /OFF EXTERNAL THERMOREGULATOR REMOTE CONTROL PANEL	EXTERNAL ON /OFF EXTERNAL THERMOREGULATOR REMOTE CONTROL PANEL	EXTERNAL ON /OFF EXTERNAL THERMOREGULATOR REMOTE CONTROL PANEL
DEFROSTING	ELECTRICAL	ELECTRICAL	ELECTRICAL	ELECTRICAL
INSULATION TRANSFORMER		PRESENT	PRESENT	PRESENT
STATUS INDICATORS	LED	LED	LED	LED
ALARM SIGNALS	LED	LED	LED	LED
INPUTS				
THERMOSTAT OR PRESSURE SWITCH	PRESENT	PRESENT	PRESENT	PRESENT
OIL DIFFERENTIAL PRESSURE SWITCH				PRESENT
HIGH/LOW PRESSURE SWITCH	PRESENT	PRESENT	PRESENT	PRESENT
KRIWAN® CONNECTION	PRESENT	PRESENT	PRESENT	PRESENT
CONDENSER FANS REGULATOR PRESS. SWITCH (R.P.S.)		PRESENT	PRESENT	PRESENT
OUTPUTS				
COMPRESSOR	2200 W (0,5÷3 HP)	2200÷3000 W (3÷4 HP)	3000÷5500 W (4÷7,5 HP)	5500÷7500 W (7÷10 HP)
CONDENSER FANS OUTPUT 1	800 W (1 PH)	800 W (1 PH) TOTAL (1 PH)	800 W (1 PH) TOTAL (1 PH)	2000 W (1PH/ 3PH)
CONDENSER FANS OUTPUT 2 (SEPARATED)		(1 PH)	(1 PH)	2000 W (1PH / 3PH)
EVAPORATOR FANS	800 W (1 PH)	2000 W (1PH)	2000 W (1PH)	2000 W (1PH/ 3PH)
DEFROSTING HEATERS	4000 W (AC1)	7500 W (AC1)	9000 W (AC1)	12000 W (AC1)
ROOM LIGHT	PRESENT	PRESENT	PRESENT	PRESENT
SOLENOID VALVE	PRESENT	PRESENT	PRESENT	PRESENT
COMPRESSOR OIL HEATER		PRESENT	PRESENT	PRESENT

ECP__ VD CR

ECP300 VD CR | ECP400 VD CR
ECP750 VD CR | ECP1000 VD CR

A line of power boards for refrigeration systems with three-phase compressors up to 10 HP to be linked to an out-of-room control unit.
Controls and powers the compressor, condenser fans, evaporator fans, solenoid valve, defrost elements managed by means of cold fans and defrost call enabling from out-of-room control unit.



APPLICATIONS

- Control of three-phase static or ventilated refrigeration systems up to 10 HP, with electric or off-cycle defrost linked to an out-of-room control unit.

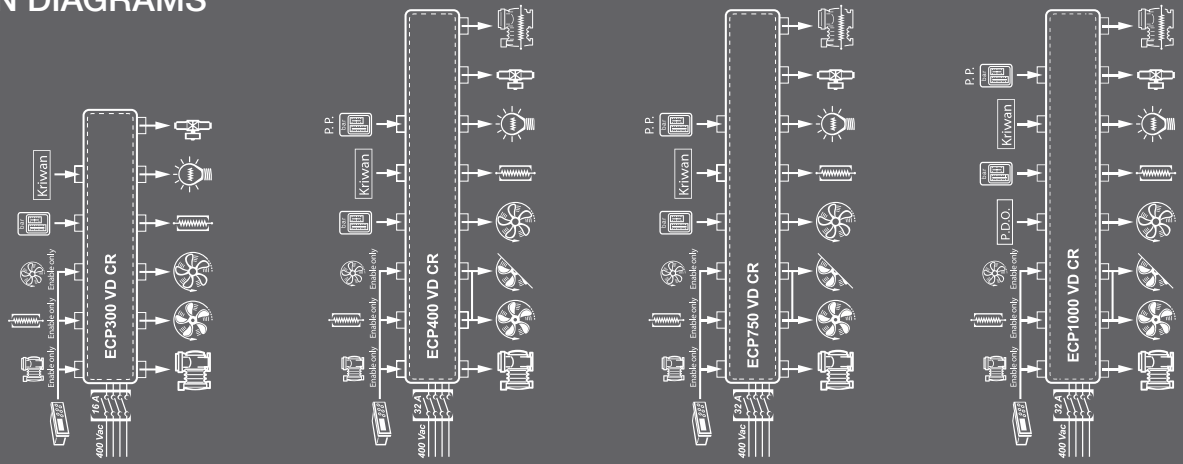
OPTIONS

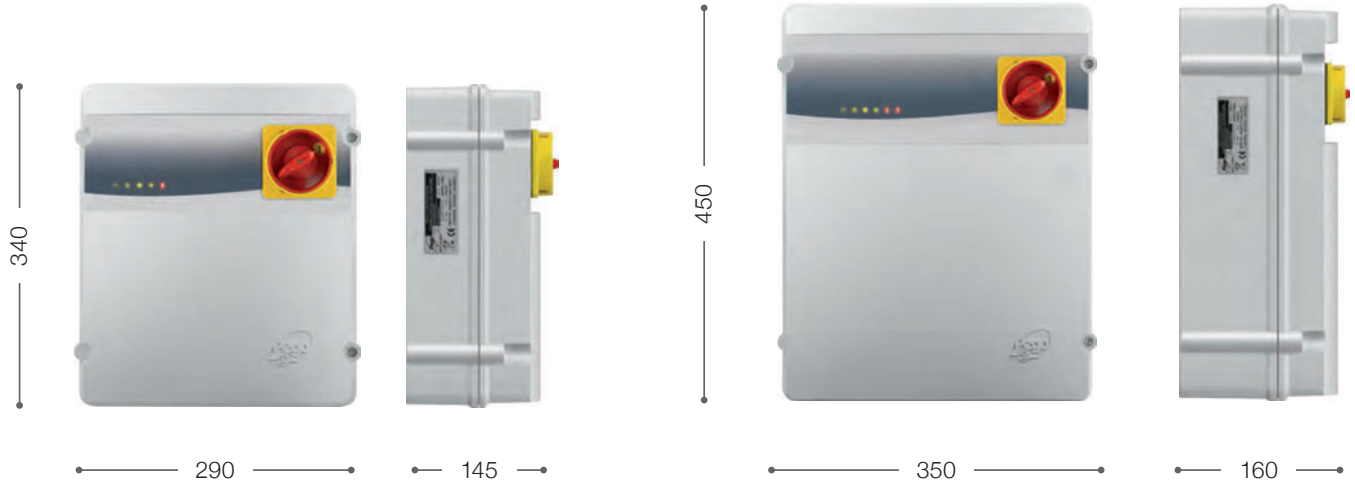
- Installation of magnetothermic circuit breakers instead of fuses.
- Compressor shutdown in pump-down mode.
- Datalogger function with PLUS200 EXPERT CR out-of-room controller for temperature and alarms registration.

MAIN CHARACTERISTICS

- Direct control of compressor, condenser fans, compressor oil element, defrost elements, evaporator fans, solenoid valve and all standard-compliant electrical safeguards.
- Compact unit with self-extinguishing ABS housing panel and IP65 protection rating plus circuit breaker on front of panel.
- Electromechanical timer for timed defrosts.
- System status indicated by LED icon.
- Can be controlled by thermostat, thermo-regulator or out-of-room control unit.
- Can house thermo-regulator on front of panel.

CONNECTION DIAGRAMS





TECHNICAL CHARACTERISTICS		ECP300 VD CR	ECP400 VD CR	ECP750 VD CR	ECP1000 VD CR
BOX DIMENSIONS		290 X 340 X 145 mm	350 X 450 X 160 mm	350 X 450 X 160 mm	350 X 450 X 160 mm
WEIGHT		5 Kg	6 Kg	6 Kg	7 Kg
PROTECTION RATING		IP 65	IP 65	IP 65	IP 65
POWER SUPPLY		400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz
LOAD TYPE		THREE-PHASE	THREE-PHASE	THREE-PHASE	THREE-PHASE
WORKING TEMPERATURE		-5 ÷ +50°C	-5 ÷ +50°C	-5 ÷ +50°C	-5 ÷ +50°C
STORAGE TEMPERATURE		-10 ÷ +70°C	-10 ÷ +70°C	-10 ÷ +70°C	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY		< 90% Rh	< 90% Rh	< 90% Rh	< 90% Rh
MAIN SWITCH		16 A	32 A	32 A	32 A
OVERLOAD PROTECTION		THERMAL RELAY	THERMAL RELAY	THERMAL RELAY	THERMAL RELAY
GENERAL PROTECTION		FUSES	FUSES	FUSES	FUSES
CONTROL	COMPRESSOR	EXTERNAL ON /OFF	EXTERNAL ON /OFF	EXTERNAL ON /OFF	EXTERNAL ON /OFF
	DEFROST	EXTERNAL ON /OFF	EXTERNAL ON /OFF	EXTERNAL ON /OFF	EXTERNAL ON /OFF
	FANS	EXTERNAL ON /OFF	EXTERNAL ON /OFF	EXTERNAL ON /OFF	EXTERNAL ON /OFF
DEFROSTING		ELECTRICAL	ELECTRICAL	ELECTRICAL	ELECTRICAL
INSULATION TRANSFORMER			PRESENT	PRESENT	PRESENT
STATUS INDICATORS		LED	LED	LED	LED
ALARM SIGNALS		LED	LED	LED	LED
INPUTS					
COMPRESSOR POWER		ENABLE ONLY	ENABLE ONLY	ENABLE ONLY	ENABLE ONLY
DEFROST		ENABLE ONLY	ENABLE ONLY	ENABLE ONLY	ENABLE ONLY
EVAPORATOR FANS		ENABLE ONLY	ENABLE ONLY	ENABLE ONLY	ENABLE ONLY
OIL DIFFERENTIAL PRESSURE SWITCH					PRESENT
HIGH/LOW PRESSURE SWITCH		PRESENT	PRESENT	PRESENT	PRESENT
KRIWAN® CONNECTION		PRESENT	PRESENT	PRESENT	PRESENT
CONDENSER FANS REGULATOR PRESS. SWITCH (R.P.S.)			PRESENT	PRESENT	PRESENT
OUTPUTS					
COMPRESSOR		2200 W (0,5÷3 HP)	2200÷3000 W (3÷4 HP)	3000÷5500 W (4÷7,5 HP)	5500÷7500 W (7÷10 HP)
CONDENSER FANS OUTPUT 1		800 W (1 PH)	800 W (1 PH) TOTAL (1 PH)	800 W (1 PH) TOTAL (1 PH)	2000 W (1PH/ 3PH)
CONDENSER FANS OUTPUT 2 (SEPARATED)			(1 PH)	(1 PH)	2000 W (1PH / 3PH)
EVAPORATOR FANS		800 W (1 PH)	2000 W (1PH)	2000 W (1PH)	2000 W (1PH/ 3PH)
DEFROSTING HEATERS		4000 W (AC1)	7500 W (AC1)	9000 W (AC1)	12000 W (AC1)
ROOM LIGHT		PRESENT	PRESENT	PRESENT	PRESENT
SOLENOID VALVE		PRESENT	PRESENT	PRESENT	PRESENT
COMPRESSOR OIL HEATER			PRESENT	PRESENT	PRESENT

ECP2000 VD CR

ECP1500 VD CR | ECP2000 VD CR
ECP2500 VD CR

A line of power and control panels for refrigeration systems with three-phase compressor up to 25HP to be linked with an out-of-room control unit (i.e. ECP200 Base4 or SLIM Base4).
Controls and powers the compressor, condenser fans, evaporator fans, solenoid valve, defrost elements managed by means of cold, fans and defrost call enabling from out-of-room control unit.

Examples of out-of-room control units to link

ECP200 EXPERT BASE 4A

EXPERT NANO 4CK

PLUS 200 EXPERT CR

APPLICATIONS

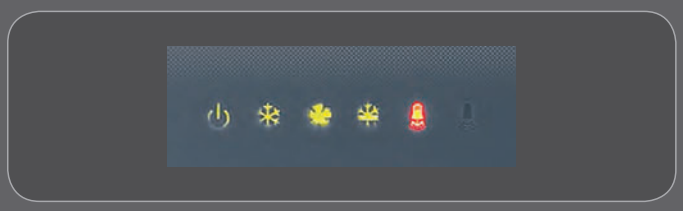
- Control of three-phase ventilated refrigeration systems up to 25 HP, with electrical defrost linked to an out-of-room control unit.

OPTIONS

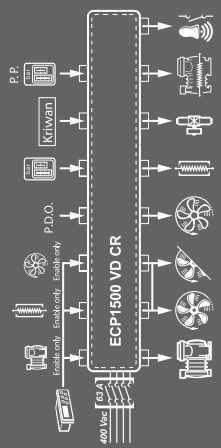
- Compressor shutdown in pump-down mode.
- Datalogger function with external control panel Plus 200 Expert CR for temperatures and alarms recording.

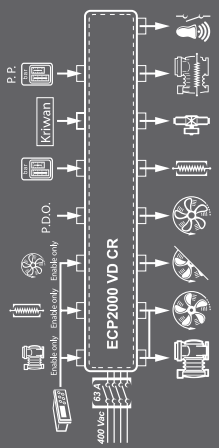
MAIN CHARACTERISTICS

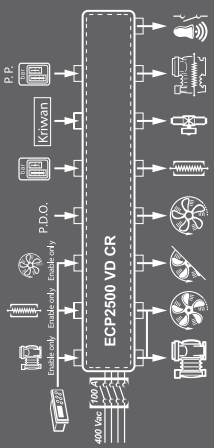
- Direct control of compressor, condenser fans, compressor oil element, defrost elements, evaporator fans, solenoid valve and all standard-compliant electrical safeguards.
- Compact unit with self-extinguishing ABS housing panel and IP65 protection rating plus circuit breaker on front of panel.
- System status indicated by LED icon.
- Alarm signal by voltage-free contact.
- Can be controlled by thermostat, thermo-regulator or out-of-room control unit.



CONNECTION DIAGRAMS







TECHNICAL CHARACTERISTICS		ECP1500 VD CR	ECP2000 VD CR	ECP2500 VD CR
BOX DIMENSIONS		470 X 650 X 210 mm	470 X 650 X 210 mm	470 X 650 X 210 mm
WEIGHT		20 Kg	20 Kg	20 Kg
PROTECTION RATING		IP 65	IP 65	IP 65
POWER SUPPLY		400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz
LOAD TYPE		THREE-PHASE	THREE-PHASE	THREE-PHASE
WORKING TEMPERATURE		-5 ÷ +50°C	-5 ÷ +50°C	-5 ÷ +50°C
STORAGE TEMPERATURE		-10 ÷ +70°C	-10 ÷ +70°C	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY		< 90% Rh	< 90% Rh	< 90% Rh
MAIN SWITCH		63 A	63 A	100 A
OVERLOAD PROTECTION		MOTOR CIRCUIT BREAKER	MOTOR CIRCUIT BREAKER	MOTOR CIRCUIT BREAKER
GENERAL PROTECTION		FUSES	FUSES	FUSES
CONTROL	COMPRESSOR	EXTERNAL ON /OFF	EXTERNAL ON /OFF	EXTERNAL ON /OFF
	DEFROST	EXTERNAL ON /OFF	EXTERNAL ON /OFF	EXTERNAL ON /OFF
	FANS	EXTERNAL ON /OFF	EXTERNAL ON /OFF	EXTERNAL ON /OFF
DEFROSTING		ELECTRICAL	ELECTRICAL	ELECTRICAL
INSULATION TRANSFORMER		PRESENT	PRESENT	PRESENT
STATUS INDICATORS		LED	LED	LED
ALARM SIGNALS		LED	LED	LED
INPUTS				
COMPRESSOR		ENABLE ONLY	ENABLE ONLY	ENABLE ONLY
DEFROSTING		ENABLE ONLY	ENABLE ONLY	ENABLE ONLY
EVAPORATOR FANS		ENABLE ONLY	ENABLE ONLY	ENABLE ONLY
OIL DIFFERENTIAL PRESSURE SWITCH		PRESENT	PRESENT	PRESENT
HIGH/LOW PRESSURE SWITCH		PRESENT	PRESENT	PRESENT
KRIWAN® CONNECTION		PRESENT	PRESENT	PRESENT
CONDENSER FANS REGULATOR PRESS. SWITCH (R.P.S.)		PRESENT	PRESENT	PRESENT
KLIXON CONNECTIONS FOR CONDENSER / EVAPORATOR FANS		PRESENT	PRESENT	PRESENT
OUTPUTS				
COMPRESSOR		7500÷11250 W (10÷15 HP)	11250÷15000 W (15÷20 HP)	15000÷18750 W (20÷25 HP)
CONDENSER FANS (SEPARATED)		2 X 2000 W (1PH / 3PH)	2 X 2000 W (1PH / 3PH)	2 X 2000 W (1PH / 3PH)
EVAPORATOR FANS		2 X 2000 W (3PH)	3 X 2000 W (3PH)	3 X 2000 W (3PH)
DEFROSTING HEATERS		15000 W (AC1)	20000 W (AC1)	25000 W (AC1)
SOLENOID VALVE		PRESENT	PRESENT	PRESENT
COMPRESSOR OIL HEATER		PRESENT	PRESENT	PRESENT
ALARM RELAY		PRESENT	PRESENT	PRESENT

NANO__ VD

NANO04 VD | NANO300 VD | NANO400 VD
NANO750 VD | NANO1000 VD

A line of power and control boards for refrigeration systems with three-phase compressors up to 10 HP that provide complete cold room management. You can control the room light and the stand-by system using the buttons on the thermostat. Integrated PEGO thermo-regulator controls compressor, ventilation, defrosting and light. The unit also controls the door switch, which automatically turns on the room light, and compressor and fan shutdown.

APPLICATIONS

- Complete control of three-phase static or ventilated refrigeration systems up to 10 HP, with electric or off-cycle defrost.

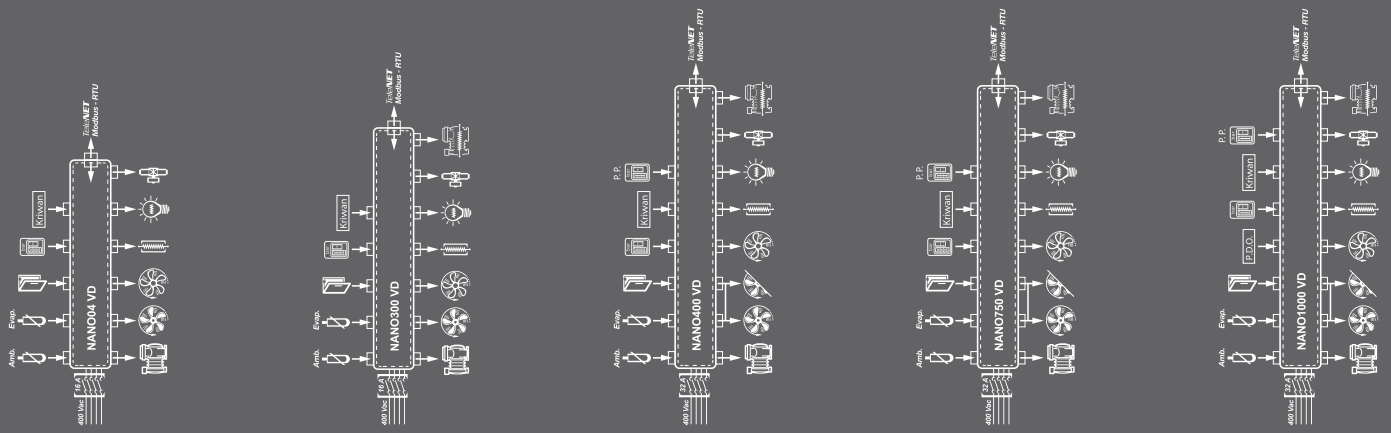
OPTIONS

- Installation of magnetothermic circuit breakers instead of fuses.
- Compressor shutdown in pump-down mode.
- Hot gas defrost control.

MAIN CHARACTERISTICS

- Designed to provide an immediate start-up and easy maintenance.
- Direct control of compressor, condenser fans, compressor oil element, defrost elements, evaporator fans, solenoid valve, door heater, room light and all standard-compliant electrical safeguards.
- Compact unit with self-extinguishing ABS housing panel and IP55 protection rating plus circuit breaker on front of panel.
- Integrated PEGO thermo-regulator (Expert Nano 4CK).
- System status indicated by dysplay.
- Key operated ON/OFF.
- Cold room light ON/OFF switch with key or by means of door switch.
- Key operated manual START/STOP defrosting.
- Clock for programmed defrost (RTC).
- Configurable multifunction output, alternative to the light output.
- RS485 serial connection with Modbus-RTU or Telenet protocol.

CONNECTION DIAGRAMS



THREE-PHASE SYSTEMS WITH THERMO-REGULATOR

TECHNICAL CHARACTERISTICS	NANO04 VD	NANO300 VD	NANO400 VD	NANO750 VD	NANO1000 VD
BOX DIMENSIONS	210 X 260 X 145 mm	290 X 340 X 145 mm	350 X 450 X 160 mm	350 X 450 X 160 mm	350 X 450 X 160 mm
WEIGHT	4 Kg	5 Kg	6 Kg	7 Kg	7 Kg
PROTECTION RATING	IP 55	IP 55	IP 55	IP 55	IP 55
POWER SUPPLY	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz
LOAD TYPE	THREE-PHASE	THREE-PHASE	THREE-PHASE	THREE-PHASE	THREE-PHASE
WORKING TEMPERATURE	-5 ÷ +50°C	-5 ÷ +50°C	-5 ÷ +50°C	-5 ÷ +50°C	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C	-10 ÷ +70°C	-10 ÷ +70°C	-10 ÷ +70°C	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90% Rh	< 90% Rh	< 90% Rh	< 90% Rh	< 90% Rh
MAIN SWITCH	16 A	16 A	32 A	32 A	32 A
OVERLOAD PROTECTION	THERMAL RELAY	THERMAL RELAY	THERMAL RELAY	THERMAL RELAY	THERMAL RELAY
GENERAL PROTECTION	FUSES	FUSES	FUSES	FUSES	FUSES
CONTROL	PEGO THERMOREGULATOR (EXPERT NANO 4CK)	PEGO THERMOREGULA-TOR (EXPERT NANO 4CK)	PEGO THERMOREGULA-TOR (EXPERT NANO 4CK)	PEGO THERMOREGULATOR (EXPERT NANO 4CK)	PEGO THERMOREGULATOR (EXPERT NANO 4CK)
DEFROSTING	ELECTRICAL	ELECTRICAL	ELECTRICAL	ELECTRICAL	ELECTRICAL
INSULATION TRANSFORMER		PRESENT	PRESENT	PRESENT	PRESENT
STATUS INDICATORS	DISPLAY	DISPLAY	DISPLAY	DISPLAY	DISPLAY
ALARM SIGNALS	DISPLAY + BUZZER	DISPLAY + BUZZER	DISPLAY + BUZZER	DISPLAY + BUZZER	DISPLAY + BUZZER
CLOCK (RTC)	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT
INPUTS					
AMBIENT PROBE	NTC 10KΩ	NTC 10KΩ	NTC 10KΩ	NTC 10KΩ	NTC 10KΩ
EVAPORATOR PROBE	NTC 10KΩ	NTC 10KΩ	NTC 10KΩ	NTC 10KΩ	NTC 10KΩ
DOOR SWITCH	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT
OIL DIFFERENTIAL PRESSURE SWITCH					PRESENT
HIGH/LOW PRESSURE SWITCH	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT
KRIWAN® CONNECTION	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT
CONDENSER FANS REGULATOR PRESS. SWITCH (R.P.S)			PRESENT	PRESENT	PRESENT
OUTPUT					
COMPRESSOR	1800 W (0,5÷2,5 HP)	2200 W (0,5÷3 HP)	2200÷3000 W (3÷4 HP)	3000÷5500 W (4÷7,5 HP)	5500÷7500 W (7÷10 HP)
CONDENSER FANS OUTPUT 1	800 W (1 PH)	800 W (1 PH)	800 W (1 PH) TOTALI (1 PH)	800 W (1 PH) TOTALI (1 PH)	2000 W (1PH/ 3PH)
CONDENSER FANS OUTPUT 2			(1 PH)	(1 PH)	2000 W (1PH / 3PH)
EVAPORATOR FANS	250 W (1 PH)	800 W (1PH)	2000 W (1PH)	2000 W (1PH)	2000 W (1PH/ 3PH)
DEFROSTING HEATERS	1200 W (1 PH)	4500 W (1500 W X 3, AC1)	9000 W (3000 W X 3, AC1)	10500 W (3500 W X 3, AC1)	15000 W (5000 W X 3, AC1)
ROOM LIGHT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT
SOLENOID VALVE	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT
COMPRESSOR OIL HEATER	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU

NANO__ U VD

NANO7,5 U VD | NANO15 U VD
NANO19,5 U VD

A line of power and electronic control boards for control of the three-phase evaporating unit only where devices are served by a compressor rack. Cold room light and system stand-by switches incorporated on front of panel. Integrated thermo-regulator controls cold, ventilation and defrosting calls. The unit also controls the door switch, which automatically turns on the room light, fan shutdown and cold call shutdown.

APPLICATIONS

- Control of evaporating unit only with electrical defrost up to 19,5 kw.

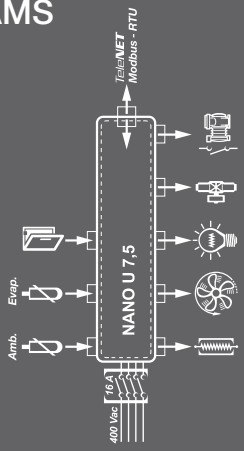
OPTIONS

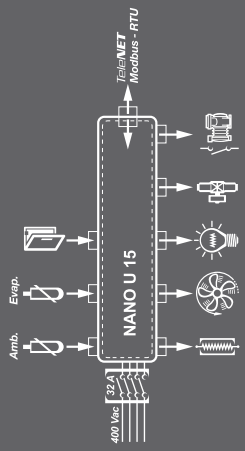
- Installation of magnetothermic circuit breakers instead of fuses.

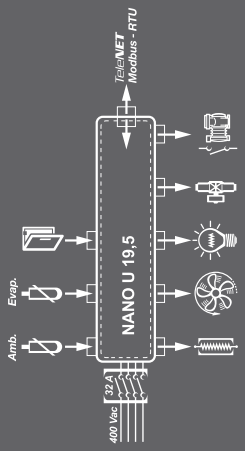
MAIN CHARACTERISTICS

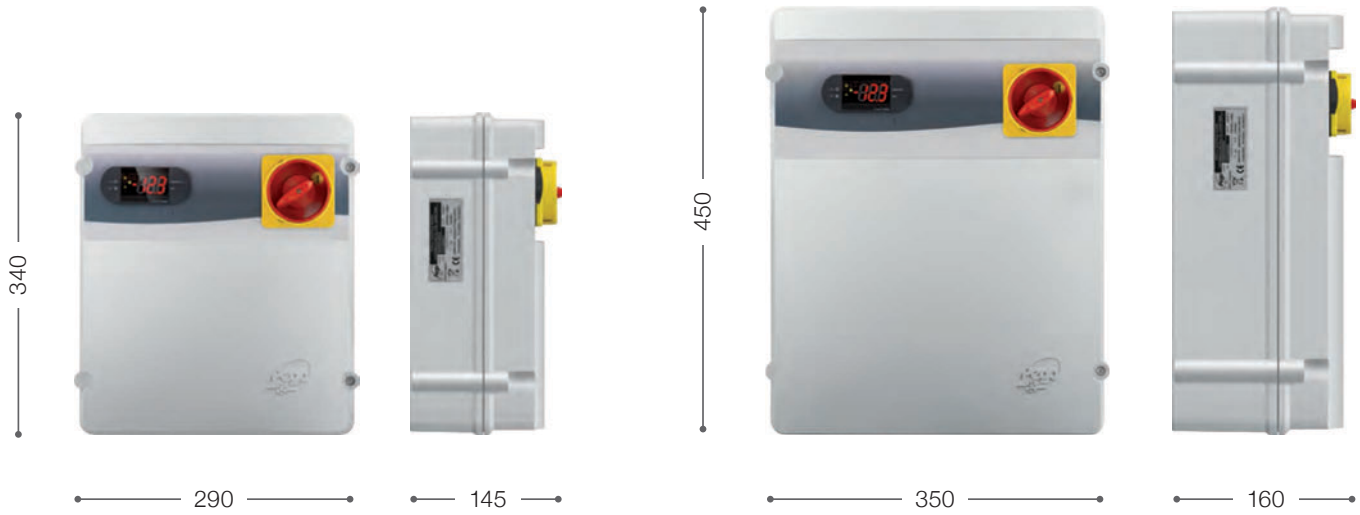
- Designed to provide an immediate start-up and easy maintenance.
- Enabling for motor condenser unit, defrosting elements, evaporator fans, solenoid valve, room light, door element and all standard-compliant electrical safeguards.
- Compact, self-extinguishing ABS housing with IP55 protection rating and circuit breaker on front of panel.
- Integrated PEGO thermo-regulator (Expert Nano 4CK).
- System status indicated by display.
- Key operated ON/OFF.
- Cold room light ON/OFF switch with key or by means of door switch.
- Key operated manual START/STOP defrosting.
- Clock for programmed defrost (RTC).
- Configurable multifunction output, alternative to the light output.
- RS485 serial connection with Modbus-RTU or Telenet protocol.

CONNECTION DIAGRAMS









TECHNICAL CHARACTERISTICS	NANO7,5 U VD	NANO19,5 U VD	NANO19,5 U VD
BOX DIMENSIONS	290 X 340 X 145 mm	350 X 450 X 160 mm	350 X 450 X 160 mm
WEIGHT	5 Kg	6 Kg	7 Kg
PROTECTION RATING	IP 55	IP 55	IP 55
POWER SUPPLY	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz
LOAD TYPE	THREE-PHASE	THREE-PHASE	THREE-PHASE
WORKING TEMPERATURE	-5 ÷ +50°C	-5 ÷ +50°C	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C	-10 ÷ +70°C	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90% Rh	< 90% Rh	< 90% Rh
MAIN SWITCH	16 A	32 A	32 A
GENERAL PROTECTION	FUSES	FUSES	FUSES
CONTROL	THERMOREGULATOR PEGO (EXPERT NANO 4CK)	THERMOREGULATOR PEGO (EXPERT NANO 4CK)	THERMOREGULATOR PEGO (EXPERT NANO 4CK)
DEFROSTING	ELECTRICAL	ELECTRICAL	ELECTRICAL
INSULATION TRANSFORMER		PRESENT	PRESENT
STATUS INDICATORS	DISPLAY	DISPLAY	DISPLAY
ALARM SIGNALS	DISPLAY + BUZZER	DISPLAY + BUZZER	DISPLAY + BUZZER
CLOCK (RTC)	PRESENT	PRESENT	PRESENT
INPUTS			
AMBIENT PROBE	NTC 10KΩ	NTC 10KΩ	NTC 10KΩ
EVAPORATOR PROBE	NTC 10KΩ	NTC 10KΩ	NTC 10KΩ
DOOR SWITCH	PRESENT	PRESENT	PRESENT
OUTPUTS			
EVAPORATOR FANS	800 W (1 PH)	2000 W X 2 (3 PH)	2000 W X 3 (3 PH)
DEFROSTING HEATERS	7500 W (2500 W X 3, AC1)	15000 W (5000 W X 3, AC1)	19500 W (6500 W X 3, AC1)
ROOM LIGHT	PRESENT	PRESENT	PRESENT
SOLENOID VALVE	PRESENT	PRESENT	PRESENT
ENABLE CONDENSING UNIT	PRESENT	PRESENT	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU


TeleNET
(03)
Temperatura ambiente = 29 °C
Temperatura sonda evaporatore
(26) ECP200 EXPERT - 1 min
SD Card
Configura rete
Modifica strumento

CUSTOMER CARE

Strength point is the constant aid supplied directly to the installers, for all the problems which can be discovered during the installation. PEGO goal is to satisfy our Customers solving their specific problems and always designing improved and technologically enhanced products.

DIN NANO 4CK

The DIN NANO 4CK is a 4 relays electronic regulator DIN rail designed to control refrigerated counters, display windows and static or ventilated refrigeration units with off-cycle or electrical defrosting in real time (RTC). It is fitted with three analogue inputs for NTC temperature probes, one of which is configurable as a digital input, an additional digital input, four relays for the compressor control, fans, defrosting function and alarm (the defrosting relay can be configured as light command and the alarm relay as light/AUX) and buzzer.
As option the connection to an echo temperature repetition.

APPLICATIONS

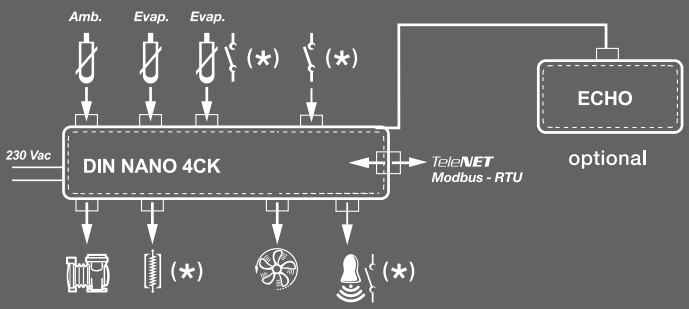
- Control of refrigerated counters, display windows and refrigeration units.
- Control of two evaporators with two temperature probes of end defrost.

MAIN CHARACTERISTICS

- Can be configured for hot or cold applications.
- Can be configured for managing day / night (automatic modification of the setpoint for energy saving) activated by time mode (real time clock) or by means of the digital input.
- Can be configured to manage two evaporators with dual temperature sensor for defrost termination.

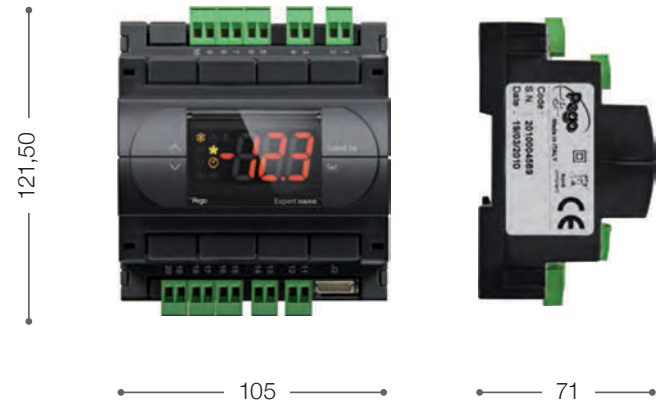
CONNECTION DIAGRAM

(*) = Configurable function



- Relay managing compressor and fans of evaporator (2 non-configurable relays) and defrosting resistances, alarm, pump down start, room light and compressor output (2 configurable relays).
- Defrosting activation in real-time, up to 6 starts in 24h.
- Defrosting can be configured for off-cycle, heating element or cycle inversion and frequency and durationcan be set. End-of-defrosting can be based on time or temperature.
- Key operated manual START/STOP defrosting.
- Key operated ON/OFF.
- Cold room light ON/OFF switch with key or by means of door switch (if defrost output is configured like cold room light).
- A temperature repeater echo display is available as an option.
- 3-figure LED display sign, decimal point and plant status icons. Internal buzzer for acoustic signals.
- PEGO programming philosophy guaranteeing immediate start-up.
- RS485 serial connection with Modbus-RTU or Telenet protocol.
- Power supply 230Vac.
- HACCP function with memory and visualization of the last alarm.

DIN NANO 4CK



ECHO

TECHNICAL CHARACTERISTICS	DIN NANO 4CK
DIMENSIONS	DIN NANO 4CK: 105 x 121,5 x 71 mm - ECHO: 93 x 37 x 23,1 mm
WEIGHT	0,5 Kg
PROTECTION RATING (DISPLAY ECHO)	IP 65 with front board installation
POWER SUPPLY	230 V AC ± 10% 50/60 Hz
ABSORBED POWER	5 VA max
WORKING TEMPERATURE	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90 % Rh
DISPLAY	3-Digit with sign, decimal point and LED status indicators
RESOLUTION	0,1 °C.
PROBE PRECISION (electronic)	± 0,5 °C
READING RANGE	- 45÷99 °C
CONNECTION	Screw removable clamps
SOFTWARE CLASS	A / parameters saved on non-volatile memory (EEPROM)
CLOCK (RTC)	PRESENT
INPUTS	
ANALOGUE	2 inputs for NTC probes (10KΩ 1% a 25°C)
DIGITAL	1 input (free voltage contact)
CONFIGURABLE	1 input for NTC probes (10KΩ 1% at 25°C) or digital input (free voltage contact)
OUTPUTS	
COMPRESSOR RELAY	(DO1) N.O. 16(6)A / 250V~
HEATINGS ELEMENTS RELAY	(DO2) N.O. 16(6)A / 250V~
FAN RELAY	(DO3) N.O. 16(6)A / 250V~
ALARM/AUX RELAY	(DO4) N.O. 8(3)A / 250V~
BUZZER	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU

DIN NANO 4CK

ECHO

PEV PULSE

Electronic regulator for control of electronic expansion valve. Configurable with remote display or integrated display, it integrates the control for the electronic expansion valve 230 VAC ON/OFF. Control for evaporator overheat.

APPLICATIONS

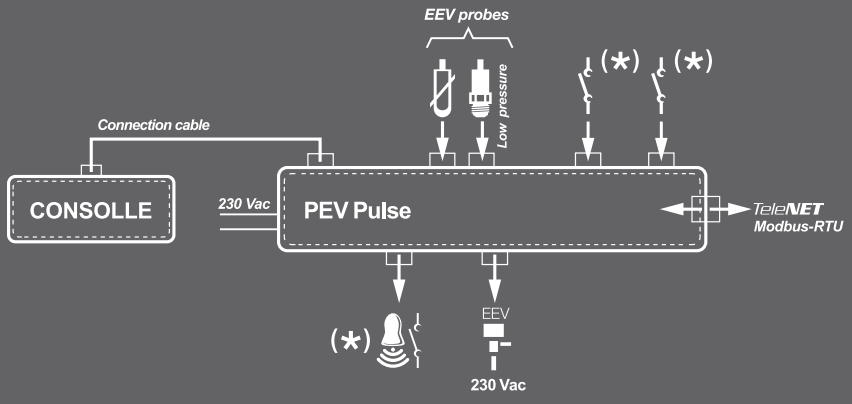
- Refrigerated counters and cold room.

MAIN CHARACTERISTICS

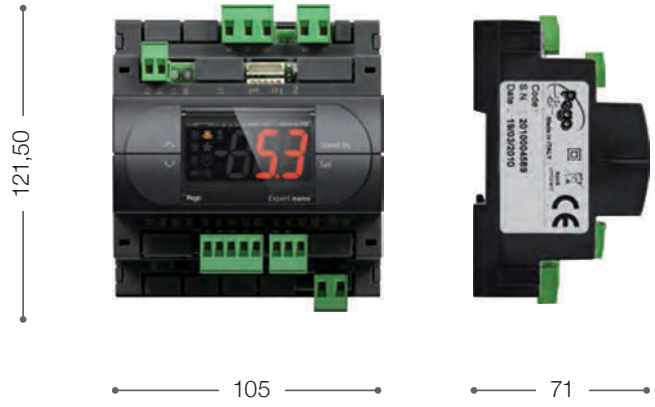
- Control of electronic expansion valve ON/OFF with 230 VAC coil.
- Integrated or remoted console of control.
- Serial RS485 connection with TeleNET or Modbus protocol selectable by parameter.
- Two configurable digital input.
- Suction temperature probe and evaporation pressure probe for control of evaporator overheat.
- IP65 remote display protection.
- Easy startup with 4 settings built in for the different application.

CONNECTION DIAGRAM

(*) = Configurable function

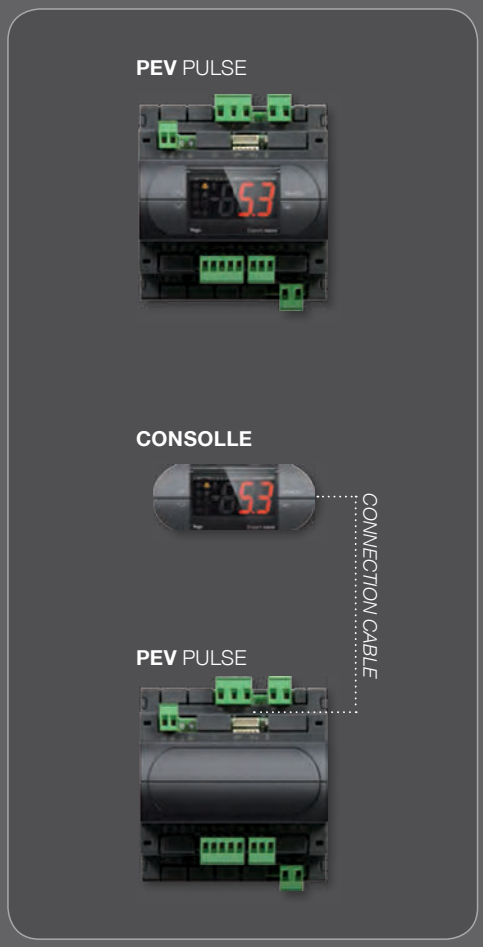


PEV PULSE



CONSOLLE

TECHNICAL CHARACTERISTICS	PEV PULSE
DIMENSIONS	PEV PULSE: 105 x 121,5 x 71 mm CONSOLLE: 93 x 37 x 23,1 mm
WEIGHT	0,5 Kg
DISPLAY PROTECTION RATE	IP 65
POWER SUPPLY	230 V AC ± 10% 50/60 Hz
LOAD TYPE	SINGLE-PHASE
WORKING TEMPERATURE	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90 % Rh
STATUS INDICATOR	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER
INPUTS	
DIGITAL INPUT	N°2 CONFIGURABLE
SUCTION PROBE	NTC 10 KΩ
EVAPORATION PRESSURE PROBE	4-20MA / 0-5V RATIO
OUTPUTS	
ELECTRONIC EXPANSION VALVE	PULSE 230 VAC
ALARM RELAY	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS - RTU



DIN NANO 3RK

DIN NANO 3RK is a 4-relay DIN rail electronic regulator for managing the refrigeration control unit which controls up to a maximum of three compressors or up to three fans of the condensation group depending on the measured pressure.

APPLICATIONS

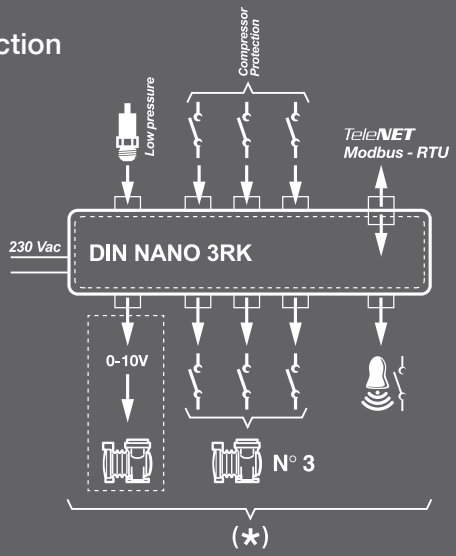
- Compressor control of refrigeration control unit.
- Condensation fan control of refrigeration control unit.

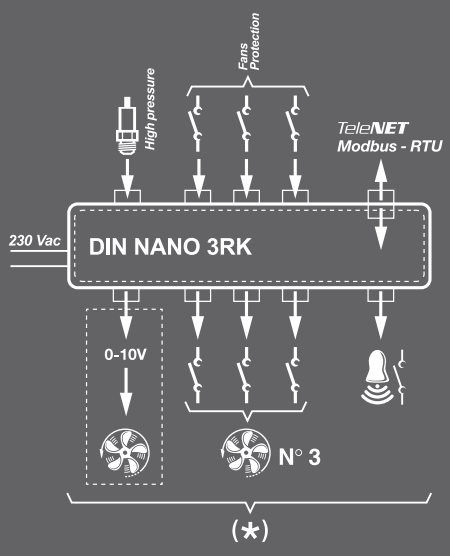
MAIN CHARACTERISTICS

- Configurable to control compressors (up to a maximum of 3) or condensation fans (up to a maximum of 3).
- Analogue 0-10V output for speed regulation instead of digital outputs controlling condensation fans / compressor.
- Pressure transducer reading display in Bar or in °C (conversion depending on type of refrigerant gas selected).
- Compressor/fan rotation depending on operating time.
- Management of compressors with the same or different powers.
- Management of n. of outputs used.
- Sideband adjustment.
- 3-figure LED display sign, decimal point and plant status icons.
- RS485 serial connection with Modbus-RTU or Telenet protocol.
- PEGO programming philosophy guaranteeing immediate start-up.
- Power supply 230Vac.

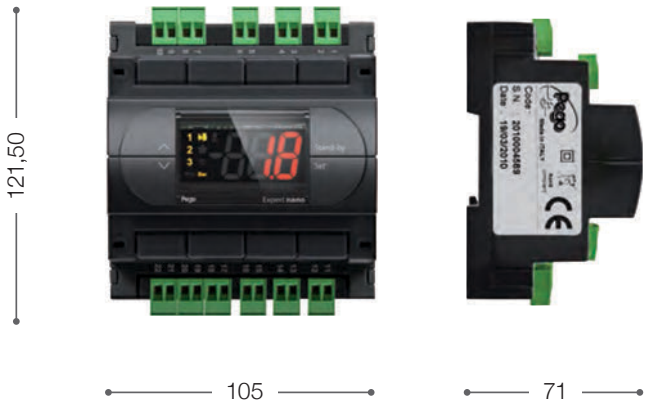
CONNECTION DIAGRAMS

(*) = Configurable function





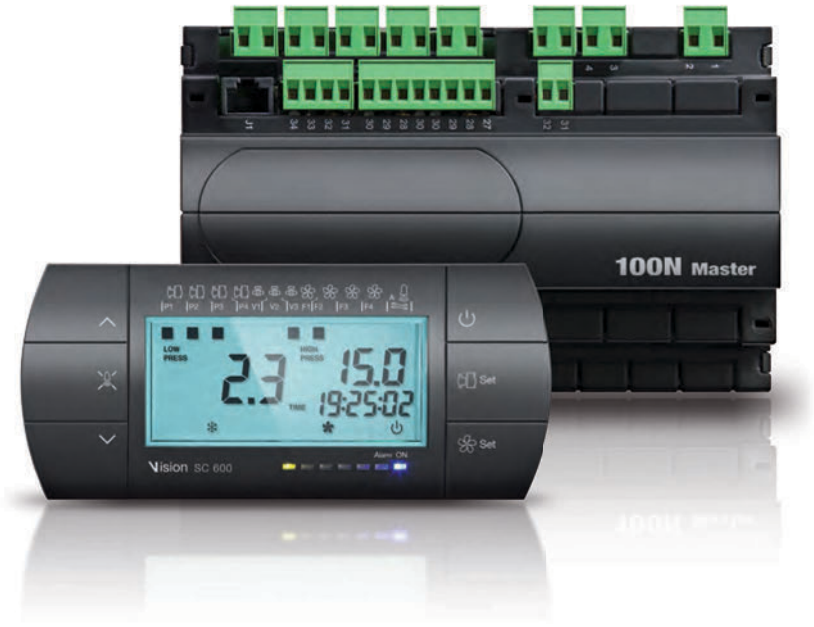
DIN NANO 3RK



TECHNICAL CHARACTERISTICS	DIN NANO 3RK
DIMENSIONS	DIN NANO 3RK: 105 x 121,5 x 71 mm
WEIGHT	0,5 Kg
POWER SUPPLY	230 V AC ± 10% 50/60 Hz
ABSORBED POWER	5 VA max
WORKING TEMPERATURE	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90 % Rh
DISPLAY	3-Digit with sign, decimal point and LED status indicators
CONNECTION	Screw removable clamps
	INPUTS
ANALOGUE	1 input 4-20mA for pressure probe
DIGITAL	3 alarm inputs (free voltage contact)
	OUTPUTS
COMPRESSOR RELAY 1 / CONDENSER FANS 1	(DO1) N.O. 16(6)A / 250V
COMPRESSOR RELAY 2 / CONDENSER FANS 2	(DO2) N.O. 16(6)A / 250V
COMPRESSOR RELAY 3 / CONDENSER FANS 3	(DO3) N.O. 16(6)A / 250V
ALARM / AUX RELAY	(DO4) N.O. 8(3)A / 250V
ANALOGUE OUTPUT FOR COMPRESSOR / FANS	0-10VDC
SUPERVISION SYSTEM	TELENET / MODBUS-RTU

VISION SC 600

Electronic controller for compressor rack management. Allows control of compressors and condenser fans, adjusted with pressure sensor (high and low pressure).



APPLICATIONS

- Compressor rack.
- Electrical board design according to customer specifications.

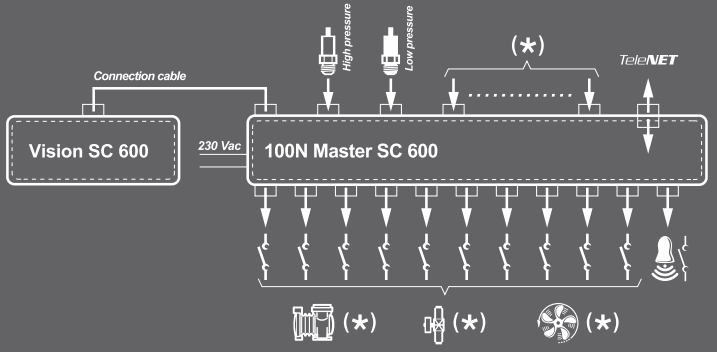
FUNCTIONS

- Sideband adjustment.
- It can be configured to control the compressors, compressor splitting valves and condenser fans (up to a max. of 10 outputs).
- Compressor/fan rotation depending on the operation timing.
- Analogue output 0-10V for compressor inverter control.
- Analogue output 0-10V to adjust the speed of the condensation fans.
- LCD screen simultaneously displays high and low pressure, output status (on, off, starting or shutting down).
- Pressure transducer reading display in Bar or in °C (conversion depending on type of refrigerant gas selected).
- Alarm logo management.
- RS485 serial connection with Modbus-RTU or Telenet (TWMP) protocol.

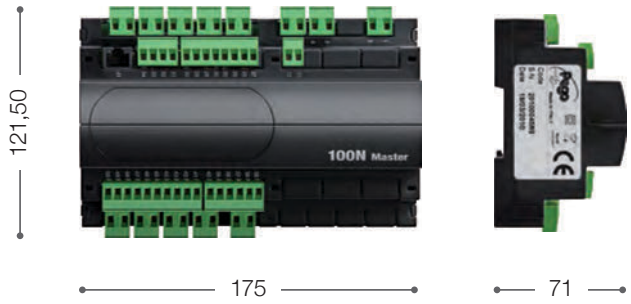
MAIN CHARACTERISTICS

- Pego compressor rack controllers distinguish themselves by simplicity of installation and parameter configuration.
- The installer can configure the controller and start the rack just by making a few simple settings.

CONNECTION DIAGRAM



100N MASTER SC 600



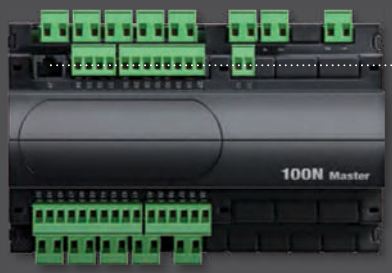
VISION SC 600

TECHNICAL CHARACTERISTICS	VISION SC 600
DIMENSIONS	100N MASTER SC 600: 175 x 121,50 x 71 mm VISION SC 600: 158 x 70 x 32 mm
WEIGHT	0,7 Kg
PROTECTION RATING	IP 65 (KEYBOARD/DISPLAY)
POWER SUPPLY	230 V AC ±10% 50/60 Hz
LOAD TYPE	SINGLE-PHASE
WORKING TEMPERATURE	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90% Rh
CONTROL	PEGO
STATUS INDICATORS	DISPLAY LCD WITH BACKLIGHT
ALARM SIGNALS	DISPLAY + BUZZER
INPUTS	
HIGH PRESSURE PROBE	4 ÷ 20 mA CONFIGURABLE
LOW PRESSURE PROBE	4 ÷ 20 mA CONFIGURABLE
DIGITAL	N° 15 CONFIGURABLE AS: COMPRESSOR ALARM 1 ... 10, FAN ALARM 1 ... 10, COMPRESSORS ALARM (DISPLAY ONLY), FANS ALARM (DISPLAY ONLY), CENTRAL ALARM IN MANUAL, FREON LEVEL ALARM, HIGH PRESSURE ALARM, LOW PRESSURE ALARM, REMOTE STAND-BY.
OUTPUTS	
RELAY (ON/OFF STATUS)	N°10 CONFIGURABLE
ALARM RELAY	PRESENT
ANALOGUE OUTPUTS	N°2 (0-10VDC, COMPRESSOR INVERTER AND CONDENSATION FAN INVERTER)
SUPERVISION SYSTEM	TELENET / MODBUS-RTU

VISION SC 600

CONNECTION CABLE

100N MASTER SC 600



VISION TOUCH THR

CAPACITIVE TOUCH control for humidity and temperature management with all seasoning functions.
It offers a smart TFT 7" display equipped with a capacitive touch screen, state-of-the-art software and an advanced interface for easy and intuitive use.

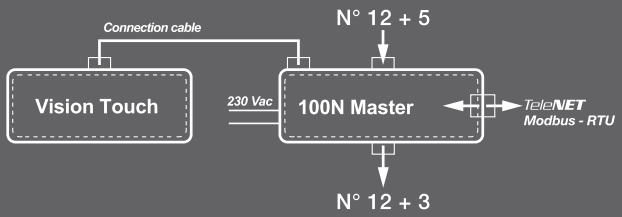
APPLICATIONS

- Seasoning/drying rooms.
- Storage rooms with or without humidity control.
- Climatic rooms for humidostatic tests, temperature and climatic cycles.

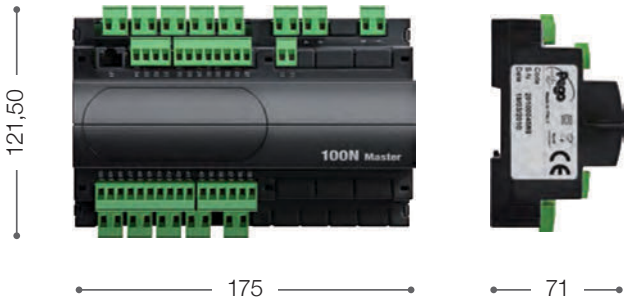
MAIN CHARACTERISTICS

- TFT 7'' high definition dysplay (800x480 WVGA), led backlighting and capacitive touch screen.
- Front with 1,1 mm chemically treated glass.
- Ability to reverse the viewing angle of the display to ensure the possibility of mounting at any height.
- Devices: USB 2.0, microSD, RS485.
- Acustic signals.
- IP65 frontal protection.
- Light sensor for the automatic regulation of brilliance.
- High quality design and icons.
- Touch screen interface with gestures, for a more intuitive control.
- Clock and calendar (RTC).
- Different password for user and installator function.
- Multilingual.
- Customizable user parameters menu (it allows to hide the functions not used, semplifyingthe menu).
- Contestual help in parameters configuration menu.
- Software updating from microSD or USB.
- Alarm register with popup advice messages.
- Advanced HACCP function with detailed temperature and humidity alarms memorization.
- 20 programmes completely customizable can be memorized on the equipment.
- Possibility of exporting and importing programmes and paramenters on USB or microSD supports.
- Automatical management of 21 functions for each programme.
- Manual or automatical functioning with selectioned programme execution.
- Possibility of forcing a manual skipping phase during the execution of a programme.
- Possibility of setting the execution modality at the end of an automatic programme such as: maintenance / cyclical / stand by (for this last one you have also the possibility of activating the alarm of programme finished).
- Diagram of the programme in execution with different progresses (phases already executed, phases in execution and phases to be executed) and representation of all the setted values and all the remaining times.
- Temperature regulation range: -45°C/+99°C; humidity regulation range: 0-100 R.H.%
- Heat and humidity can b e excluded to manage storage cells with defrost activation.
- Dehumidifying programme with cold / hot / indipendent free voltage contact.
- Functions management: temperature (hot/cold) and humidity (humidifying/dehumidifying) regulation; defrosting (electrical or hot gas); refreshment; dripping; programmed or automatic air exchanges with energy saving function and external temperature/humidity probes reading; modular valves hot/cold water management; essence input in automatic programs management; evaporator fans speed management (digital outputs slow/fast or with 0-10V signal); possibility of activate internal air re-circles for destratification.
- "Test center" mood for verifying in simple and intuitive way all the digital and analogical inputs/outputs.
- Serial RS485 connection with TeleNET or Modbus protocol selectable by parameter.

CONNECTION DIAGRAM



100N MASTER 2



TECHNICAL CHARACTERISTICS	VISION TOUCH
DIMENSION	100N MASTER: 175 x 121,50 x 71 mm VISION TOUCH: 191 x 151 x 44 mm
WEIGHT	1 Kg
PROTECTION RATING	IP 65 (CONTROL)
POWER SUPPLY	MASTER: 230 V AC ± 10% 50/60 Hz VISION TOUCH: 12 - 40 VDC + 10/-15% CLASSE 2 12 - 24 VAC + 10/-15% 15VA (POSSIBILITY OF DERIVING THE SUPPLYING FROM THE MASTER)
LOAD TYPE	SINGLEPHASE
WORKING TEMPERATURE	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90 % Rh
STATUS INDICATOR	DISPLAY TFT TOUCH CAPACITIVE 7''
ALARM SIGNALS	DISPLAY + BUZZER + RELÈ

VISION TOUCH DISPLAY CHARACTERISTICS	
DIMENSION	191 x 151 x 44 mm
TOUCH TECHNOLOGY	CAPACITIVE, SINGLE-TOUCH
DISPLAY	TFT-LCD 7"
DEFINITION	800X480 WGA
BACK-LIGHTING	LED
COLOURS	16.7 MILLIONS
BRILLIANCE	350 CD/M² TYP.
CONTRAST	500 TYP.
FONT TRUE TYPE	YES
MULTILINGUAL	YES
ALARM, HISTORY, PASSWORD	YES
HARDWARE REAL TIME CLOCK	YES
DEVICES	USB 2.0 / MEMORY CARD MICROSD / RS485
BUZZER	YES
SIGNALLING LED	2 (FRONTALS)
LIGHT SENSOR	YES (FRONTAL)
MATERIAL	CONTAINER: SELF-EXTINGUISHING ABS FRONT: 1,1MM CHEMICALLY TREATED GLASS.

100N MASTER 2 CHARACTERISTICS	
ANALOGICAL INPUTS	5 CONFIGURABLE AS: (NTC) TEMPERATURE AMBIENCE, (NTC) TEMPERATURE PROBES FINISHED DEFROST, (4-20 MA) EXTERNAL HUMIDITY, (NTC) EXTERNAL TEMPERATURE, (NTC) HOT WATER TEMPERATURE, (NTC) COLD WATER TEMPERATURE.
DIGITAL INPUTS	12 CONFIGURABLE AS: MICRO DOOR; REMOTE STAND-BY; REMOTE DISABLING HUMIDITY; REMOTE DISABLING HOT; GENERAL ALARM; ALARM MAN IN COLD ROOM.
OUTPUTS RELAY	12 (N.1 30A AC1 /N.11 16A AC1) CONFIGURABLE AS: HOT, COLD, HUMIDIFYING, DEHUMIDIFYING, AIR EXCHANGING SHUTTER, EVAPORATOR FANS HIGH SPEED, EVAPORATOR FANS LOW SPEED, ALARM, ESSENCE, ROOM LIGHT, REFRESHMENT, FINISHED PROGRAMME ADVISE.
ANALOGICAL OUTPUTS	3 (0-10 V) CONFIGURABLE AS: SPEED EVAPORATOR FANS, MODULAR HOT WATER VALVE, MODULAR COLD WATER VALVE.

VISION THR

Temperature and humidity control complete with specific seasoning functions. Flexible programming also makes it ideal for simple storage purposes.
Programming up to five recipes, of seven phases each, settable and customizable.

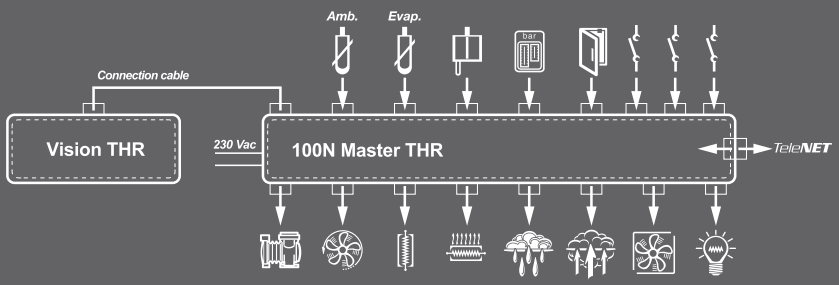
APPLICATIONS

- Seasoning/drying rooms.
- Germination rooms with day/night cycles.
- Storage rooms with or without humidity control.

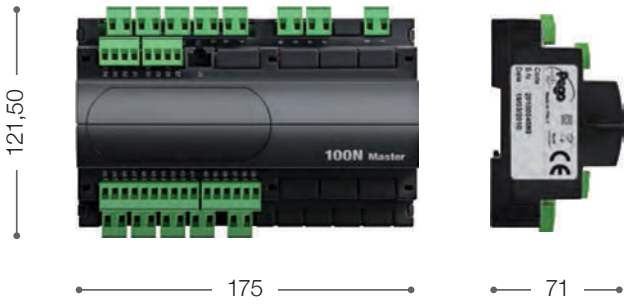
MAIN CHARACTERISTICS

- Backlit LCD screen.
- Clock and calendar.
- Manual or automatic mode.
- Up to 5 recipes completely customazible.
- Automatic management of 7 phases for each recipe (dripping first phase, seasoning/ conservation last phase).
- Simple programming and selection of set recipes.
- Possibility of join together more recipes for exceeding the 7 phases limit.
- Heat and humidity can be excluded to manage storage cells with defrost activation.
- Temperature to one decimal point.
- Password for keypad lock.
- Day/night cycle for germination systems with double set-point.
- Dehumidification program with cold or heat call.

CONNECTION DIAGRAM



100N MASTER THR



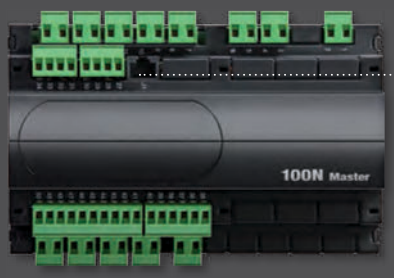
VISION THR

TECHNICAL CHARACTERISTICS	VISION THR
DIMENSIONS	100N MASTER THR: 175 x 121,50 x 71 mm VISION THR: 158 x 70 x 32 mm
WEIGHT	1 Kg
PROTECTION RATING	
POWER SUPPLY	230 V AC ±10% 50/60 Hz
LOAD TYPE	SINGLE-PHASE
WORKING TEMPERATURE	-5 ÷ +50°C
STORAGE TEMPERATURE	
RELATIVE AMBIENT HUMIDITY	< 90% Rh
RANGE OF READING	-45 ÷ +45°C
STATUS INDICATORS	DISPLAY LCD WITH BACKLIGHT
ALARM SIGNALS	DISPLAY + BUZZER
INPUTS	
AMBIENT PROBE	NTC 10 KΩ
EVAPORATOR PROBE	NTC 10 KΩ
HUMIDITY PROBE	4 ÷ 20 mA (0 ÷ 100% Rh)
OVERLOAD PROTECTION	PRESENT
DOOR SWITCH	PRESENT
OUTPUTS	
COMPRESSOR	1500 W (2 HP)
EVAPORATOR FANS	500 W
DEFROSTING HEATERS	1500 W (AC1)
HOT HEATERS	1500 W
ENABLE HUMIDIFIERS	500 W
ENABLE DEHUMIDIFIERS	500 W
AIR CHANGE	500 W
PAUSE	500 W
ROOM LIGHT	800 W (AC1)
ALARM RELAY	PRESENT
SUPERVISION SYSTEM	TELENET

VISION THR

CONNECTION CABLE

100N MASTER THR



PLUS100 THR

Temperature and humidity control complete with specific seasoning functions. Flexible programming also makes it ideal for simple storage purposes.
Programming up to five recipes, of seven phases each, settable and customizable.

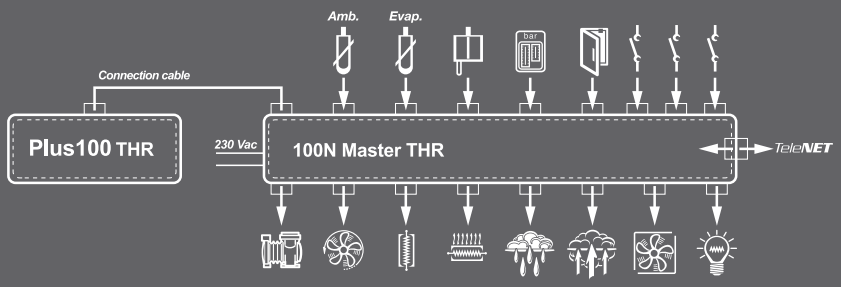
APPLICATIONS

- Seasoning/drying rooms.
- Germination rooms with day/night cycles.
- Storage rooms with or without humidity control.

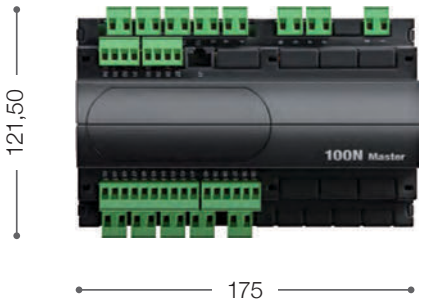
MAIN CHARACTERISTICS

- Backlit LCD screen.
- Clock and calendar.
- Manual or automatic mode.
- Up to 5 recipes completely customazible.
- Automatic management of 7 phases for each recipe (dripping first phase, seasoning/ conservation last phase).
- Simple programming and selection of set recipes.
- Possibility of join together more recipes for exceeding the 7 phases limit.
- Heat and humidity can be excluded to manage storage cells with defrost activation.
- Temperature to one decimal point.
- Password for keypad lock.
- Day/night cycle for germination systems with double set-point.
- Dehumidification program with cold or heat call.

CONNECTION DIAGRAM



100N MASTER THR



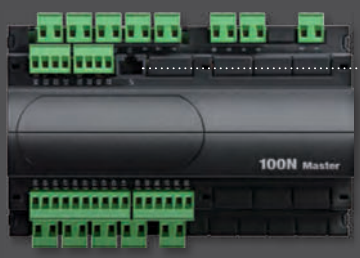
PLUS100 THR

TECHNICAL CHARACTERISTICS	VISION THR
DIMENSIONS	100N MASTER THR: 175 x 121,50 x 71 mm PLUS100 THR: 210 x 110 x 35 mm
WEIGHT	1 Kg
PROTECTION RATING	IP 55 (KEYBOARD/DISPLAY)
POWER SUPPLY	230 V AC ±10% 50/60 Hz
LOAD TYPE	SINGLE-PHASE
WORKING TEMPERATURE	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90% Rh
RANGE OF READING	-45 ÷ +45°C
STATUS INDICATORS	DISPLAY LCD WITH BACKLIGHT
ALARM SIGNALS	DISPLAY + BUZZER
INPUTS	
AMBIENT PROBE	NTC 10 KΩ
EVAPORATOR PROBE	NTC 10 KΩ
HUMIDITY PROBE	4 ÷ 20 mA (0 ÷ 100% Rh)
OVERLOAD PROTECTION	PRESENT
DOOR SWITCH	PRESENT
OUTPUTS	
COMPRESSOR	1500 W (2 HP)
EVAPORATOR FANS	500 W
DEFROSTING HEATERS	1500 W (AC1)
HOT HEATERS	1500 W
ENABLE HUMIDIFIERS	500 W
ENABLE DEHUMIDIFIERS	500 W
AIR CHANGE	500 W
PAUSE	500 W
ROOM LIGHT	800 W (AC1)
ALARM RELAY	PRESENT
SUPERVISION SYSTEM	TELENET

PLUS100 THR

CONNECTION CABLE

100N MASTER THR



PLUS100 AB

Electronic control unit for the management of quick-refrigeration systems and deep freezers.
It is possible to set different timed or product core temperature-based quick-refrigeration programs, execute positive or negative temperature quick-refrigeration and apply timed or temperature-based deep-freezing and mixed programs.

APPLICATIONS

- Cabinets and quick-refrigeration rooms (positive / negative temperature).
- Product deep-freezing.

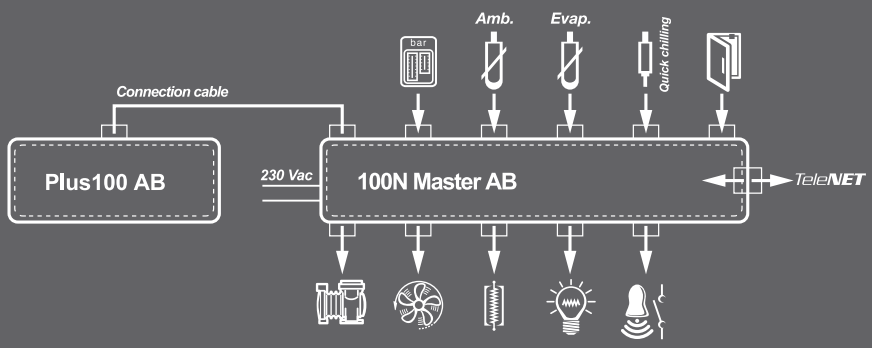
FUNCTIONS

- Timed or temperature-based quick-refrigeration.
- Timed or temperature-based deep-freezing.
- Mixed quick-refrigeration/deep-freezing function.
- Storage with electrical defrost.
- Min. and max. temperature limits for the final user.
- Activation of fans to de-layer the air.
- Defrosts in real time clock mode.

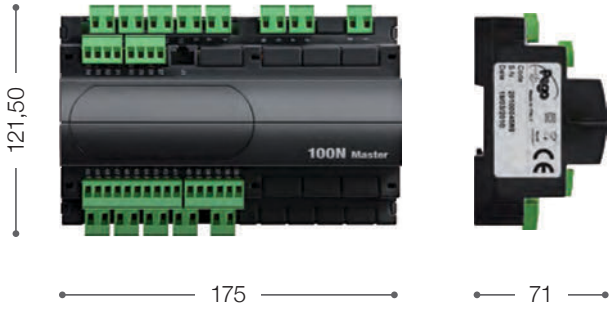
MAIN CHARACTERISTICS

- The Plus100 AB electronic controller allows complete management of all the components on a refrigeration plant such as the compressor, evaporator fans, defrosting elements and room light.
- The LCD screen shows cold room and product core temperatures simultaneously.
- Where time-based programs are used the clock field shows the remaining time.
- Compressor control during quick-refrigeration is optimised to ensure that quick-refrigeration of the product occurs under the best possible conditions.

CONNECTION DIAGRAMS



100N MASTER AB



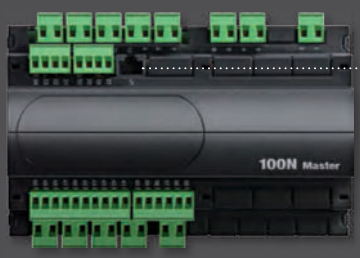
PLUS100 AB

TECHNICAL CHARACTERISTICS	PLUS100 AB
DIMENSIONS	100N MASTER AB: 175 x 121,50 x 71 mm PLUS100 AB: 210 x 110 x 35 mm
WEIGHT	1 Kg
PROTECTION RATING	IP 55 (KEYBOARD/DISPLAY)
POWER SUPPLY	230 V AC ±10% 50/60 Hz
LOAD TYPE	SINGLE-PHASE
WORKING TEMPERATURE	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90% Rh
STATUS INDICATORS	DISPLAY LCD WITH BACKLIGHT
ALARM SIGNALS	DISPLAY + BUZZER
INPUTS	
AMBIENT PROBE	NTC 10 KΩ
EVAPORATOR PROBE	NTC 10 KΩ
FOOD PROBE	NTC 10 KΩ
OVERLOAD PROTECTION	PRESENT
FANS PROTECTION	PRESENT
DOOR SWITCH	PRESENT
OUTPUTS	
COMPRESSOR	1500 W (2 HP)
EVAPORATOR FANS	500 W
DEFROSTING HEATERS	1500 W (AC1)
ROOM LIGHT	800 W (AC1)
ALARM RELAY	PRESENT
SUPERVISION SYSTEM	TELENET

PLUS100 AB

PHONE LEAD

100N MASTER AB



VISION TOUCH PAN

Capacitive Touch control designed for pause-leavening rooms.
It offers a smart TFT 7" display equipped with a capacitive touch screen, state-of-the-art software and an advanced interface for easy and intuitive use.

APPLICATIONS

- Cabinets, counters and pause-leavening rooms for small and large bakeries and confectionaries.
- Can replace other pause-leavening controls on existing plants.

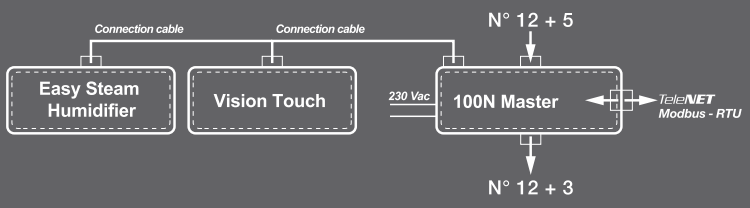
TECHNICAL CHARACTERISTICS

- Hot manual mode (leavening).
- Cold manual mode (accumulation).
- Manages automatic retarding programs that can be customised, consisting of a maximum of 9 steps that can be set (2 accumulation phases, 3 preservation phases, 3 leavening phases and 1 resting phase); the following is possible for each phase:
  - enable its operation (with the exception of Preservation phase 3 that is always present);
  - set the functions enabled in the phase (Cold, Hot, Humidify and Dehumidify);
  - phase duration, Temperature setpoint and Humidity setpoint;
  - select the evaporator fan speed and continuous fan forcing;
  - switch to enable temperature threshold management, below which humidity control is inhibited;
  - switch to enable defrosting for the accumulation and preservation phases. (At the beginning of the leavening phase, a defrosting phase is launched, if enabled, and this is then inhibited during the leavening and resting phases);
  - switch to enable the gradual increase to reach the Temperature setpoint (only for the leavening phases).
- Possibility of enabling a warning for the end of program and oven advance ignition command.
- Store up to 12 programs in the internal memory with the option of exporting them to a USB or microSD.
- Diagram of the program in execution with progress display (completed phases, phases in progress and phases yet to be executed) and a representation of the set values and of all the remaining times.
- Temperature adjustment range: -45°C/+99°C; humidity adjustment range: 0-100 R.H.%
- Remote control of PEGO EasySteam humidifier.

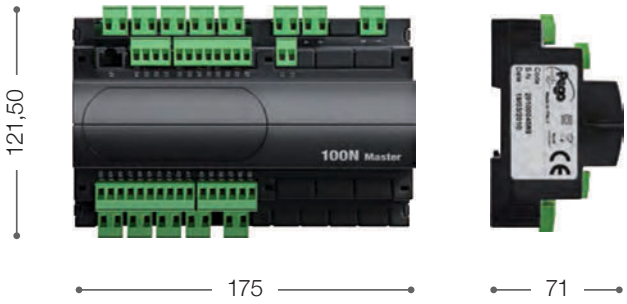
GENERAL CHARACTERISTICS

- TFT 7'' high definition dysplay (800x480 WVGA), led backlighting and capacitive touch screen.
- Front with 1,1 mm chemically treated glass.
- Ability to reverse the viewing angle of the display to ensure the possibility of mounting at any height.
- Devices: USB 2.0, microSD, RS485.
- Acustic signals.
- IP65 frontal protection.
- High quality design and icons.
- Touch screen interface with gestures, for a more intuitive control.
- Clock and calendar (RTC).
- Different password for user and installator function.
- Multilingual.
- Customizable user parameters menu (it allows to hide the functions not used, semplifying the menu).
- Contextual help in parameters configuration menu.
- Software updating from microSD or USB.
- Ability to export and import parameters on USB or microSD media.
- Alarm history combined with popup warning messages.
- Advanced HACCP function with detailed temperature and humidity alarms memorization.
- "Test center" mood for verifying in simple and intuitive way all the digital and analogical inputs/outputs.
- RS485 serial connection with TeleNET or Modbus protocol which can be selected in the parameters.

CONNECTION SCHEME



100N MASTER 2



TECHNICAL CHARACTERISTICS	VISION TOUCH
DIMENSION	100N MASTER: 175 x 121,50 x 71 mm VISION TOUCH: 191 x 151 x 44 mm
WEIGHT	1 Kg
PROTECTION RATING	IP 65 (CONTROL)
POWER SUPPLY	MASTER: 230 V AC ± 10% 50/60 Hz VISION TOUCH: 12 - 40 VDC + 10/-15% CLASSE 2 12 - 24 VAC + 10/-15% 15VA (POSSIBILITY OF DERIVING THE SUPPLYING FROM THE MASTER)
LOAD TYPE	SINGLEPHASE
WORKING TEMPERATURE	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90 % Rh
STATUS INDICATOR	DISPLAY TFT TOUCH CAPACITIVE 7''
ALARM SIGNALS	DISPLAY + BUZZER + RELÈ

VISION TOUCH DISPLAY CHARACTERISTICS	
DIMENSION	191 x 151 x 44 mm
TOUCH TECHNOLOGY	CAPACITIVE, SINGLE-TOUCH
DISPLAY	TFT-LCD 7"
DEFINITION	800X480 WGA
BACK-LIGHTING	LED
COLOURS	16.7 MILLIONS
BRILLIANCE	350 CD/M² TYP.
CONTRAST	500 TYP.
FONT TRUE TYPE	YES
MULTILINGUAL	YES
ALARM, HISTORY, PASSWORD	YES
HARDWARE REAL TIME CLOCK	YES
DEVICES	USB 2.0 / MEMORY CARD MICROSD / RS485
BUZZER	YES
SIGNALLING LED	2 (FRONTALS)
LIGHT SENSOR	YES (FRONTAL)
MATERIAL	CONTAINER: SELF-EXTINGUISHING ABS FRONT: 1,1MM CHEMICALLY TREATED GLASS.

100N MASTER 2 CHARACTERISTICS	
ANALOGICAL INPUTS	5 CONFIGURABLE AS: (NTC) TEMPERATURE AMBIENCE, (NTC) TEMPERATURE PROBES FINISHED DEFROST.
DIGITAL INPUTS	12 CONFIGURABLE AS: MICRO DOOR; REMOTE STAND-BY; REMOTE DISABLING HUMIDITY; REMOTE DISABLING HOT; GENERAL ALARM; COMPRESSOR SAFEGUARD; HUMIDIFIER ALARM; FAN SAFEGUARD; GENERIC WARNING 1, 2 AND 3.
OUTPUTS RELAY	12 (N.1 30A AC1 /N.11 16A AC1) CONFIGURABLE AS: HOT, COLD, HUMIDIFYING, DEHUMIDIFYING, DEFROSTING, AIR EXCHANGING SHUTTER, EVAPORATOR FANS HIGH SPEED, EVAPORATOR FANS LOW SPEED, ALARM, ROOM LIGHT, FINISHED PROGRAMME ADVISE, ADVANCE OVEN IGNITION.
ANALOGICAL OUTPUTS	3 (0-10 V) CONFIGURABLE AS: SPEED EVAPORATOR FANS.

PLUS100 PAN

Electronic controller designed for pause-leavening rooms. Work cycles easily programmed via user-friendly interface. Luminous graphics indicate progress of program being executed.

APPLICATIONS

- Cabinets, counters and pause-leavening rooms for small and large bakeries and confectionaries.
- Can replace other pause-leavening controls on existing plants.

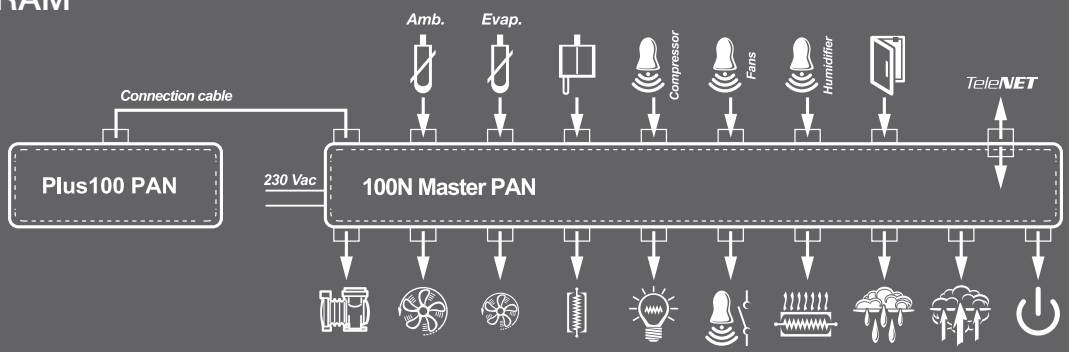
FUNCTIONS

- Neutral-zone temperature and humidity control.
- Programming of four work cycles.
- Double fan speed.
- Hot and cold manual cycles.
- Management of cooling, storage, leavening and product-ready settling phases.
- Clock and calendar to set product-ready time.
- Luminous synoptic display indicating program progress.

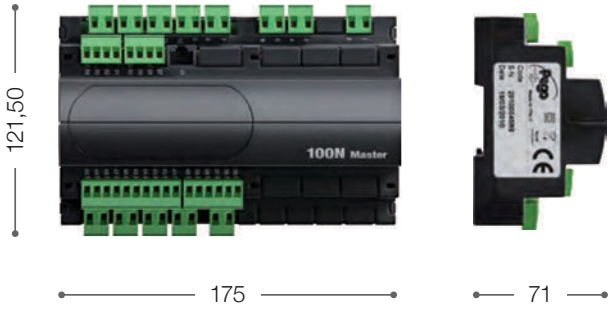
MAIN CHARACTERISTICS

- The Plus100 PAN electronic controller consists of the 100N Master PAN unit, on which all the electrical connections are made, and the keyboard/display, which features a large LCD screen providing complete information on room status.
- The overall unit allows control of cold, heat, ventilation, room light, humidification, dehumidification, defrosting and alarms via control of the NTC ambient and evaporator sensors and the 4-20 mA humidity sensor inputs.
- Compressor and fan safety devices, door switch, humidifier alarm.
- Special power boards complete with the Plus100 PAN controller can be supplied according to customer-specified requirements.

CONNECTION DIAGRAM



100N MASTER PAN



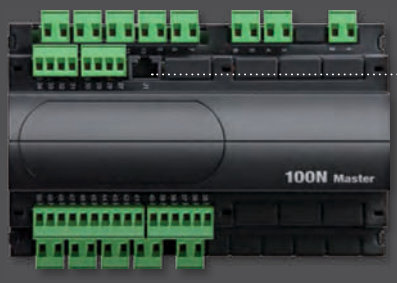
PLUS100 PAN

TECHNICAL CHARACTERISTICS	PLUS100 PAN
DIMENSIONS	100N MASTER PAN: 175 x 121,50 x 71 mm PLUS100 PAN: 210 x 110 x 35 mm
WEIGHT	1 Kg
PROTECTION RATING	IP 55 (KEYBOARD/DISPLAY)
POWER SUPPLY	230 V AC ±10% 50/60 Hz
LOAD TYPE	SINGLE-PHASE
WORKING TEMPERATURE	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90% Rh
RANGE OF READING	-45 ÷ +45°C
STATUS INDICATORS	DISPLAY LCD WITH BACKLIGHT
ALARM SIGNALS	DISPLAY + BUZZER
INPUTS	
AMBIENT PROBE	NTC 10 KΩ
EVAPORATOR PROBE	NTC 10 KΩ
HUMIDITY PROBE	4 ÷ 20 mA (0 ÷ 100% Rh)
COMPRESSORS PROTECTION	PRESENT
FANS PROTECTION	PRESENT
HUMIDIFIERS ALARM	PRESENT
DOOR SWITCH	PRESENT
OUTPUTS	
COMPRESSOR	1500 W (2 HP)
CONDENSER FANS (DOUBLE SPEED)	500 W
DEFROSTING HEATERS	1500 W (AC1)
HOT HEATERS	1500 W
ENABLE HUMIDIFIERS	500 W
ENABLE DEHUMIDIFIERS	500 W
ROOM LIGHT	800 W (AC1)
ALARM RELAY	PRESENT
STAND-BY CONTROL	500 W
SUPERVISION SYSTEM	TELENET

PLUS100 PAN

PHONE LEAD

100N MASTER PAN



VISION 2PLT

Electronic control for double system management with the possibility of inserting an environment secondary probe to ensure the proper operation of the system in case of environment main probe failure. Can manage up to two compressors and two evaporators, operating in call rotation mode (for even utilisation) or with a double set-point.
Defrosts can be executed in real time clock mode.
Version with 100Master and remote telephone lead-connected keyboard/display.

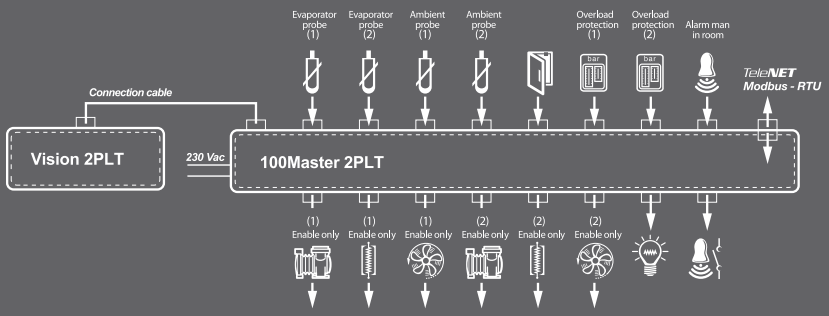
APPLICATIONS

- Low temperature rooms with double safety system.
- Room with single motor condenser unit and double evaporator.

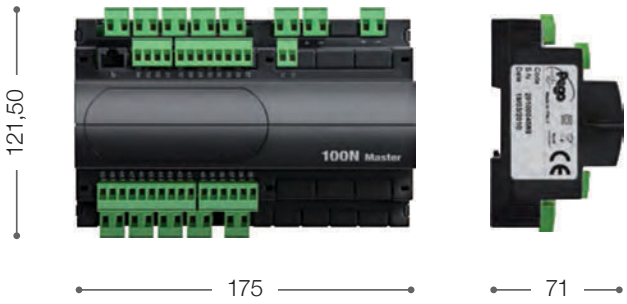
MAIN CHARACTERISTICS

- Single or double environment security probe.
- Single set-point with 2-system control and delayed start of second system, compressor rotation.
- Double set-point for gradual application of refrigeration power.
- Real time clock defrosts with one or two evaporators, each with end-of-defrost sensor.
- Display of ambient temperature, evaporator temperature, systems status.
- The Plus200 2PLT electronic controller allows complete control of all the units on a double-system refrigeration plant.
- Control of up to two compressors, double evaporator (fans and defrost elements) and room light.
- Double evaporator control occurs separately with double end-of-defrost sensor.
- Safety devices for the two systems are separate and room light can be controlled by door switch.
- Alarm relay fitted as standard.

CONNECTION SCHEME

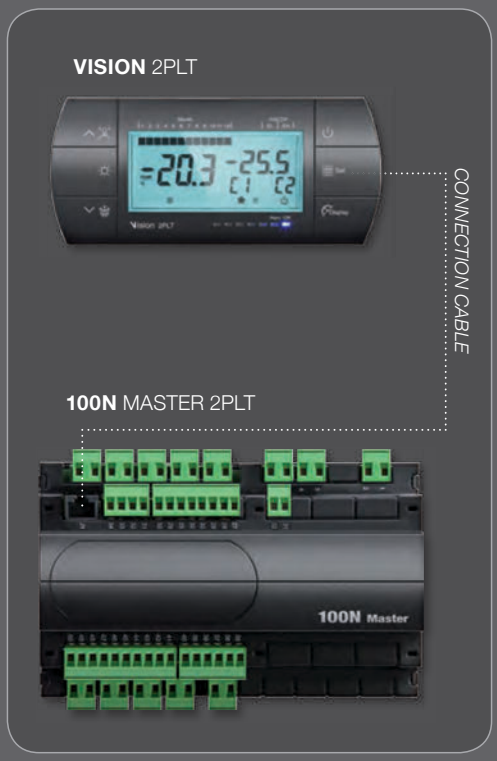


100N MASTER 2PLT



VISION 2PLT

TECHNICAL CHARACTERISTICS	VISION 2PLT
DIMENSION	100N MASTER: 175 x 121,50 x 71 mm VISION: 158 x 70 x 32 mm
WEIGHT	1 Kg
PROTECTION RATING	IP 65 (KEYBOARD/DISPLAY)
POWER SUPPLY	230 V AC ± 10% 50/60 Hz
LOAD TYPE	SINGLE-PHASE
WORKING TEMPERATURE	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90 % Rh
RANGE OF READING	-45 ÷ +99°C
DEFROSTING	ELECTRICAL
STATUS INDICATORS	DISPLAY LCD (WITH BACKLIGHT)
ALARM SIGNALS	DISPLAY + BUZZER
INPUTS	
AMBIENT PROBE 1	NTC 10 KΩ
AMBIENT PROBE 2	NTC 10 KΩ
EVAPORATOR PROBE 1	NTC 10 KΩ
EVAPORATOR PROBE 2	NTC 10 KΩ
COMPRESSOR PROTECTION 1	PRESENT
COMPRESSOR PROTECTION 2	PRESENT
MAN IN COLD-ROOM ALARM	PRESENT
DOOR SWITCH	PRESENT
OUTPUTS	
COMPRESSOR 1	1500 W (2HP)
COMPRESSOR 2	750 W (1HP)
DEFROST 1	1500 W (AC1)
DEFROST 2	1500 W (AC1)
EVAPORATOR FANS 1	500 W
EVAPORATOR FANS 2	500 W
ROOM LIGHT	800 W (AC1)
ALARM RELAY / AUX	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU



PLUS200 2PLT

Electronic control for double system management with the possibility of inserting an environment secondary probe to ensure the proper operation of the system in case of environment main probe failure. Can manage up to two compressors and two evaporators, operating in call rotation mode (for even utilisation) or with a double set-point.
Defrosts can be executed in real time clock mode.
Version with 100Master and remote telephone lead-connected keyboard/display.

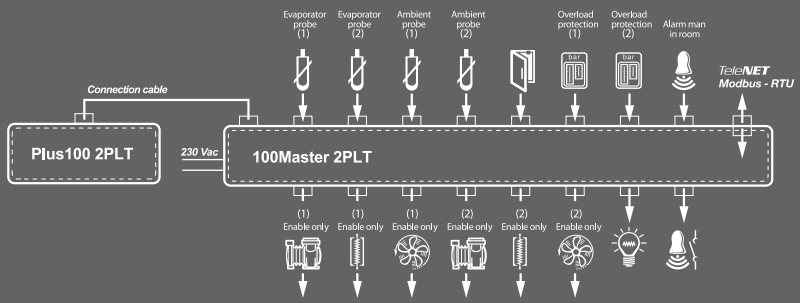
APPLICATIONS

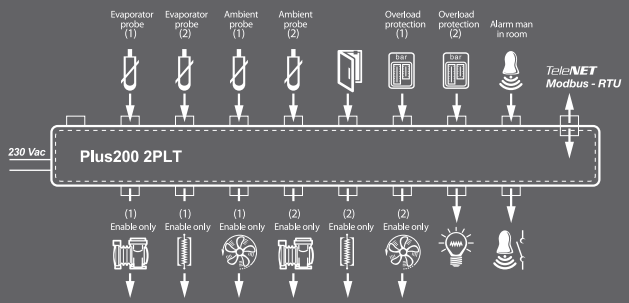
- Low temperature rooms with double safety system.
- Room with single motor condenser unit and double evaporator.

MAIN CHARACTERISTICS

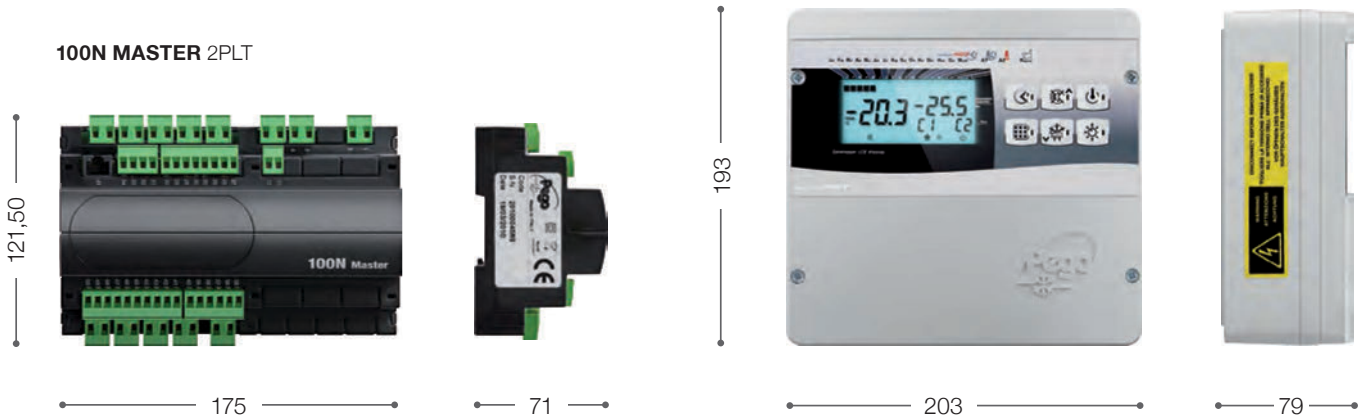
- Single or double environment security probe.
- Single set-point with 2-system control and delayed start of second system, compressor rotation.
- Double set-point for gradual application of refrigeration power.
- Real time clock defrosts with one or two evaporators, each with end-of-defrost sensor.
- Display of ambient temperature, evaporator temperature, systems status.
- The Plus200 2PLT electronic controller allows complete control of all the units on a double-system refrigeration plant.
- Control of up to two compressors, double evaporator (fans and defrost elements) and room light.
- Double evaporator control occurs separately with double end-of-defrost sensor.
- Safety devices for the two systems are separate and room light can be controlled by door switch.
- Alarm relay fitted as standard.

CONNECTION DIAGRAMS





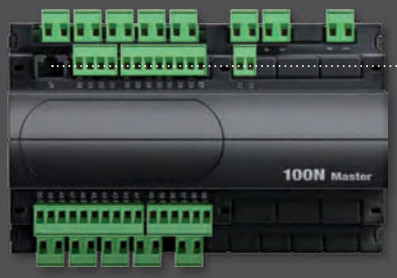
100N MASTER 2PLT



TECHNICAL CHARACTERISTICS	PLUS100 2PLT	PLUS200 2PLT
DIMENSIONS	100N MASTER 2PLT: 175 x 121,50 x 71 mm PLUS100 2PLT: 203 x 193 x 79 mm	203 x 193 x 79 mm
WEIGHT	1 Kg	1 Kg
PROTECTION RATING	IP 65 (KEYBOARD/DI-SPLAY)	IP 65
POWER SUPPLY	230 V AC ±10% 50/60 Hz	230 V AC ±10% 50/60 Hz
LOAD TYPE	SINGLE-PHASE	SINGLE-PHASE
WORKING TEMPERATURE	-5 ÷ +50°C	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90% Rh	< 90% Rh
RANGE OF READING	-45 ÷ +99°C	-45 ÷ +99°C
DEFROSTING	ELECTRICAL	ELECTRICAL
STATUS INDICATORS	DISPLAY LCD WITH BACKLIGHT	DISPLAY LCD WITH BACKLIGHT
ALARM SIGNALS	DISPLAY + BUZZER	DISPLAY + BUZZER
INPUTS		
AMBIENT PROBE 1	NTC 10 KΩ	NTC 10 KΩ
AMBIENT PROBE 2	NTC 10 KΩ	NTC 10 KΩ
EVAPORATOR PROBE 1	NTC 10 KΩ	NTC 10 KΩ
EVAPORATOR PROBE 2	NTC 10 KΩ	NTC 10 KΩ
COMPRESSOR PROTECTION 1	PRESENT	PRESENT
COMPRESSOR PROTECTION 2	PRESENT	PRESENT
MAN IN COLD-ROOM ALARM	PRESENT	PRESENT
DOOR SWITCH	PRESENT	PRESENT
OUTPUTS		
COMPRESSOR 1	1500 W (2 HP)	750 W (1 HP)
COMPRESSOR 2	750 W (1 HP)	750 W (1 HP)
DEFROST 1	1500 W (AC1)	1500 W (AC1)
DEFROST 2	1500 W (AC1)	1500 W (AC1)
EVAPORATOR FANS 1	500 W	500 W
EVAPORATOR FANS 2	500 W	500 W
ROOM LIGHT	800 W (AC1)	800 W (AC1)
ALARM RELAY / AUX	PRESENT	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU

Available also version 100N Master and remote telephone lead-connected keyboard/display.

100N MASTER 2PLT



PLUS100 2PLT

ECP APE 03

Man in cold room alarm kit: consisting of control unit with acoustic / visual warning, comes complete with buffer battery and luminous emergency in-room pushbutton.
The kit allows a person trapped inside the cold room to activate an acoustic-luminous alarm installed outside the room and so call for help. The system will work even in the event of a temporary power cut thanks to the buffer battery on the external unit.

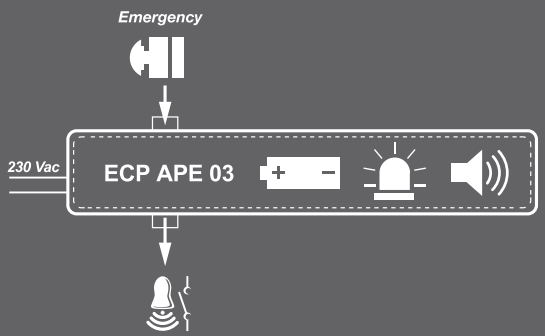
APPLICATIONS

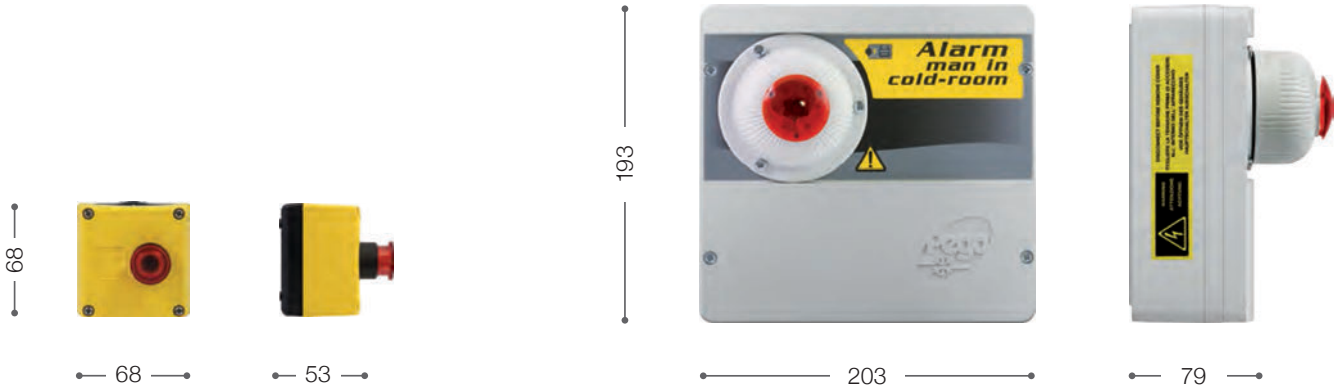
- "Man in room" safety system for low-temperature rooms.

MAIN CHARACTERISTICS

- **Emergency pushbutton** to be fitted inside cold room. This is a luminous mushroom-shaped pushbutton with a N.C. contact. The pushbutton is illuminated by LEDs, thus making it easy to find even in the dark.
- **Acoustic-visual alarm** control unit to be fitted outside the room. Features a siren and a flashing light and a buffer battery to provide power in the event of a black-out. Also has a clean contact (closed when alarm is active) that can be used to inhibit refrigeration, switch on the interior room light or activate other devices such as a dialler for remote alarm activation.

CONNECTION DIAGRAM





TECHNICAL CHARACTERISTICS	ECP APE 03
DIMENSIONS	PUSHBUTTON: 68 x 68 x 53 mm - CONTROL UNIT: 203 x 193 x 79 mm
WEIGHT	2 Kg
MAIN POWER SUPPLY	230 V AC 50 Hz
MAX CONSUMPTION ON MAIN POWER SUPPLY	20 mA
BUFFER BATTERY	12 VDC NI-MH 1300 mAh COMPLETE RECHARGE TIME: 110 H
AUTONOMY	• WITH 230 V AC POWER OFF (OPERATION WITH CHARGED BUFFER BATTERY: ABOUT 14H) • WITH 230 V AC POWER ON: UNLIMITED
EXTERNAL MODULE	IP 43 PROTECTION RATING
WORKING TEMPERATURE	-5 ÷ +45 °C
ACOUSTIC CHARACTERISTICS	TYPE: PIEZOELECTRIC - SOUND POWER: 95 dB AT 1 M
VISUAL WARNING	RED FLASHING LED 12 V DC
IN-ROOM EMERGENCY PUSHBUTTON	IN-ROOM EMERGENCY PUSHBUTTON RED FLASHING LED 12 V DC N.C. CONTACT KEYBOARD WITH IP 65 PROTECTION RATING OPERATING TEMPERATURE: -25 - +70°C
AUXILIARY RELAY	8A AC1 (CONTACT CLOSES WHEN ALARM IS SWITCHED ON)

PLUS EXPERT DL3 DATALOGGER

Three-channels temperature recorder which allows, for each channel, to monitor and record, at regular intervals, temperature, digital input status and alarm events.
It allows visualization of registered data directly on the LCD display or theirs download on personal computer by an SD memory card.

APPLICATIONS

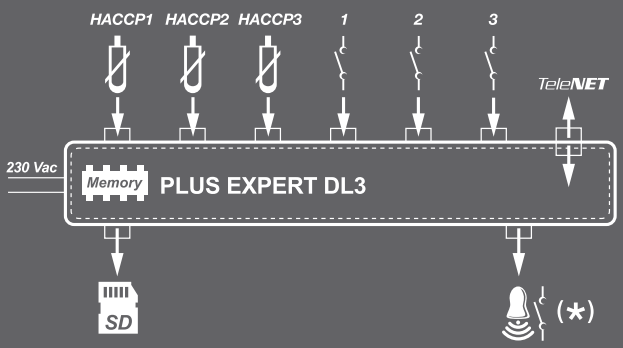
- Datalogger function up to 3 temperatures and 3 digital inputs for storage and distribution cold rooms of deep-frozen food products.

OPTIONS

- SD (Secure DIgital™) memory card for temperatures recorded data transfer onto personal computer.

CONNECTION DIAGRAM

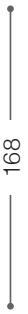
(*) = Configurable function



MAIN CHARACTERISTICS

- EN 12830 compliant
- Allows up to three temperatures within the -45°C - +45 °C interval to be recorded at regular intervals and until three digital inputs.
- Temperatures visualization up to 1 year with cyclic memory (only the oldest data are overwritten).
- Recorded temperatures can be displayed on the LCD screen.
- The temperature alarm and digital inputs history can be viewed separately to keep track of past alarms (as requested by HACCP).
- Secure Digital™ slot built into controller for data downloads.
- TeleNET SD free software to download data on personal computer.
- The ABS housing can easily be installed and wall-mounted and features an IP65 protection rating.
- Calibration certificate enclosed.

SD CARD



TECHNICAL CHARACTERISTICS	PLUS EXPERT DL3
BOX DIMENSIONS	262 X 168 X 97 mm
WEIGHT	1 Kg
PROTECTION RATING	IP 65
POWER SUPPLY	230VAC ±10% 50/60 Hz
WORKING TEMPERATURE	0 ÷ +50 °C
STORAGE TEMPERATURE	-20 ÷+60 °C
RELATIVE AMBIENT HUMIDITY	< 90% Rh
RANGE OF READING	-45 ÷+45 °C
TEMPERATURE INDICATOR	LCD DISPLAY WITH BACKLIGHT
ALARM SIGNALS	DISPLAY + BUZZER
MAXIMUM NUMBER OF READINGS WITHOUT OVERWRITE	1 YEAR (CYCLIC MEMORY)
	INPUTS
AMBIENT PROBE	3 X NTC 10K 1%
DIGITAL INPUT	N°3 DIGITAL INPUTS
	OUTPUTS
ALARM RELAY	PRESENT
SUPERVISION SYSTEM	TELENET
	DESIGNATION
STANDARD REFERENCE	EN 12830
SUITABILITY	S (STORAGE)
LOCATION	A
ACCURACY CLASS	1
MEASUREMENT RANGE	°C

TELENET

TeleNET is an application for the monitoring and supervision of refrigeration and conditioning systems controlled by Pego electronic instruments.
The network of instruments channels the data onto a personal computer where it is possible to display and print reports, manage alarms, modify operating parameters and monitor the whole system.

APPLICATIONS

- Monitoring and supervision of refrigeration and conditioning systems.
- Automatic control of work cycles.
- Recording of physical parameters (temperature, humidity, pressure, CO_2 etc.).
- Industrial cooling, storage, seasoning systems.
- Registration and consultation of data saved on Secure Digital card (for Pego electrical panel Plus Expert series).

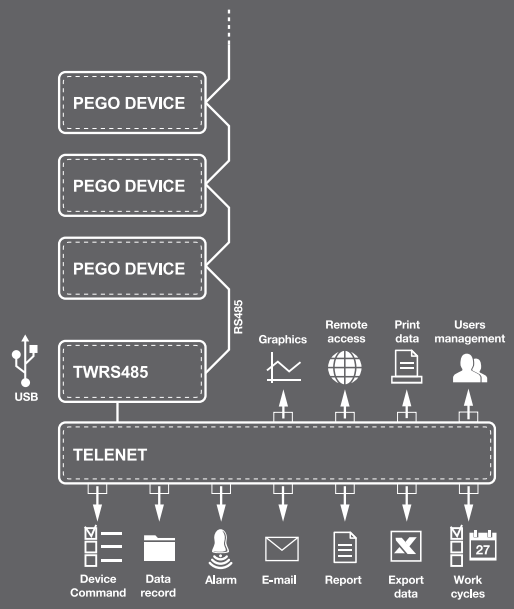
MAIN CHARACTERISTICS

- Industrial supervision system for Pego electronic controls with RS485 output.
- Allows interaction with instruments.
- Suitable for local networks (LAN) in client/server configuration.
- Control of work cycles with automatic modification of parameters over time.
- Integrated data backup and restore.
- Remote system control.
- Home page can be configured to show selected instrument data.
- Customised graphics with parameters comparison.
- Possibility to print the registered data or export them in Excel format.
- Alarms navigator.
- A differentiated alarm management and trasmission of e-mails to mobile phones and computers to inform user of alarm activation/deactivation.
- User-friendly programme updating with download from PEGO website.
- No limit to connectable instruments with the addition of TWRS485 interfaces (unique interface available for connection up to 64 instruments).

SYSTEM REQUISITES

- Operating system: Windows XP SP3 or Windows Vista, Windows 7, Windows 8.
- RAM memory recommended 4 GB.
- Hard disk 10 GB available space.
- Min. resolution 1024x768 24 bit (recommended 1280x1024 32 bit).
- N. 1 USB port to 2TWRS485 interface.
- N. 1 USB port for License Key.
- 2 Ghz processor or higher.

CONNECTION DIAGRAMS



TWRS 485

TECHNICAL CHARACTERISTICS	TELENET
TWRS485 INTERFACE DIMENSION	210 X 200 X 48 mm
TWRS485 INTERFACE WEIGHT	0,5 Kg
NUMBER OF CONNECTABLE INSTRUMENTS	UNLIMITED (SUBJECT TO VERIFICATION OF AVAILABLE CONNECTION LINE CAPACITY AND HARDWARE RESOURCES)
ALARM RELAYS	REQUIRE TWMA
SAMPLED VARIABLES PRINT-OUT	PRESENT
GRAPHICS PRINT-OUT	PRESENT
EVENT HISTORY	PRESENT
SAMPLING INTERVAL	FROM 1 MIN
DATA EXPORT	PRESENT
MANAGE ALARMS / SEND E-MAIL	PRESENT
AUTOMATIC WORK CYCLES	PRESENT
CLIENT/SERVER	PRESENT
USER MANAGEMENT BY PASSWORD AND AUTHORISATION LEVELS	PRESENT

Screenshot demonstration of TeleNET monitoring system

TWM3 T P UR

3-channel analogue acquisition module for temperature, pressure and relative humidity detection to be connected to a TeleNET supervision network or with Modbus-RTU protocol.
Each analogue input can be set autonomously to read the desired size. The on-board display allows you to view the read measurements and is easy to configure.

APPLICATIONS

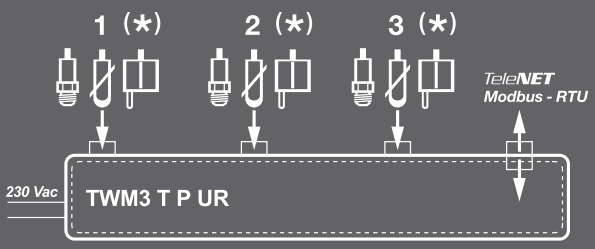
- HACCP temperature monitoring.
- Test rooms/benches.
- Temperature/humidity/pressure monitoring.

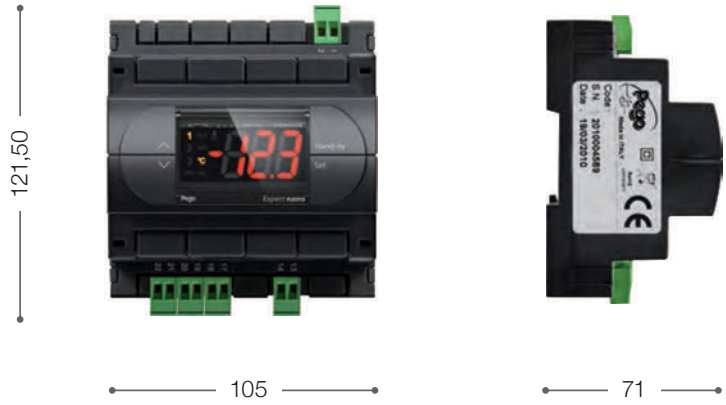
MAIN CHARACTERISTICS

- Independent configuration of 3 analogue inputs to read temperature, pressure or relative humidity.
- Display with keyboard to view read measurements and to configure the instrument.
- Preset module to read 3 temperatures with supplied NTC probes.
- Pre-setting of analogue channels on demand by customer.
- Power supply 230Vac.
- RS485 serial connection with Modbus-RTU or Telenet protocol.

CONNECTION DIAGRAM

(*) = Configurable function





TECHNICAL CHARACTERISTICS	TWM3 T P UR
DIMENSIONS	105x121,5x71 mm
WEIGHT	0,5 Kg
POWER SUPPLY	230 V AC ± 10% 50/60 Hz
ABSORBED POWER	5 VA MAX
WORKING TEMPERATURE	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90 % Rh
DISPLAY	3-DIGIT WITH SIGN, DECIMAL POINT AND LED STATUS INDICATORS
CONNECTION	SCREW REMOVABLE CLAMPS
INPUTS	
ANALOGUE	N° 3 CONFIGURABLE ANALOGUE INPUTS TO READ TEMPERATURE, PRESSURE OR RELATIVE HUMIDITY
OUTPUTS	
SUPERVISION SYSTEM	TELENET / MODBUS-RTU

TWM3 IO

Acquisition module with 3 digital inputs and a relay output to be connected to a TeleNET supervision network or with Modbus-RTU protocol.
Each digital input can be set autonomously to acquire states or alarms and the relay can be remote-controlled.
The on-board display allows you to view the states and is easy to configure.

APPLICATIONS

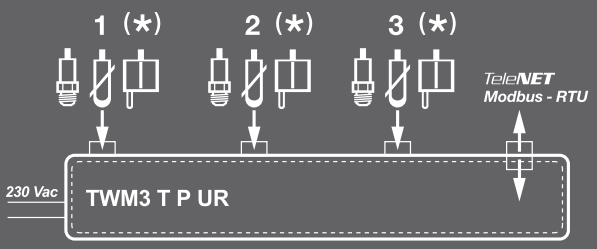
- States or alarms monitoring.
- Test rooms/benches.

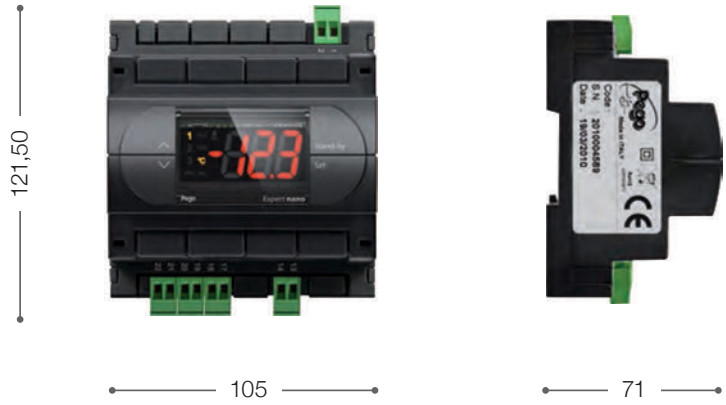
MAIN CHARACTERISTICS

- Independent configuration of 3 digital inputs for acquisition of states or alarms.
- Configurable relay output for the combined drive of one or more inputs.
- Display with keyboard to view states and to configure the instrument.
- RS485 serial connection with Modbus-RTU or Telenet protocol.
- Power supply 230Vac.

CONNECTION DIAGRAM

(*) = Configurable function





TECHNICAL CHARACTERISTICS	TWM3 IO
DIMENSIONS	105x121,5x71 mm
WEIGHT	0,5 Kg
POWER SUPPLY	230 V AC ± 10% 50/60 Hz
ABSORBED POWER	5 VA MAX
WORKING TEMPERATURE	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90 % Rh
DISPLAY	3-DIGIT WITH SIGN, DECIMAL POINT AND LED STATUS INDICATORS
CONNECTION	SCREW REMOVABLE CLAMPS
INPUTS	
DIGITAL	N° 3 DIGITAL INPUTS
OUTPUTS	
RELAY	N.O. 8(3)A / 250V
SUPERVISION SYSTEM	TELENET / MODBUS-RTU

EXPERT GSM

EXPERT GSM module sends an alarm phone call to report the anomaly of the cold room.
It's able to send all the alarms of the cold room and also the power supply break.

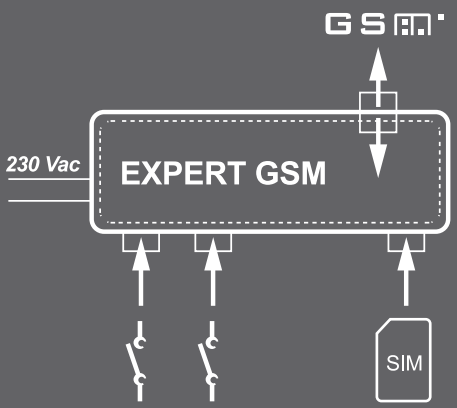
APPLICATIONS

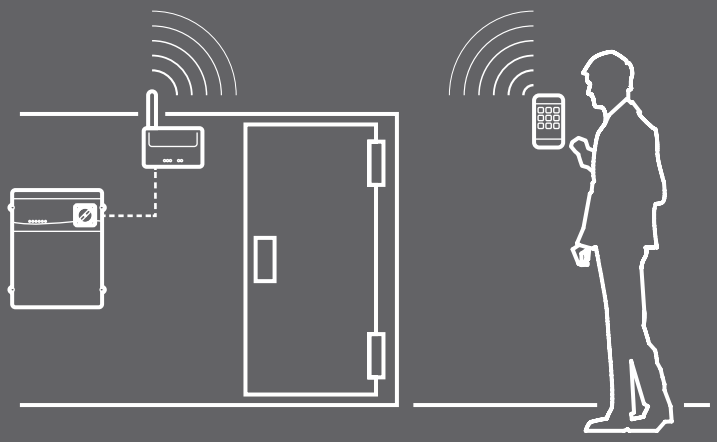
- The module is fully integrated in the series ECP 200 EXPERT and ECP 300 EXPERT and it can be applied on all PEGO electrical boards with alarm output.
- Easy integration into existing systems.

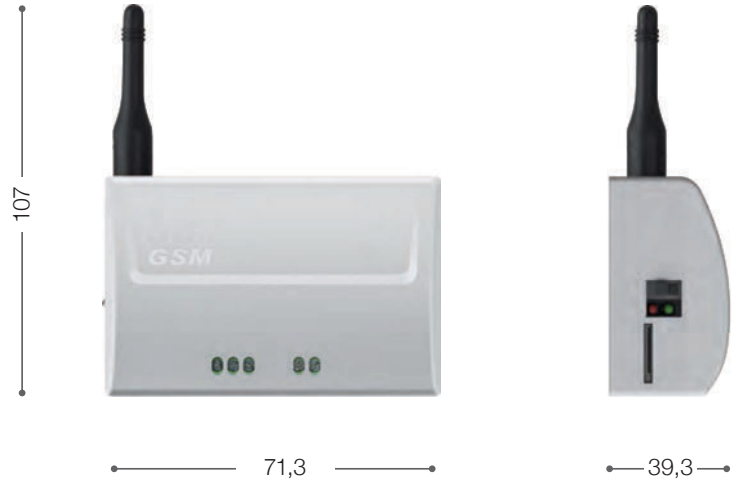
MAIN CHARACTERISTICS

- Sending alarms up to 10 phone numbers.
- Easily programmable via SMS.
- Two digital inputs to activate the alarm.
- 230 VAC power supply with rechargeable Li-Ion battery to indicate the lack of power supply (battery optional).
- GSM quad-band (850/900/1800/1900 MHz).
- Requires SIM card (not included).
- DIN rail mounting.
- Antenna included with option for remote mounting.

CONNECTION SCHEME







TECHNICAL CHARACTERISTICS	EXPERT GSM
DIMENSION	107x71,3x39,3 mm
POWER SUPPLY	230 V AC ± 10% 50/60 Hz
WORKING TEMPERATURE	-5 ÷ +50°C
STORAGE TEMPERATURE	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	< 90 % Rh
CONNECTION	FIXED SCREW CLAMPS WITH CROSS-SECTION FROM 0.2 TO 2.5 MM²
	INPUTS
DIGITAL	N° 1 NO DIGITAL INPUT N° 1 NC DIGITAL INPUT
	OUTPUTS
GSM BAND	850 / 900 / 1800 / 1900 MHZ

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