CATALOGUE 2023

ELECTRICAL BOARDS FOR REFRIGERATION

Pego

PRODUCTS INDEX

SYMBOLS

	Temperature probe
	High pressure probe
	Low pressure probe
	Humidity probe
	Food probe
	Free voltage contact
	Door switch
	High/low pressure switch
	Partialization pressure switch
	pump-down pressure switch
	Kriwan
	Oil differential pressure switch
	Mechanical cold limit thermostat
	Mechanical hot limit thermostat
	External thermostat
	Compressor
	Defrosting heater
	Evaporator fans
	Condenser fans
	Condenser fans partialised
	Alarm
	Light
	Electronic expansion valve
	Solenoid valve
	Compressor oil heater
	Electrical heaters for hot
	Humidification
	Dehumidification
	Air change
	Standby
	Emergency pushbutton
	Visual warning
	Acoustic signals
	Datalogger memory
	USB interface
	Ethernet connection
	Backup battery
	Printer
	GSM module
	SIM card
	Stepper valve
	Pulse valve

APPLICATIONS INDEX

ESSENTIAL AND ELEGANT DESIGN FOR YOUR COLD ROOM

NECTOR is designed to offer a wide range of functions and complete connectivity, in a panel with a clean and essential design able to integrate perfectly in any environment thanks to its PMMA surface with capacitive multitouch

NEW COLOR CODE FOR COLD ROOM

A large flat RGB LED display provides an immediate view of the system status. The integrated datalogger stores the values such as status of the probes and digital inputs, up to 2 years

- All right!
- Cold in action
- Defrost / heat
- Pre-alarm
- Alarm

USB PORT for software updates, import / export parameters and recordings download

((NECTOR

Control panel for the complete management of cold room with
single-phase compressor up to 2 HP with Datalogger function and integrated connectivity.

- Simple programming "Pego philosophy"
- Easy secure connection via bluetooth
- Complete programming via the MyPego APP
- Direct Wi-Fi and Ethernet connection to the Pego Cloud
- Calibration report included

Available on the App Store

GET IT ON Google Play

DOUBLE ACCESS
for equipping with multiple magnetothermic switches and DIN rail components

LARGE WHITE LED DISPLAY
large white light display
high visibility

MULTI TOUCH
the action on several keys at the same time allows you to multiply the available functions

EXTREME CONNECTIVITY FOR TOTAL REMOTE CONTROL

- Capacitive multi-touch display
- WiFi and Ethernet connectivity
- Bluetooth connectivity
- Cloud connection with MyPego iOS and Android APP
- Integrated datalogger function

• BLE (Bluetooth low energy)
• WiFi 802.11 b/g/n (2.4 GHz) up to 150 Mbps
• Cloud

• Ethernet 10/100 Mbps
• Serial RS-485 Modbus-RTU
Supervision TELENET WEB

- Automatic notification in case of cold room anomaly *
- Accessibility 24/24 from APP to check the status of the cold room *
- Emergency management
- Maintenance planning
- Time organization

* Free trial for a limited time. Subscription plans available.

((NECTOR

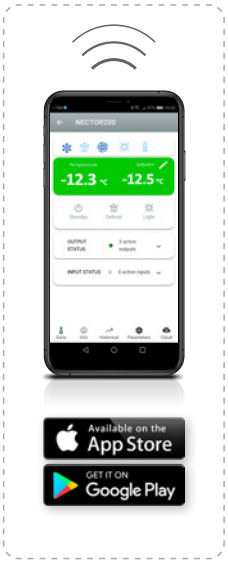
The connection to the Pego cloud via Ethernet / Wifi allows the user to always stay in contact with the cold room by receiving real-time notifications in case of anomalies directly on the smartphone.

IN TOUCH WITH YOUR COLD ROOM

- Visualization of system status in real time
- Display of parameters and daily history
- Receive alarm notifications in real time
- Instrument data sharing with other users
- Multilingual

NECTOR 200

Control panel for the complete management of refrigerated cells with single-phase compressor up to 2 HP with Datalogger function and integrated connectivity. Designed to integrate safety, protection, control and ease of installation into a single solution.



APPLICATIONS

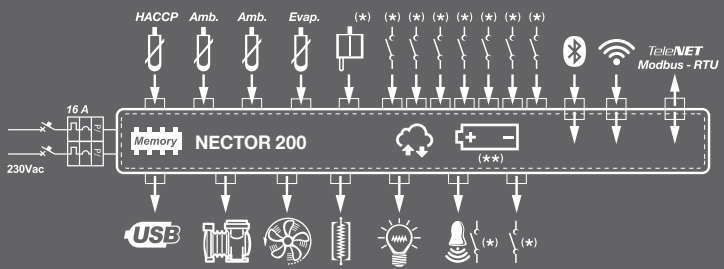
- Complete management of static or ventilated single-phase refrigeration systems up to 2HP, with off cycle or electric defrost, with direct compressor stop or pump-down in combination with the Datalogger / remote control function.
- Management of the single-phase evaporating unit only with freon solenoid valve consent and remote condensing unit consent in combination with the Datalogger / remote control function.

MAIN CHARACTERISTICS

- Direct management of compressor, defrost heaters, evaporator fans and cold room light.
- Wi-Fi, Ethernet and Bluetooth (BLE) connectivity.
- Bluetooth functions with MyPego app: complete remote control of the instrument, configuration of connectivity settings, display of daily history and system status.
- Cloud functions with MyPego app (function can be activated by subscription): real-time system control; daily history; real-time alarm messaging notification.
- Integrated local webserver.
- Datalogger function with up to 2 years' history.
- Humidification / dehumidification function with dedicated 4-20mA humidity probe.
- Condenser or evaporator fan speed management with 0-10V analogue output and dedicated pressure probe (probe not included).
- Off cycle, electric, hot gas and thermostat-controlled defrosting, also with real-time clock.
- Direct management of the solenoid valve for hot gas defrosting.
- Double evaporator management with dual end-of-defrost probe.
- Emergency operation (in case of faulty ambient probe).
- Pump-down operation.
- Configurable cold/hot/neutral zone mode.
- Energy saving (day / night setpoint management, smart defrosts).
- Integrated USB port for datalogger / parameter download and software update.
- Backup battery for data logging in the absence of the main power supply (optional).
- 7 configurable digital inputs.
- 2 configurable digital outputs.
- RS485 for connection to the TeleNET or ModBUS supervision network.

CONNECTION DIAGRAMS

(*) = Configurable function



300

TECHNICAL CHARACTERISTICS	NECTOR 200
DIMENSIONS	300 x 200 x 100 mm
WEIGHT	0.7 kg
BOX PROTECTION RATING	IP65
BOX MATERIAL	SELF-EXTINGUISHING PC-ABS
INSULATION TYPE	CLASS II
AMBIENT CONDITIONS	
WORKING TEMPERATURE	0 +50 °C
STORAGE TEMPERATURE	-10 +70 °C
RELATIVE HUMIDITY	LOWER THAN 90 RH% (Non condensing)
ELECTRICAL SPECIFICATIONS	
SUPPLY VOLTAGE	85 – 260 Vac (± 10%) Single phase
POWER FREQUENCY	50 / 60 Hz
MAX ABSORBED POWER (electronic control)	~10 VA
BATTERY (** optional)	12 V, NI-MH 1300 mAh, autonomy 40h
GENERAL ELECTRICAL PROTECTION (depending on the model)	BIPOLAR DIFFERENTIAL MAGNETOTHERMAL SWITCH 16A, CURVE C, ID=300mA
INPUT SPECIFICATIONS	
CONNECTABLE PROBE TYPES	4 NTC 10KΩ TEMPERATURE PROBES 1 4-20 mA PROBE configurable as 0-100RH% humidity or pressure
PROBE READ PRECISION	TEMPERATURE: 0.1 °C HUMIDITY / PRESSURE: 1 RH% / 0.1 Bar
READ RANGE	TEMPERATURE: -45 +99 °C HUMIDITY / PRESSURE: 0T100 RH% / 0.1 Bar
CONFIGURABLE DIGITAL INPUTS	7
DESIGNATION	
NORMATIVE REFERENCE	CE + EN 12830
ADEQUACY	S (conservation)
TYPE OF CLIMATE ENVIRONMENT	A
ACCURACY CLASS	1
OUTPUT SPECIFICATIONS (voltage-free contacts)	
COMPRESSOR	1500 W (AC3)
DEFROST	3000 W (AC1) (** depending on the model)
FANS	500 W (AC3)
COLD ROOM LIGHT	800 W (AC1) or 100W for LED lights
CONFIGURABLE OUTPUT 1	100 W (AC1)
CONFIGURABLE OUTPUT 2	100 W (AC1)
ANALOGUE OUTPUT	0 – 10 V
CONNECTIVITY	
RS485 SERIAL	MODBUS-RTU / TELENET
BLUETOOTH	BLE LOW ENERGY
WIFI	802.11 B/G/N (2.4 GHZ) UP TO 150 Mbps
ETHERNET	10/100 Mbps

NECTOR 200 P20

Control panel for the complete management of refrigerated cells with single-phase compressor up to 2 HP with Datalogger function and integrated connectivity; manages the most common ON/OFF electronic expansion valves for controlling evaporator over heating.

APPLICATIONS

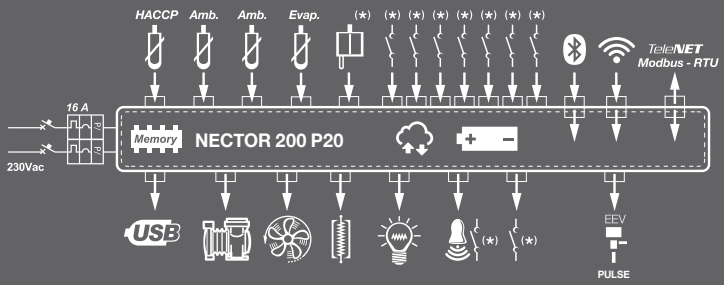
- Complete management of static or ventilated single-phase refrigeration systems up to 2HP with management of the ON/OFF electronic expansion valve (at 24/110/230 Vac or 24 Vdc), off cycle or electric defrost with direct compressor stop or pump-down, in combination with the Datalogger / remote control function.
- Management of the single-phase evaporating unit only with ON/OFF electronic expansion valve control (at 24/110/230 Vac or 24 Vdc) and remote condensing unit consent in combination with the Datalogger / remote control function.

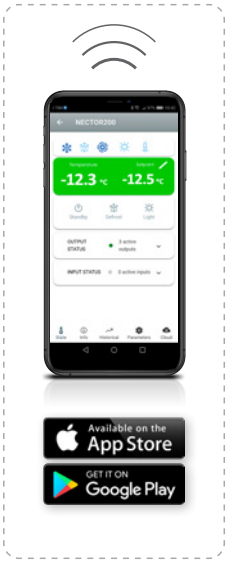
MAIN CHARACTERISTICS

- Control of the ON / OFF electronic expansion valve with 24/110/230 Vac or 24V dc coil
- Management of valve parameters from the Nector display or via MyPego app.
- Compatible with 22 types of refrigerant gas.
- Direct management of compressor, defrost heaters, evaporator fans and cold room light.
- Wi-Fi, Ethernet and Bluetooth (BLE) connectivity.
- Bluetooth functions with MyPego app: complete remote control of the instrument, configuration of connectivity settings, display of daily history and system status.
- Cloud functions with MyPego app (function can be activated by subscription): real-time system control; daily history; real-time alarm messaging notification.
- Integrated local webserver.
- Datalogger function with up to 2 years' history.
- Humidification / dehumidification function with dedicated 4-20mA humidity probe.
- Condenser or evaporator fan speed management with 0-10V analogue output and dedicated pressure probe (probe not included).
- Off cycle, electric, hot gas and thermostat-controlled defrosting, also with real-time clock.
- Direct management of the solenoid valve for hot gas defrosting.
- Double evaporator management with double end defrost probe.
- Emergency operation (in case of faulty ambient probe).
- Pump-down operation.
- Configurable cold/hot/neutral zone mode.
- Energy saving (day / night setpoint management, intelligent defrosts)
- Integrated USB port for datalogger / parameter download and software update.
- Backup battery for data logging in the absence of the main power supply.
- 7 configurable digital inputs.
- 2 configurable digital outputs.
- RS485 for connection to the TeleNET or ModBUS supervision network.

CONNECTION DIAGRAMS

(*) = Configurable function





300

100

TECHNICAL CHARACTERISTICS	NECTOR 200
DIMENSIONS	300 x 200 x 100 mm
WEIGHT	0.7 kg
BOX PROTECTION RATING	IP65
BOX MATERIAL	SELF-EXTINGUISHING PC-ABS
INSULATION TYPE	CLASS II
AMBIENT CONDITIONS	
WORKING TEMPERATURE	0 +50 °C
STORAGE TEMPERATURE	-10 +70 °C
RELATIVE HUMIDITY	LOWER THAN 90 RH% (Non condensing)
ELECTRICAL SPECIFICATIONS	
SUPPLY VOLTAGE	85 – 260 Vac (± 10%) Single phase
POWER FREQUENCY	50 / 60 Hz
MAX ABSORBED POWER (electronic control)	~10 VA
BATTERY	12 V, NI-MH 1300 mAh, autonomy 40h
GENERAL ELECTRICAL PROTECTION (depending on the model)	BIPOLAR DIFFERENTIAL MAGNETOTHERMAL SWITCH 16A, CURVE C, ID=300mA
INPUT SPECIFICATIONS	
CONNECTABLE PROBE TYPES	4 NTC 10KΩ TEMPERATURE PROBES 1 4-20 mA PROBE configurable as 0-100RH% humidity or pressure
PROBE READ PRECISION	TEMPERATURE: 0.1 °C HUMIDITY / PRESSURE: 1 RH% / 0.1 Bar
READ RANGE	TEMPERATURE: -45 +99 °C HUMIDITY / PRESSURE: 0T100 RH% / 0.1 Bar
CONFIGURABLE DIGITAL INPUTS	7
DESIGNATION	
NORMATIVE REFERENCE	CE + EN 12830
ADEQUACY	S (conservation)
TYPE OF CLIMATE ENVIRONMENT	A
ACCURACY CLASS	1
OUTPUT SPECIFICATIONS (voltage-free contacts)	
COMPRESSOR	1500 W (AC3)
DEFROST	3000 W (AC1) (** depending on the model)
FANS	500 W (AC3)
COLD ROOM LIGHT	800 W (AC1) or 100W for LED lights
CONFIGURABLE OUTPUT 1	100 W (AC1)
CONFIGURABLE OUTPUT 2	100 W (AC1)
ANALOGUE OUTPUT	0 – 10 V
ELECTRONIC EXPANSION VALVE	ON/OFF WITH COIL 24/110/230 VAC or 24 V DC
CONNECTIVITY	
RS485 SERIAL	MODBUS-RTU / TELENET
BLUETOOTH	BLE LOW ENERGY
WIFI	802.11 B/G/N (2.4 GHZ) UP TO 150 Mbps
ETHERNET	10/100 Mbps

NECTOR 200 S27

Control panel for the complete management of refrigerated cells with single-phase compressor up to 2 HP with Datalogger function and integrated connectivity; manages the most common electronic stepper expansion valves (stepper motor) for evaporator overheating control.

STEP MOTOR EXPANSION VALVES
PAGES 160-161

APPLICATIONS

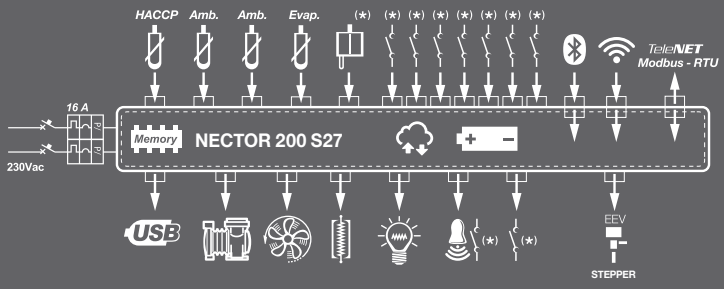
- Complete management of static or ventilated single-phase refrigeration systems up to 2HP with management of the bipolar stepper electronic expansion valve, off cycle or electric defrosting with direct compressor stop or in pump-down, in combination with the Datalogger / remote control function.
- Management of the single-phase evaporating unit only with bipolar stepper electronic expansion valve control and remote condensing unit consent in combination with the Datalogger / remote control function.

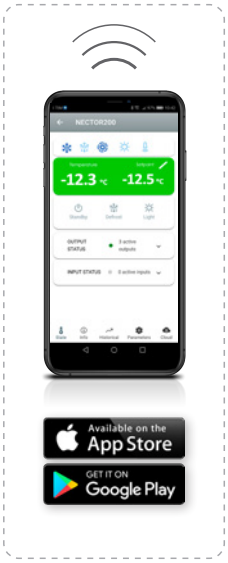
MAIN CHARACTERISTICS

- Stepper electronic expansion valve control (bipolar stepper motor).
- Management of valve parameters from the Nector display or via MyPego app.
- Compatible with 22 types of refrigerant gas.
- Direct management of compressor, defrost heaters, evaporator fans and cold room light.
- Wi-Fi, Ethernet and Bluetooth (BLE) connectivity.
- Bluetooth functions with MyPego app: complete remote control of the instrument, configuration of connectivity settings, display of daily history and system status.
- Cloud functions with MyPego app (function that can be activated by subscription): real-time system control; daily history; real-time alarm messaging notification.
- Integrated local webserver.
- Datalogger function with up to 2 years' history.
- Humidification / dehumidification function with dedicated 4-20mA humidity probe.
- Condenser or evaporator fan speed management with 0-10V analogue output and dedicated pressure probe (probe not included).
- Off cycle, electric, hot gas and thermostat-controlled defrosting, also with real-time clock.
- Direct management of the solenoid valve for hot gas defrosting.
- Double evaporator management with dual end-of-defrost probe.
- Emergency operation (in case of faulty ambient probe).
- Pump-down operation.
- Configurable cold/hot/neutral zone mode.
- Energy saving (day / night setpoint management, smart defrosts).
- Integrated USB port for datalogger / parameter download and software update.
- Backup battery for data logging in the absence of the main power supply.
- 7 configurable digital inputs.
- 2 configurable digital outputs.
- RS485 for connection to the TeleNET or ModBUS supervision network.

CONNECTION DIAGRAMS

(*) = Configurable function





300

100

TECHNICAL CHARACTERISTICS	NECTOR 200 S27
DIMENSIONS	300 x 200 x 100 mm
WEIGHT	0.7 kg
BOX PROTECTION RATING	IP65
BOX MATERIAL	SELF-EXTINGUISHING PC-ABS
INSULATION TYPE	CLASS II
AMBIENT CONDITIONS	
WORKING TEMPERATURE	0 +50 °C
STORAGE TEMPERATURE	-10 +70 °C
RELATIVE HUMIDITY	LOWER THAN 90 RH% (Non condensing)
ELECTRICAL SPECIFICATIONS	
SUPPLY VOLTAGE	85 – 260 Vac (± 10%) Single phase
POWER FREQUENCY	50 / 60 Hz
MAX ABSORBED POWER (electronic control)	~10 VA
BATTERY	12 V, NI-MH 1300 mAh, autonomy 40h
GENERAL ELECTRICAL PROTECTION (depending on the model)	BIPOLAR DIFFERENTIAL MAGNETOTHERMAL SWITCH 16A, CURVE C, ID=300mA
INPUT SPECIFICATIONS	
CONNECTABLE PROBE TYPES	4 NTC 10KΩ TEMPERATURE PROBES 1 4-20 mA PROBE configurable as 0-100RH% humidity or pressure
PROBE READ PRECISION	TEMPERATURE: 0.1 °C HUMIDITY / PRESSURE: 1 RH% / 0.1 Bar
READ RANGE	TEMPERATURE: -45 +99 °C HUMIDITY / PRESSURE: 0T100 RH% / 0.1 Bar
CONFIGURABLE DIGITAL INPUTS	7
DESIGNATION	
NORMATIVE REFERENCE	CE + EN 12830
ADEQUACY	S (conservation)
TYPE OF CLIMATE ENVIRONMENT	A
ACCURACY CLASS	1
OUTPUT SPECIFICATIONS (voltage-free contacts)	
COMPRESSOR	1500 W (AC3)
DEFROST	3000 W (AC1) (** depending on the model)
FANS	500 W (AC3)
COLD ROOM LIGHT	800 W (AC1) or 100W for LED lights
CONFIGURABLE OUTPUT 1	100 W (AC1)
CONFIGURABLE OUTPUT 2	100 W (AC1)
ANALOGUE OUTPUT	0 – 10 V
ELECTRONIC EXPANSION VALVE	BIPOLAR STEPPER, CONFIGURABLE
CONNECTIVITY	
RS485 SERIAL	MODBUS-RTU / TELENET
BLUETOOTH	BLE LOW ENERGY
WIFI	802.11 B/G/N (2.4 GHZ) UP TO 150 Mbps
ETHERNET	10/100 Mbps

ECP 202 EXPERT

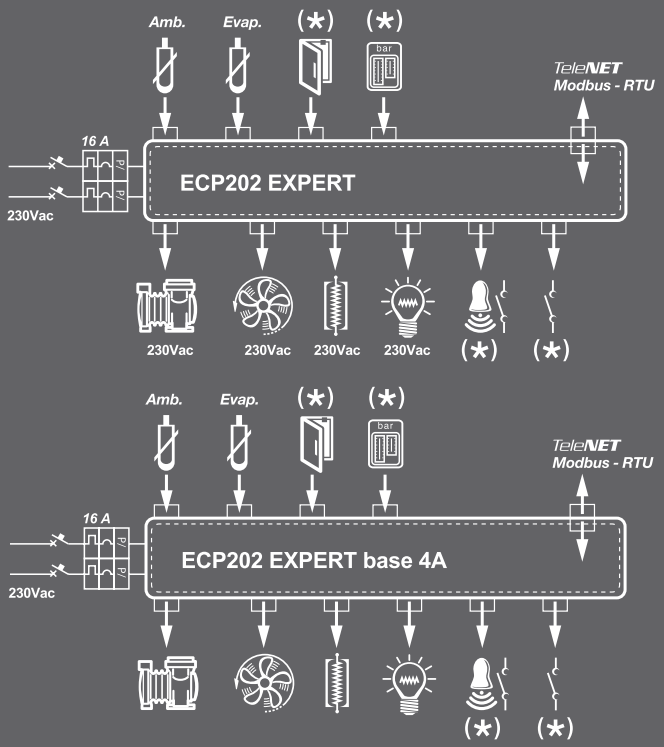
Control panel for cold rooms with single-phase compressor up to 2 HP, specially designed to provide safety, protection, control and easy-installation – all in one unit.
It allows a complete control of all the components on a refrigeration system.

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 single-phase evaporating unit with solenoid valve and 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.
- Built-in differential magnetothermic breaker for protection and cut-off of refrigeration unit.
- Innovative, stylish design. Lockable transparent cover for access to magnetothermic breaker, all with IP65 protection rating.
- 2 auxiliary relays with parameter-configured activation (alarm, temperature set-point, direct control via frontal pushbutton, door heater elements, remote motor condenser unit enabling, solenoid valve control enabling where compressor pump-down operation is applied, stand-by).
- RS485 for connection to TeleNET industrial supervision network or Modbus-RTU standard protocol.
- Easy installation and opening thanks to new hinged cover.
- Can be configured for hot applications or cold applications.
- Functions for energy saving.

263

96

TECHNICAL CHARACTERISTICS	ECP 202 EXPERT	ECP 202 EXPERT with BASE board
DIMENSIONS	263 x 180 x 96 mm	263 x 180 x 96 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)	~ 5 W	~ 5 W
AMBIENT CONDITIONS		
WORKING TEMPERATURE	-5 ÷ +40 °C	-5 ÷ +40 °C
STORAGE TEMPERATURE	-10 ÷ +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 ÷ +99 °C	-45 ÷ +99 °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 1 (VOLTAGE-FREE CONTACT)	PRESENT	PRESENT
CONFIGURABLE ALARM CONTACT / AUX 2 (VOLTAGE-FREE CONTACT)	PRESENT	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU
GENERAL ELECTRIC PROTECTION		
BIPOLAR DIFFERENTIAL MAGNETOTHERMIC CIRCUIT BREAKER	16 A ID = 300 mA SWITCHING POWER 4,5 kA ID = 30 mA (ON REQUEST)	16 A ID = 300 mA SWITCHING POWER 4,5 kA ID = 30 mA (ON REQUEST)
INSULATION AND MECHANICAL CHARACTERISTICS		
BOX PROTECTION RATING	IP65	IP65
BOX MATERIAL	SELF-EXTINGUISHING ABS	SELF-EXTINGUISHING ABS
INSULATION TYPE	Class II	Class II

ECP 202 EXPERT D7.5

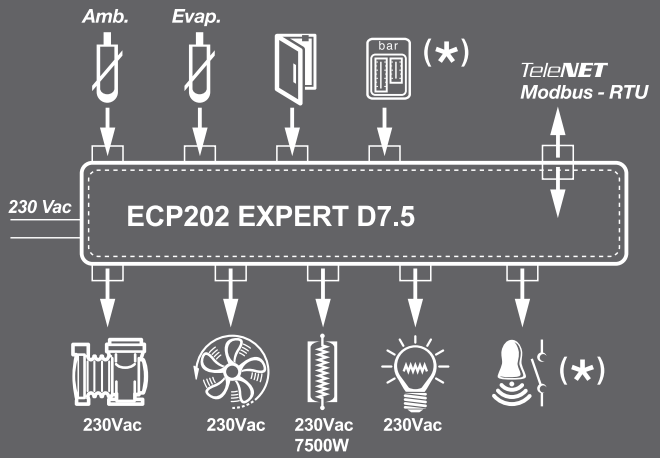
Control panel for cold rooms with single-phase compressor up to 2 HP and single-phase or three-phase electrical defrosting up to 7500W, specially designed to provide safety, protection, control and easy-installation – all in one unit. It allows a complete control of all the components on a refrigeration 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. IP 65 protection rating.
- 2 auxiliary relays with parameter-configured activation (alarm, temperature set-point, direct control via frontal pushbutton, door heater elements, remote motor condenser unit enabling, solenoid valve control enabling where compressor pump-down operation is applied, stand-by).
- 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.

263

96

TECHNICAL CHARACTERISTICS	ECP 202 EXPERT D7.5
DIMENSIONS	263 x 180 x 96 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)	~ 5 W
AMBIENT CONDITIONS	
WORKING TEMPERATURE	-5 ÷ +40 °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 ÷ +99 °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	IP65
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.

ECP 200 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 solenoid valve and remote motor condenser enabling.

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 IP65 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, solenoid valve 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.

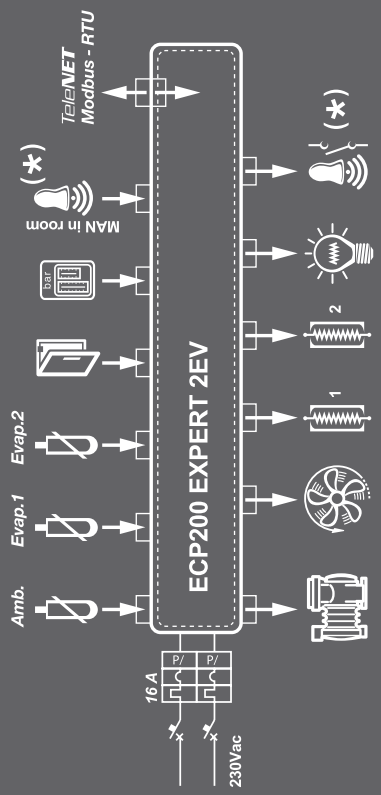
263

96

TECHNICAL CARACTERISTICS	ECP 200 EXPERT 2EV
BOX DIMENSIONS	263 x 180 x 96 mm
WEIGHT	2 kg
PROTECTION RATING	IP65
POWER SUPPLY	230 V AC ±10% 50/60 Hz
LOAD TYPE	SINGLE PHASE
WORKING TEMPERATURE	-5 ÷ +40 °C
STORAGE TEMPERATURE	-10 ÷ +70 °C
RELATIVE AMBIENT TEMPERATURE	< 90% RH
MAIN SWITCH - GENERAL PROTECTION	2 POLES DIFFERENTIAL MAGNETOTHERMIC 16 A
CONTROL	PEGO
DEFROSTING	ELECTRICAL
COMPONENT STATUS INDICATORS	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER
REAL TIME CLOCK DEFROST	PRESENT (RTC)
INPUTS	
AMBIENT PROBE	NTC 10 kΩ 1%
EVAPORATOR PROBE 1	NTC 10 kΩ 1%
EVAPORATOR PROBE 2	NTC 10 kΩ 1%
DOOR SWITCH	PRESENT
HIGH/LOW PRESSURE SWITCH	PRESENT
MAN IN COLD ROOM ALARM	PRESENT
COMPRESSOR WORK MODE SELECTION	PUMP-DOWN / THERMOSTAT
OUTPUTS	
COMPRESSOR	1500 W (AC3)
EVAPORATOR FANS	500 W (AC3)
DEFROSTING HEATERS 1	1500 W (AC1)
DEFROSTING HEATERS 2	1500 W (AC1)
ROOM LIGHT	800 W (AC1) RESISTIVE LOAD
SOLENOID VALVE	PRESENT
AUXILIARY RELAY OR ALARM	100 W
SUPERVISION SYSTEM	TELENET / MODBUS-RTU

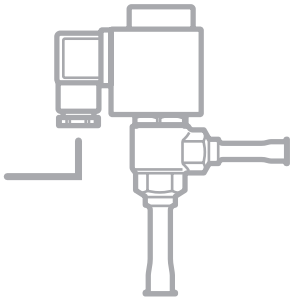
CONNECTION DIAGRAM

(*) = Configurable function



ECP 200 EXPERT PULSE

Electrical panel for **cold room control with differential magnetothermic circuit breaker** and with integrated **command of pulse electronic expansion valve 230 V AC On/Off** and single-phase compressor up to 2 HP. 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 V AC.
- Utility for managing the single-phase evaporating unit with electronic expansion valve only ON/OFF at 230 V AC.

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 V AC 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 IP65 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.

263

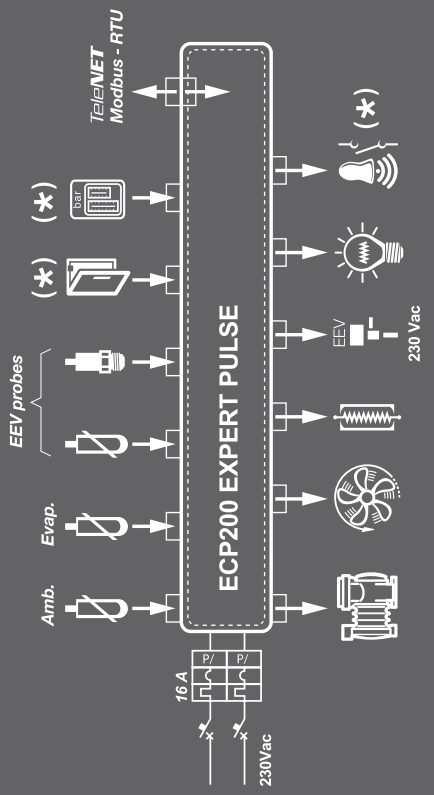
180

96

TECHNICAL CARACTERISTICS	ECP 200 EXPERT PULSE
BOX DIMENSIONS	263 x 180 x 96 mm
WEIGHT	2 kg
PROTECTION RATING	IP65
POWER SUPPLY	230 V AC ±10% 50/60 Hz
LOAD TYPE	SINGLE PHASE
WORKING TEMPERATURE	-5 ÷ +40 °C
STORAGE TEMPERATURE	-10 ÷ +70 °C
RELATIVE AMBIENT TEMPERATURE	< 90% RH
MAIN SWITCH - GENERAL PROTECTION	2 POLES DIFFERENTIAL MAGNETOTHERMIC 16 A
CONTROL	PEGO
DEFROSTING	ELECTRICAL
COMPONENT STATUS INDICATORS	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER
DEFROST	PRESENT (RTC)
INPUTS	
AMBIENT PROBE	NTC 10 kΩ 1%
EVAPORATOR PROBE	NTC 10 kΩ 1%
SUCTION PROBE	NTC 10 kΩ 1%
EVAPORATION PRESSURE PROBE	4-20 mA / 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	1500 W (AC3) FREE VOLTAGE CONTACT
EVAPORATOR FANS	500 W (AC3) FREE VOLTAGE CONTACT
DEFROSTING HEATERS	3000 W (AC1) FREE VOLTAGE CONTACT
ELECTRONIC VALVE	PULSE 230 V AC
ROOM LIGHT	800 W (AC1) FREE VOLTAGE CONTACT
AUXILIARY RELAY OR ALARM	100 W FREE VOLTAGE CONTACT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU

CONNECTION DIAGRAM

(*) = Configurable function



ECP 300 EXPERT VD

ECP 300 EXPERT VD 4 | ECP 300 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.

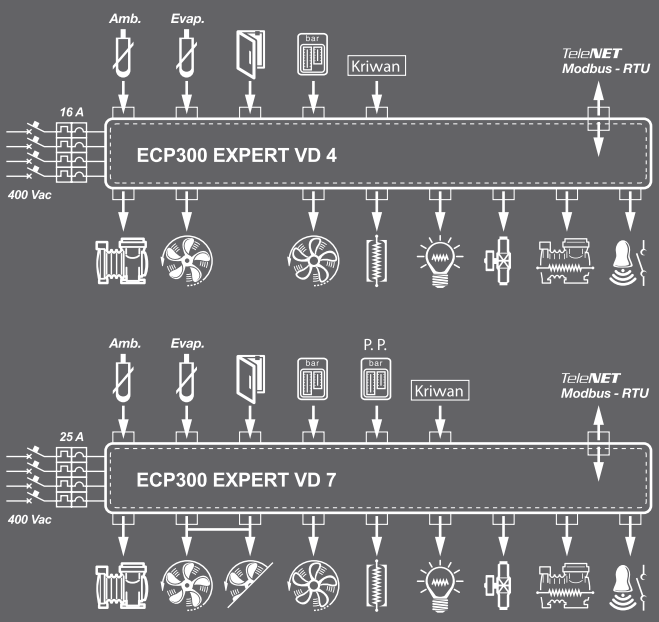
APPLICATIONS

- 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 IP65 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	ECP 300 EXPERT VD 4	ECP 300 EXPERT VD 7
BOX DIMENSIONS	400 x 300 x 135 mm	400 x 300 x 135 mm
WEIGHT	9 kg	10 kg
PROTECTION RATING	IP65	IP65
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 ÷ +99 °C	-45 ÷ +99 °C
MAIN SWITCH / GENERAL PROTECTION	4 POLES MAGNETOTHERMIC 16 A	4 POLES MAGNETOTHERMIC 25 A
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 10 kΩ	NTC 10 kΩ
EVAPORATOR PROBE	NTC 10 kΩ	NTC 10 kΩ
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 (3PH) OR 1500 W (1PH)
DEFROSTING HEATERS	6000 W (AC1) balanced resistive load	9000 W (AC1) balanced 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

ECP 300 EXPERT U VD

ECP 300 EXPERT U VD 6 | ECP 300 EXPERT U VD 12

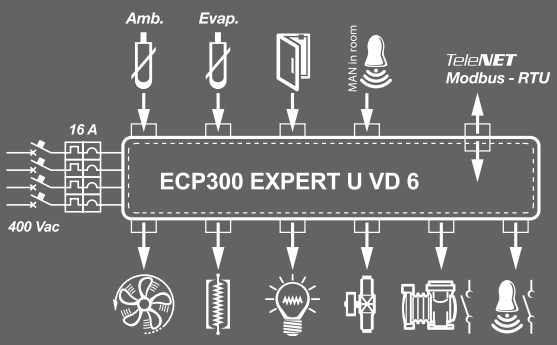
A line of power and control panels for refrigeration systems to control only the three-phase evaporating unit where units are served by a central refrigerator or remote condenser unit. Magnetothermic and differential protection for room light accessible from the front panel linked to an innovative form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

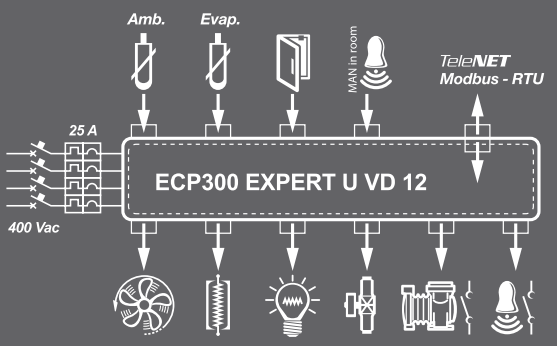
Available version with PULSE electronic valve integrated control.

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=30 mA 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 IP65 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	ECP 300 EXPERT U VD 6	ECP 300 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	IP65	IP65
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 ÷ +99 °C	-45 ÷ +99 °C
MAIN SWITCH / GENERAL PROTECTION	4 POLES MAGNETOTHERMIC 16 A	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 10 kΩ	NTC 10 kΩ
EVAPORATOR PROBE	NTC 10 kΩ	NTC 10 kΩ
DOOR SWITCH	PRESENT	PRESENT
MAN IN COLD-ROOM ALARM	AVAILABLE	AVAILABLE
OUTPUTS		
EVAPORATOR FANS	550 W (1PH)	2x2000 W (3PH) OR 2x1500 W (1PH)
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

ECP 300 EXPERT STEPPER U VD

ECP 300 EXPERT STEPPER U VD 01 | ECP 300 EXPERT STEPPER U VD 02

Line of electrical panels, with power and control of the stepper electronic expansion valve (stepper motor), dedicated to the management of the three-phase evaporating unit.

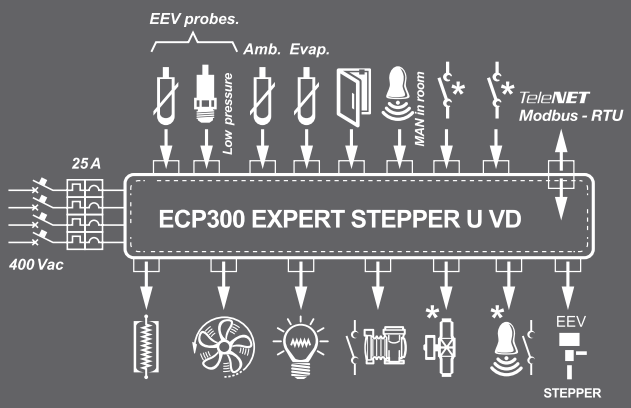
STEP MOTOR EXPANSION VALVES
PAGES 160-161

APPLICATIONS

- Control of the evaporating unit, with electrical defrost up to 12 kW.
- Management of the motorized bipolar expansion valve.

CONNECTION DIAGRAMS

(*) = Configurable function



MAIN CHARACTERISTICS

- Driver for the motorized electronic valve integrated in the cold room control.
- Single display for complete cold room management.
- Connectable to any type of stepper valve on the market.
- Including parameters self-configuration table based on the brand and model of the valve.
- Internal USB port for updates with new refrigerant gases.
- Enabling for condensing unit, defrost heaters, evaporator fans, solenoid valve, cold room light and presence of all the electrical protections required by regulations.
- Protection of the loads and of the auxiliary circuit with circuit breakers.
- Differential magnetothermic dedicated to room light accessible from the front panel (see the table).
- Easy wiring on the internal terminal block.
- Compact, self-extinguishing abs housing with IP65 protection rating and circuit breaker on the front of the panel.
- Electronic control with large LED display and easy-to-use keyboard.
- LED system status indicators.
- RS485 serial port for connection to the TeleNET industrial supervision network or standard Modbus-RTU protocol.
- Alarm output with voltage-free contact to activate other warning devices such as sirens or telephone dialer.

TECHNICAL CHARACTERISTICS	ECP 300 EXPERT STEPPER U VD 01	ECP 300 EXPERT STEPPER U VD 02
BOX DIMENSIONS	400 x 300 x 135 mm	400 x 300 x 135 mm
WEIGHT	7 kg	9 kg
PROTECTION RATING	IP65	IP65
POWER SUPPLY (3PH + N + E)	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	-10 ÷ +70 °C	-10 ÷ +70 °C
RELATIVE AMBIENT HUMIDITY	30% - 90% RH without condensate	30% - 90% RH without condensate
READING REANGE	-45 ÷ +99 °C	-45 ÷ +99 °C
GENERAL PROTECTION	4 POLES MAGNETOTHERMIC 16 A	4 POLES MAGNETOTHERMIC 25 A
ROOM LIGHT PROTECTION	DIFFERENTIAL MAGNETOTHERMIC CIRCUIT BREAKER (optional)	DIFFERENTIAL MAGNETOTHERMIC CIRCUIT BREAKER (optional)
CONTROL	PEGO STEPPER	PEGO STEPPER
INSULATION TRANSFORMER	PRESENT	PRESENT
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	NTC 10 kΩ
SUCTION PROBE	NTC 10 kΩ / PTC / PT1000	NTC 10 kΩ / PTC / PT1000
EVAPORATION PRESSURE PROBE (not included)	4 - 20 mA	4 - 20 mA
DOOR SWITCH	PRESENT	PRESENT
MAN IN COLD-ROOM ALARM	AVAILABLE	AVAILABLE
OUTPUTS		
EVAPORATOR FANS	1 X 1500 W	2 X 1500 W
DEFROSTING HEATERS	6 kW (3 X 2000) Balanced resistive load	12 kW (3 X 4000) Balanced resistive load
ROOM LIGHT	PRESENT	PRESENT
ENABLE CONDENSING UNIT	PRESENT	PRESENT
CONFIGURABLE RELAY (alarm AUX)	PRESENT	PRESENT
STEPPER VALVE OUTPUT	BIPOLAR	BIPOLAR
SUPERVISION SYSTEM	TELENET/ MODBUS-RTU	TELENET/ MODBUS-RTU

PLUSR200 EXPERT DATALOGGER

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 can record (for up to 1 year) ambient temperature and relative alarms through an electronic circuit equipped with autonomous temperature sensor (as per EN 12830). Moreover, defrosts can be carried out in real time clock mode and it is possible to connect up to the TeleNET supervision system or Modbus-RTU standard protocol.

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 solenoid valve enabling or remote motor condenser enabling, together with Datalogger function.

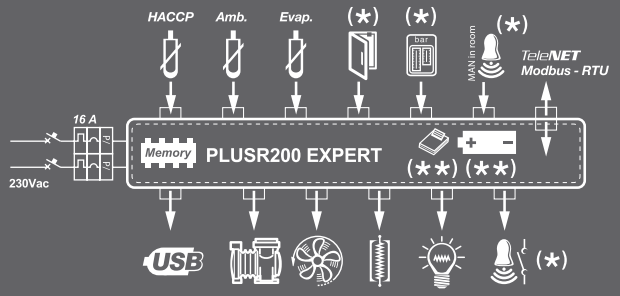
OPTIONS

- Module for communication with smartphone (Android).
- Battery backup up to 40 hours.

CONNECTION DIAGRAM

(*) = Configurable function

(* *) = Optional



MAIN CHARACTERISTICS

- Direct control of compressor, defrost heaters, evaporator fans, room light with 230 V AC 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).
- USB slot built into controller for data downloads.
- Software updating from USB.
- Defrosts can be carried out in real time clock mode.
- RS485 for connection to TeleNET industrial supervision network or Modbus-RTU standard protocol.
- 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** software to download data on personal computer (provided free of charge with product).

TECHNICAL CHARACTERISTICS	PLUSR 200 EXPERT
DIMENSIONS	263 x 180 x 96 mm
WEIGHT	1 kg
POWER SUPPLY	
VOLTAGE	230 V AC ±10% 50/60 HZ
MAX ABSORBED POWER	~ 5 W
AMBIENT CONDITIONS	
WORKING TEMPERATURE	-5 ÷ +40 °C
STORAGE TEMPERATURE	-20 ÷ +60 °C
RELATIVE HUMIDITY	< 90% RH
GENERAL CHARACTERISTICS	
CONNECTABLE SENSOR TYPES	NTC 10 kΩ
RESOLUTION	0,1 °C
RANGE OF READING	-45 ÷ +99 °C
RECORDING CHARACTERISTICS	
MAXIMUM NUMBER OF READINGS WITHOUT OVERWRITE	1 YEAR (CYCLIC MEMORY)
OUTPUT CHARACTERISTICS - MAX APPLICABLE LOAD (230 V AC)	
COMPRESSOR	1500 W (AC3) FREE VOLTAGE CONTACT
DEFROST	3000 W (AC1) FREE VOLTAGE CONTACT
FANS	500 W (AC3) FREE VOLTAGE CONTACT
ROOM LIGHT	800 W (AC1) FREE VOLTAGE CONTACT
CONFIGURABLE ALARM CONTACT (VOLTAGE-FREE CONTACT)	PRESENT
SUPERVISION SYSTEM	TELENET/MODBUS-RTU
GENERAL ELECTRIC PROTECTION	
BIPOLAR DIFFERENTIAL MAGNETOTHERMIC CIRCUIT BREAKER	OPTIONAL, 16 A ID = 300 mA SWITCHING POWER 4.5 kA ID = 30 mA (ON REQUEST)
INSULATION AND MECHANICAL CHARACTERISTICS	
BOX PROTECTION RATING	IP65
BOX MATERIAL	SELF-EXTINGUISHING ABS
TYPE OF INSULATION	CLASS II
DESIGNATION	
STANDARD REFERENCE	EN 12830
SUITABILITY	S (STORAGE)
LOCATION	A
ACCURACY CLASS	1
OPTIONS	
BATTERY BACKUP	OPTIONAL
COMMUNICATION WITH PRINTER/SMARTPHONE (ANDROID)	OPTIONAL

PLUSR 300 EXPERT VD DATALOGGER

PLUSR 300 EXPERT VD 4 | PLUSR 300 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 year) ambient temperature and relative alarms through an electronic circuit equipped with autonomous temperature sensor (as per EN 12830). Moreover, defrosts can be carried out in real time clock mode and it is possible to connect up to the TeleNET or Modbus-RTU 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

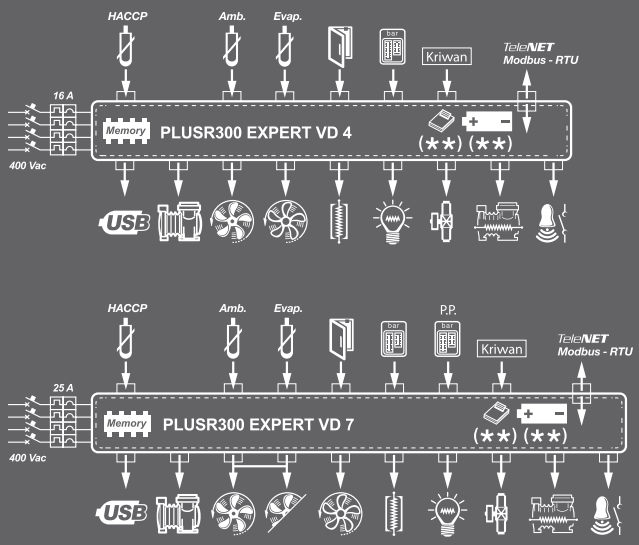
- Control of three-phase refrigeration plant up to 7.5 HP, static or ventilated, with off-cycle or electrical defrosting.

OPTIONS

- Module for communication with smartphone (Android).
- Battery backup (Datalogger) up to 40 hours.
- RS version with thermostat door heater and discharge heater.

CONNECTION DIAGRAMS

(* *) = Optional



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 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).
- USB slot built into controller for data downloads.
- Software updating from USB.
- Defrosts can be carried out in real time clock mode.
- RS485 for connection to Modbus-RTU or TeleNET industrial supervision network.
- TeleNET software to download data on personal computer (provided free of charge with product).

TECHNICAL CHARACTERISTICS	PLUSR 300 EXPERT VD 4	PLUSR 300 EXPERT VD 7
BOX DIMENSIONS	400 x 300 x 135 mm	400 x 300 x 135 mm
WEIGHT	9 kg	10 kg
PROTECTION RATING	IP65	IP65
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 16 A	4 POLES MAGNETOTHERMIC 25 A
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 10 kΩ	NTC 10 kΩ
EVAPORATOR PROBE	NTC 10 kΩ	NTC 10 kΩ
DATALOGGER PROBE	NTC 10 kΩ	NTC 10 kΩ
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 (0,5-4 HP)	3000 W ÷ 5500 W (4 ÷ 7,5 HP)

PLUSR 300 EXPERT U VD DATALOGGER

PLUSR 300 EXPERT U VD 6 | PLUSR 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 can record (for up to year) ambient temperature and relative alarms through an electronic circuit equipped with autonomous temperature sensor (as per EN 12830). Moreover, defrosts can be carried out in real time clock mode and it is possible to connect up to the TeleNET or Modbus-RTU 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

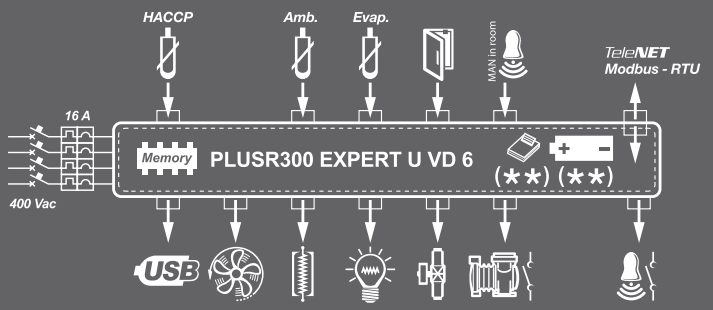
- Control of evaporating unit with electrical defrost up to 12 kW.

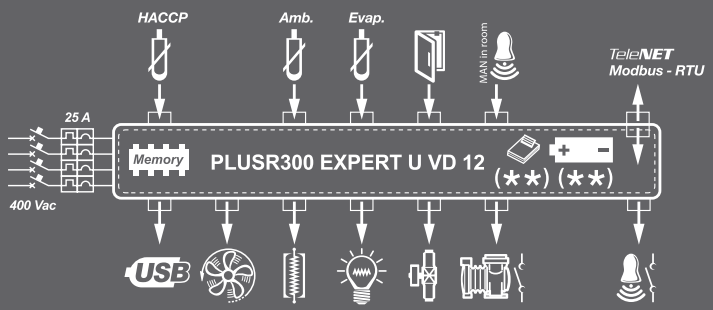
OPTIONS

- Module for communication with smartphone (Android).
- Battery backup (Datalogger) up to 40 hours.
- RS version with thermostat door heater and discharge heater.

CONNECTION DIAGRAMS

(* *) = Optional





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 dedicated to room light accessible 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 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).
- USB slot built into controller for data downloads.
- Software updating from USB.
- Defrosts can be carried out in real time clock mode.
- RS485 for connection to TeleNET industrial supervision network or Modbus-RTU standard protocol.
- TeleNET software to download data on personal computer (provided free of charge with product).

TECHNICAL CHARACTERISTICS	PLUSR 300 EXPERT U VD 6	PLUSR 300 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	IP65	IP65
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 ÷ +99 °C	-45 ÷ +99 °C
MAIN SWITCH / GENERAL PROTECTION	4 POLES MAGNETOTHERMIC 16 A	4 POLES MAGNETOTHERMIC 25 A
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 10 kΩ	NTC 10 kΩ
EVAPORATOR PROBE	NTC 10 kΩ	NTC 10 kΩ
DATALOGGER PROBE	NTC 10 kΩ	NTC 10 kΩ
DOOR SWITCH	PRESENT	PRESENT
MAN IN COLD-ROOM ALARM	AVAILABLE	AVAILABLE
OUTPUTS		
EVAPORATOR FANS	550 W (1PH)	2x2000 W (3PH) OR 2x1500 W (1PH)
DEFROSTING HEATERS	6000 W (AC1) balanced resistive load	12000 W (AC1) balanced 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
DATALOGGER		
DATALOGGER	INDIPENDENT PROBE	INDIPENDENT PROBE
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
OPTIONS		
BATTERY BACKUP	OPTIONAL	OPTIONAL
COMMUNICATION WITH PRINTER/SMARTPHONE (ANDROID)	OPTIONAL	OPTIONAL

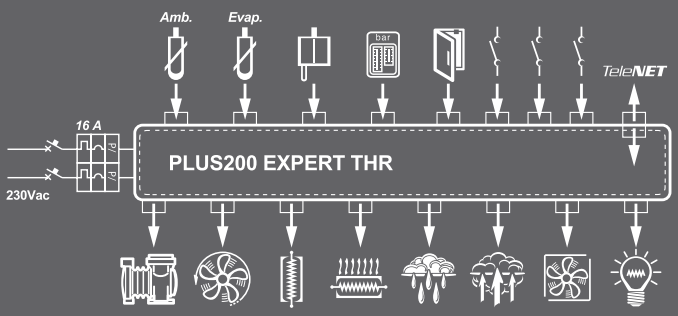
PLUS 200 EXPERT THR

Single-phase electrical panel with control of temperature and humidity for single-phase compressor up to 2 HP 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.

TECHNICAL CHARACTERISTICS	PLUS 200 EXPERT THR
DIMENSIONS	263 x 180 x 96 mm
WEIGHT	1 kg
PROTECTION RATING	IP65
POWER SUPPLY	230 V AC ±10% 50/60 Hz
LOAD TYPE	SINGLE-PHASE
WORKING TEMPERATURE	-5 ÷ +40 °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	16 A ID=300 mA SWITCHING POWER 4,5 kA
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 (2HP)
EVAPORATOR FANS	500 W
DEFROSTING HEATERS	1500 W
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

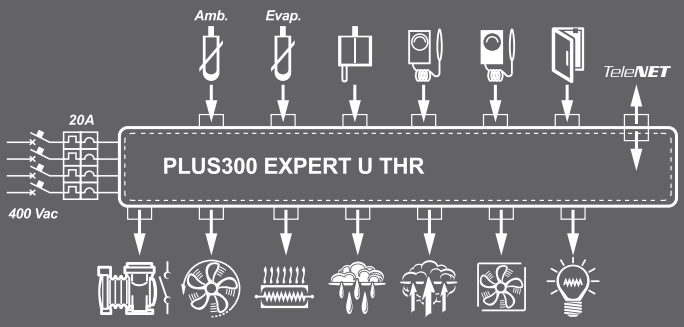
PLUS 300 EXPERT U THR

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	400 V AC ±10% 50/60 Hz
LOAD TYPE	THREE-PHASE
WORKING TEMPERATURE	-5 ÷ +40 °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 20 A
INPUTS	
AMBIENT PROBE	NTC 10 kΩ
EVAPORATOR PROBE	NTC 10 kΩ
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	800 W (1PH)
DEFROST	OFF CYCLE
HOT HEATERS	7500 W (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).

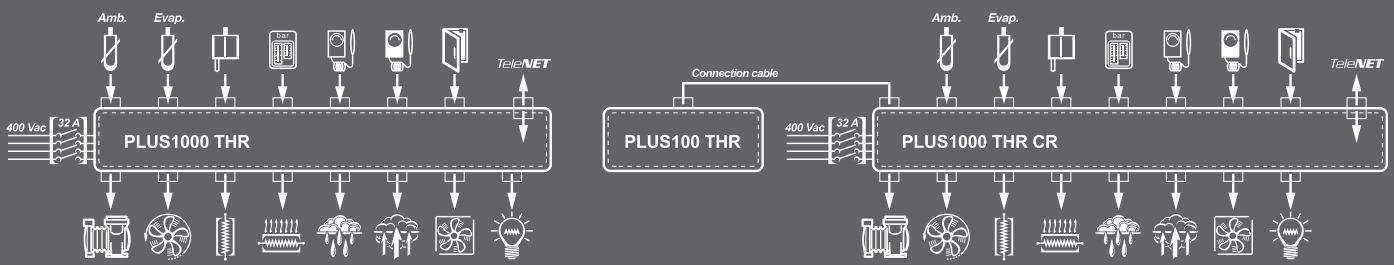
OPTIONS

- **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



PLUS 100 THR

PLUS 1000 THR CR

TECHNICAL CHARACTERISTICS	PLUS 1000 THR	PLUS 100 THR + PLUS 1000 THR CR
DIMENSIONS	**PLUS100 THR**: 210 x 110 x 35 mm **PLUS1000 THR**: 350 x 450 x 160 mm	**PLUS100 THR**: 210 x 110 x 35 mm **PLUS1000 THR**: 350 x 450 x 160 mm
WEIGHT	6 kg	5.5 kg (+0.7 kg KEYBOARD/DISPLAY)
PROTECTION RATING	IP65	IP65
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 (3F + N + T)	400 V AC ±10% 50/60 Hz	OTHER CHARACTERISTICS SUCH AS **PLUS1000 THR**
LOAD TYPE	THREE-PHASE	
WORKING TEMPERATURE	-5 ÷ +40 °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 (1PH)	
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	

PLUS 100 THR

PLUS 1000 THR CR

ECP 202 BASE

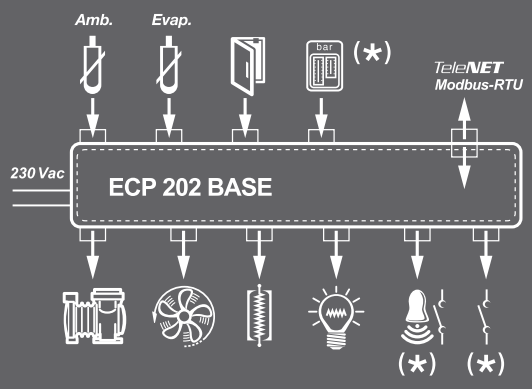
A line of control panels for cold rooms with single-phase compressor up to 2 HP, specially designed to provide greater flexibility at a competitive cost.

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.
- 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.

CONNECTION DIAGRAM

(*) = Configurable function



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.
- 2 parameter-configurable digital inputs (door switch, compressor protection, man in cold room alarm, remote stand-by, night function, remote defrost).
- 2 auxiliary relays 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, active in stand-by).
- Air recirculation management
- Configurable for cold applications or for hot applications.
- Emergency operation in case of faulty ambient probe.
- RS485 for connection to TeleNET industrial supervision network or Modbus-RTU standard protocol.

TECHNICAL CHARACTERISTICS	ECP 202 BASE
DIMENSIONS	203 x 193 x 79 mm
WEIGHT	0,5 kg
PROTECTION RATING	IP65
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
DEFROST	ELECTRICAL
STATUS INDICATORS	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER
INPUTS	
AMBIENT PROBE	NTC 10 kΩ
EVAPORATOR PROBE	NTC 10 kΩ
OVERLOAD PROTECTION	PRESENT
DOOR SWITCH	PRESENT
OUTPUTS	
COMPRESSOR	1500 W (2HP)
DEFROST	3000 W (AC1)
EVAPORATOR FANS	500 W
COLD ROOM LIGHT	800 W (AC1)
2 CONFIGURABLE RELAYS	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU

ECP__ BASE4 VD

ECP 300 BASE4 VD | ECP 400 BASE4 VD
ECP 750 BASE4 VD | ECP 1000 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.

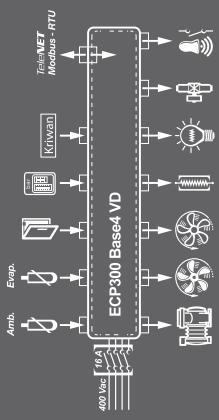
OPTIONS

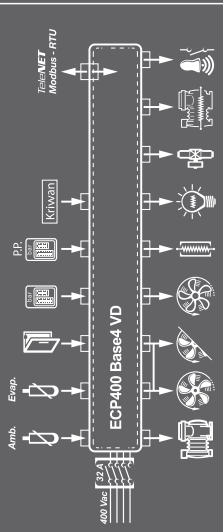
- Installation of magnetothermic protection devices instead of fuses.
- Pump-down compressor stop.
- Hot-gas defrost control.

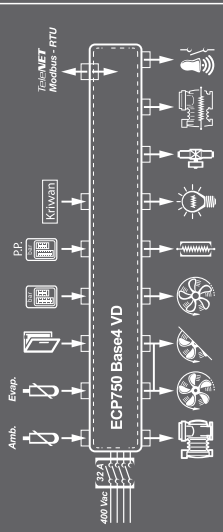
MAIN CHARACTERISTICS

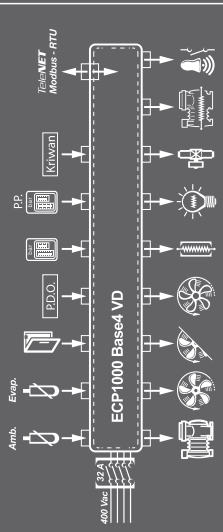
- Direct control of compressor, condenser fans, compressor oil heater, defrosting heaters, evaporator fans, solenoid valve, room light and all standard-compliant electrical protection devices.
- Compact, self-extinguishing ABS housing with IP65 protection rating and frontal circuit-breaker.
- Electronic 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.

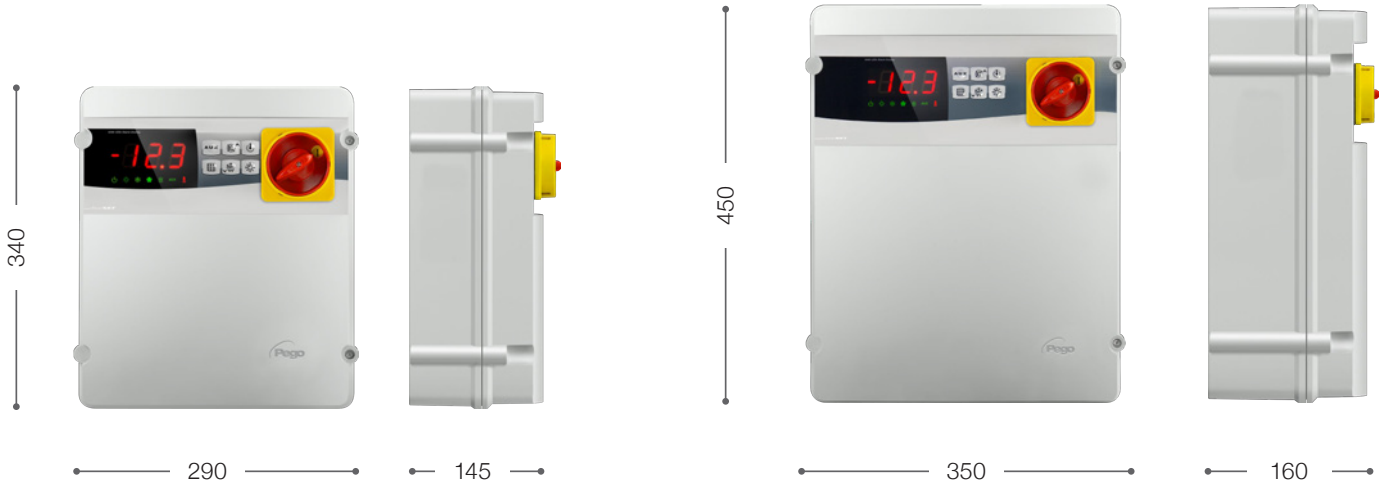
CONNECTION DIAGRAMS











TECHNICAL CHARACTERISTICS	ECP 300 BASE4 VD	ECP 400 BASE4 VD	ECP 750 BASE4 VD	ECP 1000 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	IP65	IP65	IP65	IP65
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 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °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 (1PH)	800 W TOTAL (1PH)	800 W TOTAL (1PH)	2000 W (3PH) OR 1500 W (1PH)
CONDENSER FANS OUTPUT 2 (SEPARATED)		(1PH)	(1PH)	2000 W (3PH) OR 1500 W (1PH)
EVAPORATOR FANS	800 W (1PH)	1500 W (1PH)	1500 W (1PH)	2000 W (3PH) OR 1500 W (1PH)
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	PRESENT	PRESENT	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU

ECP__ BASE4 VDE

ECP 1500 BASE4 VDE | ECP 2000 BASE4 VDE
ECP 2500 BASE4 VDE

A line of control panels for cold rooms with three-phase compressor up to 25 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 25 HP, off-cycle or electrical defrosting.

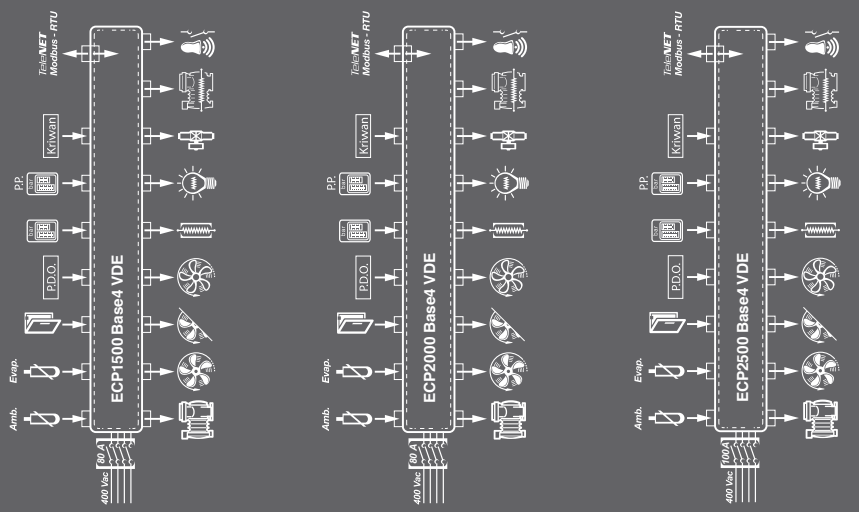
OPTIONS

- 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.
- Protection of the loads and the auxiliary circuit with circuit breakers.
- Selection of functioning mode for the compressor (pump-down / thermostat).
- 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.
- Alarm output with free-voltage contact to activate further warning devices such as siren or dialer.

CONNECTION DIAGRAMS



TECHNICAL CHARACTERISTICS	ECP 1500 BASE4 VDE	ECP 2000 BASE4 VDE	ECP 2500 BASE4 VDE
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	IP65	IP65	IP65
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 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °C
STORAGE TEMPERATURE	-10 ÷ +70 °C	-10 ÷ +70 °C	-10 ÷ +70 °C
RELATIVE AMBIENT HUMIDITY	< 90% RH	< 90% RH	< 90% RH
RANGE OF READING	-45 ÷ +45 °C	-45 ÷ +45 °C	-45 ÷ +45 °C
MAIN SWITCH	80 A	80 A	100 A
COMPRESSOR PROTECTION	MOTOR CIRCUIT BREAKER	MOTOR CIRCUIT BREAKER	MOTOR CIRCUIT BREAKER
PROTECTION	CIRCUIT BREAKERS	CIRCUIT BREAKERS	CIRCUIT BREAKERS
CONTROL	PEGO	PEGO	PEGO
DEFROSTING	ELECTRICAL	ELECTRICAL	ELECTRICAL
INSULATION TRANSFORMER	PRESENT	PRESENT	PRESENT
STATUS INDICATORS	LED + DISPLAY	LED + DISPLAY	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER	LED + BUZZER	LED + BUZZER
INPUT			
AMBIENT PROBE	NTC 10 kΩ	NTC 10 kΩ	NTC 10 kΩ
EVAPORATOR PROBE	NTC 10 kΩ	NTC 10 kΩ	NTC 10 kΩ
DOOR SWITCH	PRESENT	PRESENT	PRESENT
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 CONNECTION FOR CONDENSER/ EVAPORATOR FANS	PRESENT	PRESENT	PRESENT
COMPRESSOR FUNCTIONING MODE SELECTION	PUMP DOWN - THERMOSTAT	PUMP DOWN - THERMOSTAT	PUMP DOWN - THERMOSTAT
OUTPUTS			
COMPRESSOR	7500÷11250 W (10÷15 HP)	11250÷15000 W (15÷20 HP)	15000÷18750 W (20÷25 HP)
CONDENSER FANS (SEPARATED)	2x2000 W (3PH) OR 2x1500 W (1PH)	2x2000 W (3PH) OR 2x1500 W (1PH)	2x2000 W (3PH) OR 2x1500 W (1PH)
EVAPORATOR FANS	2x2000 W (3PH)	3x2000 W (3PH)	3x2000 W (3PH)
DEFROSTING HEATERS	16500 W (AC1)	21000 W (AC1)	27000 W (AC1)
ROOM LIGHT	PRESENT	PRESENT	PRESENT
SOLENOID VALVE	PRESENT	PRESENT	PRESENT
COMPRESSOR OIL HEATER	PRESENT	PRESENT	PRESENT
ALARM RELAY	PRESENT	PRESENT	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU

HYPERANGE _ B6 VEH

HYPERANGE 030 B6 VEH-1 | HYPERANGE 030 B6 VEH-2
HYPERANGE 075 B6 VEH | HYPERANGE 100 B6 VEH

Power and control panel line for refrigeration systems with three-phase compressor up to 10 HP designed for the complete management of the cold room.
The different power ranges combined with the simplicity of configuring the operating modes allow the creation of an ad hoc panel for the system.
The electronic thermal protections make the panel extremely versatile.

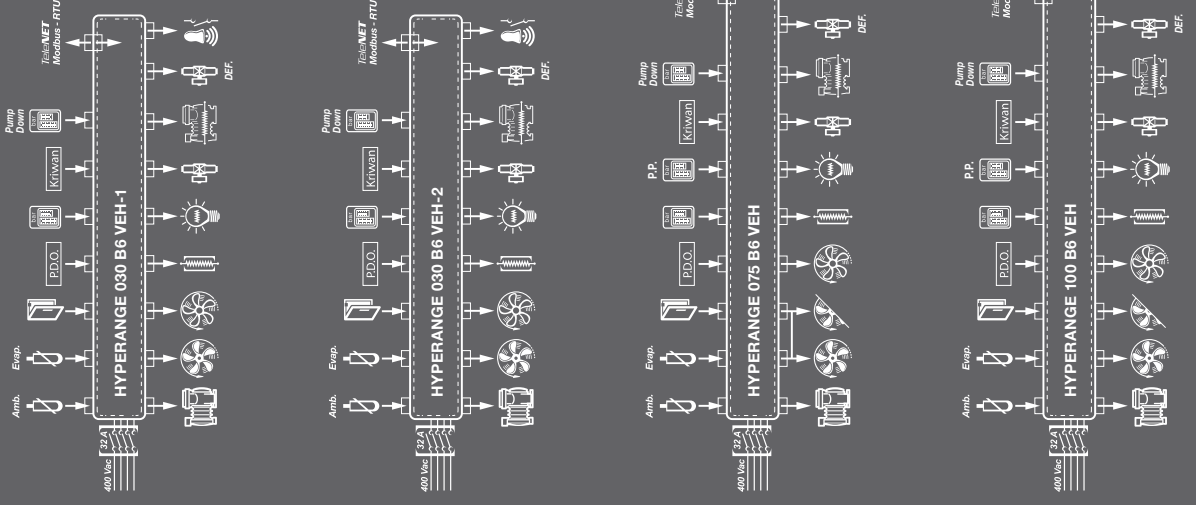
APPLICATIONS

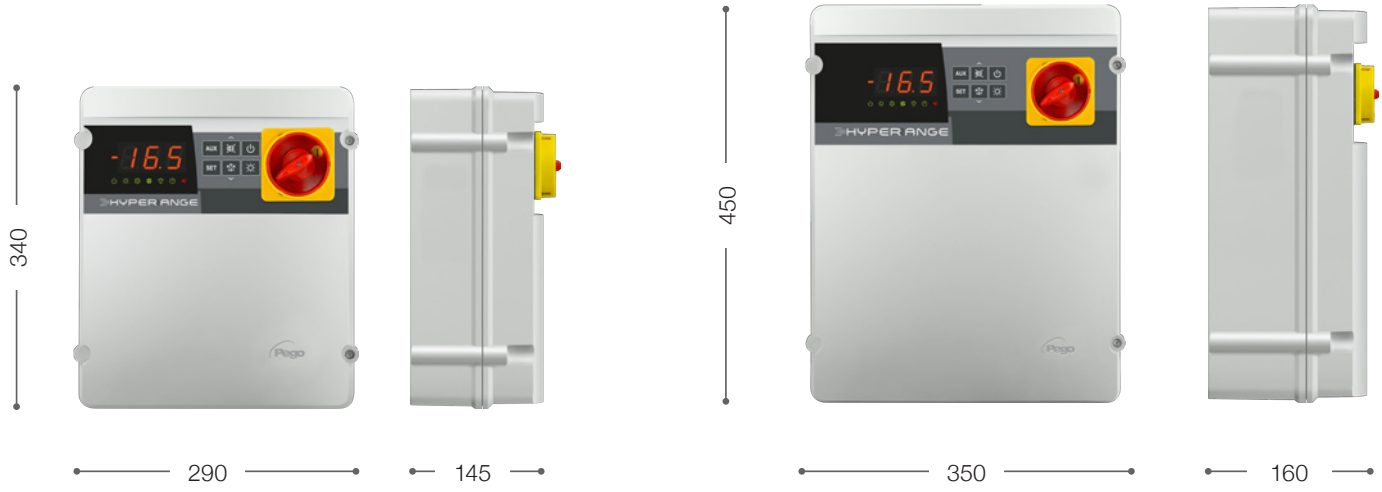
- Complete management of static or ventilated three-phase refrigeration systems up to 10 HP, with off cycle, electric or hot gas defrost, with compressor management with thermostat or pump-down pressure switch.

MAIN CHARACTERISTICS

- Direct management of the compressor, condenser fans, compressor oil heater, defrost heaters, evaporator fans, solenoid valve, cold room light and all the electrical protections required by the regulations.
- Configurable hot gas defrost management
- Configurable pump-down compressor stop management.
- Anti-condensation door heater control.
- Electronic thermal protections for the compressor, for greater versatility
- Configurable digital inputs and outputs
- Compact panel in self-extinguishing ABS with IP65 protection rating and selector switch on the front of the panel.
- Control electronics with large LED display and user-friendly keyboard.
- System status indication with LED icons.
- RS485 for connection to the TeleNET industrial supervision network or Modbus-RTU standard protocol.

CONNECTION DIAGRAMS





TECHNICAL CHARACTERISTICS	HYPERANGE 030 B6-1	HYPERANGE 030 B6-2	HYPERANGE 075 B6	HYPERANGE 100 B6
BOX DIMENSIONS	290 x 340 x 145 mm	290 x 340 x 145 mm	350 x 450 x 160 mm	350 x 450 x 160 mm
WEIGHT	5 kg	6 kg	6 kg	7 kg
PROTECTION RATING	IP65	IP65	IP65	IP65
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 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °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 ÷ +99 °C	-45 ÷ +99 °C	-45 ÷ +99 °C	-45 ÷ +99 °C
DOOR LOCK MAIN SWITCH	16 A	32 A	32 A	32 A
COMPRESSOR PROTECTION	ELECTRONIC THERMAL RELAY	ELECTRONIC THERMAL RELAY	ELECTRONIC THERMAL RELAY	ELECTRONIC THERMAL RELAY
GENERAL PROTECTION	MAGNETOTHERMAL SWITCHES	MAGNETOTHERMAL SWITCHES	MAGNETOTHERMAL SWITCHES	MAGNETOTHERMAL SWITCHES
CONTROL	**PEGO**	**PEGO**	**PEGO**	**PEGO**
DEFROSTING	ELECTRIC / HOT GAS	ELECTRIC / HOT GAS	ELECTRIC / HOT GAS	ELECTRIC / HOT GAS
INSULATION TRANSFORMER	PRESENT	PRESENT	PRESENT	PRESENT
COMPONENT STATUS INDICATORS	LED + DISPLAY	LED + DISPLAY	LED + DISPLAY	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER	LED + BUZZER	LED + BUZZER	LED + BUZZER
INPUTS				
COLD ROOM 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 MICRO-SWITCH	PRESENT	PRESENT	PRESENT	PRESENT
PUMP DOWN PRESSURE SWITCH	PRESENT	PRESENT	PRESENT	PRESENT
HIGH/LOW PRESSURE SWITCH	PRESENT	PRESENT	PRESENT	PRESENT
KRIWAN® CONNECTION	PRESENT	PRESENT	PRESENT	PRESENT
OUTPUTS				
COMPRESSOR	MAX 4 A	MAX 12 A	MAX 16 A	MAX 25 A
CONDENSER FANS OUTPUT 1	500 W (1PH)	500 W (1PH)	800 W TOTAL (1PH)	1500 W (3PH / 1PH)
CONDENSER FANS OUTPUT 2			(1PH)	1500 W (3PH / 1PH)
EVAPORATOR FANS	750 W (1PH)	750 W (1PH)	1100 W (1PH)	1500 W (3PH / 1PH)
DEFROSTING HEATERS	4500 W (AC1)	7500 W (AC1)	10500 W (AC1)	15000 W (AC1)
COLD ROOM LIGHT	PRESENT	PRESENT	PRESENTE	PRESENT
SOLENOID VALVE	PRESENT	PRESENT	PRESENTE	PRESENT
COMPRESSOR OIL HEATER	PRESENT	PRESENT	PRESENTE	PRESENT
DOOR HEATER	PRESENT	PRESENT	PRESENTE	PRESENT
HOT GAS SOLENOID VALVE	PRESENT	PRESENT	PRESENTE	PRESENT
ALARM RELAY	PRESENT	PRESENT	PRESENTE	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU

ECP__ BASE4 U VD

ECP 300 BASE4 U VD | ECP 400 BASE4 U VD
ECP 750 BASE4 U VD | ECP 1000 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.

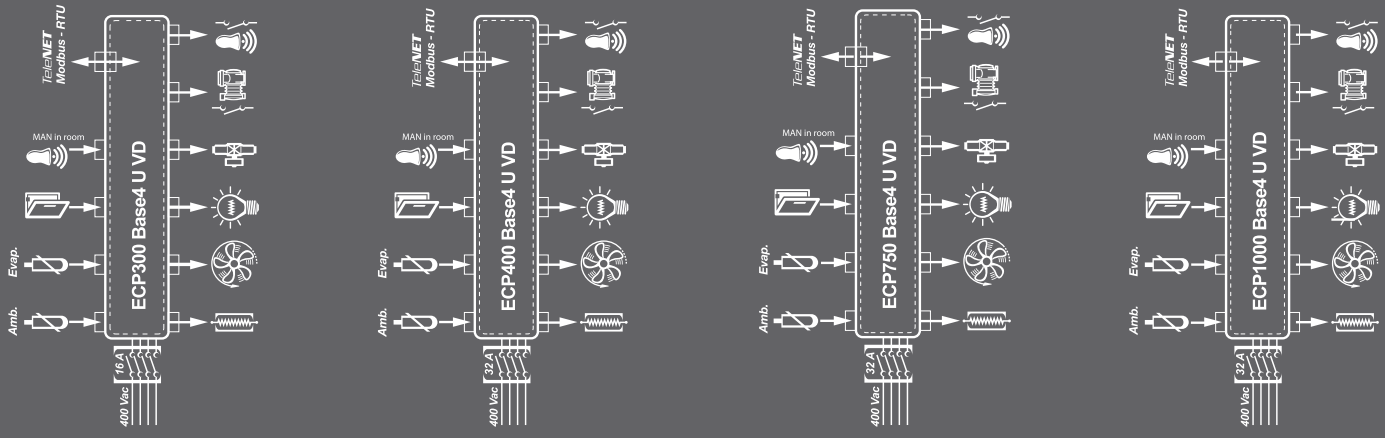
OPTIONS

- Magnetothermic circuit breakers installed instead of fuses.

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	ECP 300 BASE4 U VD	ECP 400 BASE4 U VD	ECP 750 BASE4 U VD	ECP 1000 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	IP65	IP65	IP65	IP65
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 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °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	1500 W (1PH)	1500 W (1PH)	2x2000 W (3PH) OR 2x1500 W (1PH)	3x2000 W (3PH) OR 3x1500 W (1PH)
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	PRESENT	PRESENT	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU

ECP1000 2EV U

A line of power and electronic control panels
to manage 2 three-phase evaporating units
where devices are served by
a compressor rack.

APPLICATIONS

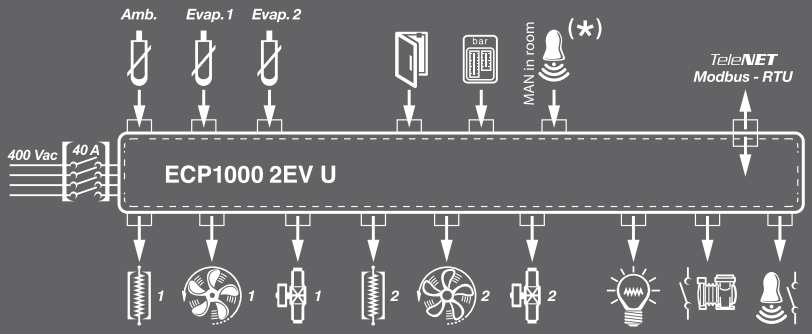
- Control of 2 evaporating units with electrical defrost up to 9 kw.

MAIN CHARACTERISTICS

- Enabling for 2 condensing units, 2 defrosting elements, 2 evaporator fans, 2 solenoid valves, 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 DIAGRAM

(✶) = Configurable function



TECHNICAL CHARACTERISTICS	ECP 1000 2EV U
BOX DIMENSIONS	350 x 450 x 160 mm
WEIGHT	7 kg
PROTECTION RATING	IP65
POWER SUPPLY	400 V AC ±10% 50/60 HZ
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	40 A
GENERAL PROTECTION	FUSES
CONTROL	PEGO
DEFROSTING	ELECTRICAL
INSULATION TRANSFORMER	PRESENT
STATUS INDICATORS	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER
INPUTS	
AMBIENT PROBE	NTC 10 kΩ
EVAPORATOR PROBE 1	NTC 10 kΩ
EVAPORATOR PROBE 2	NTC 10 kΩ
DOOR SWITCH	PRESENT
MAN IN COLD-ROOM ALARM	PRESENT
OUTPUTS	
EVAPORATOR FANS 1	1500 W (1PH)
EVAPORATOR FANS 2	1500 W (1PH)
DEFROSTING HEATER 1	9000 W
DEFROSTING HEATER 2	9000 W
SOLENOID VALVE 1	PRESENT
SOLENOID VALVE 2	PRESENT
ROOM LIGHT	800 W (AC1) resistive load
ENABLE CONDENSING UNIT	PRESENT
ALARM RELAY	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU

ECP1000 2EV U CR

ECP 1000 2EV U CR 01 | ECP 1000 2EV U CR 02

A line of power and electronic control panels to manage 2 three-phase evaporating units to be linked to an out-of-room control unit. Controls and powers the 2 evaporator fans, 2 solenoid valves, 2 defrost elements managed by means of fans and defrost call enabling from out-of-room control unit.

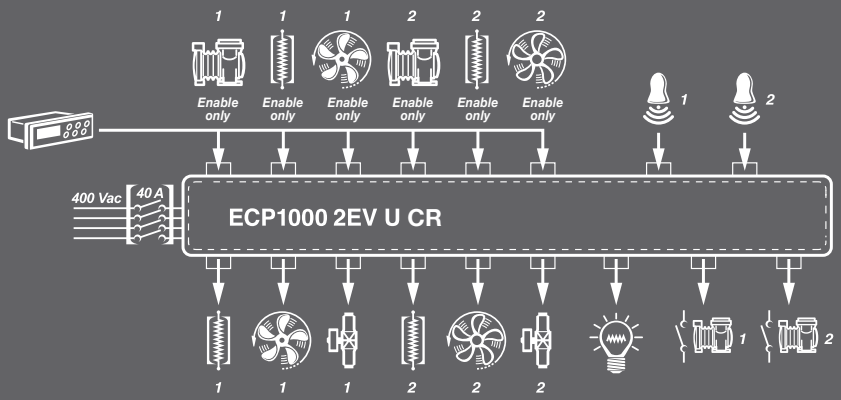
APPLICATIONS

- Control of 2 evaporating units with electrical defrost up to 9 kw, linked to an out-of-room control unit.

MAIN CHARACTERISTICS

- Direct control of 2 defrost elements, 2 evaporator fans, 2 solenoid valves 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.
- Can be controlled by thermostat, thermo- regulator or out-of-room control unit.
- Can house thermo-regulator on front of panel.

CONNECTION DIAGRAM



TECHNICAL CHARACTERISTICS	ECP 1000 2EV U CR 01	ECP 1000 2EV U CR 02
BOX DIMENSIONS	350 x 450 x 160 mm	350 x 450 x 160 mm
WEIGHT	7 kg	7 kg
PROTECTION RATING	IP65	IP65
POWER SUPPLY (3PH+N+E)	400 V AC ±10% 50/60 HZ	400 V AC ±10% 50/60 HZ
LOAD TYPE	THREE-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
RANGE OF READING	-45 ÷ +45 °C	-45 ÷ +45 °C
MAIN SWITCH	40 A	40 A
GENERAL PROTECTION	FUSES	MAGNETOTHERMAL SWITCHES
CONTROL COMPRESSOR 1 CONTROL DEFROST 1 CONTROL FANS 1 CONTROL COMPRESSOR 2 CONTROL DEFROST 2 CONTROL FANS 2	EXTERNAL ON/OFF EXTERNAL ON/OFF EXTERNAL ON/OFF EXTERNAL ON/OFF EXTERNAL ON/OFF EXTERNAL ON/OFF	EXTERNAL ON/OFF EXTERNAL ON/OFF EXTERNAL ON/OFF EXTERNAL ON/OFF EXTERNAL ON/OFF EXTERNAL ON/OFF
DEFROSTING	ELECTRICAL	ELECTRICAL
INSULATION TRANSFORMER	PRESENT	PRESENT
STATUS INDICATORS	LED	LED
ALARM SIGNALS	LED	LED
INPUTS		
COMPRESSOR 1 DEFROST 1 EVAPORATOR FANS 1 COMPRESSOR 2 DEFROST 2 EVAPORATOR FANS 2	ENABLE ONLY ENABLE ONLY ENABLE ONLY ENABLE ONLY ENABLE ONLY ENABLE ONLY	ENABLE ONLY ENABLE ONLY ENABLE ONLY ENABLE ONLY ENABLE ONLY ENABLE ONLY
OUTPUTS		
EVAPORATOR FANS 1	1500 W (1PH)	1500 W (1PH)
EVAPORATOR FANS 2	1500 W (1PH)	1500 W (1PH)
DEFROSTING HEATER 1	9000 W (AC1)	9000 W (AC1)
DEFROSTING HEATER 2	9000 W (AC1)	9000 W (AC1)
SOLENOID VALVE 1	PRESENT	PRESENT
SOLENOID VALVE 2	PRESENT	PRESENT
ROOM LIGHT	PRESENT	PRESENT
ENABLE CONDENSING UNIT 1	PRESENT	PRESENT
ENABLE CONDENSING UNIT 2	PRESENT	PRESENT
DOOR HEATER	PRESENT	PRESENT

ECP__ BASE4 U VDE

ECP 7.5 BASE4 U VDE | ECP 15 BASE4 U VDE
ECP 19.5 BASE4 U VDE

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.

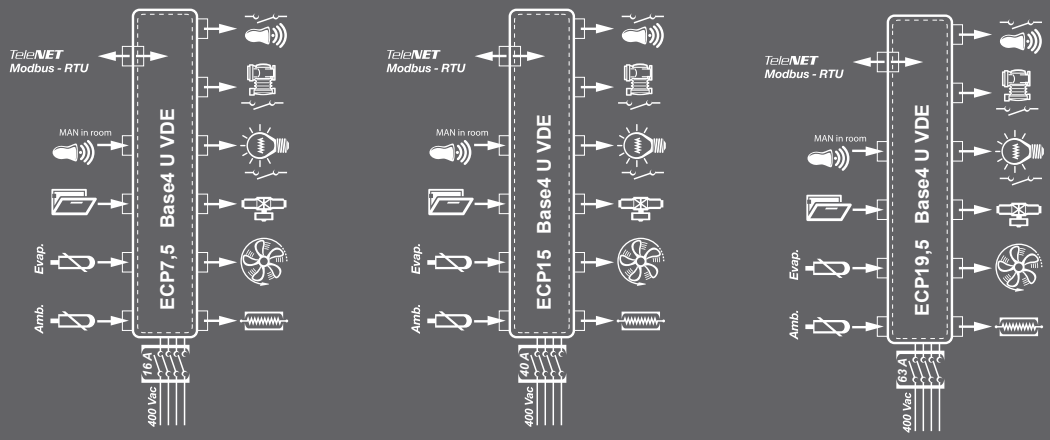
APPLICATIONS

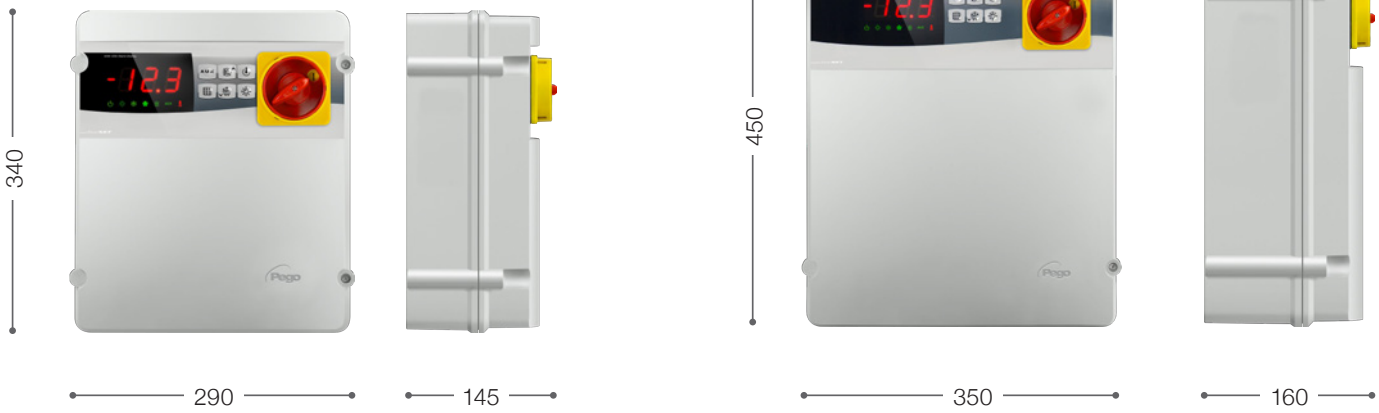
- Control of evaporating unit only with electrical defrost up to 21 kW.

MAIN CHARACTERISTICS

- Protection of the loads and the auxiliary circuit with circuit breakers.
- 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.
- Free-voltage contact alarm output to activate other warning devices such as sirens or dialers.

CONNECTION DIAGRAMS





TECHNICAL CHARACTERISTICS	ECP 7.5 BASE4 U VDE	ECP 15 BASE4 U VDE	ECP 19.5 BASE4 U VDE
BOX DIMENSIONS	290 x 340 x 145 mm	350 x 450 x 160 mm	350 x 450 x 160 mm
WEIGHT	6 kg	6 kg	7 kg
PROTECTION RATING	IP65	IP65	IP65
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 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °C
STORAGE TEMPERATURE	-10 ÷ +70 °C	-10 ÷ +70 °C	-10 ÷ +70 °C
RELATIVE AMBIENT HUMIDITY	< 90% RH	< 90% RH	< 90% RH
RANGE OF READING	-45 ÷ +45 °C	-45 ÷ +45 °C	-45 ÷ +45 °C
MAIN SWITCH	16 A	40 A	63 A
PROTECTION	CIRCUIT BREAKERS	CIRCUIT BREAKERS	CIRCUIT BREAKERS
CONTROL	PEGO	PEGO	PEGO
DEFROSTING	ELECTRICAL	ELECTRICAL	ELECTRICAL
INSULATION TRANSFORMER	PRESENT	PRESENT	PRESENT
STATUS INDICATORS	LED + DISPLAY	LED + DISPLAY	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER	LED + BUZZER	LED + BUZZER
INPUTS			
AMBIENT PROBE	NTC 10 kΩ	NTC 10 kΩ	NTC 10 kΩ
EVAPORATOR PROBE	NTC 10 kΩ	NTC 10 kΩ	NTC 10 kΩ
DOOR SWITCH	PRESENT	PRESENT	PRESENT
MAN IN COLD-ROOM ALARM	AVAILABLE	AVAILABLE	AVAILABLE
OUTPUTS			
EVAPORATOR FANS	800 W (1PH)	2x2000 W (3PH)	3x2000 W (3PH)
DEFROSTING HEATERS	7500 W (2500 W x 3, AC1)	16500 W (5500 W x 3, AC1)	21000 W (7000 W x 3, AC1)
ROOM LIGHT	PRESENT	PRESENT	PRESENT
SOLENOID VALVE	PRESENT	PRESENT	PRESENT
ENABLE CONDENSING UNIT	PRESENT	PRESENT	PRESENT
ALARM RELAY	PRESENT	PRESENT	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU

ECP__ BASE4 U VDE

ECP 25 BASE4 U VDE | ECP 36 BASE4 U VDE

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.

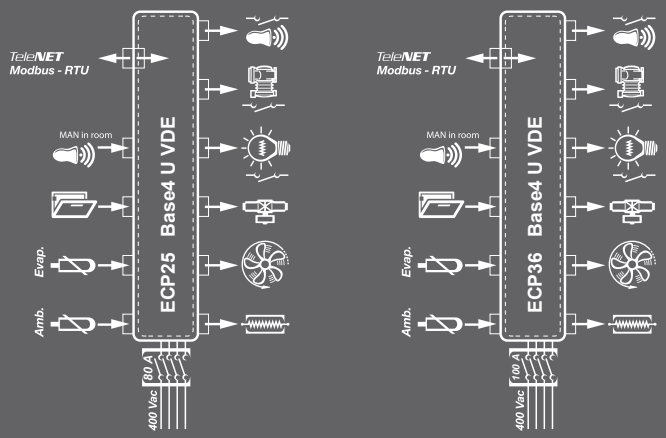
APPLICATIONS

- Control of evaporating unit only with electrical defrost up to 42 kW.

MAIN CHARACTERISTICS

- Protection of the loads and the auxiliary circuit with circuit breakers.
- 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.
- Free-voltage contact alarm output to activate other warning devices such as sirens or dialers.

CONNECTION DIAGRAMS



TECHNICAL CHARACTERISTICS	ECP 25 BASE4 U VDE	ECP 36 BASE4 U VDE
BOX DIMENSIONS	470 x 650 x 210 mm	470 x 650 x 210 mm
WEIGHT	20 kg	20 kg
PROTECTION RATING	IP65	IP65
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	-10 ÷ +70 °C	-10 ÷ +70 °C
RELATIVE AMBIENT HUMIDITY	< 90% RH	< 90% RH
RANGE OF READING	-45 ÷ +45 °C	-45 ÷ +45 °C
MAIN SWITCH	80 A	100 A
PROTECTION	CIRCUIT BREAKERS	CIRCUIT BREAKERS
CONTROL	PEGO	PEGO
DEFROSTING	ELECTRICAL	ELECTRICAL
INSULATION TRANSFORMER	PRESENT	PRESENT
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	NTC 10 kΩ
DOOR SWITCH	PRESENT	PRESENT
MAN IN COLD-ROOM ALARM	AVAILABLE	AVAILABLE
OUTPUTS		
EVAPORATOR FANS	4x2500 W (3PH)	4x2500 W (3PH)
DEFROSTING HEATERS	30000 W (AC1) (10000 W x 3, AC1)	42000 W (14000 W x 3, AC1)
ROOM LIGHT	PRESENT	PRESENT
SOLENOID VALVE	PRESENT	PRESENT
ENABLE CONDENSING UNIT	PRESENT	PRESENT
ALARM RELAY	PRESENT	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU	TELENET / MODBUS-RTU

ECP__ BASE STEPPER U VDE

ECP 16 BASE STEPPER U VDE | ECP 21 BASE STEPPER U VDE
ECP 30 BASE STEPPER U VDE | ECP 42 BASE STEPPER U VDE

Line of electrical panels, with power and control of the stepper electronic expansion valve (stepper motor), dedicated to the management of the three-phase evaporating unit.

iCastel

STEP MOTOR EXPANSION VALVES
PAGES 160-161

APPLICATIONS

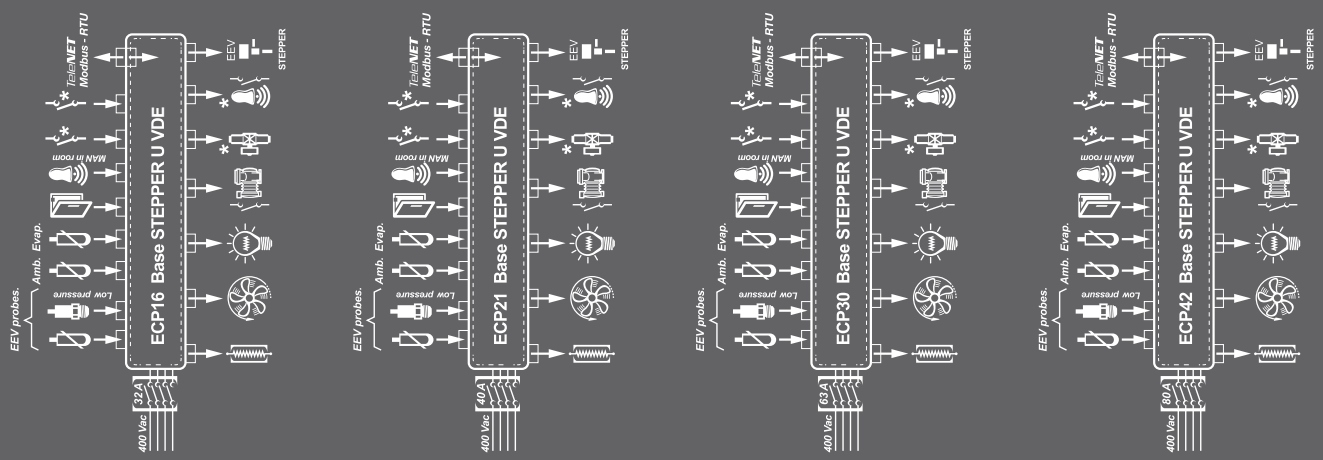
- Control of the evaporating unit, with electrical defrost up to 42 kW.
- Management of the motorized bipolar expansion valve.

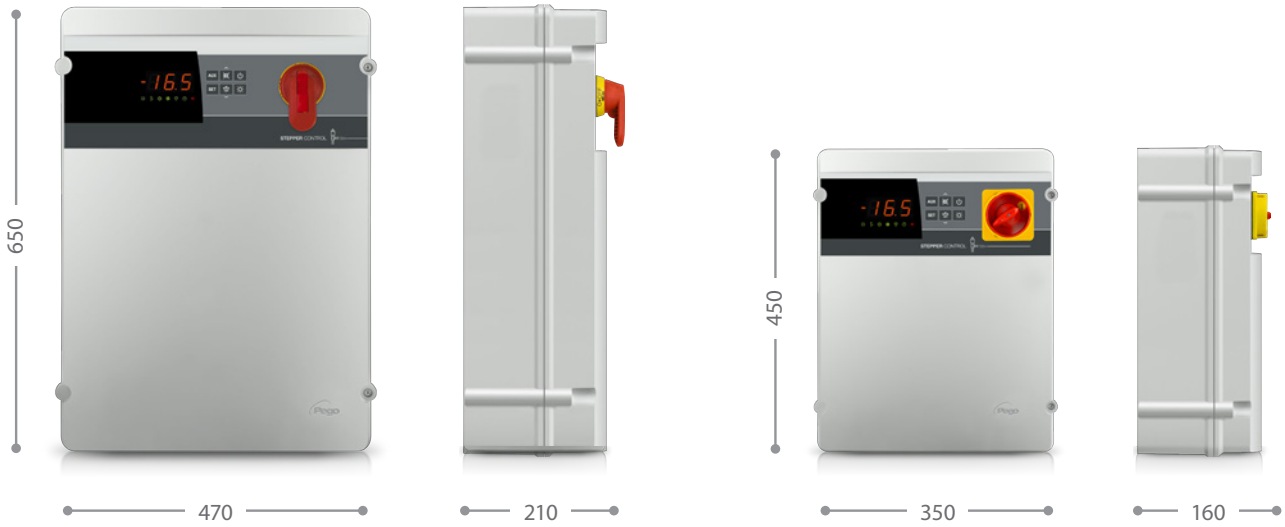
MAIN CHARACTERISTICS

- Driver for the motorized electronic valve integrated in the cold room control.
- Single display for complete cold room management.
- Connectable to any type of stepper valve on the market.
- Including parameters self-configuration table based on the brand and model of the valve.
- Internal USB port for updates with new refrigerant gases.
- Enabling for condensing unit, defrost heaters, evaporator fans, solenoid valve, cold room light and presence of all the electrical protections required by regulations.
- Protection of the loads and of the auxiliary circuit with circuit breakers.
- Compact, self-extinguishing abs housing with IP65 protection rating and circuit breaker on the front of the panel.
- Electronic control with large LED display and easy-to-use keyboard.
- LED system status indicators.
- RS485 serial port for connection to the TeleNET industrial supervision network or standard Modbus-RTU protocol.
- Alarm output with voltage-free contact to activate other warning devices such as sirens or telephone dialer.

CONNECTION DIAGRAMS

(*) = Configurable function





TECHNICAL CHARACTERISTICS	ECP 16 BASE STEPPER U VDE	ECP 21 BASE STEPPER U VDE	ECP 30 BASE STEPPER U VDE	ECP 42 BASE STEPPER U VDE
BOX DIMENSIONS	350x450x160 mm	350x450x160 mm	470x650x210 mm	470x650x210 mm
WEIGHT	9 kg	10 kg	19 kg	20 kg
PROTECTION RATING	IP65	IP65	IP65	IP65
POWER SUPPLY (3PH + N + E)	400 V AC ±10% 50/60 Hz			
LOAD TYPE	THREE-PHASE	THREE-PHASE	THREE-PHASE	THREE-PHASE
WORKING TEMPERATURE	-5 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °C
STORAGE TEMPERATURE	-10 ÷ +70 °C	-10 ÷ +70 °C	-10 ÷ +70 °C	-10 ÷ +70 °C
RELATIVE AMBIENT HUMIDITY	30% - 90% RH without condensate	30% - 90% RH without condensate	30% - 90% RH without condensate	30% - 90% RH without condensate
READING REANGE	-45 ÷ +99 °C	-45 ÷ +99 °C	-45 ÷ +99 °C	-45 ÷ +99 °C
MAGNETOTHERMIC GENERAL PROTECTION	4 POLES 32 A	4 POLES 40 A	4 POLES 63 A	4 POLES 80 A
ROOM LIGHT PROTECTION	DIFFERENTIAL MAGNETOTHERMIC CIRCUIT BREAKER (optional)			
CONTROL	PEGO STEPPER	PEGO STEPPER	PEGO STEPPER	PEGO STEPPER
INSULATION TRANSFORMER	PRESENT	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 / PTC / PT1000	NTC 10 KΩ / PTC / PT1000	NTC 10 KΩ / PTC / PT1000	NTC 10 KΩ / PTC / PT1000
SUCTION PROBE	NTC 10 kΩ	NTC 10 kΩ	NTC 10 kΩ	NTC 10 kΩ
EVAPORATION PRESSURE PROBE (not included)	4 - 20 mA	4 - 20 mA	4 - 20 mA	4 - 20 mA
DOOR SWITCH	PRESENT	PRESENT	PRESENT	PRESENT
MAN IN COLD-ROOM ALARM	AVAILABLE	AVAILABLE	AVAILABLE	AVAILABLE
OUTPUTS				
EVAPORATOR FANS	2 X 1500 W	3 X 1500 W	4 X 2500 W	4 X 2500 W
DEFROSTING HEATERS	16,5 kW (3 X 5500) Balanced resistive load	21 kW (3 X 7000) Balanced resistive load	30 kW (3 x 10000) Balanced resistive load	42 kW (3 x 14000) Balanced resistive load
ROOM LIGHT	PRESENT	PRESENT	PRESENT	PRESENT
ENABLE CONDENSING UNIT	PRESENT	PRESENT	PRESENT	PRESENT
CONFIGURABLE RELAY (alarm AUX)	PRESENT	PRESENT	PRESENT	PRESENT
STEPPER VALVE OUTPUT	BIPOLAR	BIPOLAR	BIPOLAR	BIPOLAR
SUPERVISION SYSTEM	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.

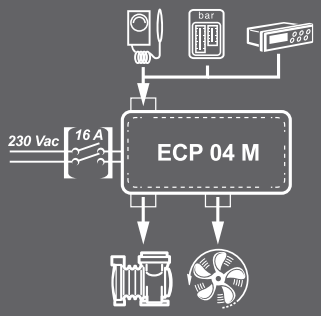
APPLICATIONS

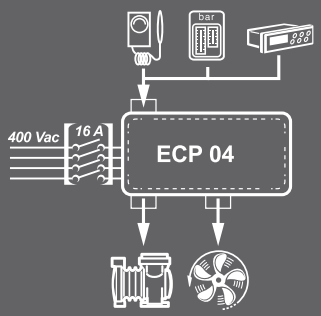
- **ECP 04 M** Control of condensing unit with single-phase compressor up to 2 HP.
- **ECP 04** Control of condensing unit with three-phase compressor up to 3 HP.

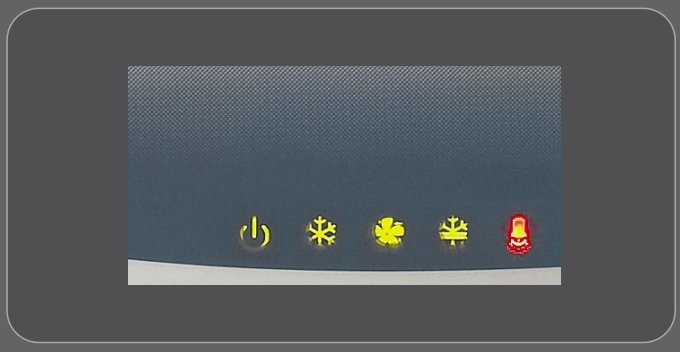
MAIN CHARACTERISTICS

- 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	210 x 260 x 145 mm	210 x 260 x 145 mm
WEIGHT	4 kg	4 kg
PROTECTION RATING	IP65	IP65
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 ÷ +40 °C	-5 ÷ +40 °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 (2HP) (1PH)	2200 W (3HP) (3PH)
CONDENSER FANS	800 W (1 PH)	800 W (1PH)

ECP 07 10 15 20

ECP 07 | ECP 10 | ECP 15 | ECP 20

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.

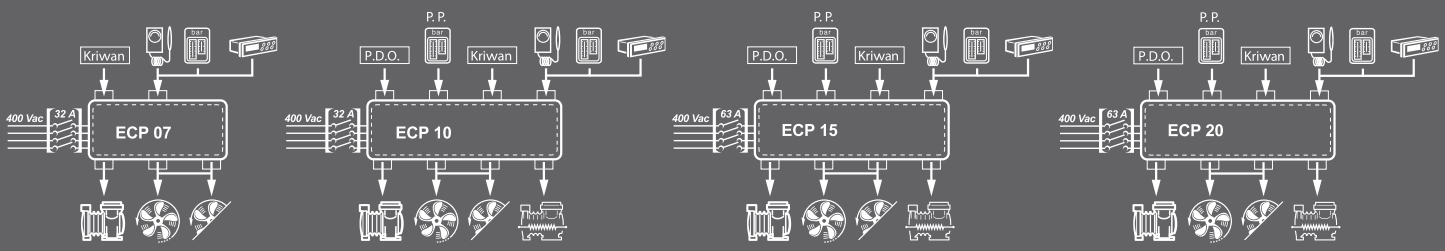
APPLICATIONS

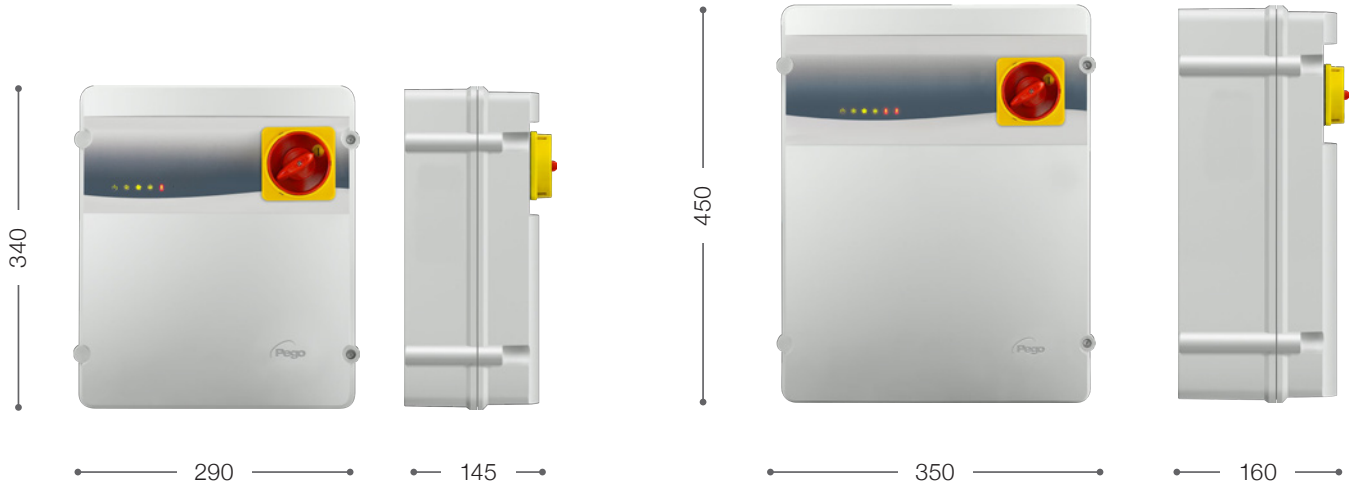
- **ECP 07** Control of condensing unit with three-phase compressor up to 7 HP.
- **ECP 10** Control of condensing unit with three-phase compressor up to 10 HP.
- **ECP 15** Control of condensing unit with three-phase compressor up to 15 HP.
- **ECP 20** Control of condensing unit with three-phase compressor 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	ECP 20
BOX DIMENSIONS	290 x 340 x 145 mm		290 x 340 x 145 mm	350 x 450 x 160 mm	350 x 450 x 160 mm
WEIGHT	4 kg		6 kg	7 kg	7 kg
PROTECTION RATING	IP65		IP65	IP65	IP65
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 ÷ +40 °C		-5 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °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	32 A		32 A	63 A	63 A
OVERLOAD PROTECTION	THERMAL RELAY		THERMAL RELAY	THERMAL RELAY	THERMAL RELAY
GENERAL PROTECTION	FUSES		FUSES	FUSES	FUSES
CONTROL	EXTERNAL PRESSURE SWITCH		EXTERNAL PRESSURE SWITCH	EXTERNAL PRESSURE SWITCH	EXTERNAL PRESSURE SWITCH
PUMP-DOWN STOP	PRESENT		PRESENT	PRESENT	PRESENT
INSULATION TRANSFORMER	PRESENT		PRESENT	PRESENT	PRESENT
STATUS INDICATORS	LED		LED	LED	LED
INPUTS					
THERMOSTAT OR PRESSURE SWITCH	PRESENT		PRESENT	PRESENT	PRESENT
OIL DIFFERENTIAL PRESSURE SWITCH			PRESENT	PRESENT	PRESENT
KRIWAN® CONNECTION	PRESENT		PRESENTE	PRESENTE	PRESENT
CONDENSER FANS REGULATOR PRESS. SWITCH (R.P.S.)			PRESENT	PRESENT	PRESENT
OUTPUTS					
COMPRESSOR	2200÷5500 W (3÷7 HP)		5500÷7500 W (7÷10 HP)	7500÷11250 W (10÷15 HP)	11250÷15000 W (15÷20 HP)
CONDENSER FANS OUTPUT 1	800 W (1PH) TOTAL	(1PH)	2000 W (3PH) OR 1500 W (1PH)	2000 W (3PH) OR 1500 W (1PH)	2000 W (3PH) OR 1500 W (1PH)
CONDENSER FANS OUTPUT 2 (SEPARATED)		(1PH)	2000 W (3PH) OR 1500 W (1PH)	2000 W (3PH) OR 1500 W (1PH)	2000 W (3PH) OR 1500 W (1PH)
COMPRESSOR OIL HEATER			PRESENT	PRESENT	PRESENT

ECP 30

ECP 30

A simple, compact solution for control of three-phase condensing units up to 30 HP.
The call can be generated by pressure switch (compressor shutdown in pump-down mode), thermostat or clean contact.

Available version with PWS compressor.

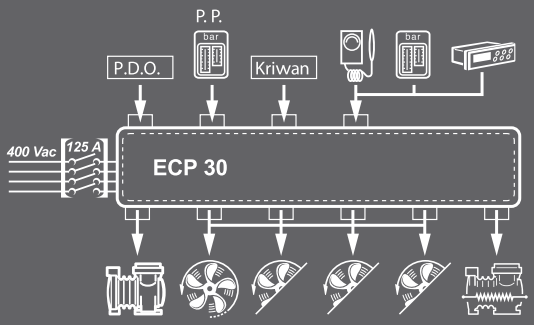
APPLICATIONS

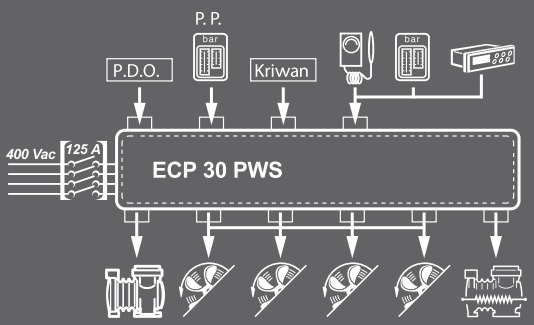
- Control of condensing unit with three-phase compressor up to 30 HP.

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 30	ECP 30 PWS
BOX DIMENSIONS	470 x 650 x 210 mm	470 x 650 x 210 mm
WEIGHT	10 kg	10 kg
PROTECTION RATING	IP65	IP65
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	-10 ÷ +70 °C	-10 ÷ +70 °C
RELATIVE AMBIENT HUMIDITY	< 90% RH	< 90% RH
MAIN SWITCH	125 A	125 A
OVERLOAD PROTECTION	MOTOR CIRCUIT BREAKER	MOTOR CIRCUIT BREAKER
GENERAL PROTECTION	CIRCUIT BREAKERS	CIRCUIT BREAKERS
CONTROL	EXTERNAL PRESSURE SWITCH	EXTERNAL PRESSURE SWITCH
PUMP-DOWN STOP	PRESENT	PRESENT
INSULATION TRANSFORMER	PRESENT	PRESENT
STATUS INDICATORS	LED	LED
INPUTS		
THERMOSTAT OR PRESSURE SWITCH	PRESENT	PRESENT
OIL DIFFERENTIAL PRESSURE SWITCH	PRESENT	PRESENT
KRIWAN® CONNECTION	PRESENT	PRESENT
CONDENSER FANS REGULATOR PRESS. SWITCH (R.P.S.)	PRESENT	PRESENT
OUTPUTS		
COMPRESSOR	15000 ÷ 22400 W (20÷30 HP)	PWS 15000 ÷ 22400 W (20÷30 HP)
CONDENSER FANS OUTPUT 1	2000 W (3PH) OR 1500 W (1PH)	SEPARATED 2000 W (3PH) OR 1500 W (1PH)
CONDENSER FANS OUTPUT 2	SEPARATED 2000 W (3PH) OR 1500 W (1PH)	SEPARATED 2000 W (3PH) OR 1500 W (1PH)
CONDENSER FANS OUTPUT 3	SEPARATED 2000 W (3PH) OR 1500 W (1PH)	SEPARATED 2000 W (3PH) OR 1500 W (1PH)
CONDENSER FANS OUTPUT 4	SEPARATED 2000 W (3PH) OR 1500 W (1PH)	SEPARATED 2000 W (3PH) OR 1500 W (1PH)
COMPRESSOR OIL HEATER	PRESENT	PRESENT

ECP__ VD

ECP 300 VD | ECP 400 VD
ECP 750 VD | ECP 1000 VD

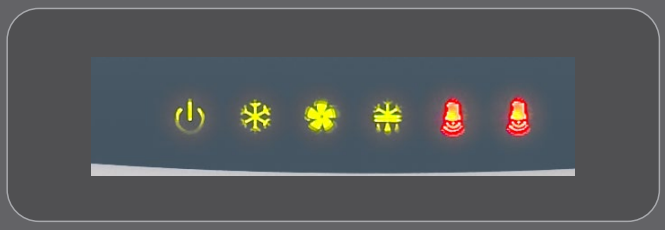
A line of power boards for refrigeration systems with three-phase compressors up to 10 HP to be linked to a thermostat, thermo-regulator or out-of-room control unit.
An electromechanical timer is incorporated for timed defrosts.

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

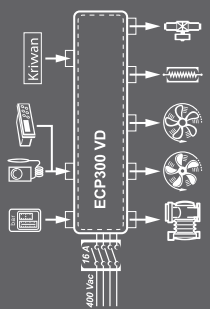
- Installation of magnetothermic circuit breakers instead of fuses.
- Compressor shutdown in pump-down mode.

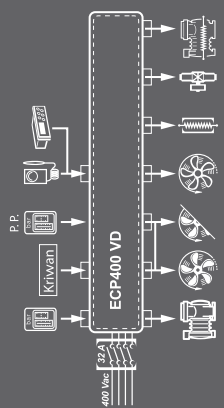


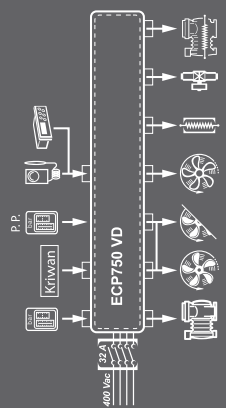
MAIN CHARACTERISTICS

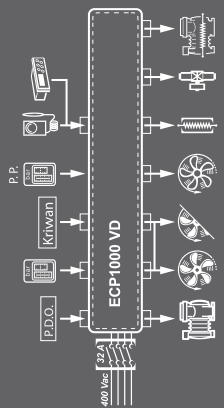
- Enabling for motor condenser unit, defrosting elements, evaporator fans, solenoid valve, room light, door element and all standard-compliant electrical safeguards.
- Compact unit with self-extinguishing ABS housing panel and IP65 protection rating plus circuit breaker on front of panel.
- Electromechanical 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.

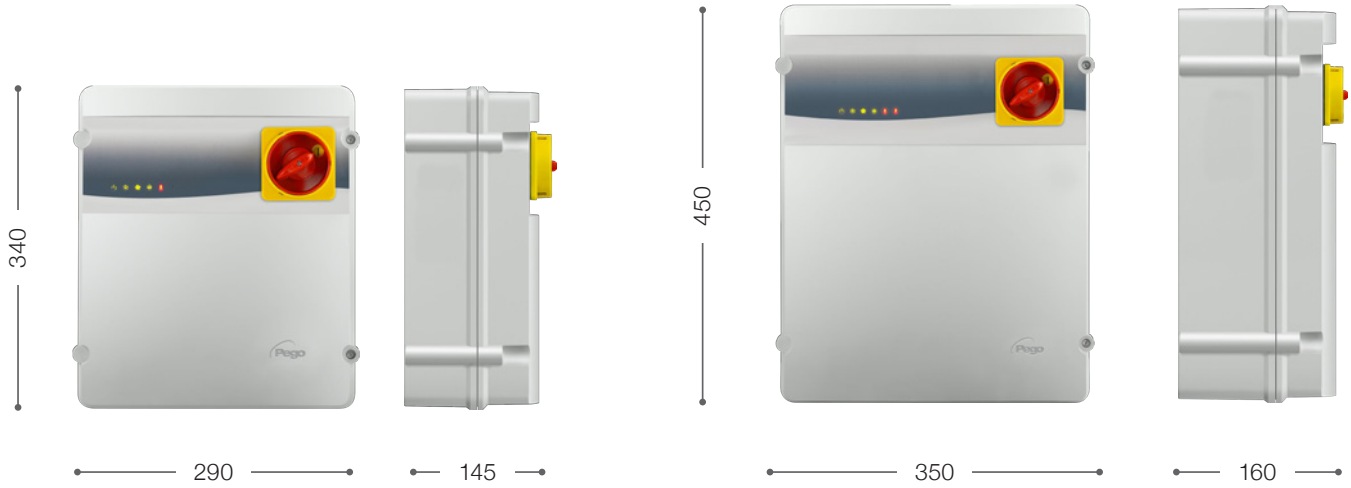
CONNECTION DIAGRAMS









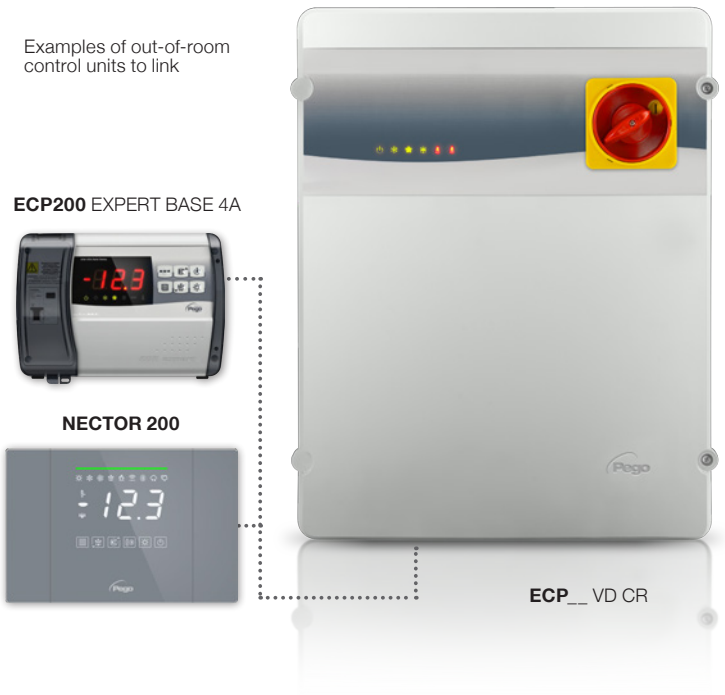


TECHNICAL CHARACTERISTICS	ECP 300 VD	ECP 400 VD	ECP 750 VD	ECP 1000 VD
BOX DIMENSIONS	290 x 340 x 145 mm	350 x 450 x 160 mm	350 x 450 x 160 mm	350 x 450 x 160 mm
WEIGHT	5 kg	6 kg	6 kg	7 kg
PROTECTION RATING	IP65	IP65	IP65	IP65
POWER SUPPLY	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz
LOAD TYPE	THREE-PHASE	THREE-PHASE	THREE-PHASE	THREE-PHASE
WORKING TEMPERATURE	-5 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °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 (1PH)	800 W (1PH) TOTAL (1PH)	800 W (1PH) TOTAL (PH)	2000 W (3PH) OR 1500 W (1PH)
CONDENSER FANS OUTPUT 2 (SEPARATED)		(1PH)	(1PH)	2000 W (3PH) OR 1500 W (1PH)
EVAPORATOR FANS	800 W (1PH)	1500 W (1PH)	1500 W (1PH)	2000 W (3PH) OR 1500 W (1PH)
DEFROSTING HEATERS	4000 W (AC1)	7500 W (AC1)	9000 W (AC1)	12000 W (AC1)
SOLENOID VALVE	PRESENT	PRESENT	PRESENT	PRESENT
COMPRESSOR OIL HEATER		PRESENT	PRESENT	PRESENT

ECP__ VD CR

ECP 300 VD CR | ECP 400 VD CR
ECP 750 VD CR | ECP 1000 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.

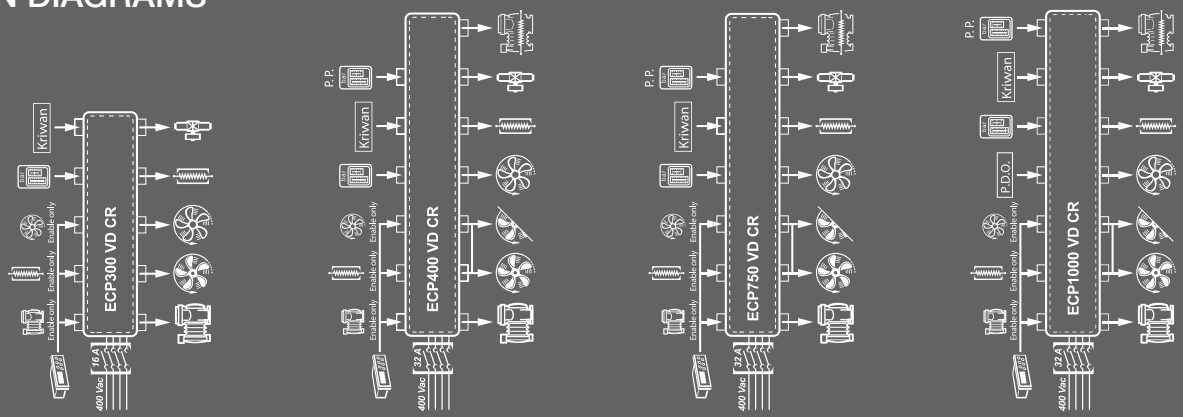
OPTIONS

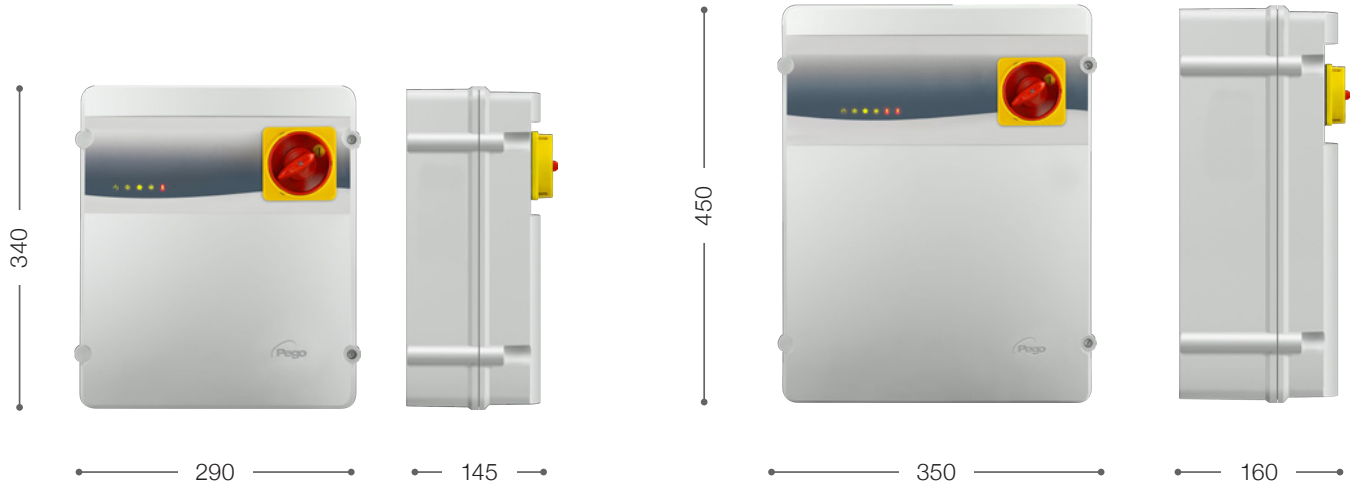
- Installation of magnetothermic circuit breakers instead of fuses.
- Compressor shutdown in pump-down mode.
- Datalogger function with PLUSR200 EXPERT CR out-of-room controller for temperature and alarms registration.

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.
- 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		ECP 300 VD CR	ECP 400 VD CR	ECP 750 VD CR	ECP 1000 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		IP65	IP65	IP65	IP65
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 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °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 (1PH)	800 W (1PH) TOTAL	(1PH)	800 W (1PH) TOTAL	(1PH)	2000 W (3PH) OR 1500 W (1PH)
CONDENSER FANS OUTPUT 2 (SEPARATED)				(1PH)		(1PH)	2000 W (3PH) OR 1500 W (1PH)
EVAPORATOR FANS		800 W (1PH)	1500 W (1PH)		1500 W (1PH)		2000 W (3PH) OR 1500 W (1PH)
DEFROSTING HEATERS		4000 W (AC1)	7500 W (AC1)		9000 W (AC1)		12000 W (AC1)
SOLENOID VALVE		PRESENT	PRESENT		PRESENT		PRESENT
COMPRESSOR OIL HEATER			PRESENT		PRESENT		PRESENT

ECP 2000 VD CR

ECP 1500 VD CR | ECP 2000 VD CR
ECP 2500 VD CR

A line of power and control panels for refrigeration systems with three-phase compressor up to 25 HP to be linked with an out-of-room control unit (i.e. ECP200 Base4A or EXPERT NANO 4CK). 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

NECTOR 200

ECP2000 VD CR

APPLICATIONS

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

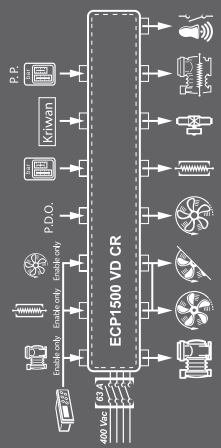
OPTIONS

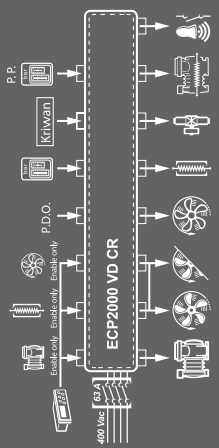
- Compressor shutdown in pump-down mode.
- Datalogger function with external control panel PLUSR200 EXPERT CR for temperatures and alarms recording.

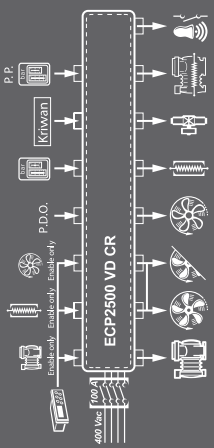
MAIN CHARACTERISTICS

- 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		ECP 1500 VD CR	ECP 2000 VD CR	ECP 2500 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		IP65	IP65	IP65
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 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °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)		2x2000 W (3PH) OR 2x1500 W (1PH)	2x2000 W (3PH) OR 2x1500 W (1PH)	2x2000 W (3PH) OR 2x1500 W (1PH)
EVAPORATOR FANS		2x2000 W (3PH)	3x2000 W (3PH)	3x2000 W (3PH)
DEFROSTING HEATERS		16500 W (AC1)	21000 W (AC1)	27000 W (AC1)
SOLENOID VALVE		PRESENT	PRESENT	PRESENT
COMPRESSOR OIL HEATER		PRESENT	PRESENT	PRESENT
ALARM RELAY		PRESENT	PRESENT	PRESENT

ECP__ U VDE CR

ECP 7.5 U VDE CR | ECP 15 U VDE CR
ECP 19.5 U VDE CR

A line of power 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.

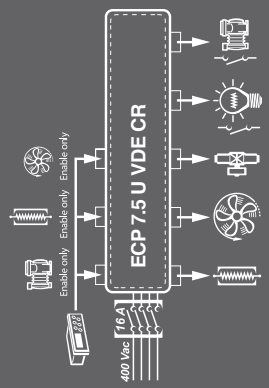
APPLICATIONS

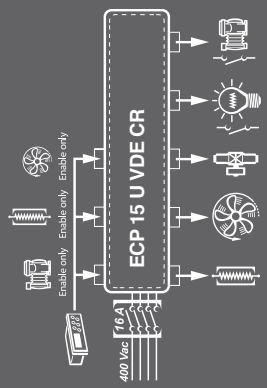
- Control of evaporating unit only with electrical defrost up to 21 kW.

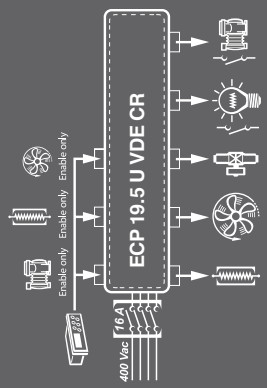
MAIN CHARACTERISTICS

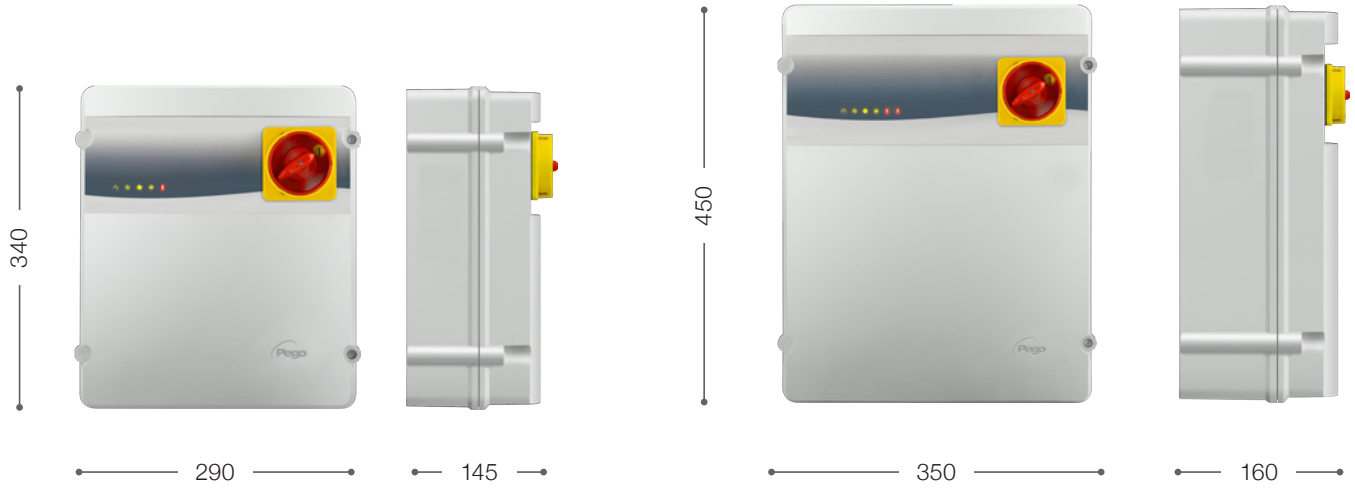
- Protection of the loads and the auxiliary circuit with circuit breakers.
- Enabling for condensing unit, defrosting elements, evaporator fans, solenoid valve, room light and all standard-compliant electrical safeguards.
- Compact, self-extinguishing ABS housing with IP65 protection rating and circuit breaker on front of panel.
- LED system status indicators.

CONNECTION DIAGRAMS







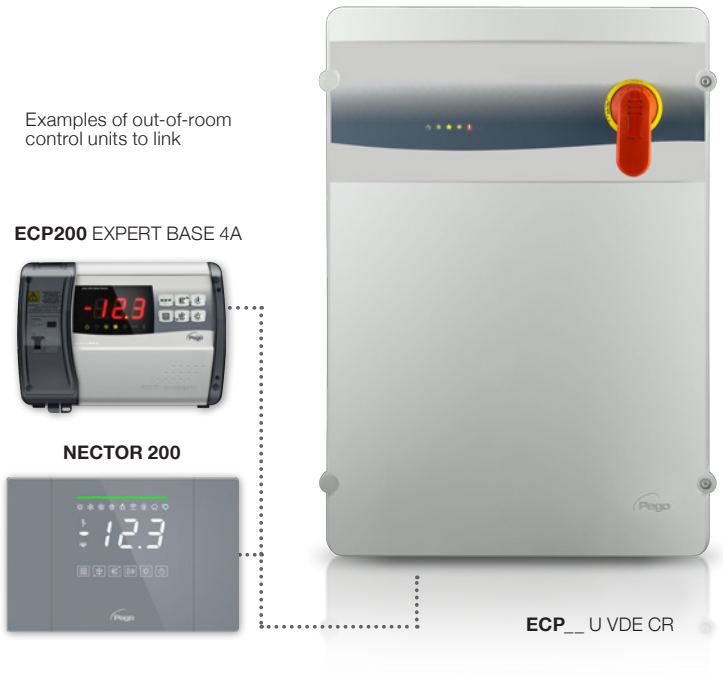


TECHNICAL CHARACTERISTICS		ECP 7.5 U VDE CR	ECP 15 U VDE CR	ECP 19.5 U VDE CR
BOX DIMENSIONS		290 x 340 x 145 mm	350 x 450 x 160 mm	350 x 450 x 160 mm
WEIGHT		6 kg	6 kg	7 kg
PROTECTION RATING		IP65	IP65	IP65
POWER SUPPLY		400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz	400 V AC ±10% 50/60 Hz
LOAD TYPE		THREE-PHASE	THREE-PHASE	THREE-PHASE
WORKING TEMPERATURE		-5 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °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	40 A	63 A
PROTECTION		CIRCUIT BREAKERS	CIRCUIT BREAKERS	CIRCUIT BREAKERS
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
OUTPUTS				
EVAPORATOR FANS		800 W (1PH)	2x2000 W (3PH)	3x2000 W (3PH)
DEFROSTING HEATERS		7500 W (2500 W x 3, AC1)	16500 W (5500 W x 3, AC1)	21000 W (7000 W x 3, AC1)
ROOM LIGHT		PRESENT	PRESENT	PRESENT
SOLENOID VALVE		PRESENT	PRESENT	PRESENT
ENABLE CONDENSING UNIT		PRESENT	PRESENT	PRESENT

ECP__ U VDE CR

ECP 25 U VDE CR | ECP 36 U VDE CR

A line of power 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.



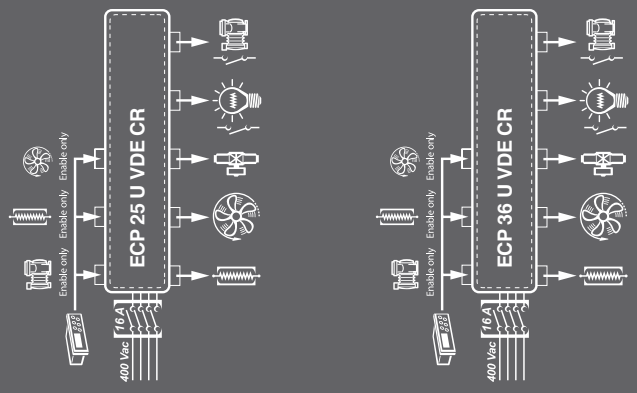
APPLICATIONS

- Control of evaporating unit only with electrical defrost up to 42 kW.

MAIN CHARACTERISTICS

- Protection of the loads and the auxiliary circuit with circuit breakers.
- 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.
- LED system status indicators.

CONNECTION DIAGRAMS



TECHNICAL CHARACTERISTICS		ECP 25 U VDE CR	ECP 36 U VDE CR
BOX DIMENSIONS		470 x 650 x 210 mm	470 x 650 x 210 mm
WEIGHT		20 kg	20 kg
PROTECTION RATING		IP65	IP65
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		-10 ÷ +70 °C	-10 ÷ +70 °C
RELATIVE AMBIENT HUMIDITY		< 90% RH	< 90% RH
MAIN SWITCH		80 A	100 A
PROTECTION		CIRCUIT BREAKERS	CIRCUIT BREAKERS
CONTROL	COMPRESSOR	EXTERNAL ON /OFF	EXTERNAL ON /OFF
	DEFROST	EXTERNAL ON /OFF	EXTERNAL ON /OFF
	FANS	EXTERNAL ON /OFF	EXTERNAL ON /OFF
DEFROSTING		ELECTRICAL	ELECTRICAL
INSULATION TRANSFORMER		PRESENT	PRESENT
STATUS INDICATORS		LED	LED
ALARM SIGNALS		LED	LED
INPUTS			
COMPRESSOR		ENABLE ONLY	ENABLE ONLY
DEFROSTING		ENABLE ONLY	ENABLE ONLY
EVAPORATOR FANS		ENABLE ONLY	ENABLE ONLY
OUTPUTS			
EVAPORATOR FANS		4x2500 W (3PH)	4x2500 W (3PH)
DEFROSTING HEATERS		30000 W (AC1) (10000 W x 3, AC1)	42000 W (14000 W x 3, AC1)
ROOM LIGHT		PRESENT	PRESENT
SOLENOID VALVE		PRESENT	PRESENT
ENABLE CONDENSING UNIT		PRESENT	PRESENT

NANO __ VD

NANO 04 VD | NANO 300 VD | NANO 400 VD
NANO 750 VD | NANO 1000 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.

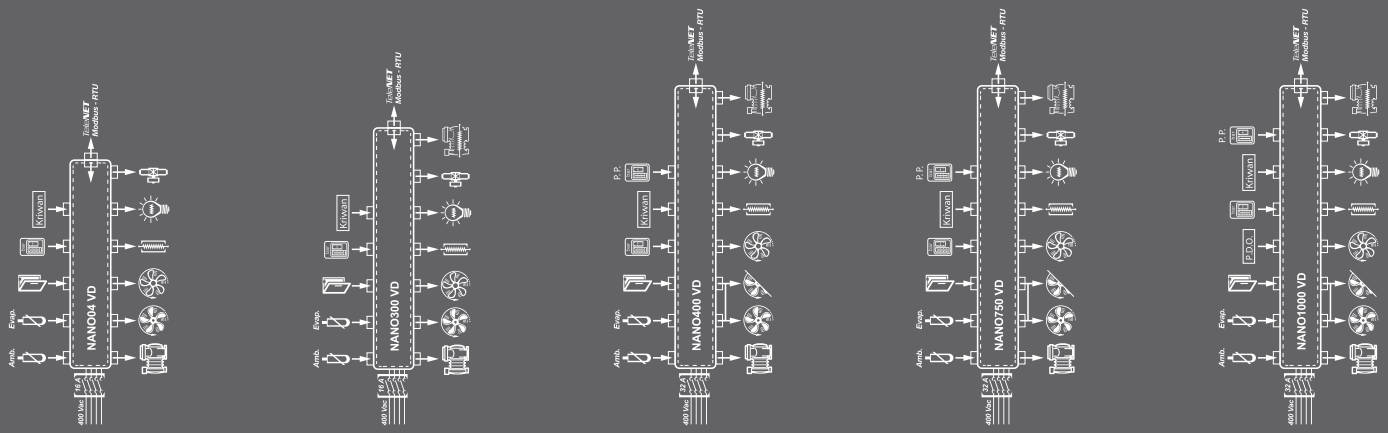
OPTIONS

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

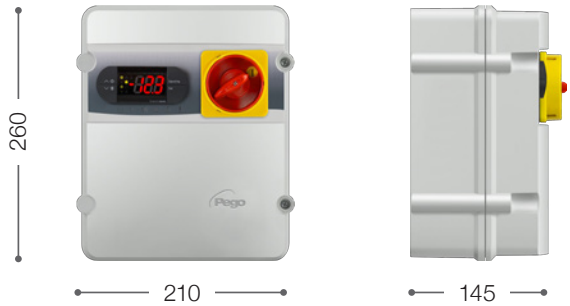
MAIN CHARACTERISTICS

- 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	NANO 04 VD	NANO 300 VD	NANO 400 VD	NANO 750 VD	NANO 1000 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 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °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 THERMOREGULATOR (EXPERT NANO 4CK)	PEGO THERMOREGULATOR (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 10 kΩ	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	NTC 10 kΩ
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 (1PH)	800 W (1PH)	800 W (1PH) TOTALI (1PH)	800 W (1PH) TOTALI (1PH)	2000 W (3PH) OR 1500 W (1PH)
CONDENSER FANS OUTPUT 2			(1PH)	(1PH)	2000 W (3PH) OR 1500 W (1PH)
EVAPORATOR FANS	250 W (1PH)	800 W (1PH)	1500 W (1PH)	1500 W (1PH)	2000 W (3PH) OR 1500 W (1PH)
DEFROSTING HEATERS	1200 W (1PH)	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

NANO 7,5 U VD | NANO 15 U VD
NANO 19,5 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.

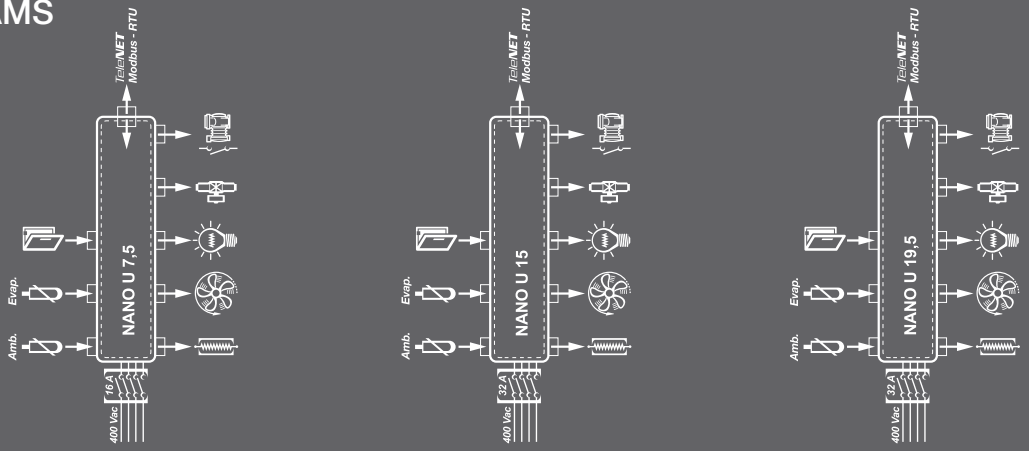
OPTIONS

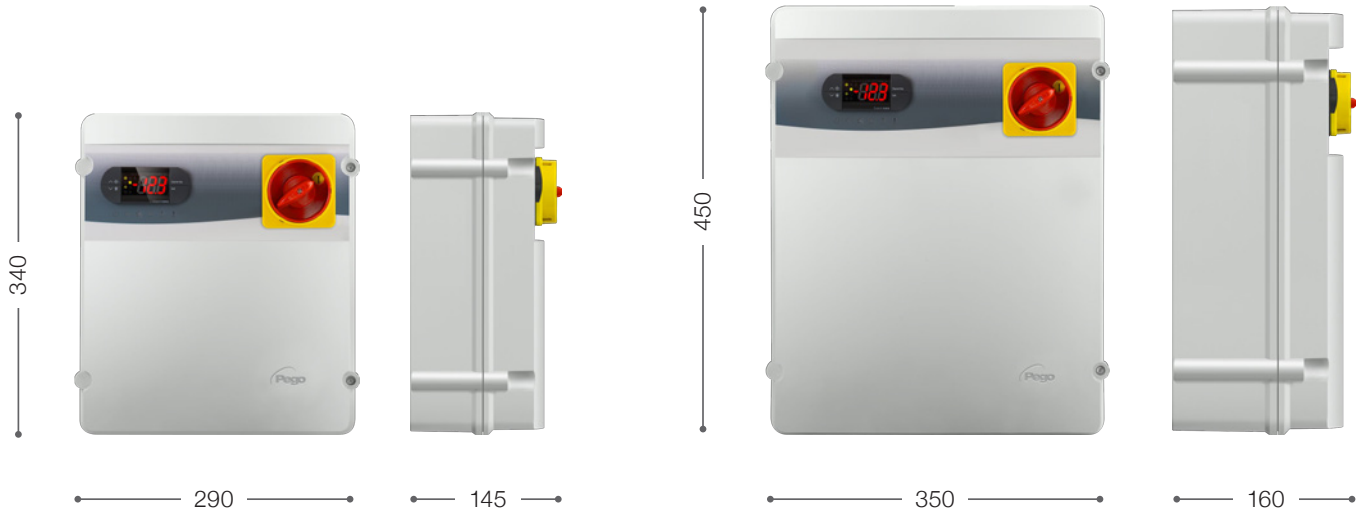
- Installation of magnetothermic circuit breakers instead of fuses.

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	NANO 7,5 U VD	NANO 15 U VD	NANO 19,5 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 ÷ +40 °C	-5 ÷ +40 °C	-5 ÷ +40 °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 10 kΩ	NTC 10 kΩ	NTC 10 kΩ
EVAPORATOR PROBE	NTC 10 kΩ	NTC 10 kΩ	NTC 10 kΩ
DOOR SWITCH	PRESENT	PRESENT	PRESENT
OUTPUTS			
EVAPORATOR FANS	2000 W (3PH) 800 W (1PH)	2000 W x 2 (3PH)	2000 W x 3 (3PH)
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

PILOT SYSTEM

PILOT is an innovative modular fixing system for electrical and electronic components, particularly suitable for counters and refrigerated cabinets.

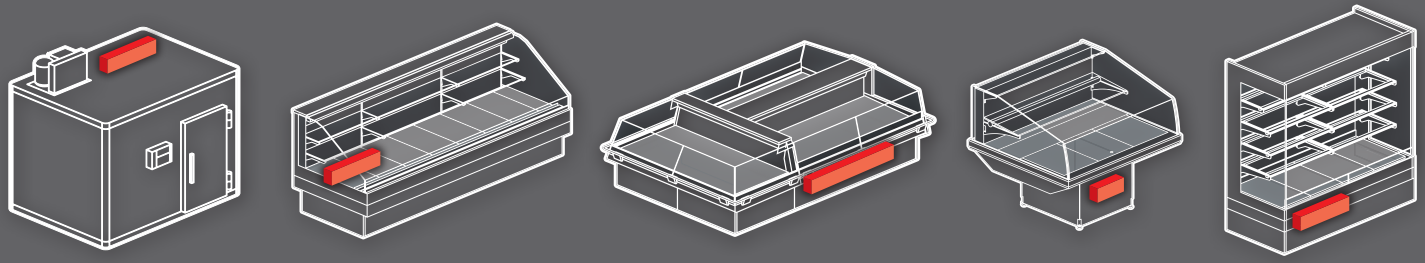
APPLICATIONS

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

MAIN CHARACTERISTICS

- Compact profile.
- Suitable for mounting DIN rail components.
- Modular profile adaptable to different lengths.
- Electrical design customized on customer request.
- Self-extinguishing PVC frame a guarantee of electrical insulation.
- The closing side parts can be arranged for the passage of cables with a cable gland or connector.

INSTALLATION



PILOT

TECHNICAL CHARACTERISTICS	PILOT
BOX DIMENSION	156 x 105 x (550 ÷ 1500) mm
WEIGHT	ACCORDING TO CONFIGURATION
ELECTRICAL CHARACTERISTICS	
POWER SUPPLY	ON REQUEST
LOAD TYPE	PHASE OR SINGLE PHASE
MAIN SWITCH	PRESENT
OVERLOAD PROTECTION	CIRCUIT BREAKER OR FUSES
ENVIRONMENTAL CONDITIONS	
WORKING TEMPERATURE	-5 ÷ +40°C
STORAGE TEMPERATURE	-10 ÷ +70°C
RELATIVE AMBIENT HUMIDITY	<90% RH
GENERAL CHARACTERISTICS	
CONTROL	ON REQUEST
STATUS INDICATORS	ON REQUEST
ALARM INDICATORS	ON REQUEST
INPUTS	
AMBIENT PROBE	ON REQUEST
EVAPORATOR PROBE	ON REQUEST
ANALOGIC AND DIGITAL INPUTS	ON REQUEST
OUTPUTS	
EVAPORATOR FANS	ON REQUEST
DEFROSTING	ON REQUEST
LIGHT	ON REQUEST
ELECTRONIC EXPANSION VALVE	ON REQUEST
ANTIFOG HEATERS	ON REQUEST
SUPERVISION SYSTEM	ON REQUEST
INSULATION AND MECHANICAL CHARACTERISTICS	
PROTECTION RATING	IP 40
MATERIAL	SELF-EXTINGUISHING PVC

COOL
HOT
SMALL.

PEV
NEXUS
EXPERT NANO


Stand-by
Set
xpert nano

EXPERT NANO 1LT

EXPERT NANO 1LT 01 | EXPERT NANO 1LT 02
EXPERT NANO 1LT 11

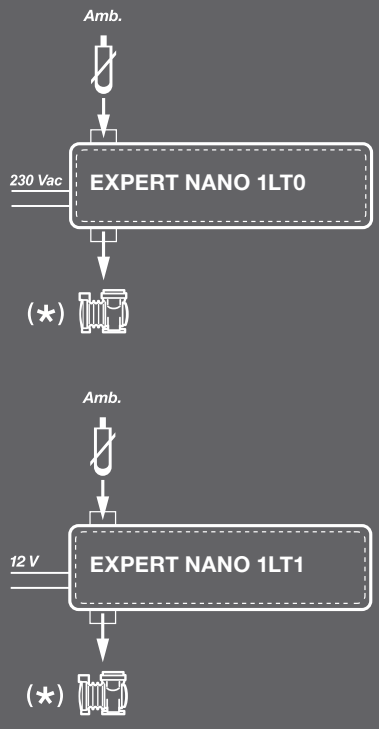
The EXPERT NANO 1LT is a 1 relay electronic thermoregulator designed to control static refrigeration units operating at normal temperature with off-cycle defrosting (to stop compressor).
It is fitted with one analogic input for NTC/PTC temperature probes and one relay for the control of the compressor.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

APPLICATIONS

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

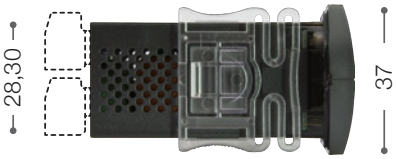
CONNECTION DIAGRAMS

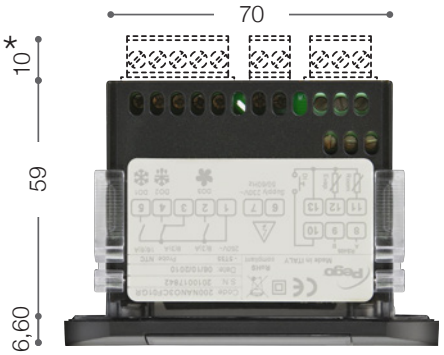
(*) = Configurable function



MAIN CHARACTERISTICS

- Can be configured for hot or cold or alarm 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 1LT 02

TECHNICAL CHARACTERISTICS	EXPERT NANO 1LT 01	EXPERT NANO 1LT 02	EXPERT NANO 1LT 11
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 V AC ~ +10/-15% 50/60 Hz		12 V AC ~ +10/-15% 50/60 Hz 12 V DC +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
SOFTWARE CLASS	A / Parameters saved on non-volatile memory (EEPROM)		
INPUTS			
ANALOGUE INPUTS	1 Inputs for NTC probes NTC (10 kΩ 1% at 25 °C) / PTC		
OUTPUTS			
COMPRESSOR RELAY (DO1)	N.O. 16(6)A / 250 V AC	N.O. 16(6)A / 250 V AC	N.O. 16(6)A / 250 V AC
ACCESSORIES			
ACCESSORIES AVAILABLE	NANO BOX - NANO ADAPTER	NANO ADAPTER	NANO BOX - NANO ADAPTER

EXPERT NANO 3CF

EXPERT NANO 3CK 01 | EXPERT NANO 3CF 01
EXPERT NANO 3CF 02 | EXPERT NANO 3CF 11

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

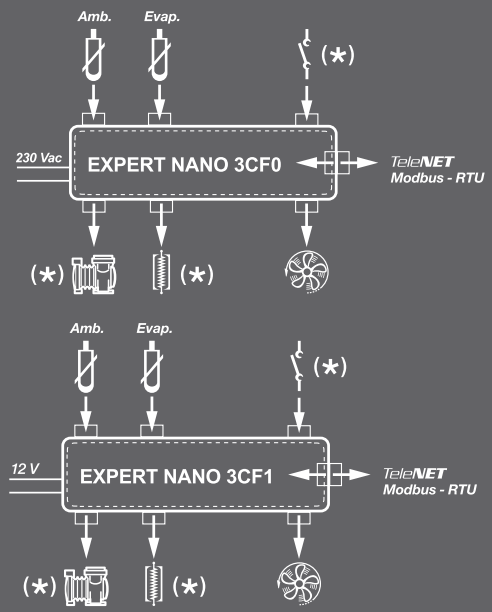
- Control of refrigerated counters, display windows and refrigeration units.

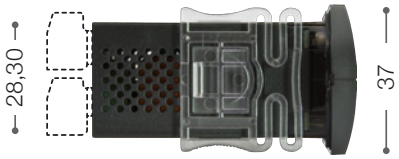
MAIN CHARACTERISTICS

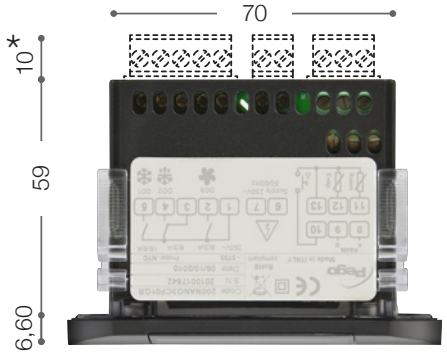
- Can be configured for hot or cold applications.
- Defrosting can be configured for off-cycle, heating element or cycle inversion and frequency and duration can be set. End-of-defrosting can be based on time or temperature.
- Clock for programmed defrost (RTC) (on some models).
- Relay for controlling 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 3CK 01	EXPERT NANO 3CF 01	EXPERT NANO 3CF 02	EXPERT NANO 3CF 11
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 V AC~ +10/-15% 50/60 Hz			12V AC~ +10/-15% 50/60 Hz 12V DC +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 (10 kΩ 1% at 25°C)	2 inputs for NTC probes (10 kΩ 1% at 25 °C) / PTC		
DIGITAL	1 input (free voltage contact)			
OUTPUTS				
COMPRESSOR RELAY	(DO1) N.O. 16(6)A / 250V~			
HEATING ELEMENTS RELAY	(DO2) N.O. 8(3)A N.C. 6(3)A / 250V~			
FAN RELAY	(DO3) N.O. 8(3)A / 250V~			
BUZZER	PRESENT			
SUPERVISION SYSTEM	TELENET / MODBUS-RTU			
OPTIONS				
CLOCK (RTC)	Present	NO	NO	NO
ACCESSORIES				
ACCESSORIES AVAILABLE	NANO BOX NANO ADAPTER	NANO BOX NANO ADAPTER	NANO ADAPTER	NANO BOX NANO ADAPTER

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 and buzzer.
As option the connection to an echo temperature repetition.

APPLICATIONS

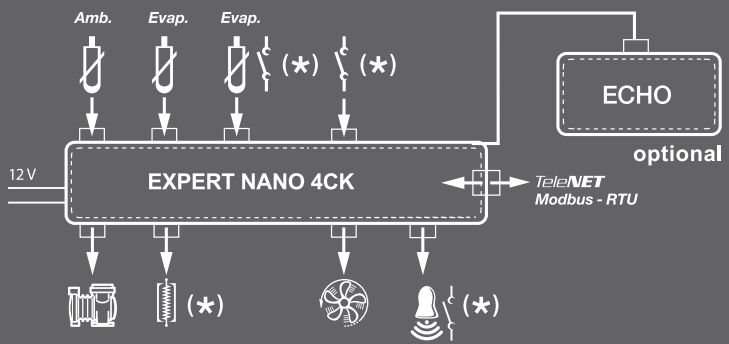
- Control of refrigerated counters, display windows and refrigeration units.
- Control of two evaporators with two temperature probes of end defrost.

MAIN CHARACTERISTICS

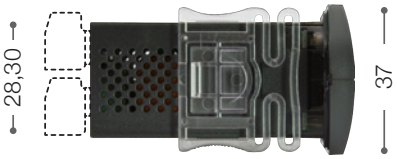
- Can be configured for hot, cold or neutral zone applications.
- Can be configured for managing day / night (automatic modification of the setpoint for energy saving) activated by time mode (real time clock) or by means of the digital input.
- Can be configured to manage two evaporators with dual temperature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

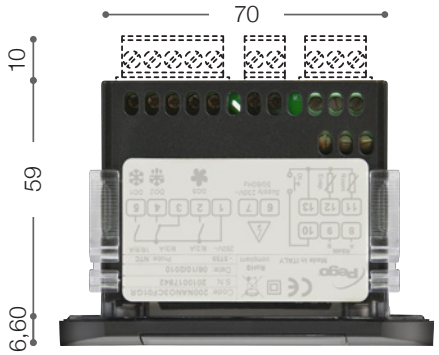
CONNECTION DIAGRAM

(∗) = 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 4CK 13
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	12V AC +10/-15% 50/60 Hz | 12V DC +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 (10 kΩ 1% at 25 °C)
DIGITAL	1 input (free voltage contact)
CONFIGURABLE	1 input for NTC probes (10 kΩ 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
ACCESSORIES	
ACCESSORIES AVAILABLE	NANO ADAPTER

EXPERT NANO 2ZN

EXPERT NANO 2ZN 12 | EXPERT NANO 2ZN 02

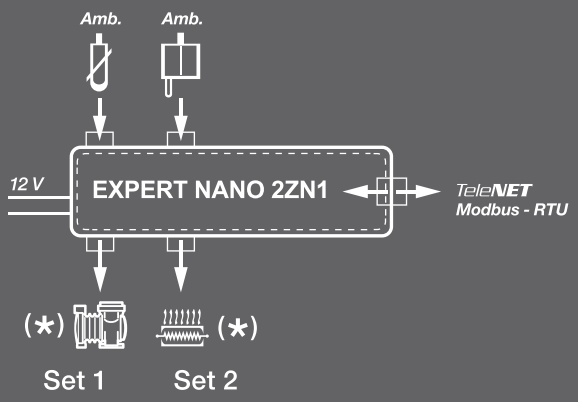
The Expert NANO 2ZN is an electronic thermoregulator with two relays for hot/cold or humidifies/dehumidifies in neutral zone. It can be used also for a double setpoint with two separated outputs.
It has one analogue input for NTC temperature probe, one analog input for humidity probe, two relays with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

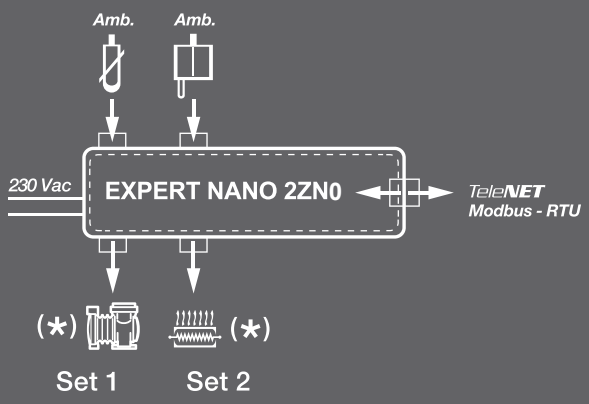
APPLICATIONS

- Management of climatic storage rooms.

CONNECTION DIAGRAM

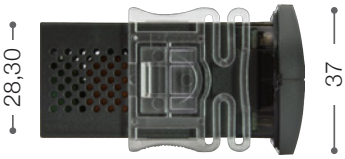
(*) = Configurable function





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 2ZN 12	EXPERT NANO 2ZN 02
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	12V AC~ +10/-15% 50/60 Hz | 12V DC +10/-15% class 2	230 V~ +10/-15% 50/60 Hz
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 (10 kΩ 1% at 25 °C) 1 input for humidity probe (4-20 mA / 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	
ACCESSORIES		
ACCESSORIES AVAILABLE	NANO BOX - NANO ADAPTER	NANO BOX - NANO ADAPTER

EXPERT NANO MILK

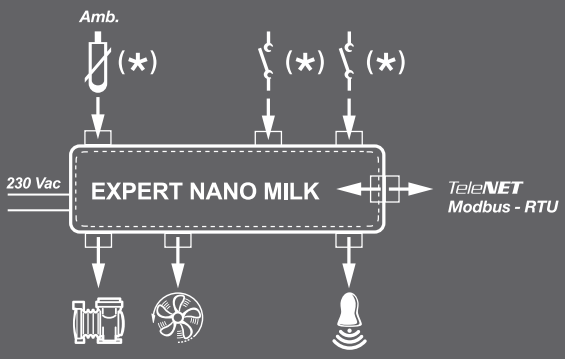
The EXPERT NANO MILK is an electronic regulator operating with microprocessor designed for applications of milk preservation / refrigeration; it controls temperature and stirrer.
It is fitted with one analogue input for NTC or PTC temperature probe, two digital inputs, three relays for the control of the compressor, stirrer and alarm and buzzer.
The regulator can be also configured for heat applications.

APPLICATIONS

- Milk preservation/refrigeration.

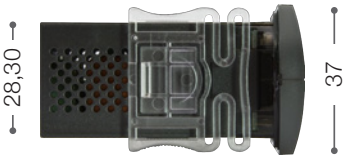
CONNECTION DIAGRAM

(*) = Configurable function



MAIN CHARACTERISTICS

- Can be configured for hot or cold applications.
- Can be configured to read NTC or PTC probes.
- Relay for controlling the compressor, stirrer and alarm.
- Ability to initiate cycles of temperature reduction, by key or digital input.
- Key or DI operated manual START/STOP stirrer.
- START/STOP Cyclic stirrer with time settings
- Key operated ON/OFF.
- Display/adjustment of temperature with decimal point.
- Internal buzzer for acoustic signals.
- Flat front surface for easy cleaning and 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.



TECHNICAL CHARACTERISTICS	EXPERT NANO MLK 01
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 V~ +10/-15% 50/60 Hz
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
SOFTWARE CLASS	A / Parameters saved on non-volatile memory (EEPROM)
INPUTS	
ANALOGUE	1 input for NTC probes (10 kΩ 1% at 25 °C) or PTC probes (KTY83-121)
DIGITAL	2 inputs (the voltagecontact)
OUTPUTS	
COMPRESSOR RELAY (DO1)	(DO1) N.O. 16(6)A / 250V~
ALARM RELAY (DO2)	(DO2) N.O. 8(3)A N.C. 6(3)A / 250V~
STIRRER RELAY (DO3)	(DO3) N.O. 8(3)A / 250V~
BUZZER	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU
ACCESSORIES	
ACCESSORIES AVAILABLE	NANO BOX - NANO ADAPTER

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 and buzzer.
As option the connection to an echo temperature repetition.

APPLICATIONS

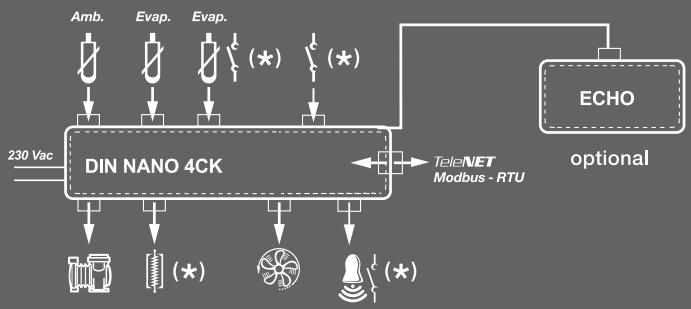
- Control of refrigerated counters, display windows and refrigeration units.
- Control of two evaporators with two temperature probes of end defrost.

MAIN CHARACTERISTICS

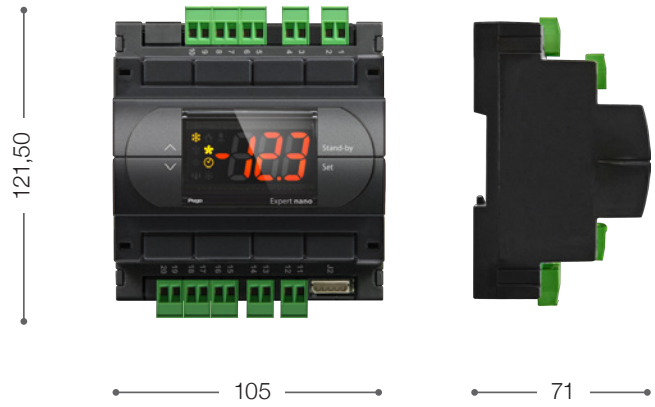
- Can be configured for hot, cold or neutral zone applications.
- Can be configured for managing day / night (automatic modification of the setpoint for energy saving) activated by time mode (real time clock) or by means of the digital input.
- Can be configured to manage two evaporators with dual temperature sensor for defrost termination.
- 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 230 V AC.
- HACCP function with memory and visualization of the last alarm.

CONNECTION DIAGRAM

(*) = Configurable function



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)	IP65 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 (10 kΩ 1% a 25 °C)
DIGITAL	1 input (free voltage contact)
CONFIGURABLE	1 input for NTC probes (10 kΩ 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
ACCESSORIES	
ACCESSORIES AVAILABLE	NANO BOX I NANO ADAPTER

DIN NANO 4CK

ECHO

DIN NANO 5CK

The DIN NANO 5CK is a 5 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, three digital inputs, five relays for the compressor control, fans, defrosting function, light and alarm (2 configurable relays).
The buzzer is a standard and the controller can also be configured for applications call hot.
The remote console of control (5 meters, RS485) is a standard.
As option the connection to an echo temperature repetition.

APPLICATIONS

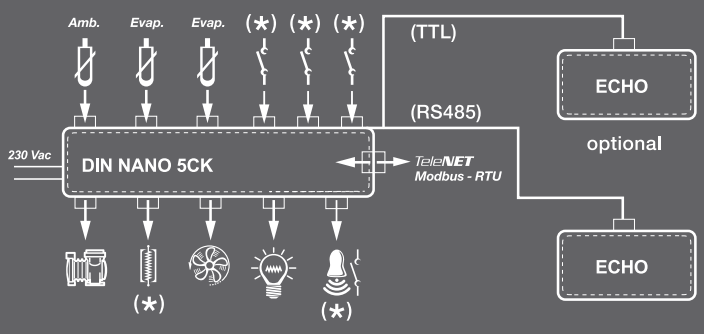
- Control of refrigerated counters, display windows and refrigeration units.
- Control of two evaporators with two temperature probes of end defrost.

MAIN CHARACTERISTICS

- Remote console of control (5 meters, RS485).
- Integrated console of control (optional).
- A temperature repeater echo display is available as an option.
- IP65 remote display protection.
- 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.

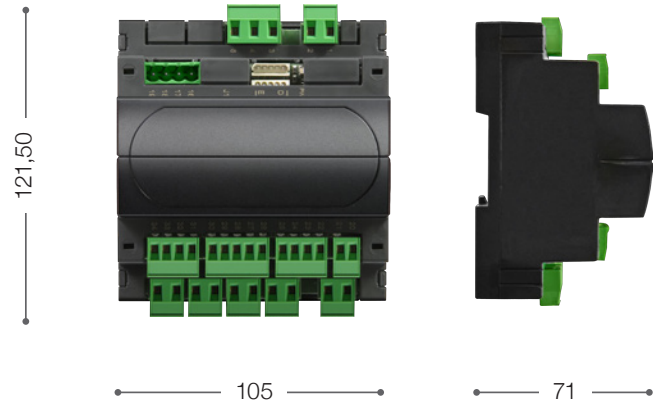
CONNECTION DIAGRAM

(*) = Configurable function



- Can be configured to manage two evaporators with dual temperature sensor for defrost termination.
- Relay managing compressor, fans of evaporator and light (3 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 duration can 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.
- 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 230 V AC.
- HACCP function with memory and visualization of the last alarm.

DIN NANO 5CK



ECHO

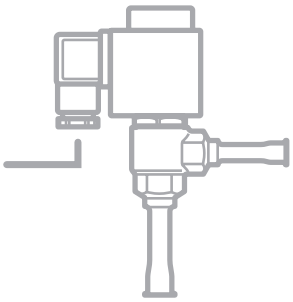
TECHNICAL CHARACTERISTICS	DIN NANO 5CK
DIMENSIONS	**DIN NANO 5CK**: 105 x 121,5 x 71 mm **ECHO**: 93 x 37 x 23,1 mm
WEIGHT	0,5 kg
PROTECTION RATING (DISPLAY ECHO)	IP65 with front board installation
POWER SUPPLY	230 V AC ±10% 50/60 Hz
ABSORBED POWER	5 VA max
WORKING TEMPERATURE	-5 ÷ +50 °C
STORAGE TEMPERATURE	-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	3 inputs for NTC probes (10 kΩ 1% at 25 °C)
DIGITAL	3 configurable inputs (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~
LIGHT	(DO4) N.O. 8(3)A / 250V~
ALARM/AUX RELAY	(DO5) N.O. 8(3)A / 250V~
BUZZER	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU
ACCESSORIES	
ACCESSORIES AVAILABLE	NANO BOX I NANO ADAPTER

DIN NANO 5CK

ECHO

PEV P20

Electronic regulator for control of ON/OFF electronic expansion valve with 230/110/24 VAC or 24 VDC coil. It can be configured with a remote or integrated display, it manages the most common ON/OFF electronic expansion valves and integrates the evaporator overheating control.



APPLICATIONS

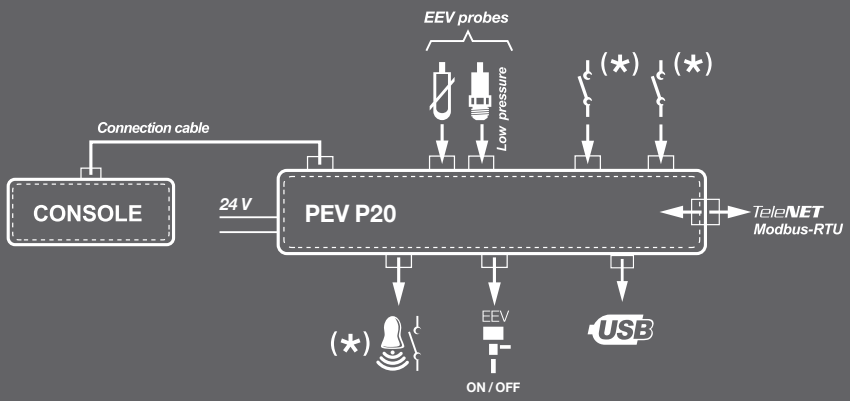
- Refrigerated counters and cold room.

MAIN CHARACTERISTICS

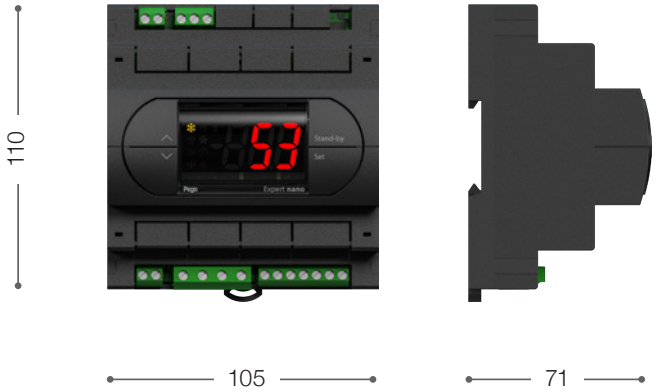
- Control of the ON/OFF electronic expansion valve with 230/110/24 VAC and 24 VDC coil.
- Compatible with 23 gas types: R404, R134, R22, R407A, R407F, R407H, R410A, R450A, R507, R513A, R744 (CO2), R449A, R290, R32, R448A, R452A, R600, R600A, R1270, R1234ze, R23, R717 (NH3), R454C.
- Software update via USB.
- Integrated or remote control console.
- RS485 serial connection with TeleNET or Modbus protocol can be selected by parameter.
- Two configurable digital inputs.
- Intake temperature and evaporation pressure probe for managing evaporator overheating.
- Remote display with IP65 protection.
- Easy parameter programming with 4 pre-configurations for the different applications of the electronic expansion valve.
- Alarm signaling.
- System status LED signals and large display.
- User-friendly keyboard.

CONNECTION DIAGRAM

(*) = Configurable function



PEV P20



CONSOLE

TECHNICAL CHARACTERISTICS	PEV P20
DIMENSIONS	**PEV P20**: 105 x 110 x 71 mm **CONSOLE**: 93 x 37 x 23.1 mm
WEIGHT	0.5 kg
DISPLAY PROTECTION RATING	IP65
POWER SUPPLY	24 V AC/DC ±10% 50/60 Hz
LOAD TYPE	SINGLE-PHASE
WORKING TEMPERATURE	-5 ÷ +50 °C
STORAGE TEMPERATURE	-10 ÷ +70 °C
RELATIVE AMBIENT HUMIDITY	< 90% RH
COMPONENT STATUS INDICATOR	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER
INPUTS	
DIGITAL INPUT	N°2 CONFIGURABLE
INTAKE PROBE	NTC 10 kΩ / PT1000 / PTC
EVAPORATION PRESSURE PROBE	4-20 mA
OUTPUTS	
ELECTRONIC EXPANSION VALVE	ON/OFF 24/110/230 VAC or 24 V DC
ALARM RELAY	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS - RTU
ACCESSORIES	
ACCESSORIES AVAILABLE	NANO BOX I NANO ADAPTER

PEV P20

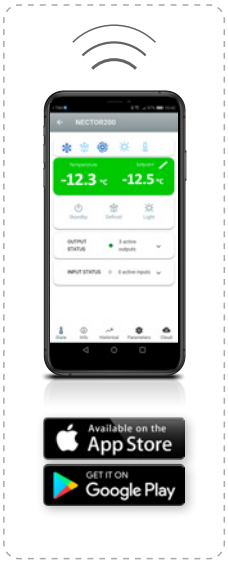
CONSOLE

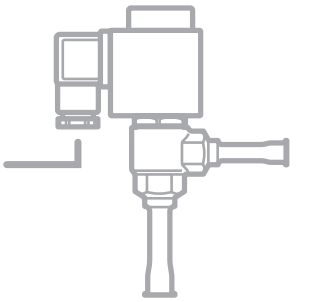
CONNECTION CABLE

PEV P20

NEXUS P20

Electronic regulator for controlling the ON/OFF electronic expansion valve with 230/110/24 VAC or 24 VDC coil, with integrated connectivity functions through the **MyPego** app.
Manages the most common ON/OFF electronic expansion valves for controlling evaporator overheating.



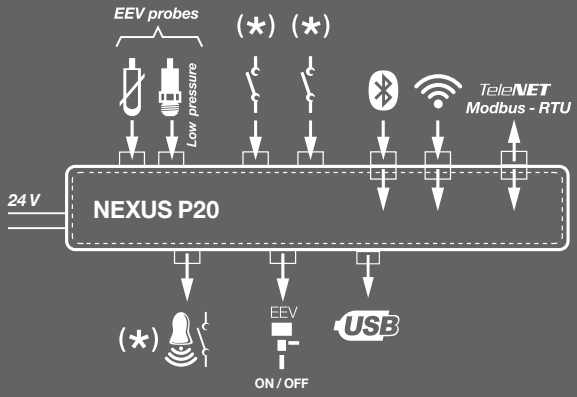


APPLICATIONS

- Refrigerated counters and cold room.

CONNECTION DIAGRAM

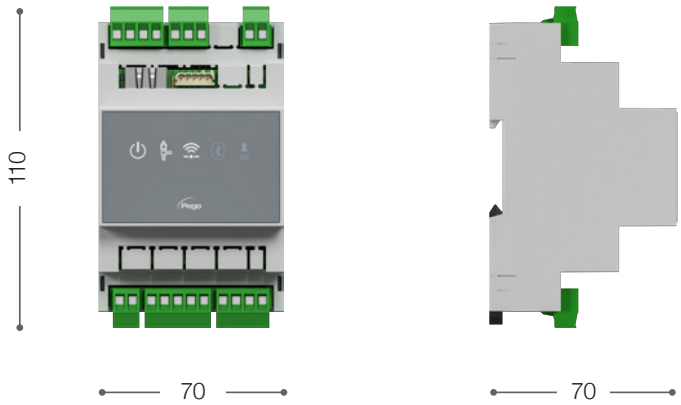
(*) = Configurable function



MAIN CHARACTERISTICS

- Bluetooth, WiFi and ethernet connectivity for interaction with the driver and diagnostics by the installer.
- No on-board display. The MyPego APP is used for programming. It is possible to connect an external display with IP65 protection, as a service terminal.
- Control of the ON/OFF electronic expansion valve with 230/110/24 VAC and 24 VDC coil.
- Compatible with 23 gas types: R404, R134, R22, R407A, R407F, R407H, R410A, R450A, R507, R513A, R744 (CO2), R449A, R290, R32, R448A, R452A, R600, R600A, R1270, R1234ze, R23, R717 (NH3), R454C.
- Software update via USB.
- RS485 serial connection with TeleNET or Modbus protocol can be selected by parameter.
- Two configurable digital inputs.
- Intake temperature and evaporation pressure probe for evaporator superheat management.
- Easy parameter programming with 4 pre-configurations for the different applications of the electronic expansion valve.
- Plastic container for DIN bar for 4 DIN modules.

NEXUS P20

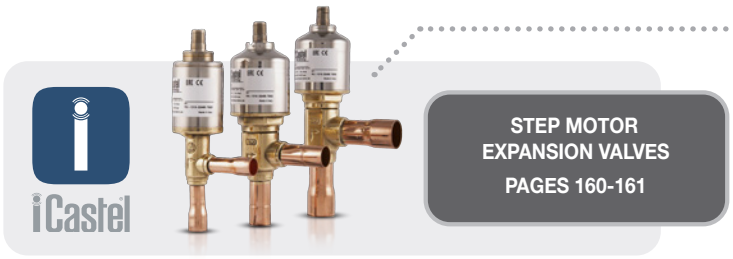


TECHNICAL CHARACTERISTICS	NEXUS P20
DIMENSIONS	NEXUS P20: 110 x 70 x 70 mm
WEIGHT	0.5 kg
DISPLAY PROTECTION RATING	IP65
POWER SUPPLY	24 V AC/DC ±10% 50/60 Hz
LOAD TYPE	SINGLE-PHASE
WORKING TEMPERATURE	-5 ÷ +50 °C
STORAGE TEMPERATURE	-10 ÷ +70 °C
RELATIVE AMBIENT HUMIDITY	< 90% RH
COMPONENT STATUS INDICATOR	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER
INPUTS	
DIGITAL INPUT	N°2 CONFIGURABLE
INTAKE PROBE	NTC 10 kΩ / PT1000 / PTC
EVAPORATION PRESSURE PROBE	4-20 mA
OUTPUTS	
ELECTRONIC EXPANSION VALVE	ON/OFF 24/110/230 VAC or 24 V DC
ALARM RELAY	PRESENT
ACCESSORIES	
ACCESSORIES AVAILABLE	NANO BOX I NANO ADAPTER
CONNECTIVITY	
RS485 SERIAL	MODBUS-RTU / TELENET
BLUETOOTH	BLE LOW ENERGY
WIFI	802.11 B/G/N (2.4 GHZ) UP TO 150 Mbps
ETHERNET	10/100 Mbps

NEXUS P20

PEV S27

Electronic regulator for controlling the motorized electronic expansion valve.
It can be configured with a remote or integrated display.
Controls the most common bipolar stepper electronic expansion valves and integrates the evaporator overheating management.



APPLICATIONS

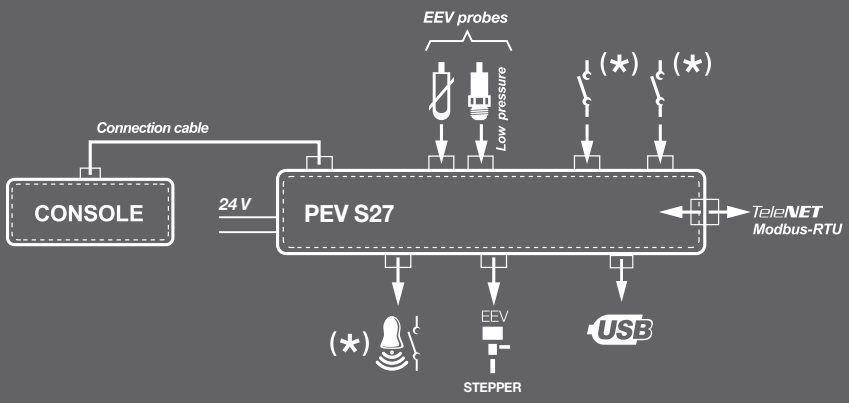
- Refrigerated counters and cold room.

MAIN CHARACTERISTICS

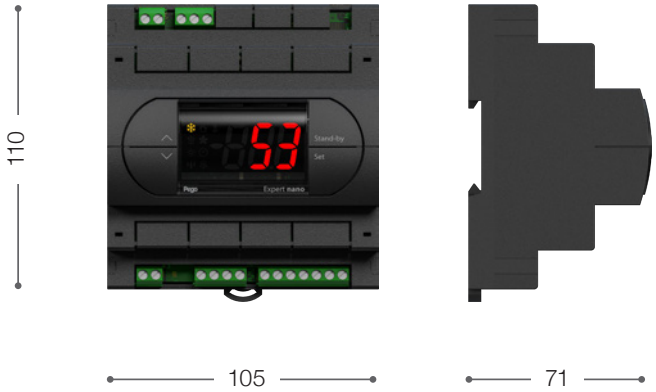
- Control of the motorized electronic expansion valve.
- Compatible with 23 gas types: R404, R134, R22, R407A, R407F, R407H, R410A, R450A, R507, R513A, R744 (CO2), R449A, R290, R32, R448A, R452A, R600, R600A, R1270, R1234ze, R23, R717 (NH3), R454C.
- Software update via USB.
- Integrated or remote control console.
- RS485 serial connection with TeleNET or Modbus protocol can be selected by parameter.
- Two configurable digital inputs.
- Intake temperature and evaporation pressure probe for evaporator overheating management.
- Remote display with IP65 protection.
- Easy parameter programming with 4 pre-configurations for the different applications of the electronic expansion valve.
- Alarm signaling.
- System status LED signals and large display.
- User-friendly keyboard.

CONNECTION DIAGRAM

(*) = Configurable function



PEV S27



CONSOLE

TECHNICAL CHARACTERISTICS	PEV S27
DIMENSIONS	**PEV S27**: 105 x 110 x 71 mm **CONSOLE**: 93 x 37 x 23.1 mm
WEIGHT	0.5 kg
DISPLAY PROTECTION RATING	IP65
POWER SUPPLY	24 V AC/DC ±10% 50/60 Hz
LOAD TYPE	SINGLE-PHASE
WORKING TEMPERATURE	-5 ÷ +50 °C
STORAGE TEMPERATURE	-10 ÷ +70 °C
RELATIVE AMBIENT HUMIDITY	< 90% RH
COMPONENT STATUS INDICATOR	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER
INPUTS	
DIGITAL INPUT	N°2 CONFIGURABLE
INTAKE PROBE	NTC 10 kΩ / PT1000 / PTC
EVAPORATION PRESSURE PROBE	4-20 mA
OUTPUTS	
ELECTRONIC EXPANSION VALVE	STEPPER BIPOLAR
ALARM RELAY	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS - RTU
ACCESSORIES	
ACCESSORIES AVAILABLE	NANO BOX I NANO ADAPTER

PEV S27

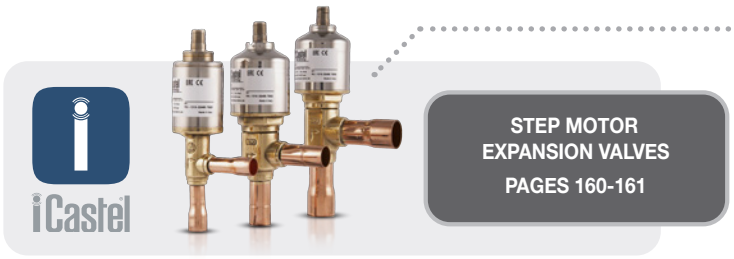
CONSOLE

CONNECTION CABLE

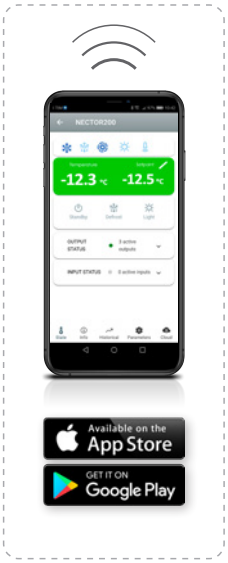
PEV S27

NEXUS S27

Electronic regulator for controlling the motorized electronic expansion valve, with integrated connectivity functions through the **MyPego** app. Manages the most common bipolar stepper electronic expansion valves for evaporator overheating management.



STEP MOTOR EXPANSION VALVES
PAGES 160-161



APPLICATIONS

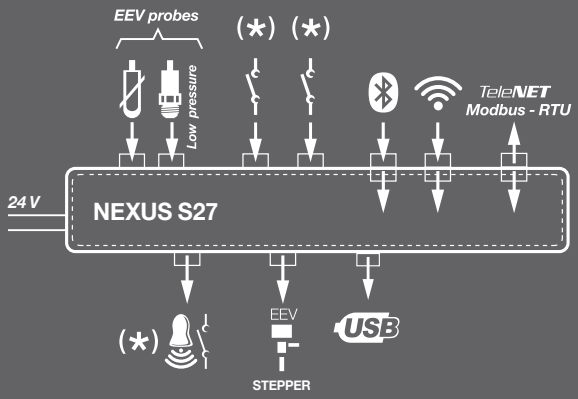
- Refrigerated counters and cold room.

MAIN CHARACTERISTICS

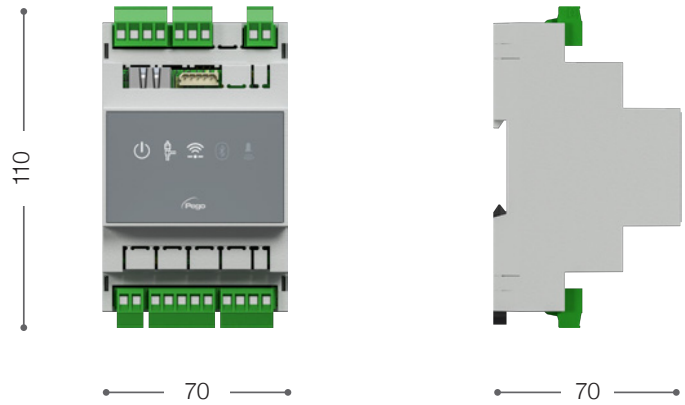
- Bluetooth, WiFi and ethernet connectivity for interaction with the driver and diagnostics by the installer.
- No on-board display. The MyPego APP is used for programming. It is possible to connect an external display with IP65 protection, as a service terminal.
- Control of the bipolar motorized electronic expansion valve.
- Compatible with 23 gas types: R404, R134, R22, R407A, R407F, R407H, R410A, R450A, R507, R513A, R744 (CO2), R449A, R290, R32, R448A, R452A, R600, R600A, R1270, R1234ze, R23, R717 (NH3), R454C.
- Software update via USB.
- RS485 serial connection with TeleNET or Modbus protocol can be selected by parameter.
- Two configurable digital inputs.
- Intake temperature and evaporation pressure probe for evaporator overheating management.
- Easy parameter programming with 4 pre-configurations for the different applications of the electronic expansion valve.
- Plastic container for DIN bar for 4 DIN modules.

CONNECTION DIAGRAM

(*) = Configurable function



NEXUS S27



TECHNICAL CHARACTERISTICS	NEXUS S27
DIMENSIONS	NEXUS S27: 110 x 70 x 70 mm
WEIGHT	0.5 kg
DISPLAY PROTECTION RATING	IP65
POWER SUPPLY	24 V AC/DC ±10% 50/60 Hz
LOAD TYPE	SINGLE-PHASE
WORKING TEMPERATURE	-5 ÷ +50 °C
STORAGE TEMPERATURE	-10 ÷ +70 °C
RELATIVE AMBIENT HUMIDITY	< 90% RH
COMPONENT STATUS INDICATOR	LED + DISPLAY
ALARM SIGNALS	LED + BUZZER
INPUTS	
DIGITAL INPUT	N°2 CONFIGURABLE
INTAKE PROBE	NTC 10 kΩ / PT1000 / PTC
EVAPORATION PRESSURE PROBE	4-20 mA
OUTPUTS	
ELECTRONIC EXPANSION VALVE	BIPOLAR STEPPER
ALARM RELAY	PRESENT
ACCESSORIES	
ACCESSORIES AVAILABLE	NANO BOX I NANO ADAPTER
CONNECTIVITY	
RS485 SERIAL	MODBUS-RTU / TELENET
BLUETOOTH	BLE LOW ENERGY
WIFI	802.11 B/G/N (2.4 GHZ) UP TO 150 Mbps
ETHERNET	10/100 Mbps

NEXUS S27

DIN NANO FSC

The DIN NANO FSC is a DIN rail electronic regulator which optimises the management of the condenser fans. It helps to reduce energy consumption regulating the condensation temperature according to the external temperature. It can also reduce the sound emissions from the condensing fans during the night.

APPLICATIONS

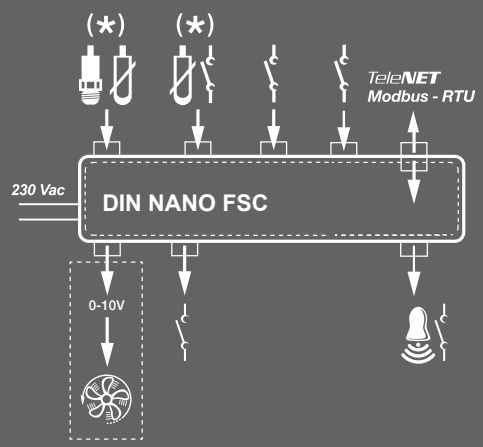
- Control for electronic fans used on condensing units.
- Control for phase-cutting voltage regulators used to manage the condensation fan speed.

MAIN CHARACTERISTICS

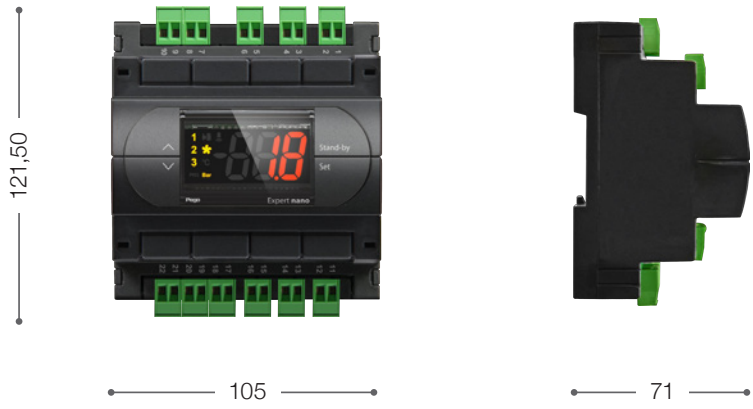
- Analogue output 0-10 V to adjust the speed of the condensation fans.
- Regulation with pressure/temperature probe.
- Acquisition of external temperature to optimise regulation.
- 4 operating modes: normal operation, energy saving, low fan noise, settable constant speed.
- Day/night function (variation of condensation reference).
- Pressure transducer reading display in Bar or in °C (conversion depending on type of refrigerant gas selected).
- 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 230 V AC.

CONNECTION DIAGRAM

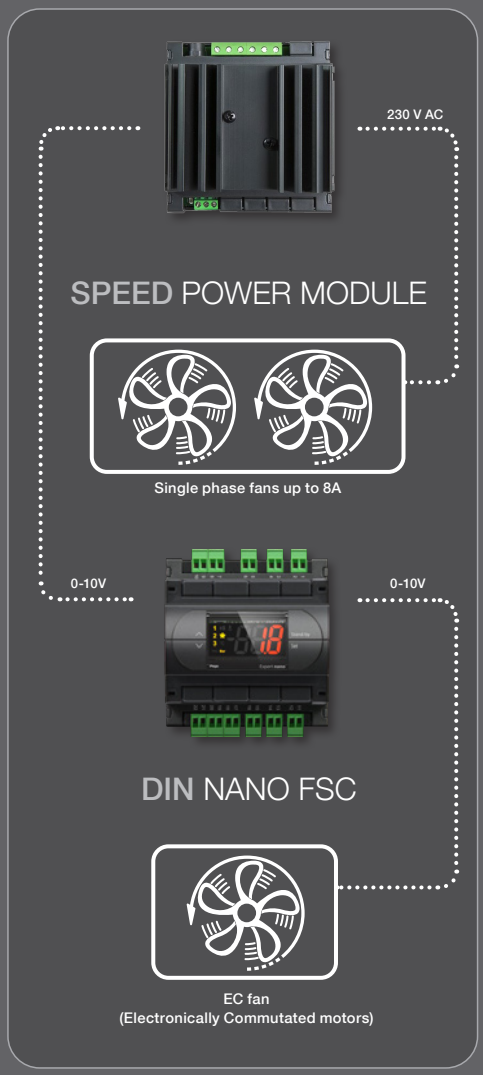
(*) = Configurable function



DIN NANO FSC



TECHNICAL CHARACTERISTICS	DIN NANO FSC
DIMENSIONS	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
OUTPUTS	
ANALOGUE	1 input for regulation probe (4-20 mA for pressure probe or NTC probes 10 kΩ 1% at 25 °C)
DIGITAL	2 inputs (free voltage contact)
CONFIGURABLE	1 input for NTC probes (10 kΩ 1% at 25 °C) or digital input (free voltage contact)
OUTPUTS	
CONDENSER FAN RELAY	(DO1) N.O. 16(6)A / 250V
ALARM	(DO5) N.O. 8(3)A / 250V
ANALOGUE OUTPUT FOR FAN	0-10 V DC
SUPERVISION SYSTEM	TELENET / MODBUS-RTU



DIN SPM

The SPM regulator is a module that can be controlled by the DIN NANO FSC and allows the single-phase fan speed to be varied up to 8 A. It uses the phase-cutting principle to adjust the effective output voltage from 0 to 230 V AC, according to the 0-10 V DC command signal applied on input.
The output can be adjusted manually by connecting an external 10 kΩ potentiometer to the board. The regulator is fitted with a fuse, which can be easily inspected and replaced, which guarantees short-circuit protection.
It is recommended to verify that the connected motors are suitable for use with phase-cutting regulation.

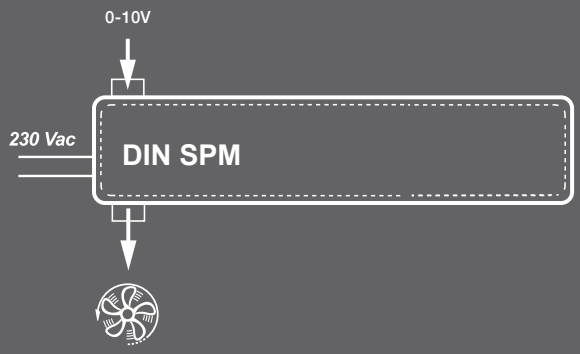
APPLICATIONS

- Speed controller of the condensation fans.
- Speed controller of the evaporator fans.

MAIN CHARACTERISTICS

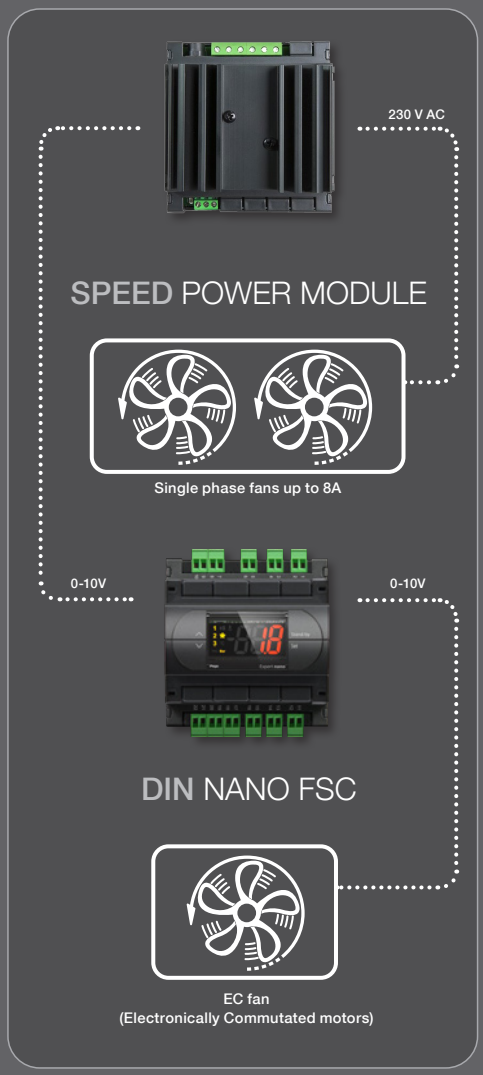
- Effective output voltage from 0 to 230 V AC.
- Control signal 0-10 V DC.
- Protected from short-circuit by means of a fuse.
- Possible manual control via an external 10 kΩ potentiometer.
- Power supply 230 V AC.

CONNECTION DIAGRAMS



DIN SPM

TECHNICAL CHARACTERISTICS	DIN SPM
DIMENSIONS	105 x 110 x 75 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
CONNECTION	Screw fixed clamps
FUSE	6,3 x 32, 10 A delayed
INPUTS	
ANALOGUE	0-10 V DC
OUTPUTS	
RATED CURRENT	8 A



DIN NANO SC 500

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

APPLICATIONS

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

FUNCTION

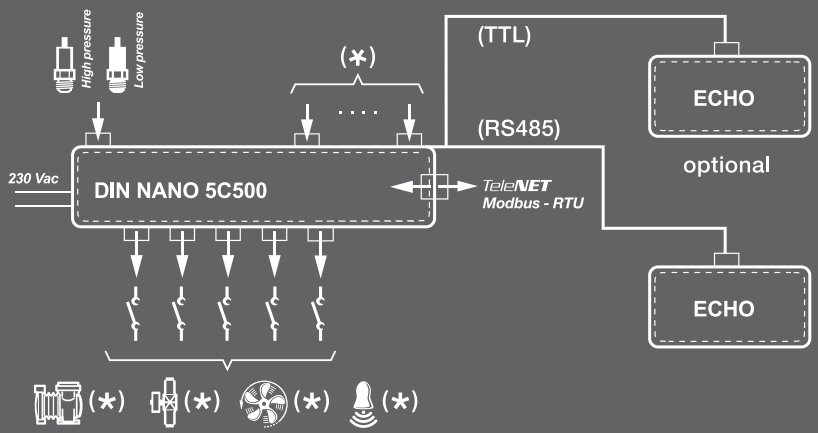
- Sideband adjustment.
- It can be configured to control the compressors, compressor splitting valves or condenser fans (up to a max. of 5 outputs).
- Compressor/fan rotation depending on the operation timing.
- Analogue output 0-10 V for compressor inverter control or to adjust the speed of the condensation fans.
- Screen displays pressure and 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 protocol.

MAIN CHARACTERISTICS

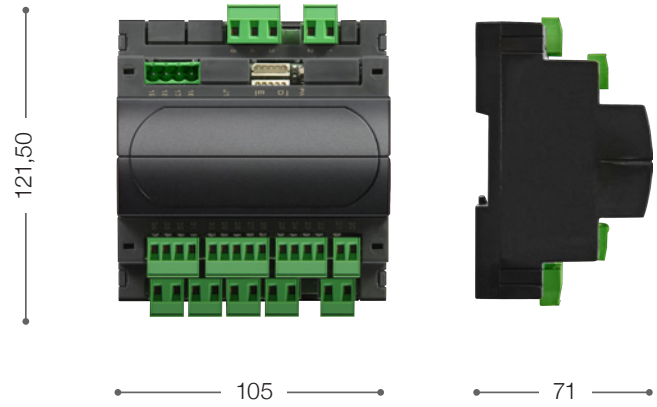
- Pego compressor rack controllers distinguish themselves by simplicity of installation and parameter configuration.
- The installer can configure the controller and start the rack just by making a few simple settings.

CONNECTION DIAGRAMS

(*) = Configurable function



DIN NANO SC 500



ECHO

TECHNICAL CHARACTERISTICS	DIN NANO SC 500
DIMENSIONS	**DIN NANO SC 500**: 105 x 121,5 x 71 mm **ECHO**: 93 x 37 x 23,1 mm
WEIGHT	0,5 kg
PROTECTION RATING (DISPLAY ECHO)	IP65 with front board installation
POWER SUPPLY	230 V AC ±10% 50/60 Hz
ABSORBED POWER	Single-phase
WORKING TEMPERATURE	-5 ÷ +50 °C
STORAGE TEMPERATURE	-10 ÷ +70 °C
RELATIVE AMBIENT HUMIDITY	< 90% RH
CONTROL	**PEGO**
STATUS INDICATORS	Display 3-Digit with sign, decimal point and LED status indicators
ALARM SIGNALS	Display + Buzzer
INPUTS	
PRESSURE PROBE	4 ÷ 20 mA configurable
DIGITAL	N° 7 configurable as: compressor alarm 1 ... 5, fan alarm 1 ... 5, compressors alarm (display only), fans alarm (display only), central alarm in manual, liquid level alarm, high pressure alarm, low pressure alarm, remote stand-by.
OUTPUTS	
RELAY (ON/OFF STATUS)	N°5 configurable
ALARM RELAY	PRESENT
ANALOGUE OUTPUTS	N°1 (0-10 V DC, compressor inverter or condensation fan inverter)
SUPERVISION SYSTEM	TELENET / MODBUS-RTU
ACCESSORIES	
ACCESSORIES AVAILABLE	NANO BOX | NANO ADAPTER

DIN NANO SC 500

ECHO

DIN NANO CHILLER

The DIN NANO CHILLER electronic module is capable of fully monitoring and controlling air/water and water/water chiller units with up to two compressors, ensuring uniform operation and correctly distributing the working times between the individual machines; all of this with maximum operating safety together with the convenience of being able to install the NANO ECHO Control Console anywhere.

APPLICATIONS

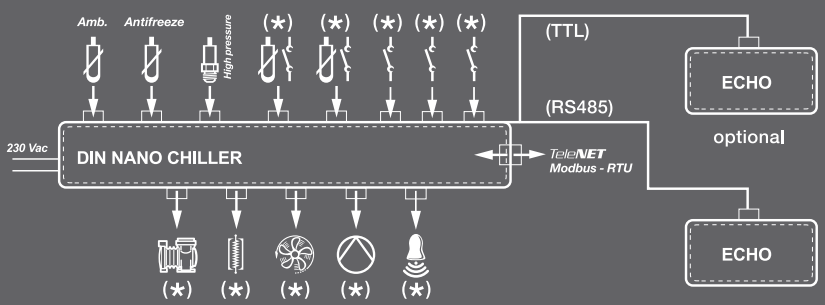
- Air/water and water/water chiller control.

MAIN CHARACTERISTICS

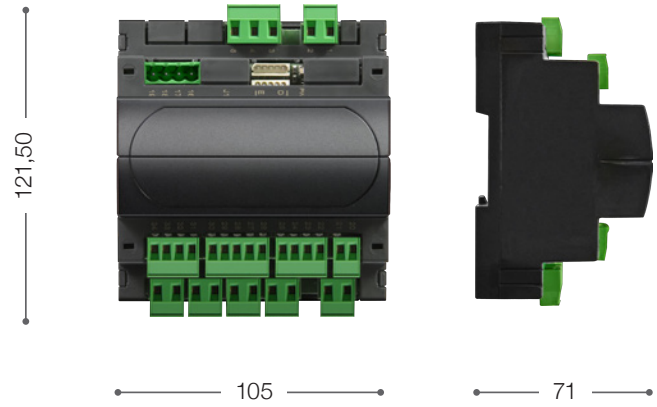
- Configurable for control air/water or water/water chillers.
- Evaporator flow switch management.
- Antifreeze protection management.
- Condensing energy saving management based on external environmental conditions.
- Configurable stand-by mode.
- 0-10 V Analog output for the adjustment of speed of the condenser fans or for modulating control of the evaporator / condenser water pump.
- Display of the pressure probe measure in Bar or in °C (conversion based on the type of refrigerant gas selected).
- Rotation of compressors according to the time of operation.
- Side band regulation.
- Configurable digital inputs/outputs.
- Night / day management (energy saving).
- Clock and calendar.
- Password for keys lock.
- 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.

CONNECTION DIAGRAMS

(*) = Configurable function



DIN NANO CHILLER

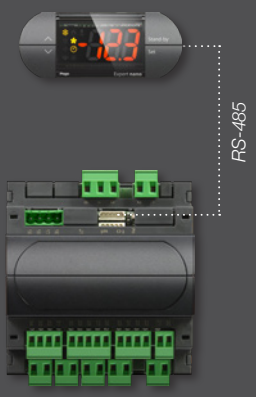


ECHO

TECHNICAL CHARACTERISTICS	DIN NANO CHILLER
DIMENSION	**DIN NANO CHILLER**: 105 x 121,5 x 71 mm **ECHO**: 93 x 37 x 23,1 mm
WEIGHT	0,5 kg
PROTECTION RATING (DISPLAY ECHO)	IP65 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	4 inputs for NTC probes (10 KΩ 1% a 25 °C) 1 input for condenser pressure probe (4 - 20 mA)
DIGITAL	5 CONFIGURABLE INPUTS (free voltage contact)
OUTPUTS	
COMPRESSOR RELAY	(DO1) N.O. 16 (6) A / 250 V
HEATINGS ELEMENTS RELAY	(DO2) N.O. 16 (6) A / 250 V
EVAPORATOR WATER PUMP RELAY	(DO3) N.O. 16 (6) A / 250 V
CONDENSER FAN / WATER PUMP RELAY	(DO4) N.O. 8 (3) A / 250 V
ALARM RELAY	(DO5) N.O. 8 (3) A / 250 V
BUZZER	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU

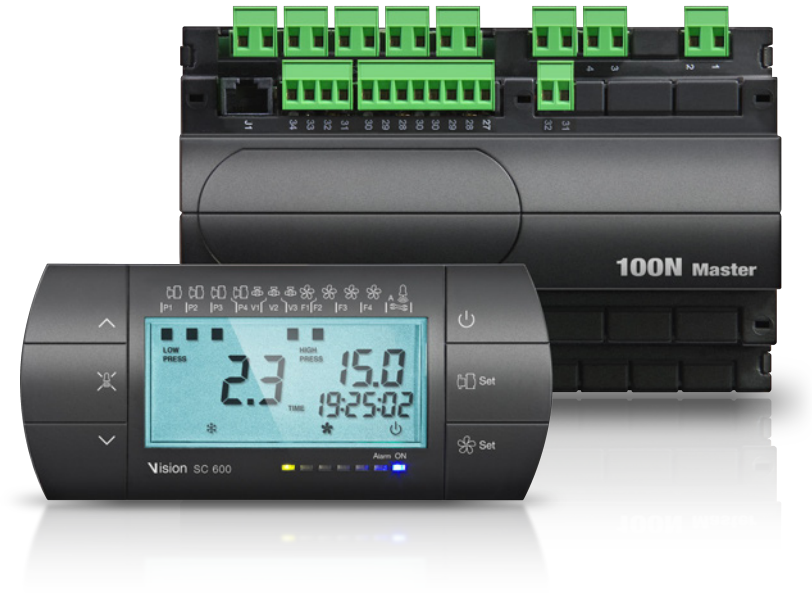
DIN NANO CHILLER

ECHO



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.

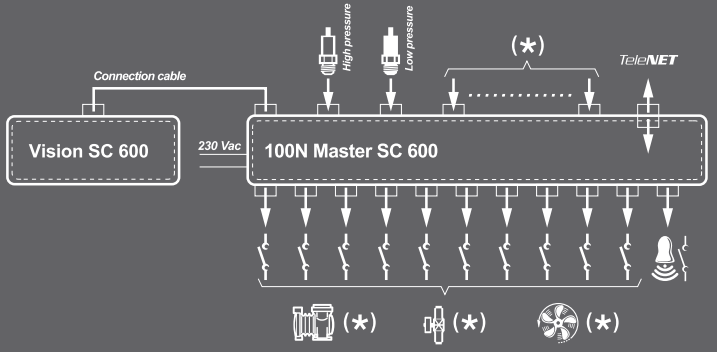
FUNCTIONS

- 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 protocol.

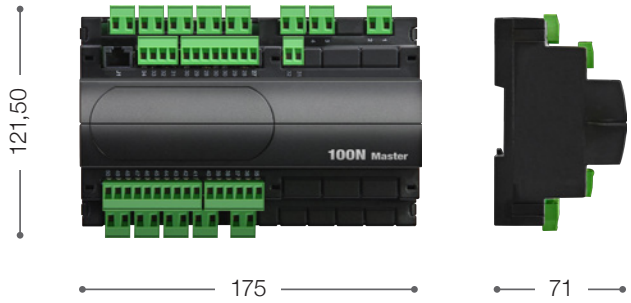
MAIN CHARACTERISTICS

- 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



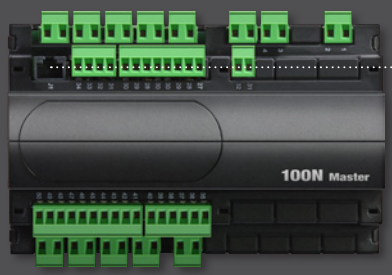
VISION SC 600

TECHNICAL CHARACTERISTICS	VISION SC 600
DIMENSIONS	**VISION SC 600**: 158 x 70 x 32 mm **100N MASTER SC 600**: 175 x 121,50 x 71 mm
WEIGHT	0,7 kg
PROTECTION RATING	IP65 (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, LIQUID 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 (0-10 V DC, COMPRESSOR INVERTER AND CONDENSATION FAN INVERTER)
SUPERVISION SYSTEM	TELENET / MODBUS-RTU
ACCESSORIES	
ACCESSORIES AVAILABLE	200CASVIS03

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.

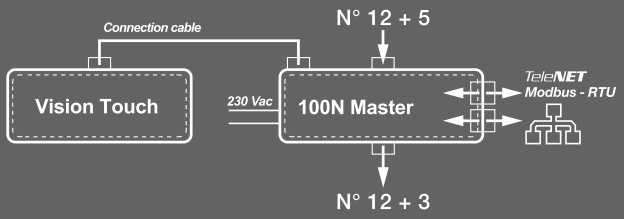
APPLICATIONS

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

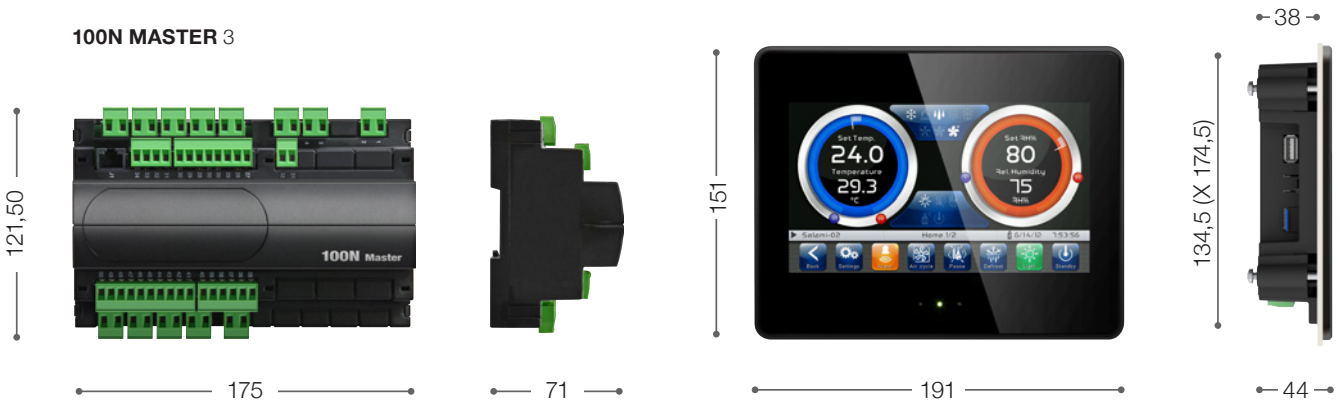
MAIN CHARACTERISTICS

- Web server for remote access.
- Datalogger function.
- 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, Ethernet.
- 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.
- Multilanguage.
- 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 0-10 V 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 3



TECHNICAL CHARACTERISTICS	VISION TOUCH THR
DIMENSION	**VISION TOUCH THR**: 191 x 151 x 44 mm **100N MASTER**: 175 x 121,50 x 71 mm
WEIGHT	1 kg
PROTECTION RATING	IP65 (CONTROL)
POWER SUPPLY	MASTER: 110-230 V AC ±10% 50/60 Hz VISION TOUCH: 12 - 40 V DC + 10/-15% CLASSE 2 12 - 24 V AC + 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
MULTILANGUAGE	YES
ALARM, HISTORY, PASSWORD	YES
HARDWARE REAL TIME CLOCK	YES
DEVICES	USB 2.0 / MEMORY CARD MICROSD / RS485 / ETHERNET
BUZZER	YES
SIGNALLING LED	2 (FRONTALS)
LIGHT SENSOR	YES (FRONTAL)
MATERIAL	CONTAINER: SELF-EXTINGUISHING ABS FRONT: 1,1 mm CHEMICALLY TREATED GLASS.
ACCESSORIES	
ACCESSORIES AVAILABLE	COPL24II I ACCFLTOUCH I SONEE16F6A21

100N MASTER 3 CHARACTERISTICS	
ANALOGICAL INPUTS	5 CONFIGURABLE AS: (NTC) TEMPERATURE AMBIENCE, (NTC) TEMPERATURE PROBES FINISHED DEFROST, (4-20 mA) EXTERNAL HUMIDITY, (NTC) EXTERNAL TEMPERATURE, (4-20 mA) AMBIENT HUMIDITY, (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 30 A AC1 /N.11 16 A 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, HUMIDIFIER REGULATION.

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.

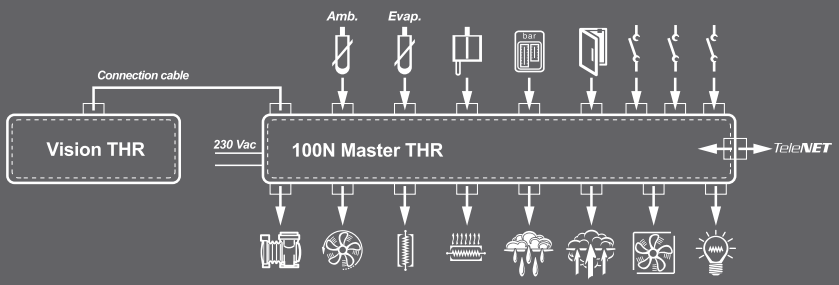
APPLICATIONS

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

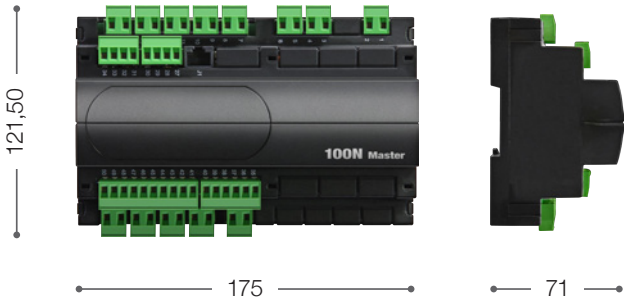
MAIN CHARACTERISTICS

- 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



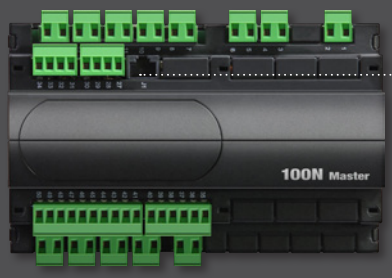
VISION THR

TECHNICAL CHARACTERISTICS	VISION THR
DIMENSIONS	**VISION THR**: 158 x 70 x 32 mm **100N MASTER THR**: 175 x 121,50 x 71 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 (2HP)
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
ACCESSORIES	
ACCESSORIES AVAILABLE	200CASVIS03 I SONEE16F6A21

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.

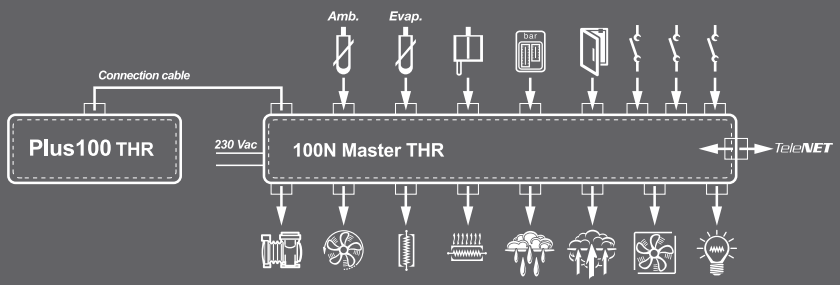
APPLICATIONS

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

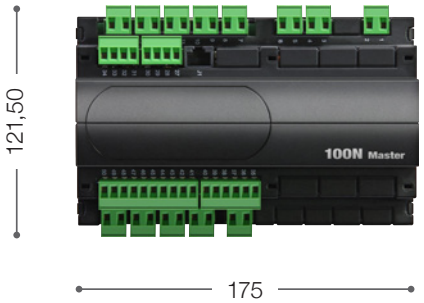
MAIN CHARACTERISTICS

- 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



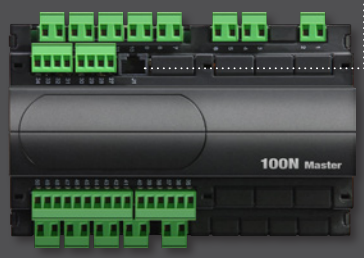
PLUS 100 THR

TECHNICAL CHARACTERISTICS	PLUS 100 THR
DIMENSIONS	**PLUS 100 THR**: 210 x 110 x 35 mm **100N MASTER THR**: 175 x 121,50 x 71 mm
WEIGHT	1 kg
PROTECTION RATING	IP55 (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 (2HP)
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
ACCESSORIES	
ACCESSORIES AVAILABLE	SONEE16F6A21

PLUS 100 THR

CONNECTION CABLE

100N MASTER THR



VISION TOUCH AB

CAPACITIVE TOUCH control designed 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.

MAIN CHARACTERISTICS

- Web server for remote access.
- Datalogger function.
- 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.
- Manages automatic retarding programs that can be customised, consisting of a maximum of 3 steps.
- Possibility of enabling a warning for the end of program.
- Store up to 20 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.
- Touch screen interface with gestures, for a more intuitive control.
- Clock and calendar (RTC).
- Different password for user and installator function.
- Multilanguage.
- 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.

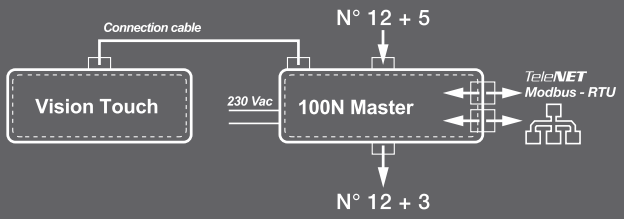
ACCESSORIES

- ACCFLTOUCH: wall-mounting accessory with spring insertion.
- COPL24II: protection in transparent polycarbonate IP65.

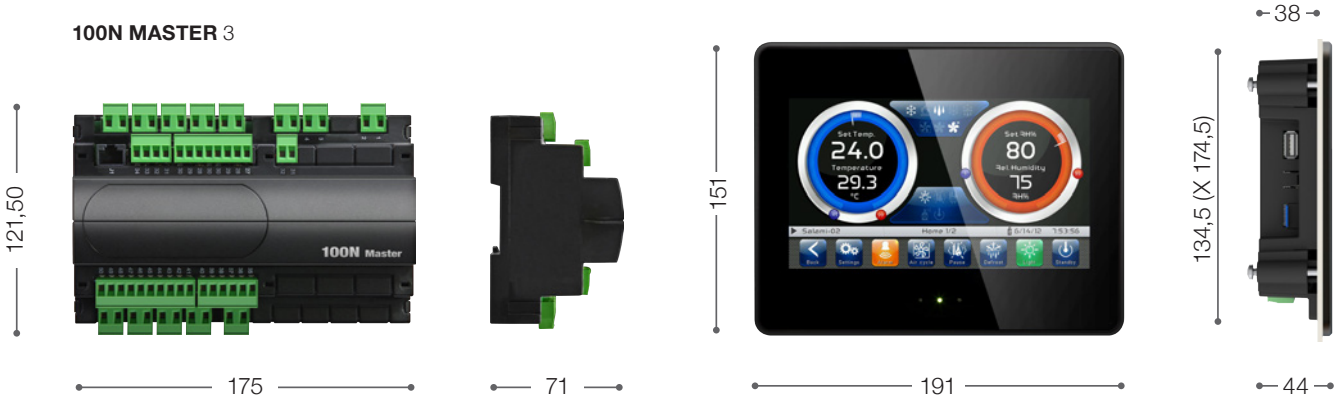
GENERAL CHARACTERISTICS

- 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, Ethernet.
- Acustic signals.
- IP65 frontal protection.
- High quality design and icons.

CONNECTION DIAGRAM



100N MASTER 3



TECHNICAL CHARACTERISTICS	VISION TOUCH AB
DIMENSION	**VISION TOUCH AB**: 191 x 151 x 44 mm **100N MASTER**: 175 x 121,50 x 71 mm
WEIGHT	1 kg
PROTECTION RATING	IP65 (CONTROL)
POWER SUPPLY	MASTER: 110-230 V AC ±10% 50/60 Hz VISION TOUCH: 12 - 40 V DC + 10/-15% CLASSE 2 12 - 24 V AC + 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
MULTILANGUAGE	YES
ALARM, HISTORY, PASSWORD	YES
HARDWARE REAL TIME CLOCK	YES
DEVICES	USB 2.0 / MEMORY CARD MICROSD / RS485 / ETHERNET
BUZZER	YES
SIGNALLING LED	2 (FRONTALS)
LIGHT SENSOR	YES (FRONTAL)
MATERIAL	CONTAINER: SELF-EXTINGUISHING ABS FRONT: 1,1 mm CHEMICALLY TREATED GLASS.
ACCESSORIES	
ACCESSORIES AVAILABLE	COPL24II I ACCFLTOUCH

100N MASTER 3 CHARACTERISTICS	
ANALOGICAL INPUTS	5 CONFIGURABLE AS: (NTC) TEMPERATURE AMBIENCE, (NTC) TEMPERATURE PROBES FINISHED DEFROST, (NTC) TEMPERATURE PIERCING PROBES.
DIGITAL INPUTS	12 CONFIGURABLE AS: MICRO DOOR; REMOTE STAND-BY; GENERAL ALARM; COMPRESSOR SAFEGUARD; FAN SAFEGUARD; GENERIC WARNING 1, 2 AND 3; HIGH/LOW PRESSURE; START/STOP DEFROST; MAN IN COLD ROOM ALARM.
OUTPUTS RELAY	12 (N.1 30 A AC1 /N.11 16 A AC1) CONFIGURABLE AS: COLD, DEFROSTING, EVAPORATOR FANS HIGH SPEED, EVAPORATOR FANS LOW SPEED, ALARM, ROOM LIGHT, FINISHED PROGRAMME ADVISE.
ANALOGICAL OUTPUTS	3 (0-10 V) CONFIGURABLE AS: SPEED EVAPORATOR FANS.

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.

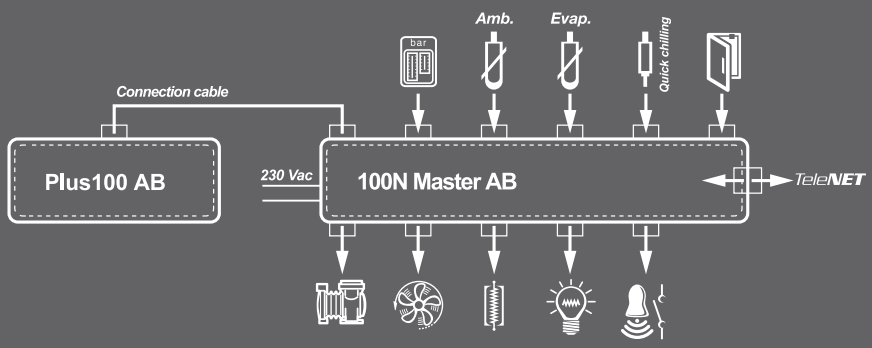
FUNCTIONS

- 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.

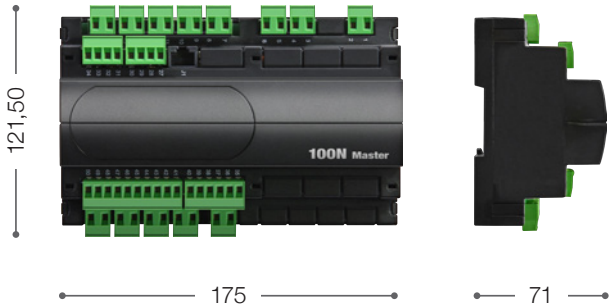
MAIN CHARACTERISTICS

- 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 DIAGRAM



100N MASTER AB



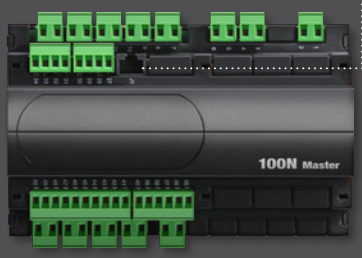
PLUS 100 AB

TECHNICAL CHARACTERISTICS	PLUS 100 AB
DIMENSIONS	**PLUS 100 AB**: 210 x 110 x 35 mm **100N MASTER AB**: 175 x 121,50 x 71 mm
WEIGHT	1 kg
PROTECTION RATING	IP55 (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 (2HP)
EVAPORATOR FANS	500 W
DEFROSTING HEATERS	1500 W (AC1)
ROOM LIGHT	800 W (AC1)
ALARM RELAY	PRESENT
SUPERVISION SYSTEM	TELENET

PLUS 100 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.

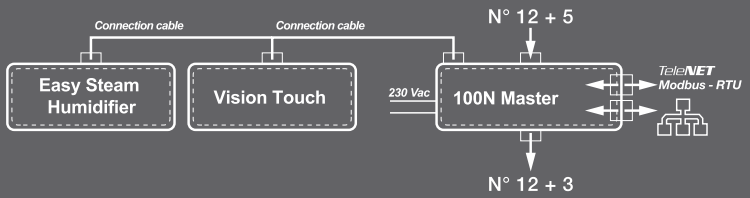
TECHNICAL CHARACTERISTICS

- Web server for remote access.
- 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.

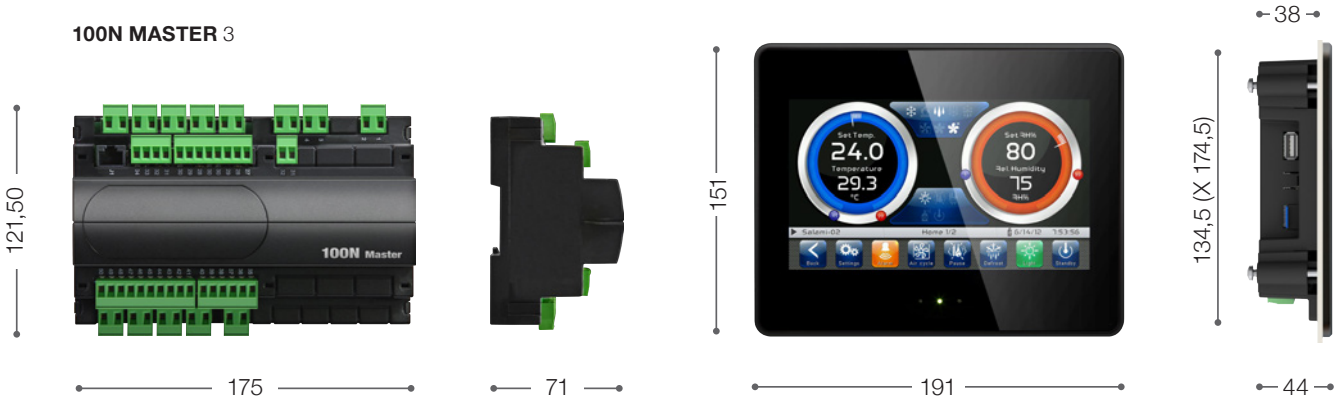
GENERAL CHARACTERISTICS

- 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, Ethernet.
- 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.
- Multilanguage.
- 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 DIAGRAM



100N MASTER 3



TECHNICAL CHARACTERISTICS	VISION TOUCH PAN
DIMENSION	**VISION TOUCH PAN**: 191 x 151 x 44 mm **100N MASTER**: 175 x 121,50 x 71 mm
WEIGHT	1 kg
PROTECTION RATING	IP65 (CONTROL)
POWER SUPPLY	MASTER: 110-230 V AC ±10% 50/60 Hz VISION TOUCH: 12 - 40 V DC + 10/-15% CLASSE 2 12 - 24 V AC + 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
MULTILANGUAGE	YES
ALARM, HISTORY, PASSWORD	YES
HARDWARE REAL TIME CLOCK	YES
DEVICES	USB 2.0 / MEMORY CARD MICROSD / RS485 / ETHERNET
BUZZER	YES
SIGNALLING LED	2 (FRONTALS)
LIGHT SENSOR	YES (FRONTAL)
MATERIAL	CONTAINER: SELF-EXTINGUISHING ABS FRONT: 1,1 mm CHEMICALLY TREATED GLASS.
ACCESSORIES	
ACCESSORIES AVAILABLE	COPL24II I ACCFLTOUCH I SONEE16F6A21

100N MASTER 3 CHARACTERISTICS	
ANALOGICAL INPUTS	5 CONFIGURABLE AS: (NTC) TEMPERATURE AMBIENCE, (NTC) TEMPERATURE PROBES FINISHED DEFROST, (4-20 mA) AMBIENT HUMIDITY.
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 30 A AC1 /N.11 16 A 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, HUMIDIFIER REGULATION.

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.

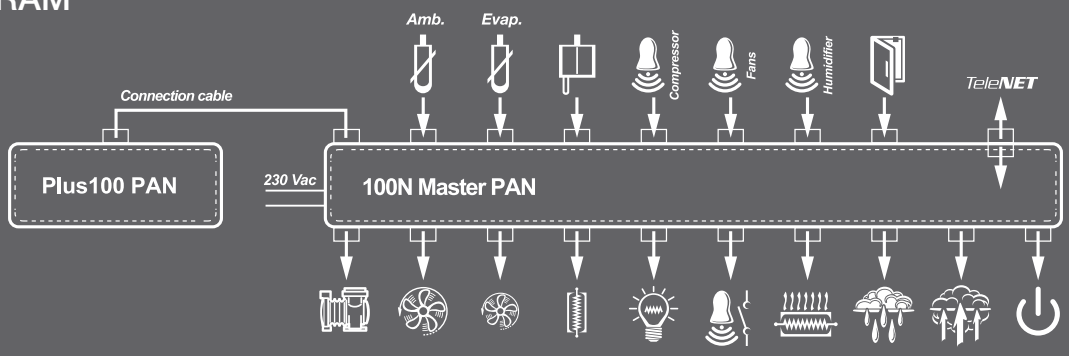
FUNCTIONS

- 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.

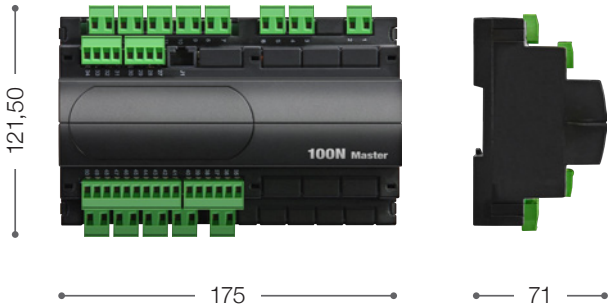
MAIN CHARACTERISTICS

- 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



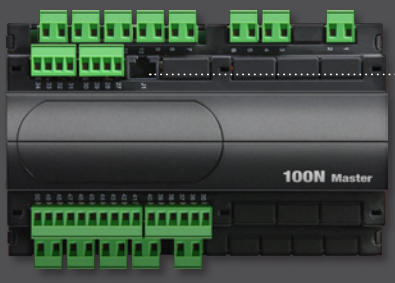
PLUS 100 PAN

TECHNICAL CHARACTERISTICS	PLUS 100 PAN
DIMENSIONS	**PLUS 100 PAN**: 210 x 110 x 35 mm **100N MASTER PAN**: 175 x 121,50 x 71 mm
WEIGHT	1 kg
PROTECTION RATING	IP55 (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 (2HP)
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
ACCESSORIES	
ACCESSORIES AVAILABLE	SONEE16F6A21

PLUS 100 PAN

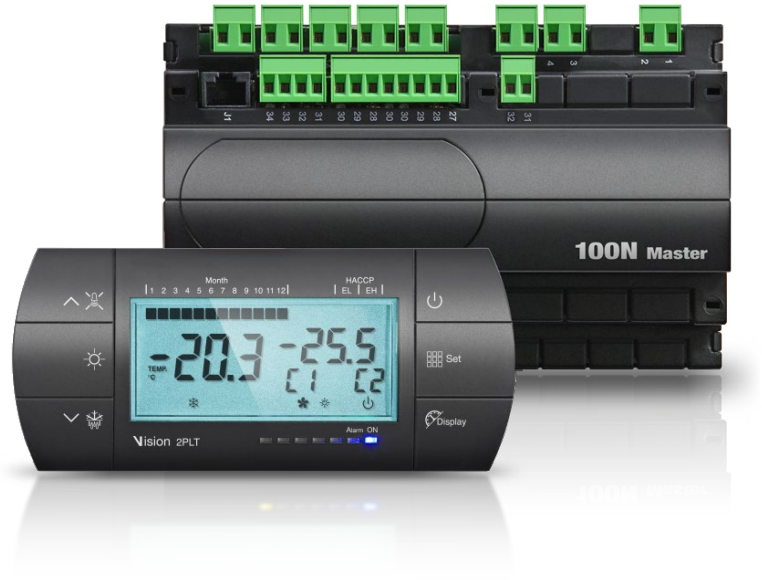
PHONE LEAD

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.



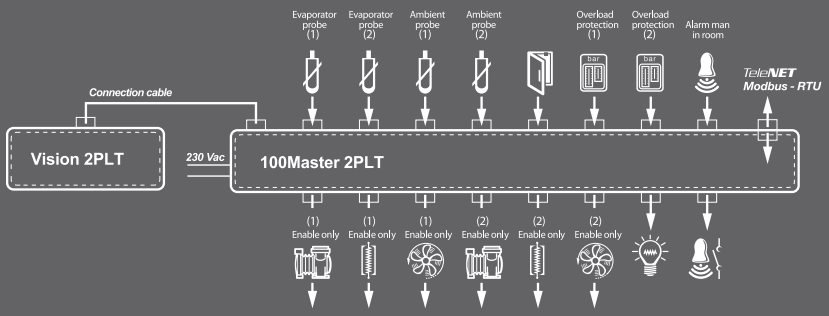
APPLICATIONS

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

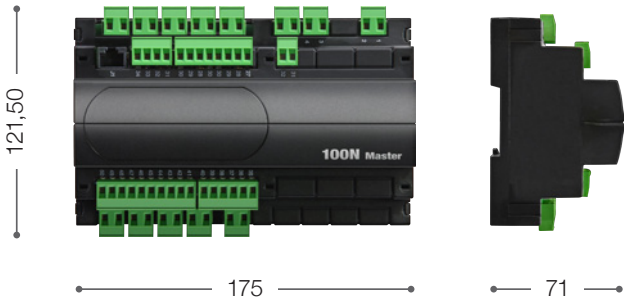
MAIN CHARACTERISTICS

- 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 DIAGRAM

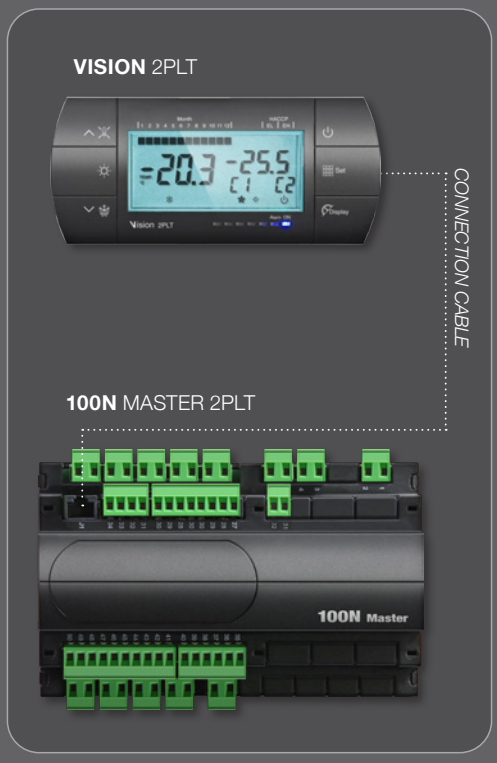


100N MASTER 2PLT



VISION 2PLT

TECHNICAL CHARACTERISTICS	VISION 2PLT
DIMENSION	**VISION 2PLT**: 158 x 70 x 32 mm **100N MASTER 2PLT**: 175 x 121,50 x 71 mm
WEIGHT	1 kg
PROTECTION RATING	IP65 (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
ACCESSORIES	
ACCESSORIES AVAILABLE	200CASVIS03



PLUS200 2PLT

PLUS 200 2PLT | PLUS 200 2PLT DISPLAY

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.

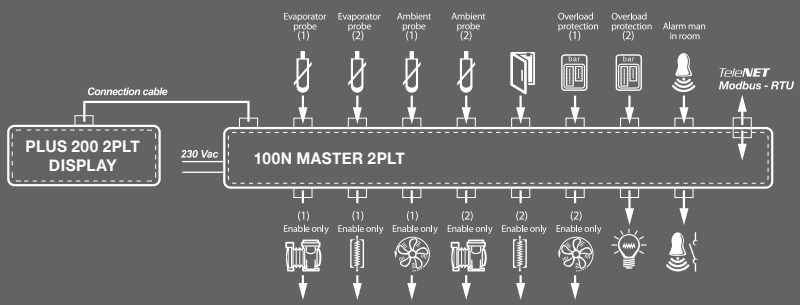
APPLICATIONS

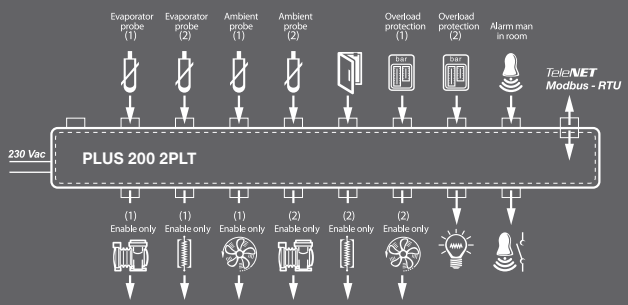
- Low temperature rooms with double safety system.
- Room with single motor condenser unit and double evaporator.

MAIN CHARACTERISTICS

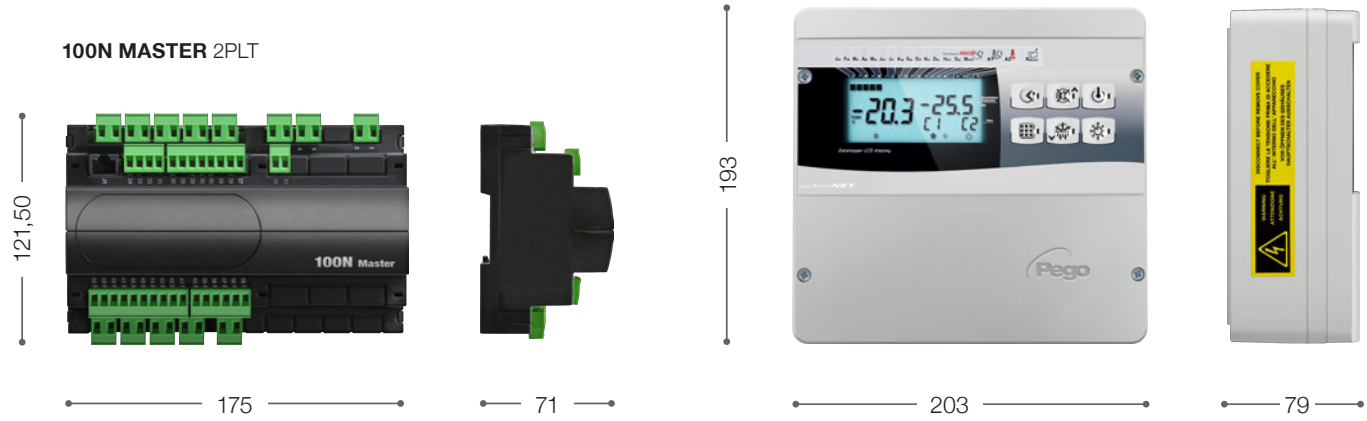
- Single or double environment security probe.
- Single set-point with 2-system control and delayed start of second system, compressor rotation.
- Double set-point for gradual application of refrigeration power.
- Real time clock defrosts with one or two evaporators, each with end-of-defrost sensor.
- 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





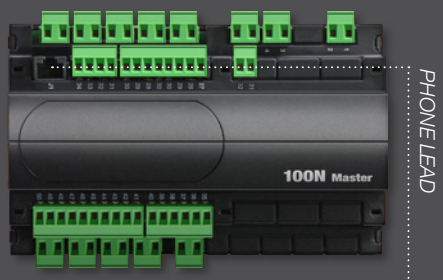
100N MASTER 2PLT



TECHNICAL CHARACTERISTICS	PLUS 200 2PLT DISPLAY	PLUS 200 2PLT
DIMENSIONS	**PLUS 100 2PLT**: 203 x 193 x 79 mm **100N MASTER 2PLT**: 175 x 121,50 x 71 mm	203 x 193 x 79 mm
WEIGHT	1 kg	1 kg
PROTECTION RATING	IP65 (KEYBOARD/DISPLAY)	IP65
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 (2HP)	750 W (1HP)
COMPRESSOR 2	750 W (1HP)	750 W (1HP)
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



PLUS 200 2PLT DISPLAY

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.

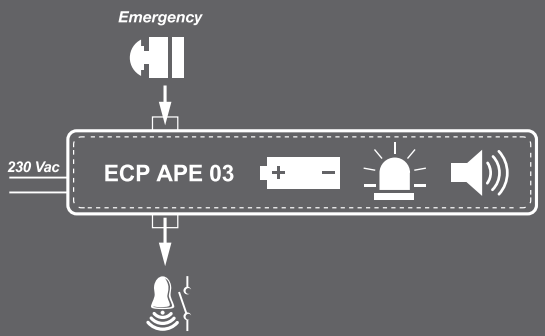
APPLICATIONS

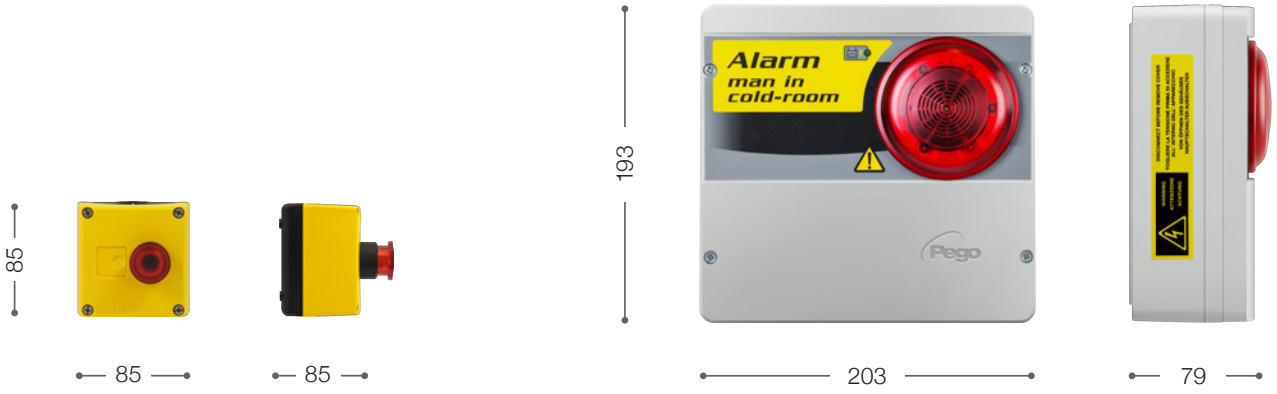
- "Man in room" safety system for low-temperature rooms.

MAIN CHARACTERISTICS

- Complies to the **UNI EN 378-1:2016**, applicable to cold rooms at negative temperatures with a volume greater than 10 m^3.
- **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	CONTROL UNIT: 203 x 193 x 79 mm PUSHBUTTON: 85 x 85 x 85 mm
WEIGHT	2 kg
MAIN POWER SUPPLY	230 V AC 50/60 Hz
MAX CONSUMPTION ON MAIN POWER SUPPLY	20 mA
BUFFER BATTERY	12 V DC 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	IP43 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 IP65 PROTECTION RATING OPERATING TEMPERATURE: -25 - +70°C
AUXILIARY RELAY	8 A AC1 (CONTACT CLOSES WHEN ALARM IS SWITCHED ON)

PLUSR 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 USB key.

APPLICATIONS

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

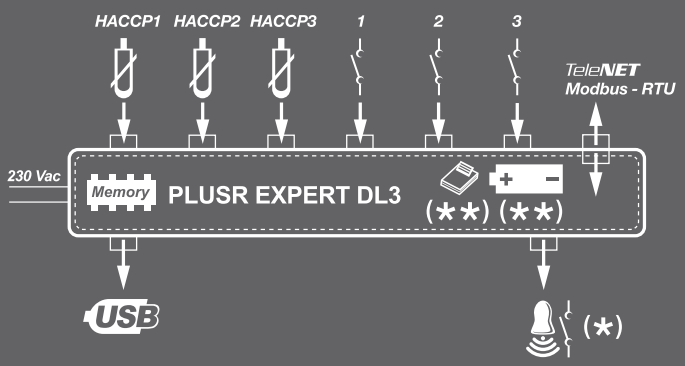
OPTIONS

- Module for communication with smartphone (Android).
- Battery backup up to 40 hours.

CONNECTION DIAGRAM

(*) = Configurable function

(* *) = Optional



MAIN CHARACTERISTICS

- EN 12830 compliant.
- Allows up to three temperatures within the -45°C - +99 °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).
- USB slot built into controller for data downloads.
- Software updating from USB.
- TeleNET 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.

TECHNICAL CHARACTERISTICS	PLUSR EXPERT DL3
BOX DIMENSIONS	263 x 180 x 96 mm
WEIGHT	1 kg
PROTECTION RATING	IP65
POWER SUPPLY	230 V AC ±10% 50/60 Hz
WORKING TEMPERATURE	0 ÷ +50 °C
STORAGE TEMPERATURE	-20 ÷ +60 °C
RELATIVE AMBIENT HUMIDITY	< 90% RH
RANGE OF READING	-45 ÷ +99 °C
TEMPERATURE INDICATOR	LCD DISPLAY WITH BACKLIGHT
ALARM SIGNALS	DISPLAY LCD + BUZZER
MAXIMUM NUMBER OF READINGS WITHOUT OVERWRITE	1 YEAR (CYCLIC MEMORY)
BATTERY BACKUP	OPTIONAL
COMMUNICATION WITH PRINTER/SMARTPHONE (ANDROID)	OPTIONAL
INPUTS	
AMBIENT PROBE	3 x NTC 10 kΩ 1%
DIGITAL INPUT	N° 3 DIGITAL INPUTS
OUTPUTS	
ALARM RELAY	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU
DESIGNATION	
STANDARD REFERENCE	EN 12830
SUITABILITY	S (STORAGE)
LOCATION	A
ACCURACY CLASS	1
MEASUREMENT RANGE	°C

PLUSR EXPERT DL8 DATALOGGER

Eight-channels temperature recorder which allows, for each channel, to monitor and record, at regular intervals, temperature and alarm events. It allows visualization of registered data directly on the LCD display or theirs download on personal computer by an USB key.

APPLICATIONS

- Datalogger function up to 8 temperaturesfor storage and distribution cold rooms of deep-frozen food products.

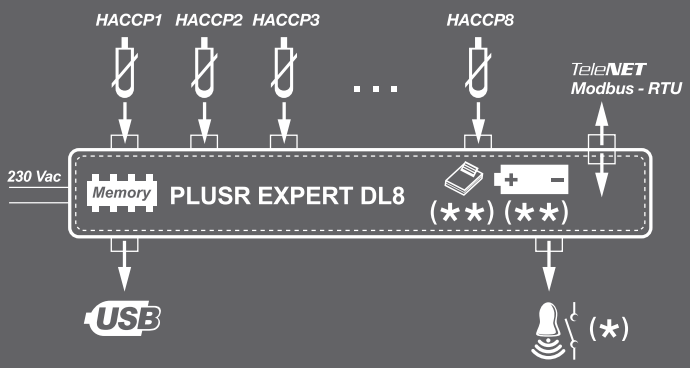
OPTIONS

- Module for communication with smartphone (Android).
- Battery backup up to 40 hours.

CONNECTION DIAGRAM

(*) = Configurable function

(* *) = Optional



MAIN CHARACTERISTICS

- EN 12830 compliant.
- Allows up to eight temperatures within the -45°C - +99 °C interval to be recorded at regular intervals.
- 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 history can be viewed separately to keep track of past alarms (as requested by HACCP).
- USB slot built into controller for data downloads.
- Software updating from USB.
- TeleNET 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.

TECHNICAL CHARACTERISTICS	PLUSR EXPERT DL8
BOX DIMENSIONS	263 x 180 x 96 mm
WEIGHT	1 kg
PROTECTION RATING	IP65
POWER SUPPLY	230 V AC ±10% 50/60 Hz
WORKING TEMPERATURE	0 ÷ +50 °C
STORAGE TEMPERATURE	-20 ÷ +60 °C
RELATIVE AMBIENT HUMIDITY	< 90% RH
RANGE OF READING	-45 ÷ +99 °C
TEMPERATURE INDICATOR	LCD DISPLAY WITH BACKLIGHT
ALARM SIGNALS	DISPLAY LCD + BUZZER
MAXIMUM NUMBER OF READINGS WITHOUT OVERWRITE	1 YEAR (CYCLIC MEMORY)
BATTERY BACKUP	OPTIONAL
COMMUNICATION WITH PRINTER/SMARTPHONE (ANDROID)	OPTIONAL
INPUTS	
AMBIENT PROBE	8 x NTC 10 kΩ
OUTPUTS	
ALARM RELAY	PRESENT
SUPERVISION SYSTEM	TELENET / MODBUS-RTU
DESIGNATION	
STANDARD REFERENCE	EN 12830
SUITABILITY	S (STORAGE)
LOCATION	A
ACCURACY CLASS	1
MEASUREMENT RANGE	°C

MASSIMA CONNETTIVITÀ INTEGRATA

TELENET | TELENET WEB | MYPEGO APP

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.

TELENET WEB

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.
Installation of the WEB package enables quick, complete and simple access to the network tools via the web browser, also from smartphone and tablet.

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 by Pego electrical panel PlusR Expert series.

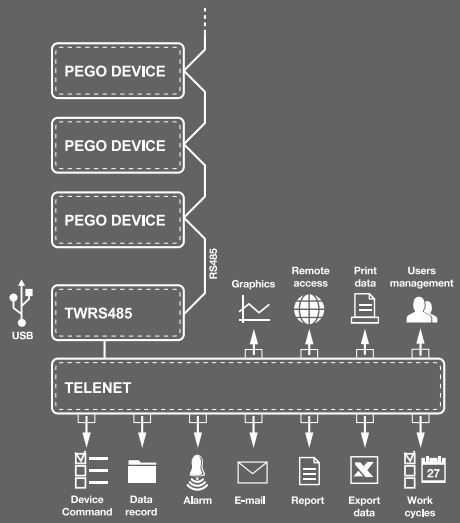
MAIN CHARACTERISTICS

- 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.
- HACCP table.
- Alarms navigator.
- A differentiated alarm management and trasmission of e-mails to mobile phones and computers to inform user of alarm activation/deactivation.
- Interfacing with third party tools via Modbus RTU / TCP (on request).
- Self-recognition of connected instruments.
- Synoptic function, to identify the location of the installed instruments.
- 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).

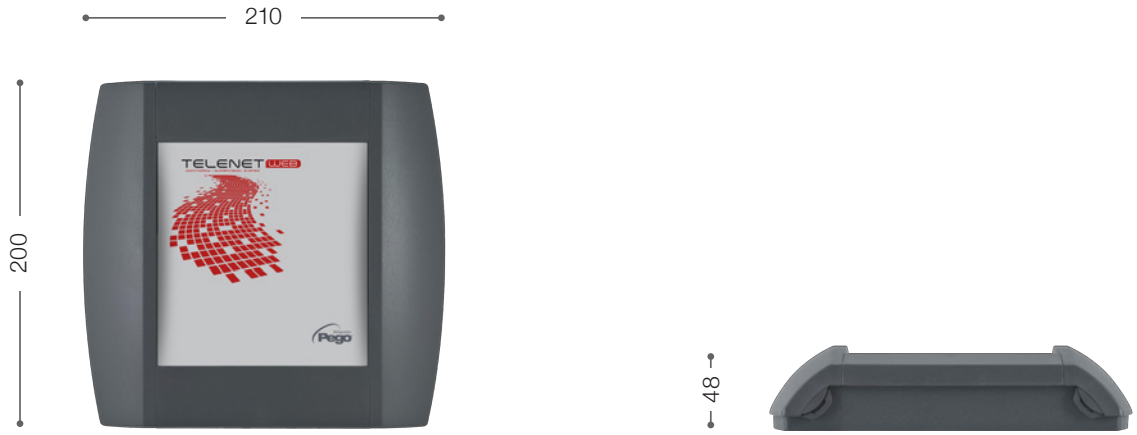
SYSTEM REQUISITES

- Operating system: Windows 7, Windows 8/8.1, Windows 10, Windows 11, Windows Server 2008, Windows Server 2012.
- RAM memory 2 GB (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.
- 2 Ghz processor or higher.

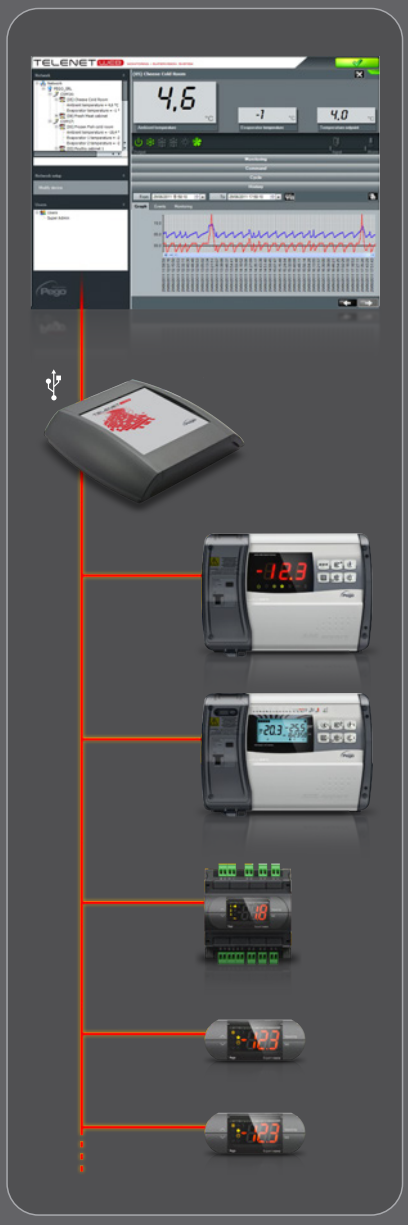
CONNECTION DIAGRAMS



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

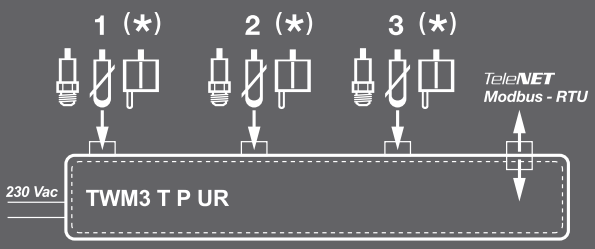
- HACCP temperature monitoring.
- Test rooms/benches.
- Temperature/humidity/pressure monitoring.

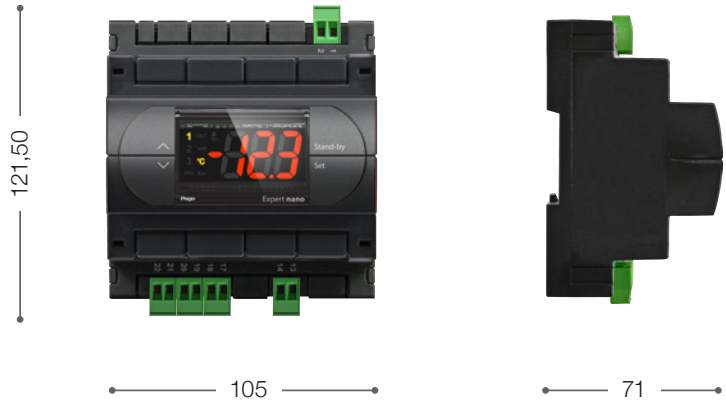
MAIN CHARACTERISTICS

- 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 230 V AC.
- RS485 serial connection with Modbus-RTU or Telenet protocol.

CONNECTION DIAGRAM

(*) = Configurable function





TECHNICAL CHARACTERISTICS	TWM3 T P UR
DIMENSIONS	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	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

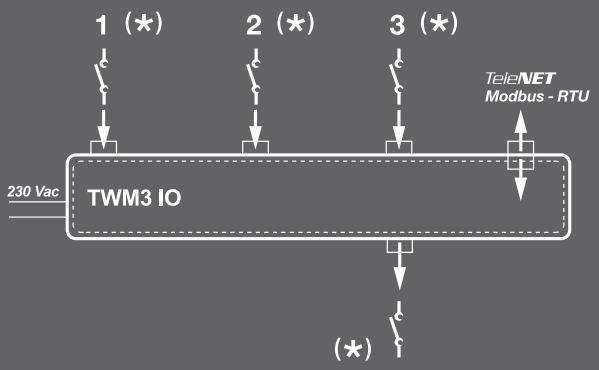
- States or alarms monitoring.
- Test rooms/benches.

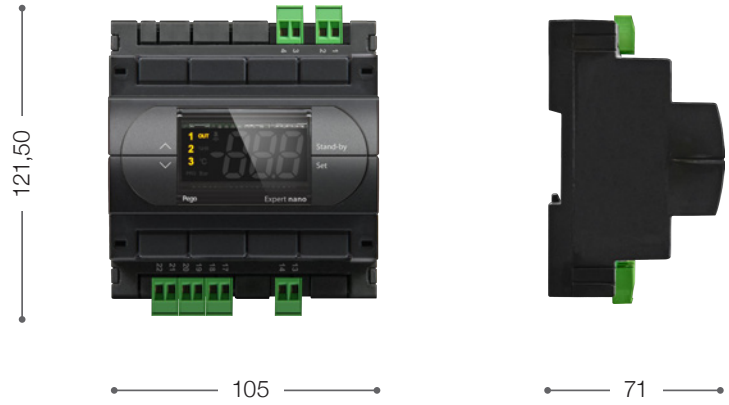
MAIN CHARACTERISTICS

- 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 230 V AC.

CONNECTION DIAGRAM

(*) = Configurable function





TECHNICAL CHARACTERISTICS	TWM3 IO
DIMENSIONS	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	
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.

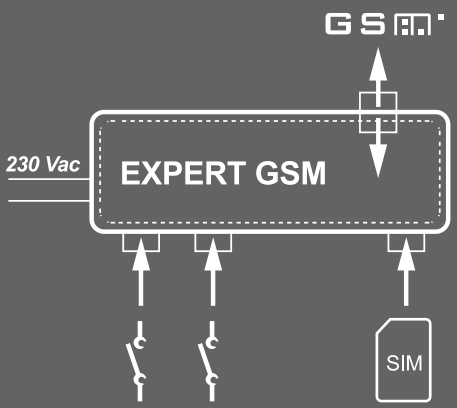
APPLICATIONS

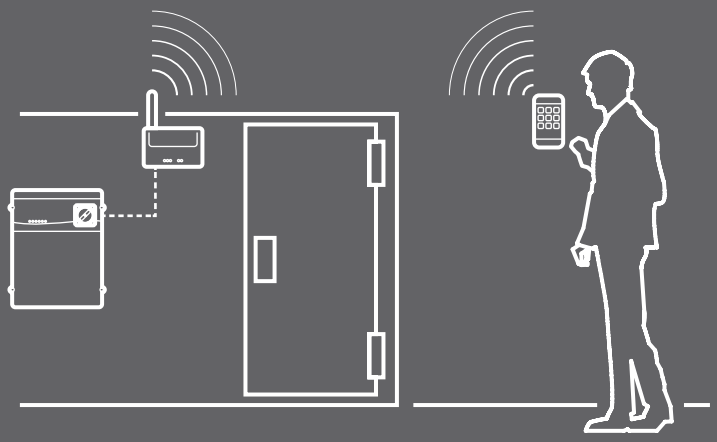
- The module is fully integrated in the series ECP 200 EXPERT and ECP 300 EXPERT and it can be applied on all PEGO electrical boards with alarm output.
- Easy integration into existing systems.

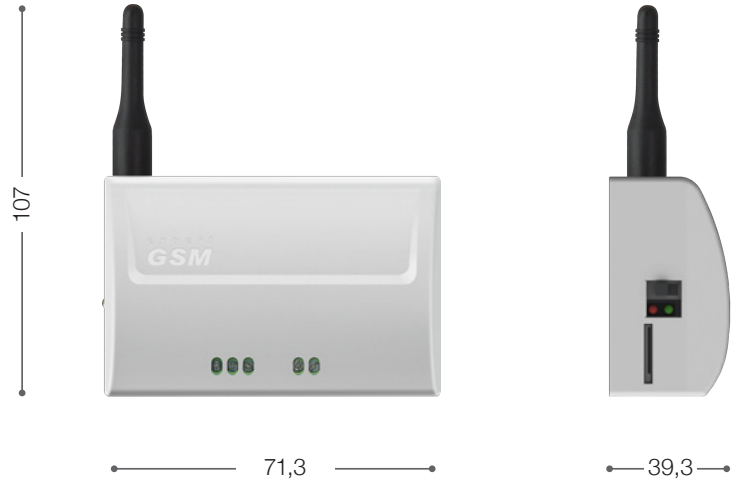
MAIN CHARACTERISTICS

- Sending alarms up to 10 phone numbers.
- Easily programmable via SMS.
- Two digital inputs to activate the alarm.
- 230 V AC 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 DIAGRAM







TECHNICAL CHARACTERISTICS	EXPERT GSM
DIMENSION	107 x 71,3 x 39,3 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

EXPERT LED

EXPERT LED 30 | EXPERT LED 60 | EXPERT LED 120
EXPERT LED 60 LV | EXPERT LED 120 LV
EXPERT LED 60 MEAT | EXPERT LED 120 MEAT

The ceiling light EXPERT LED is the best solution for your cold room's lighting.
It saves energy by using LED technology; furthermore the modern and thin design ensures the minimum space requirements.

APPLICATIONS

- Lighting of cold rooms at negative temperatures.
- Lighting of cold rooms at positive temperatures.

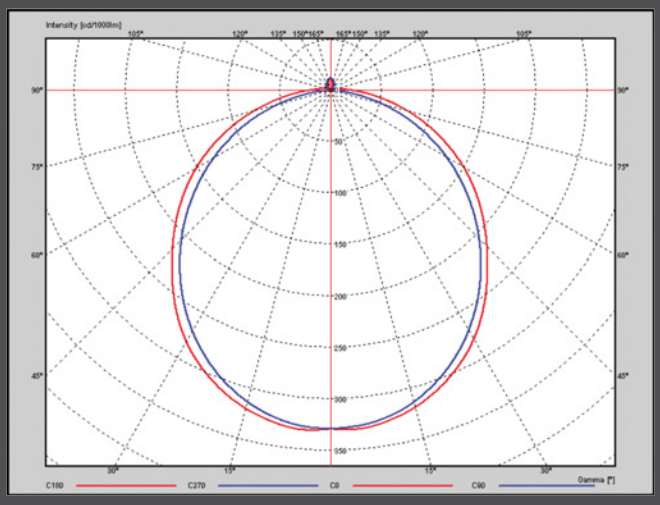
OPTIONS

- LV version, with 24 V DC power supply, dimmable.
- MEAT version, for lighting up the meat exposed in a refrigerated environment.

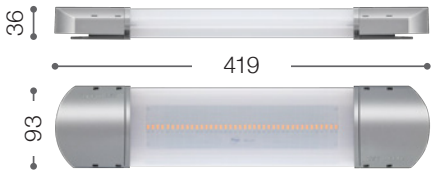
MAIN CHARACTERISTICS

- Instant start, without waiting time, even at low temperatures.
- Energy saving compared with fluorescent solutions.
- Reduced maintenance costs due to the LED's long life.
- Easy installation.
- Thin design.
- IP65 protection rating.
- High brightness.
- Supply circuit designed to minimize the heat generated by the light.
- Light color optimized for meat lighting (EXPERT LED MEAT).

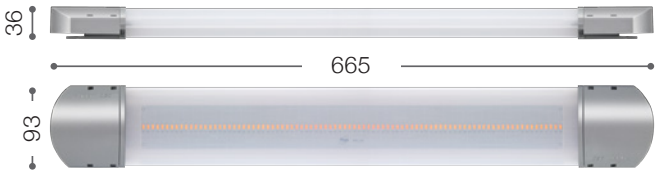
Polar diagram



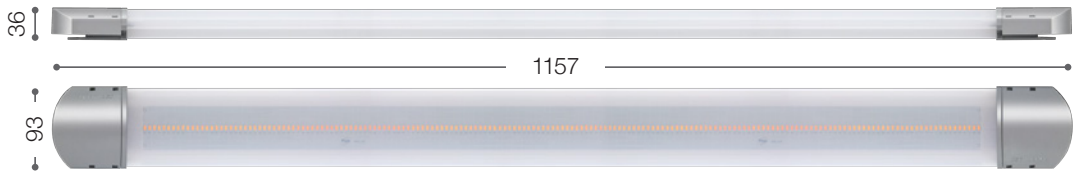
EXPERT LED 30



EXPERT LED 60
EXPERT LED 60 LV
EXPERT LED 60 MEAT



EXPERT LED 120
EXPERT LED 120 LV
EXPERT LED 120 MEAT



TECHNICAL CHARACTERISTICS	EXPERT LED 30	EXPERT LED 60	EXPERT LED 120	EXPERT LED 60 MEAT	EXPERT LED 120 MEAT
DIMENSION	419 x 93 x 36 mm	665 x 93 x 36 mm	1157 x 93 x 36 mm	665 x 93 x 36 mm	1157 x 93 x 36 mm
WEIGHT	0,35 kg	0,65 kg	1,3 kg	0,65 kg	1,3 kg
POWER VOLTAGE					
VOLTAGE	230 V AC ±10% 50/60 Hz	230 V AC ±10% 50/60 Hz	230 V AC ±10% 50/60 Hz	230 V AC ±10% 50/60 Hz	230 V AC ±10% 50/60 Hz
DRIVER	INTEGRATED	INTEGRATED	INTEGRATED	INTEGRATED	INTEGRATED
MAX ABSORBED POWER	8 W	16,5 W	33,5 W	16,5 W	33,5 W
ENVIRONMENT CONDITIONS					
WORKING TEMPERATURE	-30 ÷ +40 °C	-30 ÷ +40 °C	-30 ÷ +40 °C	-30 ÷ +40 °C	-30 ÷ +40 °C
STORAGE TEMPERATURE	-35 ÷ +70 °C	-35 ÷ +70 °C	-35 ÷ +70 °C	-35 ÷ +70 °C	-35 ÷ +70 °C
RELATIVE HUMIDITY	<90% RH	<90% RH	<90% RH	<90% RH	<90% RH
GENERAL CHARACTERISTICS					
LUMINOUS FLUX	700 lumen	1570 lumen	3250 lumen	840 lumen	1700 lumen
COLOR TEMPERATURE	5700 K (Cool White)	5700 K (Cool White)	5700 K (Cool White)	2400 K (Pink)	2400 K (Pink)
COLOR RENDERING INDEX	> 80	> 80	> 80	> 90	> 90
CONNECTION	Pre-wired cable	Pre-wired cable	Pre-wired cable	Pre-wired cable	Pre-wired cable
INSTALLATION	Single; ceiling mounting with screws	Single; ceiling mounting with screws	Single; ceiling mounting with screws	Single; ceiling mounting with screws	Single; ceiling mounting with screws
LAMP	LED; integrated; non-replaceable	LED; integrated; non-replaceable	LED; integrated; non-replaceable	LED; integrated; non-replaceable	LED; integrated; non-replaceable
TURN-ON TIME	<0,2"	<0,2"	<0,2"	<0,2"	<0,2"
WARM-UP TIME (60%)	Instant on	Instant on	Instant on	Instant on	Instant on
NUMBER OF ON-OFF CYCLES	100000	100000	100000	100000	100000
INSULATION AND MECHANICAL CHARACTERISTICS					
PROTECTION RATING	IP65	IP65	IP65	IP65	IP65
MATERIAL	Self-extinguishing polycarbonate V0	Self-extinguishing polycarbonate V0	Self-extinguishing polycarbonate V0	Self-extinguishing polycarbonate V0	Self-extinguishing polycarbonate V0
INSULATION TYPE	Class II	Class II	Class II	Class II	Class II

EXPERT LED EMERGENCY

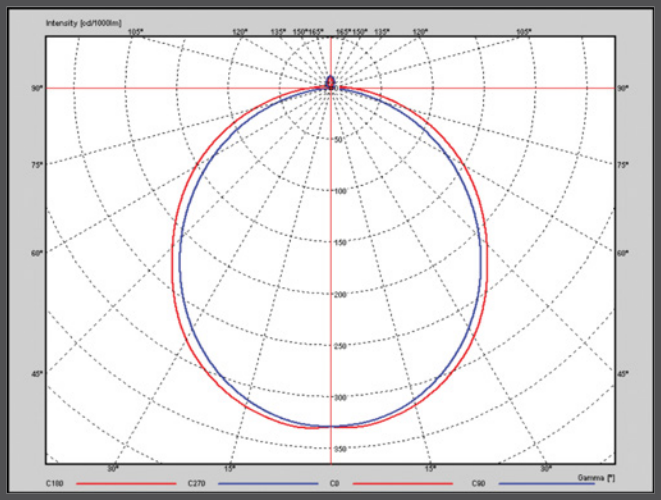
200LEDEM-L | 200LEDEM-D

The EXPERT LED EMERGENCY ceiling light is the best solution for your cold room's emergency lighting.
The use of LED technology, the high transparency diffuser and the careful management of energy consumption guarantee the best performance in terms of light flow and battery life.
The driver allows you to customize EXPERT LED EMERGENCY as needed: in always on mode (SA) for continuous illumination of escape routes or in emergency mode (SE) for activation only without power supply.
The internal diagnostic function allows to control in real time the battery state (installed outside the cold room).
The modern and thin design ensures the minimum space requirements inside the cold room.

APPLICATIONS

- Emergency lighting of cold rooms at negative or positive temperatures (SE).
- Continuous lighting of escape routes in cold rooms at negative or positive temperatures (SA).

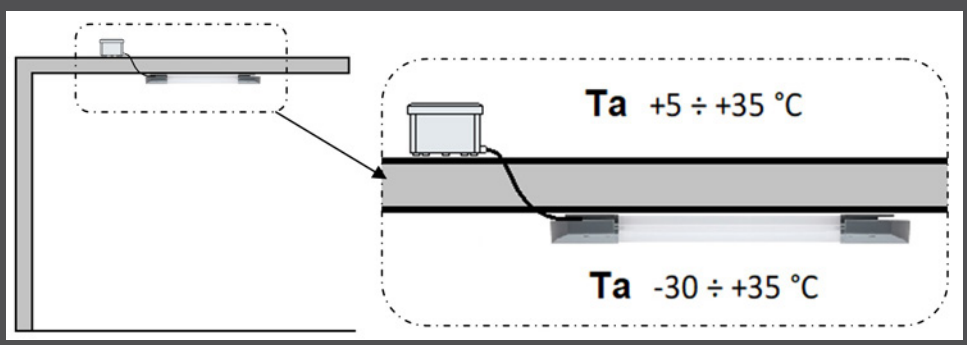
Polar diagram

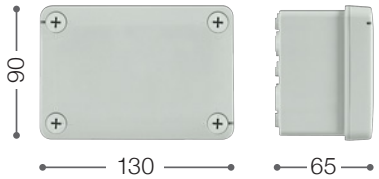


MAIN CHARACTERISTICS

- Instant start, without waiting time, even at low temperatures.
- External driver with integrated battery, specially designed to maximize battery life in without power supply.
- Led power supply status and battery status inside the lamp.
- Configurable in always on mode (SA) or emergency mode (SE).
- Energy saving compared with fluorescent solutions.
- Reduced maintenance costs due to the LED's long life.
- Easy installation.
- Thin design.
- IP 65 protection rating (lamp).
- High brightness.

INSTALLATION





TECHNICAL CHARACTERISTICS	200LEDEM-L (LAMP)
DIMENSION	419 x 93 x 36 mm
WEIGHT	0,35 kg
POWER VOLTAGE	
VOLTAGE	23 V DC SELV
DRIVER	EXTERNAL. Connect only to 200LEDEM -D
MAX ABSORBED POWER	5,1 W
ENVIRONMENT CONDITIONS	
WORKING TEMPERATURE	-30 ÷ +35 °C
STORAGE TEMPERATURE	-20 ÷ +35 °C
RELATIVE HUMIDITY	<90% RH
GENERAL CHARACTERISTICS	
LUMINOUS FLUX	800 lumen
COLOR TEMPERATURE	5700 K (Cool White)
COLOR RENDERING INDEX	> 80
CONNECTION	Pre-wired cable (100 cm)
INSTALLATION	Single; ceiling or wall mounting with screws
LAMP	LED; integrated; non-replaceable
TURN-ON TIME	<0,2"
WARM-UP TIME (60%)	Instant on
NUMBER OF ON-OFF CYCLES	100000
INSULATION AND MECHANICAL CHARACTERISTICS	
PROTECTION RATING	IP65
MATERIAL	Self-extinguishing polycarbonate V0
INSULATION TYPE	Class III

TECHNICAL CHARACTERISTICS	200LEDEM-D (DRIVER)
DIMENSION	130 x 90 x 65 mm
WEIGHT	0,35 kg
POWER VOLTAGE	
VOLTAGE	230 V AC 50/60 Hz
MAX ABSORBED POWER	7,5 W
ENVIRONMENT CONDITIONS	
WORKING TEMPERATURE	+5 ÷ +35 °C
STORAGE TEMPERATURE	-20 ÷ +35 °C
RELATIVE HUMIDITY	<90% RH
GENERAL CHARACTERISTICS	
INSTALLATION	Junction box, mount with screw
DIAGNOSTIC, POWER AND BATTERY STATUS	Signals available from terminal block
OUTPUT	SELV, Pout = 5.1 W, Iout = 0.2 A, Uout (max) = 38 V 100 % (SA) 50 % (SE)
LOAD TYPE	Connect only to 200LEDEM -L
TURN-ON TIME	<0,2 s
NUMBER OF ON-OFF CYCLES	100000
BATTERY	
CODE	100APEBATT (PEGO)
TYPE	12 VDC NI-MH 1300 mAh, replaceable
FULL CHARGE TIME	10 hours
AUTONOMY WITH FULLY CHARGED BATTERY	> 3 hours
MAXIMUM CURRENT SUPPLY	250 mA
INSULATION AND MECHANICAL CHARACTERISTICS	
PROTECTION RATING	IP55
MATERIAL	Polymer self-extinguishing GW 650 °C
INSULATION TYPE	Class II

MicroP

MicroP is a magnetic door switch compatible with all Pego electronics and electronic panels with low voltage digital input.
The simplicity of installation and its technology make it the ideal accessory for cold room management.

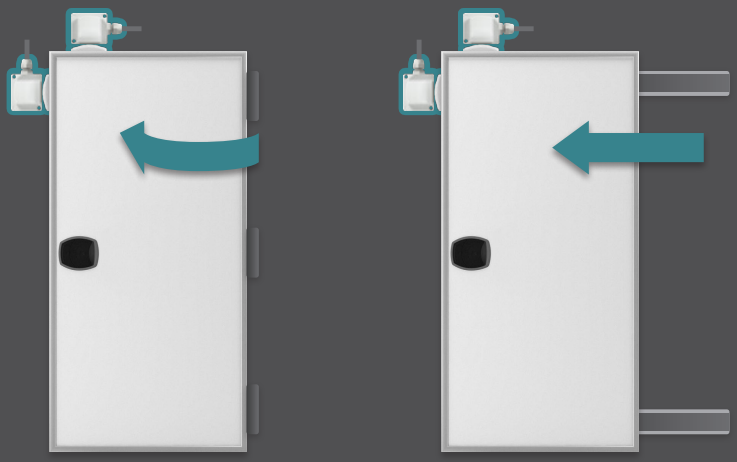
APPLICATIONS

- Magnetic door switch compatible with all Pego electronics and electronic panels with low voltage digital input.

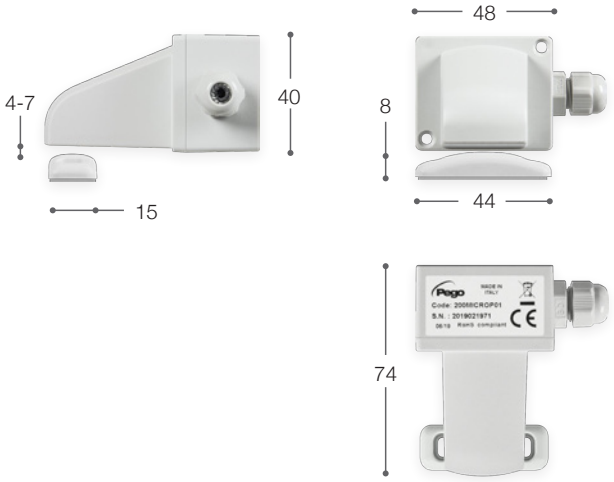
MAIN CHARACTERISTICS

- Contact closed when the magnet is near the sensor (door closed).
- No calibration required.
- The cable exit side can be established during installation, by turning the bottom by 180°.

INSTALLATION



MOUNTING



TECHNICAL CHARACTERISTICS	MICROP
DIMENSIONS	74 x 48 x 40 mm (sensor) 44 x 15 x 8 mm (magnet)
WEIGHT	55 g
ELECTRICAL CHARACTERISTICS	
SWITCHED POWER	10 W
SWITCHED VOLTAGE	200 VDC - 140 VAC RMS
SWITCHED CURRENT	500 mA DC - 500 mA AC RMS
NUMBER OF CYCLES	1.000.000.000 (1V, 10 mA)
ENVIRONMENT CONDITIONS	
WORKING TEMPERATURE	-20 ÷ +90°C
STORAGE TEMPERATURE	-20 ÷ +90°C
RELATIVE HUMIDITY	<90% Rh
GENERAL CHARACTERISTICS	
CABLE ENTRY	PG7, MAX CABLE DIAMETER = 7 mm RIGHT OR LEFT SIDE ENTRY (rotating the bottom)
ELECTRICAL CONNECTION	FIXED SCREW TERMINALS FOR CABLES WITH CROSS-SECTIONS FROM 0.2 TO 1.5 mm^2
TYPE OF CONTACT	N. O.
INSULATION AND MECHANICAL CHARACTERISTICS	
FRONT PROTECTION RATING	IP65
MATERIAL	SELF-EXTINGUISHING POLYCARBONATE V0
INSTALLATION	WITH SUPPLIED SCREWS

NANO BOX

* KIT FOR WALL-MOUNTED NANO THERMOSTAT INSTALLATION.

TECHNICAL CHARACTERISTICS	NANO BOX
DIMENSIONS	215 x 74 x 83 mm
APPLICATIONS	NANO EXPERT series DISPLAY ECHO

* Thermostat and switches not included.
Compatible only with fixed terminal thermostats.

NANO ADAPTER

* KIT FOR PANEL-MOUNTED NANO THERMOSTAT INSTALLATION.

TECHNICAL CHARACTERISTICS	NANO ADAPTER
DIMENSIONS	196 x 42,5 mm
APPLICATIONS	NANO EXPERT series DISPLAY ECHO

* Thermostat and switches not included.

200CASVIS03

ACCESSORY BRACKET FOR VISION CONSOLE.

TECHNICAL CHARACTERISTICS	200CASVIS03
DIMENSIONS	158 x 70 x 47 mm
APPLICATIONS	VISION series

COPL24II

PROTECTION IN TRANSPARENT POLYCARBONATE IP65.

TECHNICAL CHARACTERISTICS	COPL24II
DIMENSIONS	248 x 228 x 28 mm
FRONT PROTECTION RATING	IP65
APPLICATIONS	VISION TOUCH series

ACCFLTOUCH

WALL-MOUNTING ACCESSORY WITH SPRING INSERTION.

TECHNICAL CHARACTERISTICS	ACCFLTOUCH
DIMENSIONS	178,5 x 137 x 35 mm
APPLICATIONS	VISION TOUCH series

SONEE16F6A21

ELECTRONIC HUMIDITY SENSORS.

Equipped with a 4-20mA outlet proportional to a 0-100% relative humidity. Available in wall-mounted version.

TECHNICAL CHARACTERISTICS	SONEE16F6A21
DIMENSIONS	80 x 80 x 38 mm
OUTPUT APPROPRIATE 0-100% RH	4-20 mA
SELV POWER SUPPLY	2 wires, 20-35V DC RL < 500 Ω 11-35V DC RL < 50 Ω
OPERATING TEMPERATURE RANGE	-5 ÷ +50 °C
STORAGE TEMPERATURE RANGE	-25 ÷ +60°C
PROTECTION CLASS	IP65
MOUNTING TYPE	WALL
APPLICATIONS	Controls THR and PAN

STEP MOTOR
EXPANSION VALVES

Castel stepper motor expansion valves are lamination devices that receive the liquid from the condenser and inject it into the evaporator, operating the necessary pressure drop across the expansion orifice by adjusting the value of the superheat in the evaporator itself.
Continuously adjustable valves are equipped with a linear stepper motor, whose positioning is controlled by an external electronic device called a “driver”.

iCastel

APPLICATIONS

The Castel control valve has been designed to work with a reduced number of steps. Thanks to this feature, the valve is able to quickly react to system fluctuations. The quick response time enables the valve to keep the superheat in the order of 0,5°C.
Thanks to the easy installation and composition, Castel expansion valves are compatible with all drivers available on the market and managed by any logic of the command system.
Castel stepper motor expansion valves regulate the flow of refrigerant liquid into evaporators, by modulating the opening and closure of the shutter into a calibrated orifice, allowing a wide range of power variation. These are angle valves that permit the bidirectional flow of the refrigerant, ensuring a high precision and reliable control in both directions and contribute to increase the efficiency of the entire refrigerating system.
The valves are available in three size that are related to the size of the valve body.
Each “Body Size” has different calibrated orifices covering three ranges of power gradually increasing; the overall range of power is from 22 to 90 kW, taking as reference the refrigerant R410A.
Stepper motor expansion valves can be used in a wide range of applications as listed below:

- Refrigeration systems (supermarkets)
- Air conditioning systems
- Heat pump systems

MAIN CHARACTERISTICS

- This device carries out the calculation of superheat by the reading of the pressure and temperature transducers at the evaporator outlet and in turn generates a signal sent to the stepper motor that is transformed into movement/positioning of the valve stem.
- For this reason the stepper motor expansion valve is able to provide a very accurate regulation of refrigerant flow and is, therefore, able to control the value of superheat even under strong thermal load changes, or under large power variation of the refrigeration cycle.

Stepper drive

A stepper motor is an electromechanical device that converts electrical pulses into discrete mechanical movements. The shaft or spindle of a stepper motor rotates in discrete increments when electrical command pulses are applied to it in the correct sequence.
The sequence of the pulses is directly related to the direction of rotation of the motor shaft.
While the frequency of the input pulses is directly related to the speed of rotation of the same.
The rotation of the motor shaft causes the rotation of the nut screw integrated with the shaft itself, inside which moves the threaded screw of the shutter.
This system of screw/nut screw ensures the transformation from rotary motion into a translational movement, whose positioning precision depends either on the pitch angle of the screw, or from the coupling precision of the system for converting the motion.

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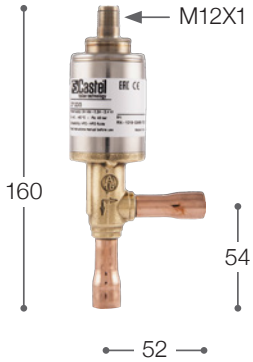

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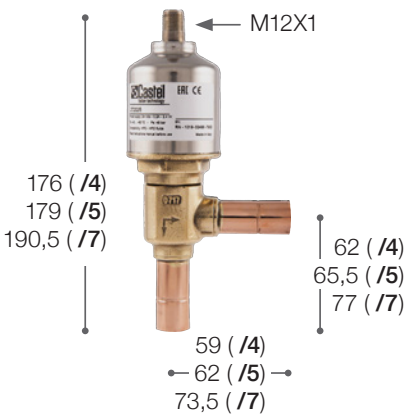

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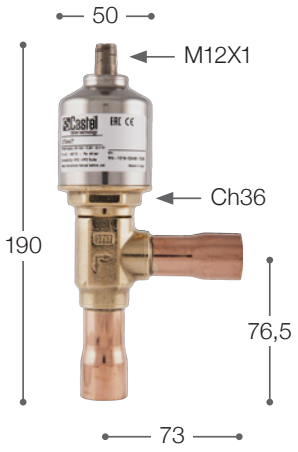

DRAWING	PART NUMBER	CONNECTIONS Ø (in)		CONNECTIONS Ø (mm)		PS	TS [°C]		VOLTAGE	POWER	STEP	IP
		IN	OUT	IN	OUT		Min	Max	V	W	N°	IP
271 	27115/3	3/8”	3/8”	-	-	50	-40	+60	6	2,4	415	IP65
	27115/M10	-	-	10	10							
	27115/M12	-	-	12	12							
	27115/4	1/2"	1/2"	-	-							
	27120/3	3/8”	3/8”	-	-							
	27120/M10	-	-	10	10							
	27120/M12	-	-	12	12							
	27120/4	1/2"	1/2"	-	-							
	27127/3	3/8”	3/8”	-	-							
	27127/M10	-	-	10	10							
	27127/M12	-	-	12	12							
	27127/4	1/2"	1/2"	-	-							
272 	27232/M12	-	-	12	12	50	-40	+60	9	5,4	415	IP65
	27232/4	1/2"	1/2"	-	-							
	27232/5	5/8”	5/8”	16	16							
	27232/7	7/8”	7/8”	22	22							
	27236/M12	-	-	12	12							
	27236/4	1/2"	1/2"	-	-							
	27236/5	5/8”	5/8”	16	16							
	27236/7	7/8”	7/8”	22	22							
273 	27340/7	7/8”	7/8”	22	22	50	-40	+60	9	5,4	415	IP65
	27340/9	1.1/8”	1.1/8”									
	27344/7	7/8”	7/8”	22	22							
	27344/9	1.1/8”	1.1/8”									

DRAWING	PART NUMBER	DEGREE OF PROTECTION	CABLE LENGTH	CONNECTOR
	9901/X08	IP 65	3 m	M12 Circular connector
	9901/X20		15 m	

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