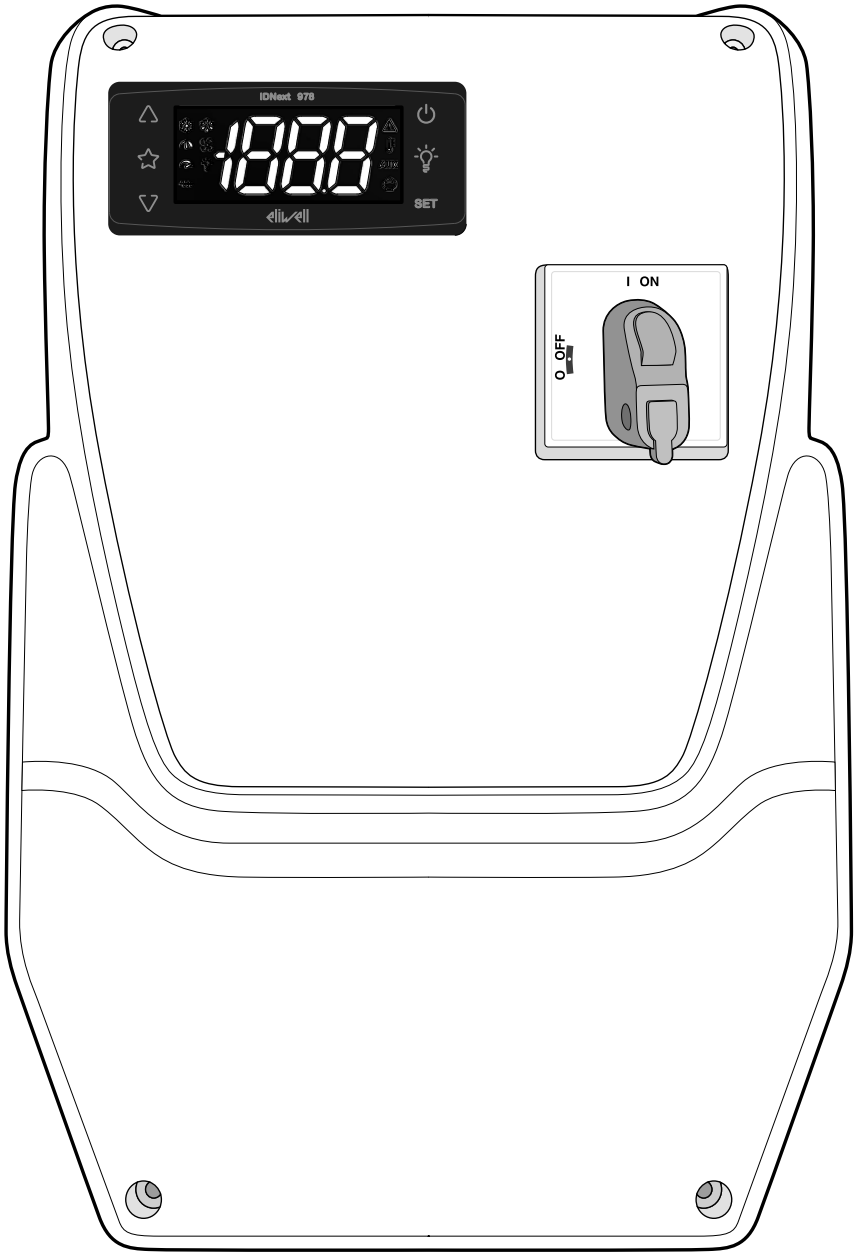
by Schneider Electric



IDNext Panel 978

Instruction manual

9MA10306.00 03/22

Original instructions

Legal information

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As part of a group of responsible, inclusive companies, we are updating the content of our communications which may contain non-inclusive terminology.
Until we complete this process, however, standardized business terms may still be present that could be deemed inappropriate by some of our customers.

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Safety information

Important information

Read these instructions carefully and visually inspect the equipment to familiarize yourself with the device before attempting to install it, put it into operation or service it. The following warning messages may appear anywhere in this documentation or on the equipment to warn of potential dangers or to call attention to information that can clarify or simplify a procedure.



The addition of this symbol to a “Danger” or “Warning” label indicates the existence of an electrical hazard that could result in personal injury should the user fail to follow the instructions.



This is the safety warning symbol. It is used to warn the user of the potential dangers of personal injury.
Observe all the safety warnings that follow this symbol to avoid the risk of serious injury or death.

⚠ DANGER

DANGER indicates a dangerous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

WARNING indicates a dangerous situation which, if not avoided, **could result in** death or serious injury.

⚠ CAUTION

CAUTION indicates a potentially dangerous situation which, if not avoided, **could result in** minor or moderate injury.

NOTICE

NOTICE used in reference to procedures not associated with physical injuries.

N.B.:

The electrical panel (device) must only be installed and repaired by qualified personnel. Schneider Electric and Eliwell cannot accept any liability for any consequences arising from the use of this material.

An authorized person is someone in possession of the skills and knowledge applicable to the structure, to the operation of the electrical equipment and to its installation, and who has received safety training in order to recognize and avoid the risks involved.

Personnel qualification

Only personnel with suitable training and an in-depth knowledge and understanding of the contents of this manual and any other documentation relevant to the product are authorized to work on and with this product. Qualified personnel must be capable of identifying any dangers which may arise from the parameterization or changing of parameter values, and from the use of mechanical, electric and electronic equipment in general.
Plus, they must be familiar with the personal safety laws, provisions and regulations which must be observed during system planning and implementation.

Permitted use

This device is designed to control cold rooms used in commercial refrigeration.

The device must be installed and used in accordance with the instructions provided.

The device must be suitably protected against water and dust based on its application and the inside must only be accessible with the use of a keyed or tooled locking mechanism.

Prohibited use

Any use other than what is permitted is in fact prohibited.
Please note that the relay contacts provided are a functional type and are subject to faults: any protective devices indicated by product regulations or suggested as a result of common sense with regard to obvious safety needs must be implemented outside of the device.

Liability and residual risks

The liability of Schneider Electric and Eliwell is limited to the correct and professional use of the product according to the directives referred to herein and in the other supporting documents, and does not cover any damage (including but not limited to) the following causes:

- unspecified installation/use and, in particular, in contravention of the safety requirements of the legislation in force in the country of installation and/or specified in this document;
- use on equipment which does not provide adequate protection against electrocution, water and dust in the actual installation conditions;
- use on devices which allow access to dangerous parts without the aid of a keyed or tooled locking mechanism;
- product tampering and/or alteration;
- installation/use on equipment that does not comply with the regulations in force in the country of installation.

Disposal



The device must be subjected to separated waste disposal in compliance with current regulations regarding waste disposal.

Product related information

⚠ ⚠ DANGER

RISK OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Any panel maintenance procedures must only be performed by individuals who know how to work in safety.
- Disconnect all power from all equipment including connected devices prior to removing any covers or doors, or installing or removing any accessories, hardware, cables or wires.
- Always use a properly rated voltage sensing device to confirm the power is off where and when indicated.
- Replace and secure all covers, accessories, hardware, cables, and wires and confirm that a proper ground connection exists before applying power to the unit.
- Use only the specified voltage when operating this equipment and any associated products.
- Comply with all standards regarding accident prevention and local applicable safety directives.
- Do not use this equipment for safety-critical functions.

Failure to follow these instructions will result in death or serious injury.

This equipment is designed to operate in non-hazardous locations and where applications which generate - or could potentially generate - hazardous atmospheres have been isolated. Install this device only in areas and with applications known to be free from hazardous atmospheres at all times.

⚠ DANGER

POTENTIAL FOR EXPLOSION

- Install and use this device in non-hazardous locations only.
- Do not use this device in applications which could produce hazardous atmospheres, such as applications which use flammable refrigerants.

Failure to follow these instructions will result in death or serious injury.

For information regarding the use of control equipment in applications capable of generating hazardous materials, please contact the relevant national regulatory bodies or certifying authorities.

⚠ WARNING

RISK OF OVERHEATING AND/OR FIRE

Make sure your application has not been designed with the controller outputs connected directly to instruments that generate a frequently activated capacitive load (1).

Failure to follow these instructions can result in death, serious injury, or equipment damage.

(1) Even if your application does not apply a frequently activated capacitive load to the relays, capacitive loads decrease the life of every electromechanical relay and the installation of a contactor or external relay, sized and maintained in accordance with the size and features of the capacitive load, helps to minimize the effects of relay degradation.

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

- The device's signal cables (probes, digital inputs, communication and relative power supplies), must be laid separately from the power cables.
- Every implementation of this equipment must be tested individually and completely in order to check its proper operation before it is commissioned.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

NOTICE

INOPERABLE DEVICE

- When connecting probes and the digital input, use cables shorter than 10 m (32.80 ft).
- For TTL serial line connection, use cables no longer than 1 m (3.28 ft).

Failure to follow these instructions can result in equipment damage.

Information about...

Scope of the document

This document refers to the IDNext Panel 978 electrical panel, including information relating to installation and wiring.

Use this document to:

- install, use and service the electrical panel.
- connect the electrical panel to a supervisor.
- familiarize yourself with the functions of the electrical panel.

Note: read this document and all related documents carefully before installing, operating or servicing the panel.

Note regarding validity

This document applies to IDNext Panel 978, in the following versions:

- Single-phase, thermal relay 5.5...8 A 230 Vac
- Single-phase, thermal relay 8... 11 A 230 Vac
- Tri-phase, thermal relay 3.7...5.5 A 400 Vac
- Tri-phase, thermal relay 5.5...6 A 400 Vac

The technical characteristics of the devices described in this manual are also available online. The characteristics illustrated in this manual should be identical to those which can be found online.

In line with our policy of constant improvement, we may later revise the content to improve its clarity and accuracy. If you notice any discrepancies between the manual and the information available online, use the latter as your point of reference.

Related documents

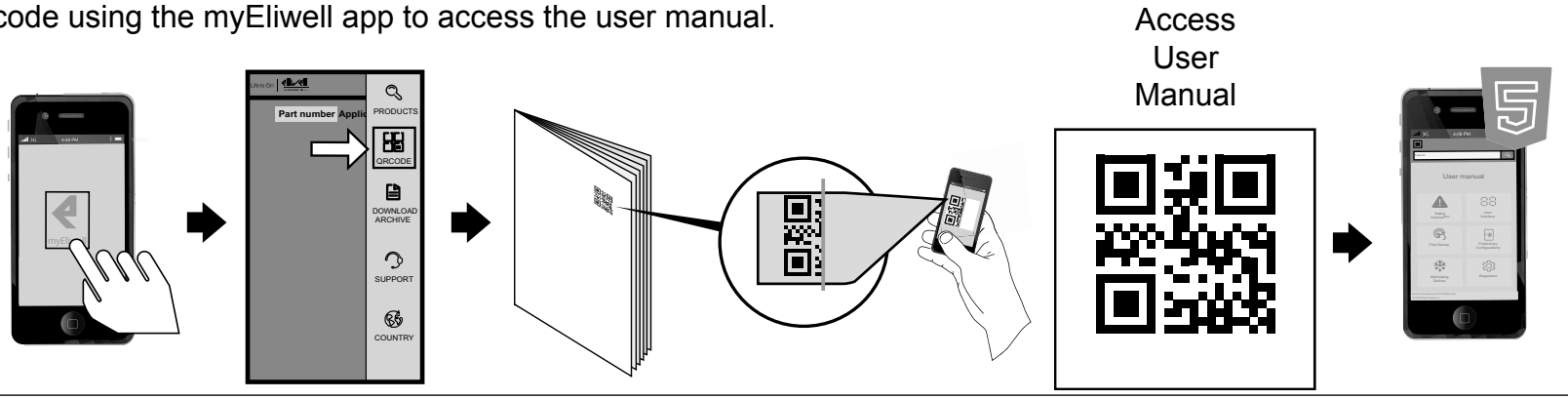
Document title	Reference document code
IDNext Panel 978 User Manual (this manual)	9MA00306.00 (IT)
	9MA10306.00 (EN)
	9MA50306.00 (DE)
	9MAA0306.00 (RU)
	9MAU0306.00 (AR)
IDNext User Manual [1]	IDNXP-00IT MAN IDNext -HC (IT)
	IDNXP-00EN MAN IDNext -HC (EN)
Schneider Electric component documentation	see https://www.se.com

[1] reference only for regulators and functions sections. Technical characteristics, fitting, wiring and servicing details are provided in this IDNext Panel 978 User Manual

These technical publications and other technical information can be downloaded from our website, at the address: www.eliwell.com

IDNext User Manual QR CODE

Scan the QR code using the myEliwell app to access the user manual.



Download the myEliwell APP from: Google play / App Store

Receipt, handling and storage

Storage and handling

Warnings

NOTICE
INOPERABLE DEVICE • Consult the manufacturer and check the warranty terms if the product needs to be stored in a warehouse for long periods. • Protect the panel from humidity, vibrations and impacts. • Make sure all the cables are inside the box and that the cover is closed and locked. **Failure to follow these instructions can result in equipment damage.**

Ambient conditions

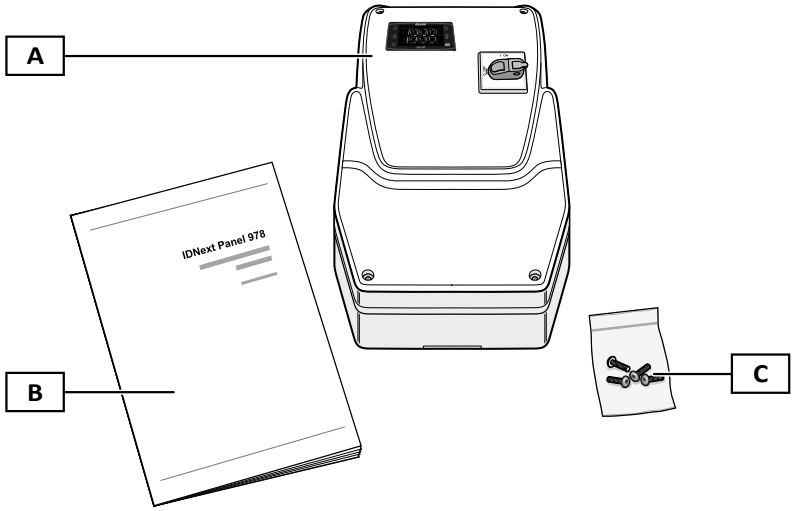
The electrical equipment is designed to withstand the effects of transportation and storage temperatures between -25...70 °C (-13...158 °F). For temperatures outside this interval, take suitable protective precautions.

See “Ambient storage conditions” on page 54.

Product ID

Package contents

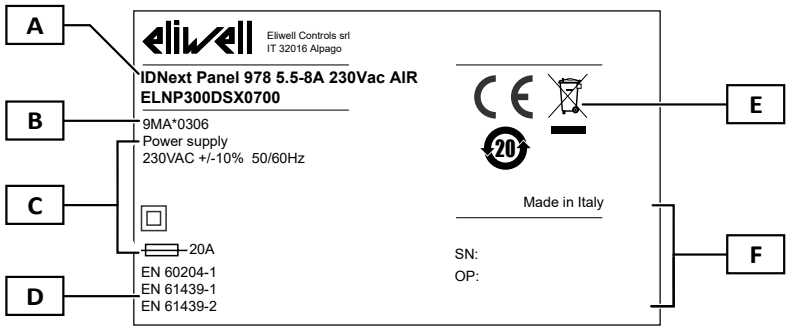
The following elements are supplied in the package sold:



Part	Description
A	IDNext Panel 978
B	Instruction manual and drilling template (this document)
C	Four screws for closing the panel cover

ID label

The information on the ID label is important when you require assistance or servicing, or if you need to request accessories.



Part	Description
A	Product ID data (name, basic characteristics, code)
B	Reference instruction manual code (this manual)
C	Technical data
D	Reference standards
E	EC Labeling
F	Manufacturing data

Device description

General description

Introduction

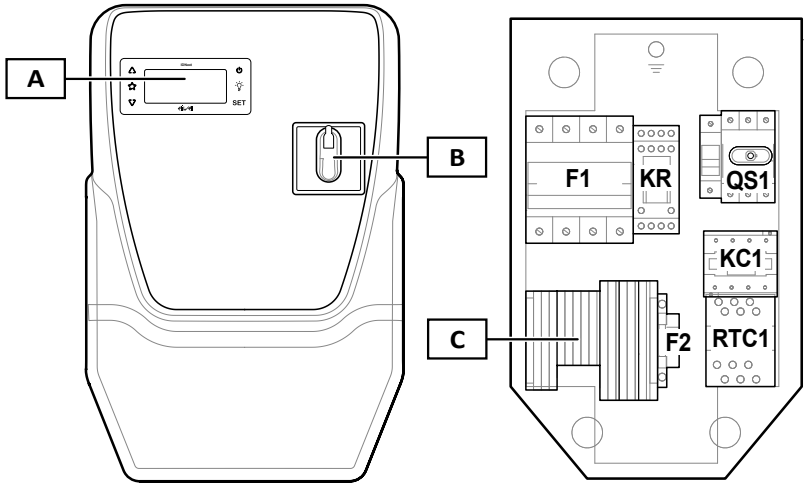
IDNext Panel 978 is an electrical panel comprising an electronic controller and electromechanical components used to control both static and ventilated refrigerating units.

Versions

IDNext Panel 978 is available in several versions, for the control of compressors and tri-phase or single-phase electric heaters:

- Single-phase, thermal relay 5.5...8 A 230 Vac
- Single-phase, thermal relay 8... 11 A 230 Vac
- Tri-phase, thermal relay 3.7...5.5 A 400 Vac
- Tri-phase, thermal relay 5.5...6 A 400 Vac

Main components



Part	Description
A	IDNext 978 electronic controller
B	Disconnecter handle
C	Main terminal block
F1	Protection fuse holder for power parts
KR	Relay with four switching contacts
QS1	General disconnecter with door lock
KC1	Contactor
RTC1	Thermal relay
F2	Controller protection fuse holder

Note: the illustration refers to the tri-phase version.

Inputs and outputs

Introduction

Through the controller, IDNext Panel 978 manages:

- two probe inputs
- one digital input DI
- four digital outputs
- one TTL serial port

The input and output configuration should be defined during the panel configuration stage.

Probe inputs

Input Pb1 is used for the temperature, to regulate the compressor; input Pb2 is used for the temperature sensor, to regulate defrosting or evaporator fans.

Digital input

The digital input can be used for:

• defrost activation	• reduced set	• auxiliary
• door switch	• external alarm	• stand-by
• pressure switch	• deep cooling	• light
• energy saving	/	/

Outputs

The four digital outputs can be used to manage:

• compressor	• defrost heater	• evaporator fans
• alarm	• auxiliary	• stand-by
• light	• buzzer	• condenser fan
• heater dead band control	/	/

Digital output 2 and digital output 3 are managed indirectly, by means of a relay and a contactor plus thermal relay respectively.

TTL serial port / software tool

The TTL serial port has the following functions:

- connecting the supervision systems via Modbus communication.
  Note: communication with a supervisor requires:
  a) TTL-RS485 Bus**Adapter** 150 interface module (optional).
  b) TTL-RS485 Bus**Adapter** 150 DONGLE interface module (optional).
- Eliwell AIR App and HACCP Module
- use the UNICARD (optional) for controller configuration.

Parameters

Parameters

The controller input and output configuration and operating logics are defined by the parameters directly available through the interface.

The controller is pre-configured using a parameter map. The map values can be changed and, if necessary, restored.

Parameter visibility

The parameters have two levels of visibility:

- **User**: parameters for basic controller configuration. They can be protected with user password **PA1** and are listed in the “User parameters table” on page 61.
- **Installer**: organized in folders, these include user parameters and other parameters for advanced controller configuration. They can be protected with installer password **PA2** and are listed in the “Installer parameters table” on page 62.

Applications

Introduction

Applications are sets of preset parameters which facilitate controller configuration. Application values are automatically loaded in the parameter map so that they can then be changed in order to respond to the actual application in the best possible way.

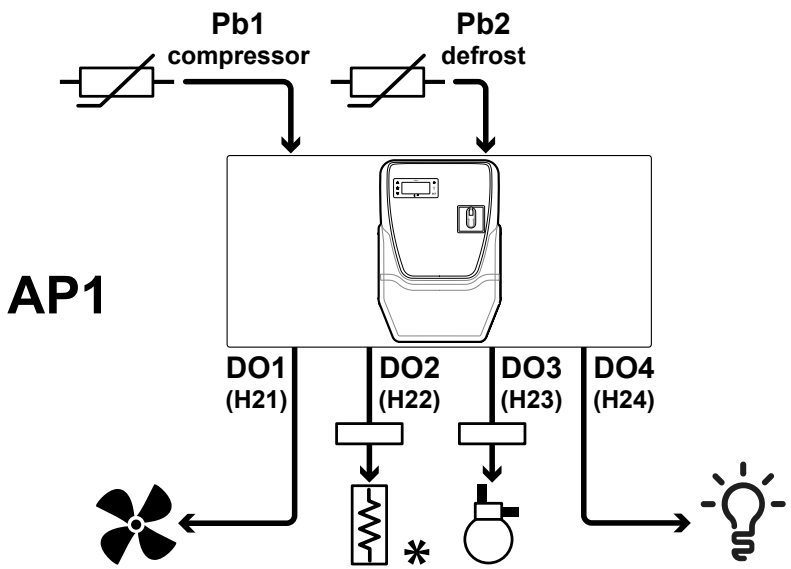
Preset applications

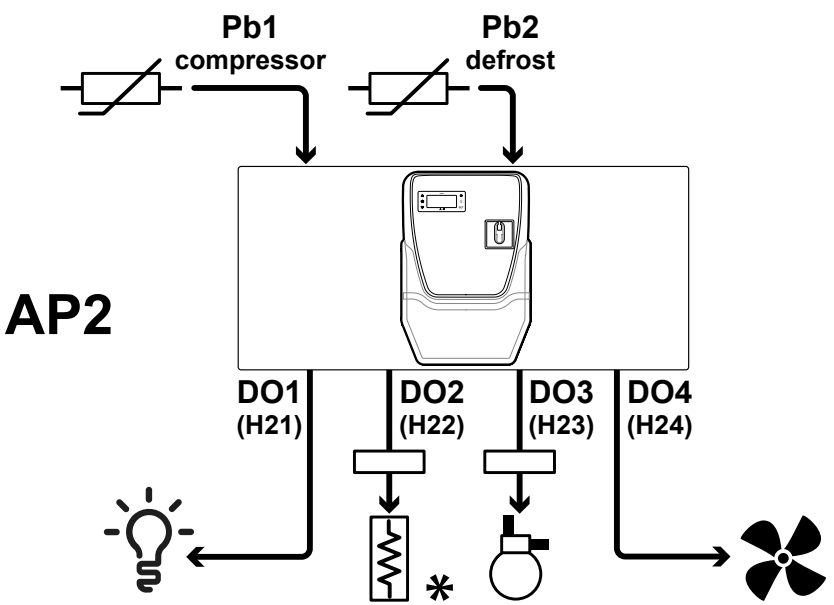
Four preset applications are provided (**AP1**, **AP2**, **AP3**), which mainly differ due to the configuration of the digital outputs.

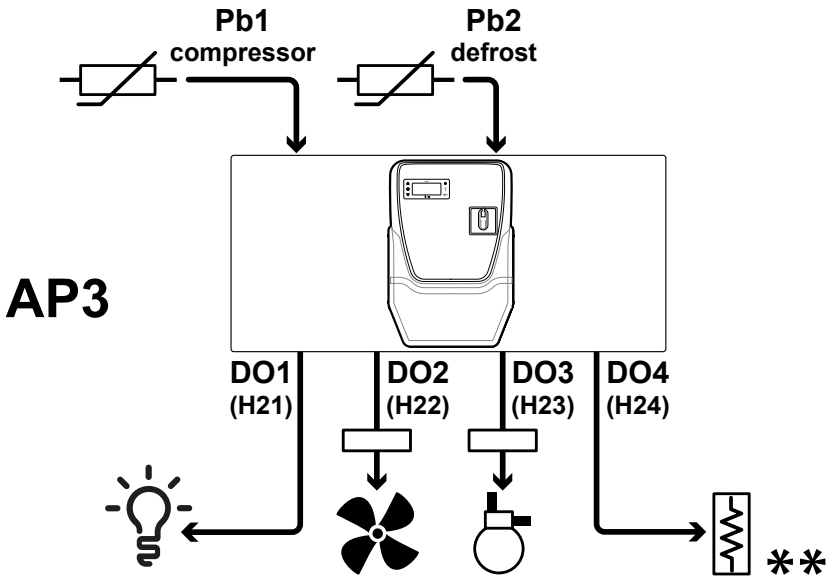
Application AP1 corresponds to the factory configuration.

Application	Digital output 1 (DO1) parameter H21	Digital output 2 (DO2) parameter H22	Digital output 3 (DO3) parameter H23	Digital output 4 (DO4) parameter H24	Probe input (Pb1)	Probe input (Pb2)	Digital input 1 (DI)
AP1	Evaporator fans (**3**)	Defrost heater (**2**)	Compressor (**1**)	Light (**5**)	Compressor	Evaporator	not configured
AP2	Light (**5**)	Defrost heater (**2**)	Compressor (**1**)	Evaporator fans (**3**)	Compressor	Evaporator	not configured
AP3	Light (**5**)	Evaporator fans (**3**)	Compressor (**1**)	Cycle inversion defrost (**2**)	Compressor	Evaporator	not configured

To find out the default values of the applications for all parameters, see “Installer parameters table” on page 62.







Note *: electric defrost.

Note **: cycle inversion defrost.

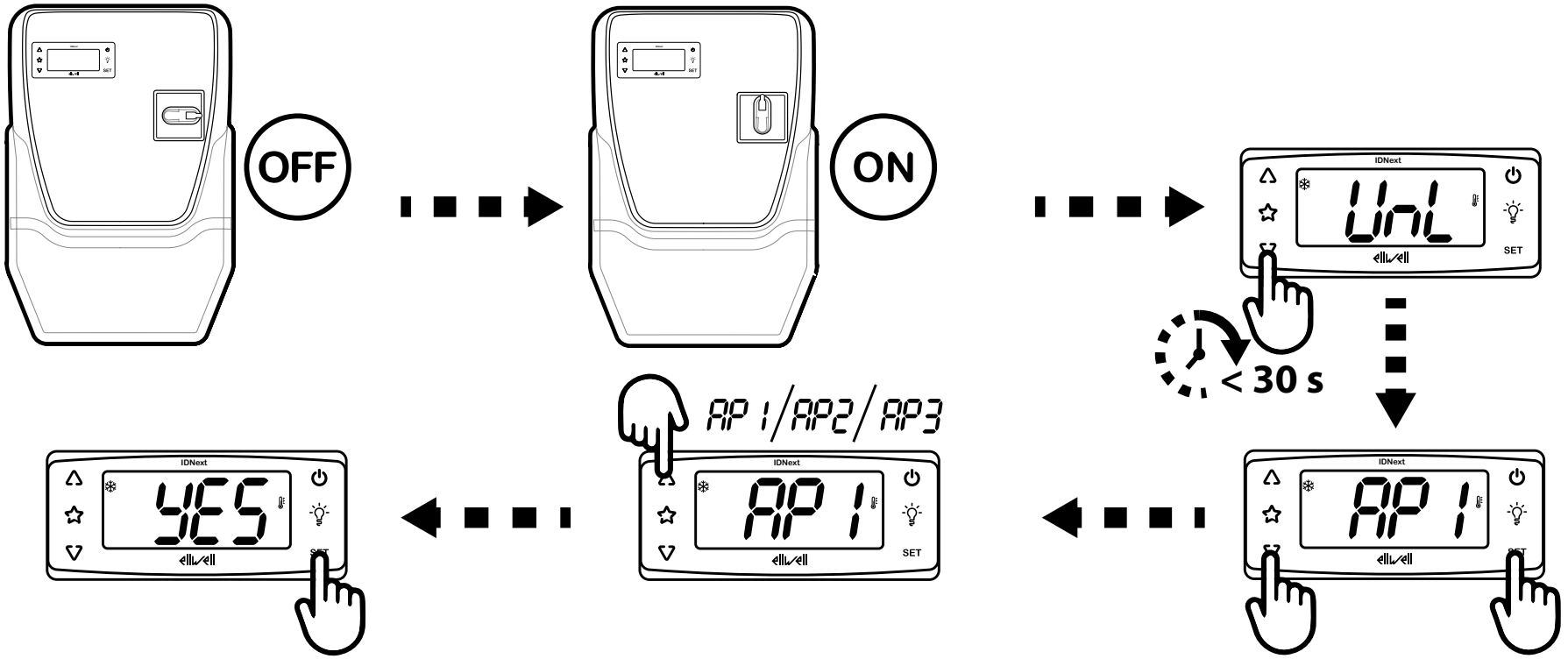
Legend

Symbol	Description	Symbol	Description
 **compressor**	Input Pb1, temperature sensor for compressor control		Defrost heater **Note ***: electric defrost. **Note ****: cycle inversion defrost.
 **defrost**	Input Pb2, temperature sensor for defrost control		Compressor
	Light		Evaporator fans

Application selection

The procedure for loading one of the preset applications is as follows:

1. If the controller is on, switch it off
2. Switch on the controller
3. Press and hold ▽ for at least 3 seconds, until the label “UnL” appears, to unlock the keypad
4. Within 30 seconds of startup, press and hold (SET + ▽) for at least 5 seconds, until label “**AP1**” appears
5. Scroll through the **AP1**, **AP2** and **AP3** applications using △ and ▽
6. Confirm the chosen preset application using SET.
   Note: The process can be canceled by pressing ⏻ or letting a timeout occur (15 seconds)
7. If the procedure was completed successfully, the display will show "**yES**"; otherwise it will show "**no**"
8. The regulator will restart and revert to showing the main display.



The procedure for loading one of the preset applications restores the respective default values, with the exception of the parameters NOT specific to the application that retain the value set previously. These values, left unaltered, may not be suitable and may therefore need to be changed.

NOTICE

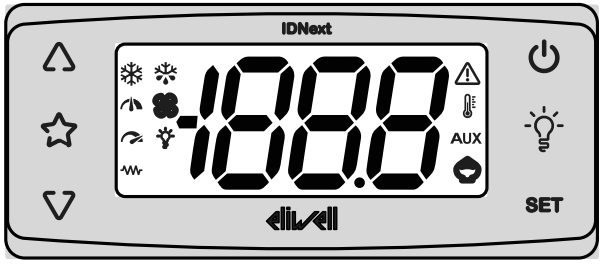
INOPERABLE DEVICE

Check the parameters after loading a preset application.

Failure to follow these instructions can result in equipment damage.

NOTE. For correct and precise equipment operation, only use Eliwell probes.

Controller interface



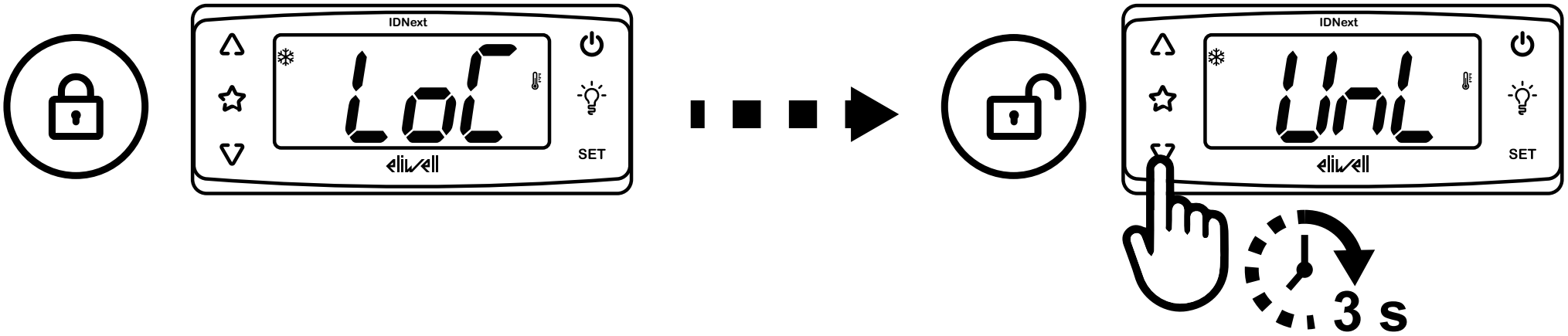
Controller status

Controller status	Display	Disconnecter handle position	Description
On	On	ON	The controller is active in all its functions (unless faults are indicated)
On	“LoC” text	ON	Keypad locked. The secondary functions (press and hold) of keys ∧, ∨, ☆, 💡 and ⏻ are disabled and the value of the setpoint cannot be changed
Stand-by	“OFF” text	ON	The controller is on but disables all utilities and does not perform any control procedures
Off	Off	OFF	The controller is off

Keypad unlock

On startup, or when 30 seconds have passed since the last action carried out on the user interface, the controller locks automatically. If it is locked and any key is pressed, the text “LoC” will appear.

To unlock the keypad, press and hold ▽ for at least 3 seconds, until the text “UnL” appears.



Keys

Key	Function (press and release)	Function (press and hold 5 seconds)
△	• Scroll through the menu options. • Increase the values.	From outside the menus only. Can be configured by the user (parameter **H31**). Default: activate manual defrost.
☆	Direct access to the function set with parameter **H35**. From outside the menus only.	/
▽	• Scroll through the menu options. • Decrease the values.	From outside the menus only. Can be configured by the user (parameter **H32**).
		Keypad unlock (press and hold for at least 3 seconds).
⏻	Go back up one level in the menu. Confirm the parameter value.	From outside the menus only. Can be configured by the user (parameter **H33**). Default: enable stand-by.
💡	Direct access to the function set with parameter **H34**. From outside the menus only.	/
SET	• Access the "Machine Status" menu. • View any alarms. • On startup, access the selection process for the application you wish to load.	• Access the "Programming" menu. • Confirm commands.
▽+ SET	Press and hold simultaneously for 5 seconds on startup to load the preset applications (only after unlocking the keypad).	

ICONS

Icon	Function	Description
	Compressor	• Lit steadily: compressor active • Flashing: delay, protection or activation inhibited • Off: compressor not active
	Defrost	• Lit steadily: defrost active • Flashing: manual defrost activation, or activation via digital input • Off: defrost not active
	Evaporator fans	• Lit steadily: fans active • Off: fans not active
	NOT USED	/
	NOT USED	/
	Light	• Lit steadily: light on • Off: light off
	Heating	• Lit steadily: heating regulator active • Off: heating regulator not active
	Alarm	• Lit steadily: alarm present • Flashing: alarm silenced • Off: No alarm active
	Temperature	• Lit steadily: showing a temperature (°C or °F) • Off: showing a non-temperature or label value
	Aux	• Lit steadily: AUX output active (depending on model) • Flashing: deep cooling active • Off: AUX output not active
	Energy saving	• Lit steadily: energy saving active • Flashing: reduced set active

Menu

Two menus are available:

Menu	Function	List of folders
Machine status	View probe values View and/or change setpoint View any alarms present	**AL**: alarms folder (1) **SEt**: setpoint selection folder **Pb1**: Pb1 value folder **Pb2**: Pb2 value folder (1) only present if there are active alarms.
Programming	Set parameters	User parameters: “User parameters table” on page 61 Installer parameters: “Installer parameters table” on page 62

Appliance installation

Warnings regarding installation

⚠ ⚠ DANGER

RISK OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Any panel maintenance procedures must only be performed by individuals who know how to work in safety.
- Disconnect all power from all equipment including connected devices prior to removing any covers or doors, or installing or removing any accessories, hardware, cables or wires.
- Always use a properly rated voltage sensing device to confirm the power is off where and when indicated.
- Replace and secure all covers, accessories, hardware, cables, and wires and confirm that a proper ground connection exists before applying power to the unit.
- Use only the specified voltage when operating this equipment and any associated products.
- Comply with all standards regarding accident prevention and local applicable safety directives.
- Do not use this equipment for safety-critical functions.

Failure to follow these instructions will result in death or serious injury.

⚠ ⚠ DANGER

RISK OF ELECTRIC SHOCK AND/OR FIRE

- Do not expose the equipment to liquids.
- Do not exceed the temperature and humidity ranges specified in the technical data and keep the area surrounding the cooling slits aerated.
- Do not apply dangerous voltages to the analog input, digital input and TTL terminals.

Failure to follow these instructions will result in death or serious injury.

This equipment is designed to operate in non-hazardous locations and where applications which generate - or could potentially generate - hazardous atmospheres have been isolated. Install this device only in areas and with applications known to be free from hazardous atmospheres at all times.

⚠ DANGER

POTENTIAL FOR EXPLOSION

- Install and use this device in non-hazardous locations only.
- Do not use this device in applications which could produce hazardous atmospheres, such as applications which use flammable refrigerants.

Failure to follow these instructions will result in death or serious injury.

For information regarding the use of control equipment in applications capable of generating hazardous materials, please contact the relevant national regulatory bodies or certifying authorities.

⚠ WARNING

RISK OF OVERHEATING AND/OR FIRE

Make sure your application has not been designed with the controller outputs connected directly to instruments that generate a frequently activated capacitive load [(1)].

Failure to follow these instructions can result in death, serious injury, or equipment damage.

[(1)] Even if your application does not apply a frequently activated capacitive load to the relays, capacitive loads decrease the life of every electromechanical relay and the installation of a contactor or external relay, sized and maintained in accordance with the size and features of the capacitive load, helps to minimize the effects of relay degradation.

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

- The device's signal cables (probes, digital inputs, communication and relative power supplies), must be laid separately from the power cables.
- Every implementation of this equipment must be tested individually and completely in order to check its proper operation before it is commissioned.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

NOTE. For correct and precise equipment operation, only use Eliwell probes.

Installing IDNext Panel 978

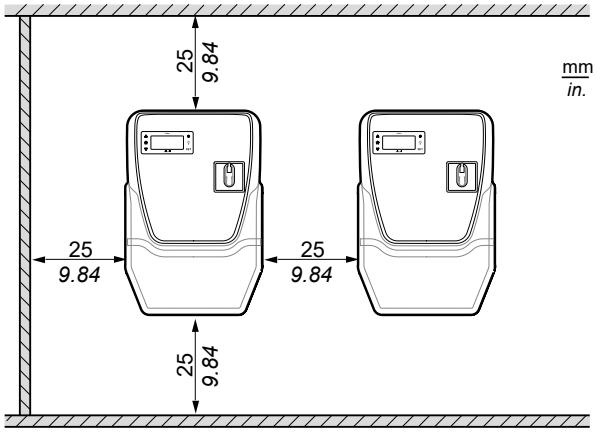
Installation sequence

The following sequence is suggested when installing the panel:

1. See “Preparing the panel” on page 27
2. See “Wall-mounting the panel” on page 29, and check the distances
3. See “Connecting the cables” on page 29
4. See “Calibrating the compressor thermal relay” on page 31
5. See “Closing the panel” on page 32
6. See “Configuring the controller” on page 33
7. See “Checking correct panel operation” on page 33

When installing the product, complete with the distances indicated.

Distances



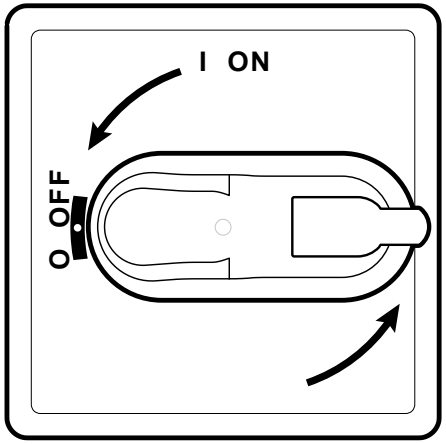
⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

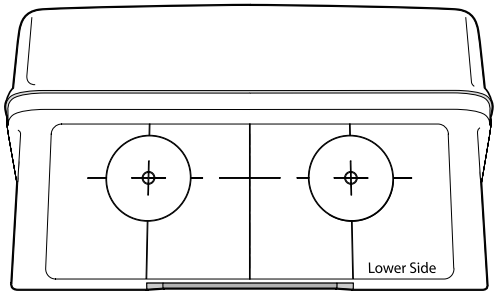
- Do not place this equipment near or above any devices which could cause overheating.
- Install the device in a point that guarantees the minimum distances from all structures and adjacent equipment as indicated in this document.
- Install all equipment in conformity with the technical specifications given in the corresponding documentation.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

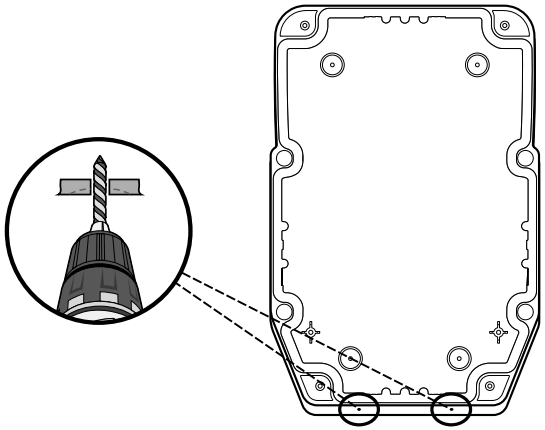
Preparing the panel



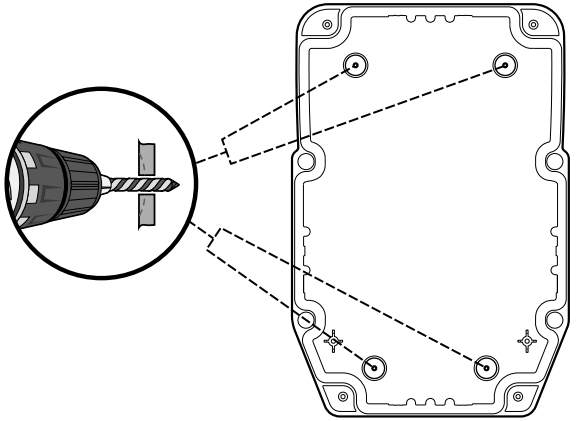
1. Set the disconnecter handle to OFF and open the cover.
2. Position the drilling template on the bottom of the panel.



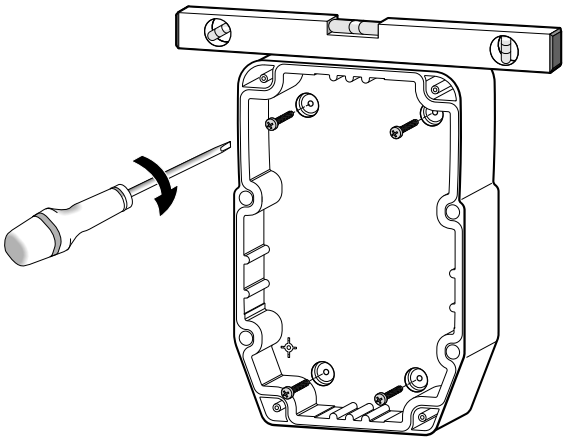
3. Make holes for the cable glands (one for power cables and one for signal cables).



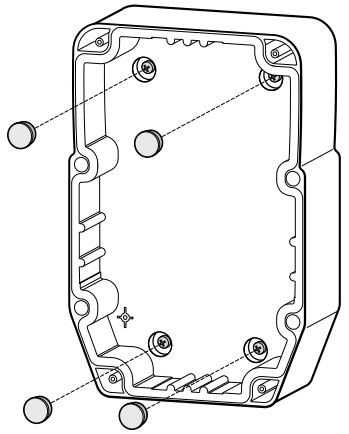
4. Make holes in the panel plate, in the specified areas.



Wall-mounting the panel



1. Fix the panel to the wall using four screws (not supplied) suited to the thickness of the wall.



2. Optional. Fit the TDI 20 screw caps (not supplied).

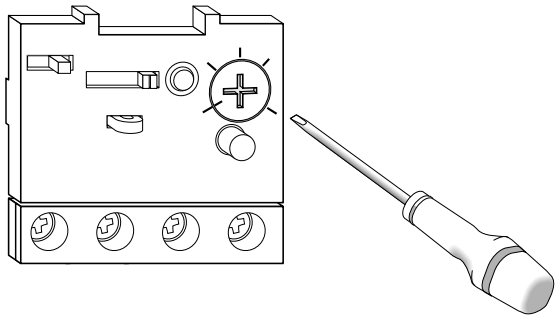
Connecting the cables

Connect the main terminal block, the thermal relay (**RTC1**) and the disconnecter (**QS1**), referring to the data provided in “Electrical connections” on page 54. Use suitable cable glands/conduit glands.

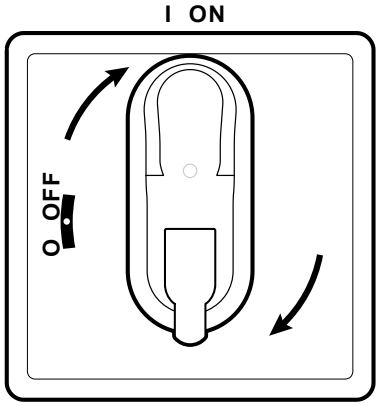
NOTICE
INOPERABLE DEVICE If you want to configure the utilities differently than anticipated by the factory configuration, pay attention to the specifications of each digital output and adapt the electrical diagram provided. **Failure to follow these instructions can result in equipment damage.**

NOTICE
INOPERABLE DEVICE • When connecting probes and the digital input, use cables shorter than 10 m (32.80 ft). • For TTL serial line connection, use cables no longer than 1 m (3.28 ft). **Failure to follow these instructions can result in equipment damage.**

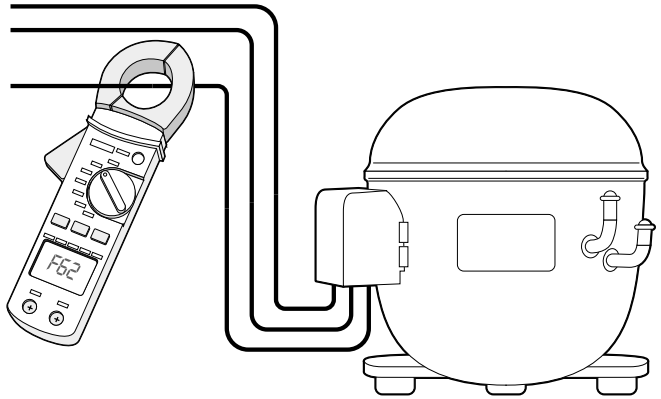
Calibrating the compressor thermal relay



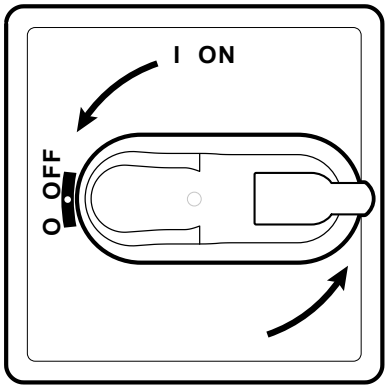
1. Use the thermal relay adjustment screw (**RTC1**) and set a higher absorption than the value provided on the compressor data plate.



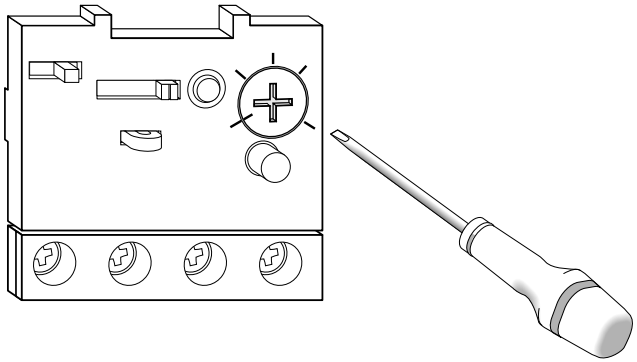
2. Make sure all cables are inside the box, close the cover and set the disconnecter handle to ON.



3. Use an ammeter to check the actual absorption of the compressor.

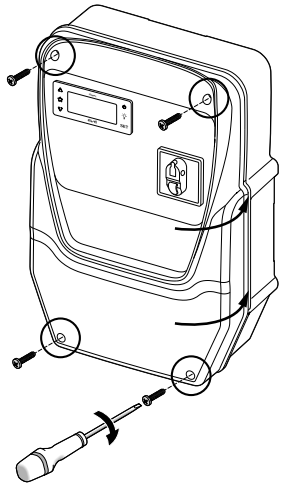


4. Set the disconnecter handle to OFF and open the cover.



5. Use the thermal relay adjustment screw (**RTC1**) and set the actual compressor absorption value.

Close the panel



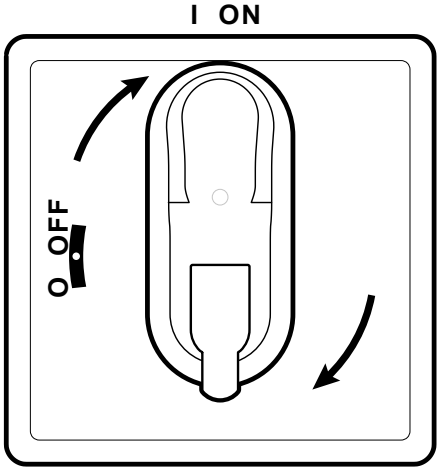
1. Make sure all cables are inside the box, close the cover and lock it using the four screws provided.

⚠ ⚠ DANGER

RISK OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

Make sure the cable insulation has not been damaged.

Failure to follow these instructions will result in death or serious injury.



2. Set the disconnecter handle to ON: the controller performs a lamp test and starts up.

Configure the controller

On startup, the controller is configured with parameter values which are the same as those anticipated in AP1, see “Applications” on page 15. Configure the controller as follows:

If	Then
The actual application corresponds to application AP1.	Check the values of all parameters and if necessary, change the parameters, see “Changing the parameters” on page 39.
The actual application corresponds to application AP2 or AP3.	Load the correct application, see “Loading a preset application” on page 34. Check the values of all parameters and if necessary, change the parameters, see “Changing the parameters” on page 39
The actual application does not correspond to a preset application.	Set the parameters as necessary, see “Changing the parameters” on page 39.

Checking correct panel operation

Carry out a full refrigeration cycle and make sure the IDNext Panel 978 is working properly, and that the refrigerated unit is being controlled correctly.

Installer procedure

Loading a preset application

On startup, the controller is configured with parameter values which are the same as those anticipated in AP1, see “Applications” on page 15.

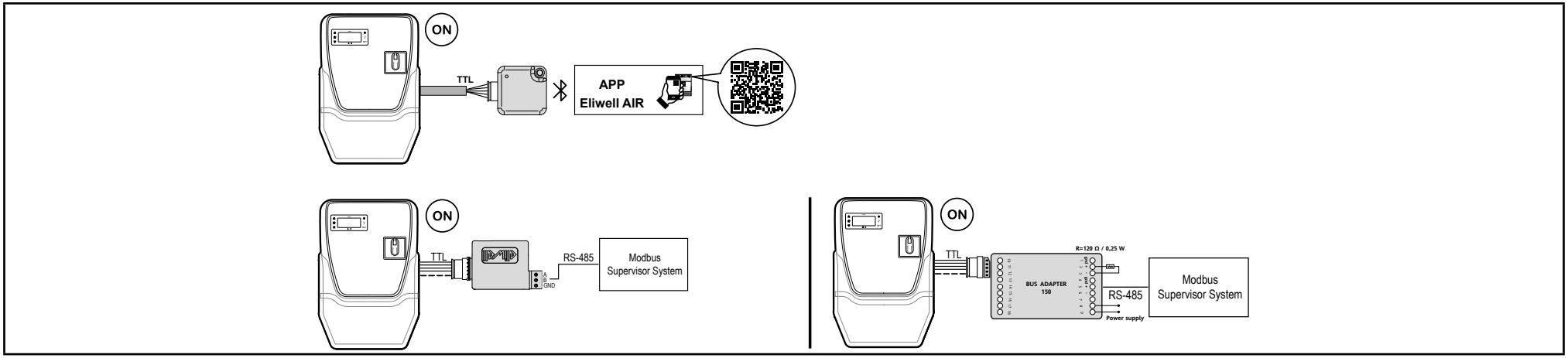
Set communication with a supervisor

IDNext Panel 978 can communicate with a supervisor; proceed as follows:

1. Connect the cable supplied with the Bus**Adapter** 150 / Bus**Adapter** 150 Dongle / HACCP Module to the TTL port of the controller.
2. Set the parameters as follows:

If	Then
You want to communicate with a supervisor via Modbus protocol	In the **Add** folder, set parameters **Adr, BAU and Pty.**
You want to communicate with Eliwell AIR	In the **Add** folder, parameters **Adr, BAU** should be **1** and **0(9600 baud)** respectively. Once communication has taken place, the green LED on the HACCP Module remains lit steadily. If there is no communication, the LED flashes. **Check the values for parameters Adr, BAU.** **NOTE**. Use the yellow TTL cable.

3. Connect the cable to the Bus**Adapter** 150 / Bus**Adapter** 150 Dongle / HACCP Module.



Change the password

There are two password levels:

- Password “PA1”: allows access to user parameters. The password is disabled by default (parameter **PS1**=0).
- Password “PA2”: allows access to installer parameters. The password is enabled by default (parameter **PS2**=15).

The procedures used to change the two passwords are described below.

Enabling password “PA1”

1. Press and hold SET.
2. Scroll through the parameters using ∧ and ∨ until you see parameter **PS1** and press SET .
3. Change the value using ∧ and ∨.
4. To confirm the value, press SET.
5. To apply the new setting, switch the controller off and on again.

Changing password “PA2”

1. Press and hold SET.
2. Scroll through the parameters using ∧ and ∨ until you see parameter **PA2** and press SET .
3. Set the value to “15” using ∧ and ∨ , then press SET.
4. Scroll through the folders using ∧ and ∨ until you see folder **diS** and press SET .
5. Scroll through the parameters using ∧ and ∨ until you see parameter **PS2** and press SET .
6. Change the value using ∧ and ∨.
7. To confirm the value, press SET.
8. To apply the new setting, switch the controller off and on again.

Locking/Unlocking the controller keypad

The controller keypad can be locked. If the lock is enabled, the secondary functions (press and hold) of keys ∧ , ∨, ⏻ , ☆ and 💡 are disabled and the value of the setpoint cannot be changed. You will, however, still be able to enter the “Programming” menu and change the parameters.

On startup

On startup, or when 30 seconds have passed since the last action carried out on the user interface, the controller locks automatically. If it is locked and any key is pressed, the text “LoC” will appear.

To unlock the keypad, press and hold ∨ for at least 3 seconds, until the text “UnL” appears.

From the “Machine status” menu

Press SET: you will enter the “Machine status” menu.

Note: the procedure is the same whether you are locking or unlocking the keypad.

From the “Programming” menu

To lock the keypad, set parameter **LoC** in folder **diS, LoC** = YES; to unlock it **LoC** = no.

Using the device

Operator procedures

Changing the controller status

The following actions are required to change the controller status:

- To switch it on: turn the disconnecter handle to ON
- To switch it off: turn the disconnecter handle to OFF
- To set it to standby: press and hold the key ⏻
- To reactivate it from standby: press and hold the key ⏻

Setting the setpoint

To view the value of the setpoint, press SET when the label “SEt” is shown. The Setpoint value appears on the display. To change the value of the Setpoint, use ∧ and ∨ within 15 seconds. To confirm the change, press SET.

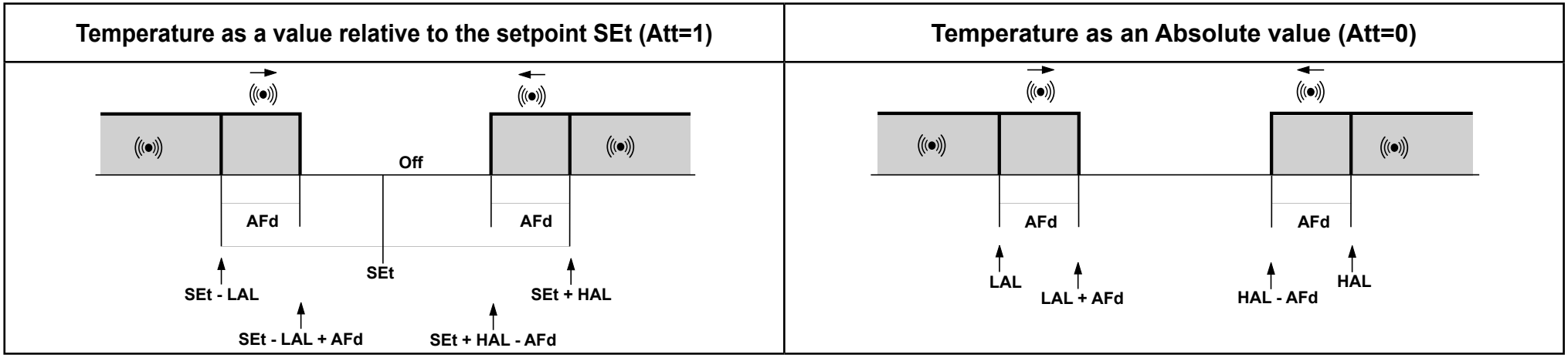
View probes

When label Pb1 or Pb2 is present, press SET to view the value measured by the relevant probe.

Note: the value shown cannot be changed.

Alarm management

Take the following diagram into account when setting the parameters governing the indication of temperature values outside the tolerance range:



	Att value	Temperature read by Pb1	Alarm generated
Alarm conditions	**0 (label Ab)**	Temperature ≥ HAL	Maximum temperature
		Temperature ≤ LAL	Minimum temperature
	1 (label rE)	Temperature ≥ SEt + HAL	Maximum temperature
		Temperature ≤ SEt + LAL	Minimum temperature
Conditions for alarm deactivation	**0 (label Ab)**	Temperature ≤ HAL - AFd	Maximum temperature
		Temperature ≥ LAL + AFd	Minimum temperature
	1 (label rE)	Temperature ≤ SEt + HAL - AFd	Maximum temperature
		Temperature ≥ Set + LAL + AFd	Minimum temperature

Value of Att = 0 (label Ab) Absolute values. The values of HAL and LAL must have a sign.

Value of Att = 1 (label rE) Relative values. HAL > 0 and LAL < 0.

Changing the parameters

To enter the **Programming** menu, press and hold SET for 5 seconds.

If specified, an access PASSWORD **PA1** will be required for **User** parameters and PA2 for **Installer** parameters (default password: 15).

User parameters: On access, the display will show the first parameter (diF). Press ∧ and ∨ to scroll through all parameters at the current level. Select the desired parameter by pressing SET. Press ∧ and ∨ to change it and SET to save the change.

Installer parameters: On access, the display will show the first folder (CP). Press ∧ and ∨ to scroll through the folders at the current level. Select the desired folder using SET. Press ∧ and ∨ to scroll through the parameters in the current folder and select the parameter using SET. Press ∧ and ∨ to change it and SET to save the change.

Note: Switch the instrument off and on again every time you change the parameter configuration.

If	Then
If the user password is disabled (PS1 = 0)	When you enter the “Programming” menu, the first user parameter appears straight away. To change user parameters, continue with step 2. To access the installer parameters, scroll through the parameters until you see **PA2** and press SET. If prompted, enter the password. **Note**: if an incorrect password is entered, the text “PA2” will appear again. Enter it again.
If the user password is enabled (PS1 ≠ 0)	When you enter the “Programming” menu, the text “PA1” and “PA2” appears alternately. To access the user parameters, select PA1 using SET and enter the password. To access the installer parameters, select PA2 using SET and enter the password. **Note:** if an incorrect password is entered, the text “PA1” or “PA2” will appear again. Enter it again.

9. Scroll through the parameters using ∧ and ∨.

10. View the desired parameter and press SET.
11. Change the value using ∧ and ∨.
12. To confirm the value, press SET.
13. To apply the new setting, switch the controller off and on again.

Activating the defrost cycle manually

Press and hold ∧ for 5 seconds: if the temperature conditions are right, defrosting will begin; otherwise, the display flashes three times and the defrost is stopped.

Maintenance

Warnings regarding maintenance

General warnings

⚠ ⚠ DANGER

RISK OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Any panel maintenance procedures must only be performed by individuals who know how to work in safety.
- Disconnect all power from all equipment including connected devices prior to removing any covers or doors, or installing or removing any accessories, hardware, cables or wires.
- Always use a properly rated voltage sensing device to confirm the power is off where and when indicated.
- Replace and secure all covers, accessories, hardware, cables, and wires and confirm that a proper ground connection exists before applying power to the unit.
- Use only the specified voltage when operating this equipment and any associated products.
- Do not use this equipment for safety-critical functions.
- Comply with all standards regarding accident prevention and local applicable safety directives.

Failure to follow these instructions will result in death or serious injury.

Isolating from the power supply

To prevent the power supply from being restored accidentally during the replacement of internal or external panel components and during servicing, the person responsible for the work should proceed as follows:

- Set the disconnecter handle to OFF.
- If the work involves components outside the panel, put a padlock through the relevant hole in the disconnecter handle and keep the key in a safe place.
- Put “Maintenance in progress” warning signs up.

⚠ ⚠ DANGER

RISK OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

Do not remove or tamper with the padlock. Do not restore the power supply without authorization.

Failure to follow these instructions will result in death or serious injury.

Controller maintenance

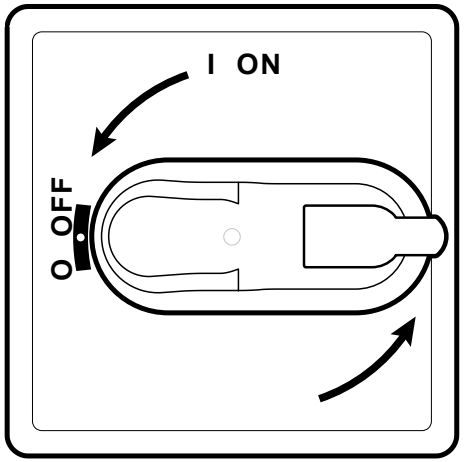
Replacing the controller

Foreword

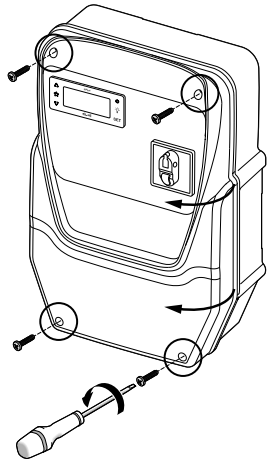
To adapt a new IDNext 978 P/B (230 Vac) for operation in the IDNext Panel 978, pay particular attention to the configuration of the digital outputs.

NOTICE
INOPERABLE DEVICE Obtain the configuration of parameters **H21, H22, H23 and H24** from the controller you are replacing. **Failure to follow these instructions can result in equipment damage.**

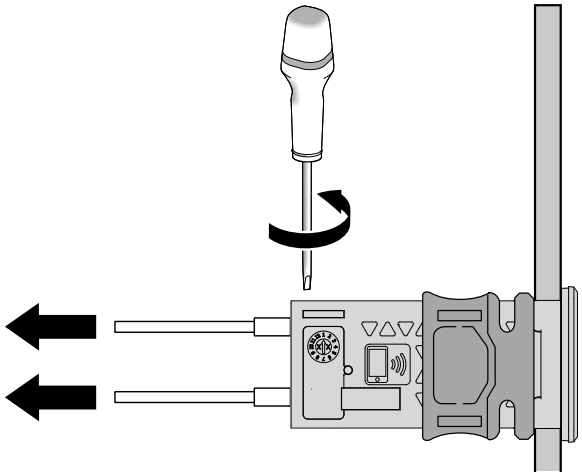
Procedure



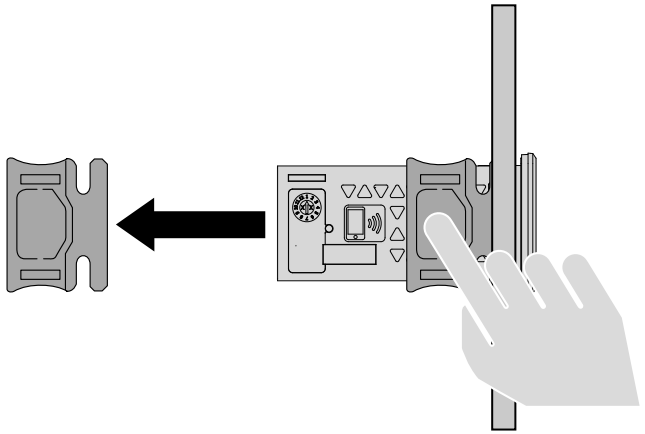
1. Set the disconnecter handle to OFF.



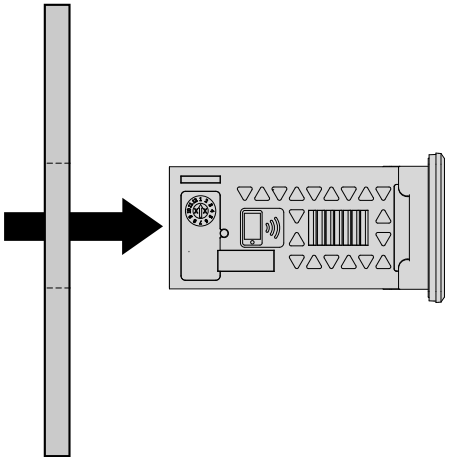
2. Remove the screws and open the panel cover.



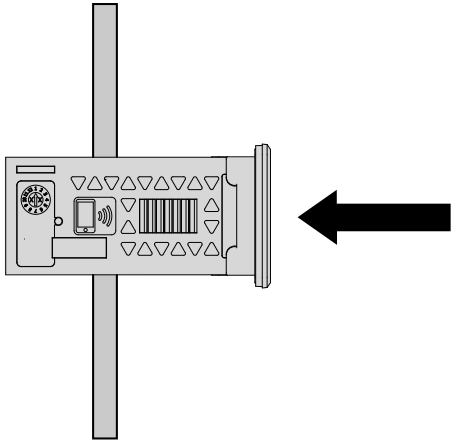
3. Remove the wires from the controller terminals. Make a note of the original position of each wire.



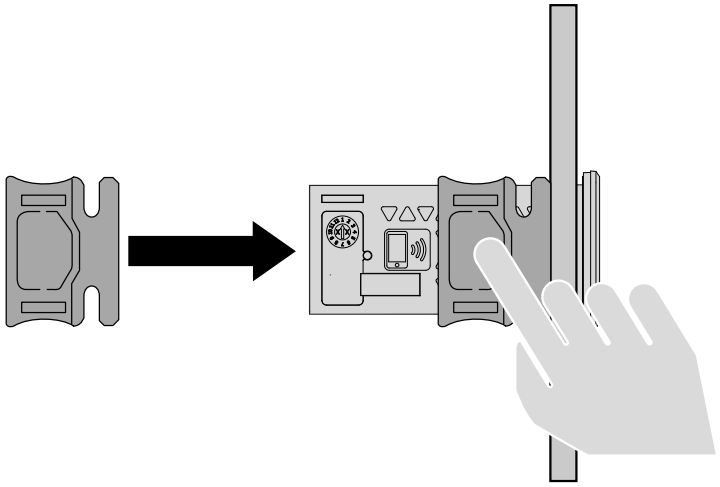
4. Remove the brackets.



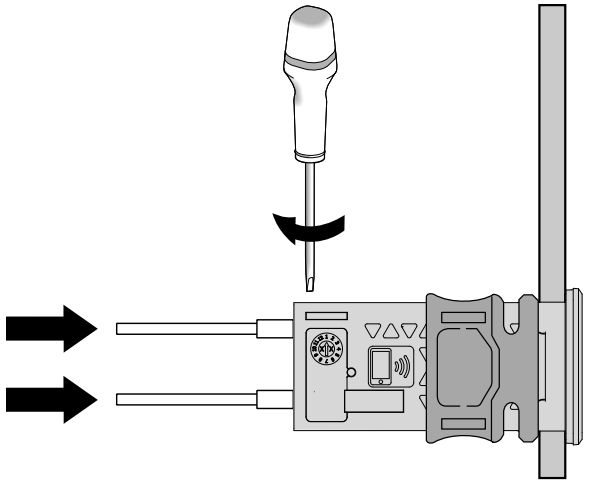
5. Remove the controller from the front part of the panel.



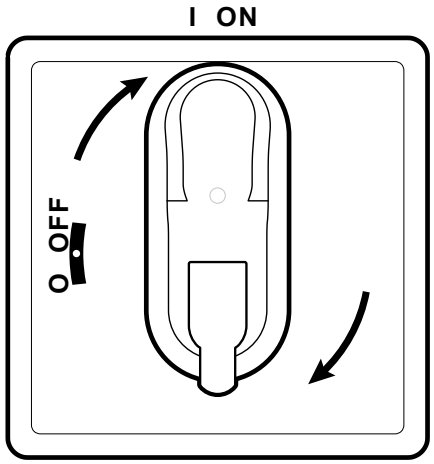
6. Fit the new controller in place of the one you have removed.



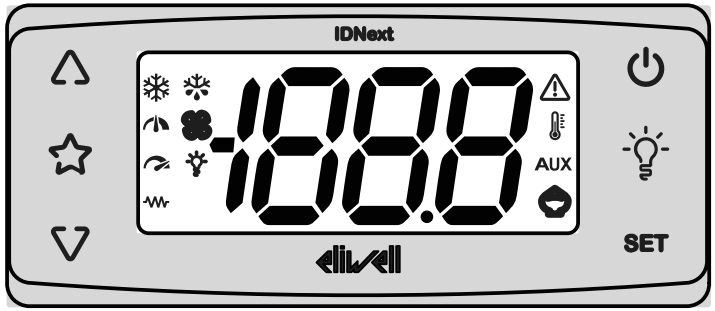
7. Secure the controller using the brackets.



8. Reconnect the wires to the terminals.



9. Set the disconnecter handle to ON: the controller performs a lamp test and starts up.



10. Configure the controller correctly, see “Controller maintenance” on page 42.
11. To apply the new configuration, switch the controller off and on again.

Using the UNICARD

The UNICARD should be connected to the serial port (TTL) and allows rapid programming of the instrument parameters.

Access the **Installer** parameters by entering PA2, then scroll through the folders using ∧ and ∨ until you see folder **FPr**. Select it using SET, scroll through the parameters using ∧ and ∨, then select the function using SET (for example, **UL**).

- Upload (**UL**): Access the **Installer** parameters by entering **PA2**, then scroll through the folders using ∧ and ∨ until you see folder **FPr**. Select it using SET, scroll through the parameters using ∧ and ∨, select **UL** and press SET. The process is used to load the programming parameters from the instrument to the UNICARD. If the procedure is completed successfully the display will show **yES**; otherwise **no**.
- Format (**Fr**): Access the **Installer** parameters by entering **PA2**, then scroll through the folders using ∧ and ∨ until you see folder **FPr**. Select it using SET, scroll through the parameters using ∧ and ∨, select **Fr** and press SET. This command can be used to format the UNICARD (recommended the first time it is used). **Note**: using the **Fr** parameter will delete all current data. This operation cannot be reversed.
- Download: Connect the UNICARD while the instrument is switched off. At startup, data will automatically start downloading from the UNICARD to the instrument. At the end of the lamp test, the display will show **dLy** if the procedure was successful and **dLn** if it was not completed.

Note: After the Download, the instrument will use the newly uploaded map settings.

Restoring the factory values

The factory values for the parameter map can be reloaded as necessary or in the event of a malfunction.

NOTICE
INOPERABLE DEVICE This procedure restores the initial status of the controller by assigning the value anticipated in the factory to the parameters. All changes that have been made to the operating parameters will therefore be lost. **Failure to follow these instructions can result in equipment damage.**

1. Press and hold SET while turning the disconnecter handle to ON: the test “AP1” appears.
2. Select AP1 using SET; to cancel the procedure press ⏻ : If the procedure was completed successfully, the letter “y” appears; otherwise “n” appears.
3. Wait for a few seconds: the main display will appear.

The procedure for loading one of the preset applications restores the respective default values, with the exception of the parameters NOT specific to the application that retain the value set previously. These values, left unaltered, may not be suitable and may therefore need to be changed.

NOTICE
INOPERABLE DEVICE Check the parameters after loading a preset application. **Failure to follow these instructions can result in equipment damage.**

Regular maintenance

Work

After the first 20 days of operation, and subsequently once a year:

Work	Component
Tightening	Disconnecter terminals (**QS1**) Thermal relay terminals (**RTC1**)

Cleaning

Do not use abrasive substances or solvents.

Diagnostics

Alarms

Introduction

The alarm condition is always indicated by the icon ⚠, the buzzer and a relay (if configured).

Note: if alarm exclusion times are in progress (folder **AL** for installer parameters), the alarm is not indicated.

Procedures on alarms

To turn off the buzzer, press any button: the corresponding icon will continue flashing.

Alarms legend

Label	Description	Cause	Effect	Solution
E1	Pb1 probe in error	• Reading of values outside the operating interval • Probe or corresponding wiring in short-circuit or open circuit	• Label **E1** displayed • Alarm icon ⚠ lit steadily • Disabling of the maximum/minimum alarm regulator • Compressor operation based on parameters **Ont** and **OFt**	• Check the probe type (**H00**) • Check the probe wiring • Replace probe
E2	Pb2 probe in error	• Reading of values outside the operating interval • Probe or corresponding wiring in short-circuit or open circuit	• Label **E2** displayed • Alarm icon ⚠ lit steadily • Defrost ends due to timeout (**dEt**) • Evaporator fans are: on (compressor on), or operating based on parameter **FCo** (compressor off).	• Check the probe type (**H00**) • Check the probe wiring • Replace probe
AH1	Probe Pb1 high temperature alarm	• Value read by Pb1>**HAL** after • a time period equal to **tAo**	• Alarm **AH1** added to folder AL • No effect on regulation	Wait for the temperature value read by Pb1 to drop below (**HAL-AFd**).

Label	Description	Cause	Effect	Solution
AL1	Probe Pb1 low temperature alarm	Value read by Pb1<**LAL** after a time period equal to **tAo**.	• Alarm **AL1** added to folder AL • No effect on regulation	Wait for the temperature value read by Pb1 to rise above (**LAL+AFd**).
EA	External alarm	Digital input activation (**H11**=±5)	• Alarm **EA** added to folder AL • Alarm icon ⚠ lit steadily • Control inhibited if **EAL**=y	Check and remove the external cause that triggered the alarm on the digital input
oPd	Alarm door open	Digital input activation for a time greater than **tdo** (**H11**=±4)	• Alarm **Opd** added to folder AL • Alarm icon ⚠ lit steadily • Control inhibited	Close the door
Ad2	End of Defrost due to time-out	End of defrost due to timeout, instead of the defrost end temperature being reached.	• Alarm **Ad2** added to folder AL • Alarm icon ⚠ lit steadily	Wait for the next defrost for automatic deactivation
rFA	Add refrigerant alarm	When the compressor is on, the temperature progress does not fall within an interval set with **rFT**.	• Alarm **rFA** added to folder AL • Alarm icon ⚠ lit steadily	Switch the instrument off and on again. The alarm is deactivated if **rFT** = 0.
nPA	Pressure switch Alarm	Activation of Pressure switch alarm due to external pressure switch activity.	• If the number **n** of activations of the pressure switch is **n < PEn**: • **nPA** alarm is added to the folder AL with the number of pressure switch activations • Compressor regulation inhibited	Check and remove the cause that triggered the alarm on the D.I. (Automatic Reset)
PAL	Pressure switch Alarm	Activation of Pressure switch alarm due to external pressure switch activity.	• If the number **n** of activations of the pressure switch is **n = PEn** within a time period < **PEi** • Label **PAL** displayed • **PA** alarm is added to the folder AL and **nPA** removed from the folder AL • Alarm icon ⚠ lit steadily • Compressor regulation, fans and defrost are inhibited	• Switch the device off and on again • Reset alarms by entering the functions folder and pressing **rAP** (Manual Reset)

Troubleshooting

List of potential problems

Problem	Possible causes	Solution
The compressor starts with a manual command but not on the controller's command	Panel not powered.	• Make sure the disconnecter is set to ON. • Check the disconnecter connections. • Check the supply line.
The behavior of the utilities controlled is not as anticipated.	Incorrect wiring to the main terminal block.	Check the wiring, referring to the data provided in "Electrical connections" on page 54.
	Parameters set incorrectly.	Change the parameter values, see "Changing the parameters" on page 39.
The value of the temperature read by the probe is not the actual value	Probe type set incorrectly.	Set the correct type of probe (parameter **H00**).

Support

How to request assistance

Customer Technical Support

+39 0437 986 300

techsuppeliwell@se.com

Sales

+39 0437 986 100 (Italy)

+39 0437 986 200 (other countries)

saleseliwell@se.com

How to return the appliance

In the event of a malfunction or fault which makes it necessary to return the appliance, send it back to your local dealer in its original packaging.

Make a note of the dealer’s details here:

Technical data

Technical characteristics

General characteristics

	Single-phase versions	Tri-phase versions
Power supply	230 Vac (Ph + N + PE), 50/60 Hz	400 Vac (3Ph + N + Gnd), 50/60 Hz
Command type	Single-phase	Tri-phase
Disconnecter	25 A	
Control	IDNext 978 electronic controller	
Connectivity	TTL port for connection to Modbus supervisor / HACCP Module: a) TTL-RS485 Bus**Adapter** 150 interface module (optional) b) TTL-RS485 Bus**Adapter** 150 DONGLE interface module (optional) Eliwell AIR App and HACCP Module	
Controller protection	1 fuse, 5 x 20 mm (0.20 x 0.8 in) 160 mA, Gnd	
General protection	2 fuses, 10 x 38 mm (0.40 x 1.5 in), 25 A, Gnd. See “Appendices for single-phase versions” on page 71.	3 fuses *(1)*, 10 x 38 mm (0.40 x 1.5 in), 25 A, T. See “Appendices for tri-phase versions” on page 76.
Motor protection	See “Appendices for single-phase versions” on page 71.	See “Appendices for tri-phase versions” on page 76.
	(1) NOTE: be careful when fitting fuses in the tri-phase version: the fuse holder has double housing for spare fuses. The correct position is the lower one.	
Overvoltage category	II (IEC 60664-1: 2007)	
Pollution class	2 (IEC 60664-1: 2007)	
Panel usage	Indoor use	
Panel type	Fixed panel	
Maximum installation site altitude	2000 m	

Electrical specifications

	Single-phase versions IDNext Panel 978 5.5-8 A 230 Vac IDNext Panel 978 8-11 A 230 Vac	Tri-phase versions IDNext Panel 978 3.7-5.5 A 400 Vac IDNext Panel 978 5.5-6 A 400 Vac
Rated voltage (U_n)	230 Vac	400 Vac
Rated usage voltage (U_e)	230 Vac	400 Vac
Rated isolation voltage (U_i)	230 Vac	400 Vac
Rated panel current (I_{nA})	15 A 18 A	5.5 A per phase + 7 A on single phase 6 A per phase + 7 A on single phase
Rated current of one circuit (I_{nC})	15 A 18 A	5.5 A per phase + 7 A on single phase 6 A per phase + 7 A on single phase
Permitted short-term rated current (I_{cw})	19 A 24 A	15 A 19 A
Permitted peak rated current (I_{pk})	20 A 25 A	16 A 20 A
Conditioned short-circuit current (I_{cc})	< 5 kA	< 5 kA
Rated frequency (f_n)	50/60 Hz	50/60 Hz

Inputs and outputs (see “Electrical connections” on page 55)

Probe inputs	2
Digital inputs	1
Digital outputs	4 relays

Probe values

Note: data relating only to the IDNext Panel 978 without taking probes into account (accessories not supplied). The margin of error introduced by the probe should be added to the values provided herein.

Display ranges	-99.9…99.9 or -999…99	
Measuring range:	NTC: -50...110 °C (-58...230 °F) PTC: -55...140 °C (-67...284 °F) Pt1000: -55...150 °C (-67...302 °F)	(on display with three digits + sign)
Accuracy	NTC: -50...-30 °C (-58...-22 °F)	Better than ±2.4 °C (±4.3 °F) ±1 digit
	NTC: -30...110 °C (-22...230 °F)	Better than ±1,6 °C (±2,9 °F) ±1 digit
	PTC: -55...140 °C (-67...284 °F)	Better than ±2.0 °C (±3.5 °F) ±1 digit
	Pt1000: -55...150 °C (-67...302 °F)	Better than ±2.3 °C (±4.1 °F) ±1 digit
Resolution	0.1 °C/°F or 1 °C/°F (depending on the set display range)	

Mechanical characteristics

	Single-phase versions	**Tri-phase versions**
Material	PC + ABS	
Mount	Wall	
Dimensions (W x H x D)	213 x 318 x 102 mm (8.4 x 12.5 x 4 in)	
Weight	3 kg (6.6 lb)	

Ambient operating conditions

Temperature	-5...+40 °C (23...+104 °F)	in accordance with standard IEC 61439-2, for indoor use
Humidity	10...90% non-condensing	

Ambient conditions for transportation and storage

Temperature	-25...+70 °C (-13...+158 °F)
Humidity	10...90% non-condensing

Standards and directives

Directives	2014/35/EU (Low voltage) 2014/30/EU (Electromagnetic compatibility)
Norms	EN 60204-1 EN 61439-1
Labeling	CE

Electrical connections

⚠ ⚠ DANGER

RISK OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

Electrical connection must only be performed by individuals who know how to work in safety.

Failure to follow these instructions will result in death or serious injury.

Electrical diagram

NOTICE

INOPERABLE DEVICE

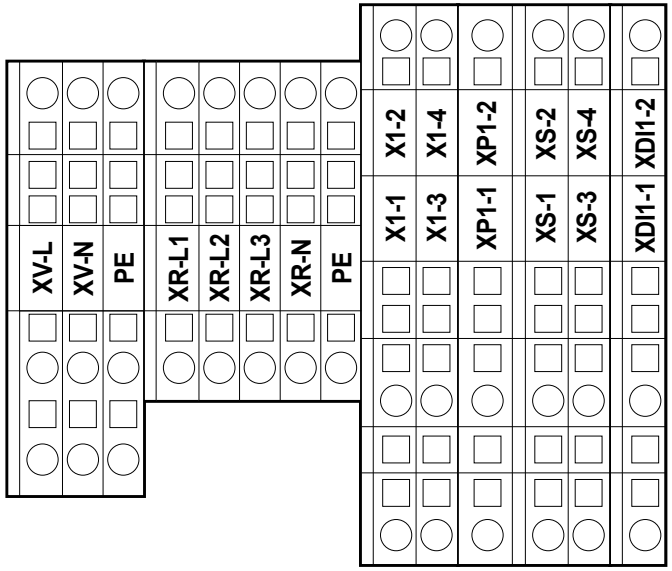
The electrical diagram refers to the factory configuration. If a different configuration is established during installation, the installer must adapt the electrical diagram accordingly.

Failure to follow these instructions can result in equipment damage.

For single-phase versions, see “Electrical diagram for single-phase versions” on page 71.

For tri-phase versions, see “Electrical diagram for tri-phase versions” on page 76.

Main terminal block

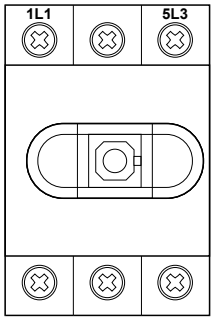
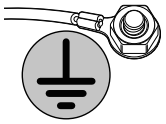


Note: use the **PE** terminals for connection to the ground system.

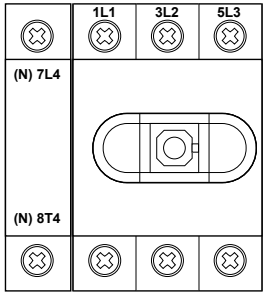
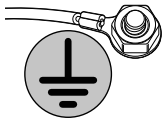
Terminal	Description	Characteristics	Cables
XV-L	Digital output 1	250 Vac (1-PH)	Rigid conductor cross-section: 0.08...4 mm^2 (28...12 AWG)
XV-N	(evaporator fans)	10(6) A	Flexible conductor cross-section: 0.08...2.5 mm^2 (28...14 AWG)
PE			
XR-L1	Digital output 2	Single-phase versions: 800 W	Rigid conductor cross-section: 0.08...4 mm^2 (28...12 AWG)
XR-L2	(electric defrost heater)	Tri-phase versions: 1200 W	Flexible conductor cross-section: 0.08...2.5 mm^2 (28...14 AWG)
XR-L3			
XR-N			
PE			

Terminal	Description	Characteristics	Cables
X1-1 **X1-2**	Digital output 4 (Light)	250 Vac (1-PH) 8(4) A	Rigid conductor cross-section: 0.08...4 mm^2 (28...12 AWG) Flexible conductor cross-section: 0.08...4 mm^2 (28...12 AWG)
X1-3 **X1-4**	Not used	-	-
XP1-1 **XP1-2**	Pressure switch input	230 Vac For single-phase versions, see “Electrical diagram for single-phase versions” on page 71. For tri-phase versions, see “Electrical diagram for tri-phase versions” on page 76.	Rigid conductor cross-section: 0.08...4 mm^2 (28...12 AWG) Flexible conductor cross-section: 0.08...4 mm^2 (28...12 AWG)
XS-1 **XS-2**	Pb1 input (temperature sensor for compressor control)	NTC (default)/PTC/Pt1000 (selected via parameter H00)	Rigid conductor cross-section: 0.08...4 mm^2 (28...12 AWG)Flexible conductor cross-section: 0.08...4 mm^2 (28...12 AWG)
XS-3 **XS-4**	Pb2 input (temperature sensor for defrost control)	NTC (default)/PTC/Pt1000 (selected via parameter H00)	Rigid conductor cross-section: 0.08...4 mm^2 (28...12 AWG) Flexible conductor cross-section: 0.08...4 mm^2 (28...12 AWG)
XDI1-1 **XDI1-2**	Digital input (door switch)	SELV voltage free input	Rigid conductor cross-section: 0.08...4 mm^2 (28...12 AWG) Flexible conductor cross-section: 0.08...4 mm^2 (28...12 AWG)

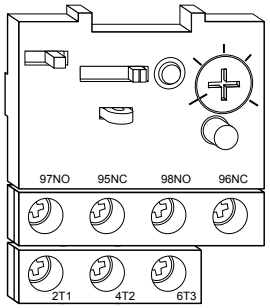
Disconnecter - QS1 (single-phase versions)

	Terminal	Description	Characteristics	Cables	Tightening
	1L1	Phase	See “General characteristics” on page 51	Rigid conductor cross-section: 0.75 mm^2 (18 AWG) Flexible conductor cross-section: 10 mm^2 (8 AWG)	1 Nm (8.9 lb-in)
	5L3	Neutral			
		Ground	-	Rigid conductor cross-section: 0.08...6 mm^2 (28...10 AWG) Flexible conductor cross-section: 0.08...4 mm^2 (28...12 AWG)	6 Nm (53.1 lb-in)

Disconnecter - QS1 (tri-phase versions)

	Terminal	Description	Characteristics	Cables	Tightening
	1L1	Phase 1	See “General characteristics” on page 51	Rigid conductor cross-section: 0.75 mm^2 (18 AWG) Flexible conductor cross-section: 10 mm^2 (8 AWG)	1 Nm (8.9 lb-in)
	3L2	Phase 2			
	5L3	Phase 3			
	(N) 7L4	Neutral			
		Ground	-	Rigid conductor cross-section: 0.08...6 mm^2 (28...10 AWG) Flexible conductor cross-section: 0.08...4 mm^2 (28...12 AWG)	6 Nm (53.1 lb-in)

Thermal relay (RTC1)

	Terminal	Description	Characteristics	Cables	Tightening
	2T1 4T2 6T3	Digital output 3 (compressor)	Single-phase versions:	Screw terminals 2 cables 0.34...1.5 mm² (22...16 AWG) Flexible conductor cross-section – with ferrule	1.3 Nm (11.5 lb-in)
			Tri-phase versions:	Screw terminals 1 cable 0.34...2.5 mm² (22...14 AWG) Flexible conductor cross-section – with ferrule Screw terminals 2 cables 0.75...4 mm² (18...12 AWG) Flexible conductor cross-section – without ferrule Screw terminals 1 cable 0.75...4 mm² (18...12 AWG) Flexible conductor cross-section – without ferrule Screw terminals 2 cables 1.5...4 mm² (16...12 AWG) Rigid conductor cross-section Screw terminals 1 cable 1.5...4 mm² (16...12 AWG) Rigid conductor cross-section	

Controller TTL serial port

TTL

TTL (Molex 5268) for connection to UNICARD (maximum length = 1 m - 3.28 ft.)

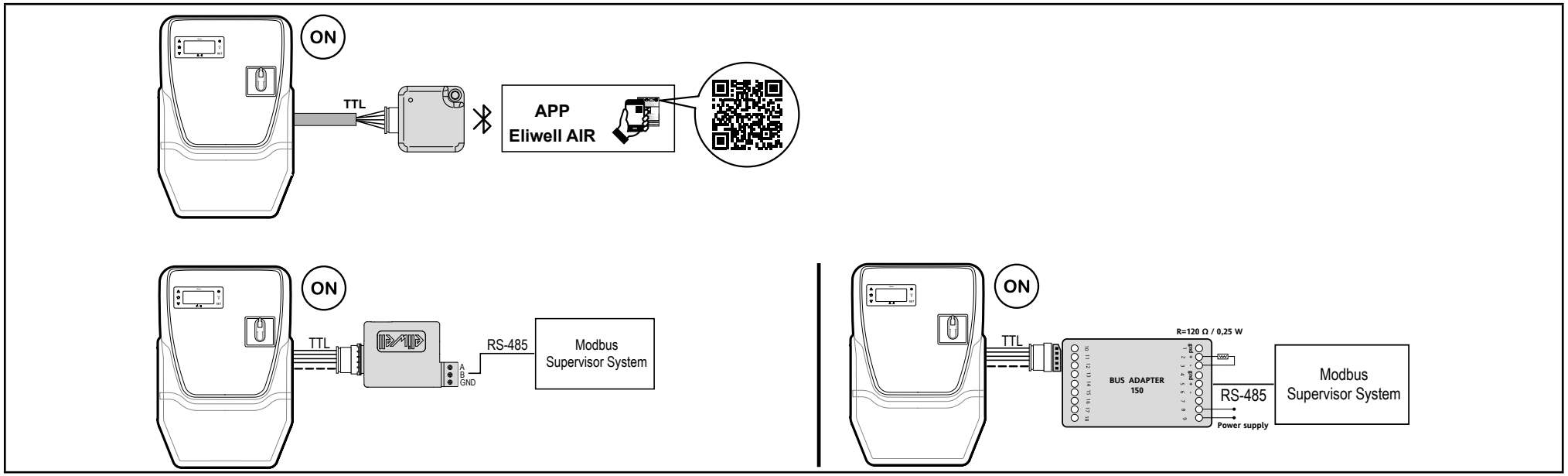
Connecting to a supervisor

Only use the cable supplied with the following devices respectively:

a) TTL-RS485 BusAdapter 150 interface module (optional).

b) TTL-RS485 BusAdapter 150 DONGLE interface module (optional).

c) HACCP Module.



User parameters table

PAR.	Description	Range	DEFAULT	UM
SEt	Temperature adjustment setpoint.	LSE...HSE	3.0	°C/°F
diF	diFferential. Compressor relay activation differential.	0.1...30.0	2.0	°C/°F
LSE	Minimum setpoint value.	-67.0...HSE	-55.0	°C/°F
HSE	Maximum setpoint value.	LSE...302	140	°C/°F
dit	Interval between the start of two defrosts.	0...250	6	hours
dEt	Determines the maximum duration of the defrost.	1...250	30	min
dS1	Defrost end temperature.	-67.0...302	8.0	°C/°F
dt	Dripping time.	0...250	0	min
FSt	Evaporator fan disabling temperature.	-67.0...302	8.0	°C/°F
Fdt	Fan activation delay time after a defrost.	0...250	0	min
dFd	Used to select or deselect the exclusion of the evaporator fans during defrost. **n**(0) = no, **y**(1) = yes (fan excluded or off).	n/y	y	flag
HAL	Maximum temperature alarm.	LAL...302	150	°C/°F
LAL	Minimum temperature alarm.	-67.0...HAL	-50.0	°C/°F
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	0.0	°C/°F
CA2 (!)	Positive or negative temperature value to be added to the value of Pb2.	-30.0...30.0	0.0	°C/°F
PS1	When enabled (**PS1**≠0) this is the access key to **User** parameters.	0...250	0	num
H42	Pb2 probe present. **n** (0) = not present; **y** (1) = present.	n/y	y	num
tAb	Parameters table. **Reserved**: read-only parameter.	/	/	/
PA2	Used to access **Installer** parameters.			

Note: if one or more parameters marked with (!) are changed, the controller must be switched off and then on again.

Installer parameters table

PAR.	DESCRIPTION	RANGE	AP1	AP2	AP3	U.M.
SEt	Temperature adjustment setpoint.	LSE...HSE	3.0	0.0	-18.0	°C/°F
COMPRESSOR (“CP” folder)						
diF	Compressor relay activation differential.	0.1...30.0	2.0	2.0	2.0	°C/°F
LSE	Minimum value that can be attributed to the setpoint.	-67.0...HSE	-67.0	-50.0	-50.0	°C/°F
HSE	Maximum value that can be attributed to the setpoint.	LSE...302	140.0	99.0	99.0	°C/°F
HC	The regulator will execute operation for cooling (set “C(0)”) or heating (set “H(1)”)	C/H	C	C	C	flag
ont	Regulator switch-on time for faulty probe. If **Ont** = 1 and **OFt** = 0 the compressor is always ON; if **Ont** = 1 and **OFt** > 0 it runs in duty cycle mode.	0...250	15	15	15	min
oFt	Regulator switch-off time for faulty probe. If **OFt** = 1 and **Ont** = 0 the regulator is always OFF; if **OFt** = 1 and **Ont** > 0 it runs in duty cycle mode.	0...250	15	15	15	min
don	Compressor relay activation delay time from call.	0...250	0	0	0	s
doF	Delay time after switch-off and the next switch-on.	0...250	0	0	0	min
dbi	Delay time between two subsequent compressor starts.	0...250	0	0	0	min
Cit	Minimum compressor activation time before it can be deactivated. If Cit = 0 it is not active.	0...250	3.0	3.0	3.0	min
CAt	Maximum compressor activation time before it can be deactivated. If CAt = 0 it is not active.	0...250	C	C	C	min
odo	Output activation delay time from switching on the controller or after a power failure. **0** = not active. **Note:** Switch the controller off and on again to apply the change.	0...250	0	0	0	min
dcS	“Deep cooling cycle” setpoint.	-67.0...302	0.0	0.0	0.0	°C/°F
tdc	“Deep cooling cycle” duration.	0...250	0	0	0	min
dcc	Defrost activation delay after a “Deep cooling cycle”.	0...250	0	0	0	min
CP2	Compressor 2 activation delay	0...250	0	0	0	min

PAR.	DESCRIPTION	RANGE	AP1	AP2	AP3	U.M.
dFA	Condenser fan and compressor activation delay from the request	0...250	0	0	0	s
DEFROST (“dEF” folder)						
dty	Type of defrost. **0** = electric defrost; **1** = cycle inversion defrost; **2** = defrost independent of compressor.	0/1/2	0	0	1	num
doH	Delay time for starting the first defrost from the call.	0...250	0	0	0	min
dEt	Defrost timeout; determines the maximum duration of the defrost.	1...250	30	30	30	min
dS1	Evaporator 1 defrost end temperature (measured by probe Pb2)	-67.0...302	8	8	8	min
dt2	Unit of measure for defrost duration (dEt parameter) (only if dFt ≠ 0). 0 = hours; 1 = minutes; 2 = seconds.	0/1/2	1	1	1	num
dPo	Determines if upon switching on, the instrument must activate defrosting. **n** (0) = no; **y** (1) = yes.	n/y	n	n	n	flag
tCd	Minimum period of time with the compressor ON or OFF before defrost is activated.	-127...127	0	0	0	min
Cod	Time with the compressor OFF before defrost is activated	0...250	0	0	0	min
dMr	Enables the defrost count reset in the case of manual defrosting. n = count reset does not take place; y = count reset takes place	n/y	n	n	n	flag
d00	Compressor running time before defrost is activated	0...250	0	0	0	hours
d01	Set unit of measure for d00. 0 = hours; 1 = minutes; 2 = seconds.	0/1/2	0	0	0	num
dit	Interval time between the start of two consecutive defrosts.	0...250	6	6	6	hours
d11	Set unit of measure for dit. 0 = hours; 1 = minutes; 2 = seconds.	0/1/2	0	0	0	num
d20	Can be used to activate the defrost when the compressor is off. • 0 = disabled. Defrost is not activated. • 1 = enabled. Defrost is activated when the compressor is off.	0/1	0	0	0	flag
d40	Enables/disables use of probe Pb2. • 0 = disabled. Defrost does not take Pb2 into account • 1 = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)	0/1	0	0	0	flag

PAR.	DESCRIPTION	RANGE	AP1	AP2	AP3	U.M.
d41	Sets the defrost activation threshold	-67.0...302	0	0	0	°C/°F
d42	Sets the maximum time for which the evaporator can remain under the threshold d41	0...250	0	0	0	min
d43	Sets the type of time count in which the evaporator temperature remains under the threshold value. • 0 = count independent of compressor status • 1 = count with compressor on (when the compressor is off the count begins again) • 2 = count independent of compressor status. The count stops when the temperature rises above the threshold d41 • 3 = count with compressor on and until the temperature rises above the threshold d41	0...3	0	0	0	num
d44	Sets the threshold management mode. • 0 = absolute value (for example: d41 = -25 °C means that the threshold temperature is exactly -25 °C) • 1 = relative value (negative offset, relative to the value measured by defrost probe Pb2 (if d40 = 1) at the end of the first cooling cycle or on startup)	0/1	0	0	0	flag
FANS (“FAn” folder)						
FPt	Sets whether parameter FSt is expressed as an absolute temperature value or as a value relative to the Setpoint. 0 = absolute; 1 = relative.	0/1	0.0	0.0	0.0	flag
FSt	Fan disabling temperature.	-67.0...302	8.0	8.0	8.0	°C/°F
FAd	Fan activation differential.	1.0...25.0	2.0	2.0	2.0	°C/°F
Fdt	Fan activation delay time after a defrost.	0...250	2	2	2	min
dt	Dripping time.	0...250	0	0	0	min
dFd	Used to select or deselect the exclusion of the evaporator fans during defrosting. **n** (0) = no (in accordance with parameter **FCO**); **y** (1) = yes (fan excluded).	n/y	y	y	y	flag

<table>
<tr><th>PAR.</th><th>DESCRIPTION</th><th>RANGE</th><th>AP1</th><th>AP2</th><th>AP3</th><th>U.M.</th></tr>
<tr><td>FCo</td><td>Evaporator fan operating mode.
<table>
<tr><th rowspan="2">Pb2</th><th rowspan="2">H42</th><th rowspan="2">FCo</th><th colspan="2">day</th><th colspan="2">night</th></tr>
<tr><th>Cn</th><th>Cf</th><th>Cn</th><th>Cf</th></tr>
<tr><td rowspan="4">ok</td><td rowspan="4">y</td><td>0</td><td>T</td><td>Off</td><td>T</td><td>Off</td></tr>
<tr><td>1</td><td>T</td><td>T</td><td>T</td><td>T</td></tr>
<tr><td>2</td><td>T</td><td>Dcd</td><td>T</td><td>Dcn</td></tr>
<tr><td>3</td><td>T</td><td>Dcd</td><td>T</td><td>Dcn</td></tr>
<tr><td rowspan="4">ko</td><td rowspan="4">y</td><td>0</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr>
<tr><td>1</td><td>On</td><td>On</td><td>On</td><td>On</td></tr>
<tr><td>2</td><td>On</td><td>Dcd</td><td>On</td><td>Dcn</td></tr>
<tr><td>3</td><td>On</td><td>Dcd</td><td>On</td><td>Dcn</td></tr>
<tr><td rowspan="4">ok</td><td rowspan="4">n</td><td>0</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr>
<tr><td>1</td><td>On</td><td>On</td><td>On</td><td>On</td></tr>
<tr><td>2</td><td>On</td><td>Dcd</td><td>On</td><td>Dcn</td></tr>
<tr><td>3</td><td>On</td><td>Dcd</td><td>On</td><td>Dcn</td></tr>
</table>
Headings legend:
Pb2 = probe Pb2 status (ok = present; ko = in E2 error and no = absent; day = day mode; night = night mode; Cn = compressor on; Cf = compressor off.
Status legend:
T = thermostat controlled fans; On = fans on; Off= fans off; DCd = Day duty cycle</td><td>0/1/2/3</td><td>0</td><td>0</td><td>0</td><td>num</td></tr>
<tr><td>FOn</td><td>Fan ON time for day duty cycle.</td><td>0...250</td><td>0</td><td>0</td><td>0</td><td>min</td></tr>
<tr><td>FOF</td><td>Fan OFF time for day duty cycle.</td><td>0...250</td><td>0</td><td>0</td><td>0</td><td>min</td></tr>
<tr><td>Fnn</td><td>Fan ON time for night duty cycle.</td><td>0...250</td><td>0</td><td>0</td><td>0</td><td>min</td></tr>
<tr><td>FnF</td><td>Fan OFF time for night duty cycle.</td><td>0...250</td><td>0</td><td>0</td><td>0</td><td>min</td></tr>
<tr><td>ESF</td><td>“Night” mode activation. “”. n (0) = no; y (1) = yes.</td><td>n/y</td><td>n</td><td>n</td><td>n</td><td>flag</td></tr>
</table>

PAR.	DESCRIPTION	RANGE	AP1	AP2	AP3	U.M.
ALARMS (“AL” folder)						
Att	Used to select whether the **HAL** and **LAL** parameters will have an absolute (**Att**= 0) or relative value (**Att** = 1).	0/1	0	0	0	flag
AFd	Alarm differential.	0.1...25.0	2.0	2.0	2.0	°C/°F
HAL	Maximum temperature alarm.	LAL...302	150.0	150.0	150.0	°C/°F
LAL	Minimum temperature alarm.	-67.0...HAL	-50.0	-50.0	-50.0	°C/°F
PAo	Alarm exclusion time on restarting after a power failure.	0...10	1	1	1	hours
dAo	Temperature alarm exclusion time after defrosting.	0...999	15	15	15	min
oAo	Alarm signaling delay after deactivation of the digital input.	0...10	1	1	1	hours
tdo	Door open alarm activation delay time.	0...250	15	15	15	min
tAo	Temperature alarm signaling delay time.	0...250	0	0	0	min
dAt	Defrost ended due to timeout alarm signaling. **n** (0) = no; **y** (1) = yes.	n/y	n	n	n	flag
EAL	An external alarm inhibits the regulators. 0 = does not inhibit the regulators 1 = compressor and defrost inhibited 2 = fans, compressor and defrost inhibited	0/1/2	n	n	n	flag
AoP	Alarm output polarity. 0 = NO; 1 = NC.	0/1	y	y	y	flag
rFt	Low refrigerant alarm signaling delay.	0...250	0 (not in applications)			min
LIGHTS & DIGITAL INPUTS (“Lit” folder)						
dod	Digital input shuts off utilities. **0** = disabled; **1** = disables fans; **2** = disables compressor; **3** = disables fans and compressor.	0/1/2/3	3	3	3	num
dAd	Digital input activation delay.	0...250	0	0	0	min
dCo	Compressor deactivation delay from door opening.	0...250	1	1	1	min
AuP	Auxiliary (AUX) output activation when the door is opened. **n** (0) = disabled **y** (1) = AUX output activated	n/y	n	y	n	flag

PAR.	DESCRIPTION	RANGE	AP1	AP2	AP3	U.M.
PRESSURE SWITCH (“PrE” folder)						
PEn	Number of errors permitted per general pressure switch input.	0...15	0	0	0	num
PEI	General pressure switch error count interval.	1...99	1	1	1	min
PEt	Compressor activation delay after pressure switch deactivation.	0...255	0	0	0	min
EnS (Energy Saving)						
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function)	-30.0...30.0	0	0	0	°C/°F
odF	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function)	0.1...30.0	1	1	1	°C/°F
COMMUNICATION (“Add” folder)						
Adr	Modbus protocol controller address.	1...247	1 (not in applications)			flag
bAU	Modbus Baudrate selection. 96 (0) = 9600; 192 (1) = 19200; 384 (2) = 38400	96/192/384	0 (not in applications)			num
Pty	Modbus parity bit. **n** (0) = none; **E** (1) = even; **o** (2) = odd.	n/E/o	n	n	n	num
DISPLAY (“diS” folder)						
dro	Selects the unit of measure used when displaying the temperature read by the probes. **0** = °C, **1** = °F. **Note:** changing from °C to °F or vice-versa does NOT change the SEt, diF values, etc. (example: set = 10 °C becomes 10 °F).	0/1	0	0	0	flag
CA1	Calibration 1. Temperature value to be added to the value of Pb1.	-30.0...30.0	0.0	0.0	0.0	°C/°F
CA2	Calibration 2. Temperature value to be added to the value of Pb2.	-30.0...30.0	0.0	0.0	0.0	°C/°F
CAi	Activation of the calibration value. 0 = Adds the value to the temperature value displayed; 1 = Adds the value to the temperature used by the regulators and not to the one displayed; 2 = Adds the value to the temperature used by the regulators and to the temperature displayed.	0/1/2	2	2	2	num

PAR.	DESCRIPTION	RANGE	AP1	AP2	AP3	U.M.
LoC	Keypad lock. no (0) = Keypad lock disabled yES (1) = Keypad lock enabled (on startup; when 30 seconds have elapsed since the last action carried out on the user interface)	n/y	n	n	n	flag
ddd	Selection of the type of value to show on the display. **0** = Setpoint; **1** = probe Pb1 ; **2** = probe Pb2 ; **3** = RESERVED.	0/1/2/3	1	1	1	num
ddL	Display mode during defrosting. 0 = displays the temperature read by Pb1; 1 = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached; 2 = displays the label dEF during defrost until the setpoint is reached.	0/1/2	0	0	0	num
Ldd	Display unlock timeout value - label “dEF”.	0...250	30	30	30	min
ndt	Display with decimal point. **n** (0) = no; **y** (1) = yes.	n/y	y	y	y	flag
FSE	Sets the value (COEFF) used by the low-pass filter to calculate the temperature value to be displayed. 0 = disabled; 1 = 200; 2 = 100; 3 = 50; 4 = 25; 5 = 12; 6 = 6; 7 = 3.	0...7	0	0	0	min
FdS	Filter disabling threshold.	-67.0...302	0	0	0	°C/°F
Ftt	Time that has elapsed beyond the value of FdS before the filter is disabled.	0...250	0	0	0	num
FHt	Filter sampling interval.	1...250	0	0	0	num
PS1	Password1: if PS1≠0 this is the access key to User parameters.	0...250	0	0	0	num
PS2	Password2: if PS2≠0 this is the access key to Installer parameters.	0...250	15	15	15	num
CONFIGURATION (“CnF” folder)						
Note: if one or more parameters in this folder are changed, the controller MUST be switched off and then on again to apply the change.						
H00	Select probe type. 0 = PTC; 1 = NTC; 2 = Pt1000.	0/1/2	1	1	1	num
H08	Stand-by operating mode. 0 = display off; the regulators are active and the device signals any alarms by reactivating the display; 1 = display off; the regulators and alarms are inhibited; 2 = the display shows the label “OFF”; the regulators and alarms are inhibited.	0/1/2	0	0	0	num

PAR.	DESCRIPTION	RANGE	AP1	AP2	AP3	U.M.
H11	Digital input 1/polarity configuration. 0 = disabled; ±1 = defrost; ±2 = reduced set; ±3 = auxiliary; ±4 = door switch; ±5 = external alarm; ±6 = stand-by; ±7 = pressure switch; ±8 = deep cooling (DCC); ±9 = light; ±10 = energy saving. **Note:** the sign "+" indicates that the input is active if the contact is closed; the sign "-" indicates that the input is active if the contact is open.	-10... +10	0	0	0	num
H21	Configuration of digital input 1 (Out1): 0 = disabled; 1 = compressor; 2 = defrost; 3 = evaporator fans; 4 = alarm; 5 = auxiliary; 6 = stand-by; 7 = light; 8 = buzzer; 9 = compressor 2; 10 = RESERVED; 11 = condenser fans; 12 = heater deadband control; 13 = RESERVED.	0...13	3	5	5	num
H22	Configuration of digital input 2 (Out2). Same as H21. 0 = disabled; 1 = compressor; 2 = defrost; 3 = evaporator fans; 4 = alarm; 5 = auxiliary; 6 = stand-by; 7 = light; 8 = buzzer; 9 = compressor 2; 10 = RESERVED; 11 = condenser fans; 12 = heater deadband control.	0...12	2	2	3	num
H23	Configuration of digital input 3 (Out3). Same as H22.	0...12	1	1	1	num
H24	Configuration of digital input 4 (Out4). Same as H22.	0...12	5	3	2	num
H25	Enables/disables the buzzer. 0 = disabled; 1 = enabled.	0/1	1	1	1	flag
H31	Configurability of the △ key. 0 = disabled; 1 = defrost; 2 = auxiliary; 3 = reduced set; 4 = stand-by; 5 = RESERVED; 6 = RESERVED; 7 = deep cooling (DCC); 8 = light.	0...8	1	1	1	num
H32	Configuration of the ▽ key. Same as H31.	0...8	2	2	2	num
H33	Configuration of the ⏻ key. Same as H31.	0...8	2	2	2	num
H34	Configuration of the 💡 key. Same as H31.	0...8	2	2	2	num
H35	Configuration of the ☆ key. Same as H31.	0...8	2	2	2	num
H42	Evaporator probe presence. **n** (0) = not present; **y** (1) = present.	n/y	y	y	y	flag

PAR.	DESCRIPTION	RANGE	AP1	AP2	AP3	U.M.
H60	Display selected application. 0 = disabled; 1 = AP1; 2 = AP2; 3 = AP3.	0...3	1 (not in applications)			**num**
tAb	Reserved: read-only parameter. Table of parameters.	-	-	-	-	-
UNICARD (“Fpr” folder)						
UL	Transferral of programming parameters from the device to the UNICARD.	-	-	-	-	-
Fr	UNICARD formatting. Deletes all data on the memory stick. **Note:** the use of parameter “Fr” results in the loss of all data entered. This operation cannot be reversed.	-	-	-	-	-
FUNCTIONS (“FnC” folder)						
rAP	Reset pressure switch alarms.	-	-	-	-	-

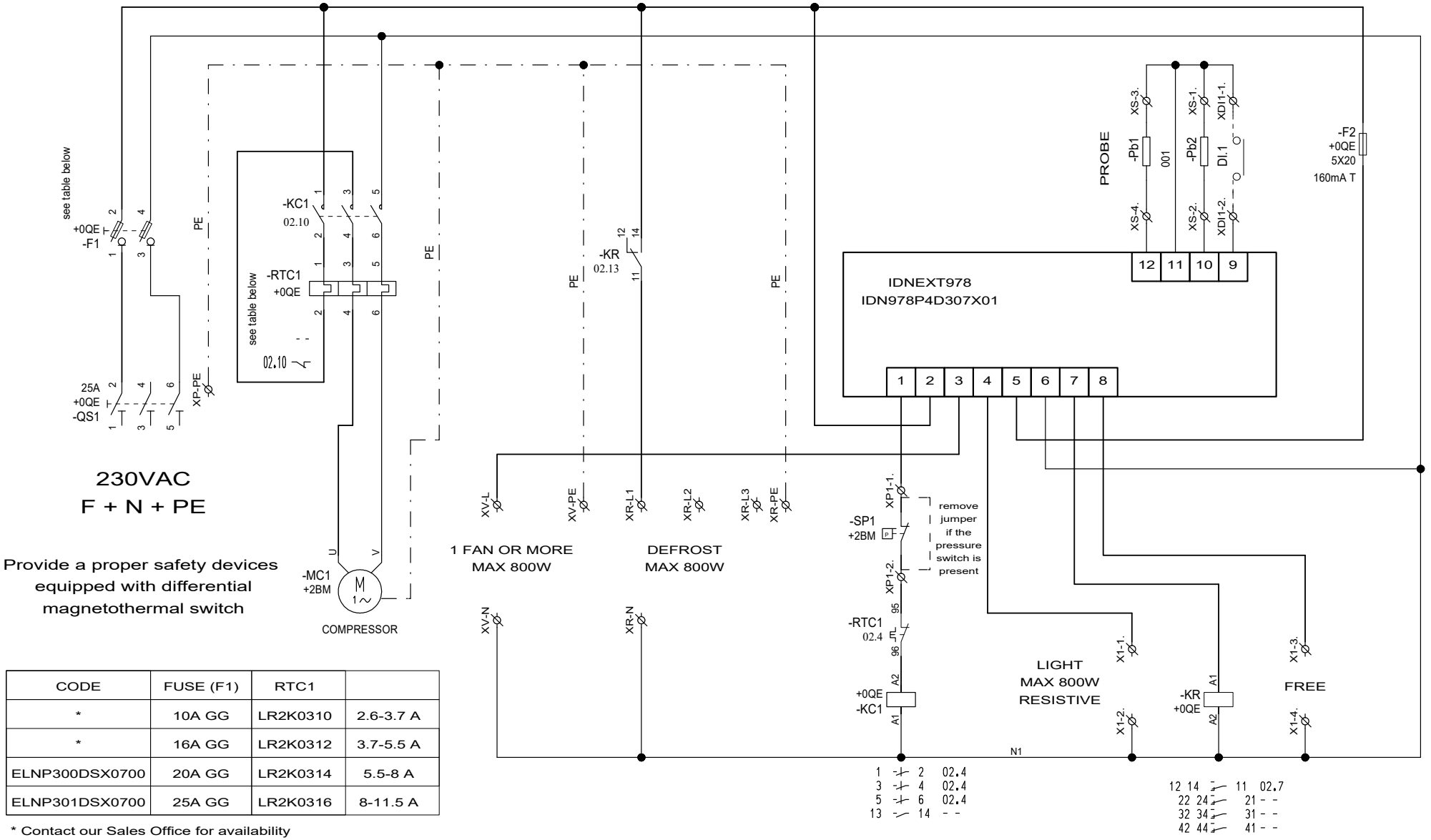
Note: if one or more parameters in folder CnF or marked with (!) are changed, the controller must be switched off and then on again to make sure it works properly.

Appendices

Appendices for single-phase versions

Electrical diagram for single-phase versions

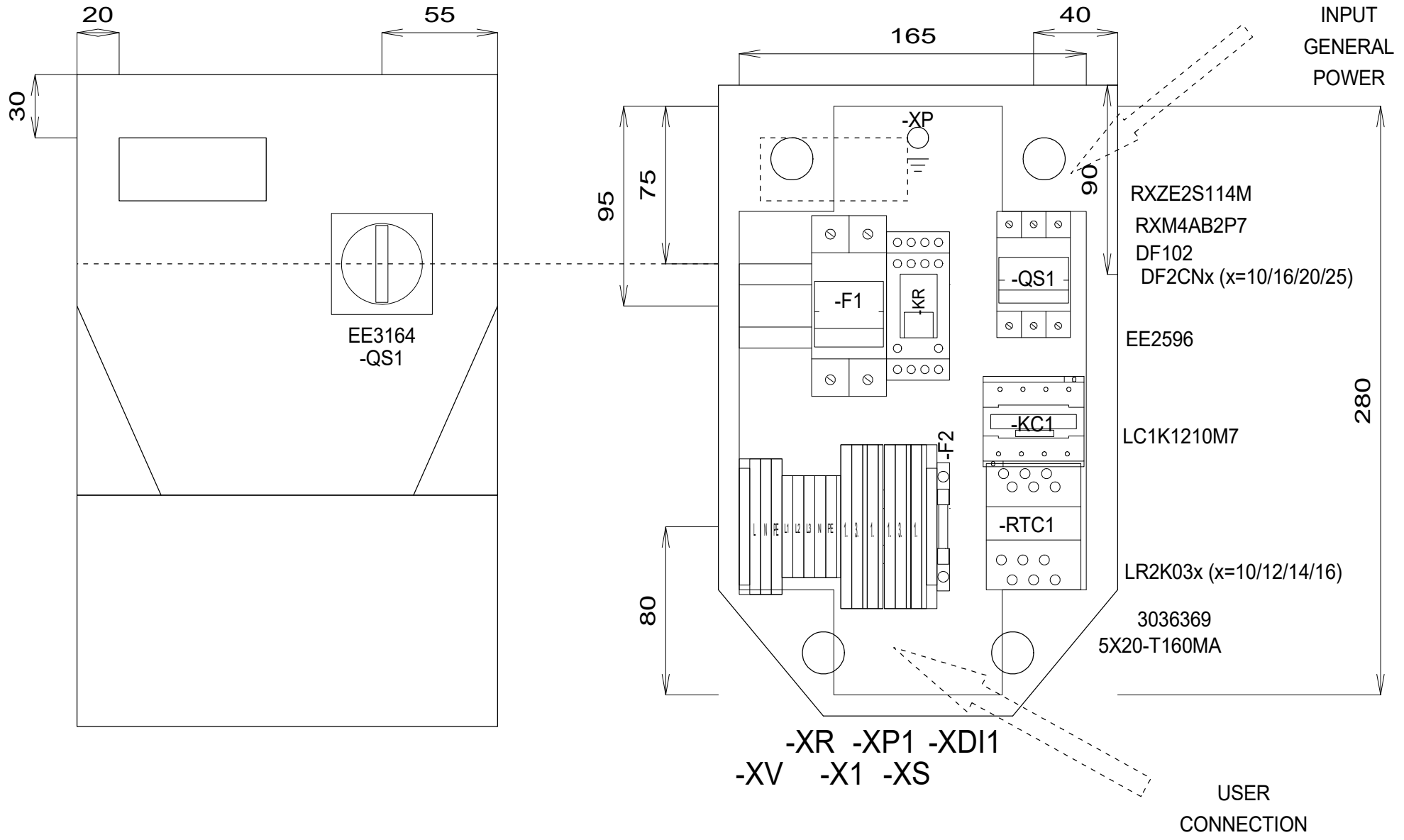
NOTICE
INOPERABLE DEVICE The electrical diagram refers to the factory configuration. If a different configuration is established during installation, the installer must adapt the electrical diagram accordingly. **Failure to follow these instructions can result in equipment damage.**



CODE	FUSE (F1)	RTC1	
*	10A GG	LR2K0310	2.6-3.7 A
*	16A GG	LR2K0312	3.7-5.5 A
ELNP300DSX0700	20A GG	LR2K0314	5.5-8 A
ELNP301DSX0700	25A GG	LR2K0316	8-11.5 A

* Contact our Sales Office for availability

Layout for single-phase versions



List of materials for single-phase versions

TERMINAL BOARD LIST

Identification	Description	Code	Manufacturer	Location	Amount
P1	FBS 2-5	3030161	PHOENIX	0QE	1
P2	FBS 2-5	3030161	PHOENIX	0QE	1
X1-	D-STTBS 2,5	3038503	PHOENIX	0QE	1
X1-1.	STTBS 2,5	3038464	PHOENIX	0QE	1
X1-3.	STTBS 2,5	3038464	PHOENIX	0QE	1
XP1-	D-STTBS 2,5	3038503	PHOENIX	0QE	1
XP1-1	STTBS 2,5	3038464	PHOENIX	0QE	1
XDI1-	D-STTBS 2,5	3038503	PHOENIX	0QE	1
XDI1-	CLIPFIX 35-5	3022276	PHOENIX	0QE	1
XDI1-1.	STTBS 2,5	3038464	PHOENIX	0QE	1
XR-	D-ST 2.5	3030417	PHOENIX	0QE	1
XR-L1	ST 2,5	3031212	PHOENIX	0QE	1
XR-L2	ST 2,5	3031212	PHOENIX	0QE	1
XR-L3	ST 2,5	3031212	PHOENIX	0QE	1
XR-N	ST 2,5	3031212	PHOENIX	0QE	1
XR-PE	ST 2,5-PE	3031238	PHOENIX	0QE	1
XS-	D-STTBS 2,5	3038503	PHOENIX	0QE	1
XS-1.	STTBS 2,5	3038464	PHOENIX	0QE	1
XS-3.	STTBS 2,5	3038464	PHOENIX	0QE	1
XV-	CLIPFIX 35-5	3022276	PHOENIX	0QE	1
XV-L	ST 2,5-TWIN	3031241	PHOENIX	0QE	1
XV-N	ST 2,5-TWIN	3031241	PHOENIX	0QE	1
XV-PE	ST 2,5-TWIN-PE	3031267	PHOENIX	0QE	1

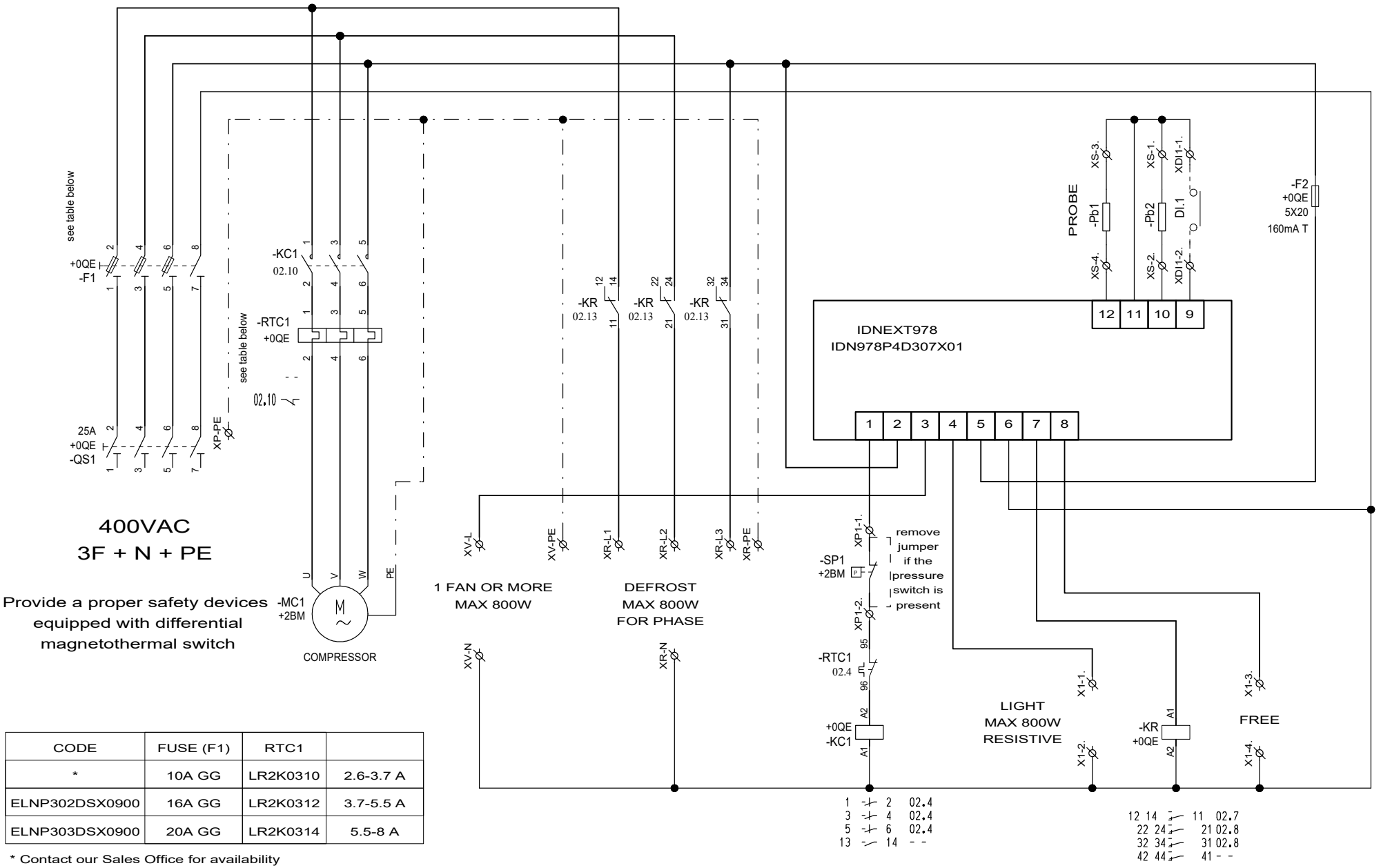
MATERIAL LIST

Identification	Description	Code	Manufacturer	Location	Amount
F1	FUSE-HOLDER 2P 32A 690V	DF102	SCHNEIDER	0QE	1
F1	FUSE	DF2CN10 / 16 / 20 / 25	SCHNEIDER	0QE	2
F2	FUSE-HOLDER 5X20	3036369	PHOENIX	0QE	1
F2	FUSE 5X20 160MA T	5X20-T160MA	FUSIBILE	0QE	1
G1	RAIL	04180089	CON	0QE	1
KC1	CONTACTOR 12A AC3 230VAC	LC1K1210M7	SCHNEIDER	0QE	1
KR	4 CONTACTS RELAY-HOLDER	RXZE2S114M	SCHNEIDER	0QE	1
KR	4 CONTACTS RELAY 230VAC 6A LED	RXM4AB2P7	SCHNEIDER	0QE	1
QS1	MAIN SWITCH 25A 3P	EE2596	ABB	0QE	1
QS1	YELLOW/RED PADLOCKABLE HANDLE MINI	EE3164	ABB	0QE	1
QS1	SHAFT 6X130MM	EE3222	ABB	0QE	1
RTC1	TERMIC RELAY 5.5-8A / TERMIC RELAY 8-11.5A	LR2K0310 / 12 / 14 / 16	SCHNEIDER	0QE	1

Appendices for tri-phase versions

Electrical diagram for tri-phase versions

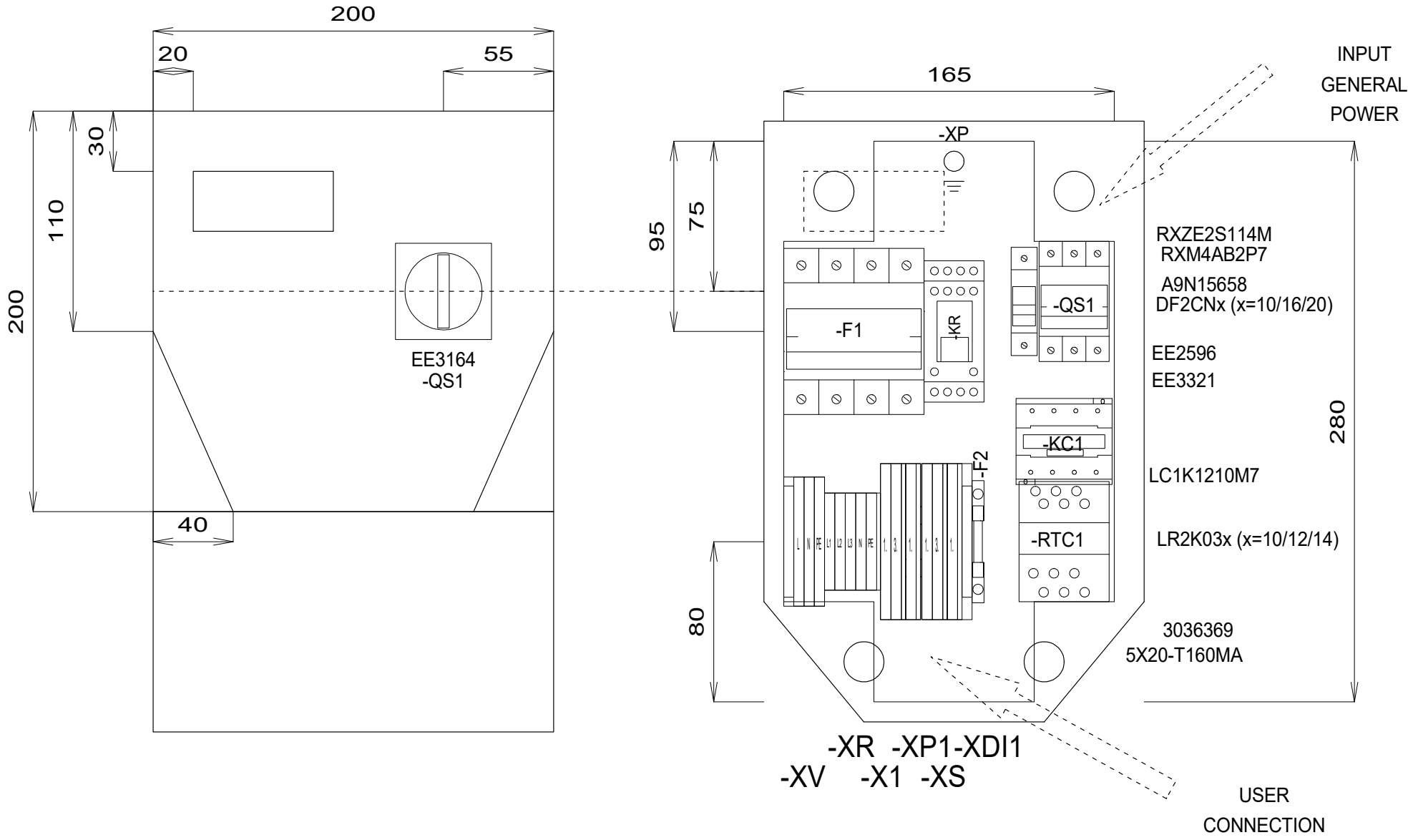
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ELNP302DSX0900	16A GG	LR2K0312	3.7-5.5 A
ELNP303DSX0900	20A GG	LR2K0314	5.5-8 A

* Contact our Sales Office for availability

Layout for tri-phase versions



List of materials for tri-phase versions

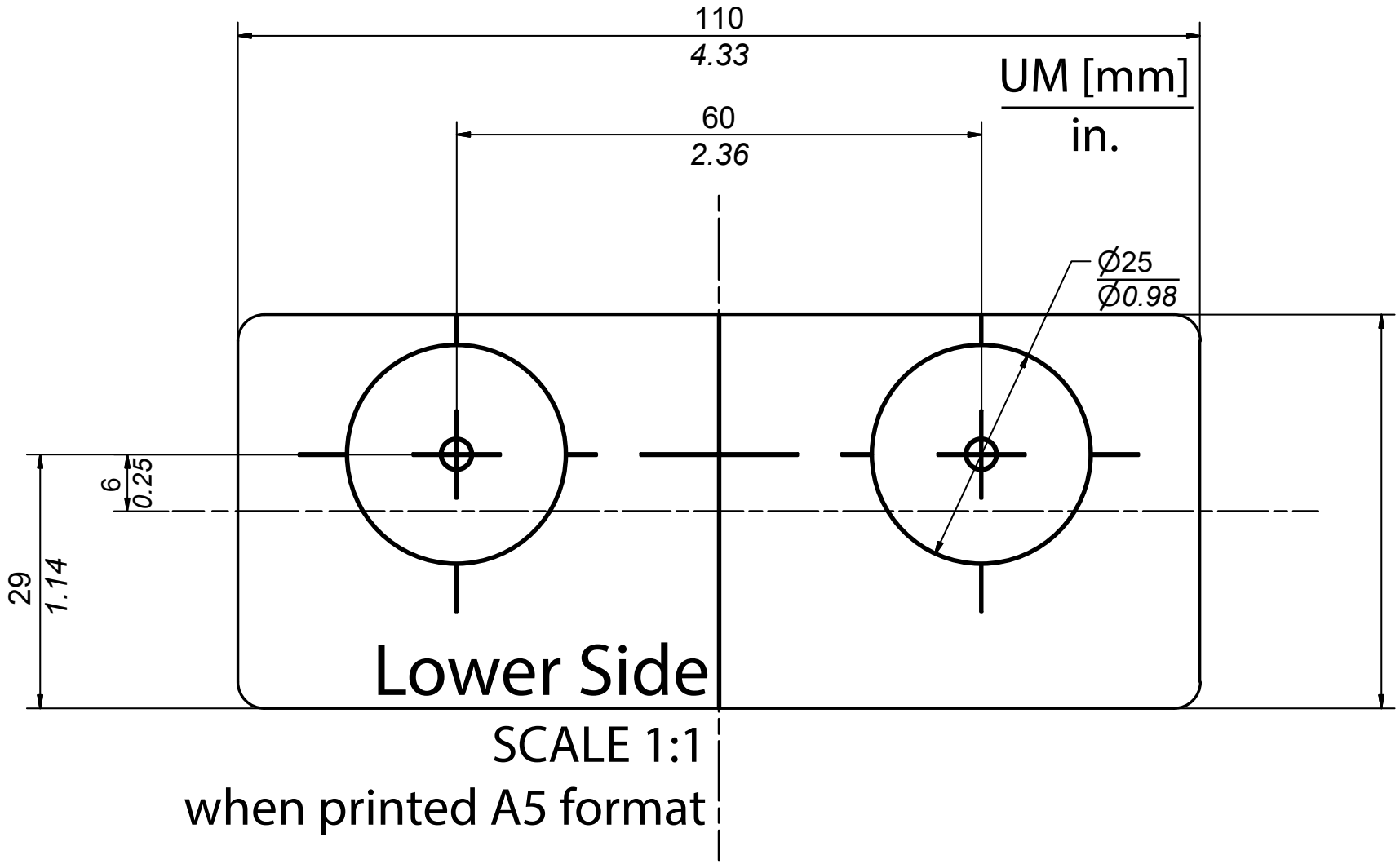
TERMINAL BOARD LIST

Identification	Description	Code	Manufacturer	Location	Amount
X1-	D-STTBS 2,5	3038503	PHOENIX	0QE	1
X1-1.	STTBS 2,5	3038464	PHOENIX	0QE	1
X1-3.	STTBS 2,5	3038464	PHOENIX	0QE	1
XP1-	D-STTBS 2,5	3038503	PHOENIX	0QE	1
XP1-1	STTBS 2,5	3038464	PHOENIX	0QE	1
XDI1-	D-STTBS 2,5	3038503	PHOENIX	0QE	1
XDI1-	CLIPFIX 35-5	3022276	PHOENIX	0QE	1
XDI1-1.	STTBS 2,5	3038464	PHOENIX	0QE	1
XR-L1	ST 2,5	3031212	PHOENIX	0QE	1
XR-L2	ST 2,5	3031212	PHOENIX	0QE	1
XR-L3	ST 2,5	3031212	PHOENIX	0QE	1
XR-N	ST 2,5	3031212	PHOENIX	0QE	1
XR-PE	ST 2,5-PE	3031238	PHOENIX	0QE	1
XS-	D-STTBS 2,5	3038503	PHOENIX	0QE	1
XS-1.	STTBS 2,5	3038464	PHOENIX	0QE	1
XS-3.	STTBS 2,5	3038464	PHOENIX	0QE	1
XV-	CLIPFIX 35-5	3022276	PHOENIX	0QE	1
XV-L	ST 2,5-TWIN	3031241	PHOENIX	0QE	1
XV-N	ST 2,5-TWIN	3031241	PHOENIX	0QE	1
XV-PE	ST 2,5-TWIN-PE	3031267	PHOENIX	0QE	1

MATERIAL LIST

Identification	Description	Code	Manufacturer	Location	Amount
F1	FUSE-HOLDER 3P+N 32A 690V	A9N15658	SCHNEIDER	0QE	1
F1	FUSE	DF2CN10 / 16 / 20	SCHNEIDER	0QE	3
F2	FUSE-HOLDER 5X20	3036369	PHOENIX	0QE	1
F2	FUSE 5X20 160MA T	5X20-T160MA	FUSIBILE	0QE	1
G1	RAIL	04180089	CON	0QE	1
KC1	CONTACTOR 12A AC3 230VAC	LC1K1210M7	SCHNEIDER	0QE	1
KR	4 CONTACTS RELAY-HOLDER	RXZE2S114M	SCHNEIDER	0QE	1
KR	4 CONTACTS RELAY 230VAC 6A LED	RXM4AB2P7	SCHNEIDER	0QE	1
QS1	MAIN SWITCH 25A 3P	EE2596	ABB	0QE	1
QS1	SHAFT 6X130MM	EE3222	ABB	0QE	1
QS1	FOURTH POLE SWITCH 40A	EE3321	ABB	0QE	1
QS1	YELLOW/RED PADLOCKABLE HANDLE MINI	EE3164	ABB	0QE	1
RTC1	TERMIC RELAY 3.7-5.5A / TERMIC RELAY 5.5-8A	LR2K0310 / 12 / 14	SCHNEIDER	0QE	1

Drilling template



IDPanel 978

User Manual

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