JEAc

Low Cost Connectable Electronic Temperature Controller with Built-in LED Display

USER MANUAL

v4

Important: This manual contains important safety instructions. Before using this product please read all instructions carefully. Keep this manual handy for reference.

Please read the following warnings to maintain the safe function and continued performance of your Sollatek device.

INSTALLATION

Mounting of the unit must be in accordance with orientation as specified in the “Description & Install” section. The device must only be installed and configured by trained and authorized staff as specified in the “Description & Install” section.

WASHDOWN

The front of the unit may be exposed to water jets. The rear of the unit must not be exposed to high pressure water jets or temporary submersion.

CHEMICALS

The Sollatek device is made of polycarbonate and should not be exposed to chemicals which attack this material.

TEMPERATURE

The Sollatek device must only be subjected to temperatures as specified in the “Technical Specifications” section of this manual.

VIBRATION AND IMPACT

The device MUST be installed in such a way as to be protected from impact in operation. Do not hit or drop the device.

NO SERVICEABLE PARTS

There are no serviceable parts inside the device. Do NOT open the housing.

VOLTAGES

The Sollatek device must only be connected to power supplies which comply with the acceptable voltage ranges specified in the “Technical Specification” section of this manual.

VOLTAGE FLUCTUATIONS AND SERGE

The Sollatek device has surge protection as specified in the “Technical Specification”. Exposure to surge voltages out side these limits, or excessively repeated surges within the limits may cause damage to the electrical circuits.

CURRENTS

Outputs should not be connected to short circuits or to loads which exceed the currents specified in the “Technical Specification” section of this manual. Care must be taken to ensure that cables and terminations are safely terminated.

SEGREGATION OF POWER AND SIGNAL CABLING

Correct segregation of power and signal cabling must be followed. Do not run power and signal cables together in the same conduit. Induction from power cables may corrupt data signals, leading to incorrect operation.

CONSEQUENTIAL FAILURES

The Sollatek device includes features to protect both itself and connected components. However, failure of connected components may cause damage to the JEAc controller and / or connected components. Critical or vulnerable components should be protected independently against failure.

FIT FOR PURPOSE

The Sollatek device must only be used for the purpose and functions described in this manual. As each application requires different configuration and setup, no liability is accepted by Sollatek UK Ltd for the correct operation of the final equipment.

Failure to comply with the warnings may result in the device becoming damaged leading to premature failure or unsafe operation. In extreme cases failure to comply may cause risk of electrocution or fire.

SAFETY PRECAUTIONS

Precautions should be taken when installing or disconnecting the device. Isolate power supply before installation or servicing.

Trained and Authorised personnel only should install / service this equipment

THE DANGERS FROM ELECTRICITY

Harm can be caused to any person when they are exposed to ‘live parts’ that are either touched directly or indirectly by means of some

Conducting object or material. Voltages over 50 volts AC or 120 volts DC are considered hazardous.

Most electrical accidents occur because individuals:

1. Are working on or near equipment which is thought to be dead but which is, in fact, live.
2. Are working on or near equipment which is known to be live, but where those involved are without adequate training or appropriate equipment, or they have not taken adequate precautions.
3. Misuse of equipment or use electrical equipment which they know to be faulty.

REDUCING THE RISK OF ELECTRIC SHOCK

To reduce the risk of electric shock:

1. Install the device in an area free of conductive contaminants. Ambient temperature must not exceed 60°C.
2. Isolate the power to the device before installation, repair or removal.
3. Use tools with insulated handles.

FIRST-AID

Before commencing any work:

1. Find out the location of a suitably stocked first-aid box
2. Find out the arrangements that exist on site for first-aid, and who is responsible for taking charge of these.

DISPOSAL

Sollatek devices are subject to the EU directive 202/96/EC, and may also be subject to other national legislation for safe disposal of e-waste.

1. The device cannot be disposed of as municipal waste and such should waste should be collected and disposed of separately.
2. The device can be disposed of through an approved WEEE collection point, or alternatively can be returned to Sollatek UK Ltd at the end of its working life.
3. The device may contain hazardous substances, which if disposed of incorrectly may cause harm to the environment and/or human health.
4. Penalties may be applicable for incorrect disposal, as specified by local legislation.

Sollatek devices complies with EU directive 2002/95/EC (RoHS).

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1. INTRODUCTION

The JEAc provides accurate temperature control and advanced defrosting for all commercial refrigeration units, display cabinets, and freezers. It optimises the cooler's operation to align with store opening times by detecting store activity (via door openings) and adjusts the temperature and light settings accordingly.

The JEAc offers flexibility and complete control with up to three outputs, three input sensors, and nearly 100 configurable parameters accessible via PC software or the built-in display. This ensures the cooler's operations match store requirements. The JEAc is compatible with Hydro-Carbon-rated materials (HC).

Despite its intricate operation, the JEAc maintains simplicity for the user with straightforward installation and setup, an easy-to-read, user-friendly display panel, and seamless integration with the cooler's branding.

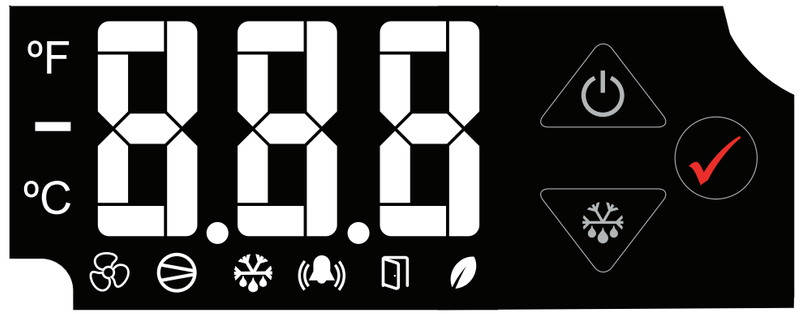
The JEAc can connect to the Sollatek GMC4 connectivity device, allowing for remote monitoring, configuration, and asset location via an online portal and phone application. Data from the JEAc can be utilised for sales/customer insights, health monitoring, and early fault detection, thus reducing cooler downtime. Service personnel can also remotely configure and update the JEAc to ensure precise control and operation at all times.

2. DESCRIPTION

The JEAc controller consists of three main groups of features:

- The Front Display Panel with the user interface and controls.
- The Rear Connector Panel for input, output, and data cables.
- The Main Housing includes the mounting clips, mounting screws and bezel.

2.1 JEAc FRONT PANEL - WITH DISPLAY



ICONS

Fan	ON when Evaporator Fan is ON, otherwise OFF
Compressor	ON when the compressor is on, otherwise OFF
Defrost	ON when controller is in defrost mode, otherwise OFF
Alarm	ON when a fault occurs, otherwise OFF
Door	ON when the door is open, otherwise OFF
Eco Mode	ON when the controller is in eco mode, otherwise OFF

BUTTONS

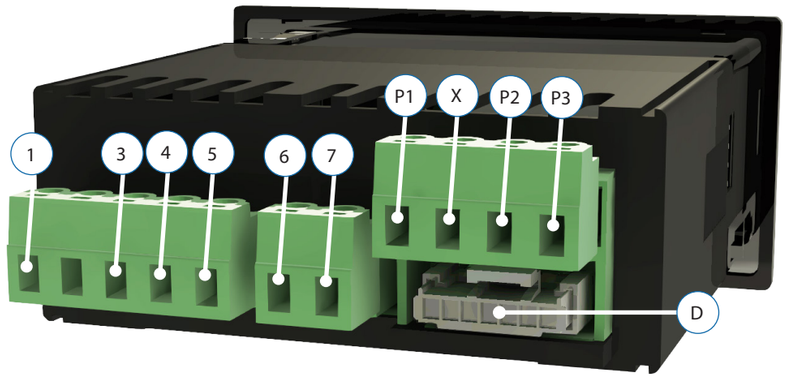
Up button	Enter Menu List ON/OFF Mode
Down Button	Trigger Manual Defrost
Tick Button	Toggle Lights ON/OFF Enter / Set Menu / Parameter

2.2 REAR CONNECTORS

2.2.1 JEAc WITH 3 RELAYS

WARNING! MAINS CONNECTION

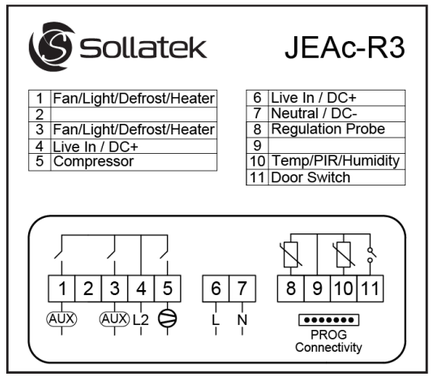
Risk of electrocution or damage to equipment. Ensure Mains is isolated before installation or repair of the unit or any connected equipment.



1	Evaporator Fan / Lights / Heater	5 Amp Relay 90-250 VAC or 0-24 VDC O/P
3	Evaporator Fan / Lights / Heater	5 Amp Relay 90-250 VAC or 0-24 VDC O/P
4	Live in 2	90-300 VAC or 0-24 VDC I/P
5	Compressor	16 Amp Relay 90-250 VAC O/P or 0-24 VDC O/P
6	Live in	90-300 VAC I/P or DC+
7	Neutral	90-300 VAC I/P or DC-

P1 - P2	NTC Temperature Sensor I/P PIR Sensor Humidity Sensor	10 kΩ NTC ($\beta_{25/85}$: 3435 k)
P3	Sensor I/P	Door Switch
D	Data Connector	Connectivity Module
X	Probes Common 0V	

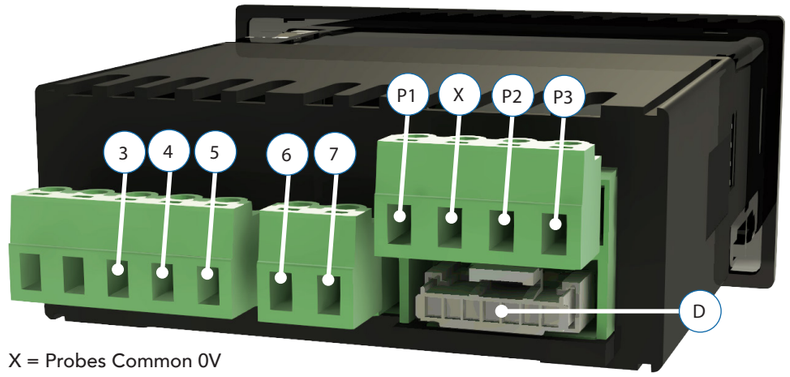
3 RELAY CONNECTION LABEL ON PRODUCT



2.2.2 JEAc WITH 2 RELAYS

WARNING! MAINS CONNECTION

Risk of electrocution or damage to equipment. Ensure Mains is isolated before installation or repair of the unit or any connected equipment.

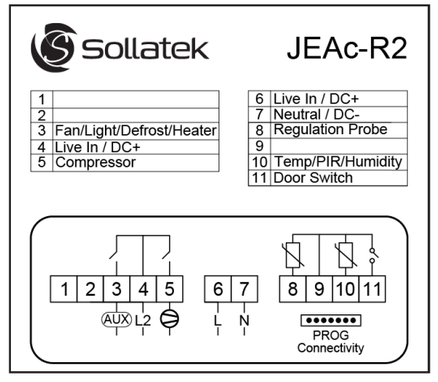


X = Probes Common 0V

3	Evaporator Fan / Heater	5 Amp Relay 90-250 VAC or 0-24 VDC O/P
4	Live in 2	90-300 VAC or 0-24 VDC I/P
5	Compressor	16 Amp Relay 90-250 VAC O/P or 0-24 VDC O/P
6	Live in	90-300 VAC I/P or DC+
7	Neutral	90-300 VAC I/P or DC-

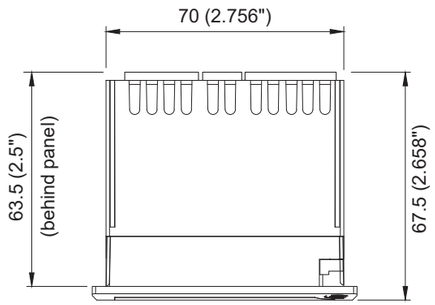
P1 - P2	NTC Temperature Sensor I/P PIR Sensor Humidity Sensor	10 kΩ NTC ($\beta_{25/85}$: 3435 k)
P3	Sensor I/P	Door Switch
D	Data Connector	Connectivity Module
X	Probes Common 0V	

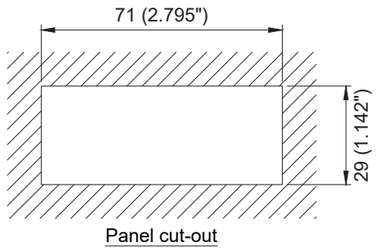
2 RELAY CONNECTION LABEL ON PRODUCT

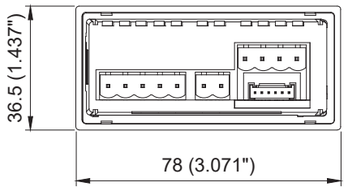


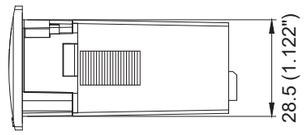
3. INSTALLATION

3.1 DIMENSIONS AND PANEL CUT-OUT









3.2 PANEL MOUNTING

WARNING!

Avoid installing the JEAc in the following environments:

- Strong vibrations or knocks
- Exposure to continuous water spray
- Aggressive and polluting atmospheres to avoid corrosion
- Environments where explosive or mixes of flammable gases are present

1. Cut a rectangle aperture in the panel of the cooler where the display is to be located as per the panel cut diagram. Ensure the aperture is free of burrs and sharp edges.

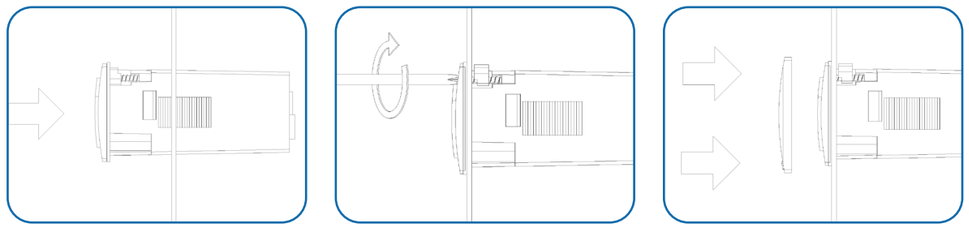
Note: The Maximum panel thickness must not exceed:

Front screw mounting: 1.6mm maximum with gasket and 3.6mm maximum without the gasket.

Side clip mounting: 6.6mm maximum with gasket and 8.6mm maximum without the gasket.

3.2.1 FRONT MOUNTING

2. Remove the bezel from the front of the JEAc by pulling it off. Insert the JEAc from the outside (front) of the panel.
3. Tighten the screws. After turning 90o the catch will come out of its slot and press onto the panel. Tighten the screw until the front panel is secure, DO NOT over-tighten the screw.
4. Push the bezel back onto the front of the JEAc.

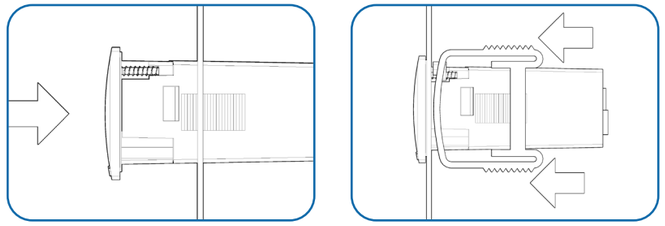


3.2.2 REAR MOUNTING

Note: Side mounting clips are purchased separately

1. Insert the JEAc into the front of the panel.
2. Insert one of the side clips into the guides within the top and bottom of the body. Slide towards the front of the JEAc until it is securely against the panel. Repeat the same operation for the other side.

Note: Ensure the clips are securely attached to the JEAc and are tight against the panel.



3.3 WIRING

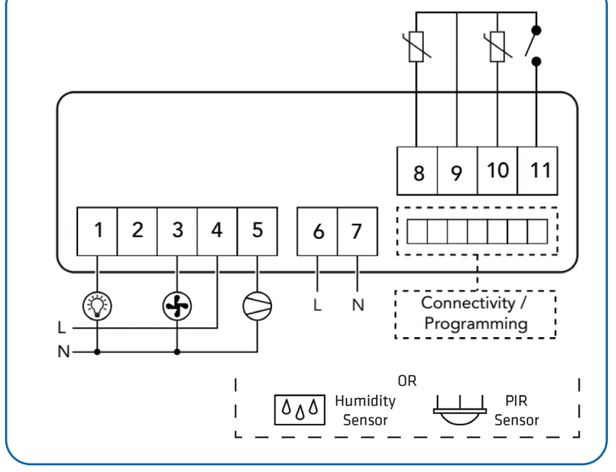
3.3.1 OUTPUT WIRING

WARNING! MAINS CONNECTION

Risk of electrocution or damage to equipment. Ensure Mains is isolated before installation or repair of the unit or any connected equipment.

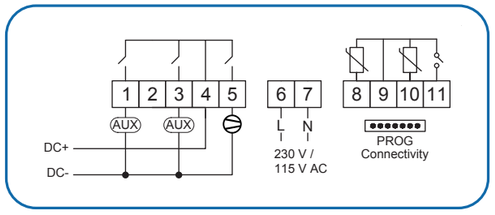
3.3.1.1 JEAc-x3 models

Standard Wiring (All outputs supplied with 90-300 VAC)

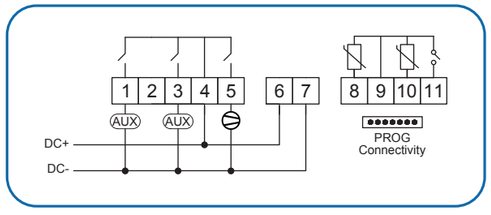


1. Connect the Live-In wire to terminal 6 on the JEAc.
2. Connect a loop from terminal 6 (Live-In) to terminal 4, Live-2-In on the JEAc.
3. Connect the Neutral wire to terminal 7 on the JEAc.
4. Connect the Compressor to terminal 5 of the JEAc.
5. Connect the fan (Evaporator or Condenser) to terminal 3 of the JEAc, if required.
6. Connect the lights to terminal 1 of the JEAc, if required.

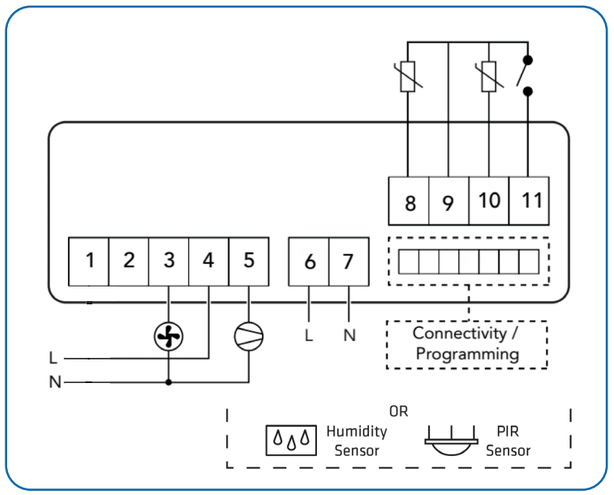
AC Supply, all Relays Supplied by 12V/24V DC



DC Supply and Relays (DC version)



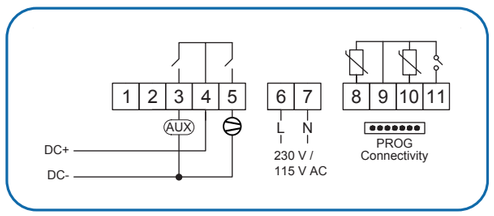
3.3.1.2 JEAc-x2 Models



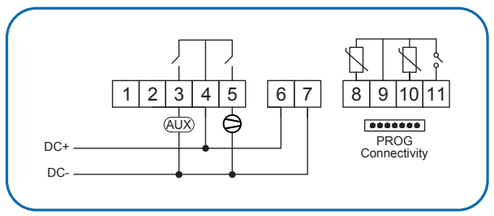
Standard Output Wiring (All outputs supplied with 90-300 VAC)

1. Connect the Live-In wire to terminal 6 on the JEAc.
2. Connect a loop from terminal 6 (Live-In) to terminal 4, Live-2-In on the JEAc.
3. Connect the Neutral wire to terminal 7 on the JEAc.
4. Connect the Compressor to terminal 5 of the JEAc.
5. Connect the Fan (Evaporator or Condenser), Light or Heater to terminal 3 of the JEAc, if required.

AC Supply, all Relays Supplied by 12V/24V DC



DC Supply and Relays (DC version)



3.3.2 INPUT SENSOR WIRING

WARNING!

Separate as much as possible the input sensors and cables carrying inductive load and power. Do Not run power and signal cables together in the same conduit.

The input connectors on the rear of the JEAc are pluggable screw terminals.

Note: Ensure the pluggable screw terminals of the sensors are pushed firmly onto the terminal. When fully connected, the connector will be locked in place by a retaining clip.

1. Connect the Air temperature probe to terminal P1 on the JEAc.
2. Connect evaporator or condenser or ambient temperature probe to terminal P2 on the JEAc.

Note: Temperature probe selection can be configured, if probe selection is modified then the resulting probes will have to be connected to the responding terminal (see section 9.1 for more details). The stated above connectors are as per the default probe selection.

A PIR or Humidity sensor can be connected to P2. If such sensor is required, then it must be enabled, and the probe connector selected in the controller configuration (see Section 9.1 for more details)

3. Connect the Door switch, to the P3 terminal on the JEAc (If required).

3.3.3 EXTERNAL DEVICES

WARNING!

Separate as much as possible the data cables and cables carrying inductive load and power. Do Not run power and signal cables together in the same conduit.

The JEAc has a 7-way connector for adding external modules to further enhance the controller's capabilities.

You can connect:

- GMC4 connectivity device
- Programming device (SPP03)

Sollatek provides a connection cable for all devices which connect to the JEAc to make connecting quick and easy.

1. Plug the 7-way connector of the connecting cable into the port on the rear of the JEAc.

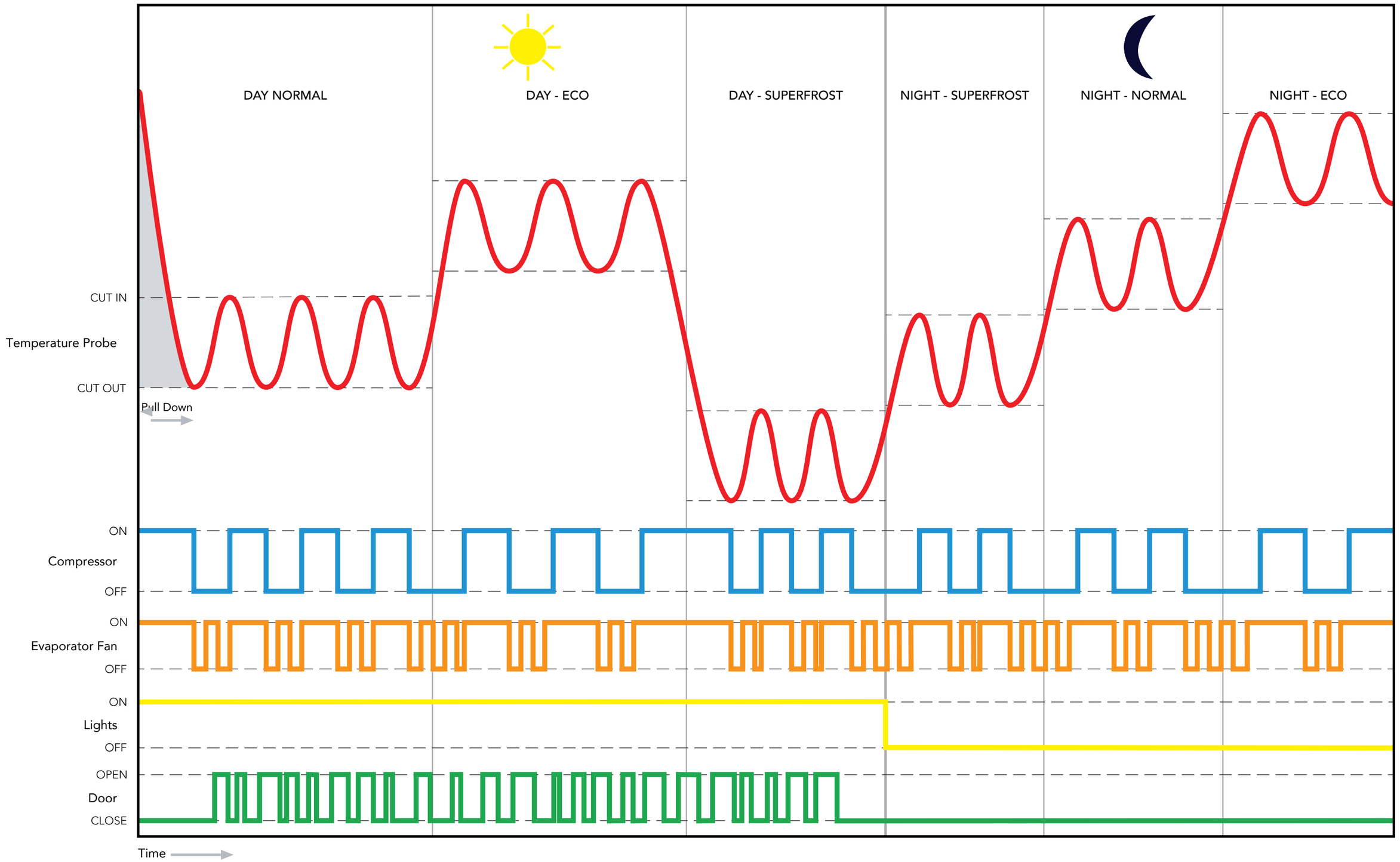
Note: The connector will only fit into the port in one orientation.
Note: Connecting and disconnecting should always be done with JEAc powered off.

2. Plug the other end of the connecting cable into the other device (refer to the device manual for port type and location).

4. OPERATION

4.1 OVERVIEW

Please Note:
The drawing below is generic and "Superfrost" is not implemented in JEAc.



JEAc USER MANUAL

4.2 DAY AND NIGHT MODE

In DAY mode, the temperature is lower to keep the products inside the cooler at the correct temperature for resale, and the lights are ON for Point of Sale (POS). In NIGHT mode the regulated temperature is higher than in DAY mode as the products do not need to be as cold, and the lights are OFF as no need for POS. This saves energy and reduces the workload of the outputs (compressor) to extend operational life. Switching between day and night mode is controlled by the energy-saving feature.

4.3 NORMAL AND ECO MODE

In either DAY or NIGHT mode, there are 2 different temperature cut-in/cut-out settings which can be implemented: Normal and Eco. The values can be customisable. Normal is the standard cut-in/cut-out temperature required for general cooler operation and Eco allows setting higher cut-in/cut-out temperature than Normal. These settings are manually activated by pressing buttons on the display interface. (see diagram in 7.1.1.1).

Normal/Eco mode setting is non-volatile which means that the controller remains in the same mode even after power cut Transition between Normal and Eco modes can only be initiated manually by the user.

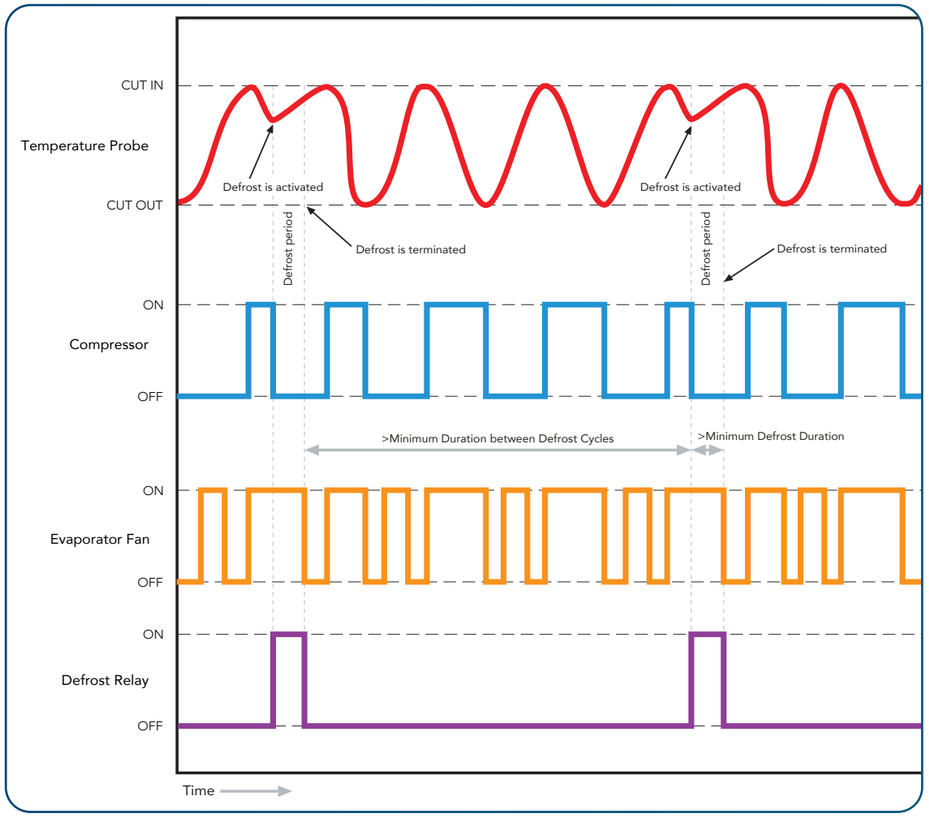
4.4 DEFROST MODE

4.4.1 STANDARD DEFROST

Depending on customer requirements there are different parameters which can trigger the defrost mode:

Defrost can be triggered by either using the temperature of the evaporator probe or/and by time-lapse (see defrost in parameters for different types of timers). When both settings are enabled, whichever event happens first will trigger or end the defrost cycle. Defrost can also be triggered manually (see chapter 7).

The JEAc has a minimum defrost duration and minimum duration between defrost cycles which must be satisfied before it will act no matter the status of the other parameters. This is to ensure the defrost cycle is not stopped too early or defrost cycles are not initiated to close together.



Operation during a DEFROST cycle

Compressor:	OFF or ON (configurable)
Evaporator Fan:	OFF or ON (configurable)
Defrost Relay (if fitted):	ON

Example of Configuration

Active Heater Defrost		Hot Gas Defrost	
Compressor:	OFF	Compressor:	ON
Evaporator Fan:	ON	Evaporator Fan:	OFF
Defrost Relay (if fitted):	ON	Defrost Relay (if fitted):	ON

4.4.2 POST DEFROST DRIPDOWN

Post Defrost Dripdown can be used only with active defrost e.g. Heater or Hot Gas defrost. After defrost has been terminated by either time or temperature (depending on configuration), the JEAc will turn the compressor, fan and defrost relay OFF until the evaporator temperature drops to the set temperature (if an evaporator probe is fitted) or the maximum dripdown duration has elapsed to prevent freeze up by allowing excess moisture to drip off the evaporator coil. Once dripdown is terminated the JEAc will resume normal operation.

Operation During Post Defrost Dripdown

Compressor:	OFF
Evaporator fan:	OFF
Defrost Relay (if fitted):	OFF

4.4.3 MANUAL DEFROST

Defrost cycle can be triggered by pressing buttons on the display. See section 7 for details.

4.4.4 FORCED DEFROST

If compressor is running for too long, a forced defrost cycle is triggered automatically. This timeout is controlled by parameter Cd5 (see section 9.6)

4.5 WINTER MODE

Winter mode is designed for when coolers are in extremely cold temperatures (For example: outdoor coolers in cold countries) and require a heater to be fitted. The compressor will be turned OFF and the heater will be turned ON. This is to warm up the inside of the cooler to ensure products in the cooler do not get too cold and freeze. Winter mode is entered automatically based on configurable parameters.

Standard operation During Winter Mode

Compressor:	OFF
Evaporator fan:	ON
Cabinet Heater (if fitted):	ON

5. FEATURES

5.1 ENERGY SAVING

The JEAc tracks door openings. If no door openings are logged for a pre-set time (customisable) then the JEAc will enter NIGHT mode. This is to maximise energy saving when the outlet is closed and no customer demand.

5.1.1 NORMAL AND ECO MODE

Whichever mode: Normal or Eco, the JEAc was running in during DAY mode, the JEAc will remain in the same mode in NIGHT mode, i.e. JEAc running in DAY-Eco mode then the JEAc will switch to NIGHT-Eco mode respecting the corresponding cut-in and cut-out temperatures. The only way the JEAc will switch modes (Normal or Eco) is by using the display buttons to manually switch the mode.

5.1.2 BREAK-OUT FROM NIGHT MODE

The JEAc will revert into DAY mode when either a door activity is seen or the Longest Night Mode Duration (customisable) has elapsed, whichever occurs first. The Longest Night Mode Duration can be disabled. In such case only a door activity can cause the JEAc to revert to DAY mode.

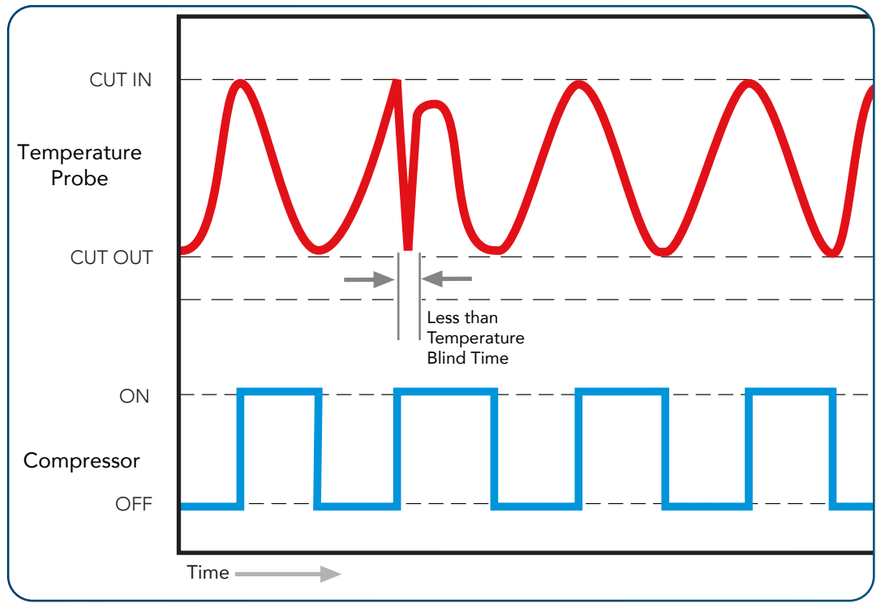
5.1.3 DOOR SWITCH FAILURE

In the event of a door switch failure, the JEAc will stop switching modes and will remain in DAY mode until the failure has been rectified.

5.2 PROTECTIVE DELAYS

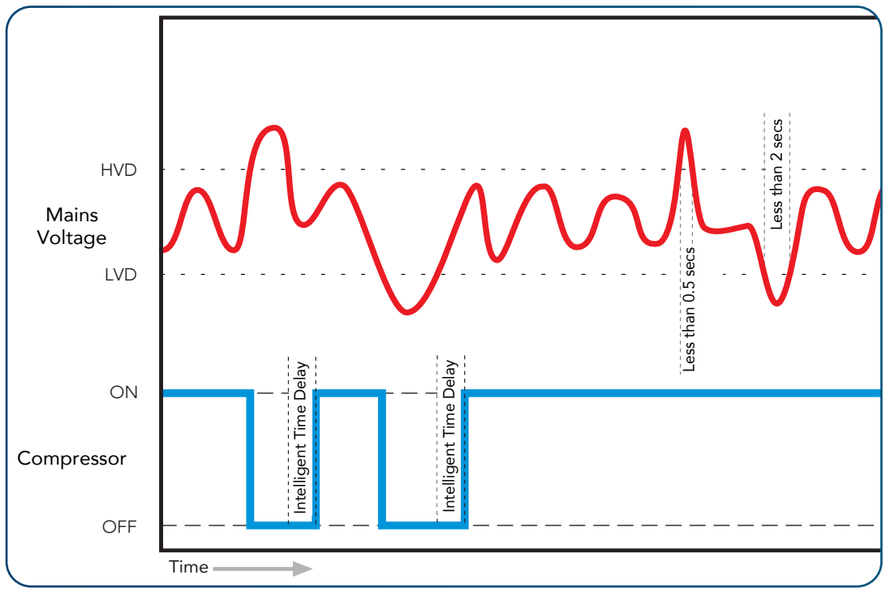
5.2.1 TEMPERATURE BLIND TIME

The software will ignore the sensor temperature reading for the first few seconds (a pre-set value of 10 seconds) after the compressor is switched on. This is to prevent short-term thermal effects such as those caused by the fan starting to operate causing disconnection.



5.2.2 BAD VOLTAGE BLIND TIME

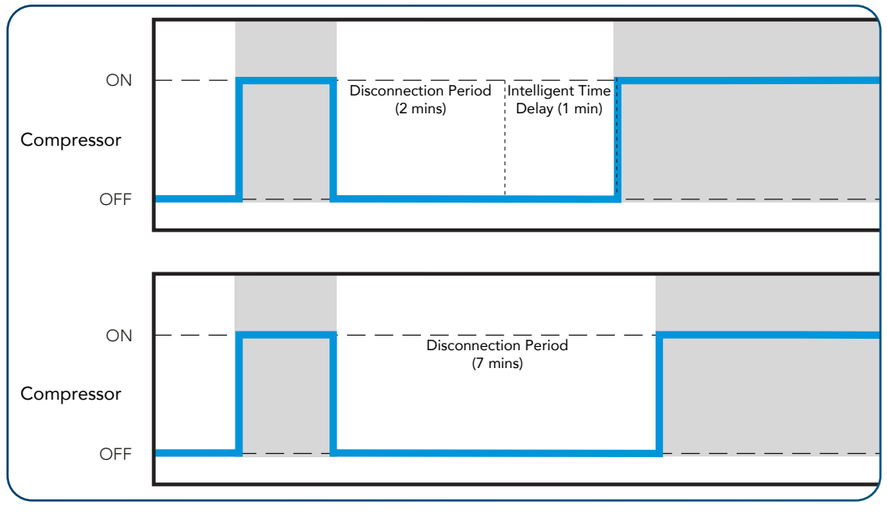
The JEAc provides high and low voltage protection by disconnecting the supply from the compressor and outputs if the voltage exceeds the set High Voltage Disconnect (HVD) or falls below the Low Voltage Disconnect (LVD) (both configurable). Once the voltage has returned with the reconnection voltage and delay timers have been satisfied, the JEAc will automatically reconnect the outputs. The JEAc permits high and low mains voltages transitions for short periods of time preventing inadvertent compressor stop-starts. Pre-set values of 0.5 and 2 seconds (configurable) respectively are implemented.



5.2.3 INTELLIGENT TIME DELAY

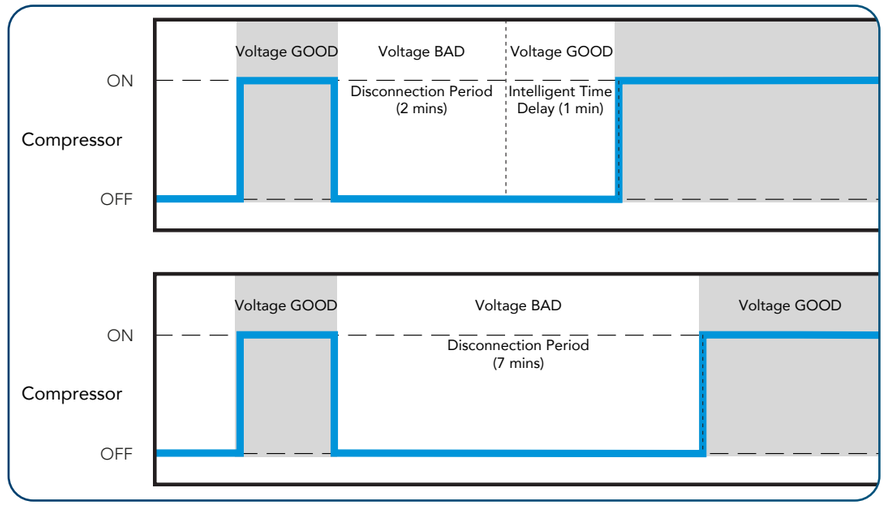
The JEAc controller has a built-in intelligent time delay of up to 5 minutes (customer configurable). After a compressor disconnection period, either from cycling OFF, defrost or HVD / LVD the JEAc will automatically adjust the time delay on the disconnection period before allowing the compressor to turn ON. For example, if the Time delay is set to 3 minutes, a 2-minute disconnection will result in only a 1-minute additional delay, making the total delay 3 minutes. Any disconnection of 3 minutes or over and the JEAc will immediately turn the compressor ON.

The time delay is essential in allowing compressor gases to neutralise, ensuring that the mains power has stabilised before re-connection and avoiding a locked rotor condition.



5.2.4 INTELLIGENT BLACKOUT TIME DELAY

The JEAc also has an Intelligent Blackout delay, meaning depending on the disconnection period, caused by no power i.e. power cut or mains being turned off, the JEAc will adjust the wait period before allowing the compressor and other outputs to turn on. For example, if the Time delay is set to 3 minutes, a 2-minute disconnection will result in only a 1-minute additional delay, making the total delay 3 minutes. Any disconnection of 3 minutes or over and the JEAc will turn on immediately after the initial delay (configurable, default 10s). Time delay is configurable (intelligent time delay and blackout time delay is set as the same value).



5.3 PRODUCT SAFETY FEATURES

5.3.1 LOCK OUT MODE

The JEAc will enter cooler lockout mode if the regulating temperature is above a customer-defined temperature (LtP) continuously for a settable duration (LDr). In this mode, all relays are OFF and flagged as an alarm via the display (Loc). The JEAc will remain in lock-out mode even if the power is cut, the only way to exit lockout mode is via manual intervention by sending a special command (via the GUI) to the JEAc. By forcing manual intervention, the operative while resetting the JEAc can also ensure foods and drinks have not perished during prolonged overtemperature and remove anything that has to ensure customers receive quality, fresh products.

Once the lockout is released, the cooler starts operating normally in Initial Pull Down mode. Next lockout can happen only after the temperature inside the cooler reaches cut-out temperature (pull down is over).

5.4 CONNECTIVITY SOLUTION (if fitted)

Connectivity devices are fitted to the 7-way data connector at the rear of the JEAc. Refer to the Section 3. Installation for more details on how to do this.

5.4.2 GSM AND GEO-LOCATION

GSM modules/devices (2G, 3G and LTE) can be connected to the JEAc to provide cooler monitoring without the need for a technician/sales visit. The GSM sends telemetry and performance data from the JEAc to an online portal for further analysis. GSM can be added via:

- Connectivity device with Wi-Fi and GSM plugged into the JEAc

5.4.2.1 Online Portal For Complete Analysis

The Sollatek online portal turns your fleet data into usable sales and performance data.

- Detailed Reports - View a vast list of controller operational data such as temperature, event history and faults.
- Intelligent Data Analysis - Monitor technical and operational data in easy-to-read graphs and charts.
- Accurate Sales Performance - view and analyse cooler KPIs for enhanced sales forecasting and strategy.
- Dynamic Map - View and track cooler's movements within a map and view the operational status of each cooler.
- Plan-o-gram Conformity - Monitor cooler purity, out of stocks & shelf voids without the need for a store visit (available only when a BLE camera is connected).
- Remote Cooler Shut-down - In the event the cooler is stolen, disable the cooler so it cannot be used. Once the cooler is recovered the cooler can then be enabled.

6. START-UP

6.1 START-UP SEQUENCE

Connecting the JEAc to mains power initiates the start-up sequence. The short start-up sequence is to allow the JEAc to check the status of outputs and gather live data from inputs. The JEAc will go through the following steps:

Step 1: All LEDs power ON and a long continuous beep

Step 2: LED's will turn OFF and the display will momentarily go blank. The beeping will stop.

Step 3: Firmwave version number will be displayed momentarily.

Step 4: The JEAc will then display the live regulation temperature. On start-up the JEAc will enter DAY-Normal mode of operation.

6.2 DISPLAY CHARACTERS

For clarity on the display and to ensure readings and codes are easily identifiable, the below characters are used:

Upper Case Characters:

Lower Case Characters:

Numerals:

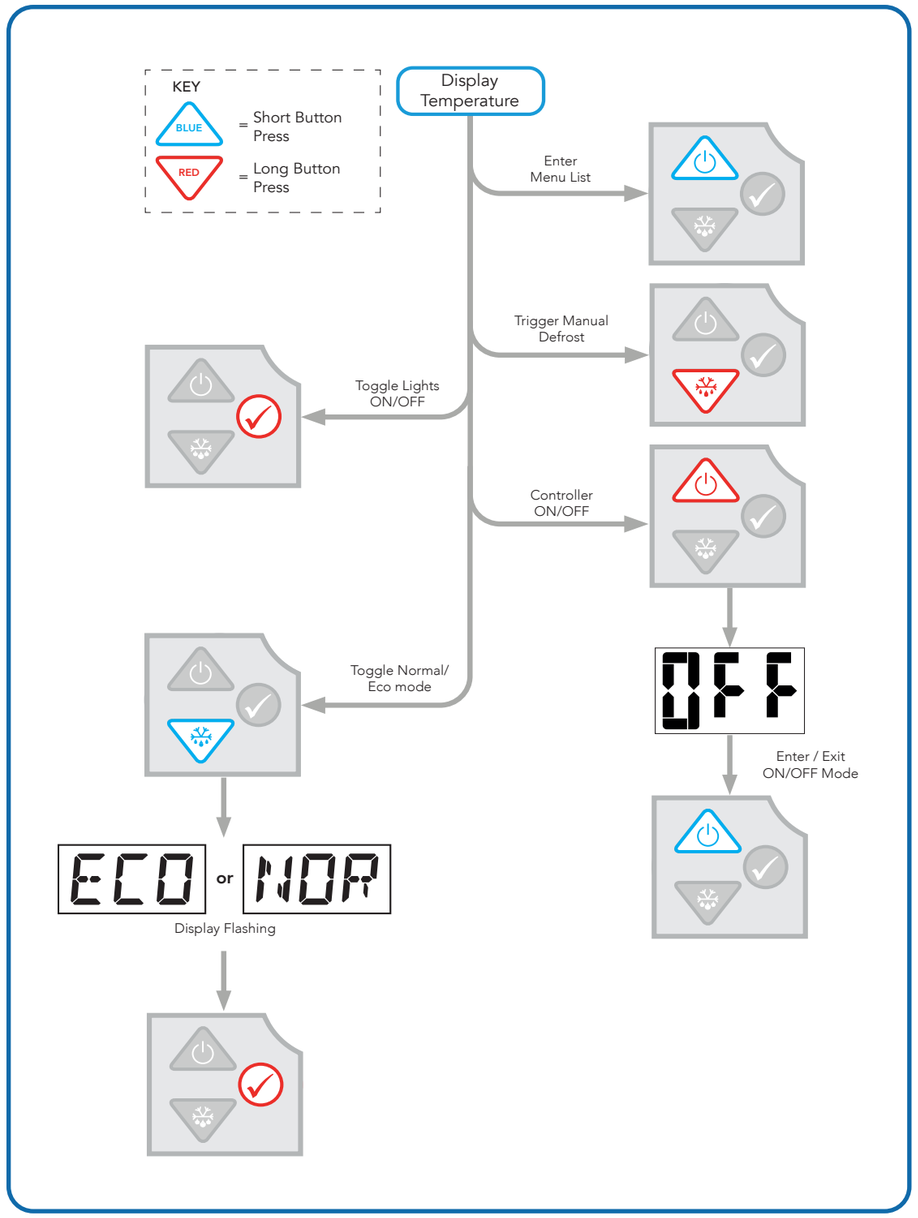
7. INTERFACE

7.1 JEAc FRONT DISPLAY

7.1.1 HOME DISPLAY FUNCTION

- Manually toggle Lights ON and OFF
- Manually toggle JEAc ON and OFF
- Manually toggle between Normal and Eco mode
- Trigger Manual Defrost
- Enter Menu list

7.1.1.1 Home Display Flowchart



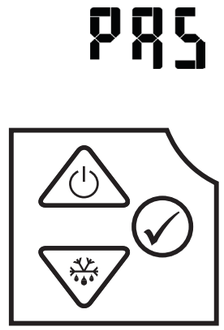
7.1.1.2 UP Button - controller ON/OFF

Press and hold the UP button for more than 1 seconds. The display will start flashing with "OFF". While the display is flashing, press the UP button momentarily and the JEAc will enter OFF Mode.

Note: If no button or any other button is pressed while the display is flashing "OFF", the JEAc display will revert to the regulation temperature reading and resume operation.

Operation During OFF Mode:

Compressor:	OFF
Evaporator fan:	OFF
Heater (if fitted):	OFF
Lights:	OFF
Main Display	Shows "OFF"
Buttons:	Disabled apart from UP button to turn JEAc ON



Exit OFF Mode:

Press the UP button to exit OFF mode. The JEAc display will revert to the regulation temperature reading and resume the operational mode the JEAc was in before entering OFF Mode i.e. Day-Eco / Day-Normal.

Note: If the power is disconnected to the JEAc while it is in OFF Mode when the power is reconnected, the JEAc will power ON and resume in OFF Mode. When the JEAc is switched out of OFF mode the JEAc will enter Day-Normal mode.

7.1.1.3 UP Button - Enter menu list

Press the UP button.

- If no passcode is implemented, the display will enter the menu list.
- If a passcode is implemented, the display will show "PAS"

Entering the passcode

- The password is a four-button sequence of the display buttons. For example, the sequences could be: Up, Up, Up, Down.
- If the password is correct, the display will enter the menu list. You will hear a double beep for confirmation.
- If an incorrect button is pressed at any point, the display will revert to the home display. You will hear a long beep to indicate an incorrect password has been entered.
- If at any point, there is a 20-second period of inactivity the display will revert to the home display.

7.1.1.4 DOWN button - Toggle between Normal and Eco mode

Switching from Normal to Eco mode

Press the DOWN button. The display will start flashing with "ECO". While the display is flashing, press and hold the TICK button for more than 1 second to switch to Eco mode. The leaf icon on the display will turn ON

Switching from Eco to Normal mode

Press the DOWN button. The display will start flashing with "nor". While the display is flashing, press and hold the TICK button for more than 1 second to switch to Normal mode. The leaf icon on the display will turn OFF

Note. If no button is pressed for more than 5 seconds or any other button is pressed while the display is flashing "ECO" or "nor", the JEAc display will revert to the regulation temperature and resume operation without changing mode.

7.1.1.5 Trigger Manual Defrost

Press and hold the DOWN button for more than 1 second. JEAc will start the defrost cycle immediately. Defrost operation and termination is determined by the same parameters as the regular defrost (see section 9.4)

7.1.1.6 Toggle Lights ON/OFF

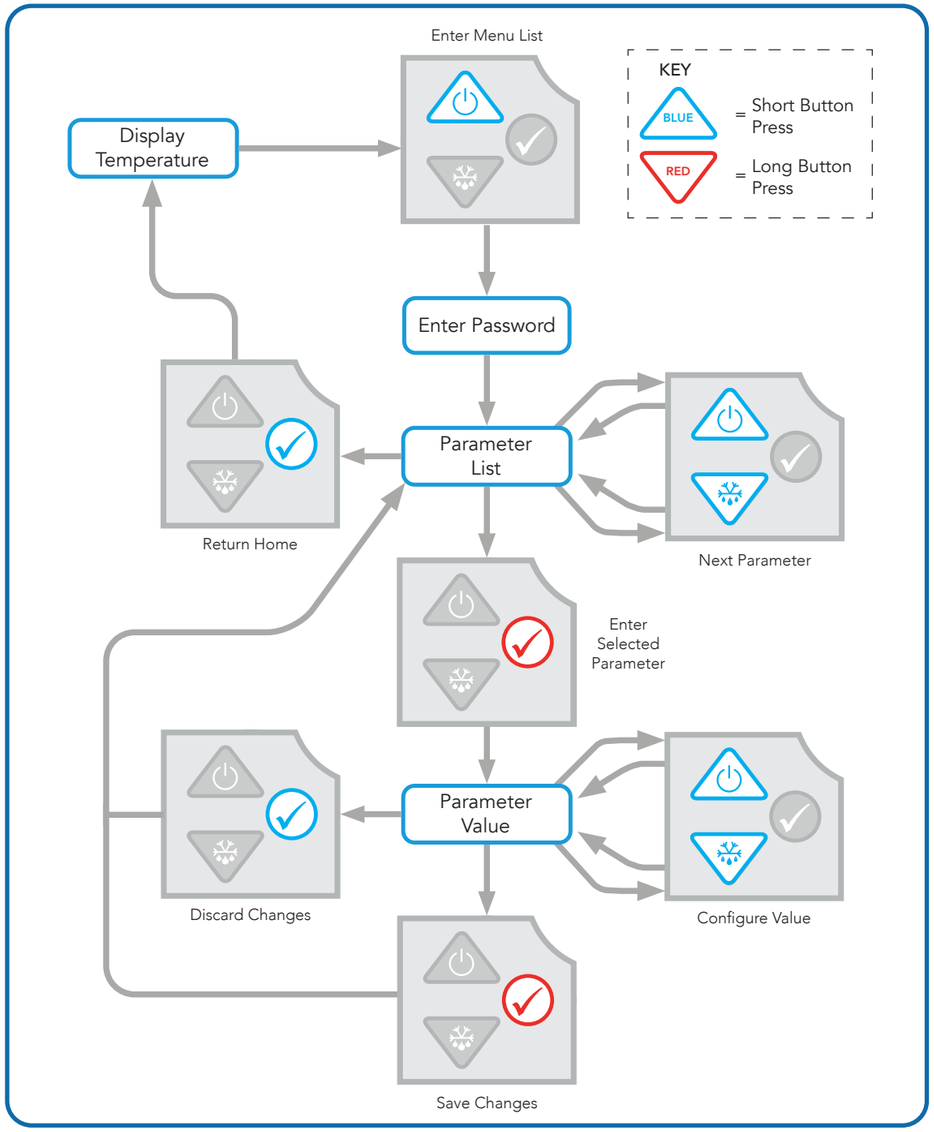
Press and hold the TICK button for more than 1 second. If any relay of JEAc was assigned to control the light then the light will be switched ON or OFF.

7.1.2 MENU LIST

In level 1 users can:

- Configure Parameters
- Reset parameters to factory-set

7.1.2.1 Menu List operational Flow Chart



Note: If the display is in the menu list or parameter values then holding down either the UP or DOWN button will scroll through the items quickly.

7.1.2.2 Menu list and value changing guide; Day, normal cut-out temperature:

Press the UP button to enter the menu list (you may be required to enter a passcode if implemented).

Toggle through the menu items by pressing the UP & DOWN buttons until “dno” is displayed.

When “dno” is displayed, long press the TICK button to show the current set temperature.

While any parameter name is displayed, press the TICK button to return to the home display (showing regulation temperature).

Toggle through the available values by pressing the UP & DOWN buttons.

To save a value, long press the TICK button. The display will return to the menu list (parameter names) & long beep.

Press the TICK button to return to the parameter list without saving changes (if any were made). The JEAc will revert the operation to the saved value and go back to menu items list (will display “dno”).

Press the TICK button when the display is on the menu list to get back to the home display (showing regulation temperature).

7.1.2.4 PARAMETERS RESET

Parameter Reset is needed to reset all parameters back to the default (factory-set) value. Menu items “PrS” is used to reset the parameters settings

Go to the menu list, and navigate to item “PrS” by Pressing the UP and DOWN buttons. Long press the TICK button to enter the value.

The displayed value will be “no”. Change to “yes” with either the UP or DOWN button. Long press the TICK button to confirm.

7.2 DESKTOP INTERFACE SOFTWARE

The JEAc Interface software provides easy creation, checking and saving of parameters.

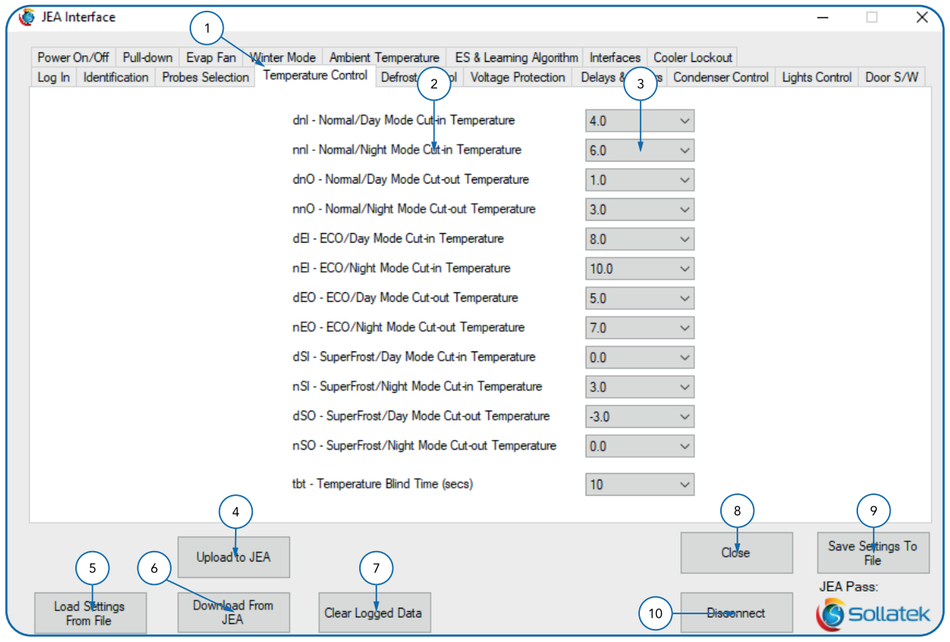
7.2.1 INSTALLATION AND LOGIN

Run the setup file provided by Sollatek. Follow any security prompts to allow installation. A security message will pop up, click Install to continue the installation.

The installer wizard window will appear on the screen. The program executable files and data will be automatically extracted without any user intervention. Progress will be indicated on the status bar within the wizard.

Once the JEAc Interface has been installed on your computer, the program will open on the login tab. Enter your login credentials provided by Sollatek and click the login button.

7.2.2 INTERFACE NAVIGATION



(1) Parameter category	Parameters are divided into relevant categories to make parameter finding quick and easy
(2) Parameter List with Display Code	All editable parameters are listed alongside the three-digit display code which appears on the display
(3) Parameter Value Options	Drop down menu with all acceptable values for the parameter item
(4) Upload to JEAc	Save the current parameters in the configuration software in the JEAc
(5) Load Settings from File	Open an existing settings file into the software
(6) Download from JEAc	Download the current JEAc settings into the software
(7) Clear Logged Data	Clear logged event data saved in the JEAc
(8) Close	Close the software interface. Any unsaved changes will be discarded
(9) Save Settings To file	Save the current values in the configuration software as a settings file on the PC
(10) Disconnect	Safely disconnect the JEAc from the PC. Once discounted the JEAc can be unplugged from the computer

7.2.3 DOWNLOAD/UPLOAD PARAMETERS INTO THE JEAC / DESKTOP INTERFACE

1. Connect the JEAc interface cable to the data port on the rear of the JEAc and the USB port on your computer. If plugging in for the first time, you may have to wait until drivers are installed.
2. Connect the JEAc to a mains supply (Live & Neutral), then turn the power ON.

Note: Parameters will not be uploaded unless the JEAc is Powered ON

3. Open and log in to the JEAc Interface using your credentials provided by Sollatek.

To download Parameters from the JEAc into the interface

4. Once the JEAc is connected to your PC and mains, click the Download from JEAc button in the interface, downloading may take a few minutes so ensure all parameters are downloading before proceeding.
   - Parameters can then be saved or edited as required.
   - Within the Identification tab the JEAc serial number, firmware version will be displayed. Cooler serial number and customer asset tracking number will also be displayed if assigned.

To upload Parameters from the interface into the JEAc

5. Ensure the parameters in the interface are set to your required configuration.
6. Once the JEAc is connected to your PC and mains, click the Upload to JEAc button in the interface.
7. Once all parameters have been uploaded successfully a success message will pop up.

8. SERVICE MODE

Service mode can be used for diagnosing relays and reading live sensors data, the normal operation of the JEAc is disabled while in service mode. Service mode can be entered via PC or phone app.

Operational Status – Allows service personnel to inspect sensor values and basic operational status

- Live Temperature of each probe
- Temperature Display Unit to decide if the temperature should be displayed in C or F
- Input Voltage
- Status of each relay
- Probe faults for each probe and door open flag
- PIR counter (if present)
- Relative humidity (if present)

Relay Diagnosing – Allows service personnel to test relays/output are fully operational by switching any relay ON or OFF.

On exiting service mode, the JEAc will resume normal operation.

There is also a safety timeout implemented to avoid accidentally leaving a cooler in Service Mode. If no command is received for more than 10 minutes while in Service Mode, the JEAc resets and starts normal operation.

9. PARAMETERS

9.1 PROBES SELECTION

PARAMETER	DESCRIPTION	UNITS	MIN	MAX	DEFAULT
tPS	Temperature Control Probe (Air)	Number	N/A, 1	1	1
dPS	Defrost Control Probe	Number	N/A, 1	2	2
cPS	Condenser Control Probe	Number	N/A, 1	2	N/A
aPS	Ambient Control Probe	Number	N/A, 1	2	N/A
PPS	PIR Sensor Probe	Number	N/A, 1	2	N/A
HPS	Humidity Sensor Probe	Number	N/A, 1	2	N/A
rHt	Relative Humidity Threshold	%	10	100	80

Note: If changes are made to the probe connection port, then the probe connected to the JEAcc must match accordingly and not as per the connection diagram (connection diagram as per default settings)

Temperature Control Probe (Air)

Selects the Air temperature probe connection port:
N/A = Not connected
1 = Probe 1

Defrost Control Probe (Evaporator)

Selects the defrost temperature probe connection port:
N/A = Not connected
1 = Probe 1
2 = Probe 2

Condenser Control Probe

Selects the condenser temperature probe connection port:
N/A = Not connected
1 = Probe 1
2 = Probe 2

Ambient Control Probe

Selects the ambient temperature probe connection port:
N/A = Not connected
1 = Probe 1
2 = Probe 2

PIR Sensor Probe

Selects the PIR sensor connection port:
N/A = Not connected
1 = Probe 1
2 = Probe 2

Humidity Sensor Probe

Selects the humidity sensor connection port:
N/A = Not connected
1 = Probe 1
2 = Probe 2

Relative Humidity Threshold

The threshold above which high humidity mode is entered. In high humidity mode, the evaporator fan is always ON, overriding other fan settings.

Note: Temperature probe selection has priority so PIR and humidity sensor should not use any of the inputs already configured for probes.

9.2 TEMPERATURE REGULATION

PARAMETER	DESCRIPTION	UNITS	MIN	MAX	DEFAULT
dnO	Normal Mode Cut-Out – DAY	°C °F	-40 -40	40 104°F	1 33.8
dnI	Normal Mode Cut-In – DAY	°C °F	-40 -40	40 104	4 39.2
dEO	ECO Mode Cut-Out – DAY	°C °F	-40 -40	40 104	5 41
dEI	ECO Mode Cut-In – DAY	°C °F	-40 -40	40 104	8 46.4
nnO	Normal Mode Cut-Out – NIGHT	°C °F	-40 -40	40 104	3 37.4
nnI	Normal Mode Cut-In – NIGHT	°C °F	-40 -40	40 104	6 42.8
nEO	ECO Mode Cut-Out – NIGHT	°C °F	-40 -40	40 104	7 44.6
nEI	ECO Mode Cut-In – NIGHT	°C °F	-40 -40	40 104	10 50
tbt	Temperature Blind Time	Seconds	0	255	10
tdu	Temperature Display Unit	°F - Fahrenheit / °C - Celsius			°C

Normal Mode Cut-Out – DAY

The temperature at which the compressor will turn OFF when the system is running in Day-Normal mode. The compressor will remain ON until the temperature reaches the Cut-Out temperature.

Normal Mode Cut-In – DAY

The temperature at which the compressor will turn ON when the system is running in Day-Normal mode. If the temperature is below this value, the compressor will remain OFF

ECO Mode Cut-Out – DAY

The temperature at which the compressor will turn OFF when the system is running in Day-Eco mode. The compressor will remain ON until the temperature reaches the Cut-Out temperature.

ECO Mode Cut-In – DAY

The temperature at which the compressor will turn ON when the system is running in Day-Eco mode. If the temperature is below this value, the compressor will remain OFF

Normal Mode Cut-Out – NIGHT

The temperature at which the compressor will turn OFF when the system is running in Night-Normal mode. The compressor will remain ON until the temperature reaches the Cut-Out temperature.

Normal Mode Cut-In – NIGHT

The temperature at which the compressor will turn ON when the system is running in Night-Normal mode. If the temperature is below this value, the compressor will remain OFF

ECO Mode Cut-Out – NIGHT

The temperature at which the compressor will turn OFF when the system is running in Night-Eco mode. The compressor will remain ON until the temperature reaches the Cut-Out temperature.

ECO Mode Cut-In – NIGHT

The temperature at which the compressor will turn ON when the system is running in Night-Eco mode. If the temperature is below this value, the compressor will remain OFF

Temperature Blind Time

The duration the JEAc ignores the regulation (Air) temperature after the compressor switches ON.

Temperature Display Unit

Select the unit of temperature the JEAc will display all temperature values.
F = Degree Fahrenheit
C = Degree Celsius

9.3 RELAYS CONFIGURATION

PARAMETER	DESCRIPTION	OPTIONS	DEFAULT
rL2	Relay #2 function	Unused, Evaporator Fan, Light Defrost/Winter Heater	Evaporator Fan
rL3	Relay #3 function		Light

Relay #2 Function

Default: Evaporator Fan
Options: Unused, Evaporator Fan, Light, Defrost/Winter Heater

Relay #3 Function

Default: Light
Options: Unused, Evaporator Fan, Light, Defrost/Winter Heater

9.4 DEFROST

PARAMETER	DESCRIPTION	UNITS	MIN	MAX	DEFAULT
dF1	Defrost Start Timer Type	-	rEL / aCC / Cnt		rEL
dF2	Threshold For Enabling Defrost Function	°C °F	N/A, -40 N/A, -40	40 104	N/A
dF3	Defrost Start Interval	Hours	N/A, 1	255	10
dF4	Defrost End Interval	Minutes	N/A, 1	255	15
dF5	Defrost Start Temperature	°C °F	N/A, -40 N/A, -40	40 104	-15 5
dF6	Defrost End Temperature	°C °F	N/A, -40 N/A, -40	40 104	10 50
dF7	Minimum Defrost Duration	Minutes	N/A, 1	255	10
dF8	Minimum Duration Between Two Consecutive Defrost Cycles	Hours	N/A, 1	255	10
dF9	Temperature Reading Displayed During Defrost	-	nor/Frn/dEF		nor
dPd	Allow Defrost During Initial Pull-Down	-	No / Yes		Yes
dPt	Defrost Start Interval During Initial Pull-Down	Hours	N/A, 1	255	15
dPE	Defrost End Interval During Initial Pull-Down	Minutes	N/A, 1	255	10
dtP	Defrost Operation Type	-	Off / nAt / ACt		ACt
dOF	Evaporator Fan During Defrost	-	Off / On		On
dOC	Compressor During Defrost	-	Off / On		Off
ddE	Evaporator Temperature threshold for terminating Dripping Delay	°C °F	-10 14	10 50	0 32
ddt	Max Dripping Delay Time after defrost	Seconds	0	255	0

Defrost Start Timer Type

dF1

Select the type of timer to start a defrost cycle:

rEL: Real Time = The defrost start time will continuously count regardless of whether the compressor is On or Off and the defrost will start when the timer value exceeds the value of dF3 (if enabled).

aCC: Accumulated Time = The defrost start timer will count only when the compressor is On and stops counting (not resetting) when the compressor is Off. In other words, the timer resumes counting every time the compressor is On, resulting in counting the accumulated durations during which the compressor has been On. The defrost will start when the timer value exceeds the value of dF3 (if enabled).

Cnt: Continuous Timer = The defrost start timer will count only when the compressor is On and resets to zero whenever the compressor is Off. The defrost will start when the timer value exceeds the value of dF3 (if enabled).

Threshold For Enabling Defrost Function

dF2

The regulation temperature that the defrost function is enabled. Regardless of any other parameters, if the regulation temperature is above this temperature, the JEAc will never enter defrost mode, unless it's a forced defrost (see Cd5).

Defrost Start Interval

dF3

The duration between the finish of a defrost cycle and the start of the next one, if not started due to temperature.

Defrost End Interval

dF4

The duration of a defrost cycle if not ended due to temperature.

Defrost Start Temperature

dF5

The temperature at which a defrost cycle will be initiated. This will only be respected if the evaporator probe is not faulty.

Defrost End Temperature

dF6

The temperature at which the defrost cycle will terminate. This will only be respected if the evaporator probe is not faulty.

Minimum Defrost Duration

dF7

The minimum allowable time for a defrost cycle. The Defrost cycle will not end until this time has elapsed regardless of if Defrost Start Interval (df4) or Defrost Start Temperature (df6) have been met.

Minimum Duration Between 2 Consecutive Defrost Cycles

dF8

The minimum allowable time between the finish of one defrost cycle and the start of the next defrost cycle. The next defrost cycle will not start until this time has elapsed regardless of if Defrost Start Interval (df4) or Defrost Start Temperature (df6) have been met.

Temperature Reading Displayed During Defrost

dF9

Select what is displayed during the defrost cycle:

nor: normal = Displays the regulation temperature

frn: Frozen = Displays the regulation temperature as the JEAc went into Defrost mode

ACt: Active = Display cycles between the regulation temperature and (dEf)

Enable Defrost During Initial Pull-Down

dPd

Select if defrost is allowed during the initial pull-down

No: Defrost will not initiate until the cut-out temperature has been reached for the first time

Yes: Defrost will initiate once the defrost start interval during initial pull-down (dPt) has been met

Defrost Start Interval During Initial Pull-Down

dPt

The period from the JEAc turning ON and the start of the defrost.

Defrost End Interval During Initial Pull-Down

dPE

The duration for the defrost cycle during initial pull-down.

Defrost Operation Type

dtP

Select which defrost method is used:

Off = Defrost function disabled

nAt: Natural = Defrost cycle by turning OFF the compressor and turning ON the fan

ACt: Active = Defrost cycle using a heater

Note: If winter mode is enabled and activated, then defrost function will be disabled until the winter mode is terminated.

Fan During Defrost (not configurable via the display)*

dOF

Select if the fan is ON during defrost / Winter mode

OFF: Fan will turn OFF (if ON) when defrost or winter mode (if enabled) is initiated and remain OFF for the duration of each mode.

ON: Fan will turn ON (if OFF) when defrost or winter mode (if enabled) is initiated and remain ON for the duration of each mode.

Compressor During Defrost (not configurable via the display)*

dOC

Select if the compressor is ON during defrost mode

Off: Compressor will turn OFF (if ON) and remain OFF during defrost

On: Compressor will turn ON (if OFF) and remain ON during defrost (for Hot Gas defrost).

**dOF and dOF settings are ignored when defrost type (dtP) is set to Natural.*

Evaporator Temperature Which Terminates Dripping Delay

The evaporator temperature at which drip-down will terminate. The JEAc will resume normal operation

Dripping Timeout

The maximum duration for the JEAc will remain in drip-down mode. After this, the JEAc will resume normal operation regardless of temperature. Set the duration to "0" to disable drip-down.

9.5 VOLTAGE PROTECTION CONTROL

PARAMETER	DESCRIPTION	UNITS	MIN	MAX	DEFAULT
UPt	Enable Voltage Protection Feature	-	No / Yes		Yes
UHo	High Voltage Disconnect	V AC	60	300	266
UHi	High Voltage Reconnect	V AC	60	300	260
ULo	Low Voltage Disconnect	V AC	60	300	180
ULI	Low Voltage Reconnect	V AC	60	300	186
Hbt	High Voltage Blind Time	Seconds	0	25	0.5
Lbt	Low Voltage Blind Time	Seconds	0	25	2

Enable Voltage Protection Feature

Select whether voltage protection is active

No = Voltage protection is disabled. All other voltage protection parameters become de-active, and JEAc will not respond to High or Low Voltage

Yes = Voltage Protection is enabled. JEAc will act according to set parameters

High Voltage Disconnect

The maximum allowable voltage before the JEAc disconnects power to all the outputs

High Voltage Reconnect

The voltage, which the JEAc will reconnect power to all the outputs after a High Voltage Disconnect event.

Low Voltage Disconnect

The minimum allowable voltage before the JEAc disconnects power to all the outputs

Low Voltage Reconnect

The voltage, which the JEAc will reconnect power to all the outputs after a Low Voltage Disconnect event.

High Voltage Blind Time

The duration of the voltage must be higher/lower than the High Voltage Disconnect (UHo)/High Voltage Reconnect (UHi) before disconnecting/reconnecting power to the compressor and outputs.
It is not recommended to set this parameter to 0

Low Voltage Blind Time

The duration of the voltage must be lower/higher than the Low Voltage Disconnect (ULo)/Low Voltage Reconnect (ULi) before disconnecting/reconnecting power to the compressor and outputs.
It is not recommended to set this parameter to 0

Note. Difference between UHo and UHi or ULo and ULi should be at least 5V to provide hysteresis.

9.6 DELAYS & TIMERS

PARAMETER	DESCRIPTION	UNITS	MIN	MAX	DEFAULT
Itd	Intelligent Time Delay	Seconds	0	300	180
Cd0	First Plug-In Delay	Seconds	0	255	10
Cd3	Minimum Compressor Off Time	Minutes	0	255	3
Cd4	Minimum Compressor On Time	Minutes	0	255	1
LAd	Loads Activation Delay	Seconds	0	255	3
Cd5	Maximum Compressor On Time Forced Defrost	Hours	N/A, 1	50	4
Cd6	Maximum Compressor On Time Refrigeration Fault	Hours	N/A, 1	50	6
dCO	Compressor On Cycle Probe#1 Faulty - Day	Minutes	0	255	2
dCF	Compressor Off Cycle Probe#1 Faulty - Day	Minutes	0	255	3
nCO	Compressor On Cycle Probe#1 Faulty - Night	Minutes	0	255	4
nCF	Compressor Off Cycle Probe#1 Faulty - Night	Minutes	0	255	5
Clb	Compressor Protection Delay Initial Bypass Count	Number	N/A, 1	10	N/A

Intelligent Time Delay

The minimum time the compressor must be OFF, before turning ON. If the compressor is OFF for longer than the set duration, then this delay will not be added before switching the compressor ON.

First Plug-in Delay

The time delay between plugging in the JEAc and the lights, fans and heater outputs being switched ON.

Minimum Compressor OFF Time

The minimum amount of time that must elapse between when the compressor is turned OFF to when the compressor is permitted to start again

Minimum Compressor ON Time

The minimum amount of time that must elapse between when the compressor is turned ON to when the compressor is permitted to turn OFF

Loads Activation Delay

The time delay between any two outputs turning ON. The start-up sequence is:

1. Lights
2. Fans
3. Compressor

Maximum Compressor ON Time Without Temperature Drop Before Initiating A Forced Defrost

The maximum permitted time that the compressor can run continuously before the JEAc is forced into defrost mode. If 3 consecutive forced defrost occur, on the third time, the JEAc initiates Refrigeration Failure Mode.

Maximum Compressor ON Time Without Temperature Drop Before Initiating Refrigeration Fault Mode

The maximum permitted time that the compressor can run continuously before the JEAc enters Refrigeration Fault Mode

Compressor ON Cycle Duration Regulation Probe Fault - Day Mode

The duration the compressor will remain ON for one operation duty cycle when the regulation (air) Temperature probe is faulty when the controller is in Day mode. This time will be obeyed regardless of mode (Normal or Eco).

Compressor OFF Cycle Duration Regulation Probe Fault - Day Mode

The duration the compressor will remain OFF for one operation duty cycle when the regulation (air) Temperature probe is faulty when the controller is in Day mode. This time will be obeyed regardless of mode (Normal or Eco).

Compressor ON Cycle Duration Regulation Probe Fault - Night Mode

The duration the compressor will remain ON for one operation duty cycle when the regulation (air) Temperature probe is faulty when the controller is in Night mode. This time will be obeyed regardless of mode (Normal or Eco).

Compressor OFF Cycle Duration Regulation Probe Fault - Night Mode

The duration the compressor will remain OFF for one operation duty cycle when the regulation (air) Temperature probe is faulty when the controller is in Night mode. This time will be obeyed regardless of mode (Normal or Eco).

Note: When the unit is in winter mode and the regulation probe is faulty, then the unit should exit winter mode (go back to normal mode by starting to operate the compressor relay as opposed to the heater relay) and operate as per normal mode under regulation probe faulty condition.

Compressor Protection Delay Initial Bypass Count (not configurable via the display)

The number times the JEAc can be powered up with Intelligent Delay disabled. After the specified number of power ups the delay works as per settings (ltd).

Note: For testing purpose ONLY to avoid waiting 3 minutes for Compressor to turn on.

9.7 CONDENSER CONTROL

PARAMETER	DESCRIPTION	UNITS	MIN	MAX	DEFAULT
OH	Condenser Temperature High Threshold	°C °F	N/A, -40 N/A, -40	90 194	70 158
Ohd	Condenser Temperature High Differential	°C °F	1 1	130 234	5 9
SC	Condenser Temperature Low Threshold	°C °F	N/A, -40 N/A, -40	90 194	-20 -4
SCd	Condenser Temperature Low Differential	°C °F	1 1	130 234	5 9

Condenser Temperature High Threshold

The maximum temperature that turns OFF the compressor for system protection.

Condenser Temperature High Differential

The temperature differential below the Condenser Temperature High Threshold, which the JEAc will revert to normal operation

Condenser Temperature Low Threshold

The Minimum temperature that turns OFF the compressor for system protection.

Condenser Temperature Low Differential

The temperature differential above the Condenser Temperature Low Threshold, which the JEAc will revert to normal operation

Note: Only condenser control or cooler lockout can be enabled at one time.

9.8 LIGHTS CONTROL

PARAMETER	DESCRIPTION	UNITS	MIN	MAX	DEFAULT
L0	Lights Regulated By Logic	-	AOn / ESL / Dr		ESL
L1	Lights On Delay (Night To Day Mode Switch)	Minutes	0	255	0
L2	Lights Off Delay (Day To Night Mode Switch)	Minutes	0	255	0
L3	Lights Switch Enable	-	No / Yes		Yes

Note: The lights will ALWAYS turn ON when the door is opened regardless of any of the settings and modes.

Lights Regulated By Logic

Select whether the state of lights will change when the controller changes Modes
Always On (AOn): Lights are ON unless the controller is in Refrigeration Failure Mode or switched OFF manually.
By ES Logic (ESL): Lights will turn ON/OFF when the controller changes from Day to Night mode and vice versa.
By Door (Dr): Lights will only turn ON when the door is open. When the door is closed the lights will turn OFF

Light ON Delay (Night to Day Mode)

The time delay between the controller switching from Night to Day mode, and the lights turning ON.

Light OFF Delay (Day to Night Mode)

The time delay between the controller switching from Day to Night mode, and the lights turning OFF.

Lights Switch Enable

Select whether the state of lights will change with a button press
No = Light button disabled. Lights will only turn ON/OFF with logic or if Refrigeration Failure Mode is entered
Yes = Light button enabled.

9.9 DOOR OPERATION

PARAMETER	DESCRIPTION	UNITS	MIN	MAX	DEFAULT
d1	Door Open Alarm Delay	Minutes	0	255	2
d2	Door Switch Malfunction Delay Delta	Minutes	0	255	5
d3	Door Close Duration Compressor On	Seconds	0	255	0
d4	Door Open Duration Evap Fan Off	Seconds	0	255	0
d5	Door Close Duration Evap Fan On	Seconds	0	255	0

Standard Door Open Operation

If the door opens and Door Opening Event (Fd0)= YES

- Any Operational Mode
  - Fan: OFF (respecting d4)
  - Door Open Indicator: ON (solid)
- Defrost Operation
  - Fan: ON
  - Door Open Indicator: ON (solid)

Door Open Alarm Delay

The time between the door opening and staying open, and the Door Alarm Triggering.

Door Switch Malfunction Delay Delta

The Time differential above the Door Open Alarm Delay (d1) which will trigger the Door Malfunction operation.

Door Close Duration Compressor ON

The duration for the door to remain closed after a Door Open Alarm before the compressor will turn back ON.

Door Open Duration Evap Fan OFF

The duration the door to remain open before the evaporator fan will switch OFF if Switch OFF fan on Door Opening Event (Fd0) is set to Yes.

Door Close Duration Evap Fan Back ON

d5 The duration the door to remain open before the evaporator fan will switch back ON if Switch OFF fan on Door Opening Event (Fd0) is set to Yes.

9.10 POWER ON/OFF BUTTON (only editable through the JEAc display)

PARAMETER	DESCRIPTION	UNITS	MIN	MAX	DEFAULT
POF	Enable Power ON/OFF Button	-	No / Yes		Yes

Enable Power ON/OFF Button

POF Select whether the JEAc can be turned OFF through the display buttons

No = Button function disabled. JEAc is always on when plugged in.

Yes = Button function enables. JEAc and outputs can be manually turned OFF through the display button

9.11 INITIAL PULL DOWN

PARAMETER	DESCRIPTION	UNITS	MIN	MAX	DEFAULT
Pdt	Initial Pull-Down Initial Temperature	°C °F	-40 -40	40 104	25 77
Pt1	Time Before Initial Pull-Down Cut-Out (Pdo) Is Activated	Hours	0	255	4
PdO	Initial Pull-Down Cut-Out Value	°C °F	-40 -40	40 104	0 32

Initial Pull-Down Initiate Temperature

Pdt The temperature, which if exceeded fat power up, will enable a pull-down.

Time Before Initial Pull-Down Cut-Out is Activated

Pt1 The minimum time the regulation temperature must exceed the Initial Pull-Down Initiate Temperature (Pdt), during pull-down to change the cut-out to the initial pull-down cut-out value (Pd0).

Initial Pull-Down Cut-Out Value

Pd0 The cut-out temperature which will be applied during pull-down in case the regulation temperature remained above Pdt for longer than Pt1.

Note: Defrost is disabled during Pull-down unless Allow Defrost During Initial Pull-Down (dPd) is enabled. Pull-down is also forced when the controller is taken out of lockout mode, regardless of the temperature.

9.12 EVAPORATOR FAN MANAGEMENT

PARAMETER	DESCRIPTION	UNITS	MIN	MAX	DEFAULT
Fd0	Fan Cycle With Compressor	-	No / Yes		Yes
Fd1	Day Duty Cycle On Time Compressor Cycles Off	Minutes	0	255	2
Fd2	Day Duty Cycle Off Time Compressor Cycles Off	Minutes	0	255	3
Fn1	Night Duty Cycle On Time Compressor Cycles Off	Minutes	0	255	2
Fn2	Night Duty Cycle Off Time Compressor Cycles Off	Minutes	0	255	3
FC1	Allow Fan Management During Normal Operation	-	No / Yes		Yes
FC2	Allow Fan Management During Eco Mode	-	No / Yes		Yes
FC3	Not Used	-	-		-
Fd	Switch Off Fan On Door Opening Event	-	No / Yes		Yes
FH	Fan Duty Cycle Override Temperature	°C °F	0 32	90 194	15 59
FHd	Fan Duty Cycle Override Temperature Differential	°C °F	0 0	25 45	2 4
FSt	Fan Minimum Stop Time	Seconds	0	255	2

Fan Cycle With Compressor

Fd0 Select the operation of the evaporator according to the compressor

No = Fan is ON when the compressor is OFF. If set to No, Fd1, Fd2, Fn1, Fn2, FC1, FC2 & FC3 will be ignored

Yes = Fan cycles when the compressor is OFF

DAY Duty Cycle ON Time Compressor Cycles OFF

Fd1 The time the evaporator fan is ON when the compressor is OFF and the system is running in Day mode if Fan Cycle with Compressor (Fd0) is enabled. If 0 is set, the fan will remain on when the compressor if OFF.

DAY Duty Cycle OFF Time Compressor cycles OFF

Fd2 The time the evaporator fan is OFF when the compressor is OFF and the system is running in Day mode if Fan Cycle with Compressor (Fd0) is enabled. If 0 is set, the fan will remain on when the compressor if OFF.

NIGHT Duty Cycle ON Time Compressor Cycles OFF

Fn1 The time the evaporator fan is ON when the compressor is OFF and the system is running in Night mode if Fan Cycle with Compressor (Fd0) is enabled. If 0 is set, the fan will remain on when the compressor if OFF.

NIGHT Duty Cycle OFF Time Compressor Cycles OFF

Fn2 The time the evaporator fan is OFF when the compressor is OFF and the system is running in Night mode if Fan Cycle with Compressor (Fd0) is enabled. If 0 is set, the fan will remain on when the compressor if OFF.

Allow Fan Management During NORMAL Operation

FC1 Select whether the evaporator fan cycles with the compressor while in Normal operating mode

No = Fan remains ON when the compressor is OFF

Yes = Fan cycles as regulated by Fd1 & Fd2 (if in Day mode) or Fn1 & Fn2 (if in Night mode)

Allow Fan Management During ECO Mode

FC2 Select whether the evaporator fan cycles with the compressor while in Eco operating mode

No = Fan remains ON when the compressor is OFF

Yes = Fan cycles as regulated by Fd1 & Fd2 (if in Day mode) or Fn1 & Fn2 (if in Night mode)

Switch OFF Fan On Door Opening Event

Fd Select whether the evaporator fan stays ON when door is open

No = Fan remains ON when Door is Open

Yes = Fan turns OFF, respecting Door Open Duration to Switch Fan OFF (d4)

Fan Duty Cycle Override Temperature

FH The maximum regulation temperature at which the evaporator fan is permitted to cycle. If the override temperature is exceeded the fan will always be ON until the temperature differential is reached.

Fan Duty Cycle Override Temperature Differential

FHd The temperature differential below the override temperature, which the fan will resume duty cycling

Fan Minimum Stop Time

FSt The Minimum time the fan must be OFF before being allowed to turn back ON

9.13 WINTER MODE (Designed for coolers in sub-zero conditions and a cabinet heater fitted)

PARAMETER	DESCRIPTION	UNITS	MIN	MAX	DEFAULT
Ht	Enable Winter Mode	-	No / Yes		No
HAt	Heater Activation Temperature Threshold	°C °F	-40 -40	40 104	-10 14
HAd	Heater Activation Delay	Minutes	0	255	0
HdF	Heater Activation Temperature Differential	°C °F	0 0	25 45	2 4

Enable Winter Mode

Select whether Winter mode is enabled

No = Winter mode disable. Other Winter mode parameters ignored

Yes = Winter mode enabled

Heater Activation Temperature Threshold

The minimum regulation temperature which will trigger the JEAc to enter Winter mode if lower for longer than the Heater Activation Delay.

Heater Activation Delay

The maximum permitted time that the Heater Activation Temperature Threshold can be exceeded before triggering Winter Mode.

Heater Activation Temperature Differential

The temperature differential above the Heater Activation Temperature Threshold, which will turn OFF the heater and normal operation mode is resumed.

Note: If Winter mode is enabled and activated, then defrost function will be disabled until the Winter mode is terminated.

Note: If the JEAc is in Winter mode and the Regulation Probe is detected to be faulty, then the JEAc will exit Winter mode and will resume normal operating mode.

9.14 AMBIENT CONDITION INTERACTION

PARAMETER	DESCRIPTION	UNITS	MIN	MAX	DEFAULT
AnA	Enable Ambient Temperature Interaction	-	No / Yes		Yes
AdE	Enable Defrost In High Ambient Condition	-	No / Yes		Yes
An	Nominal Ambient Condition	°C °F	0 32	90 194	40 104
An1	Ambient Change Threshold 1	°C °F	0 0	10 18	5 9
An2	Ambient Change Threshold 2	°C °F	0 0	10 18	10 18
AS1	Regulation Temperature Limit Change On An1	°C °F	-5 -9	5 9	0 0
AS2	Regulation Temperature Limit Change On An2	°C °F	-5 -9	5 9	0 0
ALL	Lower Ambient Safety Limit	°C °F	-50 -58	0 32	-40 -40
ALU	Upper Ambient Safety Limit	°C °F	0 32	80 176	40 104

Note: This functionality is adjusting the Set Point (cut-in and cut-out values in any operating mode) to reduce energy consumption according to ambient conditions.

Enable Ambient Temperature Interaction

Select whether the cut-in and cut-out values (set point) are influenced by the ambient temperature

No = Ambient temperature will be ignored and no adjustments will be made to the compressor cut-in and cut-out values

Yes = Adjustments will be made based on the ambient temperature

Enable Defrost in High Ambient Condition

Select whether defrost occurs when the ambient temperature rises above nominal ambient conditions (An). Enable Ambient Temperature Interaction (AnA) must be enabled, and the ambient temperature probe is configured and present.

No = Defrost is disabled when the ambient temperature is above An

Yes = Defrost is enabled. Defrost will be triggered as normal depending on set defrost parameters.

Nominal Ambient Condition

The maximum temperature the ambient temperature can reach before adjustments to cut-in and cut-out values are made if Ambient Interaction Enabled (AnA) is set to Yes.

Ambient Change Threshold 1

The maximum temperature differential above the Nominal Ambient Condition (ambient temperature probe > An and ≤ An + An1), which will increase the respective mode cut-in and cut-out values by Regulation Temperature Limit Change On An1 (AS1).

Ambient Change Threshold 2

The maximum temperature differential above the Nominal Ambient Condition plus the Ambient Change Threshold 1 (ambient temperature probe > An + An1 and ≤ ALU), which will increase the respective mode cut-in and cut-out values by Regulation Temperature Limit Change On An2 (AS2).

Regulation Temperature Limit Change On An1

The temperature which will be added to the cut-in and cut-out values if the ambient temperature probe is between the Nominal Ambient Condition and the Nominal Ambient Condition plus Ambient Change Threshold 1

Regulation Temperature Limit Change On An2

The temperature which will be added to the cut-in and cut-out values if the ambient temperature probe is between the Nominal Ambient Condition plus the Ambient Change Threshold 1 and the Upper Ambient Safety Limit.

Lower Ambient Safety Limit

The minimum ambient temperature the JEAc can resume normal operations.

Upper Ambient Safety Limit

The maximum ambient temperature the JEAc can resume normal operations.

9.15 ENERGY SAVING

PARAMETER	DESCRIPTION	UNITS	MIN	MAX	DEFAULT
ESL	Enable Energy Saving	-	On / Off		On
ndn	Duration Of No Door Activity To Enter Night Mode	Hours	1	24	2
Lnd	Maximum Night Mode Duration	Hours	n/a, 1	24	8

Enable Energy Saving

Select whether the energy-saving feature is enabled. If disabled, other energy-saving parameters become de-active.

ON = Energy Saving enabled. JEAc will switch between Day/Night mode accordingly.

OFF = Energy Saving disabled. JEAc will remain in Day mode.

Duration of No Door Activity To Enter Night Mode

The Time the controller will wait in Day Mode without any door activity before it enters Night Mode.

Maximum Night Mode Duration (applicable in non-self-learning models)

The maximum duration the controller is in Night Mode before reverting to Day Mode. If Lnd is set to 0 (N/A) then the limit is disabled and the controller will remain in Night mode until the next door activity or power cycle.

9.16 INTERFACE

PARAMETER	DESCRIPTION	OPTIONS	DEFAULT
U1	Communication Port Configuration	JEAc Interface (0) / Modbus 9600 baud (1) / Modbus 9600 baud (Inverted Logic) (2) / Modbus 19200 baud (4)	JEAc Interface

Communication Port Configuration

Select the communication protocol for the JEAc data connector

JEAc Interface (0) = Standard UART for communication with Sollatek external devices and JEAc interface software.

Modbus 9600 baud (1) = Modbus RTU communication with external devices **(Under Development)**

9.17 COOLER LOCKOUT (not configurable via the display)

PARAMETER	DESCRIPTION	UNITS	MIN	MAX	DEFAULT
LEn	Enable Cooler Lockout	-	On / Off		Off
LTp	Cooler Lockout Temperature Threshold	°C °F	-40 -40	90 194	N/A
LDr	Cooler Lockout Over Temperature Duration	Minutes	0	255	N/A

Enable Cooler Lockout

Select whether the cooler lockout feature is enabled. If disabled, other lockout parameters become de-active.

ON = Lockout Mode is enabled. JEAc will disconnect all load when set conditions are met and keep them off until it has been manually overridden.

OFF = Lockout mode is disabled. JEAc will operate as normal.

Cooler Lockout Temperature Threshold

The regulation temperature which will trigger the JEAc to enter lockout mode if continuously above it for more than the cooler lockout over temperature duration (LDr).

Cooler Lockout over Temperature Duration

The minimum duration of the temperature must remain above the cooler lockout temperature threshold (LTp) before entering lockout mode.

Note: Only cooler lockout or condenser control can be enabled at one time.

9.18 MISCELLANEOUS

PARAMETER	DESCRIPTION	OPTIONS	DEFAULT
bE	Buzzer Configuration	Disable / Enabled	Enabled

Buzzer Configuration

Default: Enabled

Options: Enabled or Disabled

10. FIRMWARE UPDATE

10.1 SPP03 - SOLLATEK PRODUCT PROGRAMMER PROCEDURE (Under Development)

The SPP03 allows you to update the JEAc firmware in-situ *(note: this does not include parameters)* without the need of connecting the device to a computer.

Uploading the firmware onto the SPP03.

1. Open the SPP Visual Programmer Software, supplied by Sollatek.
2. Plug the SPP03 Programmer into the computer's USB port, if plugging in for the first time please wait for all the drivers to be installed before proceeding.
3. Select the Programmer Type to SPP03.
4. Select the Product type to JEAc.

5. Enable Program Memory by clicking on the box on the left-hand side of the window next to the Select Program Memory File button.
6. Click the Select Program File button to open the file directory. Select the .hex firmware file from your PC.
7. Once uploaded click the Program SPP button at the bottom of the window. The LED on the SPP03 will turn ON and remain on as the data is being uploaded.
8. Progress of the uploading will be indicated in the status bar at the bottom of the window.

9. On successful uploading, the LED on the SPP03 will start flashing and then turn OFF. A success message will also appear on your PC.
10. Click "Ok" to close the window.
11. You may now remove the SPP03 device from your computer.

Programming the JEAc

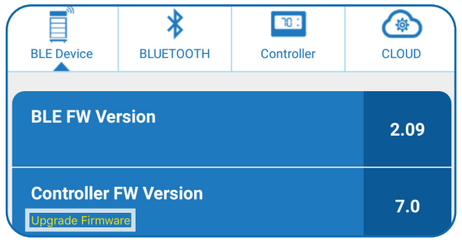
1. Disconnect JEAc from mains power.
2. Connect the mini-USB connector of the SPP03 to the mini-USB port on the extension cable.
3. Connect the 7-way connector of the extension cable into the 7-way port on the rear of the JEAc.
4. Press the button on the side of the SPP03 programmer. The LED on the SPP03 will turn ON and will remain on as the JEAc is being programmed.
5. On Completion, the LED on the SPP03 will start flashing and then turn OFF.
6. Unplug the SPP03 and extension cable from the JEAc. Reconnect mains to the JEAc. The JEAc is now ready to use.

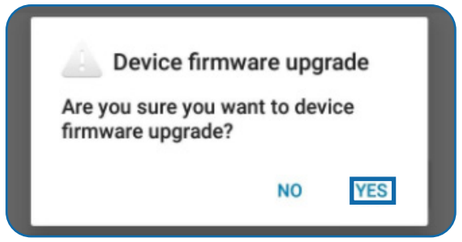
Note: If you have any problems during programming or want to use the SPP Visual software to upload to the SPP03, then please refer to the SPP03 Visual Programmer User Instructions for more details and troubleshooting.

10.2 OVER THE AIR UPDATE (UNDER DEVELOPMENT)

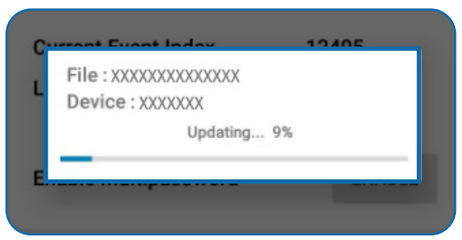
If the JEAc is connected to an external Bluetooth device, the JEAc firmware can be updated using the Sollatek smart device application.

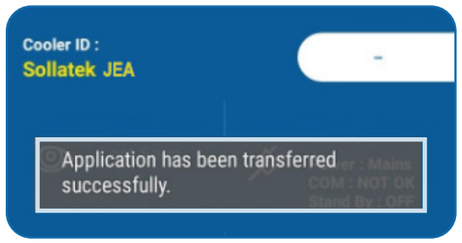
1. Open the Sollatek smart device app on your phone/tablet. Login using your credentials.
2. Find the required JEAc from the list of BLE devices. Connect the device to the app by clicking the icon in the device header.
3. Select the BLE Device Tab. If new BLE firmware is available for the JEAc, Upgrade Firmware will appear below Controller FW Version.
4. Click on the text Upgrade Firmware to start.
5. A dialogue box will appear to confirm you want to proceed with the upgrade. Press YES to proceed.





6. The dialog box will close, and the update will start automatically. Progress will be shown in a status window.
7. Once complete the status window will show “done”. The window will then close, and the app will discount with the JEAc and revert to the BLE scanning page.
8. A success message “Application has been transferred successfully” will momentarily appear over the device’s operational status to confirm the firmware has been updated.





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11. FAULTS AND ALARMS

11.1 REGULATION PROBE FAILURE

- Compressor: Cycles according to set ON/OFF cycle duration in Delays and Timer (dCO, dCF, nCO, nCO)
- All other operations as normal
  - Master Alarm Indicator: ON
  - Main Display: Toggles between -50 and PF1

11.2 PROBE 2 FAILURE

- Probe 2 can be configured as Evaporator, Condenser or Ambient
- All other operations as normal
  - Master Alarm Indicator: ON
  - Main Display: Toggles between the regulation probe temperature and PF2

If Probe 2 configured as **Evaporator Temperature:**

- All functions using the Evaporator Probe will be deactivated.
- All defrost start and end temperatures (if enabled) will be disabled.
- Defrost will only be entered or exited through start and end time (if enabled)
- dF2 is not respected (Defrost function is not suspended even if the regulation temperature is above dF2).
- All other operations as normal

If Probe 2 configured as **Condenser Temperature:**

- The condenser protection feature will be disabled
- All other operations as normal

If Probe 2 configured as **Ambient Temperature:**

- Set points (cut-in and cut-out values) are as programmed and are not adjusted due to ambient conditions.
- All other operations as normal

11.3 DOOR SWITCH ALARM

Activated when the door is open for longer than Door Open Alarm Delay (d1)

- Compressor: OFF
- Evaporator Fan: OFF* (respecting d4)
  - Master Alarm Indicator: ON
  - Main Display: Toggles between the regulation probe temperature and dOP

** If the JEAc is in Defrost mode, the evaporator fan will obey Fan management settings*

Note: Controller resumes normal operation once the alarm is reset and a door closing event is sensed. Indicators switch OFF and the display only shows the regulation probe temperature.

11.4 DOOR SWITCH FAILURE/MALFUNCTION

Activated when door is open for longer than Door Open Alarm Delay plus the Door Switch Malfunction Delay Delta (d1 + d2)

- Unit resumes working normally (compressor coming ON when there is cooling demand)
- Unit switches to DAY mode if it was in NIGHT mode when the Door Switch Failure was observed.
- During Door Switch Failure, the lights remain always ON and cannot be switched OFF manually.
  - Master Alarm: ON (solid)
  - Main Display: Toggles between the regulation probe temperature, dOP and dSF

Note: Controller resumes normal operation once the alarm is reset and a door closing event is sensed. Indicators switch OFF and the display only shows the regulation probe temperature.

11.5 OVER VOLTAGE PROTECTION

- Activated if voltage protection is enabled and supply voltage exceeds UHo for more than Hbt.
- Deactivated when supply voltage is below UHi
- All relays: OFF Main Display: Toggles between the regulation probe temparature and "OPr"

11.6 UNDER VOLTAGE PROTECTION

- Activated if voltage protection is enabled and supply voltage drops below ULo for more than Lbt.
- Deactivated when supply voltage is above ULi
- All relays: OFF Main Display: Toggles between the regulation probe temperature and "UPr"

11.7 CONDENSER OVER TEMPERATURE

- Compressor: OFF
- Evaporator Fan: ON (respecting the door switch status)
  - Master Alarm Indicator: ON
  - Main Display: Toggles between the regulation probe temperature and COt

Note: If three consecutive OH events occur, then the JEAc will Initiate Refrigeration Failure Mode

11.8 CONDENSER UNDER TEMPERATURE

- Compressor: OFF
- Evaporator Fan: ON (respecting the door switch status)
  - Master Alarm Indicator: ON
  - Main Display: Toggles between the regulation probe temperature and CUt

Note: If three consecutive SC events occur, then the JEAc will Initiate Refrigeration Failure Mode

11.9 AMBIENT OVER TEMPERATURE

- Compressor: OFF
- Evaporator Fan: ON or Cycling (respecting the Evaporator Fan Management settings)
  - Master Alarm Indicator: ON
  - Main Display: Toggles between the regulation probe temperature and AOt
- Defrost is disabled

11.10 AMBIENT UNDER TEMPERATURE

- Compressor: OFF
- Evaporator Fan: ON or Cycling (respecting the Evaporator Fan Management settings)
  - Master Alarm Indicator: ON
  - Main Display: Toggles between the regulation probe temperature and AOt
- Defrost is disabled

11.11 REFRIGERATION FAILURE

Refrigeration Failure Mode will be initiated if any of the following events take place:

- The compressor has been running continuously for longer than Cd6
- 3 consecutive defrost cycles due to Cd5
- Condenser temperature (when condenser probe is enabled and not faulty) exceeds OH over 3 consecutive events
- Condenser temperature (when condenser probe is enabled and not faulty) drops below SC over 3 consecutive events

Refrigeration Failure Mode Operation:

- Compressor: OFF
- Evaporator Fan: OFF
- Lights: OFF
- Heater (if fitted) OFF
  - Master Alarm Indicator: ON
  - Main Display: Toggles between the regulation probe temperature and rFF
  - Buttons: Disabled but menu item can still be accessed
- Buzzer: ON (beeping 0.5 s ON / 0.5 s OFF)

Note: The alarm is reset by cooler unplugging only.

11.12 COOLER LOCKOUT

Activated when the regulation temperature is continuously above the set temperature for longer than the set duration.

- All Relays: OFF
  - Main Display: Toggles between the regulation probe temperature and Loc

Note: Lockout can only be quit by manual intervention via Modbus or the GUI.

12. SPECIFICATION

REFRIGERATION CONTROL				
Temperature Control Method	2x Temperature sensor for Air and Evaporator/Condenser/Ambient			
Temperature Probe Type	10 KΩ NTC ($\beta_{25/85}$: 3435 k)			
Temperature Control Range	-50°C to +90°C (-58°F to +194°F)			
Temperature Time Delay	1 - 255 s			
Defrost Control	Timed (Real-time, accumulated, continuous), Temperature, Manual			
Defrost Type	Active (Heater or Hot Gas), Natural, Disabled			
Energy Saving	Temperature Set-back (Eco mode), Fan Cycling, Lights OFF			
Other Input Type	1x Door Switch, PIR or Humidity Sensor			
Output Control	Compressor, Evaporator Fan, Lights, Defrost/Winter Heater			
Compressor Relay Rating	16 A, 250 V			
Relay #2 Rating	5 A, 250 V			
Relay #3 Rating	5 A, 250 V			
Intelligent Time Delay	0 - 300 s			
Refrigerant Compatibility	CO_2 & Hydrocarbon			
USER INTERFACE				
Display Type	3 x 7 Segment LED digits			
Digit Height	16 mm			
Colours	Red, Blue, White, Green & Yellow			
Status Indicators	Fan, Compressor, Defrost, Alarm, Door, Eco Celsius, Fahrenheit			
Buttons	3x Membrane Push Buttons			
POWER & VOLTAGE PROTECTION				
Nominal Voltage	230 VAC	115 VAC	12 VDC	24 VAC
Operating Voltage	185-260 VAC	90-140 VAC	11-18 VDC	18-30 VDC
Frequency Range	50/60 Hz			
Type of Protection	Undervoltage/Overvoltage & Frequency			
Disconnect / Reconnect Voltage	Configurable based on nominal voltage			
Voltage Protection Accuracy	±5 V (AC variants) ±1V DC variants)			
High / Low Voltage Blind Time	0 - 25 s			
Over Voltage Category	Category II			
CONNECTORS				
Power Connector	2-way pluggable screw terminal (cable CSA 1.5mm²)			
Output Connector	5-way pluggable screw terminal (cable CSA 1.5mm²)			
Input Connector	4-way screw pluggable terminal (cable CSA 1.5mm²)			
Data Interface	7-way connector			
ENVIRONMENTAL				
Front IP Rating	IP65			
Operating Temperature	-20°C to +60°C (4°F to +140°F)			
Operating Humidity	<90% RH non-condensing			
CERTIFICATION / STANDARDS				
Product Certification	CE, IEC60730-1, IEC60730-2-9, EN60079-15			
Flammability	UL94 5VA @ 3 mm, GWFI: 960 °C @ 2mm			
Pollution Degree	2			
MECHANICAL				
Mounting	Front mounting with screws or rear mounting with clips (sold separately)			
Unit Dimensions	78.0 x 36.5 x 67.5 mm			
Unit Weight	Approx. 100 g			

13. ACCESSORY LIST

JEAc ACCESSORIES

PRODUCT CODE	PRODUCT DESCRIPTION
72121589-1	JEA - Red Bezel Printed
72121589-1B	JEA- Black Bezel Printed
72121589-1Y	JEA - Yellow Bezel Printed

72121589-4	JEA - Side Fixing Clip (2 clips per unit required)

65102618	2 Way 5.08mm Screw Term Block R/A Female
65104826	4 Way 5.08mm Screw Term Block R/A Female
65105162	J5 Way 5.08mm Screw Term Block R/A Female

INPUT SENSORS

PRODUCT CODE*	PRODUCT DESCRIPTION
9TM66015BN	T Probe 6.0/1.5/16 10K BK24 C3E
9TM66015WN	T Probe 6.0/1.5/16 10K WT24 C3E
9TM66035BN	T Probe 6.0/3.5/16 10K BK24 C3E
9TM66035WN	T Probe 6.0/3.5/16 10K WT24 C3E

9W10120WA	D/SWITH N/O SPST 2.0/WT24/C3S
9W10130WA	D/SWITH N/O SPST 3.0/WT24/C3S
9W10145WA	D/SWITH N/O SPST 4.5/WT24/C3S

TBA	FMP1-C PIR SENSOR MODULE
TBA	CABLE JEA TO FMP1-C 0.5M
TBA	CABLE JEA TO FMP1-C 2.0M

TBA	FMH2 Humidity Sensor For JEA 2m

PROGRAMMING

PRODUCT CODE	PRODUCT DESCRIPTION
90500500-A	SPP03A FFA/GMC/JEA
8M291021	SPP TO 7 WAY JEAC CABLE DWG 4215
8M293429	USB FTDI TO JEAC 7 WAY DWG 4087

CONNECTIVITY DEVICES

PRODUCT CODE	PRODUCT DESCRIPTION
95342WB2	GMC42-2BW 2G
95344WB2	GMC42-4BW 4G
TBC	JEAc-GMC42 Cable

**Other lengths available on request*

14. VERSION HISTORY

VERSION	DATE COMPLETED	DESCRIPTION	REVIEWED BY
v1.0	11/11/2024	Initial Version	Pawel Sochon
v2.0	31/03/2025	Updates to 3.0, 7.0, 9.2, 9.5 Addition of faults 11.5, 11.6 Various minor changes across the manual	Pawel Sochon
v3	10/06/2025	Changes in 9.4, 9.6, 9.12 and 13	Pawel Sochon
v4	23/06/2025	Changes related to DC version in 2.2 and 3.3	Pawel Sochon

JEAc USER MANUAL

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