

# Quick-Guide for Software Ver. 3.0

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# Quick guide for software version 3.0

## Cabinet On/OFF

Press the Q-key to switch on the cabinet. Press and hold it for 6 sec. the cabinet will switch off (Stand-by). During the start-up the program variant and SW version will be presented shortly. Revision number can be presented under "Display test".

## Other short cuts

Using the key-pad functions is accessed or activated.

| Key combination: | Time:    | Function:  |
|------------------|----------|--|
| P+Q              | > 3 sec. | Start or stop a defrosting cycle manually.   |
| Q+1              | > 6 sec. | Key pad lock on/off. With a lock key it's not possible to access any menu or make any changes. |
| (+)              | -        | Showing highest recorded temperature peak since the last reset of alarm history.               |
| (-)              | -        | Showing lowest recorded temperature peak since the last reset of alarm history.                |
| (+) + (-)        | > 6 sec. | Re-setting alarm history.  |
| P+1+3            | > 6 sec. | Re-setting all changes in the parameters and brings the settings back to default.              |
| P+1              | > 6 sec. | Access to <b>User menu and alarm settings</b> . See more in the tables below.                  |
| P+2              | > 6 sec. | Access to <b>System monitoring and presentations</b> . See more in the tables below.           |
| P+3              | > 6 sec. | Access to <b>Cooling system setup</b> . See more in the tables below.                          |
| P+4              | > 6 sec. | Access to the <b>Test Program</b> . See more in the tables below.                              |
| P+5              | > 6 sec. | Access to the <b>Control of the Sensors</b> . See more in the tables below.                    |

## Changes in product setup

If changes are needed in the controllers settings, then enter the menus as according to above. The values is changed using the + and - keys. The new setting is saved by pressing the P-key. Leave the menus with Q-key.

## User menu and alarm settings

The alarm system is separated into two. One alarm system triggers alarms only locally, which means the error only is displayed. The second alarm system triggers locally and external. Error codes in the display, but also alarm activates also the potential-free alarm output. Each alarm system is working independently.

| Menu access P+1 →          | ↓   | →   |        |  |
|----------------------------|-----|-----|--------|--|
| Dry cooling                | dC  |     |        | Activation of dry cooling program. [H1=off / H0=active]  |
| Local alarm setting        | LAL | LhL | [° C]  | Setting the upper alarm limit. At alarm the display is showing: [ A2].                         |
|                            |     | LLL | [° C]  | Setting the lower alarm limit. At alarm the display is showing: [ A3].                         |
|                            |     | Lhd | [min.] | Time delay for upper alarm limit.  |
|                            |     | LLd | [min.] | Time delay for lower alarm limit.  |
|                            |     | dA  | On/off | Activation of door alarm [1=on / 0=off]. At alarm the display is showing: [ A1].               |
|                            |     | dAd | [min.] | Time delay for door alarm.   |
|                            |     | BU  | On/off | Activation of buzzer [1=on / 0=off]. The buzzer sounds at alarms [ A1], [ A2], [ A3].          |
| External alarm setting     | EAL | EhL | [° C]  | Setting the upper alarm limit. At alarms the display is showing: [ A4].                        |
|                            |     | ELL | [° C]  | Setting the lower alarm limit. At alarms the display is showing: [ A5].                        |
|                            |     | Ehd | [min.] | Time delay for upper alarm limit.  |
|                            |     | ELd | [min.] | Time delay for lower alarm limit.  |
|                            |     | dA  | On/off | Activation of door alarm [1=on / 0=off]. At alarms the display is showing: [ A1].              |
|                            |     | dAd | [min.] | Time delay for door alarm.   |
|                            |     | BU  | On/off | Activation of buzzer [1=on / 0=off]. The buzzer sounds at alarms [ A1], [ A4], [ A5].          |
| Sensor calibration         | cAL | cA  | [° K]  | Offset adjustment on A-sensor. Cabinet sensor.   |
|                            |     | cE  | [° K]  | Offset adjustment on E-sensor. Extra sensor (placed in air or in bottle).                      |
|                            |     | cF  | [° K]  | Offset adjustment on F-sensor. Sensor for frost protection.                                    |
| Frost protection           | FP  | Act | On/off | Activation on frost protection.  |
|                            |     | tES | On     | Test the frost protection. Switch off compressor after time = C4.                              |
|                            |     | SEt | [° C]  | Adjustment of cut-out for compressor.  |
|                            |     | PrE | [...]  | Presentation of F-sensor.  |
|                            | ALL |     |        | Activation of escorting alarm limits. [FAS] = locked borders / [ESC] = following set point.    |
|                            | dEF |     |        | Numbers of defrosting pr. day.   |
|                            | dPS |     |        | Selection of sensor displaying in the display. Choose between: A, E or F.                      |
| The alarms:                |     |     |        | Text in display and description:   |
| Alarm messages from above. | A1  |     |        | Door alarm is triggered either by the LAL or EAL alarm systems.                                |
|                            | A2  |     |        | Alarm code triggered by a too hot temperature associated with the local alarm system.          |
|                            | A3  |     |        | Alarm code triggered by a too cold temperature associated with the local alarm system.         |
|                            | A4  |     |        | Alarm code triggered by a too hot temperature associated with the external alarm system.       |
|                            | A5  |     |        | Alarm code triggered by a too cold temperature associated with the external alarm system.      |
|                            | A6  |     |        | Frost protection has stopped compressor and ensured that the room temperature is not too cold. |

## Temperature monitor and presentations

Menu for setting the monitoring, alarm history, sensor choice for alarm systems and temperature read-out.

| Menu access P+2 →       | ↓ | →  |        |  |
|-------------------------|---|----|--------|--|
| Alarm setting           | A | A1 | [° C]  | By overheated condenser this starts the compressor protection program                              |
|                         |   | A2 | [° C]  | Temperature in condenser to de-activate the compressor protection program.                         |
|                         |   | A4 | On/off | Activation of alarm history [1=on / 0=off]. The program only works with alarm system: <b>LAL</b> . |
|                         |   | A5 |        | Choose between A, E or F sensor for the alarm systems <b>LAL</b> and <b>EAL</b> .                  |
| Presentation in display | P | P1 | [min.] | Freezing the temperature in minutes in display after a defrosting cycle.                           |
|                         |   | P2 | [° K]  | Freezing the temperature in display under normal run. Temperature fluctuation filter.              |
|                         |   | P3 | [sec.] | Display refresh rate.  |
|                         |   | P4 |        | Selection between Celsius or Fahrenheit temperature scale.   |

## Settings for cooling system

Menu for setting the evaporator fan, compressor and defrosting cycles.

| Menu access P+3 →        | ↓ | →  | RX-model V1+ | BioUltra E3+ |   |
|--------------------------|---|----|--------------|--------------|---|
| Compressor setting       | C | C1 |              | C1           | [° K] Differential for compressor cut-in and cut-out.                                     |
|                          |   | C2 |              | C2           | [° C] Maximum allowable temperature limit.  |
|                          |   | C3 |              | C3           | [° C] Lowest allowable temperature limit.   |
|                          |   | C4 |              | C4           | [min] Forced break time for the compressor between cut-out and cut-in                     |
|                          |   | C5 |              |              | Number of condenser sensor connected to controller  |
|                          |   | C6 |              |              | [min] Permitted time the door can be open before the compressor stops.                    |
|                          |   |    | C7           |              | [° K] (RX-model / Soft differential for cool/heat cut-out).                               |
|                          |   |    |              | C8           | [° C] (BioUltra / Set point for condenser fan.)   |
|                          |   |    |              | C9           | [° K] (BioUltra / Cut-out differential for condenser fan).                                |
| Evaporator fan setting   | F | F1 |              | L1           | [° C] Temperature for fan start after the defrosting cycle. Start of LT compressor in E3+ |
|                          |   | F2 |              |              | [min.] Time evaporator is paused while the compressor is stopped.                         |
|                          |   | F3 |              |              | [sec.] Time evaporator fan is in operation while the compressor is stopped                |
|                          |   |    |              | L4           | [° C] Stop temperature in cascade heat exchanger for LT compressor – At normal run.       |
|                          |   |    |              | L5           | [° C] Stop temperature in cascade heat exchanger for LT compressor – By abnormal run.     |
|                          |   |    |              | L6           | [° K] Temperature deviation for choosing between "normal or abnormal" run.                |
|                          |   |    |              | L7           | Running mode for LT compressor [1=slave / 0=independent].                                 |
| Defrosting cycle setting | d | d1 |              |              | Numbers of defrosting pr. day.  |
|                          |   | d2 |              |              | [° C] Defrosting stop temperature measured in the evaporator                              |
|                          |   | d3 |              |              | On/off Activating the defrosting cycle on first power-up start [0=on / 1=off]             |
|                          |   | d4 |              |              | [min.] Maximum defrosting time.   |
|                          |   | d5 |              |              | Choose between automatic [1], air [2] or electrical defrosting method [3]                 |
|                          |   | d6 |              |              | [min.] Dripping time after defrosting cycle ends.   |
|                          |   | d7 |              |              | [° C] The maximum level that determines the defrosting method when d5 = [1]               |
|                          |   | d8 |              |              | [° C] Temperature in evaporator to start an extra defrosting cycle automatically.         |
|                          |   |    |              | d10          | [min.] Defrosting window.   |
|                          |   |    |              | d11          | [h] Time delay at 100 % compressor running before forced defrosting cycle.                |

## Test program

Individually control of relay outputs and connected external components. Select the menu item and press the P-key. The relay switches and power is connected to external component. The display shows [on]. Stop the test with Q-key.

| Menu access P+4 →     | ↓   | →   | BioUltra E3+ | P-key → [on] / Q-key [off]  |
|-----------------------|-----|-----|--------------|---|
| Compressor            | tC  | tHt |              | Control of compressor and condenser fan / (BioUltra: Control of HT compressor).                             |
| Evaporator fan        | tF  | tLt |              | Control of evaporator fan / (BioUltra: Control of LT compressor).   |
| Defr. heating element | td  | td  |              | Control of defrosting heating element. <b>Warning:</b> The heating element becomes very hot. <b>Danger!</b> |
| Light                 | tL  | tCF |              | Control of light / (BioUltra: Control of condenser fan speed change – 900 rpm to 1200 rpm).                 |
| Alarm output          | tA  | tA  |              | Control of the potential free relay out-put.  |
| Display test          | tdP | tdP |              | All LED's in the display will lights up for 1 sec. followed by the software revision number.                |

## Control of sensor and display

With this menu it's possible to have instantaneous sensor read-outs.

| Menu access P+5 →  | ↓   | P-key → [° C] | Message in display and cause            |
|--|-----|---------------|---|
| Cabinet sensor   | P-A |               | F1 Error on cabinet sensor              |
| Evaporator sensor  | P-b |               | F2 Error on evaporator sensor           |
| Condenser sensor 1   | P-C |               | F3 Error on condenser sensor 1          |
| Condenser sensor 2   | P-d |               | F4 Error on condenser sensor 2          |
| Extra/Reference sensor   | P-E |               | F5 Error on Extra/Reference sensor      |
| Sensor for frost protect.  | P-F |               | F6 Error on sensor for frost protection |
| <b>Overheated condenser caused by a clogged grease filter. Triggered by both C and d sensor</b>  |     |               |   |
| BioUltra: High pressure switch has triggered by excessive pressure in the LT cooling system.     |     |               | F7 Overheated condenser 1 or 2.         |
| When the door opens the symbol lights up. A too long open door this will trigger the alarm [A1]. |     |               | F8                                      |
|  |     |               | -0- Symbol for open door                |





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