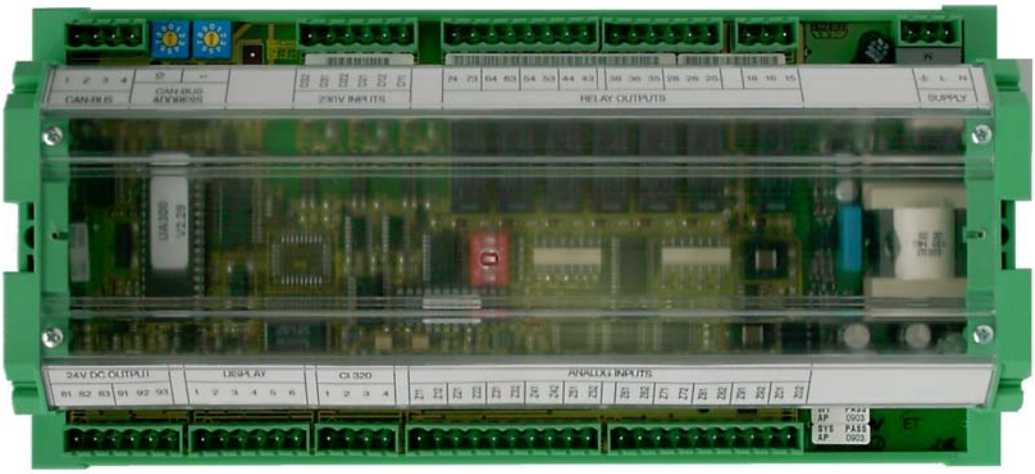
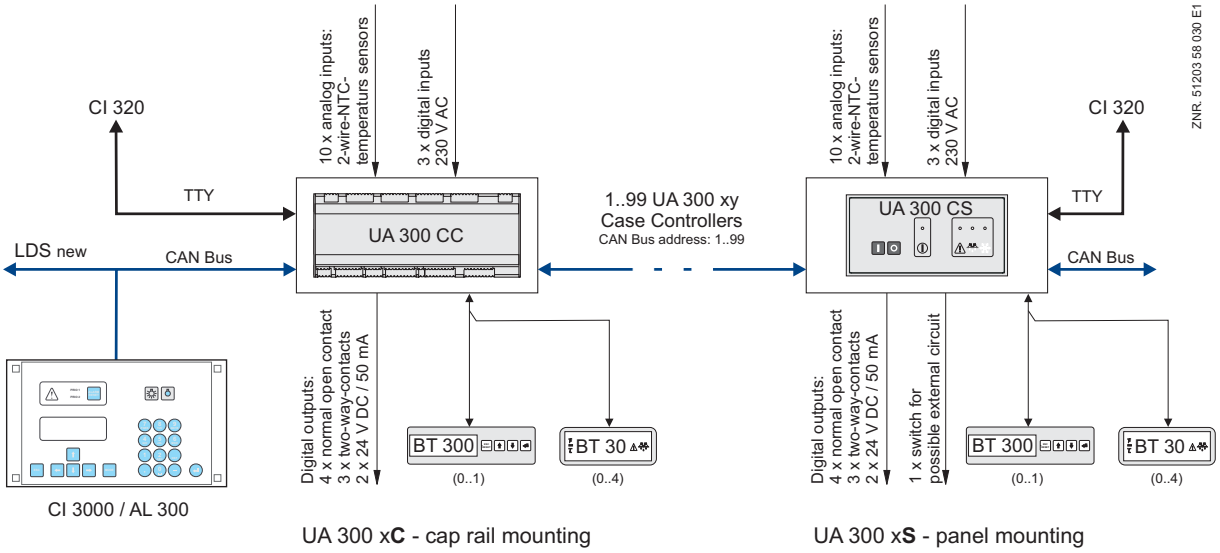
Case Controller UA 300 V2.52



1 System Design of UA 300

The controller is a packaged unit and does not use optional expansion modules. As required, a BT 300 x Operator Interface and maximum four BT 30 Temperature Displays can be connected to the controller. See Section 5 - Pin and Terminal Assignments of UA 300 for connections.



Ports

CAN bus:	Communication within LDS-System, new version, UA 300 Cx/Ax only
Display:	Connection for BT 300x Operator Interface and maximum 4 BT 30 Temperature Displays
TTY/CI 320:	Communication with LDSWin software / Connection to earlier CI 320 system

Digital inputs/outputs

3 digital inputs	230 V, floating
7 relay outputs	230 V / 6 A (4 N.O., 3 changeover)
2 transistor outputs	24 V DC / 50 mA (for alarm and antisweat heater)

1 universal switching contact to control external devices (UA 300 xS only)

Analog outputs

10 analog inputs	Connection for two-wire NTC temperature sensors

Real-time clock Battery-backed, lithium cell, UA 300 Tx only (for stand-alone operation)

Notice:

2 Application of UA 300

2.1 Versions

The UA 300 Case/Coldroom Controller is produced in different versions varying for networked or stand-alone operation and mounting location:

- UA 300 CC
- UA 300 CS
- UA 300 TC
- UA 300 TS
- UA 300 AC
- UA 300 AS

For control of refrigeration cases and coldrooms the UA 300 CS/TS is designed to install in a casing in the control panel or in the UA 300 CC/TC cap rail casing on the mounting plate. Digital outputs (24 V DC / 50 mA) are provided on the controller to connect an external signalling device and a frame heater.

Integration in CAN bus

Type UA 300 CC/CS controllers are designed to integrate in the CAN bus of the new LDS System. The suffix CC stands for ”CAN in Cabinet” (CAN bus connection, controller installs in display case, DIN rail mounting). The suffix CS stands for ”CAN in Switchbox” (CAN bus connection, controller installs in system control panel).

Stand-alone operation

Type UA 300 TC/TS controllers are designed for stand-alone operation independent of the LDS System. The suffix TC stands for ”Timer in Cabinet” (internal real-time clock, controller installs in display case, DIN rail mounting). The suffix TS stands for ”Timer in Switchbox” (internal real-time clock, controller installs in control panel). Type UA 300 TC/TS controllers have an internal battery-backed real-time clock and internal data recording memory. The clock continues running in any electric power failure.

All-in-one

The controllers UA 300 AC/ AS have been developed for integration in the CAN bus and for stand-alone operation. The suffix AC stands for All in Cabinet (controller installs in display case, DIN rail mounting), the suffix AS stands for All in Switchbox (controller installs in system control panel).

2.2 Controller types

The following controller types are combined in the UA 300 Case/Coldroom Controller.

	Controller type	Application
Case controller	UA 111	Multideck cases without defrost heater
	UA 111 D	Multideck cases without defrost heater and with twin compressor unit
	UA 121	Normal-temperature (NT) refrigeration (multideck, island and wallside cases, counters) with defrost heater.
	UA 131	Low-temperature (LT) refrigeration (islands, wallsides, cabinets, combinations) with defrost heater (either with or without fan control)
	UA 131 LS	Low temperature (LT) refrigeration (islands, wallsides, cabinets, combinations) with defrost heater, NT display cases with defrost heater (with advanced fan control)
	UA 131 DD	Specially designed for use in refrigerated display cases connected to a refrigeration system equipped with two-pipe discharge gas defrosting. As of V2.20 this controller replaces type UA 131 A designed for low-temperature (LT) islands with twin compressor unit.
	UA 141	Service counters without defrost heater
Coldroom controller	UR 141 NK (NT)	NT coldrooms without defrost heater
	UR 141 TK (LT)	NT/LT coldrooms with defrost heater and discharge gas defrosting

The controller type is selected from the above list by DIP switch S3 located in the middle of the circuit board (UA 300 xC) or on the rear of the controller (UA 300 xS). (See Section 4.2.2 Setting Controller Type and Master/Slave Mode.)

Selection of the controller type defines the controller properties and default controller settings. The UA 300 Case/Coldroom Controller can be operated by:

- Host computer via modem connected to CI 3000 Store Computer
- AL 300 Operator Terminal
- CI 3000 Store Computer
- Local BT 300 Operator Interface connected to the controller
- or it can be programmed by a PC connected to the TTY port and running the LDSWin software.

2.3 Version update

Replacement of the EPROM may only be carried out by trained personnel or at the manufacturer's works. Improper EPROM replacement can result in damage to the controller and impairment of controller functions.

As a rule, all setpoints previously defined will be retained when updating the controller version (inserting a new EPROM).

Exception: This does not apply when updating from a version earlier than V2.43 to Version V2.44 or later.

All previously defined setpoints will be replaced automatically by the basic settings of the new version when updating.

The previously defined setpoints can be preserved by first saving them to the LDSWin PC software via CAN bus. After inserting the new EPROM, the saved data can then be downloaded to the controller (See the LDSWin User Guide for further details).

3 Function of UA 300

Parameters mentioned in this section are described in the Menu Structure section. It will normally not be necessary to change the default settings of these parameters. Parameters that do not allow changing are termed fixed parameters below.

3.1 Selecting sensor type

The UA 300 case/coldroom controller uses two-wire NTC temperature sensors to perform control. All sensors connected must be the same type and parameters are not set separately for the sensors. The type of sensor used can be defined by the Sensor Type parameter (Menu 6-2-5).

The following sensor types are usable:

L243 (K243)	Temperature range -50°C to 50°C; Type K243 sensor can be used in place of type L243. Characteristics of these two sensors are identical.
K277	Temperature range -50 to 50°C
5K3A1	Temperature range 0 to 100°C

All due care must be exercised when installing temperature sensors. Sensor leads need not be shielded when installed exclusively within the refrigerated display case to be controlled and when interference is not to be expected (for example from power wires running parallel to the leads. Otherwise suitable precautions must be taken to protect the sensor leads from external interference.

3.1.1 Required and optional sensors

Temperature sensors used with the UA 300 may be either required or optional depending on the set controller type and operating mode. Sensor scan takes place automatically on first start of the controller. The number of sensors scanned can be checked in Menu (6-1) or with the LDSWin software. Required and optional sensors are listed below:

Single-zone operation

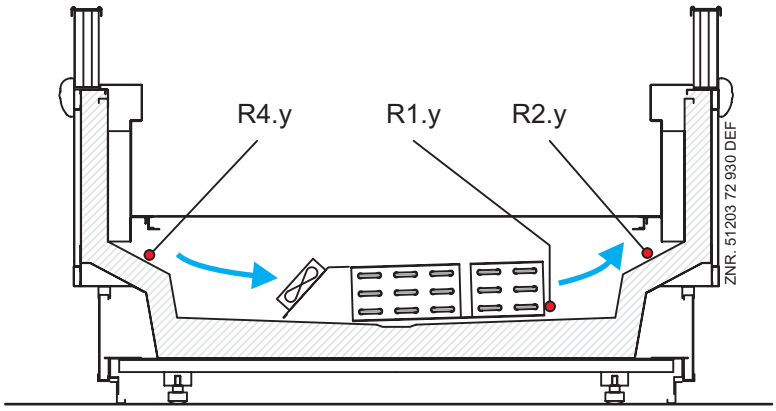
Controller type	Required sensors	Optional sensors
UA 111 / UA 141	R2.1	R2.2 R2.3 R2.4 R4.1 R4.2 R4.3 R4.4
UA 121 / UA 131	R2.1 R1.1	R4.1 R4.2 R4.3 R4.4 R1.2 R1.3 R1.4 R2.3
UR 141 NK(NT)	R4.1	R4.2 R4.3 R4.4 R1.1 R1.2 R1.3 R1.4
UR 141 TK(LT)	R4.1 R1.1	R4.1 R4.3 R4.4 R1.2 R1.3 R1.4
UA 111 D	R2.1	R4.1 R4.2 R4.3 R4.4 R4.5 R2.2 R2.3 R2.4
UA 131 DD	--	R2.1 R2.3 R4.1 R4.2 R4.3 R4.4 R1.1 R1.2 R1.3 R1.4

Two-zone operation

Controller type	Required sensors	Optional sensors
UA 111 / UA 141	R2.1 R2.3	R2.2 R2.4 R4.1 R4.2 R4.3 R4.4
UA 121 / UA 131	R2.1 R2.3 R1.1 R1.3	R4.1 R4.2 R4.3 R4.4 R1.2 R1.4
UR 141 NK(NT)	R4.1 R4.3	R4.2 R4.4 R1.1 R1.2 R1.3 R1.4
UR 141 TK(LT)	R4.1 R4.3 R1.1 R1.3	R4.2 R4.4 R1.2 R1.4
UA 111 D	Is void, controller does not support a two-zone operation	
UA 131 DD	--	R2.1 R2.3 R4.1 R4.2 R4.3 R4.4 R1.1 R1.2 R1.3 R1.4

Sensor identification

Legend: Rx.y		
x = Sensor type	1	Evaporator sensor (defrost sensor)
	2	Supply air sensor
	4	Return air sensor / room air sensor
y = Case part	1..5	Sensor element/coil 1..5



Sensor break alarm

Alarm (sensor break) is always generated if required sensors are not connected. If optional sensors are not connected, alarm is only generated when the sensors are included by sensor scan. Sensor scan can be initiated from a menu (see Menu Structure section). The CI 3000 Store Computer does not archive actual temperature values for optional sensors that are not included in sensor scan.

3.2 Controller function

The sections following describe the various functions of the UA 300 Case/Coldroom Controller. Availability of certain controller functions depends on the controller type set on DIP switch S3 (see Section 4.3.2 - Setting Controller Type and Master/Slave Mode).

3.2.1 Cooling

3.2.1.1 Temperature control by supply and return air in single-zone operation

Controller type: UA 111, UA 111 D, UA 121, UA 131, UA 131 DD, UA 141

Double on-off control by supply and return air (type UA 111, UA 121, UA 131, UA 131 DD, UA 141)

Control is made alternatively by two temperature sensors (supply air or return air temperature in pilot case). The cooling relay de-energizes when temperature reaches the setpoint (switch-off value) on one of the two sensors connected. The cooling relay re-energizes with the set hysteresis of the sensor causing switch-off.

Two-stage (twin) control by majority (type UA 111 D only)

Type UA 111 D is a special controller for multideck cases not equipped with a defrost heater and operating on a twin condensing unit.

With its five supply air and five return air sensors, the controller is capable of controlling maximum five case length modules. Compressors are controlled as a function of the majority of all connected temperature sensors of a case line-up. This means that the peak-load compressor will be stopped when temperature reaches the setpoint (switch-off value) on the majority of the connected supply air or return air sensors (e.g. 3 out of 5).

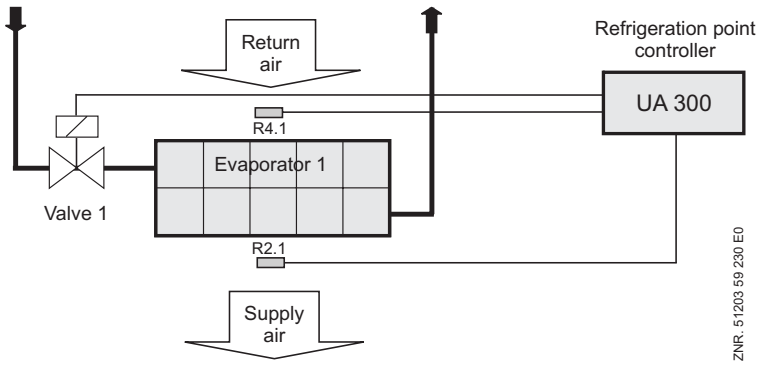
The base-load compressor is stopped when temperature reaches the setpoint (switch-off value) on the last remaining supply air or return air sensor. The base-load compressor is restarted when temperature exceeds the switching differential on the majority of the connected supply air or return air sensors.
The peak-load compressor is restarted when temperature exceeds the switching differential on all supply and return air sensors. Base load rotation is integrated to avoid varying operating times of the base-load and peak-load compressors.

Base load rotation takes place every time a compressor is started or stopped, not later than every 2 hours. By contrast with the base-load compressor, which starts immediately the start temperature is obtained, the peak-load compressor only starts after a definable start delay has expired (parameter Delay 2nd Comp (Menu 6-3).

If only one of the two sensors (supply or return air) is fitted, control is made exclusively by the one sensor.

Single-zone operation

Control is made by two temperature sensors (supply air or return air sensor of the pilot case). Cooling can take place in single-zone or two-zone operation.



R2.1: Supply air sensor
R4.1: Return air sensor
Solenoid valve: Relay for Solenoid Valve 1

3.2.1.2 Temperature control by supply and return air in two-zone operation

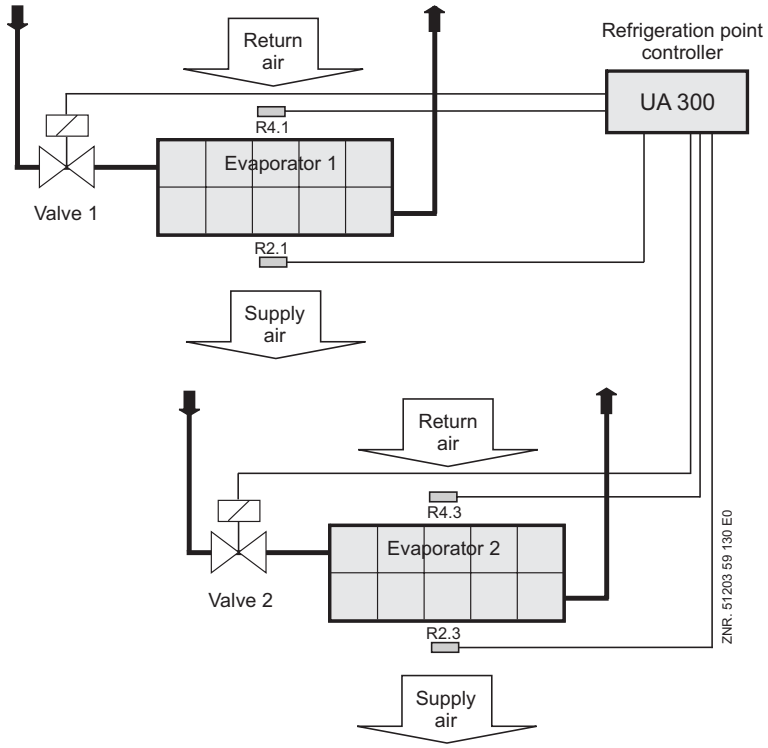
Controller type: UA 111, UA 121, UA 131, UA 131 DD, UA 141

Double on-off control by supply and return air (type UA 111, UA 121, UA 131, UA 131 DD, UA 141 only)

Control is made alternatively by two temperature sensors (supply air or return air temperature in pilot case). The cooling relay de-energizes when temperature reaches the setpoint (switch-off value) on one of the two sensors connected. The cooling relay re-energizes with the set hysteresis of the sensor causing switch-off.

If only one of the two sensors (supply or return air) is fitted, control is made exclusively by the one sensor.

Two-zone operation



R2.1: Supply air sensor
R4.1: Return air sensor
R2.3: Supply air sensor
R4.3: Return air sensor
Solenoid valve 1: Relay for Solenoid Valve 1
Solenoid valve 2: Relay for Solenoid Valve 2

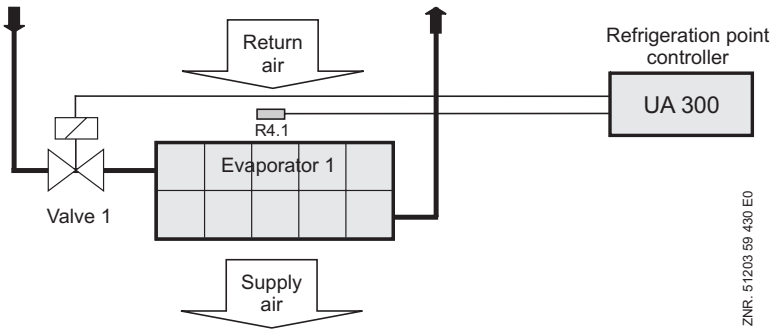
3.2.1.3 Temperature control by coldroom air sensor

Controller type UR 141 TK(LT), UR 141 NK(NT)

Single on-off control

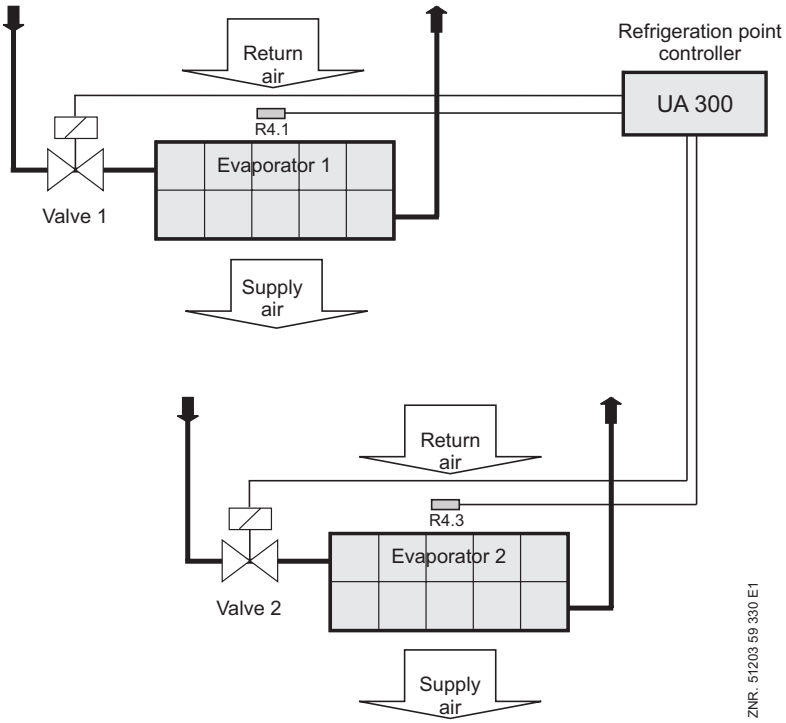
Cooling is controlled by temperature measured on the coldroom sensor. The cooling relay de-energizes when temperature reaches the setpoint (switch-off value) on the coldroom sensor and re-energizes with definable hysteresis.

Single-zone operation



R4.1: Room air sensor
Solenoid valve 1: Relay for Solenoid Valve 1

Two-zone operation



R4.1:
Room air sensor

R4.3:
Room air sensor

Solenoid valve 1:
Relay for Solenoid Valve 1

Solenoid valve 2:
Relay for Solenoid Valve 2

3.2.1.4 Continuous running monitoring

Controller type: UA 111, UA 111 D, UA 121, UA 131 DD, UA 141 only

Continuous running of refrigerated cases, e.g. in aggravated ambient conditions, has negative effects especially with multidecks.

It results in icing of the evaporator and reduced air curtain cooling. Run time continuous running monitoring provides for automatic forced shutdown of cooling as a means of preventing icing. This limits the operating time of the cooling.

Duration of forced shutdown is definable. Commencement of forced shutdown is predefined. When necessary, forced shutdown always takes place 1.5 hours after commencement of defrosting and after each additional hour.

The following condition also applies: If actual supply air temperature drops below SupplyAirSetpoint+1K in one zone, continuous run monitoring is deactivated in this zone for one cycle (1.5 or 1 h).

When forced shutdown is active, it will be terminated before the set duration elapses if temperature rises 4K on the supply air sensor R2.1.

3.2.1.5 Minimum on and off time

Short-cycling of cooling (i.e. the compressor) can occur when a small hysteresis is set, for example. Monitoring is therefore incorporated to ensure definable minimum on and off times for cooling.

More precisely, this means:

If cooling is stopped by the temperature setpoint being reached, it will remain off until the set minimum on time has expired. If the temperature setpoint is not reached until after the minimum on time has expired, cooling will then be stopped immediately. The same procedure applies to minimum off time before starting cooling.

3.2.1.6 Two temperature zones

Controller type: UA 111, UA 121, UA 131, UA 131 DD, UA 141, UR 141 NK(NT), UR 141 TK(LT) only

These controller types generally allow of controlling a line-up of maximum four refrigerated display cases with one temperature zone (pilot case and three add-on cases) or two temperature zones (two pilot cases each with maximum one add-on case).

The pilot cases detect the temperatures necessary for control and input control actuations to the cooling relay. Temperature sensors of the add-on cases are largely monitored or used for defrosting.

Coldroom temperature controllers UR 141 NK(NT) and UR 141 TK(LT) allow of independently controlling two temperature zones (two evaporators). Where required, the evaporators in coldrooms can each be fitted with two defrost sensors.

3.2.1.7 Heating circuit control

Controller type: UR 141 NK(NT) and UR 141 TK(LT) only

As an alternative to a second temperature zone, the temperature in coldrooms can be controlled with an auxiliary heating circuit. Heating circuit control comprises plain on-off control. The heating circuit control relay energizes when temperature reaches the setpoint and hysteresis. It de-energizes when the temperature exceeds the deadband.

In this instance the second zone must not be selected. Otherwise it will not be possible to adjust the setpoints.

The setpoint for the heating circuit must be set lower than the cooling setpoint. Faulty setpoint adjustment entails risk of damage to the system and merchandise!

3.2.1.8 Operation of cooling relay

Operation of the cooling relay conforms to refrigeration safety requirements and is determined by the controller type selected:

- UA 111, UA 111 D, UA 141, UR 141 NK(NT): N.O. control, i.e. cooling is OFF when the case controller is de-energized.
- UA 121, UA 131, UA 131 DD, UR 141 TK(LT): N.C control, i.e. cooling is ON when the case controller is de-energized.

3.2.1.9 Start delay after fan

Controller type: UR 141 TK(LT) only

With freezer coldrooms, cooling can be set to start with a definable delay after the fan has started.
This function is appropriate for large walk-in freezers (LT coldrooms). In an extended evaporator shutdown, temperature layering may occur (warm air above, cold below).

In such an instance starting may be delayed while the evaporator fan circulates the coldroom air for a few minutes. If temperature on the sensor then reaches the setpoint, the controller cancels demand for cooling and the evaporator fan stops.

3.2.1.10 Emergency operation

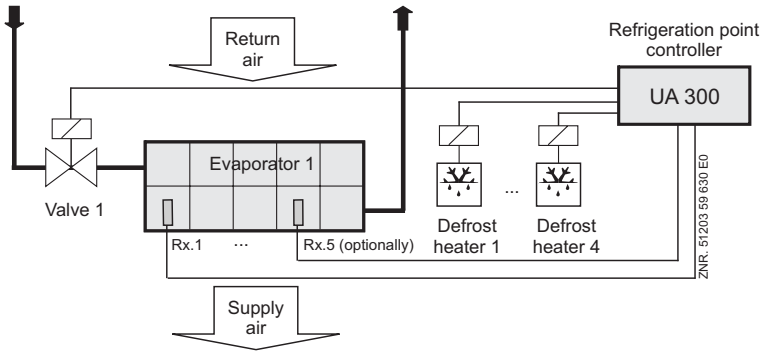
Cooling can continue for a definable on time (0 to 100%) in the event of failure of temperature measurement or the control temperature sensors (Menu 6-3). The emergency operation interval is 10 minutes, which means that when a 10% on time is set cooling is ON for 1 minute and OFF for 9 minutes of the interval.

In emergency operation, cooling alternates for the first and second zones so as to avoid unnecessary load due to simultaneous actuation of refrigeration points.

3.2.2 Defrosting

Defrosting prevents icing of the evaporators due to normal control action. Defrosting is performed by supplementary heating of the evaporator by the off-cycle method. Refrigeration point temperature control is deactivated during defrosting. Defrosting differs for single-zone and two-zone operation.

Defrosting in single-zone operation



R1.y: Evaporator sensor (with UA 121, UA 131, UR 141 NK(NT)/TK(LT), UA 131 DD this sensor is used for defrosting)

R2.y: Supply air sensor with defrost function (with UA 111, UA 111 D, UA 141) this sensor is used for defrosting)

Solenoid valve 1: Relay for Solenoid Valve 1

Defrost heater 1 to 4: Relay for Defrost Heater 1 to 4 (depending on controller type)

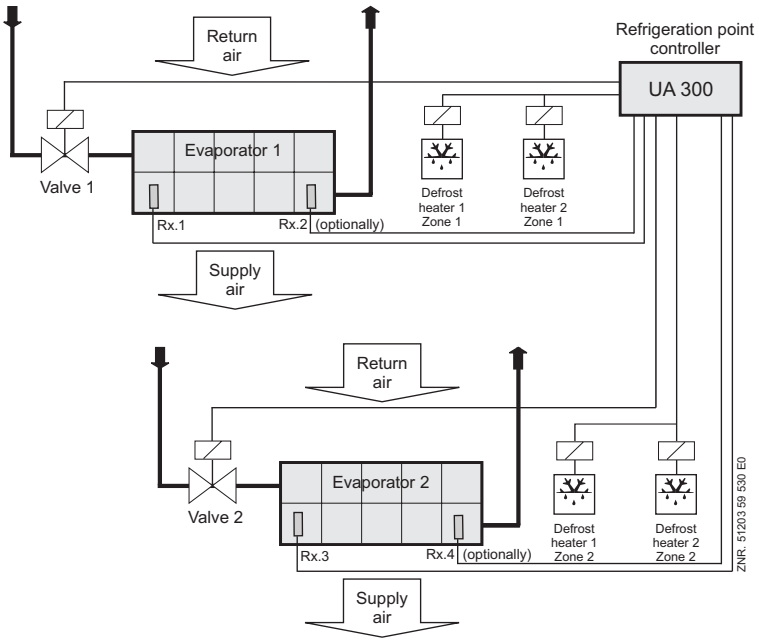
Allocation of sensors to defrost relays

Optional, non-connected sensors are not used for operation of the defrost relays.

Controller type	Required sensors	Allocated defrost relay
UA 111 / UA 111 D / UA 141	R2.1 R2.2 R2.3 R2.4 (R2.5 with UA 111 D only)	Abtaurelais 1
	--	Abtaurelais 2
UA 121	R1.1 R1.2 R1.3 R1.4	Defrost relay 1
	--	Defrost relay 2
UA 131 / UA 131 DD	R1.1	Defrost relay 1
	R1.2	Defrost relay 2
	R1.3	Defrost relay 3
	R1.4	Defrost relay 4
UR 141 NK(NT) / UR 141 TK(LT)	R1.1 R1.2	Defrost relay 1
	R1.3 R1.4	Defrost relay 2

Defrosting in two-zone operation

In two-zone operation, sensors Rx.1 act on Relay 1 and Rx.2 on Relay 2.



R1.y: Defrost sensor (with UA 121, UA 131, UR 141 NK/TK, UA 131 DD this sensor is used for defrosting)

R2.y: Supply air sensor with defrost function (UA 111, UA 111 D, UA 141)

Solenoid valve 1: Relay for Solenoid Valve Zone 1

Solenoid valve 2: Relay for Solenoid Valve Zone 2

Defrost heater 1 to 4: Relay for Defrost Heater 1 to 4 (depending on controller type)

Controller type	Required sensors	Allocated defrost relay
UA 111 / UA 141	R2.1 R2.2	Defrost relay 1
	R2.3 R2.4	Defrost relay 2
UA 121	R1.1 R1.2	Defrost relay 1
	R1.3 R1.4	Defrost relay 2
UA 131 / UA 131 DD	R1.1	Defrost relay 1
	R1.2	Defrost relay 2
	R1.3	Defrost relay 3
	R1.4	Defrost relay 4
UR 141 NK(NT) / UR 141 TK(LT)	R1.1 R1.2	Defrost relay 1
	R1.3 R1.4	Defrost relay 2

Defrost initiation

Defrosting can be initiated by four methods:

- By internal clock (not UA 131 DD)

Defrosting should be timed to take place between 0200 and 0300 hours where possible so as to avoid problems of missed or duplicated defrosting when changing to or from daylight saving time.

- By external timer (230 V Defrost input, terminals D11/D12)

External defrosting without master-slave mode:

The external defrost signal must be active for the maximum duration of defrosting. Accordingly the external defrost signal assumes the internal defrost function of Safe Defrost Time. Defrosting is however terminated regardless of the defrost signal being active when defrost termination temperature is exceeded on the defrost sensors.

External defrosting with master-slave mode:

The external defrost signal may only be applied only briefly, as in this instance it is only used to initiate defrosting. Maximum defrost duration is again governed by the internal Safe Defrost Time parameter (Menu 3-2). The defrost signal must always be shorter than the internal safe defrost time (minimum 10 sec, preferably not longer than 5 min). Cooling is always interrupted for the duration of the external defrost signal.

- By command signal via CAN bus (manual or higher-level control)
- By command from the VS 3000 Pack Controller via CAN bus (UA 131 DD, UR 141 TK(LT) only): In every instance, defrosting is not initiated unless the conditions for defrosting are found to be fulfilled. These are:
  - Evaporator temperature lower than defrost termination temperature
  - In demand defrosting, defrost counter set to 1
  - With defrost initiation by internal clock, a new defrost cycle cannot be initiated before the safe defrost time has expired regardless of defrosting being previously terminated by evaporator temperature.

With controller types UA 121, UA 131 and UR 141 TK(LT) defrosting will also be inhibited when the following conditions are all met:
1. Temperature alarm is active or alarm delay is set to 0 minutes.
2. Evaporator temperature R1.1 or R1.3 is higher than the defined return air setpoint.

Defrost termination

Defrosting can be terminated by three methods:

- By defrost termination temperature being obtained
- By completion of safe defrost time
- By command signal from the VS 3000 Pack Controller via CAN bus (UA 131 DD, UR 141 TK(LT) only)

Defrost termination by obtaining defrost termination temperature depends on the set controller types as described below:

UA 121

Every evaporator has an evaporator sensor.

Single-zone operation: One defrost relay switches the heaters of 1-4 evaporators.

Two-zone operation: Two defrost relays switch the heaters of 1-2 evaporators each for 2 zones.

UA 131, UA 131 DD

Defrosting is terminated separately for each evaporator by the temperature on the respective evaporator sensor. Defrosting is terminated via the evaporator sensor at least four minutes after the initiation of the defrosting. This applies for initiation via the external contact as well as for initiation via the CAN bus.

UR 141 NK (NT)

Defrosting is terminated separately for each evaporator according to the temperature on the respective evaporator sensor (when only one evaporator sensor is fitted) or on both evaporator sensors (when two are fitted). This means that as many as four evaporators can be connected to the controller with off-cycle defrosting.

UR 141 TK (LT)

Conditions are the same as for the UR 141 NK(NT). However, with defrosting by electric heater only two evaporators can be connected to the controller, because defrosting is controlled through only two defrost relays.

UA 111, UA 111 D, UA 141

Defrosting is terminated jointly for all evaporators when defrost termination temperature is obtained on each supply air sensor connected.

Defrosting is always terminated by the safe defrost time when defrost termination temperature is set to --. In this instance, no time defrost termination alarm is entered in the alarm log.

Demand defrosting (controller type UA 131, UA 131 DD, UR 141 TK(LT) only)

Demand defrosting means that a decision is made, depending on duration of a previous defrosting cycle, whether defrosting is actually initiated or skipped on becoming due.

A defrost counter is set to 6 at the commencement of defrosting and counts down as a function of the set counting rate until temperature on the evaporator sensor of the pilot case is in the range between -3 °C and +3 °C. Setting the counting rate to 0 deactivates demand defrosting. If the counting rate is set low, the demand defrost counter will count down faster to 1. This means that all defrost cycles are indeed initiated when due. If a higher counting rate is set, more defrost cycles will be **skipped** (maximum 5 cycles). If a hotgas defrost is carried out then the defrost counter for the demand defrost is reset.

Waiting time (controller type UA 121, UA 131, UR 141 NK(NT), UR 141 TK(LT) only)

A wait between the time cooling is stopped and the defrost heater is started can be set at the initiation of defrosting. This prevents simultaneous operation of the defrost heater while the evaporator is being pumped down.

Drain time (controller type UA 121, UA 131, UR 141 NK(NT), UR 141 TK(LT) only)

Restart of cooling following defrosting can be delayed by a definable drain time. Drain time does not commence until the last defrost relay de-energizes. This allows drip water to drain from the evaporator before cooling restarts.

Defrosting with two temperature zones

When two zones have been selected for control of cooling, each zone is treated separately for defrosting. Defrost start time is however the same for both zones.

Second defrost stage (controller type UR 141 NK(NT), UR 141 TK(LT) only)

The two defrost stages function can be used for example if a risk exists on a display case fitted with a drain water collecting pan of the pan outlet freezing up when single-stage defrosting is used. To activate a second defrost stage, the controller must be set to one zone by the Temperature Zones parameter (Menu 6-1).

This will then display the menu item for a second defrost stage (Menu 2-2-1). Defrosting is initiated by starting the first defrost stage. The second defrost stage is started when evaporator temperature (R1.1) rises above the setpoint for this stage.

Defrost termination is controlled by evaporator sensors R1.3 and R.1.4 for the second defrost stage and by evaporator sensors R1.1. and R1.2 for the first stage. The defrost termination temperature set for Zone 1 is used. The relay for the second defrost stage is the Zone 2 defrost relay.

Stock compartment on service counters

The relay “Invers defrost” (contacts 63 and 64, invers operation), which interrupts cooling of the stock compartments, is available when configuring case controllers UA 111, UA 111 D, UA 121 and UA 141. This relay is open when cooling is on and closed when defrosting is initiated.

Defrosting of the stock compartments extends for the full safe defrost time and therefore can run longer than defrosting in the 1st or 2nd temperature zone. The relay is not operated until the waiting time has expired.

Manual defrosting (not with UA 131 DD and UA 131 in master-slave mode)

Manual defrosting can be initiated (e.g. for servicing purposes) on either of the following units:

- AL 300 Operator Terminal
- CI 3000 Store Computer - Menu 5 Remote Operation - Select Refrigeration Point (CAN bus address) - 3 Clock - 2 Defrost Timer, set ON in the line Man. Defrost
- - Host computer

*When defrosting is initiated (by the controller or in LDSWin software) and is terminated or inhibited by the conditions for **demand defrosting** or **termination by defrost sensor** being fulfilled, the complete safe defrost time must have expired before manual defrosting can again be initiated.*

If manual defrosting is to be initiated again immediately following, the previous defrost cycle must first be terminated by either of the following:

***On controller:** Menu 5 Remote Operation - Select Refrigeration Point (CAN bus address) - 3 Clock - 2 Defrost Timer, set ”Man. Defrost” parameter (Menu 3-2) to OFF.*

***LDSWin:** Click on Terminate Defrosting button. Manual defrosting can then be initiated again immediately.*

3.2.2.1 Discharge gas defrosting (hot gas defrosting)

Discharge gas defrosting involves feeding discharge gas into the evaporator and can be performed with either hot or cold gas.

The discharge gas is supplied from a point upstream of the condenser (hot gas defrosting) or from the receiver downstream of the condenser (cold gas defrosting).

Discharge gas defrosting as described herein is D2D two-pipe discharge defrosting, which can be performed only with hot gas. Otherwise there is a risk of the compressors drawing in liquid refrigerant.

Notes on discharge gas defrosting (controller type UA 131 DD, UR 141 TK(LT))

These notes apply to two-pipe discharge gas defrosting. In doing so, the defrost relays are used for the actuation of special solenoid valves for the discharge gas defrosting. In discharge gas defrosting allowance is made for the specific properties of the discharge gas:

- Demand defrost counter ignored on initiation of defrosting
- No internal initiation of defrosting
- No interruption of defrosting in occurrence of temperature alarm

Discharge gas defrosting requires a pack controller in the system. Case controllers which participate in the hot-gas defrosting must be assigned to a pack controller using the parameter *Refr.Sys.No.*. The parameter *Refr.Sys.Type* must also be set for VS 3000 BS pack controllers. No further parameters have to be set here.

Activating discharge gas defrosting on UR 141 TK(LT):

Discharge gas defrosting is always active on the UR 141 TK(LT) and does not require any further parameter setting.

Termination of discharge gas defrosting on UA 131 DD:

Defrosting is terminated by the defrost termination temperature sensors at the earliest 4 minutes after defrost initiation.

Termination of discharge gas defrosting on UR 141 TK(LT):

Defrosting is terminated by the defrost termination temperature sensors without delay. If an internal defrost timer is set on the UA 141 TK(LT), it will be changed automatically to external defrosting by the pack controller the first time discharge gas defrosting is initiated. This prevents the case controller from automatically initiating defrosting.

Discharge gas defrosting cannot be used together with the master-slave function. With discharge gas defrosting the operation must be terminated when the CAN bus defrost command ends. With master-slave defrosting the operation would normally continue until the safe defrost time expires.

3.2.2.2 Brine defrosting

Defrosting with brine may be considered a special form of discharge gas defrosting (hotgas defrosting). The brine defrosting is initiated and ended via the CAN bus by the pack controller. A special feature of brine defrosting consists in synchronized operation of the cooling relay and defrost relay, meaning that the cooling relays remain open during defrosting.

Cooling relays and defrost relay are energized on initiation of brine defrosting. The display (Actual Values menu on controller or in LDSWin) shows cooling to be off, as the cooling relays then assume a defrost function and not a cooling function.

The defrost relays and cooling relays are de-energized separately by zones when defrost termination temperature is obtained on the defrost sensors. Cooling does not resume until defrosting is terminated by the pack controller via the CAN bus.

Demand defrosting is ignored when brine defrosting is initiated. Any waiting time set is disregarded on initiating brine defrosting. The defrost timer switches from INTERNAL to EXTERNAL when brine defrosting is initiated.

Fan control (as before)

UA111; UA121; UR41NK(NT); UA111D: Fans are switched to continuous running during brine defrosting.

UA141TK(LT); UA131DD: Fans are switched off during brine defrosting.

Coldroom controllers

UR141NK(NT)/ UR141TK(LT): Heating circuit and second defrost stage are controlled as before in single-zone operation. The second cooling relay remains off however during brine defrosting in single-zone operation and does not simulate the second defrost stage.

3.2.3 Master-slave mode for defrosting

With this function it is essential to ensure that simultaneous defrosting and cooling of the synchronized refrigeration points cannot take place due to faulty parameter setting.
This function requires supplementary external wiring. When connecting master and slave case controllers, make sure that power supply is connected with only one phase (e.g. only through L1)! See Section 5.5 - Wiring Master-Slave Function for Defrosting.

Description

The master-slave function is used for refrigerated cases where operation of more than 4 evaporators might result in mutual icing of the evaporators if no supplementary protective measures are taken (all controllers except UA 300 DD).

This problem is prevented by synchronization in master-slave mode. All cases are then defrosted simultaneously and return jointly to cooling mode. Synchronization is made through hardware wiring.

Operation

The internal defrost timer must be active on one of the two case controllers. This controller is then the master. The other case controller must be configured for external defrost initiation. This automatically makes it the slave controller.

Special features and constraints

All defrost relays are energized simultaneously at the commencement of defrosting. As defrosting proceeds, the evaporator defrost relays are de-energized separately and exclusively as a function of defrost termination temperature.

Return to cooling mode is not however made until defrosting is completed on all synchronized cases. Defrosting can be carried out on the master by inputting a signal to the defrost input.

All defrost options such as demand defrosting, defrosting via CAN and manual defrosting remain available on the master controller. The master-slave function can be activated by setting DIP switch 4 ON.

Configuration

The master-slave function is usable in every controller mode and can be activated by Coding Switch 4 (DIP Switch 3, Coding Switch 4 set ON, see Section 4 - Installation and Startup of UA 300). The controller must be restarted (switched off and on again) to make the change become effective. **Coding Switch 4 must be activated (ON) on both the master and the slave controller (DIP switch 3, Coding Switch 4 set ON).**

The set controller mode and activation of master-slave mode can be checked in the Type and Version menu 6-2-1. The following items must definitely be observed to ensure correct operation.

Faulty setting of coding switches and defrost timer (INT/EXT) can result in evaporator icing due to non-synchronized defrosting or failure of defrosting to take place!

Demand defrosting works only on the master case controller. Initiation of manual defrosting on the slave controller is not permitted.

Demand defrosting on the slave controller might result in the master defrosting while the slave is still in cooling mode.

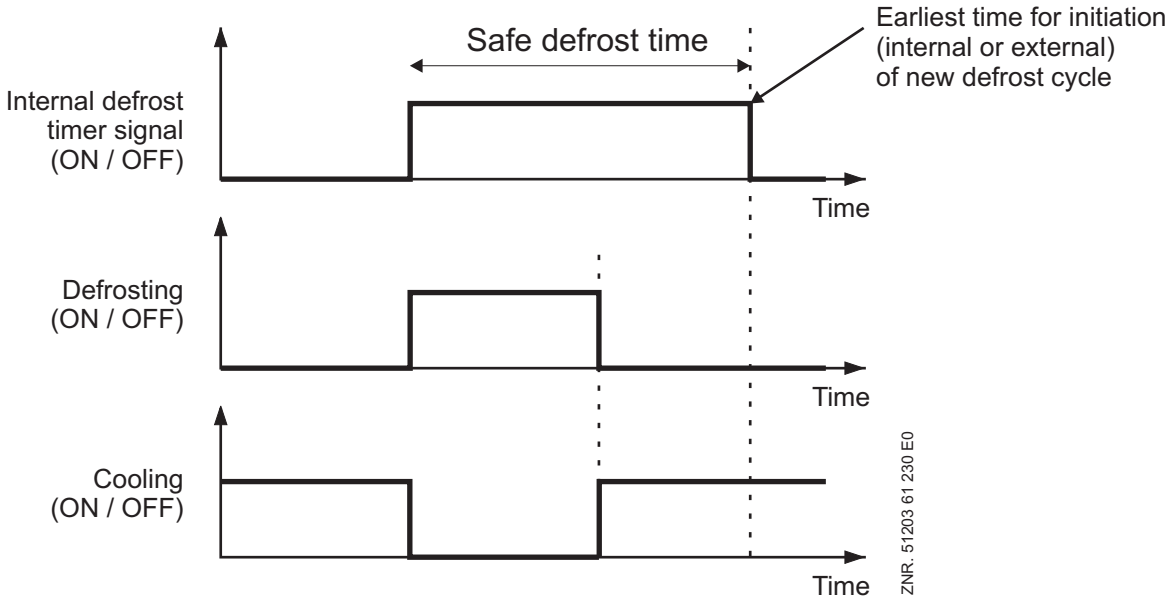
Manual defrosting cannot be initiated on the slave case controller.

Counting rate for demand defrosting must be set to zero (0) on the slave controller. Die Waiting time for commencement of defrosting must not be set to any other value but 0 on the slave, as otherwise defrosting on master and slave will not be synchronized.

The *No Defrost alarm* applies to master and slave. Demand defrosting on the master can lead to this fault report being generated erroneously on the slave, for example when monitoring time is set too low. Any drain time set will not commence until defosting has been fully completed and cooling resumes.

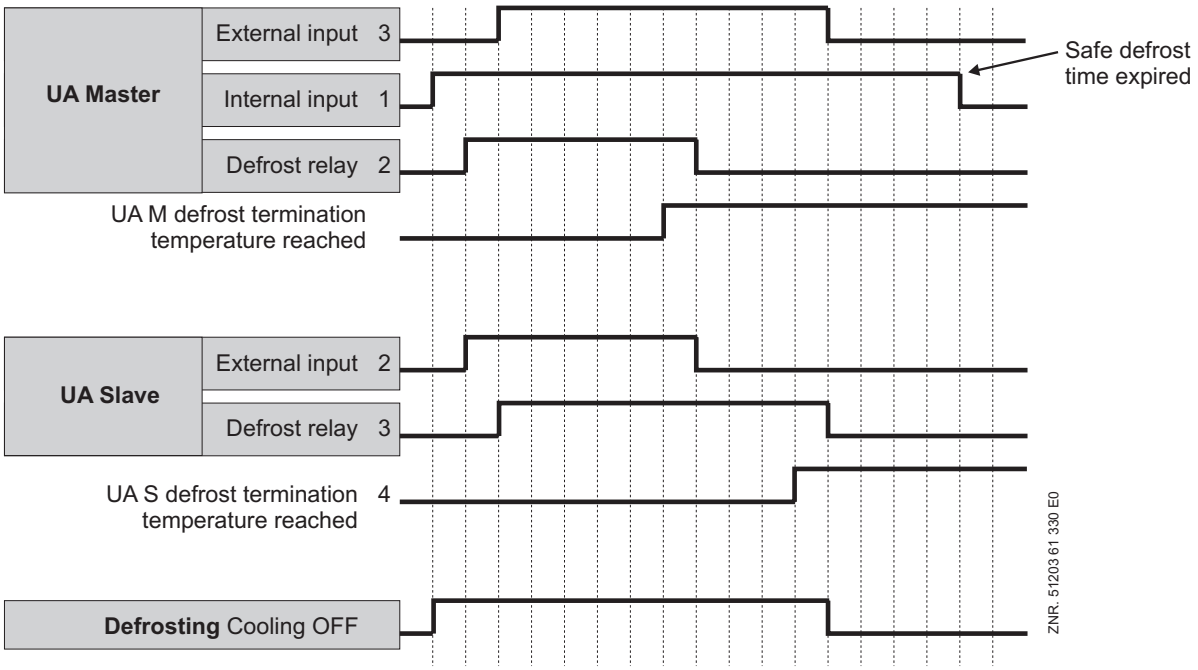
Safe defrost time on the slave must be exactly the same as on the master so that neither of the two case controllers will resume cooling before the other due to the safe defrost time having expired.

Once defrosting is started by the internal clock, no new defrost cycle can be initiated until the safe defrost time has expired even though the controller may have returned to cooling mode before then.



Defrosting example

Case controller UA M configured as master. Case controller UA S configured as slave. Synchronized master/ slave defrosting by internal defrost timer:



The numbers are used indicate logic interdependence of the signals.

Note the following for this example:

- The internal defrost signal is applied for the entire safe defrost time. Termination of defrosting is generally governed however by de-energizing of the last defrost relay.

Necessary settings for master-slave mode:

- Control hardware

  In order to activate master-slave mode, Coding Switch 4 of DIP switch 3 on the UA 300 must be set to ON. The change does not take effect until the controller is restarted (switched off and back on).

See Section 5.5 - Wiring of Master-Slave Function for Defrosting in this manual for details of UA 300 Master/UA 300 Slave wiring.

- Control software

  Activation of master-slave mode can be checked in Menu 6-2-1.

  Example: Synchronized defrost termination on one controller with two temperature zones.

  In operation with two temperature zones defrosting is terminated in each zone as a function of the respective defrost termination sensor and cooling is resumed immediately thereafter. If cooling is to be resumed simultaneously in both zones after defrosting, Coding Switch 4 of DIP Switch S3 must also be set ON for the master-slave function.

  Cooling will then not be resumed until defrosting is terminated in both zones. The defrost heater relay is still operated separately for each zone according to temperature on the defrost termination sensor. The constraints mentioned above for the master will then apply with internal defrosting and the constraints mentioned above for the slave will apply with external defrosting.

  In particular with manual and external initiation of defrosting, the duration of defrosting will not be controlled by the duration of the signal applied but in each instance by the set safe defrost time.

3.2.4 Fan control with case controllers

Fan control on multidecks (controller type UA 111, UA 121, UA 111D only)

The fan continues running during cooling and defrosting. With external toggling of setpoints from Set 1 to Set 1 - but not vice versa - the fans stop for a definable time. This is necessary to ensure troublefree closing of the night blind (e.g. on Light OFF). The fan relay is the normally closed (inverted) type:
- the relay contact (73/74) is open when the controller switches on the fan;
- the relay contact (73/74) is closed when the controller switches off the fan.

Fan control (only controller type UA 131)

The functions for the fan control are activated via the DIP switch S3 on the UA 300 circuit board. The terminal assignment, with the exception of the assignment of the 230 V relay outputs, is identical with the terminal assignment of the UA 131 (see chapter 4 Installation and Startup).

The fan relay operates inverted:
- when the controller turns on the fan, then the relay contact (73/74) is opened;
- when the controller turns off the fan then the relay contact (73/74) is closed.

When using the fan control **no** defrosting can be controlled via the relay 73/74.

Parameterisation of the fan control

The relevant parameters for the fan control are found in the operator menu of the case controller under menu item 2 setpoints - 6 fan and can be used for the normal setpoint or the alternative setpoint.

Functional characteristics

The fan relay is switched on throughout the cooling. At the start of a defrost the fan relay switches off. During the defrost the fan relay remains switched off. When the defrost is completed the fan relay switches back on in the event of an undershooting of the Fan start parameter on the evaporator.

During single-zone operation only the evaporator sensor R1.1 is required to undershoot the Fan start value in order for the fan relay to be switched on.

During two-zone operation both the evaporator sensors R1.1 **and** R1.3 must undershoot the Fan start value in order for the fan relay to be switched back on. If the evaporator sensor R1.3 is not attached then the fan relay will only be controlled via R1.1, even during two-zone operation.
In order for the fan to remain switched on during cooling and defrosting (continuous operation), the Fan start value must be set to ”--”.

Advanced fan control UA 131 LS (only controller type UA 131)

The advanced functions for the fan control are activated via the DIP switch S3 on the UA 300 circuit board. The terminal assignment, with the exception of the assignment of the 230 V relay outputs, is identical with the terminal assignment of the UA 131 (see chapter 4 Installation and Startup).

The fan relay operates inverted:
- when the controller turns on the fan, then the relay contact (15/16) is opened;
- when the controller turns off the fan then the relay contact (15/16) is closed.

When using the fan control no alarm can be signalled via the 230 V alarm relay. However an alarm can be signalled via the 24 V DC output 81/ 82/ 83.

Parameterisation of the fan control

The relevant parameters for the fan control are found in the operator menu of the case controller under menu item 2 setpoints - 6 fan and can be used for the normal setpoint or the alternative setpoint. The next step is to select the required operating mode for the fan control. This is carried out via the *OpMod.* parameter. The following four parameters for setting the operating modes are available:

- *CONTINUOUS* (continuous operation)
- *DEL.A.DEFR.* (delay after defrostg)
- *OVERRUN* (overrun)
- *FORERUN* (forerun)

For controlling the fan via the temperature at the evaporator sensors R1.1 und R1.3 the two parameters *Fan delay* and *Fan hightemp.* are used. These parameters are not effective in all operating modes.

Functional characteristics of the 4 operating modes

1. “Continuous operation” mode

In this operating mode the fan relay is permanently switched on. The two parameters *Fan delay* and *Fan hightemp.* are not effective in this operating mode.

2. “Delay after defrost” mode

In this operating mode the fan relay is permanently switched on during cooling. At the start of a defrosting the fan relay switches off. During the defrosting the fan relay remains switched off. When the defrosting is completed the fan relay on the evaporator switches back on in the event of an undershooting of the *Fan Delay* parameter.

During single-zone operation only the evaporator sensor R1.1 is required to undershoot the *Fan Delay* value in order for the fan relay to be switched on.

During two-zone operation both the evaporator sensors R1.1 **and** R1.3 must undershoot the *Fan Delay* value in order for the fan relay to be switched back on. If the evaporator sensor R1.3 is not attached then the fan relay will only be controlled via R1.1, even during two-zone operation.

During a possible parameterised Wait Time or Drip Time the fan relay is switched off.

The parameter *Fan hightemp.* is not effective in this operating mode.

3. “Overrun” operating mode

In this operating mode the fan relay is permanently switched on during cooling.

The fan relay initially remains switched on at the start of a defrosting. The fan relay switches off when *Fan high-temp.* parameter is exceeded on the evaporator. Once the defrosting is completed the fan relay switches back on with an undershoot of the *Fan Delay* parameter.

In single-zone operation only the evaporator sensor R1.1 is used for the fan control.

During two-zone operation both the evaporator sensors R1.1 **and** R1.3 are used for the fan control. If the evaporator sensor R1.3 is not attached then the fan relay will only be controlled via R1.1, even during two-zone operation.

During a possible parameterised Drip Time the fan relay doesn’t change its condition. During a possible parameterised Wait Time the parameter Fan hightemp is already evaluated.

4. ”Forerun” operating mode

In this operating mode the fan relay is permanently switched on during cooling.

At the start of a defrosting the fan relay switches off. The fan relay switches on when the parameter *Fan high-temp.* on the evaporator is exceeded. When the defrosting is completed, the fan relay switches back on under all circumstances.

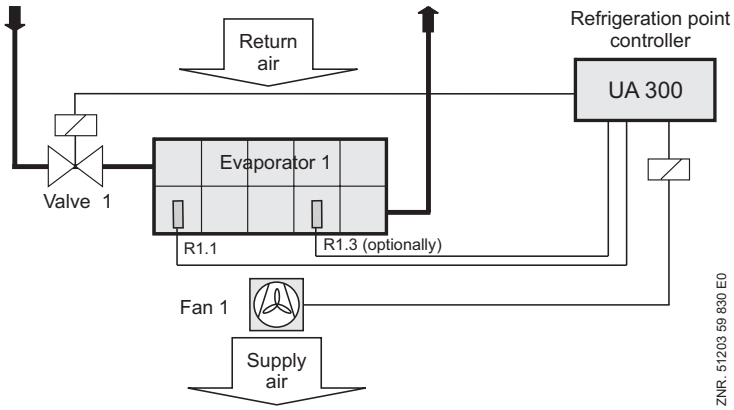
In single-zone operation only the evaporator sensor R1.1 is used for the fan control.

During two-zone operation both the evaporator sensors R1.1 **and** R1.3 are used for the fan control. If the evaporator sensor R1.3 is not attached then the fan relay will only be controlled via R1.1, even during two-zone operation.

During a possible parameterised Drip Time the fan relay doesn’t change its condition. During a possible parameterised Wait Time the parameter *Fan hightemp.* is already evaluated. The parameter Fan delay is not effective in this operating mode.

Fan control (controller type UA 131 DD)

Fan control works with the first defrost sensor of a zone and a relay.



R1.1: Evaporator sensor

R1.3: Evaporator sensor (optional in two-zone operation)

Fan 1: Fan control relay

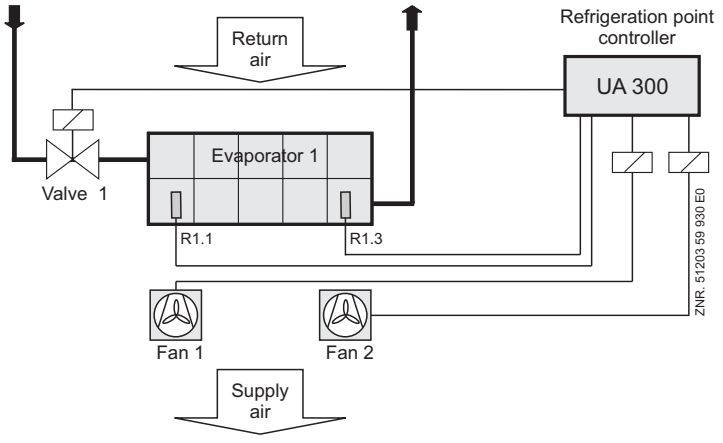
The fan continues running during cooling and is stopped during defrosting. With external toggling of setpoints from Set 1 to Set 2 - but not vice versa - the fans stop for a definable time. This is necessary to ensure trouble-free closing of the night blind (e.g. on Light OFF).

If a thermal fan delay has been set, the fan is initially not switched on after the defrosting in order not to blow any heat into the display case. The fan relay is the normally closed (inverted) type:
- the relay contact (15/16) is open when the controller switches on the fan;
- the relay contact (15/16) is closed when the controller switches off the fan.

3.2.5 Fan control with coldroom controllers

Fan control differs in single-zone operation and two-zone operation.

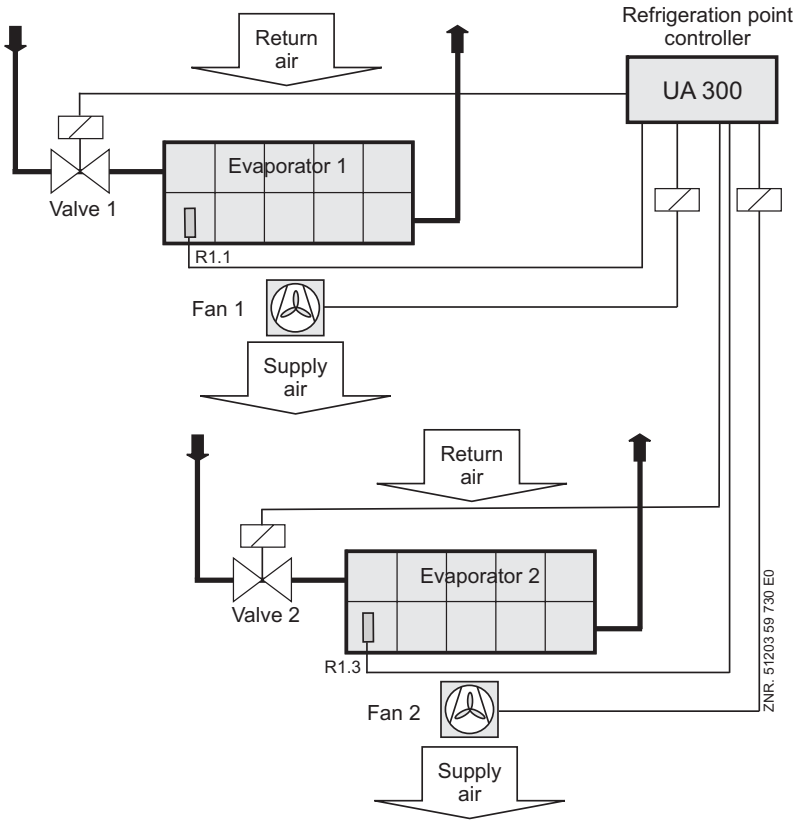
Single-zone operation



R1.1: Evaporator sensor
R1.3: Evaporator sensor (optional)
Fan 1: Fan control relay 1
Fan 2: Fan control relay 2 (optional)

Two-zone operation

In two-zone operation, evaporator sensor sensors R1.1 and R1.3 and the fan control relays each act separately on one zone.



R1.1:	Evaporator sensor
R1.3:	Evaporator sensor (optional)
Fan 1:	Fan control relay 1
Fan 2:	Fan control relay 2 (optional)

Coldroom with defrost heater (controller type UR 141 TK(LT) only)

Parameters for fan control on the UR 141 TK(LT) are as follows:

- Fan start delay, basic setting 0

- Thermal fan delay

The fan starts running when cooling is started. If cooling is stopped during cooling mode, e.g. due to exceeding the setpoint and deadband, the fan is also stopped (time-controlled fan delay set to 0).

If a thermal fan delay has been set, the fan is initially not switched on after the defrosting in order not to blow any heat into the refrigerated display cases. If the setpoint and hysteresis are exceeded on the coldroom air sensor during cooling mode and time-controlled fan delay is set greater than 0, only the fan will be started initially and cooling will not be started.

The purpose of this is to transfer any cold remaining in the evaporator to the coldroom and to remove any stratification of warm and cold air layers in the room. Cooling is not started until setpoint and hysteresis are still exceeded on the room air sensor following expiration of the time-controlled fan delay. The fan is stopped during defrosting.

If a waiting time has been defined, the fans that are running will not be stopped before initiating defrost until the set waiting time has expired. This allows the refrigerant remaining in the evaporator when the solenoid valves are closed to evaporate.

If a waiting time has been defined, the fans that are running will not be stopped before initiating defrost until the set waiting time has expired. This allows the refrigerant remaining in the evaporator when the solenoid valves are closed to evaporate.

Coldroom without defrost heater (controller type UR 141 NK (NT) only)

As a rule the fan continues running during cooling and defrosting. When the Overrun Time parameter is set greater than 0 and the Fan Overrun parameter is set other than to "--", the fan starts simultaneously with cooling and stops after a delay when cooling is stopped. The fan stop delay is dependent on two conditions, both of which must be satisfied:

- The set time-controlled fan delay must have expired.
- The set thermal fan delay t_{Fan} must be obtained or exceeded on the evaporator sensor.

Example 1: If the time delay is exceeded during cooling operation after switching off the cooling relay and the evaporator sensor < t_{Fan}, the fan continues to run until the evaporator sensor reaches the set temperature.

Example 2: If the evaporator sensor temperature is already greater than t_{Fan} during cooling operation after switching off the cooling relay and the delay time has not expired, the fan continues to run until expiry of the delay time.

The fan continues running during defrosting

Heating circuit (controller type UR 141 TK(LT) or NK(NT) only)

Fan control changes as follows: Zone 1 fan always starts together with the heater relay. If the temperature on R1.1 is higher than the fan delay temperature, the Zone 1 fan will stop with the heater relay. The starting conditions stated above apply equally to this condition, meaning that the fan will start when at least one of these conditions is satisfied. The fan relay is the normally open type.

3.2.6 Humidification (controller type UA 141 only)

A humidifier can be controlled as an alternative to the 2nd temperature zone. This requires that the 2nd temperature zone has not been selected. Only then can a setpoint be entered for humidifier on time. The humidifier will then be operated for the set time every time cooling is stopped. If cooling restarts before the set interval has expired, the humidifier will continue running for not more than 90 seconds.

3.2.7 Antisweat heaters

General

The frame and pane heaters are used to heat glass pane elements on refrigerated display cases so as to prevent them from fogging due to condensation of moisture from the ambient air. The UA 300 enables selection among three operating modes for these antisweat heaters:

- Fixed on time
- Setpoint-controlled on time (UA 131 only)
- Enthalpy-controlled on time

The operating mode wanted must first be selected. Additional parameters for the respective mode are described below.

Timing relay function for service counters (controller type UA 141 only)

A brief voltage pulse applied (e.g. by on-site pushbutton switch) to the 230V input for the frame heater causes the corresponding relay of the UA 300 Case Controller to energize and subsequently de-energize after completion of the set pane heater on time. The same 230V input is otherwise usable for manual shutdown, in which case the timing relay function will not be available.

Control by on time

As an alternative to the method described below for control as a function of cooling setpoints, the frame heater can be set to operate intermittently with an adjustable on time (0 to 100%). The full time interval is 10 minutes, meaning that the frame heater will be ON for 1 minute and OFF for 9 minutes when set to 10%.

Control as a function of cooling setpoint (controller type UA 131, UA 131 DD only)

As an alternative to the method described above for control by on time, the frame heater can be controlled as a function of working mode (supply air or return air mode) and the setpoint entered for the first temperature zone, as shown below:

- Return air mode
  Return air setpoint ≥ -18°C, heating 40% ON
  Return air setpoint > -20°C, heating 50% ON
  Return air setpoint < -20°C, heating 60% ON
- Supply air mode
  Supply air setpoint ≥ -32°C, heating 75% ON
  Supply air setpoint < -32°C, heating 95% ON

These percentage on rates mean that with a defined interval of 10 minutes the frame heater will be ON for 4, 5, 6, 7.5 or 9.5 minutes respectively. The frame heater is off during defrosting.

Operation of digital output for frame heater (UA 111, UA 111 D, UA 121, UA 131, UA 131 DD, UR 141 NK (NT), UR 141 TK (LT))

Operation is inverted. The digital output delivers a signal of 0 V when the frame heater is ON and 24 V when the frame heater is OFF.

Operation of pane heater relay (UA 141)

The relay is closed when the pane heater is ON and is open when the pane heater is OFF.

Enthalpy-controlled on time

This operating mode requires the pack controller installed in the store to be fitted with a humidity sensor and temperature sensor for the ambient room air. The case controller then continuously determines the optimum heater on time from these two measurements. Two parameters are used, emergency on time and offset for enthalpy-controlled frame heater.

The value entered for the Enthalp. Offs. parameter (Menu 2-5-2) is added to the on time calculated by the case controller as a function of room air humidity and temperature. The default setting of zero should be retained initially. If problems are observed, for instance fogging of glass pane elements, the setting can then be adjusted upwards to obtain a higher heating capacity.

If reception of ambient humidity and temperature signals from the pack controller is interrupted, the case controller will use the emergency on time setting (0-100%) as the on time.

Notes and limitations when using enthalpy-controlled heater

A minimum of one pack controlled fitted with ambient air humidity and temperature sensors must be installed in the store. If more than one pack controller is fitted with these sensors, the case controller will select one pack controller at new start/restart and then work only with the values transmitted by that pack controller.

We recommend equipping only one pack controller in the store with ambient air humidity and temperature sensor. These sensors should be mounted at locations that will ensure the humidity and temperature measurements supplied are as representative as possible for all refrigeration points in the store.

Troublefree operation is not ensured if only a temperature sensor or a humidity sensor is connected to a pack controller. The two sensors must always be connected as a pair to the same pack controller.

Failure of pack controller/CAN bus when using enthalpy-controlled heater

If the case controller does not receive ambient air temperature and humidity signals from the pack controller over a period of 10 minutes, it will automatically switch to the set emergency on time.

Timing relay function for service counters (controller type UA 141)

The timing relay function can be activated via digital Input 1 (terminals D11 and D12). This requires digital Input 3 to be set as PANE ACTU. for the switch on/off function to be available.

A brief voltage pulse applied (e.g. by on-site pushbutton switch) to the 230V input for the frame heater causes the corresponding relay of the UA 300 Case Controller to energize and subsequently de-energize after completion of the set pane heater on time.

This function is available on the UA 141 supplementary to the fixed on time or enthalpy-controlled on time functions. To ensure compatibility with earlier software versions, a fixed on time of 0% is set on the UA 141 at first start, meaning that the pane heater is then controlled exclusively by the timing relay function.

On time interval

The full time interval for the frame and pane heater is 10 minutes, meaning that the frame heater will be ON for 1 minute and OFF for 9 minutes when set to 10%.

Defrosting

The frame heater is off during defrosting. With the UA 131 the frame heater is always switched off during defrosting. The frame heater is switched off according to the status of the first defrost zone. With other controller types, not the UA 131, the frame heater is not switched off during defrosting.

3.2.8 Automatic on/off control

Controller type: UA 141 only

The counter can be switched on and off by a brief voltage pulse (on-site pushbutton switch) at the 230V counter shutdown input. As with manual shutdown, all controlled functions are switched off. Additionally, electrical loads on the counter that are not controlled, e.g. lighting, fans and frame heaters, can be switched on and off through an external relay at the digital output (terminals 91/92/93).

Counter shutdown can be activated via digital Input 2 (terminals D21 and D22). This requires digital Input 2 to be set as AUTO ACTU. for the switch on/off function to be available.

The controller and connected electrical components still carry live power!

Switch-on:

Up to 7 control times for automatic restarting of the counter can be set on an internal timer. The same 230V input is usable as an external input for setpoint toggling, in which case the on-off function will not be available. The counter is switched on either by a voltage pulse applied to digital Input 2 or by the control times. The digital output (terminals 91/92/93) is set to 24 V.

Parameters of the internal restart time are displayed and can be adjusted when setpoint toggle is set to "INT" or "---" (see Screen 3-3 in the UA 141 menu structure).

Switch-off:

As with manual shutdown, all controlled functions are switched off by the voltage pulse applied to digital Input 2 (terminals D21 und D22). The digital output (terminals 91/92/93) is set to 0 V.

3.2.9 Door contact

Controller type: UR 141 NK(NT) and UR 141 TK(LT) only

When working with coldrooms, a 230V input can be connected to the coldroom door contact. Cooling and the evaporator fan are then stopped when the coldroom door is opened. If either the high temperature alarm setpoint (coldroom air sensor) or the maximum door open time is exceeded, cooling and evaporator fan will be restarted before the door is closed.

High coldroom temperature also prevents shutdown. The same 230V input is usable for manual shutdown, in which case the door contact function will not be available. If the controller is operated with two temperature zones and only the first 230 V input (Door Contact 1) is configured for coldroom door monitoring, the door contact switch will stop cooling and evaporator fan for both zones.

Door Contact 1 can be activated via Digital Input 3 (terminals D31 and D32). This requires Digital Input 3 to be set as DOOR CONTACT (Menu 6-2-4) for the door contact to be available.

Door Contact 2 can be activated via Digital Input 2 (terminal D21/D22). This requires Input 3 to be set as DOOR CONTACT for the door contact to be available.

If the alarm delay is set to 0 minutes then the cooling and the evaporator fan are not switched off and the alarm is immediately discharged.

3.2.10 Manual shutdown

Applying a voltage to the 230V input for manual shutdown causes shutdown of all controlled functions (cooling, defrosting, etc.).

The controller and connected electrical components still carry live power!

All interfaces and control functions however remain active.

The same 230V input is usable on controller type UA 141 or UR 141 NK (NT)/TK (LT) as the input for pane heater or door contact, in which case the manual shutdown function will not be available. Manual shutdown can be activated via digital Input 3 (terminals D31 und D32). This requires digital Input 3 to be set as MAN SHUTDOWN (Menu 6-2-4) for the manual shutdown function to be available.

3.2.11 Emergency power operation

Function (from version V2.50)

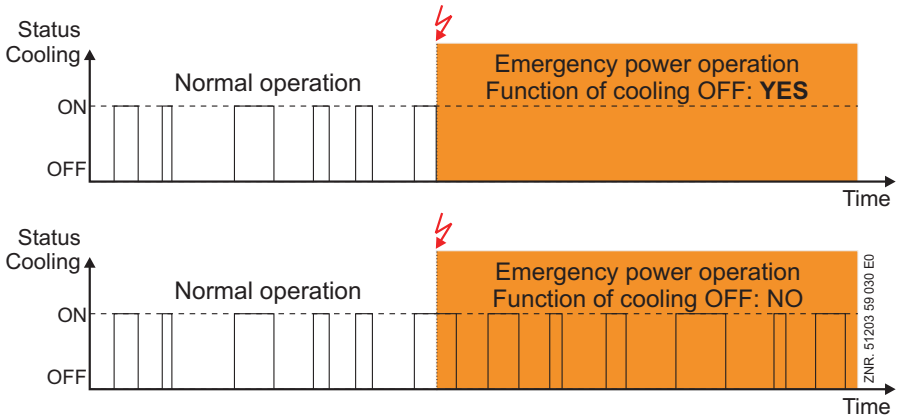
The aim of the emergency power operation is, in the event of an interruption in the power supply, to provide intelligent support for the emergency power supplied via an emergency generating unit. The LDS components are designed to prevent unnecessary power consumption which could endanger the emergency power supply.

If the allocated pack controller detects an interruption in the power supply then this is transmitted to the case controllers via the CAN bus. In combination with the emergency power operation functions, the case controllers can block control functions as required. This serves to reduce the load on the emergency generating unit.

Activation of emergency power operation

The participation of the case controllers in the emergency power operation can be set individually. To do this it is necessary to specify the allocated pack controller via menu item 6-1 on the case controller. This pack controller must support emergency power operation and be parameterised accordingly in order for it to dispatch an emergency power message (see the patch controller handbook).

The behaviour of the case controller for the cooling, the defrosting and the fan under emergency power operation can be set via menu item 6-6 using the parameters *Cool.funct.OFF, Defr.funct.OFF* and *Fan funct. OFF.* If, for example, the case controller is required to switch off the cooling on receiving an emergency power message, then the parameter *Cool.funct.OFF* must be set to Y (Yes). If this parameter is set to N (No), then the case controller continues cooling even during emergency power operation.



Defr.funct.OFF und *Fan funct. OFF*

The parameters *Defr.funct.OFF* and *Fan funct. OFF* in principle function the same. They determine whether the defrosting or the fan is switched off during emergency power operation. If the controller is conducting a defrost at the start of emergency power operation then the defrost is immediately interrupted. If the defrost command comes during emergency power operation then the command is ignored.

Defrosts that are ignored or interrupted due to emergency power operation are not automatically repeated by the controller. If a defrost interruption occurs due to emergency power operation then the refrigeration capacity of the corresponding refrigeration points must be checked.

3.2.12 Temperature reading offset

An offset (parameter Offset, Menu 6-2-2) can be applied to temperature values as a means of compensating differences between readings on thermometers in the refrigerated display case and on the case controller. This offset has no effect on the controlled functions (cooling, defrosting, etc.).

3.2.13 Setpoint toggle (day/night operation)

Controller setpoints can be entered double as a standard value and an alternative value. Setpoint toggle allows changing between these two values. Setpoint toggling can be made in two ways:

- External: By applying a voltage to 230V digital Input 2 (terminals D21 and D22) by a switch or timer)
- Internal: By setting toggle times on the internal timer

UA 111, UA 111 D, UA 121:

The fan stops for an adjustable time (night blind close time). The fan restarts when toggling back from alternative to standard setpoints.

Night blind close time
As a rule, the night blind is closed on refrigerated multidecks when toggling setpoints. Some cases (new model series) require the fans to be stopped while the night blind is being closed to prevent it from being forced out of the case.

UA 141, UR 141 TK(LT), UR 141 NK(NT)

Setpoint toggle can be activated via digital Input 2 (terminals D21 and D22). This requires digital Input 2 to be set as SETP.TOGGLE (Menu 6-2-4) for external setpoint toggle to be available.

3.2.14 Refrigeration point disabling

The UA 300 provides the option of initiating refrigeration point disable via CAN bus for the pack controller (e.g. VS 3000). Cooling is interrupted as long as refrigeration point disabling is active.

3.2.15 Forced cooling

The UA 300 provides the option of initiating forced cooling via CAN bus for the pack controller (e.g. VS 3000). The UA 300 switches to continuous cooling as long as forced cooling is active. During a forced cooling the delay time for the low temperature alarm is reset in order to prevent a false alarm during the forced cooling operation.

3.3 Operating data archiving

3.3.1 Temperature recording

Temperature recording is provided only for systems that do not have higher-order temperature recording (e.g. by CI 3000 Store Computer). Temperatures measured on the return air/coldroom air sensors of both temperature zones and the status of alarm, cooling, defrosting, manual shutdown and coldroom door are recorded at intervals of 15 minutes and stored in ring buffer memory over a period of one year.

This data recording does not meet the requirements of EU Regulation 37/2005 on the monitoring of temperatures in means of transport, warehousing and storage of quick-frozen foodstuffs intended for human consumption.

Local temperature recording (UA 300 AC/AS/TC/TS)

Temperatures are recorded at 15 minute intervals and stored in the flash memory of the UA 300 AC/AS/TC/TS. The recorded data can be displayed on the local BT 300 x Operator Interface under Archive (Menu 5) or can be read out to a PC via the CI 320 port. PC readout requires a TTY converter (available as accessory).

Temperature recording on CI 3000 Store computer (UA 300 AC/AS/CC/CS)

The UA 300 records temperature at 15 minute intervals and transmits the data via CAN bus to the CI 3000 Store Computer for archiving.

3.3.2 Temperature recording to EU Regulation 37/2005

Temperature recording in compliance with EU Regulation 37/2005 on the monitoring of temperatures in means of transport, warehousing and storage of quick-frozen foodstuffs intended for human consumption requires the use of a separate temperature recorder, e.g. UA 300 L.

Earlier LDS System

When operating the UA 300 Case/Coldroom Controller in the earlier LDS System, communication takes place via the TTY interface.

Sending setpoints and actual values

The UA 300 supports the earlier LDS System's "short" and "long" protocol for data transmission. Attachment in the long telegram depends on the controller type selected. Setpoints and actual values not covered by the earlier system are not transmitted.

Setpoint adjustment

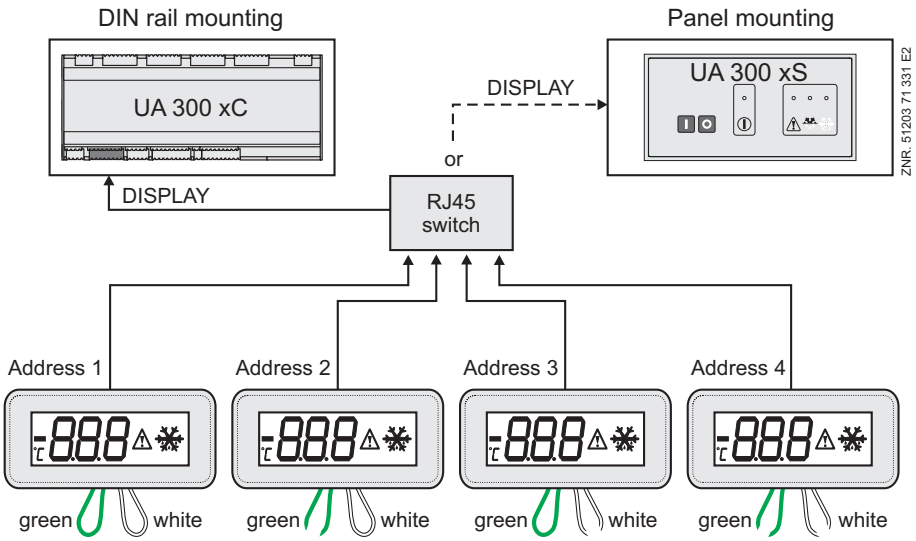
Setpoint adjustment of the earlier LDS System is not provided, as space is available in the telegrams for only a small part of the setpoints.

3.3.3 Recording of messages and alarms

In fault conditions, a maximum of 25 messages and alarms generated by the UA 300 is stored in a ring buffer with fault text, date/time of alarm start and date/time of alarm start end.

3.4 Connection of BT 30 Temperature Display

Using an RJ45 distributor, one to four BT 30 Temperature Displays can be connected to the UA 300 Case/Coldroom Controller via terminals Display 1 to 6:



The *Alarm symbol* parameter (Menu 6-2-2) can be used to show or hide indication of alarms by the alarmsymbol on the display of the BT 30. In addition to the temperature, the current cooling status is indicated by a symbol. During defrosting, the temperature reading is hidden and a defrost symbol is displayed.

The same applies during any waiting time that may be set. Temperature is re-displayed 15 minutes after defrosting terminates. Drain time has no effect on this delay of 15 minutes. The following temperatures of the UA 300 case/coldroom controller can be displayed on the BT 30:

Controller type	**Available temperature display on BT 30**			
	Address 1	**Address 2**	**Address 3**	**Address 4**
UA 121 / UA 131 / UA 131 DD / UR 141 NK(NT) UR 141 TK(LT)	R4.1	R4.2	R4.3	R4.4
UA 111 / UA 111 D / UA 141	R2.1	R2.2	R2.3	R2.4

Before connecting to the UA 300 Controller, all BT 30's must be addressed through the two exposed leads (see above):

Leads	**Konfiguration BT 30**			
	Address 1	**Address 2**	**Address 3**	**Address 4**
Green	Closed	Open	Closed	Closed
White	Closed	Closed	Closed	Closed

See the appropriate documentation for further details and connecting instructions of the BT 30.

Notice:

4 Installation and Startup of UA 300

4.1 Connection and safety notes

- This manual is an integral part of the equipment. It should be kept close to the equipment for ready reference whenever needed.
- For safety reasons, the equipment must not be used for any application other than described in the manual i.e. only for the intended purpose.
- Before using the equipment, always check that its limits are suitable for the intended application.
- Check that the electric power supply is correct for the equipment before connecting it to power.
- If required, a reverse voltage protection must be installed by the customer, e.g. by means of a coding of the plug.
- Specified ambient conditions (e.g. humidity and temperature limits) must be observed and complied with in order to avoid malfunctioning (see Section 9 - Specifications).
- Check correct wiring of the connections before switching on power to the equipment.
- Never operate the equipment without its casing. Before opening the casing the equipment must be switched to zero potential.

Beware of external voltage at the digital inputs and outputs!

- Contact the supplier in any malfunction or in case of doubt.
- Note and observe maximum load on relay contacts (see Section 9 - Specifications).
- Note that all leads running to and from the UA 300 - especially those of the CAN bus - must be shielded and installed sufficiently clear of other leads carrying live power. Doing so will avoid faulty measurements and will protect the equipment from external interference via the analog inputs.
  Parallel connection of RC elements is recommended for applications in an industrial environment.

For further details please refer to the manual titled Introduction, General Safety and Connection Notes.

1. In the interests of fire prevention, allowance should be made at the time of planning the system for a suitable shutdown device designed to operate in the event of excessive temperature on the defrost heater (high-temperature cutout).

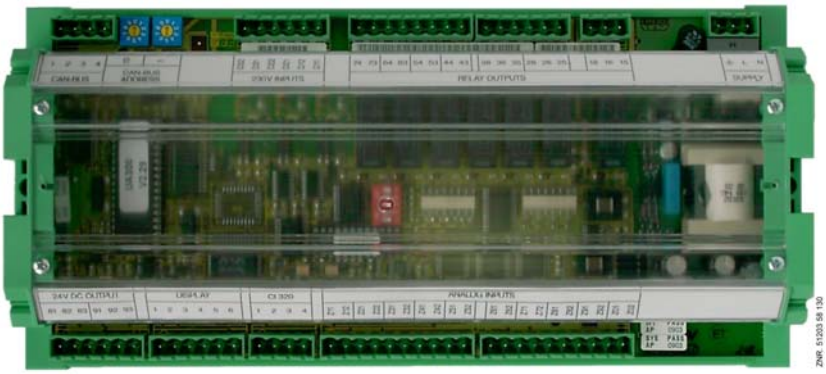
2. Experience shows that transmission of alarms is often not operational (telephone line not yet installed, etc.) at the time of commissioning the system. In such instances it is urgently recommended to monitor the controller with a CI 3000 Store Computer or AL 300 Operator Terminal via the CAN bus and allow transmission of alarms via a mobile telephone system using a GSM modem for example. In stand-alone operation or as an alternative to monitoring by Store Computer/Operator Terminal, an alarm contact provided on the controller can be used to transmit alarms via telephone line.

4.2 Installation

The UA 300 Case/Coldroom Controller is produced in two versions:

- UA 300 xC (C = ”In Cabinet”, DIN rail mounting)
- UA 300 xS (S = ”Switchbox”, control panel mounting)

4.2.1 UA 300 xC DIN rail mounting

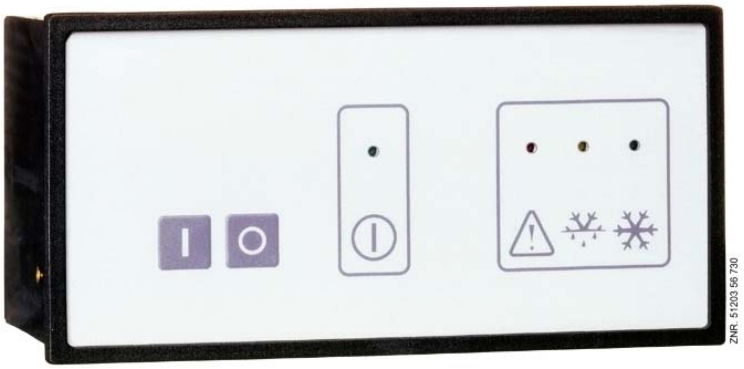


The controller fastens on the cap rail by two screw braces (one each on the underside of the two sides). Power loss is approx. 10 VA and must be allowed for in installation. The controller can be started on completing mechanical and electrical installation.

All leads running to and from the UA 300 - especially those of the CAN bus - must be shielded! No shielding is required on sensor leads when installed exclusively inside the refrigerated display case and when external interference (for example from parallel power wires) is not to be expected.

Electrical enclosure, measurements and panel cutout are described in Section 9 - Specification. Pin and terminal assignments are listed in Section 5.

4.2.2 UA 300 xS control panel mounting



The UA 300 xS is housed in a plastic casing designed for panel mounting. Power loss is approx. 10 VA. When installing, make sure to provide sufficient clearance between devices or cable ducts above and below the controller for proper removal of heat. The controller can be started on completing mechanical and electrical installation.

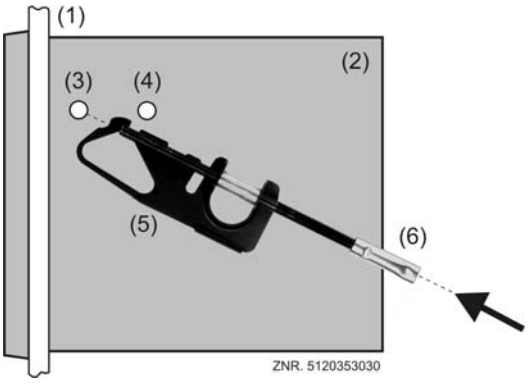
All leads running to and from the UA 300 - especially those of the CAN bus - must be shielded! No shielding is required on sensor leads when installed exclusively inside the refrigerated display case and when external interference (for example from parallel power wires) is not to be expected.

Electrical enclosure, measurements and panel cutout are described in Section 9 - Specifications. Pin and terminal assignments are listed in Section 5.

Attaching mounting braces and installation

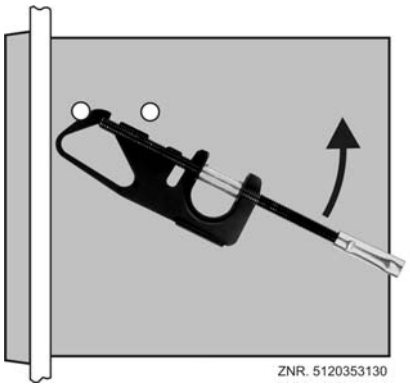
The two mounting braces enclosed with the UA 300 xS must be attached on the left and right sides of the casing for installation:

1. Push front of UA 300 xS (2) through cutout in control panel (1). Press fastening brace (5) on front support pin (3).

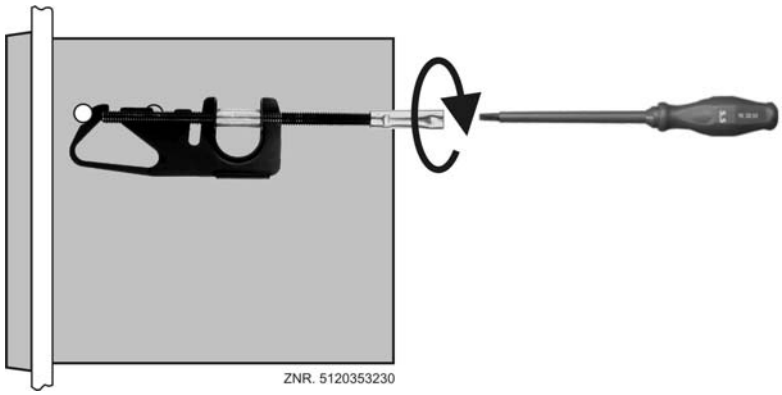


(1): Control panel with installation cutout (see Section 9 - Specifications)
(2): Casing of UA 300 xS
(3): Front support pin
(4): Rear support pin
(5): Fastening brace
(6): Fastening screw

2. Turn fastening brace (5) up on front support pin (3) and press slightly to snap on second support pin (4).



3. Using a screwdriver, tighten fastening screw (6) on control panel.Then make electrical connections on UA 300 xS (see section 5).



After completing installation and electrical connections, parameter settings must be made on the hardware and in the software of the controller.

4.3 Basic parameter settings

Proceed as follows to make the basic parameter settings are made in the hardware and software at the time the UA 300 Case/Coldroom Controller is commissioned:

- Setting of Node No. (Nd.nnn = 1to 99) or CAN bus address by decade switches **S1** and **S2** (UA 300 AC/AS/ CC/CS only). These switches are not fitted on stand-alone controllers (UA 300 TC/TS) and an address cannot be assigned.
- Setting of controller type by DIP switch S3 with Coding Switches 1 to 3.
- Setting of master-slave mode by DIP switch S3 with Coding Switch 4.
- First start (optional setting of default values to obtain a defined starting state for regular operation).
- Setting of basic parameters.

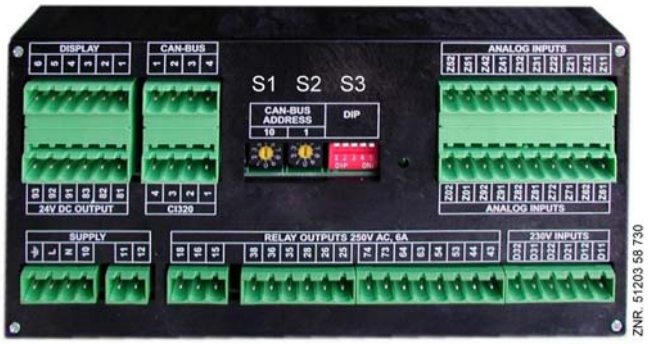
4.3.1 Setting the CAN bus address (UA 300 AC/AS/CC/CS)

The Node No. (Nd.nnn = 1 to 99) or CAN bus address is set by decade switches S1 und S2. Prior to startup, a unique Node No. (Nd.nnn = 1 to 99) or CAN bus address must first be set by the two decade switches (S1, S2) on all case controllers installed in refrigerated display cases. The CAN bus address will have been set by the manufacturer on controllers installed in the control panel, but can subsequently be changed.

So as to avoid confusion, it is recommended to choose the Item ID of the display case as its CAN bus address. When both decade switches are at zero (giving address 00), the CAN bus is inactive and the controller is not recognized as a CAN bus station. A different CAN bus address must be assigned to each refrigeration point and must be unique within the same system.

UA 300 xC

UA 300 xS



Decade switches S1 and S2 to set Node No. (Nd.nnn = 1 to 99) or
CAN bus address: (Kn.nnn = 1 .. 99)

S1: Tens of Node No. / CAN bus address
S2: Units of Node No.. / CAN bus address

S1 Tens	S2 Units	SetNd.nnn	Function
0	0	00	CAN-Bus interface inactive (disabled)
0	1..9	01..09	Case controller: Node No. and CAN bus address allocated
1..9	0..9	10..99	

Settings made on decade switches S1 and S2 do not become effective on the UA 300 until the controller is switched off briefly and back on!

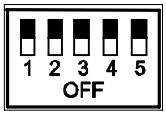
4.3.2 Setting the controller type and master-slave mode

Setting controller type

Selection can be made among seven controller types to define the basic control action to be performed. These are UA 111, UA 111 D, UA 121, UA 131, UA 141, UR 141 NK(NT) and UR 141 TK(LT). Each controller is identifiable by a six-digit Device No. stored in the EEPROM. The software version is identified by a Version No. stored in the EPROM (Menu 6-2-1).

Functions not required by the selected controller type are hidden. When changing the controller type, all parameters are restored to their basic settings. The controller type can be set by Coding Switches 1 to 3 of DIP Switch S3. Only part of the overall functions and parameters contained in the UA 300 are available when selecting a specific controller type.

Setting master-slave mode



Master-slave mode can be set by Coding Switch 4 of DIP Switch S3.

Set controller type or master-slave mode		DIP switchS3 Position of Coding Switch 1 to 5				
		1	2	3	4 1)	5
Case controller	UA 111	OFF	OFF	OFF	ON/OFF	OFF
	UA 111 D	OFF	ON	ON	ON/OFF	OFF
	UA 121	ON	OFF	OFF	ON/OFF	OFF
	UA 131 - without fan control UA 131 - with fan control (terminals 73/74)	OFF	ON	OFF	ON/OFF	OFF ON
	UA 131 LS - with advanced fan control (terminals 15/16/18)	ON	ON	ON	ON/OFF	ON
	UA 131 DD	ON	ON	ON	ON/OFF	OFF
	UA 141	ON	ON	OFF	ON/OFF	OFF
Coldroom controller	UR 141 NK (NT)	OFF	OFF	ON	ON/OFF	OFF
	UR 141 TK (LT)	ON	OFF	ON	ON/OFF	OFF

1) Master-slave mode selection switch

ON = Master-slave mode ON

OFF = Master-slave mode OFF

Settings made on DIP Switch S3 do not become effective on the UA 300 until the controller is briefly switched off and then back on!

4.3.3 First start - loading basic settings

First start (which replaces all parameters by the default values) can be performed as follows:

1. Select a different controller type.
2. Briefly switch controller off and back on.
3. Wait about 1 minute for controller to start up.
4. Set the required controller type (after first switching the controller off for safety reasons and then back on).
5. Again briefly switch the controller off and back on.

New start is also performed after exchanging the EPROM between the controller versions

UA 300 <-> UA 300 D <-> UA 300 E <-> UA 300 L.

EPROM replacement must be carried out only by trained personnel or at the manufacturer's works. Improper replacement of the EPROM can result in damage to the controller and impairment of controller functions.

Operation of the controller with a non-supported DIP switch setting is not allowed.

4.3.4 Setting basic parameters

The following items 1 to 4 are only necessary for operation via CAN bus. Proceed to item 5 if the controller is to be operated by a local Operator Interface (BT 300 x).

The menus in the following tables are only informal; some case controllers may have a different display. For further informations please see Section 7 Menu Structure.

1. Operation via the TTY interface requires a PC running the LDSWin software and an optionally available TTY adapter. Please refer to the LDSWin User Guide for details of operating the UA 300 via the TTY interface.
2. Cancel entry block (only controllers with CAN bus connection can be operated by the CI 3000 / AL 300):

   In the Main Menu

   - Choose 9 Parameter Setting - 3 Block.
   - Press the **ENTER** key **(** ↵ **)** to set the check mark **(** √ **)**. This cancels entry block, allowing settings to be made.
   - Press the **ESC** key twice to exit the screen and return to the Main Menu.

Entry block is automatically activated if no key is pressed for 10 minutes and when switching on the operator terminal (CI 3000 / AL 300).

3. In the main menu of CI 3000 Store Computer or AL 300 Operator Terminal:
   Choose **5 Remote Operation**.
4. Select case controller:
   In the selection list, select the UA 300 case controller to be set by its Node No. (Nd.nnn = 1 to 99), either by using the cursor or typing in direct. Press the ENTER key (↵) to confirm. This displays the main menu of the UA 300 case controller.

5. In the main menu of the UA 300 case controller:
First define the pack number and compressor pack:
Choose 6 Configuration - 1 Select Refrigeration Point

Various parameters can be entered and checked to define the refrigeration point to be controlled by the UA 300:

6 Configuration - 1 REFR. PT.	
REFR. PT. POS: XXXXX	
Refr. pt. name: XXXXXX	Check name of refrigeration point.
Item ID: XXXXX	Check Item ID of refrigeration point (can only be edited on Store Computer)
Priority: X	Alarm priority (0 to 99) ; see further notes in Section 8.1
Refr. Sys. No.: X	No. of compressor pack supplying refrigeration point (--, 1 to 9, important when several compressor packs are used)
Refr. Sys. Type XXX	Zone of compressor pack supplying refrigeration point (Z1/Z2, with VS 3000 BS only)
Temp. Zones X	Division of refrigeration point in one zone or two zones.
No. Sensor XX	Number of sensors. The number of sensors connected is scanned on exiting the parameter by pressing ENTER.

Alarms can be suppressed by setting Alarm Priority to 0.

6. Press the ESC key twice to exit Menu 1 Configuration.
Choose 3 Clock - 2 Defrost Timer. Enter the relevant parameters in the following screen.

3 Clock- 2 Defrost Timer	
DEFR. TIMER POS: XXX	
Defrost timer XXX	Select defrosting by external or internal defrost timer: INT: Internal defrost timer EXT: External defrost timer
Safe Defr Time XXm	Safe defrost time; defrost duration does not extend beyond this time
Defr. 1 TT-TT hh:mm	Enter defrost times --- / Mo, Tu, We, Th, Fr, Sa, Su, Mo-Su, Mo-Fr, Mo-Sa, Sa-Su
Defr. 2 TT-TT hh:mm	
...	
Defr. 14 TT-TT hh:mm	
Manual Defrost XXX	Manual defrosting ON/OFF

See the Menu Structure section for the respective controller for details of entering parameters.

7. Press the ESC key to exit **Menu 2 Defrost Timer**.

8. Choose Menu **3 Setpoint Toggle:**

   Enter the relevant parameters in the following screen.

3 Clock - 3 Toggle Setp.	
TOGGLE POS: XXX	
Status XXX	ONLY shown when setpoint toggle is set to INT or EXT
Toggle Setp. XXX	Select setpoint toggle as follows: INT: Internal EXT: External ---: Deactivated
Blind On Time Xs	Enter night blind close time for multidecks (shown only for UA 111, UA 111 D, UA 121)
Alt ON: DD-DD hh:mm	Enter time for setpoint toggle (ONLY shown when setpoint toggle is set to INT)
Alt OFF: DD-DD hh:mm	
Alt ON: DD-DD hh:mm	
Alt OFF: DD-DD hh:mm	

   See the Menu Structure section for the respective controller for details of entering parameters.

Night blind close time
As a rule, the night blind is closed on refrigerated multidecks when toggling setpoints. Some cases (new model series) require the fans to be stopped while the night blind is being closed to prevent it from being forced out of the case.

9. Press the **ESC** key twice to exit **Menu 3 Setpoint Toggle**.
10. Choose Menu 6 Configuration - 2 Controller

6 Configuration - 2 Controller	
CONTROLLER POS: XXX	
1 Typ and Version	Type, serial number and master-slave (ON/OFF)
2 Temp. Display	Matching of displayed temperature
3 Alarm Delay	Input alarm delay
4 230V Inputs	230 V Inputs
5 Sensor Type	Select temperature sensor type (L243, K277 or 5K3A1)

11. Choose **Menu 3 Alarm Delay**.

6 CKonfiguration - 2 Controller - 3 Alarm Delay		
ALARMDELAY	POS: XXX	
Sensor Fault	XXm	Alarm delay on sensor break
High/Low Temp.	XXXm	Alarm delay on high or low temperature
No Defrost	XXXh	Alarm is generated if defrosting does not take place within the set time
Selfholding	N	NO: Automatic reset of non-transient alarms YES: Alarms must be reset manually

See the Menu Structure section for the respective controller for details of entering parameters.

12. Press the **ESC** key twice to exit the menu.
13. Choose Menu **6 Configuration - 3 Cooling.**

6 Configuration - 3 Cooling		
COOLING	POS: XXX	
Min. On Time	XXm	Minimum time for which cooling relay remains on after rising above setpoint + hysteresis.
Min. Off Time	XXm	Minimum time for which cooling relay remains off after falling below setpoint + hysteresis.
Cont Cool Mon.	XXX	Time for forced interruption of cooling in continuous running.
Emergency Op.	X°C	Opening [in %] at which solenoid valve is actuated in failure of sensors important to control.

14. Press the **ESC** key repeatedly to return to the Main Menu of the CI 3000 Store Computer or AL 300 Operator Terminal.
15. In the Main Menu of the CI 3000 Store Computer / AL 300 Operator Terminal choose **7 Monitoring- 3 Configuration**.

7 Monitoring - 3 Configuration		
CONFIGURATION	Nd.nnn	Enter Node No.: Select the UA 300 controller to be configured by its Node No. (Nd.nnn = 1 to 99) or CAN bus address, using the cursor keys or by direct entry.
Name of component		Enter station name.
Item ID	XXXXX	Enter station name.
Priority	X	Enter Item ID of station in store.

16. Press the ESC key to exit the menu. This completes basic parameter setting on the UA 300 Case/Cold-room Controller.

4.4 Maintenance and battery replacement

The UA 300 xC or UA 300 xS controller contains a backup battery of Type CR 2450 N, 3V Lithium. The controller must be removed from the system to change the battery. During this time, control and monitoring of the refrigeration point is disabled. If the case/coldroom controller is connected via the CAN bus to a higher-level controller, it will no longer be on the CAN bus. In addition to the precautions directly concerning the refrigeration point, consideration must be given to the effects on higher-level controllers on the CAN bus.

When changing the battery, the safety rules contained in the **Safety and Connection Notes** section must be observed. All connectors may only be connected and disconnected when power is off. Circuit boards may only be exchanged when power is off. Always take hold of circuit boards at the edges.

ESD (Electrostatic Discharge) regulations must be observed (See **Introduction / Safety and Connection Notes section**).

Note when the controller is connected via CAN bus: Removal of the case controller from the CAN bus generates fault alarm on the higher-level controller (CI 3000 Store Computer or AL 300 Operator Terminal). Make sure the alarm is cancelled in due time or the Service Center is advised accordingly in advance.

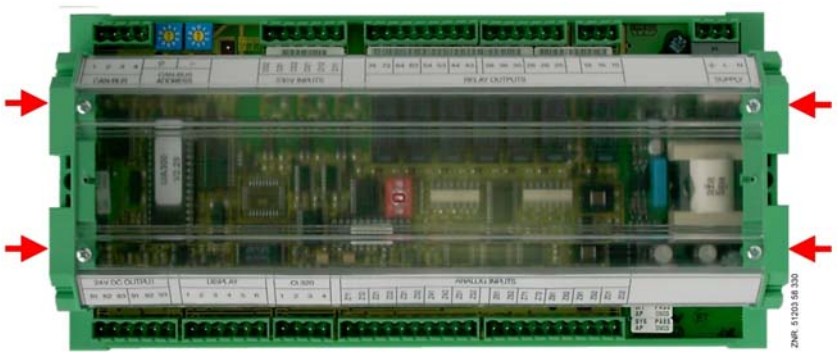
4.4.1 Replacing battery on UA 300 xC

1. Disconnect the case/coldroom controller or refrigeration point from power.
   Cancel alarm on CI 3000 Store Computer / AL 300 Operator Terminal.

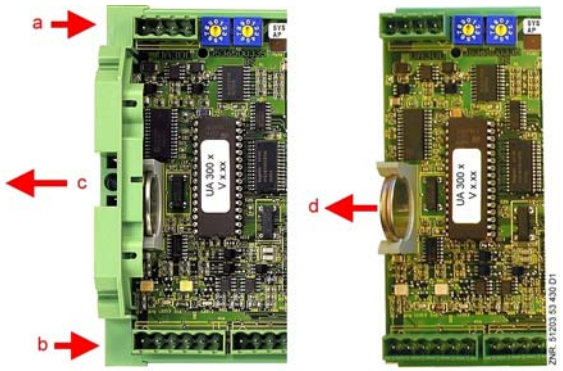
2. Remove connector, remove controller from its support if necessary.

Some connectors may carry 230 V AC power. Connectors should be marked before disconnecting.

3. Undo the four screws on the front panel and remove the plastic cover by pulling up



4. Undo two screws (a and b) on the lefthand side of the plastic casing.



5. Pull left end of casing (c) away to left.
6. Pull battery up out of its holder (d) and dispose of it in regulation manner.

- Do not grip the new battery with metal pliers, as this may cause it to be destroyed by short circuiting:
- Do not touch the contact surfaces on the edges.
- Wipe with a clean and dry cloth.

7. Grip the new battery with a cloth and press it into place in its holder.
8. Re-assemble in the reverse order. Re-connect all connectors.
9. Turn on power to the refrigeration point to restore it to operational condition.

Messages or fault messages that are output on restarting the UA 300 must be checked or cancelled on the CI 3000 Store Computer or AL 300 Operator Terminal!

10. **Controller in CAN bus system (UA 300 AC/AC/CC/CS):** Provided there is no change of configuration on the Store Computer, the controller is automatically re-detected via the CAN bus (check as necessary on the Store Computer or Alarm Terminal). Date, time and automatic daylight saving time change are set automatically by central time synchronization.
11. **Controller without CAN bus (UA 300 AC/AS/TC/TS):** Date, time and automatic daylight saving change must be entered for data archiving.

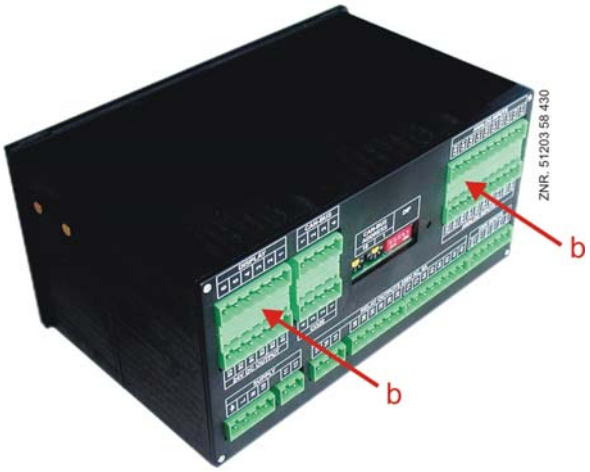
4.4.2 Replacing battery on UA 300 xS

1. Disconnect the case/coldroom controller or refrigeration point from power. Cancel alarm on CI 3000 Store Computer / AL 300 Operator Terminal.
2. Remove connector, remove controller from control panel (see Section 4.2.2 - UA 300 xS Panel Mounting for details).

Some connectors may carry 230 V AC power. Connectors should be marked before disconnecting.

3. Carefully remove plastic frame (a) and undo the four corner screws.

4. Push unit out about 5 cm at front by pressing lightly on the rear connector (b).



5. Pull battery (c) up out of its holder and dispose of it in regulation manner.

☞ Do not grip the new battery with metal pliers, as this may cause it to be destroyed by short circuiting: Wipe with a clean and dry cloth. Do not touch the contact surfaces on the edges.

6. Grip the new battery with a cloth and press it into place in its holder.
7. Re-assemble in the reverse order. Re-connect all connectors.
8. Turn on power to the refrigeration point to restore it to operational condition.

☞ Messages or fault messages that are output on restarting the UA 300 must be checked or cancelled on the CI 3000 Store Computer or AL 300 Operator Terminal!

9. **Controller in CAN bus system (UA 300 AC/AS/CC/CS):** Provided there is no change of configuration on the Store Computer, the controller is automatically re-detected via the CAN bus (check as necessary on the Store Computer or Alarm Terminal). Date, time and automatic daylight saving time change are set automatically by central time synchronization.
10. **Controller without CAN bus (UA 300 AC/AS/TC/TS):** Date, time and automatic daylight saving change must be entered for data archiving.

Notice:

5 Pin and Terminal Assignments of UA 300

Digital inputs 230 V AC

Controller Type	Digital Input 1	Digital Input 2	Digital Input 3
Terminal No.	**D11/D12**	**D21/D22**	**D31/D32**
UA 111, UA 111 D UA 121, UA 131 LS UA 131 LS, UA 131 DD	Defrost	Setpoint toggle	Manual shutdown
UA 141	Defrost	Setpoint toggle / Shutdown actuation	Manual shutdown / Pane actuation
UR 141 NK (NT) UR 141 TK (LT)	Defrost	Setpoint toggle / Coldroom door 2	Manual shutdown / Coldroom door 1

Sensors

Controller Types	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Sensor 5	Sensor 6	Sensor 7	Sensor 8	Sensor 9	Sensor 10
Terminal No.	**Z11/Z12**	**Z21/Z22**	**Z31/Z32**	**Z41/Z42**	**Z51/Z52**	**Z61/Z62**	**Z71/Z72**	**Z81/Z82**	**Z91/Z92**	**Z01/Z02**
Case controller										
UA 111	R2.1	R4.1	R2.2	R4.2	R2.3	R4.3	R2.4	R4.4	--	--
UA 111 D	R2.1	R4.1	R2.2	R4.2	R2.3	R4.3	R2.4	R4.4	R2.5	R4.5
UA 121	R2.1	R4.1	R1.1	R4.2	R1.2	R2.3	R4.3	R1.3	R4.4	R1.4
UA 131 /LS	R2.1	R4.1	R1.1	R4.2	R1.2	R2.3	R4.3	R1.3	R4.4	R1.4
UA 131 DD	R2.1	R4.1	R1.1	R4.2	R1.2	R2.3	R4.3	R1.3	R4.4	R1.4
UA 141	R2.1	R4.1	R2.2	R4.2	R2.3	R4.3	R2.4	R4.4	--	--
Coldroom controller										
UR 141 NK	--	R4.1	R1.1	R4.2	R1.2	--	R4.3	R1.3	R4.4	R1.4
UR 141 TK	--	R4.1	R1.1	R4.2	R1.2	--	R4.3	R1.3	R4.4	R1.4

Notes

Legend: Rx.y		
X =	1	Evaporator sensor (defrost sensor)
	2	Supply air sensor
	4	Return air sensor/Coldroom air sensor
	5	Evaporator inlet sensor
	6	Evaporator outlet sensor
Y = Case part	1..5	Case part 1..5

All leads running to and from the UA 300 - especially those of the CAN bus - must be shielded! No shielding is required on sensor leads when installed exclusively inside the refrigerated display case and when external interference (for example from parallel power wires) is not to be expected.

Relay outputs 230 V AC

Controller Type	Relay 1	Relay 2	Relay 3	Relay 4	Relay 5	Relay 6	Relay 7
Terminal No.	**15, 16, 18**	**25, 26, 28**	**35, 36, 38**	**43, 44**	**53, 54**	**63, 64**	**73, 74**
Case controller							
UA 111	Alarm	Cooling 1	Cooling 2	Defrost 1	Defrost 2	Inv. Defrost	Fan
UA 111 D	Alarm	Cooling 1	Cooling 2	Defrost 1	--	Inv. Defrost	Fan
UA 121	Alarm	Cooling 1	Cooling 2	Defrost 1	Defrost 2	Inv. Defrost	Fan
UA 131 Without fan control With fan control	 Alarm Alarm	 Cooling 1 Cooling 1	 Cooling 2 Cooling 2	 Defrost 1 Defrost 1	 Defrost 2 Defrost 2	 Defrost 3 Defrost 3	 Defrost 4 Fan
UA 131 LS with advanced fan control	Fan	Cooling 1	Cooling 2	Defrost 1	Defrost 2	Defrost 3	Defrost 4
UA 131 DD	Fan	Cooling 1	Cooling 2	Defrost 1	Defrost 2	Defrost 3	Defrost 4
UA 141	Alarm	Cooling 1	Cooling 2/ Humidifier	Defrost 1	Defrost 2	Inv. Defrost	Pane Heater
Coldroom controller							
UR 141 NK (NT)	Alarm	Cooling 1	Cooling 2	Defrost 1	Defrost 2	Fan 1	Fan 2
UR 141 TK (LT)	Alarm	Cooling 1	Cooling 2	Defrost 1	Defrost 2	Fan 1	Fan 2

Digital outputs 24 V DC

Controller Type	Output 1	Output 2
Terminal No.	**81, 82, 83**	**91, 92, 93**
UA 111, UA 111 D UA 121, UA 131, UA 131 LS UA 131 DD, UA 141 UR 141 NK (NT), UR 141 TK (LT)	External alarm unit U41/2	External alarm unit U41/2

Power supply

Controller Type	Power supply	Protective earth
Terminal No.	**N, L**	⏚
All controllers	230 V AC	PE

Relay operation

The following table indicates operation of the digital outputs for the separate controller types.

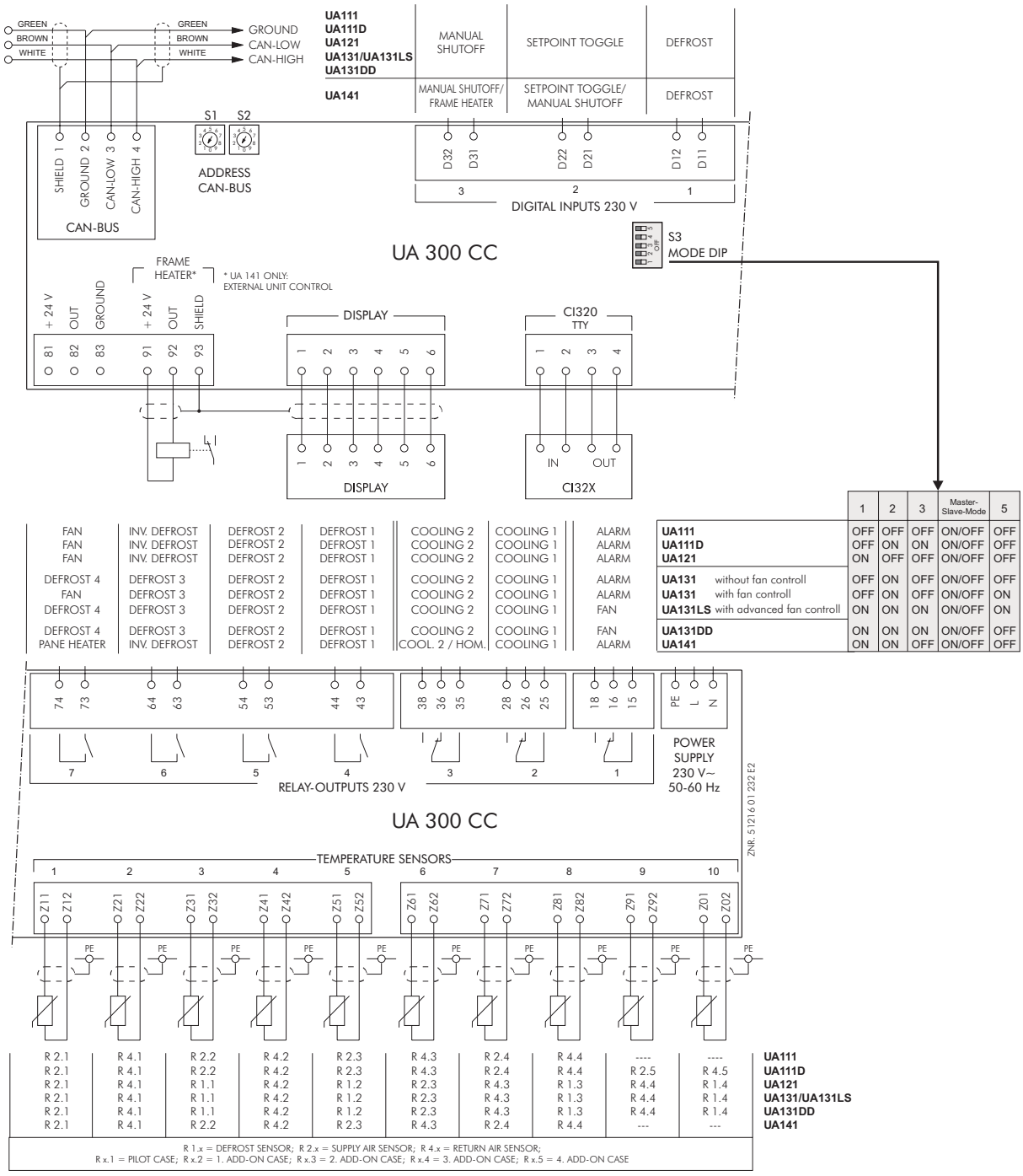
Controller Type	Cooling	Defrost	Fan	Alarm	Frame/Pane Heater	Shutdown Relay
UA 111	Positive	Positive	Positive	Positive	Positive	--
UA 111 D	Positive	Positive	Positive	Positive	Positive	--
UA 121	Inverted	Positive	Positive	Positive	Positive	--
UA 131	Positive	Positive	--	Positive	Positive	--
UA 131 DD	Positive	Positive	Positive	--	Positive	--
UA 141	Positive	Positive	--	Positive	Positive (73/ 74)	Positive
UR 141 NK (NT)	Positive	Positive	Positive	Positive	Positive	--
UR 141 TK (LT)	Positive	Positive	Positive	Positive	Positive	--

Positive means that operation of the relay is not inverted:
The relay is energized when the controller activates the function output (e.g. Cooling = ON).
(This means that the contact of a normally open relay is closed.)
The relay is not energized when the controller deactivates the function output (e.g. Cooling = OFF).
(This means that the contact of a normally open relay is open.)

Inverted means that operation of the relay is inverted:
The relay is not energized when the controller activates the function output (e.g. Alarm = ON).
(This means that the contact of a normally open relay is open.)
The relay is energized when the controller deactivates the function output (e.g. Alarm = OFF).
(This means that the contact of a normally open relay is closed.)

5.1 UA 300 xC as case controller

Controller type: UA 111, UA 111 D, UA 121, UA 131, UA 131 LS, UA 131 DD, UA 141
Pin assignments valid for UA 300 AC/CC/TC



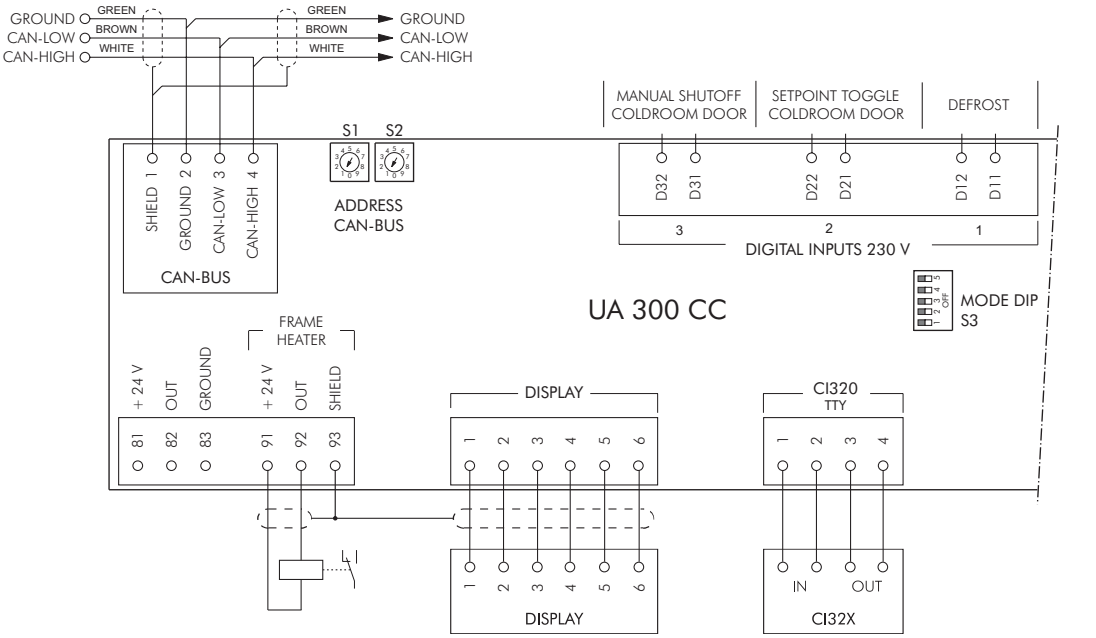
	1	2	3	Master-Slave-Mode	5
UA111	OFF	OFF	OFF	ON/OFF	OFF
UA111D	OFF	ON	ON	ON/OFF	OFF
UA121	ON	OFF	OFF	ON/OFF	OFF
UA131 without fan controll	OFF	ON	OFF	ON/OFF	OFF
UA131 with fan controll	OFF	ON	OFF	ON/OFF	ON
UA131LS with advanced fan controll	ON	ON	ON	ON/OFF	ON
UA131DD	ON	ON	ON	ON/OFF	OFF
UA141	ON	ON	OFF	ON/OFF	OFF

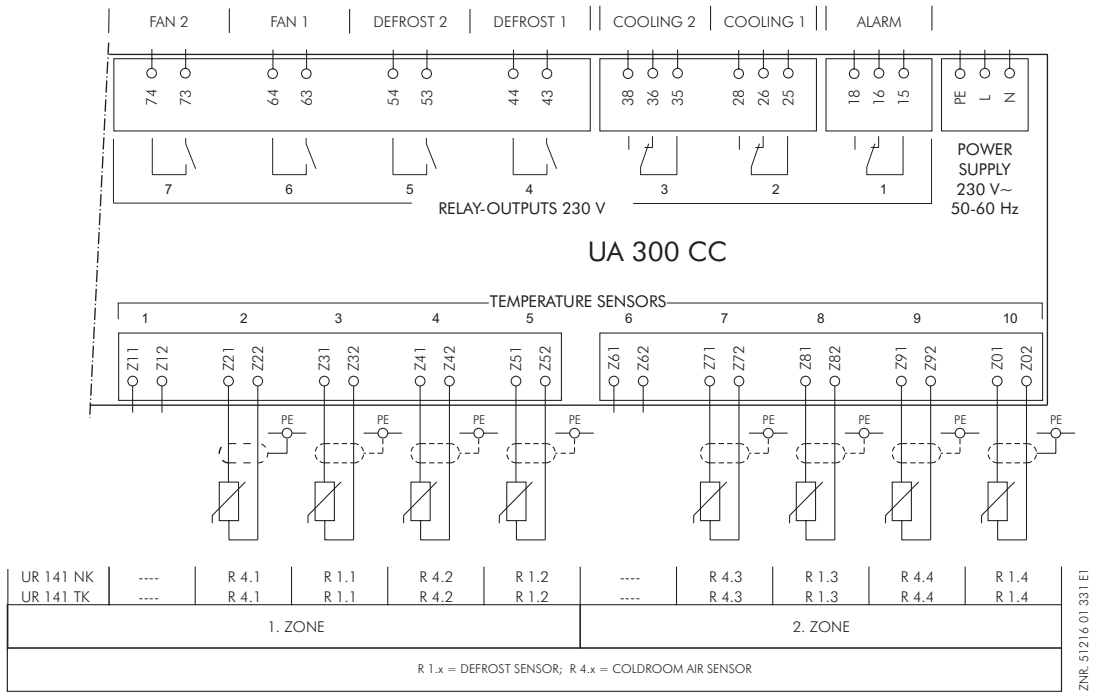
R 2.1	R 4.1	R 2.2	R 4.2	R 2.3	R 4.3	R 2.4	R 4.4	----	----	**UA111**
R 2.1	R 4.1	R 2.2	R 4.2	R 2.3	R 4.3	R 2.4	R 4.4	R 2.5	R 4.5	**UA111D**
R 2.1	R 4.1	R 1.1	R 4.2	R 1.2	R 2.3	R 4.3	R 1.3	R 4.4	R 1.4	**UA121**
R 2.1	R 4.1	R 1.1	R 4.2	R 1.2	R 2.3	R 4.3	R 1.3	R 4.4	R 1.4	**UA131/UA131LS**
R 2.1	R 4.1	R 1.1	R 4.2	R 1.2	R 2.3	R 4.3	R 1.3	R 4.4	R 1.4	**UA131DD**
R 2.1	R 4.1	R 2.2	R 4.2	R 2.3	R 4.3	R 2.4	R 4.4	---	---	**UA141**

R 1.x = DEFROST SENSOR; R 2.x = SUPPLY AIR SENSOR; R 4.x = RETURN AIR SENSOR;
R x.1 = PILOT CASE; R x.2 = 1. ADD-ON CASE; R x.3 = 2. ADD-ON CASE; R x.4 = 3. ADD-ON CASE; R x.5 = 4. ADD-ON CASE

5.2 UA 300 xC as coldroom controller

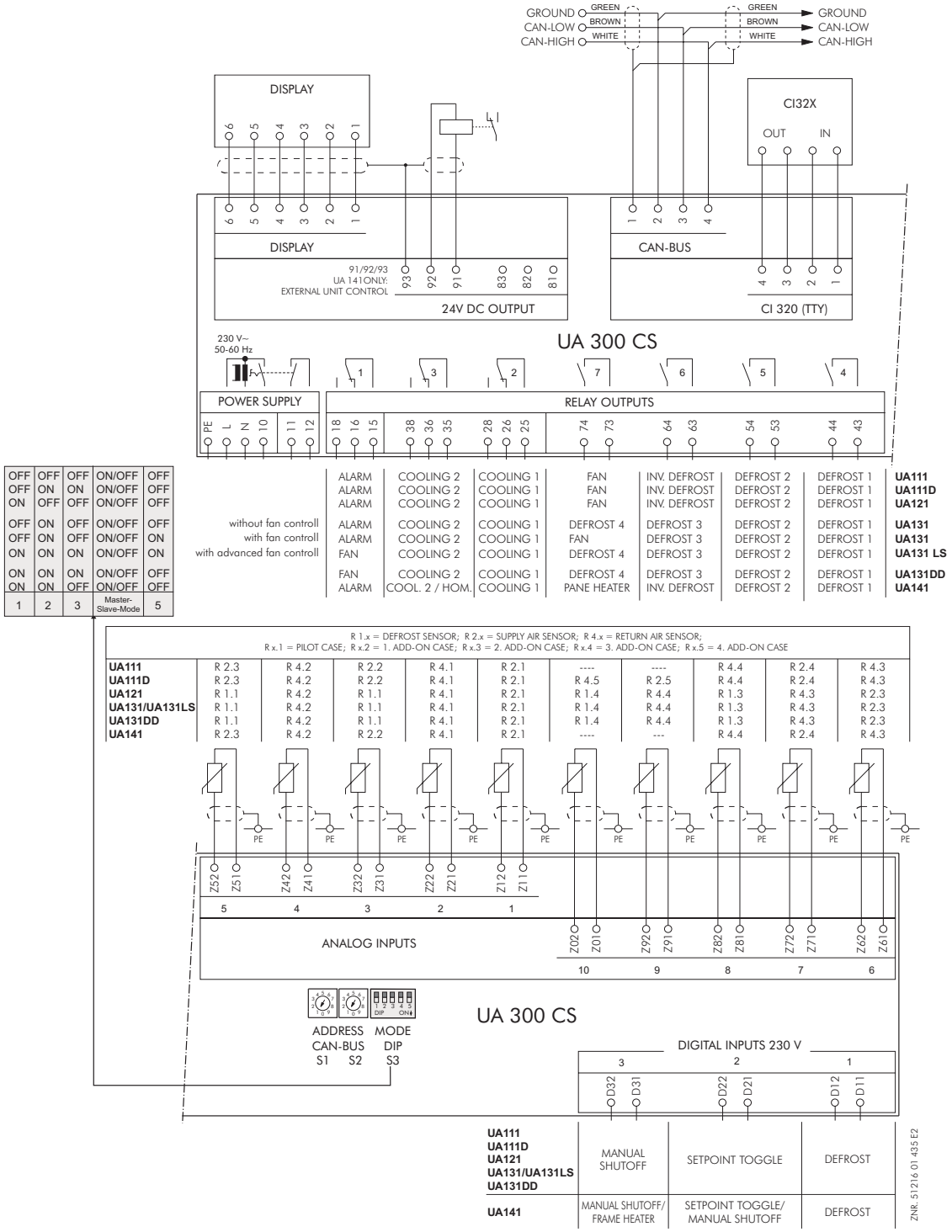
Controller type: UR 141 NK, UR 141 TK
Pin assignments valid for UA 300 AC/CC/TC





5.3 UA 300 xS as case controller

Controller types: Reglertypen UA 111, UA 111 D, UA 121, UA 131, UA 131 LS, UA 131 DD, UA 141
Pin assignments valid for UA 300 AS/CS/TS



OFF	OFF	OFF	ON/OFF	OFF
OFF	ON	ON	ON/OFF	OFF
ON	OFF	OFF	ON/OFF	OFF
OFF	ON	OFF	ON/OFF	OFF
OFF	ON	OFF	ON/OFF	ON
ON	ON	ON	ON/OFF	ON
ON	ON	ON	ON/OFF	OFF
ON	ON	OFF	ON/OFF	OFF
1	2	3	Master-Slave-Mode	5

ALARM	COOLING 2	COOLING 1	FAN	INV. DEFROST	DEFROST 2	DEFROST 1	**UA111**
ALARM	COOLING 2	COOLING 1	FAN	INV. DEFROST	DEFROST 2	DEFROST 1	**UA111D**
ALARM	COOLING 2	COOLING 1	FAN	INV. DEFROST	DEFROST 2	DEFROST 1	**UA121**
ALARM	COOLING 2	COOLING 1	DEFROST 4	DEFROST 3	DEFROST 2	DEFROST 1	**UA131**
ALARM	COOLING 2	COOLING 1	FAN	DEFROST 3	DEFROST 2	DEFROST 1	**UA131**
FAN	COOLING 2	COOLING 1	DEFROST 4	DEFROST 3	DEFROST 2	DEFROST 1	**UA131 LS**
FAN	COOLING 2	COOLING 1	DEFROST 4	DEFROST 3	DEFROST 2	DEFROST 1	**UA131DD**
ALARM	COOL. 2 / HOM.	COOLING 1	PANE HEATER	INV. DEFROST	DEFROST 2	DEFROST 1	**UA141**

without fan controll
with fan controll
with advanced fan controll

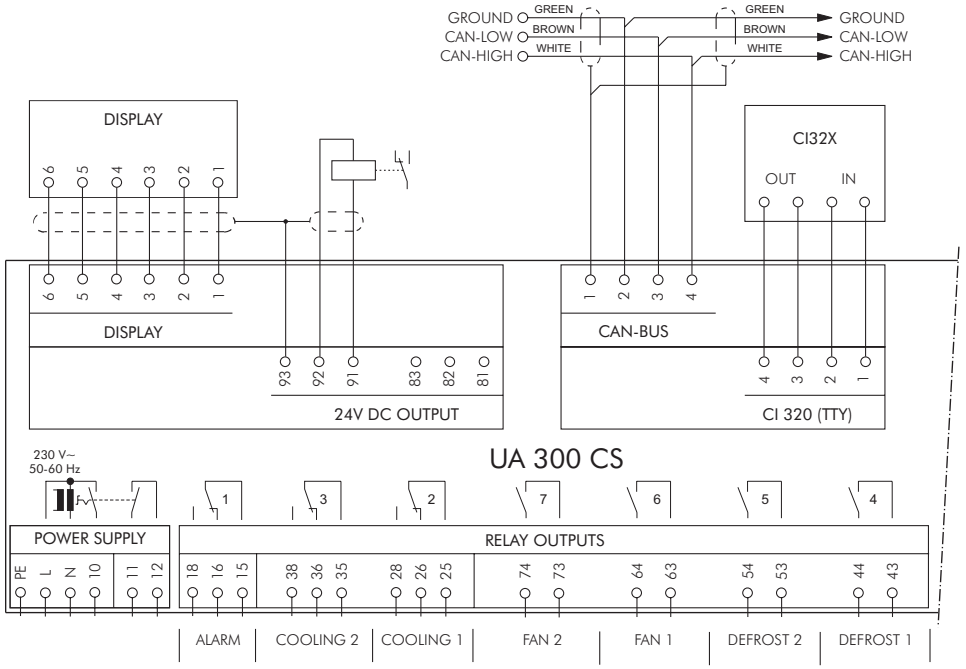
R 1.x = DEFROST SENSOR; R 2.x = SUPPLY AIR SENSOR; R 4.x = RETURN AIR SENSOR;
R x.1 = PILOT CASE; R x.2 = 1. ADD-ON CASE; R x.3 = 2. ADD-ON CASE; R x.4 = 3. ADD-ON CASE; R x.5 = 4. ADD-ON CASE

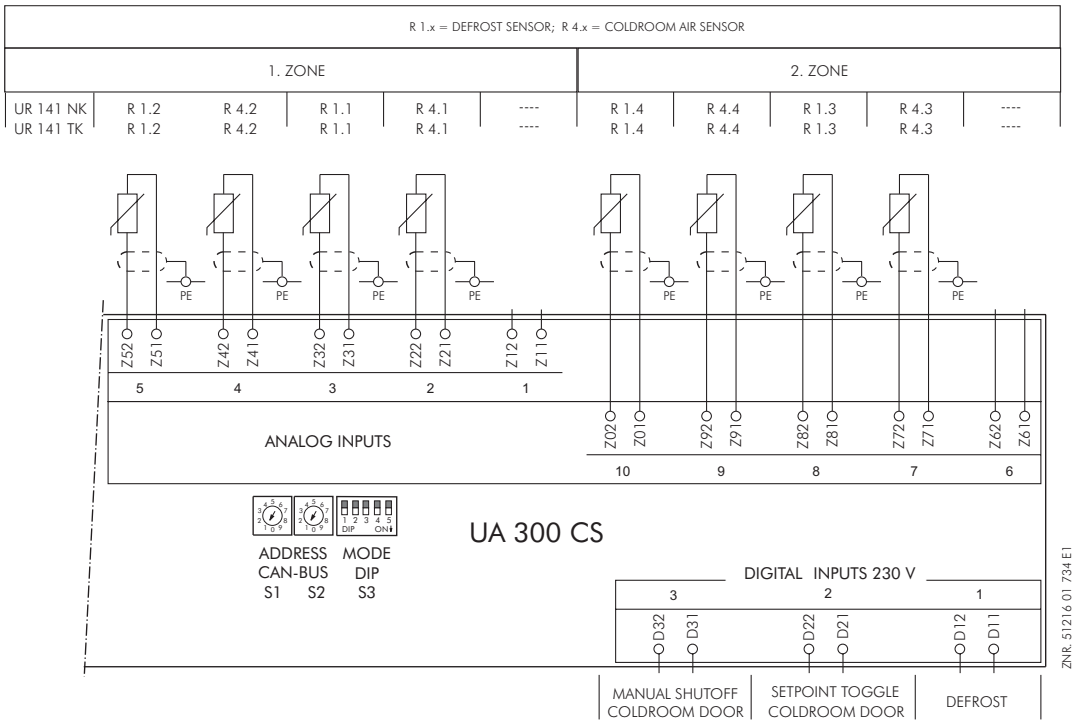
UA111	R 2.3	R 4.2	R 2.2	R 4.1	R 2.1	----	----	R 4.4	R 2.4	R 4.3
UA111D	R 2.3	R 4.2	R 2.2	R 4.1	R 2.1	R 4.5	R 2.5	R 4.4	R 2.4	R 4.3
UA121	R 1.1	R 4.2	R 1.1	R 4.1	R 2.1	R 1.4	R 4.4	R 1.3	R 4.3	R 2.3
UA131/UA131LS	R 1.1	R 4.2	R 1.1	R 4.1	R 2.1	R 1.4	R 4.4	R 1.3	R 4.3	R 2.3
UA131DD	R 1.1	R 4.2	R 1.1	R 4.1	R 2.1	R 1.4	R 4.4	R 1.3	R 4.3	R 2.3
UA141	R 2.3	R 4.2	R 2.2	R 4.1	R 2.1	----	---	R 4.4	R 2.4	R 4.3

UA111 **UA111D** **UA121** **UA131/UA131LS** **UA131DD**	MANUAL SHUTOFF	SETPOINT TOGGLE	DEFROST
UA141	MANUAL SHUTOFF/ FRAME HEATER	SETPOINT TOGGLE/ MANUAL SHUTOFF	DEFROST

5.4 UA 300 xS as coldroom controller

Controller types: UR 141 NK, UR 141 TK
Pin assignments valid for UA 300 AS/CS/TS





5.5 Wiring of master-slave function for defrosting

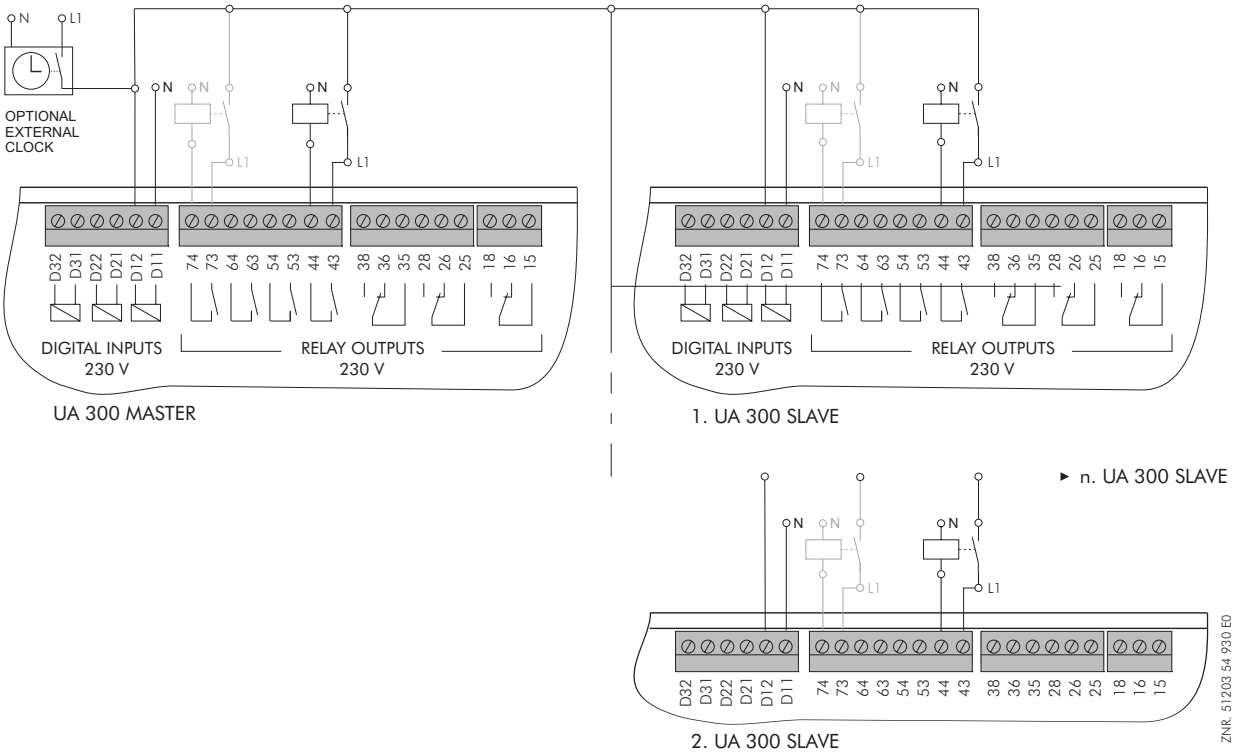
For synchronization the auxiliary relays of the master's defrost relays are connected in parallel and then supplied to the external defrost input of the slave as a 230 V signal. The slave's auxiliary contactors are also connected in parallel and returned to the external defrost input of the master as a 230 V level. This enables the software to detect whether defrosting is still taking place on both case controllers.

The drawings below are intended as alternatives for

- synchronization of one master and one slave
- synchronization of one master and several slaves

See Section 3 - Function of UA 300 - Master-Slave Mode for Defrosting - in this manual for description and operation of master-slave function.

Basic diagram for wiring between one master and **one** or **several** slave case controllers:



Defrosting is terminated by the software not later than when the set safe defrost time expires. The external clock must be wired as a passing contact as it only provides the start signal for the defrosting. The shutdown is entirely managed by the participating controllers according to their safe defrost time.

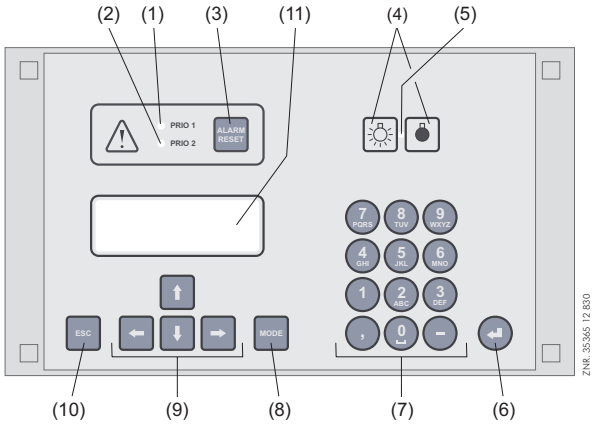
When connecting master and slave case controllers, make sure that power is supplied with **one** phase only (e.g. through L1, see illustration)!

6 Operation of UA 300

No provision is made for operation on the case/coldroom controller itself. However, several interfaces are available for local operation (BT 300 Operation Interface) or remote operation via CAN bus (CI 3000 Store Computer / AL 300 Operator Terminal). The controller can also be operated with the LDSWin program via the TTY interface (see section on LDSWin Software). This operating mode requires a TTY adapter (optional accessory).

6.1 Operation with CI 3000 Store Computer / AL 300 Operator Terminal

Operation is the same whether using the CI 3000 Store Computer or the AL 300 Operator Terminal. The operator interface and the functions are the same on both devices.



(1) Priority 1 alarm indicator light

(2) Priority 2 alarm indicator light

(3) Buzzer and horn stop key and alarm reset key

(4) External lighting on/off switch (general lighting)

(5) Lighting on/off switch indicator light

(6) **ENTER** key

(7) Alphanumeric keypad

(8) **MODE** key; CAPS SHIFT function for text entry

(9) Cursor keys

(10) **ESC** key

(11) Display (4 lines of 20 characters)

6.2 Menus and screens

Differentiation is made between menus and screens for operation of the controller.

Numbering of menus and screens:

Each menu in the menu tree can be opened by entering a specific number and each operating screen in a menu can be opened by selecting it in the menu. This is achieved by distinct marking by numbers and letters in the menu tree. Numbers 1, 2, etc. identify the menu and the letters a, b, etc. identify the order of the screens in the menu.

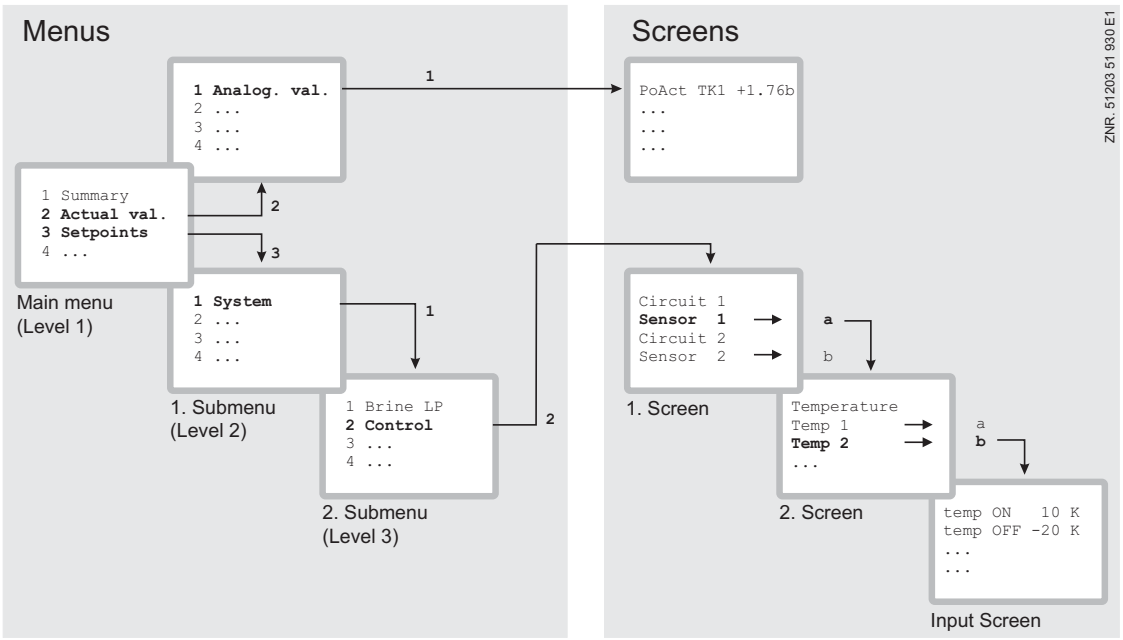
Example of screen numbering:

2 - 1 means that the screen can be opened from the menu tree by entering the numbers 2 - 1. This may be a display screen or operating screen.

Example of operating screen numbering:

3 - 1 - 2 - a - b means that the higher-level screen can be opened from the menu tree by entering the numbers 3 - 1 - 2. The letter or letters following indicate that one or more additional operating screens or selection lists can be opened in the screen by selecting them (?). The letters show their order in the screen.

Each operating screen of the UA 300 can be opened by entering its respective number.



Menus

A menu contains a list of up to nine items for selection. Each item selected may contain separate submenus or operating screens.

Selecting menu items

Each line of the selection list displayed contains a number from 1 to 9 and 0 and the name of the corresponding item. The separate items can be selected directly by pressing the appropriate numeric key 1 to 9, or 0 for item 10. If the menu lists more than three items, the cursor keys can be used to scroll through the menu and view the remaining items.

A menu item can be selected by pressing the respective numeric key regardless of whether the item itself is visible on the display.

Operating screens

An operating screen shows values for output and/or input. There may be more values for output and/or input than fit into the display at one time. The cursor keys can be used to scroll through these additional values. The screen may also contain more than one page, in which case the pages can be viewed one at a time.

Arrows appear on the right of the display to indicate whether you can scroll or page through a menu or screen.

Scrolling

Use the up and down cursor keys (↑) and (↓) to:

- Scroll line by line, for example when selecting a variable in a line from a list of predefined variables.
- Scroll block by block to view values that extend beyond the capacity of the display.

Paging

The left and right cursor keys (←) and (→) can be used to page through screens containing more than one page. If a menu contains more than three submenus, the remaining items can be viewed by scrolling with the up and down cursor keys (↑) and (↓).

Cancelling entry block

Before any values can be entered, the entry block must be deactivated as follows:

- In the Main Menu choose item 9 Parameter Setting.
- Then choose item 3 Block.
- Press ENTER (↵) to set the check mark (√). When the check mark is set, entry block is deactivated, allowing settings to be entered.
- Press ESC to exit the screen.

Blocking is activated automatically if no key is pressed for 10 minutes and when the operator terminal is switched on.

Superuser mode (granting Superuser rights)

Superuser mode is reserved exclusively for use by service personnel!

- In the Main Menu choose item 9 Parameter Setting.
- In this menu choose item 3 Block.
- Enter the current date in reverse order (not shown on display).
- Press the ENTER key (↵) to confirm, causing ”S” to be shown on the screen.
- Press the ESC key to exit the screen.

Example:

The current date is April 17, 2035, which in order of day-month-year is 17.04.35. In this instance the entry required to grant Superuser rights is 534071.

Unblocking from the main menu cancels entry block for all components of the CAN bus system. If you have moved to the operator interface of a CAN bus station but have omitted to cancel entry block, simultaneously press the **MODE** and decimal (**.**) keys to cancel entry block for the particular controller. Entry block is reactivated on exiting the operator interface for the controller.

Activating service mode

Service mode is reserved exclusively for use by service personnel!

Service mode enables the service technician to suppress the remote alarm function of the CI 3000 Store Computer for a limited time while carrying out maintenance of repair work.

- In the Main Menu, choose 9 Parameter Setting..
- From this menu item choose 3 Block.
- Simultaneously press the **MODE** + ENTER (↵) keys to open the screen for suppressing remote alarm and enter the time required for service work (1 to 255 min.).
- This activates service mode for the specified time.

Any alarms (Priority 1 and 2) still active when the set service mode time expires cause the audible signalling devices and alarm relays to be actuated and are forwarded by automatic fault report transmission.

Service mode can be reset/cancelled by entering a time of 0 min.

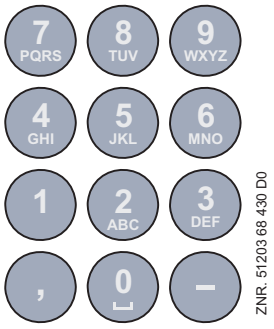
Entering values and text

Use the up and down cursor keys (↑) and (↓) to select the line wanted and press the ENTER key (↵). The cursor jumps to the entry field. The cursor keys (↑) and (↓) or numeric keys can then be used to enter or change values. Keep the cursor key (↑) or (↓) depressed to change values in fast mode.

Entering text

In fields that allow text entry, text can also be entered by the alphanumeric keypad. Repeatedly press the numeric keys to generate letters. Press the ENTER key (↵) to confirm the entered value or text.

Key	Letter/Character
0	äöüß0 Space
1	1
2	abc2
3	def3
4	ghi4
5	jkl5
6	mno6
7	pqrs7
8	tuv8
9	wxyz9
-	. _ -
,	Insert space



Alphanumeric key assignments

Press the **MODE** key to shift between upper and lower case letters.

Deleting text entry

Simultaneously press the MODE and minus (-) keys to delete a complete line of text. Press the MODE and decimal (.) keys to delete one character.

Cancelling an entry

Press the ESC key to cancel an entry at any time. The entry will not be applied.

Exiting menus and screens

Press the ESC key to exit the menu or screen you are in at any time. This returns you to the next higher menu. All menus and screens are closed automatically if no key is pressed for 10 minutes. The display then jumps to the Main Menu or to the Alarm menu if any fault report is currently active.

6.2.1 Remote operation/parameter setting of case/coldroom controller

The LCD display contains 4 lines of 20 characters. If a menu or screen contains more than 4 lines, the cursor keys can be used to scroll through the remaining lines.

```
MAIN MENU
4 Messages          ↑
5 Remote Control
6 Store Computer    ↓
```

Entry block must first be deactivated before parameters can be set.

In the Main Menu of the AL 300 Operator Terminal or CI 3000 Store Computer, open submenu 5 Remote Operation. This displays the following screen.

```
REMOTE CONTROL    Nd.nnn
Node name           ↑
Item ID         XXXXX↓
```

The case/coldroom controller wanted can be selected using the up and down cursor keys (↑) and (↓) or by entering its Node No. nnn (CAN bus address) with the numeric keys. Press the ENTER key to open the case/coldroom controller selected. This displays the main menu of the UA 300 controller as below.

```
REFR. PT.                    Pos: XXXXX
1 Actual Value                      ↑
2 Setpoints
3 Clock
4 Messages
5 Archive
6 Configuration                     ↓
```

6.3 Entering refrigeration point parameters

Name of refrigeration point

- In the Main Menu choose item 7 Monitoring.
- In the Monitoring menu choose item 3 Configuration.
- Select the case/coldroom controller to be named by scrolling with the cursor keys or entering the CAN bus address (and confirming with ENTER), then confirm by pressing the ENTER key. The flashing cursor moves from the first line to the second.
- The up and down cursor keys (↑) and (↓) can be used to move the flashing cursor to Line 2, 3 or 4.
- Press the ENTER key to place the cursor at the beginning of the entry field.
- Then enter the name, Item ID and priority (0, 1 or 2) of the refrigeration point and confirm by pressing the ENTER key.

Priority can also be configured from the Main Menu by choosing item 5 Remote Operation (selected case/coldroom controller), 6 Configuration, 1 Refrigeration Point, Priority.

For actual configuration of the refrigeration point, ”dial up” the case via remote operation:

- In the Main Menu choose item 5 Remote Operation.
- Select the controller to be configured by scrolling with the cursor keys or entering the CAN bus address (and confirming with ENTER), then confirm by pressing the ENTER key.

This displays the Refrigeration Point menu showing position of the selected case controller. You should first choose item 6 Configuration, as this narrows down the selection of functionalities. The refrigeration point parameters must then be set under menu items 2 Setpoints and 3 Clock. See also Section 4 - Installation and Startup of UA 300.

6.4 Operation with BT 300 x Operator Interface

When using the UA 300 in stand-alone mode, the case/coldroom controller can only be operated with the BT 300 x Operator Interface. A local set-up unit can be connected to a separate interface (display). The operating options are largely the same as those provided in the remote operation menu of the AL 300 Operator Terminal or CI 3000 Store computer (see chapter 6.2).

Constraints result from the use of a smaller display and a smaller number of keys. Naming of the refrigeration point is only possible with controllers of type UA 300 D and UA 300 L.

If no key is pressed, the display of the local set-up unit will show case operating status and return air temperature. Differences between the displayed value and the thermometer reading can be compensated by entering an offset for this value.

Press the ENTER key (↵) to change from the status display to the operating menus. A jumper is fitted next to the keypad ribbon cable inside the unit. Removing or shifting this jumper results in the unit no longer being usable to make settings.

A local Operator Interface can also be used to operate case controllers in a CAN bus system. This is however less convenient than using the CI 3000 Store Computer, AL 300 Operator Terminal or LDSWin software.

6.4.1 Defining the refrigeration point

Various parameters can be entered to define the refrigeration point controlled by the UA 300:

- Refrigeration point name (via CAN bus, 19 characters freely editable)
- Refrigeration point Item ID (via CAN bus 5 characters freely editable)
- Alarm priority (0, 1, 2, --)

Alarms can be suppressed by setting the alarm priority to 0.

- No. of compressor pack (e.g. VS 3000) supplying the refrigeration point (0 to 9)
- Type of compressor pack supplying the refrigeration point (LT/NT)
- Number of temperature sensors
- Division of refrigeration point in one or two zones

6.4.2 Defining the controller

Choice can be made among eight controller types to define the basic control action. The controllers available are UA 111, UA 111 D, UA 121, UA 131, UA 131 DD, UA 141, UR 141 NK(NT) and UR 141 TK(LT). Each controller is identifiable by a six-digit Device No. stored in the EPROM at the time of production. The software version is identified by a Version No. (X.XX) stored in the EPROM (see Menu 6-2-1). The controller type can be set by DIP switch (see Section 4.2.2 - Setting the Controller Type and Master-Salve Mode).

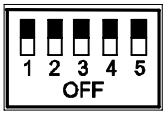
Setting the controller type limits the available functions and parameters of the UA 300. Functions not required by the selected controller type are hidden.

Changing the controller type resets all parameters to their default settings.

Notice:

7 Menu structure UA 300

7.1 Controller type UA 111 - Menu tree



1: OFF
2: OFF
3: OFF
4: ON/OFF = Master-/Slave-Mode ON/OFF
5: OFF

Level 1	Level 2	Level 3	Level 4	Level 5	Screen No.	Screen Name
Main menu					0	**REFR. PT.**
Actual Values					1	**ACT VALUES**
	Temp. Sensor				1-1	TEMPERATUR
	Cooling Zone 1				1-2	COOLING 1
	Defrost Zone 1				1-3	DEFROST 1
	--					
	Alarm				1-5	ALARM
	Frame Heater				1-6	MODE
	Cooling Zone 2				1-7	COOLING 2
	Defrost Zone 2				1-8	DEFROST 2
Setpoints					2	**SETPOINTS**
	Cooling				2-1	COOLING
		Zone 1			2-1-1	COOLING 1
		Zone 2			2-1-2	COOLING 2
		Zone 1A Altern.			2-1-3	COOLING 1A
		Zone 2A Altern.			2-1-4	COOLING 2A
	Defrost				2-2	DEFROST
		Zone 1			2-2-1	DEFROST 1
		Zone 2			2-2-2	DEFROST 2
		Zone 1A Altern.			2-2-3	DEFROST 1A
		Zone 2A Altern.			2-2-4	DEFROST 2A

Level 1	Level 2	Level 3	Level 4	Level 5	Screen No.	Screen Name
Setpoints	Alarm				2-4	ALARM
		Zone 1			2-4-1	ALARM 1
		Zone 2			2-4-2	ALARM 2
		Zone 1A Altern.			2-4-3	ALARM 1A
		Zone 2A Altern.			2-4-4	ALARM 2A
	Frame Heater				2-5	FRAME HTR
		Mode altern.			2-5-1	MODE
		Setpoint frm htr			2-5-2	SETPOINTS
		Mode altern.			2-5-3	MODE ALT
		Setpoint altern.			2-5-4	MODE ALT
Clock					3	**CLOCK**
	Current Time				3-1	CLOCK
	Defrost timer				3-2	DERF. TIMER
	Setpoint altern.				3-3	TOGGLE
Messages					4	**MESSAGES**
	View				4-1	MESSAGES
	Acknowledge				4-2	
	Delete				4-3	MESSAGES
Archive					5	**ARCHIVE**
Configuration					6	**CONFIGURAT**
	Refriger. Point				6-1	REFR. PT.
	Controller				6-2	CONTROLLER
		Type and Version			6-2-1	VERSION
		Temp. Display			6-2-2	DISPLAY
		Alarm Delay			6-2-3	ALARMDELAY
		230V Inputs			6-2-4	230V INPUT
		Sensor Type			6-2-5	SENSORS
	Cooling				6-3	COOLING
	Language				6-4	LANGUAGE
	Alarm priorities				6-5	ALARMPRIOS
	Em.Powersupply				6-6	EM.POW.SUP

7.1.1 Menu 0 Main menu

REFR. PT. POS: XXXXX	
1 Actual Values	Move to Screen 1
2 Setpoints	Move to Screen 2
3 Clock	Move to Screen 3
4 Messages	Move to Screen 4
5 Archive	Move to Screen 5
6 Configuration	Move to Screen 6

7.1.2 Menu 1 Actual Values

ACT VALUES POS: XXXXX	
1 Temp. Sensor	Move to Screen 1-1
2 Cooling Zone 1	Move to Screen 1-2
3 Defrost Zone 1	Move to Screen 1-3
4	Not used with this controller type
5 Alarm	Move to Screen 1-5
6 Frame Heater	Move to Screen 1-6
7 Cooling Zone 2	Move to Screen 1-7 Only shown when two-zone operation is set (Screen 6-1)
8 Defrost Zone 2	Move to Screen 1-8 Only shown when two-zone operation is set (Screen 6-1)

- Screen 1-1 Temp. Sensor

TEMPERATUR Pos: XXXXX		
Temp. R2.1	xxx °C	Current supply air temperature Input Z11/ Z12
Temp. R4.1	xxx °C	Current return air temperature Input Z21/ Z22
Temp. R2.2	xxx °C	Current supply air temperature Input Z31/ Z32
Temp. R4.2	xxx °C	Current return air temperature Input Z41/ Z42
Temp. R2.3	xxx °C	Current supply air temperature Input Z51/ Z52
Temp. R4.3	xxx °C	Current return air temperature Input Z61/ Z62
Temp. R2.4	xxx °C	Current supply air temperature Input Z71/ Z72
Temp. R4.4	xxx °C	Current return air temperature Input Z81/ Z82

- Screen 1-2 Cooling Zone 1

COOLING 1 Pos: XXXXX		
Cooling	xxx	Current ON/OFF status of cooling
Run Time	xx %	Cooling relay on time during last day (0000 - 2400 hours)
Starts	0	Cooling relay actuations during last day
Temp. R2.1	xxx °C	Current supply air temperature Input Z11/Z12
Setpoint R2.1	xxx °C	Supply air temperature setpoint for comparison
Hystersis R2.1	xxx K	Supply air temperature hysteresis setpoint
Temp. R4.1	xxx °C	Current return air temperature Input Z21/Z22
Setpoint R4.1	xxx °C	Return air temperature setpoint for comparison
Hystersis R4.1	xxx K	Return air temperature hysteresis setpoint

- Screen 1-3 Defrost Zone 1

DEFROST 1 Pos: XXXXX		
Defrost	XXX	Current ON/OFF status of defrosting
Temp. R2.1	XXX °C	Current supply air temperature Input Z11/Z12
Temp. R2.2	XXX °C	Current supply air temperature Input Z31/Z32
Def. End. Tmp.	XXX °C	Defrost termination temperature for comparison
Last Defrst	XX hh:mm	Day and time of last defrost cycle started

- Screen 1-4

Not used with this controller type.

- Screen 1-5 Alarm

ALARM Pos: XXXXX		
Alarm Relay	XXX	Current ON/OFF status of alarm output Terminal 15/16/18
Hi Temp Setp.1	XX °C	High temperature setpoint Zone 1
Lo Temp Setp.1	XX K	Low temperature setpoint Zone 1
Hi Temp Setp.2	XX °C	High temperature setpoint Zone 2; Only shown when two-zone operation is set (Screen 6-1)
Lo Temp Setp.2	XX K	Low temperature setpoint Zone 2; Only shown when two-zone operation is set (Screen 6-1)

- Screen 1-6 Frame Heater

MODE XXXXX		
Frame Heater	xxx	Current ON/OFF status of frame heater output Terminal 91/92/93
Run Time	xxx %	Current on time of frame heater
Humidity	xxx %	Current ambient air humidity (transmitted via CAN bus from pack controller with fitted ambient humidity sensor)
Room temp	xx °C	Current ambient air temperature (transmitted via CAN bus from pack controller with fitted ambient temperature sensor

- Screen 1-7 Cooling Zone 2

COOLING 2 XXXXX	
Cooling XXX	Current ON/OFF status of cooling
Run Time XX %	Cooling relay on time during last day (00:00 - 24:00 hours)
Starts 0	Cooling relay actuations during last day
Temp. R2.3 XXX °C	Current supply air temperature Input Z51/Z52
Setpoint R2.3 XXX °C	Supply air temperature setpoint for comparison
Hystersis R2.3 XXX K	Supply air temperature hysteresis setpoint
Temp. R4.3 XXX °C	Current return air temperature Input Z61/Z62
Setpoint R4.3 XXX °C	Return air temperature setpoint for comparison
Hystersis R4.3 XXX K	Return air temperature hysteresis setpoint

- Screen 1-8 Defrost Zone 2

DEFROST 2 Pos: XXXXX	
Defrost XXX	Current ON/OFF status of defrosting
Temp. R2.3 XXX °C	Current supply air temperature Input Z51/Z52
Temp. R2.4 XXX °C	Current supply air temperature Input Z71/Z72
Def. End. Tmp. XXX °C	Defrost termination temperature for comparison
Last Defrst XX hh:mm	Day and time of last defrost cycle started

7.1.3 Menu 2 Setpoints

SETPOINTS POS: XXXXX	
1 Cooling	Move to Screen 2-1 Special case: Move to Screen 2-1-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
2 Defrost	Move to Screen 2-2 Special case: Move to Screen 2-2-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
3	Not used with this controller type
4 Alarm	Move to Screen 2-4 Special case: Move to Screen 2-4-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
5 Frame Heater	Move to Screen 2-5

- Screen 2-1 Cooling

COOLING POS: XXXXX	
1 Zone 1	Screen 2-1-1
2 Zone 2	Screen 2-1-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-1-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-1-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-1-1 Zone 1

COOLING 1 POS: XXXXX			Entry	Default
Setpoint R2.1	XXX °C	Supply air temperature setpoint	-10..20	-2 °C
Hystersis R2.1	X K	Supply air temperature hysteresis setpoint	1..8	4 K
Setpoint R4.1	XXX °C	Return air temperature setpoint for comparison	-10..25	5 °C
Hystersis R4.1	X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-1-2 Zone 2

COOLING 2 POS: XXXXX			Entry	Default
Setpoint R2.3	XXX °C	Supply air temperature setpoint	-10..20	-2 °C
Hystersis R2.3	X K	Supply air temperature hysteresis setpoint	1..8	4 K
Setpoint R4.3	XXX °C	Return air temperature setpoint for comparison	-10..25	5 °C
Hystersis R4.3	X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-1-3 Zone 1A Altern.

COOLING 1A POS: XXXXX			Entry	Default
Setpoint R2.1	XXX °C	Supply air temperature setpoint	-10..20	0 °C
Hystersis R2.1	X K	Supply air temperature hysteresis setpoint	1..8	4 K
Setpoint R4.1	XXX °C	Return air temperature setpoint for comparison	-10..25	4 °C
Hystersis R4.1	X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-1-4 Zone 2A Altern.

COOLING 2A POS: XXXXX			Entry	Default
Setpoint R2.3	XXX °C	Supply air temperature setpoint	-10..20	0 °C
Hystersis R2.3	X K	Supply air temperature hysteresis setpoint	1..8	4 K
Setpoint R4.3	XXX °C	Return air temperature setpoint for comparison	-10..25	5 °C
Hystersis R4.3	X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-2 Defrost

DEFROST POS: XXXXX	
1 Zone 1	Screen 2-2-1
2 Zone 2	Screen 2-2-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-2-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-2-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-2-1 Zone 1

DEFROST 1 POS: XXXXX			Entry	Default
Def. End. Tmp.	XX °C	Defrost termination temperature setpoint	--, 5..20	8 °C

- Screen 2-2-2 Zone 2

DEFROST 2 POS: XXXXX			Entry	Default
Def. End. Tmp.	XX °C	Defrost termination temperature setpoint	--, 5..20	8 °C

- Screen 2-2-3 Zone 1A Altern.

DEFROST 1A POS: XXXXX			Entry	Default
Def. End. Tmp.	XX °C	Defrost termination temperature setpoint	--, 5..20	5 °C

- Screen 2-2-4 Zone 2A Altern.

DEFROST 2A POS: XXXXX			Entry	Default
Def. End. Tmp.	XX °C	Defrost termination temperature setpoint	--, 5..20	5 °C

- Screen 2-3

Not used with this controller type.

- Screen 2-4 Alarm

ALARM POS: XXXXX	
1 Zone 1	Screen 2-4-1
2 Zone 2	Screen 2-4-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-4-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-4-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-4-1 Zone 1

ALARM 1 POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	0..30	8 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-4-2 Zone 2

ALARM 2 POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	0..30	8 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-4-3 Zone 1A Altern.

ALARM 1A POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	0..30	8 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-4-4 Zone 2A Altern.

ALARM 2A POS: XXXXX		Entry	Default
High Temp Setp. XX °C	High temperature setpoint at which *High Temperature* alarm is generated	0..30	8 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-5 Frame Heater

FRAME HTR POS: XXXXX	
1 Mode altern.	Move to Screen 2-5-1
2 Setpoint frm htr	Move to Screen 2-5-2
3 Mode altern.	Move to Screen 2-5-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Setpoint altern.	Move to Screen 2-5-4 Not shown when setpoint toggle is disabled (Screen 3-3)

- Screen 2-5-1 Mode altern.

Select between values. Checkmark shows current setting.

MODE POS: XXXXX		Entry	Default
fixed run time √	Fixed frame heater on time	↵	√
enthalpy-ctrl rtm	Enthalpy control by ambient air temperature and humidity	↵	

- Screen 2-5-2 Setpoint frame heater

SETPOINTS POS: XXXXX		Entry	Default
Mod: xxxxxxxxxxxx	Displays set frame heater mode (Screen 2-5-1)		Fixed on time
Run Time XXX %	Fixed on time, Only shown when mode set to Fixed On Time (Screen 2-5-1)	--, 0..100	100 %
emerg.run time XXX %	On time in failure of ambient air humidity or temperature signal (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-1)	--, 0..100	100 %
enthalp. offs. XXX %	Offset to on time with activated enthalpy control (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-1)	-50..50	0 %

- Screen 2-5-3 Mode altern.

Select between values. Checkmark shows current setting.

MODE ALT POS: XXXXX		Entry	Default
fixed run time √	Fixed frame heater on time	↵	√
enthalpy-ctrl rtm	Enthalpy control by ambient air temperature and humidity	↵	

- Screen 2-5-4 Setpoint altern.

SOLLW. UM POS: XXXXX		Entry	Default
Mod: xxxxxxxxxxx	Displays set frame heater mode (Screen 2-5-3)		Fixed on time
Run Time XXX %	Fixed on time, Only shown when mode set to Fixed On Time (Screen 2-5-3)	--, 0..100	100 %
emerg.run time XXX %	On time in failure of ambient air humidity or temperature signal (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-3)	--, 0..100	100 %
enthalp. offs. XXX %	Offset to on time with activated enthalpy control (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-3)	-50..50	0 %

7.1.4 Menu 3 Clock

CLOCK POS: XXXXX		Entry
1 Current Time	Move to Screen 3-1	1
2 Defrost timer	Move to Screen 3-2	2
3 Toggle Setpoints	Move to Screen 3-3	3

- Screen 3-1 Current Time

Time default is set by the time master (CI 3000, AL 300) when CAN bus is connected. Any entry made will then be overwritten by the default value.

CLOCK POS: XXXXX		Entry	Default
Date: XX dd.mm.yy	Display and enter current weekday, date	dd.mm.yy	
Time: hh.mm	Display and enter current time	hh.mm	
Daylight Saving X	Display and enter automatic daylight saving change (Y/N)	↑, ↓, (Y/N)	J

- Screen 3-2 Defrost timer

DERF. TIMER POS: XXXXX		Entry	Default
Defrost timer XXX	Defrost initiation via input D11/12 (EXT) or internal (INT)	↑, ↓, (EXT, INT)	INT
Safe Defr Time XXX m	Safe defrost time for maximum allowed duration of defrosting (used only for internal defrosting)	0..120	60 min
Defr. 1 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 01:00
Defr. 2 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 07:00
Defr. 3 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 13:00
Defr. 4 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 20:00
...			
Defr. 14 xxxxx hh:mm			
Manual Defrost XXX	Status (OFF/ON) for supplementary manual defrosting *)	↑, ↓, (ON/OFF)	OFF

*) Parameter automatically set to ON for safe defrost time at first start.

- Screen 3-3 Toggle Setpoints

TOGGLE POS: XXXXX		Entry	Default
Status XXX	Setpoint toggle status (OFF/ON) of alternative set of setpoints (setpoint toggle)		
Toggle Setp. XXX	Setpoint toggle via input D21/22 (EXT), internal (INT) or disabled (--)	↑, ↓, (EXT, INT, --)	EXT
Blind On Time X s	Fan and cooling stop time after toggling to alternative set of setpoints with external setpoint toggle (Screen 3-3)	0..250	50 sec
Alt ON: DD-DD hh:mm	Start time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 21:00
AltOFF: DD-DD hh:mm	End time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 05:00
Alt ON: DD-DD hh:mm	Start time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Su 05:00
AltOFF: DD-DD hh:mm	End time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Su 21:00
...	A total of 7 different ON and OFF toggle times can be defined. A toggle time will only be obeyed when a matched pair of on and off times is set as a parameter.		

7.1.5 Menu 4 Messages

MESSAGES POS: XXXXX	
1 View	Move to Screen 4-1: Show Message Log
2 Acknowledge	Messages in message log are cancelled. *"Alarms Cancelled!"* shown in display: Press ESC to go back.
3 Delete	Move to Screen 4-2: Delete Message Log (with prompt)

- Screen 4-1 View Messages

MESSAGES POS: XXXXX	
Error Message 1:	Fault 1 message text
dd.mm.yy hh:mm ON	Start of Fault 1
dd.mm.yy hh:mm OFF	End of Fault 1 (only when Fault 1 terminated)
...	
Error Message n:	Fault n message text
dd.mm.yy hh:mm ON	Start of Fault n
dd.mm.yy hh:mm OFF	End of Fault n (only when Fault n terminated)

- Screen 4-2 Acknowledge Messages

This displays the *"Alarms Cancelled!"* message.

- Screen 4-3 Delete Messages

MESSAGES POS: XXXXX		Entry
Delete! Are you sure ? No: ESC YES: ↵	Safety prompt for deleting messages Press ESC to go back after cancelling messages.	↵, ESC

7.1.6 Menu 5 Archive

ARCHIVE POS: XXXXX	
dd.mm.yy hh:mm	Time of archiving Record 1
Zone 1: abcdef x °C	Status and temperature of Zone 1, see Note
Zone 2: abcdef x °C	Status and temperature of Zone 2, see Note Only shown when two-zone operation is set (Screen 6-1)
...	
dd.mm.yy hh:mm	Time of archiving Record n
Zone 1: abcdef x °C	Status and temperature of Zone 1, see Note
Zone 2: abcdef x °C	Status and temperature of Zone 2, see Note Only shown when two-zone operation is set (Screen 6-1)

Status abcdef covers following states of the refrigeration point. Display will be - if state is not active.

	Single-zone operation	Two-zone operation
a	O = Operation	O = Operation
b	R = Refrigeration/Cooling	R = Refrigeration/Cooling
c	D = Defrost	R = Refrigeration/Cooling
d	G =Gate/Door (coldroom ctrlr. only)	D = Defrost
e	A = Alarm	G =Gate/Door (coldroom ctrlr. only)
f		A = Alarm

7.1.7 Menu 6 Configuration

CONFIGURAT POS: XXXXX	
1 Refriger. Point	Move to Screen 6-1
2 Controller	Move to Screen 6-2
3 Cooling	Move to Screen 6-3
4 Language	Move to Screen 6-4
5 Alarm priorities	Move to Screen 6-5
6 Em.Powersupply	Move to Screen 6-6

- Screen 6-1 Refriger. Point

REFR. PT. POS: XXXXX		Entry	Default
Refr. Pt. Name:	Text only		
xxxxxxxxxxxxxxx	Free text entry describing refrigeration point (see note)		Kühlstellen-regler
Item ID: XXXXX	Free text entry displayed in screens after ITEM ID (see note)		UA300
Priority: XX	Alarm priority in failure of refrigeration point or when global controller priority is set (Screen 6-5)	↑, ↓, or numbers (0..99)	1
Refr. Sys. No.: XX	No. of pack controller allocated to case/coldroom controller	↑, ↓, or numbers (--, 1..9)	1
Refr. Sys. Type XXX	Associated compressor pack. Parameter only required when linked to a VS 3000 BS having several zones. If a different type of pack controller is used, set this parameter blank (---)	↑, ↓, or numbers (---, Z1, Z2)	---
Temp. Zones X	Number of temperature zones Single-zone operation (tandem operation) Two-zone operation	↑, ↓, or numbers (1, 2)	2
No. Sensors XX	Number of temperature sensors connected. After entering ↵ sensor scan is performed to redetermine the number of sensors	↵	

A meaningful name that describes the refrigeration point in more detail should be entered, e.g. Cheese Counter 2 and CC2. The name is entered in the screens of the CI 3000 Store Computer or AL 300 Operator Terminal. Direct entry cannot be made in the UA 300 screens displayed on operator terminals. The name also cannot be entered with the BT 300 x Operator Interface.

The priority must be assigned between 0..2 by older versions of the CI 3000 Store Computer (see section 8 Alarms and Messages of UA 300)

- Screen 6-2 Controller

CONTROLLER POS: XXXXX	
1 Type and Version	Move to Screen 6-2-1
2 Temp. Display	Move to Screen 6-2-2
3 Alarm Delay	Move to Screen 6-2-3
4 230V Inputs	Move to Screen 6-2-4
5 Sensor Type	Move to Screen 6-2-5

- Screen 6-2-1 Type and Version

VERSION POS: XXXXX			Entry	Default
Ctrlr. Type	XXXXXXX	Controller type set by DIP Switch S3	--	UA111
Software Ver.:	XXXX	Software version of case/coldroom controller (EPROM))	--	x.yy
Serial No.:	XXXXXX	Device No. of case/coldroom controller (from EEPROM)	--	
Master/Sl. Mode	XXX	Synchronized defrosting in master-slave mode (ON/OFF)	--	

- Screen 6-2-2 Temp. Display

DISPLAY POS: XXXXX			Entry	Default
Offset	XX K	Offset for temperature display	-10..10	0K
Alarm symbol	X	Show alarm symbol on BT 30 Temperature Display	↑, ↓, (Y/N)	N

- Screen 6-2-3 Alarm Delay

ALARMDELAY POS: XXXXX			Entry	Default
Sensor Fault	XX m	Sensor break alarm delay	0..30	15 min
High/Low Temp.	XX m	High/low temperature alarm delay	0..120	60 min
No Defrost	XX h	No defrost alarm delay	--, 2..168	24 h
Selfholding	X	NO: Automatic reset of non- transient alarms. YES: Alarms must be reset manually.	↑, ↓, (Y/N)	N

- Screen 6-2-4 230V Inputs

Only trained personnel should be allowed to change inputs, as changes may affect other functions.

230V INPUT POS: XXXXX		Entry	Default
Input1: XXXXXXXXXX	Function of Digital Input 1 D11/D12	↵	DERF. TIMER
Input2: XXXXXXXXXX	Function of Digital Input 2 D21/D22	↵	TOGGLE SETP
Input3: XXXXXXXXXX	Function of Digital Input 3 D31/D32	↵	MANUAL OFF

- Screen 6-2-5 Sensor Type

Select between values. Checkmark shows current setting.

SENSORS POS: XXXXX		Entry	Default
L243 √	Temperature range -50..50°C	↵	√
K277	Temperature range -50..50°C	↵	
5K3A1	Temperature range 0..100°C	↵	

- Screen 6-3 Cooling

COOLING POS: XXXXX		Entry	Default
Min. On Time XX K	Minimum cooling ON time	0..15	2 m
Min. Off Time XX m	Minimum cooling OFF time	0..15	2 m
Cont Cool Mon. xx m	Duration of forced interruption of cooling in continuous running	--, 0..15	0 m
Emergency Op. xx m	In failure of required sensors, the solenoid valve is actuated to adjust to the set opening in %.	0..100	40%

- Screen 6-4 Language

LANGUAGE POS: XXXXX		Entry	Default
Deutsch D √		↵	√
English GB		↵	
Francais F		↵	
Espagnol E		↵	
Finnish FIN		↵	
Türkce TR		↵	
Cesky CZ		↵	

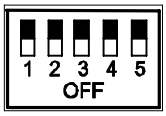
- Screen 6-5 Alarm priorities

ALARMPRIOS POS: XXXXX		Entry	Default
Prio.Refrig. Pt. X	Global alarm priority by refrigeration point priority (Screen 6-1) (Y)	↑, ↓, (Y,N)	J
Priority: XX	Show refrigeration point priority (Screen 6-1) Only shown when refrigeration point priority set to Y.		1
Following parameters are only shown when refrigeration point priority is set to N. Meaning of usable entries for alarm priority: *- = Event ignored* *0 = Message (entered only in message log)* *1 = Priority 1 alarm* *..* *99 = Priority 99 alarm*			
Low Temp.	Temperature below lower alarm limit Priority applies to following alarms: Low Temp. Zone1, Low Temp. Zone2	-, 0..99	1
High Temp.	Temperature above upper alarm limit Priority applies to following alarms: High Temp. Zone1, High Temp. Zone2	-, 0..99	1
Sensor Fault	Temperature sensor failure	-, 0..99	1
No Defrost	No defrost within alarm delay interval Priority applies to following alarm: No defrost	-, 0..99	1
Timer-Term.Defr.	Defrosting terminated by safe defrost time	-, 0..99	0
Power Failure	Start following power failure	-, 0..99	0
First Start	Controller startup (basic settings loaded!)	-, 0..99	1
Manual Shutoff	Manual switch Input D31/D32 set OFF	-, 0..99	0
Hardware Fault	Internal hardware fault Priority applies to following alarms: EEPROM Fault, RTC Fault, Flash Fault	-, 0..99	1
Setpoint Change	Message generated on changing setpoint	0..99	0
Refrig.Pt.Dis.	Cooling by pack controller via CAN bus interrupted	-, 0..99	0
Battery Voltage	Battery low	-, 0..99	0

- Maske 6-6 Em.Powersupply (Emergency Power supply)

EM.POW.SUP POS: XXXXX		Entry	Default
Cool.funct.OFF xxx	Functionality of the cooling switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N
Defr.funct.OFF xxx	Functionality of the defrosting switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N
Fan funct. OFF xxx	Functionality of the fan switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N

7.2 Controller type UA 111 D - Menu tree



1: OFF
2: ON
3: ON
4: ON/OFF = Master-/Slave-Mode ON/OFF
5: OFF

Level 1	Level 2	Level 3	Level 4	Level 5	Screen No.	Screen Name
Main menu					0	**REFR. PT.**
Actual Values					1	**ACT VALUES**
	Temp. Sensor				1-1	TEMPERATUR
	Cooling Zone 1				1-2	COOLING 1
	Defrost Zone 1				1-3	DEFROST 1
	--					
	Alarm				1-5	ALARM
	Frame Heater				1-6	MODE
Setpoints					2	**SETPOINTS**
	Cooling				2-1	COOLING
		Zone 1			2-1-1	COOLING 1
		--				
		Zone 1A Altern.			2-1-3	COOLING 1A
	Abtauung				2-2	DEFROST
		Zone 1			2-2-1	DEFROST 1
		--				
		Zone 1A Altern.			2-2-3	DEFROST 1A
	--					
	Alarm				2-4	ALARM
		Zone 1			2-4-1	ALARM 1
		--				
		Zone 1A Altern.			2-4-3	ALARM 1A
	Frame Heater				2-5	FRAME HTR
		Mode altern.			2-5-1	MODE
		Setpoint frm htr			2-5-2	SETPOINTS
		Mode altern.			2-5-3	MODE ALT
		Setpoint altern.			2-5-4	MODE ALT

Level 1	Level 2	Level 3	Level 4	Level 5	Screen No.	Screen Name
Clock					3	**CLOCK**
	Current Time				3-1	CLOCK
	Defrost timer				3-2	DERF. TIMER
	Setpoint altern.				3-3	TOGGLE
Messages					4	**MESSAGES**
	View				4-1	MESSAGES
	Acknowledge				4-2	
	Delete				4-3	MESSAGES
Archive					5	**ARCHIVE**
Configuration					6	**CONFIGURAT**
	Refriger. Point				6-1	REFR. PT.
	Controller				6-2	CONTROLLER
		Type and Version			6-2-1	VERSION
		Temp. Display			6-2-2	DISPLAY
		Alarm Delay			6-2-3	ALARMDELAY
		230V Inputs			6-2-4	230V INPUT
		Sensor Type			6-2-5	SENSORS
	Cooling				6-3	COOLING
	Language				6-4	LANGUAGE
	Alarm priorities				6-5	ALARMPRIOS
	Em.Powersupply				6-6	EM.POW.SUP

7.2.1 Menu 0 Main menu

REFR. PT. POS: XXXXX	
1 Actual Values	Move to Screen 1
2 Setpoints	Move to Screen 2
3 Clock	Move to Screen 3
4 Messages	Move to Screen 4
5 Archive	Move to Screen 5
6 Configuration	Move to Screen 6

7.2.2 Menu 1 Actual Values

ACT VALUES POS: XXXXX	
1 Temp. Sensor	Move to Screen 1-1
2 Cooling Zone 1	Move to Screen 1-2
3 Defrost Zone 1	Move to Screen 1-3
4	Not used with this controller type
5 Alarm	Move to Screen 1-5
6 Frame Heater	Move to Screen 1-6

- Screen 1-1 Temp. Sensor

TEMPERATUR Pos: XXXXX		
Temp. R2.1	xxx °C	Current supply air temperature Input Z11/ Z12
Temp. R4.1	xxx °C	Current return air temperature Input Z21/ Z22
Temp. R2.2	xxx °C	Current supply air temperature Input Z31/ Z32
Temp. R4.2	xxx °C	Current return air temperature Input Z41/ Z42
Temp. R2.3	xxx °C	Current supply air temperature Input Z51/ Z52
Temp. R4.3	xxx °C	Current return air temperature Input Z61/ Z62
Temp. R2.4	xxx °C	Current supply air temperature Input Z71/ Z72
Temp. R4.4	xxx °C	Current return air temperature Input Z81/ Z82
Temp. R2.5	xxx °C	Current supply air temperature Input Z91/ Z92
Temp. R4.5	xxx °C	Current supply air temperature Input Z01/ Z02

- Screen 1-2 Cooling Zone 1

COOLING 1 Pos: XXXXX		
Compressor 1	xxx	Current ON/OFF status Compressor 1
Comp Run Tm 1	xx %	Compressor 1 on time during last days (00:00 - 24:00 hours)
Comp. Starts 1	0	Compressor 1 actuations during last days
Compressor 2	xxx	Current ON/OFF status Compressor 2
Comp Run Tm 2	xx %	Compressor 2 on time during last days (00:00 - 24:00 hours)
Comp. Starts 2	0	Compressor 2 actuations during last days

- Screen 1-3 Defrost Zone 1

DEFROST 1 Pos: XXXXX		
Defrost	XXX	Current ON/OFF status of defrosting
Temp. R2.1	XXX °C	Current supply air temperature Input Z11/Z12
Temp. R2.2	XXX °C	Current supply air temperature Input Z31/Z32
Temp. R2.3	XXX °C	Current supply air temperature Input Z51/Z52
Temp. R2.4	XXX °C	Current supply air temperature Input Z71/Z72
Temp. R2.5	XXX °C	Current supply air temperature Input Z91/Z92
Def. End. Tmp.	XXX °C	Defrost termination temperature for comparison
Last Defrst	XX hh:mm	Day and time of last defrost cycle started

- Screen 1-4

Not used with this controller type.

- Screen 1-5 Alarm

ALARM Pos: XXXXX		
Alarm Relay	XXX	Current ON/OFF status of alarm output Terminal 15/16/18
Hi Temp Setp.1	XX °C	High temperature setpoint Zone 1
Lo Temp Setp.1	XX K	Low temperature setpoint Zone 1

- Screen 1-6 Frame Heater

MODE XXXXX		
Frame Heater	xxx	Current ON/OFF status of frame heater output Terminal 91/92/93
Run Time	xxx %	Current on time of frame heater
Humidity	xxx %	Current ambient air humidity (transmitted via CAN bus from pack controller with fitted ambient humidity sensor)
Room temp	xx °C	Current ambient air temperature (transmitted via CAN bus from pack controller with fitted ambient temperature sensor

7.2.3 Menu 2 Setpoints

SETPOINTS POS: XXXXX	
1 Cooling	Move to Screen 2-1 Special case: Move to Screen 2-1-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
2 Defrost	Move to Screen 2-2 Special case: Move to Screen 2-2-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
3	Not used with this controller type
4 Alarm	Move to Screen 2-4 Special case: Move to Screen 2-4-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
5 Frame Heater	Move to Screen 2-5

- Screen 2-1 Cooling

COOLING POS: XXXXX	
1 Zone 1	Screen 2-1-1
2	Not used with this controller type
3 Zone 1A Altern.	Screen 2-1-3 Not shown when setpoint toggle is disabled (Screen 3-3)

- Screen 2-1-1 Zone 1

COOLING 1 POS: XXXXX			Entry	Default
Setpoint R2.x	XXX °C	Supply air temperature setpoint	-10..20	-2 °C
Hystersis R2.x	X K	Supply air temperature hysteresis setpoint	1..8	4 K
Setpoint R4.x	XXX °C	Return air temperature setpoint for comparison	-4..20	5 °C
Hystersis R4.x	X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-1-2

Not used with this controller type

- Screen 2-1-3 Zone 1A Altern.

COOLING 1A POS: XXXXX			Entry	Default
Setpoint R2.x	XXX °C	Supply air temperature setpoint	-10..20	0 °C
Hystersis R2.x	X K	Supply air temperature hysteresis setpoint	1..8	4 K
Setpoint R4.x	XXX °C	Return air temperature setpoint for comparison	-4..20	5 °C
Hystersis R4.x	X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-2 Defrost

DEFROST POS: XXXXX	
1 Zone 1	Screen 2-2-1
2	Not used with this controller type
3 Zone 1A Altern.	Screen 2-2-3 Not shown when setpoint toggle is disabled (Screen 3-3)

- Screen 2-2-1 Zone 1

DEFROST 1 POS: XXXXX			Entry	Default
Def. End. Tmp.	XX °C	Defrost termination temperature setpoint	--, 5..20	8 °C

- Screen 2-2-2 Zone 2

Not used with this controller type.

- Screen 2-2-3 Zone 1A Altern.

DEFROST 1A POS: XXXXX			Entry	Default
Def. End. Tmp.	XX °C	Defrost termination temperature setpoint	--, 5..20	5 °C

- Screen 2-3

Not used with this controller type.

- Screen 2-4 Alarm

ALARM POS: XXXXX	
1 Zone 1	Screen 2-4-1
2	Not used with this controller type
3 Zone 1A Altern.	Screen 2-4-3 Not shown when setpoint toggle is disabled (Screen 3-3)

- Screen 2-4-1 Zone 1

ALARM 1 POS: XXXXX			Entry	Default
High Temp Setp	XX °C	High temperature setpoint at which *High Temperature* alarm is generated	0..30	8 °C
Low Temp Setp.	XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-4-2 Zone 2

Not used with this controller type

- Screen 2-4-3 Zone 1A Altern.

ALARM 1A POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	0..30	8 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-5 Frame Heater

FRAME HTR POS: XXXXX	
1 Mode altern.	Move to Screen 2-5-1
2 Setpoint frm htr	Move to Screen 2-5-2
3 Mode altern.	Move to Screen 2-5-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Setpoint altern.	Move to Screen 2-5-4 Not shown when setpoint toggle is disabled (Screen 3-3)

- Screen 2-5-1 Mode altern.

Select between values. Checkmark shows current setting.

MODE POS: XXXXX		Entry	Default
fixed run time √	Fixed frame heater on time	↵	√
enthalpy-ctrl rtm	Enthalpy control by ambient air temperature and humidity	↵	

- Screen 2-5-2 Setpoint frame heater

SETPOINTS POS: XXXXX		Entry	Default
Mod: xxxxxxxxxxxx	Displays set frame heater mode (Screen 2-5-1)		Fixed on time
Run Time XXX %	Fixed on time, Only shown when mode set to Fixed On Time (Screen 2-5-1)	--, 0..100	100 %
emerg.run time XXX %	On time in failure of ambient air humidity or temperature signal (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-1)	--, 0..100	100 %
enthalp. offs. XXX %	Offset to on time with activated enthalpy control (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-1)	-50..50	0 %

- Screen 2-5-3 Mode altern.

Select between values. Checkmark shows current setting.

MODE ALT POS: XXXXX		Entry	Default
fixed run time √	Fixed frame heater on time	↵	√
enthalpy-ctrl rtm	Enthalpy control by ambient air temperature and humidity	↵	

- Screen 2-5-4 Setpoint altern.

SOLLW. UM POS: XXXXX		Entry	Default
Mod: xxxxxxxxxxx	Displays set frame heater mode (Screen 2-5-3)		Fixed on time
Run Time XXX %	Fixed on time, Only shown when mode set to Fixed On Time (Screen 2-5-3)	--, 0..100	100 %
emerg.run time XXX %	On time in failure of ambient air humidity or temperature signal (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-3)	--, 0..100	100 %
enthalp. offs. XXX %	Offset to on time with activated enthalpy control (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-3)	-50..50	0 %

7.2.4 Menu 3 Clock

CLOCK POS: XXXXX	
1 Current Time	Move to Screen 3-1
2 Defrost timer	Move to Screen 3-2
3 Toggle Setpoints	Move to Screen 3-3

- Screen 3-1 Current Time

Time default is set by the time master (CI 3000, AL 300) when CAN bus is connected. Any entry made will then be overwritten by the default value.

CLOCK POS: XXXXX		Entry	Default
Date: XX dd.mm.yy	Display and enter current weekday, date	dd.mm.yy	
Time: hh.mm	Display and enter current time	hh.mm	
Daylight Saving X	Display and enter automatic daylight saving change (Y/N)	↑, ↓, (Y/N)	J

- Screen 3-2 Defrost timer

DERF. TIMER POS: XXXXX		Entry	Default
Defrost timer XXX	Defrost initiation via input D11/12 (EXT) or internal (INT)	↑, ↓, (EXT, INT)	INT
Safe Defr Time XXX m	Safe defrost time for maximum allowed duration of defrosting (used only for internal defrosting)	0..120	60 min
Defr. 1 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 01:00
Defr. 2 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 07:00
Defr. 3 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 13:00
Defr. 4 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 20:00
...			
Defr. 14 xxxxx hh:mm			
Manual Defrost XXX	Status (OFF/ON) for supplementary manual defrosting *)	↑, ↓, (ON/OFF)	OFF

*) Parameter automatically set to ON for safe defrost time at first start.

- Screen 3-3 Toggle Setpoints

TOGGLE POS: XXXXX		Entry	Default
Status XXX	Setpoint toggle status (OFF/ON) of alternative set of setpoints (setpoint toggle)		
Toggle Setp. XXX	Setpoint toggle via input D21/22 (EXT), internal (INT) or disabled (--)	↑, ↓, (EXT, INT, --)	EXT
Blind On Time X s	Fan and cooling stop time after toggling to alternative set of setpoints with external setpoint toggle (Screen 3-3)	0..250	50 sec
Alt ON: DD-DD hh:mm	Start time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 21:00
AltOFF: DD-DD hh:mm	End time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 05:00
Alt ON: DD-DD hh:mm	Start time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Su 05:00
AltOFF: DD-DD hh:mm	End time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Su 21:00
...	A total of 7 different ON and OFF toggle times can be defined. A toggle time will only be obeyed when a matched pair of on and off times is set as a parameter.		

7.2.5 Menu 4 Messages

MESSAGES POS: XXXXX	
1 View	Move to Screen 4-1: Show Message Log
2 Acknowledge	Messages in message log are cancelled. *"Alarms Cancelled!"* shown in display: Press ESC to go back.
3 Delete	Move to Screen 4-2: Delete Message Log (with prompt)

- Screen 4-1 View Messages

MESSAGES POS: XXXXX	
Error Message 1:	Fault 1 message text
dd.mm.yy hh:mm ON	Start of Fault 1
dd.mm.yy hh:mm OFF	End of Fault 1 (only when Fault 1 terminated)
...	
Error Message n:	Fault n message text
dd.mm.yy hh:mm ON	Start of Fault n
dd.mm.yy hh:mm OFF	End of Fault n (only when Fault n terminated)

- Screen 4-2 Acknowledge Messages

This displays the *"Alarms Cancelled!"* message.

- Screen 4-3 Delete Messages

MESSAGES POS: XXXXX	
Delete! Are you sure ? No: ESC YES: ↵	Safety prompt for deleting messages Press ESC to go back after cancelling messages.

7.2.6 Menu 5 Archive

ARCHIVE POS: XXXXX	
dd.mm.yy hh:mm	Time of archiving Record 1
Zone 1: abcdef x °C	Status and temperature of Zone 1, see Note
...	
dd.mm.yy hh:mm	Time of archiving Record n
Zone 1: abcdef x °C	Status and temperature of Zone 1, see Note

Status abcdef covers following states of the refrigeration point. Display will be - if state is not active.

	Single-zone operation	Two-zone operation
a	O = Operation	O = Operation
b	R = Refrigeration/Cooling	R = Refrigeration/Cooling
c	D = Defrost	R = Refrigeration/Cooling
d	G =Gate/Door (coldroom ctrlr. only)	D = Defrost
e	A = Alarm	G =Gate/Door (coldroom ctrlr. only)
f		A = Alarm

7.2.7 Menu 6 Configuration

CONFIGURAT POS: XXXXX	
1 Refriger. Point	Move to Screen 6-1
2 Controller	Move to Screen 6-2
3 Cooling	Move to Screen 6-3
4 Language	Move to Screen 6-4
5 Alarm priorities	Move to Screen 6-5
6 Em.Powersupply	Move to Screen 6-6

- Screen 6-1 Refriger. Point

REFR. PT. POS: XXXXX		Entry	Default
Refr. Pt. Name:	Text only		
xxxxxxxxxxxxxx	Free text entry describing refrigeration point (see note)		Kühlstellen-regler
Item ID: XXXXX	Free text entry displayed in screens after ITEM ID (see note)		UA300
Priority: XX	Alarm priority in failure of refrigeration point or when global controller priority is set (Screen 6-5)	↑, ↓, or numbers (0..99)	1
Refr. Sys. No.: XX	No. of pack controller allocated to case/coldroom controller	↑, ↓, or numbers (--, 1..9)	1
Refr. Sys. Type XXX	Associated compressor pack. Parameter only required when linked to a VS 3000 BS having several zones. If a different type of pack controller is used, set this parameter blank (---)	↑, ↓, or numbers (---, Z1, Z2)	---
Temp. Zones X	Number of temperature zones nur Single-zone operation möglich	↑, ↓, or numbers (1, 2)	1
No. Sensors XX	Number of temperature sensors connected. After entering ↵ sensor scan is performed to redetermine the number of sensorimm of sensors	↵	

A meaningful name that describes the refrigeration point in more detail should be entered, e.g. Cheese Counter 2 and CC2. The name is entered in the screens of the CI 3000 Store Computer or AL 300 Operator Terminal. Direct entry cannot be made in the UA 300 screens displayed on operator terminals. The name also cannot be entered with the BT 300 x Operator Interface.

The priority must be assigned between 0..2 by older versions of the CI 3000 Store Computer (see section 8 Alarms and Messages of UA 300).

- Screen 6-2 Controller

CONTROLLER POS: XXXXX	
1 Type and Version	Move to Screen 6-2-1
2 Temp. Display	Move to Screen 6-2-2
3 Alarm Delay	Move to Screen 6-2-3
4 230V Inputs	Move to Screen 6-2-4
5 Sensor Type	Move to Screen 6-2-5

- Screen 6-2-1 Type and Version

VERSION POS: XXXXX		Entry	Default
Ctrlr. Type XXXXXXX	Controller type set by DIP Switch S3	--	UA111D
Software Ver.: XXXX	Software version of case/coldroom controller (EPROM))	--	x.yy

Serial No.: XXXXXX	Device No. of case/coldroom controller (from EEPROM)	--	
Master/Sl. Mode XXX	Synchronized defrosting in master-slave mode (ON/OFF)	--	

- Screen 6-2-2 Temp. Display

DISPLAY POS: XXXXX		Entry	Default
Offset XX K	Offset for temperature display	-10..10	0K
Alarm symbol X	Show alarm symbol on BT 30 Temperature Display	↑, ↓, (Y/N)	N

- Screen 6-2-3 Alarm Delay

ALARMDELAY POS: XXXXX		Entry	Default
Sensor Fault XX m	Sensor break alarm delay	0..30	15 min
High/Low Temp. XX m	High/low temperature alarm delay	0..150	60 min
No Defrost XX h	No defrost alarm delay	--, 2..168	24 h
Selfholding X	NO: Automatic reset of non- transient alarms. YES: Alarms must be reset manually.	↑, ↓, (Y/N)	N

- Screen 6-2-4 230V Inputs

Only trained personnel should be allowed to change inputs, as changes may affect other functions.

230V INPUT POS: XXXXX		Default
Input1: XXXXXXXXXX	Function of Digital Input 1 D11/D12	DERF. TIMER
Input2: XXXXXXXXXX	Function of Digital Input 2 D21/D22	TOGGLE SETP
Input3: XXXXXXXXXX	Function of Digital Input 3 D31/D32	MANUAL OFF

- Screen 6-2-5 Sensor Type

Select between values. Checkmark shows current setting.

SENSORS POS: XXXXX		Entry	Default
L243 √	Temperature range -50..50°C	↵	√
K277	Temperature range -50..50°C	↵	
5K3A1	Temperature range 0..100°C	↵	

- Screen 6-3 Cooling

COOLING POS: XXXXX		Entry	Default
Min. On Time XX K	Minimum cooling ON time	0..15	2 m
Min. Off Time XX m	Minimum cooling OFF time	0..15	2 m
Delay 2nd Comp x m	Delay time 2nd compressor	0..15	3 m
Cont Cool Mon. xx m	Duration of forced interruption of cooling in continuous running	--, 0..15	0 m
Emergency Op. xx m	In failure of required sensors, the solenoid valve is actuated to adjust to the set opening in %.	0..100	40%

- Screen 6-4 Language

LANGUAGE POS: XXXXX		Entry	Default
Deutsch D √		↵	√
English GB		↵	
Francais F		↵	
Espagnol E		↵	
Finnish FIN		↵	
Türkce TR		↵	
Cesky CZ		↵	

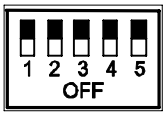
- Screen 6-5 Alarm priorities

ALARMPRIOS POS: XXXXX		Entry	Default
Prio.Refrig. Pt. X	Global alarm priority by refrigeration point priority (Screen 6-1) (Y)	↑, ↓, (Y,N)	J
Priority: XX	Show refrigeration point priority (Screen 6-1) Only shown when refrigeration point priority set to Y.		1
Following parameters are only shown when refrigeration point priority is set to N. Meaning of usable entries for alarm priority: *- = Event ignored* *0 = Message (entered only in message log)* *1 = Priority 1 alarm* *..* *99 = Priority 99 alarm*			
Low Temp.	Temperature below lower alarm limit Priority applies to following alarms: Low Temp. Zone1, Low Temp. Zone2	-, 0..99	1
High Temp.	Temperature above upper alarm limit Priority applies to following alarms: High Temp. Zone1, High Temp. Zone2	-, 0..99	1
Sensor Fault	Temperature sensor failure	-, 0..99	1
No Defrost	No defrost within alarm delay interval Priority applies to following alarm: No defrost	-, 0..99	1
Timer-Term.Defr.	Defrosting terminated by safe defrost time	-, 0..99	0
Power Failure	Start following power failure	-, 0..99	0
First Start	Controller startup (basic settings loaded!)	-, 0..99	1
Manual Shutoff	Manual switch Input D31/D32 set OFF	-, 0..99	0
Hardware Fault	Internal hardware fault Priority applies to following alarms: EEPROM Fault, RTC Fault, Flash Fault	-, 0..99	1
Setpoint Change	Message generated on changing setpoint	0..99	0
Refrig.Pt.Dis.	Cooling by pack controller via CAN bus interrupted	-, 0..99	0
Battery Voltage	Battery low	-, 0..99	0

- Maske 6-6 Em.Powersupply (Emergency Power supply)

EM.POW.SUP POS: XXXXX		Entry	Default
Cool.funct.OFF xxx	Functionality of the cooling switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N
Defr.funct.OFF xxx	Functionality of the defrosting switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N
Fan funct. OFF xxx	Functionality of the fan switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N

7.3 Controller type UA 121 - Menu tree



1: ON
2: OFF
3: OFF
4: ON/OFF = Master-/Slave-Mode ON/OFF
5: OFF

Level 1	Level 2	Level 3	Level 4	Level 5	Screen No.	Screen Name
Main menu					0	**REFR. PT.**
Actual Values					1	**ACT VALUES**
	Temp. Sensor				1-1	TEMPERATUR
	Cooling Zone 1				1-2	COOLING 1
	Defrost Zone 1				1-3	DEFROST 1
	--					
	Alarm				1-5	ALARM
	Frame Heater				1-6	MODE
	Cooling Zone 2				1-7	COOLING 2
	Defrost Zone 2				1-8	DEFROST 2
Setpoints					2	**SETPOINTS**
	Cooling				2-1	COOLING
		Zone 1			2-1-1	COOLING 1
		Zone 2			2-1-2	COOLING 2
		Zone 1A Altern.			2-1-3	COOLING 1A
		Zone 2A Altern.			2-1-4	COOLING 2A
	Abtauung				2-2	DEFROST
		Zone 1			2-2-1	DEFROST 1
		Zone 2			2-2-2	DEFROST 2
		Zone 1A Altern.			2-2-3	DEFROST 1A
		Zone 2A Altern.			2-2-4	DEFROST 2A
	--					
	Alarm				2-4	ALARM
		Zone 1			2-4-1	ALARM 1
		Zone 2			2-4-2	ALARM 2
		Zone 1A Altern.			2-4-3	ALARM 1A
		Zone 2A Altern.			2-4-4	ALARM 2A
	Frame Heater				2-5	FRAME HTR
		Mode altern.			2-5-1	MODE
		Setpoint frm htr			2-5-2	SETPOINTS
		Mode altern.			2-5-3	MODE ALT
		Setpoint altern.			2-5-4	MODE ALT

Level 1	Level 2	Level 3	Level 4	Level 5	Screen No.	Screen Name
Clock					3	**CLOCK**
	Current Time				3-1	CLOCK
	Defrost timer				3-2	DERF. TIMER
	Setpoint altern.				3-3	TOGGLE
Messages					4	**MESSAGES**
	View				4-1	MESSAGES
	Acknowledge				4-2	
	Delete				4-3	MESSAGES
Archive					5	**ARCHIVE**
Configuration					6	**CONFIGURAT**
	Refriger. Point				6-1	REFR. PT.
	Controller				6-2	CONTROLLER
		Type and Version			6-2-1	VERSION
		Temp. Display			6-2-2	DISPLAY
		Alarm Delay			6-2-3	ALARMDELAY
		230V Inputs			6-2-4	230V INPUT
		Sensor Type			6-2-5	SENSORS
	Cooling				6-3	COOLING
	Language				6-4	LANGUAGE
	Alarm priorities				6-5	ALARMPRIOS
	Em.Powersupply				6-6	EM.POW.SUP

7.3.1 Menu 0 Main menu

REFR. PT. POS: XXXXX	
1 Actual Values	Move to Screen 1
2 Setpoints	Move to Screen 2
3 Clock	Move to Screen 3
4 Messages	Move to Screen 4
5 Archive	Move to Screen 5
6 Configuration	Move to Screen 6

7.3.2 Menu 1 Actual Values

ACT VALUES POS: XXXXX	
1 Temp. Sensor	Move to Screen 1-1
2 Cooling Zone 1	Move to Screen 1-2
3 Defrost Zone 1	Move to Screen 1-3
4	Not used with this controller type
5 Alarm	Move to Screen 1-5
6 Frame Heater	Move to Screen 1-6
7 Cooling Zone 2	Move to Screen 1-7 Only shown when two-zone operation is set (Screen 6-1)
8 Defrost Zone 2	Move to Screen 1-8 Only shown when two-zone operation is set (Screen 6-1)

- Screen 1-1 Temp. Sensor

TEMPERATUR Pos: XXXXX		
Temp. R2.1	xxx °C	Current supply air temperature Input Z11/ Z12
Temp. R4.1	xxx °C	Current return air temperature Input Z21/ Z22
Temp. R1.1	xxx °C	Current evaporator defrost termination temperature Input Z31/ Z32
Temp. R4.2	xxx °C	Current return air temperature Input Z41/ Z42
Temp. R1.2	xxx °C	Current evaporator defrost termination temperature Input Z51/ Z52
Temp. R2.3	xxx °C	Current supply air temperature Input Z61/ Z62
Temp. R4.3	xxx °C	Current return air temperature Input Z71/ Z72
Temp. R1.3	xxx °C	Current evaporator defrost termination temperature Input Z81/ Z82
Temp. R4.4	xxx °C	Current return air temperature Input Z91/ Z92
Temp. R1.4	xxx °C	Current evaporator defrost termination temperature Input Z01/ Z02

- Screen 1-2 Cooling Zone 1

COOLING 1 Pos: XXXXX		
Cooling	xxx	Current ON/OFF status of cooling
Run Time	xx %	Cooling relay on time during last day (00:00 - 24:00 hours)
Starts	0	Cooling relay actuations during last day
Temp. R2.1	xxx °C	Current supply air temperature Input Z11/Z12
Setpoint R2.1	xxx °C	Supply air temperature setpoint for comparison
Hystersis R2.1	xxx K	Supply air temperature hysteresis setpoint
Temp. R4.1	xxx °C	Current return air temperature Input Z21/Z22
Setpoint R4.1	xxx °C	Return air temperature setpoint for comparison
Hystersis R4.1	xxx K	Return air temperature hysteresis setpoint

- Screen 1-3 Defrost Zone 1

DEFROST 1 Pos: XXXXX		
Defrost	XXX	Current ON/OFF status of defrosting
Temp. R1.1	XXX °C	Current supply air temperature Input Z31/Z32
Temp. R1.2	XXX °C	Current supply air temperature Input Z51/Z52
Def. End. Tmp.	XXX °C	Defrost termination temperature for comparison
Wait Time	xx m	Waiting time setpoint
Drip Time	xx m	Drain time setpoint
Last Defrst	XX hh:mm	Day and time of last defrost cycle started

- Screen 1-4

Not used with this controller type.

- Screen 1-5 Alarm

ALARM Pos: XXXXX		
Alarm Relay	XXX	Current ON/OFF status of alarm output Terminal 15/16/18
Hi Temp Setp.1	XX °C	High temperature setpoint Zone 1
Lo Temp Setp.1	XX K	Low temperature setpoint Zone 1
Hi Temp Setp.2	XX °C	High temperature setpoint Zone 2; Only shown when two-zone operation is set (Screen 6-1)
Lo Temp Setp.2	XX K	Low temperature setpoint Zone 2; Only shown when two-zone operation is set (Screen 6-1)

- Screen 1-6 Frame Heater

MODE XXXXX		
Frame Heater	xxx	Current ON/OFF status of frame heater output Terminal 91/92/93
Run Time	xxx %	Current on time of frame heater
Humidity	xxx %	Current ambient air humidity (transmitted via CAN bus from pack controller with fitted ambient humidity sensor)
Room temp	xx °C	Current ambient air temperature (transmitted via CAN bus from pack controller with fitted ambient temperature sensor

- Screen 1-7 Cooling Zone 2

COOLING 2	XXXXX	
Cooling	XXX	Current ON/OFF status of cooling
Run Time	XX %	Cooling relay on time during last day (00:00 - 24:00 hours)
Starts	0	Cooling relay actuations during last day
Temp. R2.3	XXX °C	Current supply air temperature Input Z61/Z62
Setpoint R2.3	XXX °C	Supply air temperature setpoint for comparison
Hystersis R2.3	XXX K	Supply air temperature hysteresis setpoint
Temp. R4.3	XXX °C	Current return air temperature Input Z71/Z72
Setpoint R4.3	XXX °C	Return air temperature setpoint for comparison
Hystersis R4.3	XXX K	Return air temperature hysteresis setpoint

- Screen 1-8 Defrost Zone 2

DEFROST 2	Pos: XXXXX	
Defrost	XXX	Current ON/OFF status of defrosting
Temp. R1.3	XXX °C	Current supply air temperature Input Z81/Z82
Temp. R1.4	XXX °C	Current supply air temperature Input Z01/Z02
Def. End. Tmp.	XXX °C	Defrost termination temperature for comparison
Wait Time	xx m	Waiting time setpoint
Drip Time	xx m	Drain time setpoint
Last Defrst	XX hh:mm	Day and time of last defrost cycle started

7.3.3 Menu 2 Setpoints

SETPOINTS POS: XXXXX	
1 Cooling	Screen 2-1; Special case: Move to Screen 2-1-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
2 Defrost	Screen 2-2; Special case: Move to Screen 2-2-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
3	Not used with this controller type
4 Alarm	Screen 2-4; Special case: Move to Screen 2-4-1. when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
5 Frame Heater	Move to Screen 2-5

- Screen 2-1 Cooling

COOLING POS: XXXXX	
1 Zone 1	Screen 2-1-1
2 Zone 2	Screen 2-1-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-1-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-1-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-1-1 Zone 1

COOLING 1 POS: XXXXX			Entry	Default
Setpoint R2.1	XXX °C	Supply air temperature setpoint	-10..20	-2 °C
Hystersis R2.1	X K	Supply air temperature hysteresis setpoint	1..8	4 K
Setpoint R4.1	XXX °C	Return air temperature setpoint for comparison	-10..20	4 °C
Hystersis R4.1	X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-1-2 Zone 2

COOLING 2 POS: XXXXX			Entry	Default
Setpoint R2.3	XXX °C	Supply air temperature setpoint	-10..20	-2 °C
Hystersis R2.3	X K	Supply air temperature hysteresis setpoint	1..8	4 K
Setpoint R4.3	XXX °C	Return air temperature setpoint for comparison	-10..20	4 °C
Hystersis R4.3	X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-1-3 Zone 1A Altern.

COOLING 1A POS: XXXXX			Entry	Default
Setpoint R2.1	XXX °C	Supply air temperature setpoint	-10..20	0 °C
Hystersis R2.1	X K	Supply air temperature hysteresis setpoint	1..8	4 K
Setpoint R4.1	XXX °C	Return air temperature setpoint for comparison	-10..20	4 °C
Hystersis R4.1	X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-1-4 Zone 2A Altern.

COOLING 2A POS: XXXXX			Entry	Default
Setpoint R2.3	XXX °C	Supply air temperature setpoint	-10..20	0 °C
Hystersis R2.3	X K	Supply air temperature hysteresis setpoint	1..8	4 K
Setpoint R4.3	XXX °C	Return air temperature setpoint for comparison	-10..20	4 °C
Hystersis R4.3	X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-2 Defrost

DEFROST POS: XXXXX	
1 Zone 1	Screen 2-2-1
2 Zone 2	Screen 2-2-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-2-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-2-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-2-1 Zone 1

DEFROST 1 POS: XXXXX			Entry	Default
Def. End. Tmp.	XX °C	Defrost termination temperature setpoint	--, 5..20	8 °C
Wait Time	xx m	Waiting time setpoint between cooling and defrosting	0 .. 15	0 m
Drip Time	x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	0 m

- Screen 2-2-2 Zone 2

DEFROST 2 POS: XXXXX			Entry	Default
Def. End. Tmp.	XX °C	Defrost termination temperature setpoint	--, 5..20	8 °C
Wait Time	xx m	Waiting time setpoint between cooling and defrosting	0 .. 15	0 m
Drip Time	x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	0 m

- Screen 2-2-3 Zone 1A Altern.

DEFROST 1A POS: XXXXX			Entry	Default
Def. End. Tmp.	XX °C	Defrost termination temperature setpoint	--, 5..20	5 °C
Wait Time	xx m	Waiting time setpoint between cooling and defrosting	0 .. 15	0 m
Drip Time	x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	0 m

- Screen 2-2-4 Zone 2A Altern.

DEFROST 2A POS: XXXXX			Entry	Default
Def. End. Tmp.	XX °C	Defrost termination temperature setpoint	--, 5..20	5 °C
Wait Time	xx m	Waiting time setpoint between cooling and defrosting	0 .. 15	0 m
Drip Time	x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	0 m

- Screen 2-3

Not used with this controller type.

- Screen 2-4 Alarm

ALARM POS: XXXXX	
1 Zone 1	Screen 2-4-1
2 Zone 2	Screen 2-4-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-4-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-4-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-4-1 Zone 1

ALARM 1 POS: XXXXX			Entry	Default
High Temp Setp	XX °C	High temperature setpoint at which *High Temperature* alarm is generated	0..30	8 °C
Low Temp Setp.	XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-4-2 Zone 2

ALARM 2 POS: XXXXX			Entry	Default
High Temp Setp	XX °C	High temperature setpoint at which *High Temperature* alarm is generated	0..30	8 °C
Low Temp Setp.	XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-4-3 Zone 1A Altern.

ALARM 1A POS: XXXXX			Entry	Default
High Temp Setp	XX °C	High temperature setpoint at which *High Temperature* alarm is generated	0..30	8 °C
Low Temp Setp.	XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-4-4 Zone 2A Altern.

ALARM 2A POS: XXXXX			Entry	Default
High Temp Setp	XX °C	High temperature setpoint at which *High Temperature* alarm is generated	0..30	8 °C
Low Temp Setp.	XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-5 Frame Heater

FRAME HTR POS: XXXXX	
1 Mode altern.	Move to Screen 2-5-1
2 Setpoint frm htr	Move to Screen 2-5-2
3 Mode altern.	Move to Screen 2-5-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Setpoint altern.	Move to Screen 2-5-4 Not shown when setpoint toggle is disabled (Screen 3-3)

- Screen 2-5-1 Mode altern.

Select between values. Checkmark shows current setting.

MODE POS: XXXXX			Entry	Default
fixed run time	√	Fixed frame heater on time	↵	√
enthalpy-ctrl rtm		Enthalpy control by ambient air temperature and humidity	↵	

- Screen 2-5-2 Setpoint frame heater

SETPOINTS POS: XXXXX			Entry	Default
Mod: xxxxxxxxxxxx		Displays set frame heater mode (Screen 2-5-1)		Fixed on time
Run Time	XXX %	Fixed on time, Only shown when mode set to Fixed On Time (Screen 2-5-1)	--, 0..100	100 %
emerg.run time	XXX %	On time in failure of ambient air humidity or temperature signal (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-1)	--, 0..100	100 %
enthalp. offs.	XXX %	Offset to on time with activated enthalpy control (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-1)	-50..50	0 %

- Screen 2-5-3 Mode altern.

Select between values. Checkmark shows current setting.

MODE ALT POS: XXXXX		Entry	Default
fixed run time √	Fixed frame heater on time	↵	√
enthalpy-ctrl rtm	Enthalpy control by ambient air temperature and humidity	↵	

- Screen 2-5-4 Setpoint altern.

SOLLW. UM POS: XXXXX		Entry	Default
Mod: xxxxxxxxxxx	Displays set frame heater mode (Screen 2-5-3		Fixed on time
Run Time XXX %	Fixed on time, Only shown when mode set to Fixed On Time (Screen 2-5-3)	--, 0..100	100 %
emerg.run time XXX %	On time in failure of ambient air humidity or temperature signal (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-3)	--, 0..100	100 %
enthalp. offs. XXX %	Offset to on time with activated enthalpy control (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-3)	-50..50	0 %

7.3.4 Menu 3 Clock

CLOCK POS: XXXXX	
1 Current Time	Move to Screen 3-1
2 Defrost timer	Move to Screen 3-2
3 Toggle Setpoints	Move to Screen 3-3

- Screen 3-1 Current Time

Time default is set by the time master (CI 3000, AL 300) when CAN bus is connected. Any entry made will then be overwritten by the default value.

CLOCK POS: XXXXX		Entry	Default
Date: XX dd.mm.yy	Display and enter current weekday, date	dd.mm.yy	
Time: hh.mm	Display and enter current time	hh.mm	
Daylight Saving X	Display and enter automatic daylight saving change (Y/N)	↑, ↓, (Y/N)	J

- Screen 3-2 Defrost timer

DERF. TIMER POS: XXXXX		Entry	Default
Defrost timer XXX	Defrost initiation via input D11/12 (EXT) or internal (INT)	↑, ↓, (EXT, INT)	INT
Safe Defr Time XXX m	Safe defrost time for maximum allowed duration of defrosting (used only for internal defrosting)	0..120	60 min
Defr. 1 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 01:00
Defr. 2 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 07:00
Defr. 3 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 13:00
Defr. 4 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 19:30
...			
Defr. 14 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)		
Manual Defrost XXX	Status (OFF/ON) for supplementary manual defrosting *)	↑, ↓, (ON/OFF)	OFF

*) Parameter automatically set to ON for safe defrost time at first start.

- Screen 3-3 Toggle Setpoints

TOGGLE POS: XXXXX		Entry	Default
Status XXX	Setpoint toggle status (OFF/ON) of alternative set of setpoints (setpoint toggle)		
Toggle Setp. XXX	Setpoint toggle via input D21/22 (EXT), internal (INT) or disabled (--)	↑, ↓, (EXT, INT, --)	EXT
Blind On Time X s	Fan and cooling stop time after toggling to alternative set of setpoints with external setpoint toggle (Screen 3-3)	0..250	50 sec
Alt ON: DD-DD hh:mm	Start time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 21:00
AltOFF: DD-DD hh:mm	End time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 05:00
Alt ON: DD-DD hh:mm	Start time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Su 05:00
AltOFF: DD-DD hh:mm	End time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Su 21:00
...	A total of 7 different ON and OFF toggle times can be defined. A toggle time will only be obeyed when a matched pair of on and off times is set as a parameter.		

7.3.5 Menu 4 Messages

MESSAGES POS: XXXXX	
1 View	Move to Screen 4-1: Show Message Log
2 Acknowledge	Messages in message log are cancelled. *"Alarms Cancelled!"* shown in display: Press ESC to go back.
3 Delete	Move to Screen 4-2: Delete Message Log (with prompt)

- Screen 4-1 View Messages

MESSAGES POS: XXXXX	
Error Message 1:	Fault 1 message text
dd.mm.yy hh:mm ON	Start of Fault 1
dd.mm.yy hh:mm OFF	End of Fault 1 (only when Fault 1 terminated)
...	
Error Message n:	Fault n message text
dd.mm.yy hh:mm ON	Start of Fault n
dd.mm.yy hh:mm OFF	End of Fault n (only when Fault n terminated)

- Screen 4-2 Acknowledge Messages

This displays the *"Alarms Cancelled!"* message.

- Screen 4-3 Delete Messages

MESSAGES POS: XXXXX		Entry
Delete! Are you sure ? No: ESC YES: ↵	Safety prompt for deleting messages Press ESC to go back after cancelling messages.	↵, ESC

7.3.6 Menu 5 Archive

ARCHIVE POS: XXXXX	
dd.mm.yy hh:mm	Time of archiving Record 1
Zone 1: abcdef x °C	Status and temperature of Zone 1, see Note
Zone 2: abcdef x °C	Status and temperature of Zone 2, see Note Only shown when two-zone operation is set (Screen 6-1)
...	
dd.mm.yy hh:mm	Time of archiving Record n
Zone 1: abcdef x °C	Status and temperature of Zone 1, see Note
Zone 2: abcdef x °C	Status and temperature of Zone 2, see Note Only shown when two-zone operation is set (Screen 6-1)

Status abcdef covers following states of the refrigeration point. Display will be - if state is not active.

	Single-zone operation	**Two-zone operation**
a	O = Operation	O = Operation
b	R = Refrigeration/Cooling	R = Refrigeration/Cooling
c	D = Defrost	R = Refrigeration/Cooling
d	G =Gate/Door (coldroom ctrlr. only)	D = Defrost
e	A = Alarm	G =Gate/Door (coldroom ctrlr. only)
f		A = Alarm

7.3.7 Menu 6 Configuration

CONFIGURAT POS: XXXXX	
1 Refriger. Point	Move to Screen 6-1
2 Controller	Move to Screen 6-2
3 Cooling	Move to Screen 6-3
4 Language	Move to Screen 6-4
5 Alarm priorities	Move to Screen 6-5
6 Em.Powersupply	Move to Screen 6-6

- Screen 6-1 Refriger. Point

REFR. PT. POS: XXXXX		Entry	Default
Refr. Pt. Name:	Text only		
xxxxxxxxxxxxxxx	Free text entry describing refrigeration point (see note)		Kühlstellen-regler
Item ID: XXXXX	Free text entry displayed in screens after ITEM ID (see note)		UA300
Priority: XX	Alarm priority in failure of refrigeration point or when global controller priority is set (Screen 6-5)	↑, ↓, or numbers (0..99)	1
Refr. Sys. No.: XX	No. of pack controller allocated to case/coldroom controller	↑, ↓, or numbers (--, 1..9)	1
Refr. Sys. Type XXX	Associated compressor pack. Parameter only required when linked to a VS 3000 BS having several zones. If a different type of pack controller is used, set this parameter blank (---)	↑, ↓, or numbers (---, Z1, Z2)	---
Temp. Zones X	Number of temperature zones Single-zone operation (tandem operation) Two-zone operation	↑, ↓, or numbers (1, 2)	2
No. Sensors XX	Number of temperature sensors connected. After entering ↵ sensor scan is performed to redetermine the number of sensorimm of sensors	↵	

A meaningful name that describes the refrigeration point in more detail should be entered, e.g. Cheese Counter 2 and CC2. The name is entered in the screens of the CI 3000 Store Computer or AL 300 Operator Terminal. Direct entry cannot be made in the UA 300 screens displayed on operator terminals. The name also cannot be entered with the BT 300 x Operator Interface.

The priority must be assigned between 0..2 by older versions of the CI 3000 Store Computer (see section 8 Alarms and Messages of UA 300).

- Screen 6-2 Controller

CONTROLLER POS: XXXXX	
1 Type and Version	Move to Screen 6-2-1
2 Temp. Display	Move to Screen 6-2-2
3 Alarm Delay	Move to Screen 6-2-3
4 230V Inputs	Move to Screen 6-2-4
5 Sensor Type	Move to Screen 6-2-5

- Screen 6-2-1 Type and Version

VERSION POS: XXXXX			Entry	Default
Ctrlr. Type	XXXXXXX	Controller type set by DIP Switch S3	--	UA121
Software Ver.:	XXXX	Software version of case/coldroom controller (EPROM))	--	x.yy
Serial No.:	XXXXXX	Device No. of case/coldroom controller (from EEPROM)	--	
Master/Sl. Mode	XXX	Synchronized defrosting in master-slave mode (ON/OFF)	--	

- Screen 6-2-2 Temp. Display

DISPLAY POS: XXXXX			Entry	Default
Offset	XX K	Offset for temperature display	-10..10	0K
Alarm symbol	X	Show alarm symbol on BT 30 Temperature Display	↑, ↓, (Y/N)	N

- Screen 6-2-3 Alarm Delay

ALARMDELAY POS: XXXXX			Entry	Default
Sensor Fault	XX m	Sensor break alarm delay	0..30	15 min
High/Low Temp.	XX m	High/low temperature alarm delay	0..120	60 min
No Defrost	XX h	No defrost alarm delay	--, 2..168	24 h
Selfholding	X	NO: Automatic reset of non- transient alarms. YES: Alarms must be reset manually.	↑, ↓, (Y/N)	N

- Screen 6-2-4 230V Inputs

Only trained personnel should be allowed to change inputs, as changes may affect other functions.

230V INPUT POS: XXXXX		Default
Input1: XXXXXXXXXX	Function of Digital Input 1 D11/D12	DERF. TIMER
Input2: XXXXXXXXXX	Function of Digital Input 2 D21/D22	TOGGLE SETP
Input3: XXXXXXXXXX	Function of Digital Input 3 D31/D32	MANUAL OFF

- Screen 6-2-5 Sensor Type

Select between values. Checkmark shows current setting.

SENSORS POS: XXXXX		Entry	Default
L243 √	Temperature range -50..50°C	↵	√
K277	Temperature range -50..50°C	↵	
5K3A1	Temperature range 0..100°C	↵	

- Screen 6-3 Cooling

COOLING POS: XXXXX		Entry	Default
Min. On Time XX K	Minimum cooling ON time	0..15	2 m
Min. Off Time XX m	Minimum cooling OFF time	0..15	2 m
Cont Cool Mon. xx m	Duration of forced interruption of cooling in continuous running	--, 0..15	--- m
Emergency Op. xx m	In failure of required sensors, the solenoid valve is actuated to adjust to the set opening in %.	0..100	40%

- Screen 6-4 Language

LANGUAGE POS: XXXXX		Entry	Default
Deutsch D √		↵	√
English GB		↵	
Francais F		↵	
Espagnol E		↵	
Finnish FIN		↵	
Türkce TR		↵	
Cesky CZ		↵	

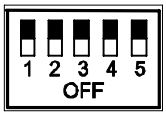
- Screen 6-5 Alarm priorities

ALARMPRIOS POS: XXXXX		Entry	Default
Prio.Refrig. Pt. X	Global alarm priority by refrigeration point priority (Screen 6-1) (Y)	↑, ↓, (Y,N)	J
Priority: XX	Show refrigeration point priority (Screen 6-1) Only shown when refrigeration point priority set to Y.		1
Following parameters are only shown when refrigeration point priority is set to N. Meaning of usable entries for alarm priority: *- = Event ignored* *0 = Message (entered only in message log)* *1 = Priority 1 alarm* *..* *99 = Priority 99 alarm*			
Low Temp.	Temperature below lower alarm limit Priority applies to following alarms: Low Temp. Zone1, Low Temp. Zone2	-, 0..99	1
High Temp.	Temperature above upper alarm limit Priority applies to following alarms: High Temp. Zone1, High Temp. Zone2	-, 0..99	1
Sensor Fault	Temperature sensor failure	-, 0..99	1
No Defrost	No defrost within alarm delay interval Priority applies to following alarm: No defrost	-, 0..99	1
Timer-Term.Defr.	Defrosting terminated by safe defrost time	-, 0..99	0
Power Failure	Start following power failure	-, 0..99	0
First Start	Controller startup (basic settings loaded!)	-, 0..99	1
Manual Shutoff	Manual switch Input D31/D32 set OFF	-, 0..99	0
Hardware Fault	Internal hardware fault Priority applies to following alarms: EEPROM Fault, RTC Fault, Flash Fault	-, 0..99	1
Setpoint Change	Message generated on changing setpoint	0..99	0
Refrig.Pt.Dis.	Cooling by pack controller via CAN bus interrupted	-, 0..99	0
Battery Voltage	Battery low	-, 0..99	0

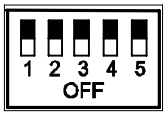
- Maske 6-6 Em.Powersupply (Emergency Power supply)

EM.POW.SUP POS: XXXXX		Entry	Default
Cool.funct.OFF xxx	Functionality of the cooling switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N
Defr.funct.OFF xxx	Functionality of the defrosting switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N
Fan funct. OFF xxx	Functionality of the fan switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N

7.4 Controller type UA 131 - Menu tree



1: OFF
2: ON
3: OFF
4: ON/OFF = Master-/Slave-Mode ON/OFF
5: ON/OFF = with/without fan control



1: ON
2: ON
3: ON
4: ON/OFF = Master-/Slave-Mode ON/OFF
5: ON = with advanced fan control: **UA 131 LS**

Level 1	Level 2	Level 3	Level 4	Level 5	Screen No.	Screen Name
Main menu					0	**REFR. PT.**
Actual Values					1	**ACT VALUES**
	Temp. Sensor				1-1	TEMPERATUR
	Cooling Zone 1				1-2	COOLING 1
	Defrost Zone 1				1-3	DEFROST 1
	--					
	Alarm				1-5	ALARM
	Frame Heater				1-6	MODE
	Cooling Zone 2				1-7	COOLING 2
	Defrost Zone 2				1-8	DEFROST 2
Setpoints					2	**SETPOINTS**
	Cooling				2-1	COOLING
		Zone 1			2-1-1	COOLING 1
		Zone 2			2-1-2	COOLING 2
		Zone 1A Altern.			2-1-3	COOLING 1A
		Zone 2A Altern.			2-1-4	COOLING 2A
	Defrost				2-2	DEFROST
		Zone 1			2-2-1	DEFROST 1
		Zone 2			2-2-2	DEFROST 2
		Zone 1A Altern.			2-2-3	DEFROST 1A
		Zone 2A Altern.			2-2-4	DEFROST 2A
	--					

Level 1	Level 2	Level 3	Level 4	Level 5	Screen No.	Screen Name
Setpoints	Alarm				2-4	ALARM
		Zone 1			2-4-1	ALARM 1
		Zone 2			2-4-2	ALARM 2
		Zone 1A Altern.			2-4-3	ALARM 1A
		Zone 2A Altern.			2-4-4	ALARM 2A
	Frame Heater				2-5	FRAME HTR
		Mode altern.			2-5-1	MODE
		Setpoint frm htr			2-5-2	SETPOINTS
		Mode altern.			2-5-3	MODE ALT
		Setpoint altern.			2-5-4	MODE ALT
	Fans				2-6	FANS
		Zone 1+2			2-6-1	FANS 1
		Zone 1+2 Altern.			2-6-2	FANS 1A
Clock					3	**CLOCK**
	Current Time				3-1	CLOCK
	Defrost timer				3-2	DERF. TIMER
	Setpoint altern.				3-3	TOGGLE
Messages					4	**MESSAGES**
	View				4-1	MESSAGES
	Acknowledge				4-2	
	Delete				4-3	MESSAGES
Archive					5	**ARCHIVE**
Configuration					6	**CONFIGURAT**
	Refriger. Point				6-1	REFR. PT.
	Controller				6-2	CONTROLLER
		Type and Version			6-2-1	VERSION
		Temp. Display			6-2-2	DISPLAY
		Alarm Delay			6-2-3	ALARMDELAY
		230V Inputs			6-2-4	230V INPUT
		Sensor Type			6-2-5	SENSORS
	Cooling				6-3	COOLING
	Language				6-4	LANGUAGE
	Alarm priorities				6-5	ALARMPRIOS
	Em.Powersupply				6-6	EM.POW.SUP

7.4.1 Menu 0 Main menu

REFR. PT. POS: XXXXX	
1 Actual Values	Move to Screen 1
2 Setpoints	Move to Screen 2
3 Clock	Move to Screen 3
4 Messages	Move to Screen 4
5 Archive	Move to Screen 5
6 Configuration	Move to Screen 6

7.4.2 Menu 1 Actual Values

ACT VALUES POS: XXXXX	
1 Temp. Sensor	Move to Screen 1-1
2 Cooling Zone 1	Move to Screen 1-2
3 Defrost Zone 1	Move to Screen 1-3
4	Not used with this controller type
5 Alarm	Move to Screen 1-5
6 Frame Heater	Move to Screen 1-6
7 Cooling Zone 2	Move to Screen 1-7 Only shown when two-zone operation is set (Screen 6-1)
8 Defrost Zone 2	Move to Screen 1-8 Only shown when two-zone operation is set (Screen 6-1)

- Screen 1-1 Temp. Sensor

TEMPERATUR Pos: XXXXX		
Temp. R2.1	xxx °C	Current supply air temperature Input Z11/ Z12
Temp. R4.1	xxx °C	Current return air temperature Input Z21/ Z22
Temp. R1.1	xxx °C	Current evaporator defrost termination temperature Input Z31/ Z32
Temp. R4.2	xxx °C	Current return air temperature Input Z41/ Z42
Temp. R1.2	xxx °C	Current evaporator defrost termination temperature Input Z51/ Z52
Temp. R2.3	xxx °C	Current supply air temperature Input Z61/ Z62
Temp. R4.3	xxx °C	Current return air temperature Input Z71/ Z72
Temp. R1.3	xxx °C	Current evaporator defrost termination temperature Input Z81/ Z82
Temp. R4.4	xxx °C	Current return air temperature Input Z91/ Z92
Temp. R1.4	xxx °C	Current evaporator defrost termination temperature Input Z01/ Z02

- Screen 1-2 Cooling Zone 1

COOLING 1 Pos: XXXXX		
Cooling	xxx	Current ON/OFF status of cooling
Run Time	xx %	Cooling relay on time during last day (00:00 - 24:00 hours)
Starts	0	Cooling relay actuations during last day
Temp. R2.1	xxx °C	Current supply air temperature Input Z11/Z12
Setpoint R2.1	xxx °C	Supply air temperature setpoint for comparison
Hystersis R2.1	xxx K	Supply air temperature hysteresis setpoint
Temp. R4.1	xxx °C	Current return air temperature Input Z21/Z22
Setpoint R4.1	xxx °C	Return air temperature setpoint for comparison
Hystersis R4.1	xxx K	Return air temperature hysteresis setpoint

- Screen 1-3 Defrost Zone 1

DEFROST 1 Pos: XXXXX		
Counting Rate		Counting rate
Defrost Counter		Defrost counter
Defr. Relay 1		Defrost Relay 1
Temp. R1.1	XXX °C	Current supply air temperature Input Z31/Z32
Defr. Relay 2		Defrost Relay 2
Temp. R1.2	XXX °C	Current supply air temperature Input Z51/Z52
Def. End. Tmp.	XXX °C	Defrost termination temperature for comparison
Wait Time	xx m	Waiting time setpoint
Drip Time	xx m	Drain time setpoint
Last Defrst	XX hh:mm	Day and time of last defrost cycle started

- Screen 1-4

Not used with this controller type.

- Screen 1-5 Alarm

ALARM Pos: XXXXX		
Alarm Relay	XXX	Current ON/OFF status of alarm output Terminal 15/16/18
Hi Temp Setp.1	XX °C	High temperature setpoint Zone 1
Lo Temp Setp.1	XX K	Low temperature setpoint Zone 1
Hi Temp Setp.2	XX °C	High temperature setpoint Zone 2; Only shown when two-zone operation is set (Screen 6-1)
Lo Temp Setp.2	XX K	Low temperature setpoint Zone 2; Only shown when two-zone operation is set (Screen 6-1)

- Screen 1-6 Frame Heater

MODE XXXXX		
Frame Heater	xxx	Current ON/OFF status of frame heater output Terminal 91/92/93
Run Time	xxx %	Current on time of frame heater
Humidity	xxx %	Current ambient air humidity (transmitted via CAN bus from pack controller with fitted ambient humidity sensor)
Room temp	xx °C	Current ambient air temperature (transmitted via CAN bus from pack controller with fitted ambient temperature sensor

- Screen 1-7 Cooling Zone 2

COOLING 2	XXXXX	
Cooling	XXX	Current ON/OFF status of cooling
Run Time	XX %	Cooling relay on time during last day (00:00 - 24:00 hours)
Starts	0	Cooling relay actuations during last day
Temp. R2.3	XXX °C	Current supply air temperature Input Z61/Z62
Setpoint R2.3	XXX °C	Supply air temperature setpoint for comparison
Hystersis R2.3	XXX K	Supply air temperature hysteresis setpoint
Temp. R4.3	XXX °C	Current return air temperature Input Z71/Z72
Setpoint R4.3	XXX °C	Return air temperature setpoint for comparison
Hystersis R4.3	XXX K	Return air temperature hysteresis setpoint

- Screen 1-8 Defrost Zone 2

DEFROST 2	Pos: XXXXX	
Counting Rate		Counting rate
Defrost Counter		Defrost counter
Defr. Relay 3		Defrost Relay 3
Temp. R1.3	XXX °C	Current supply air temperature Input Z81/Z82
Defr. Relay 4		Defrost Relay 4
Temp. R1.4	XXX °C	Current supply air temperature Input Z01/Z02
Def. End. Tmp.	XXX °C	Defrost termination temperature for comparison
Wait Time	xx m	Waiting time setpoint
Drip Time	xx m	Drain time setpoint
Last Defrst	XX hh:mm	Day and time of last defrost cycle started

7.4.3 Menu 2 Setpoints

SETPOINTS POS: XXXXX	
1 Cooling	Screen 2-1; Special case: Move to Screen 2-1-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
2 Defrost	Screen 2-2; Special case: Move to Screen 2-2-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
3	Not used with this controller type
4 Alarm	Screen 2-4; Special case: Move to Screen 2-4-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
5 Frame Heater	Move to Screen 2-5
6 Fans	Move to Screen 2-6 (Screen only shown when the case controller is configured to UA 131 with fan control (further details in the chapter Installation and Startup):

- Screen 2-1 Cooling

COOLING POS: XXXXX	
1 Zone 1	Screen 2-1-1
2 Zone 2	Screen 2-1-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-1-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-1-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-1-1 Zone 1

COOLING 1 POS: XXXXX			Entry	Default
Setpoint R2.1	XXX °C	Supply air temperature setpoint	-40..20	-32 °C
Hystersis R2.1	X K	Supply air temperature hysteresis setpoint	1..8	2 K
Setpoint R4.1	XXX °C	Return air temperature setpoint for comparison	-30..20	-20 °C
Hystersis R4.1	X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-1-2 Zone 2

COOLING 2 POS: XXXXX			Entry	Default
Setpoint R2.3	XXX °C	Supply air temperature setpoint	-40..20	-32 °C
Hystersis R2.3	X K	Supply air temperature hysteresis setpoint	1..8	2 K
Setpoint R4.3	XXX °C	Return air temperature setpoint for comparison	-30..20	-20 °C
Hystersis R4.3	X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-1-3 Zone 1A Altern.

COOLING 1A POS: XXXXX		Entry	Default
Setpoint R2.1 XXX °C	Supply air temperature setpoint	-40..20	-32 °C
Hystersis R2.1 X K	Supply air temperature hysteresis setpoint	1..8	2 K
Setpoint R4.1 XXX °C	Return air temperature setpoint for comparison	-30..20	-22 °C
Hystersis R4.1 X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-1-4 Zone 2A Altern.

COOLING 2A POS: XXXXX		Entry	Default
Setpoint R2.3 XXX °C	Supply air temperature setpoint	-40..20	-32 °C
Hystersis R2.3 X K	Supply air temperature hysteresis setpoint	1..8	2 K
Setpoint R4.3 XXX °C	Return air temperature setpoint for comparison	-30..20	-22 °C
Hystersis R4.3 X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-2 Defrost

DEFROST POS: XXXXX	
1 Zone 1	Screen 2-2-1
2 Zone 2	Screen 2-2-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-2-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-2-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-2-1 Zone 1

DEFROST 1 POS: XXXXX		Entry	Default
Counting Rate	Counting rate	0..15	3
Defrost Counter	Defrost counter	-	1
Def. End. Tmp. XX °C	Defrost termination temperature setpoint	--, 0..20	10 °C
Wait Time xx m	Waiting time setpoint between cooling and defrosting	0 .. 15	3 m
Drip Time x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	5 m

- Screen 2-2-2 Zone 2

DEFROST 2 POS: XXXXX		Entry	Default
Counting Rate	Counting rate	0..15	3
Defrost Counter	Defrost counter	-	1
Def. End. Tmp. XX °C	Defrost termination temperature setpoint	--, 0..20	10 °C
Wait Time xx m	Waiting time setpoint between cooling and defrosting	0 .. 15	3 m
Drip Time x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	5 m

- Screen 2-2-3 Zone 1A Altern.

DEFROST 1A POS: XXXXX		Entry	Default
Counting Rate	Counting rate	0..15	3
Defrost Counter	Defrost counter	-	1
Def. End. Tmp. XX °C	Defrost termination temperature setpoint	--, 0..20	10 °C
Wait Time xx m	Waiting time setpoint between cooling and defrosting	0 .. 15	3 m
Drip Time x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	5 m

- Screen 2-2-4 Zone 2A Altern.

DEFROST 2A POS: XXXXX		Entry	Default
Counting Rate	Counting rate	0..15	3
Defrost Counter	Defrost counter	-	1
Def. End. Tmp. XX °C	Defrost termination temperature setpoint	--, 0..20	10 °C
Wait Time xx m	Waiting time setpoint between cooling and defrosting	0 .. 15	3 m
Drip Time x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	5 m

- Screen 2-3

Not used with this controller type.

- Screen 2-4 Alarm

ALARM POS: XXXXX	
1 Zone 1	Screen 2-4-1
2 Zone 2	Screen 2-4-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-4-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-4-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-4-1 Zone 1

ALARM 1 POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	-20..30	-12 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-4-2 Zone 2

ALARM 2 POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	-20..30	-12 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-4-3 Zone 1A Altern.

ALARM 1A POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	-20..30	-14 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-4-4 Zone 2A Altern.

ALARM 2A POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	-20..30	-14 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-5 Frame Heater

FRAME HTR POS: XXXXX	
1 Mode altern.	Move to Screen 2-5-1
2 Setpoint frm htr	Move to Screen 2-5-2
3 Mode altern.	Move to Screen 2-5-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Setpoint altern.	Move to Screen 2-5-4 Not shown when setpoint toggle is disabled (Screen 3-3)

- Screen 2-5-1 Mode altern.

Select between values. Checkmark shows current setting.

MODE POS: XXXXX		Entry	Default
fixed run time	Fixed frame heater on time	↵	
enthalpy-ctrl rtm	Enthalpy control by ambient air temperature and humidity	↵	
set point-ctrl rtm √	Setpoint-dependentcontrol of frame heater	↵	√

- Screen 2-5-2 Setpoint frame heater

SETPOINTS POS: XXXXX		Entry	Default
Mod: xxxxxxxxxxx	Displays set frame heater mode (Screen 2-5-1)		Fixed on time
Run Time XXX %	Fixed on time, Only shown when mode set to Fixed On Time (Screen 2-5-1)	--, 0..100	100 %
emerg.run time XXX %	On time in failure of ambient air humidity or temperature signal (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-1)	--, 0..100	100 %
enthalp. offs. XXX %	Offset to on time with activated enthalpy control (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-1)	-50..50	0 %
Mod:set point-ctrl	Setpoint-dependentcontrol of frame heater Only shown when mode set to Setpoint-Dependent On Time (Screen 2-5-1)	-	-

- Screen 2-5-3 Mode altern.

Select between values. Checkmark shows current setting.

MODE ALT POS: XXXXX		Entry	Default
fixed run time	Fixed frame heater on time	↵	
enthalpy-ctrl rtm	Enthalpy control by ambient air temperature and humidity	↵	
set point-ctrl rtm √	Setpoint-dependentcontrol of frame heater	↵	√

- Screen 2-5-4 Setpoint altern.

SOLLW. UM POS: XXXXX		Entry	Default
Mod: xxxxxxxxxxx	Displays set frame heater mode (Screen 2-5-3		Fixed on time
Run Time XXX %	Fixed on time, Only shown when mode set to Fixed On Time (Screen 2-5-3)	--, 0..100	100 %
emerg.run time XXX %	On time in failure of ambient air humidity or temperature signal (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-3)	--, 0..100	100 %
enthalp. offs. XXX %	Offset to on time with activated enthalpy control (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-3)	-50..50	0 %
Mod:set point-ctrl	Setpoint-dependentcontrol of frame heater Only shown when mode set to Setpoint-Dependent On Time (Screen 2-5-1)	-	-

- Screen 2-6 Fans

Screens 2-6 / 2-6-1 / 2-6-2 are only show when the case controller is configured to UA 131 with fan control (further details in the chapter Installation and Startup):

UA 131 with fan control

FANS POS: XXXXX		Entry
1 Zone 1+2	Move to Screen 2-6-1	1
2 Zone 1+2 Altern.	Move to Screen 2-6-2	2

UA 131 LS with advanced fan control

Screen 2-6 only shown when the case controller is configured to UA 131 LS with advanced fan control (further details in the chapter Installation and Startup):

FANS POS: XXXXX		Entry	Default
Op.mode: XXXXXXXXXXXX	Possible operating modes: Continuous operation, Forerun, Overrun	CONTINUOUS FORERUN OVERRUN DEL.A.DEFR.	CONTINUOUS
Fan delay	Continuous operation mode: not relevant Forerun mode: not relevant Overrun mode: Fan on by undershoot of temperature at evaporator sensor Delay after defrost mode: Fan on by undershoot of temperature at evaporator sensor	--, -30..30	-5 °C
Fan hightemp.	Continuous operation mode: not relevant Forerun mode: fan on when temperature at evaporator sensor exceeded Overrun mode: fan off when temperature at evaporator sensor exceeded Delay after defrost mode: not relevant	--, -30..30	-5 °C

- Screen 2-6-1 Zone 1+2

FANS 1 POS: XXXXX		Entry	Default
Fans Start xx°C	Setpoint at which fan is activated	--, -30..30	-5 °C

- Screen 2-6-2 Zone 1+2 Altern.

FANS 1A POS: XXXXX		Entry	Default
Fans Start xx°C	Setpoint at which fan is activated	--, -30..30	-5 °C

7.4.4 Menu 3 Clock

CLOCK POS: XXXXX	
1 Current Time	Move to Screen 3-1
2 Defrost timer	Move to Screen 3-2
3 Toggle Setpoints	Move to Screen 3-3

- Screen 3-1 Current Time

Time default is set by the time master (CI 3000, AL 300) when CAN bus is connected. Any entry made will then be overwritten by the default value.

CLOCK POS: XXXXX		Entry	Default
Date: XX dd.mm.yy	Display and enter current weekday, date	dd.mm.yy	
Time: hh.mm	Display and enter current time	hh.mm	
Daylight Saving X	Display and enter automatic daylight saving change (Y/N)	↑, ↓, (Y/N)	J

- Screen 3-2 Defrost timer

DERF. TIMER POS: XXXXX		Entry	Default
Defrost timer XXX	Defrost initiation via input D11/12 (EXT) or internal (INT)	↑, ↓, (EXT, INT)	INT
Safe Defr Time XXX m	Safe defrost time for maximum allowed duration of defrosting (used only for internal defrosting)	0..120	60 min
Defr. 1 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 20:15
...			
Defr. 14 xxxxx hh:mm			
Manual Defrost XXX	Status (OFF/ON) for supplementary manual defrosting *)	↑, ↓, (ON/OFF)	OFF

*) Parameter automatically set to ON for safe defrost time at first start.

- Screen 3-3 Toggle Setpoints

TOGGLE POS: XXXXX		Entry	Default
Status XXX	Setpoint toggle status (OFF/ON) of alternative set of setpoints (setpoint toggle)		
Toggle Setp. XXX	Setpoint toggle via input D21/22 (EXT), internal (INT) or disabled (--)	↑, ↓, (EXT, INT, --)	EXT
Alt ON: DD-DD hh:mm	Start time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 21:00
AltOFF: DD-DD hh:mm	End time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 05:00
Alt ON: DD-DD hh:mm	Start time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Su 05:00
AltOFF: DD-DD hh:mm	End time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Su 21:00
...	A total of 7 different ON and OFF toggle times can be defined. A toggle time will only be obeyed when a matched pair of on and off times is set as a parameter.		

7.4.5 Menu 4 Messages

MESSAGES POS: XXXXX	
1 View	Move to Screen 4-1: Show Message Log
2 Acknowledge	Messages in message log are cancelled. *"Alarms Cancelled!"* shown in display: Press ESC to go back.
3 Delete	Move to Screen 4-2: Delete Message Log (with prompt)

- Screen 4-1 View Messages

MESSAGES POS: XXXXX	
Error Message 1:	Fault 1 message text
dd.mm.yy hh:mm ON	Start of Fault 1
dd.mm.yy hh:mm OFF	End of Fault 1 (only when Fault 1 terminated)
...	
Error Message n:	Fault n message text
dd.mm.yy hh:mm ON	Start of Fault n
dd.mm.yy hh:mm OFF	End of Fault n (only when Fault n terminated)

- Screen 4-2 Acknowledge Messages

This displays the *"Alarms Cancelled!"* message.

- Screen 4-3 Delete Messages

MESSAGES POS: XXXXX		Entry
Delete! Are you sure ? No: ESC YES: ↵	Safety prompt for deleting messages Press ESC to go back after cancelling messages.	↵, ESC

7.4.6 Menu 5 Archive

ARCHIVE POS: XXXXX	
dd.mm.yy hh:mm	Time of archiving Record 1
Zone 1: abcdef x °C	Status and temperature of Zone 1, see Note
Zone 2: abcdef x °C	Status and temperature of Zone 2, see Note Only shown when two-zone operation is set (Screen 6-1)
...	
dd.mm.yy hh:mm	Time of archiving Record n
Zone 1: abcdef x °C	Status and temperature of Zone 1, see Note
Zone 2: abcdef x °C	Status and temperature of Zone 2, see Note Only shown when two-zone operation is set (Screen 6-1)

Status abcdef covers following states of the refrigeration point. Display will be " - " if state is not active.

	Single-zone operation	**Two-zone operation**
a	O = Operation	O = Operation
b	R = Refrigeration/Cooling	R = Refrigeration/Cooling
c	D = Defrost	R = Refrigeration/Cooling
d	G =Gate/Door (coldroom ctrlr. only)	D = Defrost
e	A = Alarm	G =Gate/Door (coldroom ctrlr. only)
f		A = Alarm

7.4.7 Menu 6 Configuration

CONFIGURAT POS: XXXXX	
1 Refriger. Point	Move to Screen 6-1
2 Controller	Move to Screen 6-2
3 Cooling	Move to Screen 6-3
4 Language	Move to Screen 6-4
5 Alarm priorities	Move to Screen 6-5
6 Em.Powersupply	Move to Screen 6-6

- Screen 6-1 Refriger. Point

REFR. PT. POS: XXXXX		Entry	Default
Refr. Pt. Name:	Text only		
xxxxxxxxxxxxxx	Free text entry describing refrigeration point (see note)		Kühlstellen-regler
Item ID: XXXXX	Free text entry displayed in screens after ITEM ID (see note)		UA300
Priority: XX	Alarm priority in failure of refrigeration point or when global controller priority is set (Screen 6-5)	↑, ↓, or numbers (0..99)	1
Refr. Sys. No.: XX	No. of pack controller allocated to case/coldroom controller	↑, ↓, or numbers (--, 1..9)	1
Refr. Sys. Type XXX	Associated compressor pack. Parameter only required when linked to a VS 3000 BS having several zones. If a different type of pack controller is used, set this parameter blank (---)	↑, ↓, or numbers (---, Z1, Z2)	---
Temp. Zones X	Number of temperature zones Single-zone operation (tandem operation) Two-zone operation	↑, ↓, or numbers (1, 2)	2
No. Sensors XX	Number of temperature sensors connected. After entering ↵ sensor scan is performed to redetermine the number of sensorimm of sensors	↵	

A meaningful name that describes the refrigeration point in more detail should be entered, e.g. Cheese Counter 2 and CC2. The name is entered in the screens of the CI 3000 Store Computer or AL 300 Operator Terminal. Direct entry cannot be made in the UA 300 screens displayed on operator terminals. The name also cannot be entered with the BT 300 x Operator Interface.

The priority must be assigned between 0..2 by older versions of the CI 3000 Store Computer (see section 8 Alarms and Messages of UA 300).

- Screen 6-2 Controller

CONTROLLER POS: XXXXX	
1 Type and Version	Move to Screen 6-2-1
2 Temp. Display	Move to Screen 6-2-2
3 Alarm Delay	Move to Screen 6-2-3
4 230V Inputs	Move to Screen 6-2-4
5 Sensor Type	Move to Screen 6-2-5

- Screen 6-2-1 Type and Version

VERSION POS: XXXXX		Entry	Default
Ctrlr. Type XXXXXXX	Controller type set by DIP Switch S3	--	UA131
Software Ver.: XXXX	Software version of case/coldroom controller (EPROM))	--	x.yy
Serial No.: XXXXXX	Device No. of case/coldroom controller (from EEPROM)	--	
Master/Sl. Mode XXX	Synchronized defrosting in master-slave mode (ON/OFF)	--	

- Screen 6-2-2 Temp. Display

DISPLAY POS: XXXXX		Entry	Default
Offset XX K	Offset for temperature display	-10..10	0K
Alarm symbol X	Show alarm symbol on BT 30 Temperature Display	↑, ↓, (Y/N)	N

- Screen 6-2-3 Alarm Delay

ALARMDELAY POS: XXXXX		Entry	Default
Sensor Fault XX m	Sensor break alarm delay	0..30	15 min
High/Low Temp. XX m	High/low temperature alarm delay	0..120	60 min
No Defrost XX h	No defrost alarm delay	--, 2..168	50 h
Selfholding X	NO: Automatic reset of non- transient alarms. YES: Alarms must be reset manually.	↑, ↓, (Y/N)	N

- Screen 6-2-4 230V Inputs

Only trained personnel should be allowed to change inputs, as changes may affect other functions.

230V INPUT POS: XXXXX		Default
Input1: XXXXXXXXXX	Function of Digital Input 1 D11/D12	DERF. TIMER
Input2: XXXXXXXXXX	Function of Digital Input 2 D21/D22	TOGGLE SETP
Input3: XXXXXXXXXX	Function of Digital Input 3 D31/D32	MANUAL OFF

- Screen 6-2-5 Sensor Type

Select between values. Checkmark shows current setting.

SENSORS POS: XXXXX			Entry	Default
L243	√	Temperature range -50..50°C	↵	√
K277		Temperature range -50..50°C	↵	
5K3A1		Temperature range 0..100°C	↵	

- Screen 6-3 Cooling

COOLING POS: XXXXX			Entry	Default
Min. On Time	XX K	Minimum cooling ON time	0..15	2 m
Min. Off Time	XX m	Minimum cooling OFF time	0..15	2 m
Emergency Op.	xx m	In failure of required sensors, the solenoid valve is actuated to adjust to the set opening in %.	0..100	100%

- Screen 6-4 Language

LANGUAGE POS: XXXXX			Entry	Default
Deutsch D	√		↵	√
English GB			↵	
Francais F			↵	
Espagnol E			↵	
Finnish FIN			↵	
Türkce TR			↵	
Cesky CZ			↵	

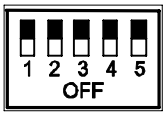
- Screen 6-5 Alarm priorities

ALARMPRIOS POS: XXXXX		Entry	Default
Prio.Refrig. Pt. X	Global alarm priority by refrigeration point priority (Screen 6-1) (Y)	↑, ↓, (Y,N)	J
Priority: XX	Show refrigeration point priority (Screen 6-1) Only shown when refrigeration point priority set to Y.		1
Following parameters are only shown when refrigeration point priority is set to N. Meaning of usable entries for alarm priority: *- = Event ignored* *0 = Message (entered only in message log)* *1 = Priority 1 alarm* *..* *99 = Priority 99 alarm*			
Low Temp.	Temperature below lower alarm limit Priority applies to following alarms: Low Temp. Zone1, Low Temp. Zone2	-, 0..99	1
High Temp.	Temperature above upper alarm limit Priority applies to following alarms: High Temp. Zone1, High Temp. Zone2	-, 0..99	1
Sensor Fault	Temperature sensor failure	-, 0..99	1
No Defrost	No defrost within alarm delay interval Priority applies to following alarm: No defrost	-, 0..99	1
Timer-Term.Defr.	Defrosting terminated by safe defrost time	-, 0..99	0
Power Failure	Start following power failure	-, 0..99	0
First Start	Controller startup (basic settings loaded!)	-, 0..99	1
Manual Shutoff	Manual switch Input D31/D32 set OFF	-, 0..99	0
Hardware Fault	Internal hardware fault Priority applies to following alarms: EEPROM Fault, RTC Fault, Flash Fault	-, 0..99	1
Setpoint Change	Message generated on changing setpoint	0..99	0
Refrig.Pt.Dis.	Cooling by pack controller via CAN bus interrupted	-, 0..99	0
Battery Voltage	Battery low	-, 0..99	0

- Maske 6-6 Em.Powersupply (Emergency Power supply)

EM.POW.SUP POS: XXXXX		Entry	Default
Cool.funct.OFF xxx	Functionality of the cooling switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N
Defr.funct.OFF xxx	Functionality of the defrosting switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N
Fan funct. OFF xxx	Functionality of the fan switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N

7.5 Controller type UA 131 DD - Menu tree



1: ON
2: ON
3: ON
4: OFF
5: OFF

Level 1	Level 2	Level 3	Level 4	Level 5	Screen No.	Screen Name
Main menu					0	**REFR. PT.**
Actual Values					1	**ACT VALUES**
	Temp. Sensor				1-1	TEMPERATUR
	Cooling Zone 1				1-2	COOLING 1
	Defrost Zone 1				1-3	DEFROST 1
	Fan				1-4	FANS 1
	Alarm				1-5	ALARM
	Frame Heater				1-6	MODE
	Cooling Zone 2				1-7	COOLING 2
	Defrost Zone 2				1-8	DEFROST 2
Setpoints					2	**SETPOINTS**
	Cooling				2-1	COOLING
		Zone 1			2-1-1	COOLING 1
		Zone 2			2-1-2	COOLING 2
		Zone 1A Altern.			2-1-3	COOLING 1A
		Zone 2A Altern.			2-1-4	COOLING 2A
	Defrost				2-2	DEFROST
		Zone 1			2-2-1	DEFROST 1
		Zone 2			2-2-2	DEFROST 2
		Zone 1A Altern.			2-2-3	DEFROST 1A
		Zone 2A Altern.			2-2-4	DEFROST 2A
	--					
	Alarm				2-4	ALARM
		Zone 1			2-4-1	ALARM 1
		Zone 2			2-4-2	ALARM 2
		Zone 1A Altern.			2-4-3	ALARM 1A
		Zone 2A Altern.			2-4-4	ALARM 2A

Level 1	Level 2	Level 3	Level 4	Level 5	Screen No.	Screen Name
Setpoints	Frame Heater				2-5	FRAME HTR
		Mode altern.			2-5-1	MODE
		Setpoint frm htr			2-5-2	SETPOINTS
		Mode altern.			2-5-3	MODE ALT
		Setpoint altern.			2-5-4	MODE ALT
	Hotgas Defrost				2-6	HOTGAS
		Zone 1+2			2-6-1	HOTGAS
		Zone 1+2 Altern.			2-6-2	HOTGAS A
Clock					3	**CLOCK**
	Current Time				3-1	CLOCK
	Defrost timer				3-2	DERF. TIMER
	Setpoint altern.				3-3	TOGGLE
Messages					4	**MESSAGES**
	View				4-1	MESSAGES
	Acknowledge				4-2	
	Delete				4-3	MESSAGES
Archive					5	**ARCHIVE**
Configuration					6	**CONFIGURAT**
	Refriger. Point				6-1	REFR. PT.
	Controller				6-2	CONTROLLER
		Type and Version			6-2-1	VERSION
		Temp. Display			6-2-2	DISPLAY
		Alarm Delay			6-2-3	ALARMDELAY
		230V Inputs			6-2-4	230V INPUT
		Sensor Type			6-2-5	SENSORS
	Cooling				6-3	COOLING
	Language				6-4	LANGUAGE
	Alarm priorities				6-5	ALARMPRIOS
	Em.Powersupply				6-6	EM.POW.SUP

7.5.1 Menu 0 Main menu

REFR. PT. POS: XXXXX	
1 Actual Values	Move to Screen 1
2 Setpoints	Move to Screen 2
3 Clock	Move to Screen 3
4 Messages	Move to Screen 4
5 Archive	Move to Screen 5
6 Configuration	Move to Screen 6

7.5.2 Menu 1 Actual Values

ACT VALUES POS: XXXXX	
1 Temp. Sensor	Move to Screen 1-1
2 Cooling Zone 1	Move to Screen 1-2
3 Defrost Zone 1	Move to Screen 1-3
4 Evap. fan	Move to Screen 1-4
5 Alarm	Move to Screen 1-5
6 Frame Heater	Move to Screen 1-6
7 Cooling Zone 2	Move to Screen 1-7 Only shown when two-zone operation is set (Screen 6-1)
8 Defrost Zone 2	Move to Screen 1-8 Only shown when two-zone operation is set (Screen 6-1)

- Screen 1-1 Temp. Sensor

TEMPERATUR Pos: XXXXX		
Temp. R2.1	xxx °C	Current supply air temperature Input Z11/ Z12
Temp. R4.1	xxx °C	Current return air temperature Input Z21/ Z22
Temp. R1.1	xxx °C	Current evaporator defrost termination temperature Input Z31/ Z32
Temp. R4.2	xxx °C	Current return air temperature Input Z41/ Z42
Temp. R1.2	xxx °C	Current evaporator defrost termination temperature Input Z51/ Z52
Temp. R2.3	xxx °C	Current supply air temperature Input Z61/ Z62
Temp. R4.3	xxx °C	Current return air temperature Input Z71/ Z72
Temp. R1.3	xxx °C	Current evaporator defrost termination temperature Input Z81/ Z82
Temp. R4.4	xxx °C	Current return air temperature Input Z91/ Z92
Temp. R1.4	xxx °C	Current evaporator defrost termination temperature Input Z01/ Z02

- Screen 1-2 Cooling Zone 1

COOLING 1 Pos: XXXXX		
Cooling	xxx	Current ON/OFF status of cooling
Run Time	xx %	Cooling relay on time during last day (00:00 - 24:00 hours)
Starts	0	Cooling relay actuations during last day
Temp. R2.1	xxx °C	Current supply air temperature Input Z11/Z12
Setpoint R2.1	xxx °C	Supply air temperature setpoint for comparison
Hystersis R2.1	xxx K	Supply air temperature hysteresis setpoint
Temp. R4.1	xxx °C	Current return air temperature Input Z21/Z22
Setpoint R4.1	xxx °C	Return air temperature setpoint for comparison
Hystersis R4.1	xxx K	Return air temperature hysteresis setpoint

- Screen 1-3 Defrost Zone 1

DEFROST 1 Pos: XXXXX		
Defr. Relay 1		Defrost Relay 1
Temp. R1.1	XXX °C	Current supply air temperature Input Z31/Z32
Defr. Relay 2		Defrost Relay 2
Temp. R1.2	XXX °C	Current supply air temperature Input Z51/Z52
Def. End. Tmp.	XXX °C	Defrost termination temperature for comparison
Last Defrst	XX hh:mm	Day and time of last defrost cycle started

- Screen 1-4 Evap. fan

FANS 1 Pos: XXXXX		
FANS		Fan ON/OFF
Temp. R1.1	XXX °C	Current supply air temperature Input Z31/Z32
Temp. R1.3	XXX °C	Current supply air temperature Input Z81/Z82
Fans Start	XXX °C	Fan start

- Screen 1-5 Alarm

ALARM Pos: XXXXX		
Alarm	XXX	Current OFF/ON status of alarm
Hi Temp Setp.1	XX °C	High temperature setpoint Zone 1
Lo Temp Setp.1	XX K	Low temperature setpoint Zone 1
Hi Temp Setp.2	XX °C	High temperature setpoint Zone 2; Only shown when two-zone operation is set (Screen 6-1)
Lo Temp Setp.2	XX K	Low temperature setpoint Zone 2; Only shown when two-zone operation is set (Screen 6-1)

- Screen 1-6 Frame Heater

MODE XXXXX		
Frame Heater	xxx	Current ON/OFF status of frame heater output Terminal 91/92/93
Run Time	xxx %	Current on time of frame heater
Humidity	xxx %	Current ambient air humidity (transmitted via CAN bus from pack controller with fitted ambient humidity sensor)
Room temp	xx °C	Current ambient air temperature (transmitted via CAN bus from pack controller with fitted ambient temperature sensor

- Screen 1-7 Cooling Zone 2

COOLING 2	XXXXX	
Cooling	XXX	Current ON/OFF status of cooling
Run Time	XX %	Cooling relay on time during last day (00:00 - 24:00 hours)
Starts	0	Cooling relay actuations during last day
Temp. R2.3	XXX °C	Current supply air temperature Input Z61/Z62
Setpoint R2.3	XXX °C	Supply air temperature setpoint for comparison
Hystersis R2.3	XXX K	Supply air temperature hysteresis setpoint
Temp. R4.3	XXX °C	Current return air temperature Input Z71/Z72
Setpoint R4.3	XXX °C	Return air temperature setpoint for comparison
Hystersis R4.3	XXX K	Return air temperature hysteresis setpoint

- Screen 1-8 Defrost Zone 2

DEFROST 2 Pos: XXXXX	
Defr. Relay 3	Defrost Relay 3
Temp. R1.3 XXX °C	Current supply air temperature Input Z81/Z82
Defr. Relay 4	Defrost Relay 4
Temp. R1.4 XXX °C	Current supply air temperature Input Z01/Z02
Def. End. Tmp. XXX °C	Defrost termination temperature for comparison
Last Defrst XX hh:mm	Day and time of last defrost cycle started

7.5.3 Menu 2 Setpoints

SETPOINTS POS: XXXXX	
1 Cooling	Screen 2-1; Special case: Move to Screen 2-1-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
2 Defrost	Screen 2-2; Special case: Move to Screen 2-2-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
3	Not used with this controller type
4 Alarm	Screen 2-4; Special case: Move to Screen 2-4-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
5 Frame Heater	Move to Screen 2-5
6 Hotgas Defrost	Move to Screen 2-6; Special case: Only shown when setpoint toggle is disabled (Screen 3-3)

- Screen 2-1 Cooling

COOLING POS: XXXXX	
1 Zone 1	Screen 2-1-1
2 Zone 2	Screen 2-1-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-1-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-1-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-1-1 Zone 1

COOLING 1 POS: XXXXX			Entry	Default
Setpoint R2.1	XXX °C	Supply air temperature setpoint	-40..30	-32 °C
Hystersis R2.1	X K	Supply air temperature hysteresis setpoint	1..8	2 K
Setpoint R4.1	XXX °C	Return air temperature setpoint for comparison	-30..30	-20 °C
Hystersis R4.1	X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-1-2 Zone 2

COOLING 2 POS: XXXXX			Entry	Default
Setpoint R2.3	XXX °C	Supply air temperature setpoint	-40..30	-32 °C
Hystersis R2.3	X K	Supply air temperature hysteresis setpoint	1..8	2 K
Setpoint R4.3	XXX °C	Return air temperature setpoint for comparison	-30..30	-20 °C
Hystersis R4.3	X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-1-3 Zone 1A Altern.

COOLING 1A POS: XXXXX			Entry	Default
Setpoint R2.1	XXX °C	Supply air temperature setpoint	-40..30	-32 °C
Hystersis R2.1	X K	Supply air temperature hysteresis setpoint	1..8	2 K
Setpoint R4.1	XXX °C	Return air temperature setpoint for comparison	-30..30	-22 °C
Hystersis R4.1	X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-1-4 Zone 2A Altern.

COOLING 2A POS: XXXXX			Entry	Default
Setpoint R2.3	XXX °C	Supply air temperature setpoint	-40..30	-32 °C
Hystersis R2.3	X K	Supply air temperature hysteresis setpoint	1..8	2 K
Setpoint R4.3	XXX °C	Return air temperature setpoint for comparison	-30..30	-22 °C
Hystersis R4.3	X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-2 Defrost

DEFROST POS: XXXXX	
1 Zone 1	Screen 2-2-1
2 Zone 2	Screen 2-2-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-2-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-2-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-2-1 Zone 1

DEFROST 1 POS: XXXXX		Entry	Default
Def. End. Tmp. XX °C	Defrost termination temperature setpoint	0..30	10 °C
Drip Time x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	0 m

- Screen 2-2-2 Zone 2

DEFROST 2 POS: XXXXX		Entry	Default
Def. End. Tmp. XX °C	Defrost termination temperature setpoint	--, 0..30	10 °C
Drip Time x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	0 m

- Screen 2-2-3 Zone 1A Altern.

DEFROST 1A POS: XXXXX		Entry	Default
Def. End. Tmp. XX °C	Defrost termination temperature setpoint	0..30	10 °C
Drip Time x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	0 m

- Screen 2-2-4 Zone 2A Altern.

DEFROST 2A POS: XXXXX		Entry	Default
Def. End. Tmp. XX °C	Defrost termination temperature setpoint	--, 0..30	10 °C
Drip Time x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	0 m

- Screen 2-3

Not used with this controller type.

- Screen 2-4 Alarm

ALARM POS: XXXXX	
1 Zone 1	Screen 2-4-1
2 Zone 2	Screen 2-4-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-4-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-4-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-4-1 Zone 1

ALARM 1 POS: XXXXX			Entry	Default
High Temp Setp	XX °C	High temperature setpoint at which *High Temperature* alarm is generated	-30..30	-12 °C
Low Temp Setp.	XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-4-2 Zone 2

ALARM 2 POS: XXXXX			Entry	Default
High Temp Setp	XX °C	High temperature setpoint at which *High Temperature* alarm is generated	-30..30	-12 °C
Low Temp Setp.	XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-4-3 Zone 1A Altern.

ALARM 1A POS: XXXXX			Entry	Default
High Temp Setp	XX °C	High temperature setpoint at which *High Temperature* alarm is generated	-30..30	-14 °C
Low Temp Setp.	XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-4-4 Zone 2A Altern.

ALARM 2A POS: XXXXX			Entry	Default
High Temp Setp	XX °C	High temperature setpoint at which *High Temperature* alarm is generated	-30..30	-14 °C
Low Temp Setp.	XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-5 Frame Heater

FRAME HTR POS: XXXXX	
1 Mode altern.	Move to Screen 2-5-1
2 Setpoint frm htr	Move to Screen 2-5-2
3 Mode altern.	Move to Screen 2-5-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Setpoint altern.	Move to Screen 2-5-4 Not shown when setpoint toggle is disabled (Screen 3-3)

- Screen 2-5-1 Mode altern.

Select between values. Checkmark shows current setting.

MODE POS: XXXXX		Entry	Default
fixed run time √	Fixed frame heater on time	↵	√
enthalpy-ctrl rtm	Enthalpy control by ambient air temperature and humidity	↵	

- Screen 2-5-2 Setpoint frame heater

SETPOINTS POS: XXXXX		Entry	Default
Mod: xxxxxxxxxxxx	Displays set frame heater mode (Screen 2-5-1)		Fixed on time
Run Time XXX %	Fixed on time, Only shown when mode set to Fixed On Time (Screen 2-5-1)	--, 0..100	100 %
emerg.run time XXX %	On time in failure of ambient air humidity or temperature signal (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-1)	--, 0..100	100 %
enthalp. offs. XXX %	Offset to on time with activated enthalpy control (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-1)	-50..50	0 %

- Screen 2-5-3 Mode altern.

Select between values. Checkmark shows current setting.

MODE ALT POS: XXXXX		Entry	Default
fixed run time √	Fixed frame heater on time	↵	√
enthalpy-ctrl rtm	Enthalpy control by ambient air temperature and humidity	↵	

- Screen 2-5-4 Setpoint altern.

SOLLW. UM POS: XXXXX		Entry	Default
Mod: xxxxxxxxxxxx	Displays set frame heater mode (Screen 2-5-3		Fixed on time
Run Time XXX %	Fixed on time, Only shown when mode set to Fixed On Time (Screen 2-5-3)	--, 0..100	100 %
emerg.run time XXX %	On time in failure of ambient air humidity or temperature signal (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-3)	--, 0..100	100 %
enthalp. offs. XXX %	Offset to on time with activated enthalpy control (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-3)	-50..50	0 %

- Screen 2-6 Hotgas

HOTGAS POS: XXXXX		Entry
1 Zone 1+2	Move to Screen 2-6-1	1
2 Zone 1+2 Altern.	Move to Screen 2-6-2 Not shown when setpoint toggle is disabled (Screen 3-3)	2

- Screen 2-6-1 Hotgas

HOTGAS POS: XXXXX		Entry	Default
Fans Start	Fan start setpoint	--, -20 .. 20	-5 °C
Flooding Evap.	Evaporator flood duration	0..15	3 m

- Screen 2-6-1 Hotgas U

HOTGAS A POS: XXXXX		Entry	Default
Fans Start	Fan start setpoint	--, -20 .. 20	-5 °C
Flooding Evap.	Evaporator flood duration	0..15	3 m

7.5.4 Menu 3 Clock

CLOCK POS: XXXXX	
1 Current Time	Move to Screen 3-1
2 Defrost timer	Move to Screen 3-2
3 Toggle Setpoints	Move to Screen 3-3

- Screen 3-1 Current Time

Time default is set by the time master (CI 3000, AL 300) when CAN bus is connected. Any entry made will then be overwritten by the default value.

CLOCK POS: XXXXX		Entry	Default
Date: XX dd.mm.yy	Display and enter current weekday, date	dd.mm.yy	
Time: hh.mm	Display and enter current time	hh.mm	
Daylight Saving X	Display and enter automatic daylight saving change (Y/N)	↑, ↓, (Y/N)	J

- Screen 3-2 Defrost timer

DERF. TIMER POS: XXXXX		Entry	Default
Defrost timer XXX	Type of defrost initiation. NO internal defrost initiation due to discharge gas controller characteristics (defrosting always initiated by VS pack controller via CAN bus)	--	EXT

- Screen 3-3 Toggle Setpoints

TOGGLE POS: XXXXX		Entry	Default
Status XXX	Setpoint toggle status (OFF/ON) of alternative set of setpoints (setpoint toggle)		
Toggle Setp. XXX	Setpoint toggle via input D21/22 (EXT), internal (INT) or disabled (--)	↑, ↓, (EXT, INT, --)	EXT
Blind On Time x s	Fan and cooling stop time after toggling to alternative set of setpoints with external setpoint toggle (Screen 3-3)	0..250	0 s
Alt ON: DD-DD hh:mm	Start time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 21:00
AltOFF: DD-DD hh:mm	End time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 05:00
Alt ON: DD-DD hh:mm	Start time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Su 05:00
AltOFF: DD-DD hh:mm	End time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Su 21:00
...	A total of 7 different ON and OFF toggle times can be defined. A toggle time will only be obeyed when a matched pair of on and off times is set as a parameter.		

7.5.5 Menu 4 Messages

MESSAGES POS: XXXXX	
1 View	Move to Screen 4-1: Show Message Log
2 Acknowledge	Messages in message log are cancelled. *"Alarms Cancelled!"* shown in display: Press ESC to go back.
3 Delete	Move to Screen 4-2: Delete Message Log (with prompt)

- Screen 4-1 View Messages

MESSAGES POS: XXXXX	
Error Message 1:	Fault 1 message text
dd.mm.yy hh:mm ON	Start of Fault 1
dd.mm.yy hh:mm OFF	End of Fault 1 (only when Fault 1 terminated)
...	
Error Message n:	Fault n message text
dd.mm.yy hh:mm ON	Start of Fault n
dd.mm.yy hh:mm OFF	End of Fault n (only when Fault n terminated)

- Screen 4-2 Acknowledge Messages

This displays the *"Alarms Cancelled!"* message.

- Screen 4-3 Delete Messages

MESSAGES POS: XXXXX		Entry
Delete! Are you sure ? No: ESC YES: ↵	Safety prompt for deleting messages Press ESC to go back after cancelling messages.	↵, ESC

7.5.6 Menu 5 Archive

ARCHIVE POS: XXXXX	
dd.mm.yy hh:mm	Time of archiving Record 1
Zone 1: abcdef x °C	Status and temperature of Zone 1, see Note
Zone 2: abcdef x °C	Status and temperature of Zone 2, see Note Only shown when two-zone operation is set (Screen 6-1)
...	
dd.mm.yy hh:mm	Time of archiving Record n
Zone 1: abcdef x °C	Status and temperature of Zone 1, see Note
Zone 2: abcdef x °C	Status and temperature of Zone 2, see Note Only shown when two-zone operation is set (Screen 6-1)

Status abcdef covers following states of the refrigeration point. Display will be " - " if state is not active.

	Single-zone operation	Two-zone operation
a	O = Operation	O = Operation
b	R = Refrigeration/Cooling	R = Refrigeration/Cooling
c	D = Defrost	R = Refrigeration/Cooling
d	G =Gate/Door (coldroom ctrlr. only)	D = Defrost
e	A = Alarm	G =Gate/Door (coldroom ctrlr. only)
f		A = Alarm

7.5.7 Menu 6 Configuration

CONFIGURAT POS: XXXXX	
1 Refriger. Point	Move to Screen 6-1
2 Controller	Move to Screen 6-2
3 Cooling	Move to Screen 6-3
4 Language	Move to Screen 6-4
5 Alarm priorities	Move to Screen 6-5
6 Em.Powersupply	Move to Screen 6-6

- Screen 6-1 Refriger. Point

REFR. PT. POS: XXXXX		Entry	Default
Refr. Pt. Name:	Text only		
xxxxxxxxxxxxxxx	Free text entry describing refrigeration point (see note)		Kühlstellen-regler
Item ID: XXXXX	Free text entry displayed in screens after ITEM ID (see note)		UA300
Priority: XX	Alarm priority in failure of refrigeration point or when global controller priority is set (Screen 6-5)	↑, ↓, or numbers (0..99)	1
Refr. Sys. No.: XX	No. of pack controller allocated to case/coldroom controller	↑, ↓, or numbers (--, 1..9)	1
Refr. Sys. Type XXX	Associated compressor pack. Parameter only required when linked to a VS 3000 BS having several zones. If a different type of pack controller is used, set this parameter blank (---)	↑, ↓, or numbers (---, Z1, Z2)	---
Temp. Zones X	Number of temperature zones Single-zone operation (tandem operation) Two-zone operation	↑, ↓, or numbers (1, 2)	2
No. Sensors XX	Number of temperature sensors connected. After entering ↵ sensor scan is performed to redetermine the number of sensorimm of sensors	↵	

A meaningful name that describes the refrigeration point in more detail should be entered, e.g. Cheese Counter 2 and CC2. The name is entered in the screens of the CI 3000 Store Computer or AL 300 Operator Terminal. Direct entry cannot be made in the UA 300 screens displayed on operator terminals. The name also cannot be entered with the BT 300 x Operator Interface.

The priority must be assigned between 0..2 by older versions of the CI 3000 Store Computer (see section 8 Alarms and Messages of UA 300).

- Screen 6-2 Controller

CONTROLLER POS: XXXXX	
1 Type and Version	Move to Screen 6-2-1
2 Temp. Display	Move to Screen 6-2-2
3 Alarm Delay	Move to Screen 6-2-3
4 230V Inputs	Move to Screen 6-2-4
5 Sensor Type	Move to Screen 6-2-5

- Screen 6-2-1 Type and Version

VERSION POS: XXXXX			Entry	Default
Ctrlr. Type	XXXXXXX	Controller type set by DIP Switch S3	--	UA131DD
Software Ver.:	XXXX	Software version of case/coldroom controller (EPROM))	--	x.yy
Serial No.:	XXXXXX	Device No. of case/coldroom controller (from EEPROM)	--	
Master/Sl. Mode	XXX	Synchronized defrosting in master-slave mode (ON/OFF)	--	

- Screen 6-2-2 Temp. Display

DISPLAY POS: XXXXX			Entry	Default
Offset	XX K	Offset for temperature display	-10..10	0K
Alarm symbol	X	Show alarm symbol on BT 30 Temperature Display	↑, ↓, (Y/N)	N

- Screen 6-2-3 Alarm Delay

ALARMDELAY POS: XXXXX			Entry	Default
Sensor Fault	XX m	Sensor break alarm delay	0..30	15 min
High/Low Temp.	XX m	High/low temperature alarm delay	0..150	60 min
No Defrost	XX h	No defrost alarm delay	--, 2..168	50 h
Selfholding	X	NO: Automatic reset of non- transient alarms. YES: Alarms must be reset manually.	↑, ↓, (Y/N)	N

- Screen 6-2-4 230V Inputs

Only trained personnel should be allowed to change inputs, as changes may affect other functions.

230V INPUT POS: XXXXX		Default
Input1: XXXXXXXXXX	Function of Digital Input 1 D11/D12	DERF. TIMER
Input2: XXXXXXXXXX	Function of Digital Input 2 D21/D22	TOGGLE SETP
Input3: XXXXXXXXXX	Function of Digital Input 3 D31/D32	MANUAL OFF

- Screen 6-2-5 Sensor Type

Select between values. Checkmark shows current setting.

SENSORS POS: XXXXX		Entry	Default
L243 √	Temperature range -50..50°C	↵	√
K277	Temperature range -50..50°C	↵	
5K3A1	Temperature range 0..100°C	↵	

- Screen 6-3 Cooling

COOLING POS: XXXXX		Entry	Default
Min. On Time XX K	Minimum cooling ON time	0..15	2 m
Min. Off Time XX m	Minimum cooling OFF time	0..15	2 m
Cont Cool Mon. xx m	Duration of forced interruption of cooling in continuous running	--, 0..15	---m
Emergency Op. xx m	In failure of required sensors, the solenoid valve is actuated to adjust to the set opening in %.	0..100	100%

- Screen 6-4 Language

LANGUAGE POS: XXXXX		Entry	Default
Deutsch D √		↵	√
English GB		↵	
Francais F		↵	
Espagnol E		↵	
Finnish FIN		↵	
Türkce TR		↵	
Cesky CZ		↵	

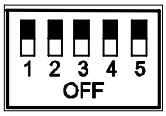
- Screen 6-5 Alarm priorities

ALARMPRIOS POS: XXXXX		Entry	Default
Prio.Refrig. Pt. X	Global alarm priority by refrigeration point priority (Screen 6-1) (Y)	↑, ↓, (Y,N)	J
Priority: XX	Show refrigeration point priority (Screen 6-1) Only shown when refrigeration point priority set to Y.		1
Following parameters are only shown when refrigeration point priority is set to N. Meaning of usable entries for alarm priority: *- = Event ignored* *0 = Message (entered only in message log)* *1 = Priority 1 alarm* *..* *99 = Priority 99 alarm*			
Low Temp.	Temperature below lower alarm limit Priority applies to following alarms: Low Temp. Zone1, Low Temp. Zone2	-, 0..99	1
High Temp.	Temperature above upper alarm limit Priority applies to following alarms: High Temp. Zone1, High Temp. Zone2	-, 0..99	1
Sensor Fault	Temperature sensor failure	-, 0..99	1
No Defrost	No defrost within alarm delay interval Priority applies to following alarm: No defrost	-, 0..99	1
Timer-Term.Defr.	Defrosting terminated by safe defrost time	-, 0..99	0
Power Failure	Start following power failure	-, 0..99	0
First Start	Controller startup (basic settings loaded!)	-, 0..99	1
Manual Shutoff	Manual switch Input D31/D32 set OFF	-, 0..99	0
Hardware Fault	Internal hardware fault Priority applies to following alarms: EEPROM Fault, RTC Fault, Flash Fault	-, 0..99	1
Setpoint Change	Message generated on changing setpoint	0..99	0
Refrig.Pt.Dis.	Cooling by pack controller via CAN bus interrupted	-, 0..99	0
Battery Voltage	Battery low	-, 0..99	0

- Maske 6-6 Em.Powersupply (Emergency Power supply)

EM.POW.SUP POS: XXXXX		Entry	Default
Cool.funct.OFF xxx	Functionality of the cooling switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N
Defr.funct.OFF xxx	Functionality of the defrosting switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N
Fan funct. OFF xxx	Functionality of the fan switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N

7.6 Controller type UA 141 - Menu tree



1: ON
2: ON
3: OFF
4: ON/OFF = Master-/Slave-Mode ON/OFF
5: OFF

Level 1	Level 2	Level 3	Level 4	Level 5	Screen No.	Screen Name
Main menu					0	**REFR. PT.**
Actual Values					1	**ACT VALUES**
	Temp. Sensor				1-1	TEMPERATUR
	Cooling Zone 1				1-2	COOLING 1
	Defrost Zone 1				1-3	DEFROST 1
	--					
	Alarm				1-5	ALARM
	Pane Heater				1-6	PANE HTR
	Cooling Zone 2				1-7	COOLING 2
	Defrost Zone 2				1-8	DEFROST 2
Setpoints					2	**SETPOINTS**
	Cooling				2-1	COOLING
		Zone 1			2-1-1	COOLING 1
		Zone 2			2-1-2	COOLING 2
		Zone 1A Altern.			2-1-3	COOLING 1A
		Zone 2A Altern.			2-1-4	COOLING 2A
	Defrost				2-2	DEFROST
		Zone 1			2-2-1	DEFROST 1
		Zone 2			2-2-2	DEFROST 2
		Zone 1A Altern.			2-2-3	DEFROST 1A
		Zone 2A Altern.			2-2-4	DEFROST 2A
	--					
	Alarm				2-4	ALARM
		Zone 1			2-4-1	ALARM 1
		Zone 2			2-4-2	ALARM 2
		Zone 1A Altern.			2-4-3	ALARM 1A
		Zone 2A Altern.			2-4-4	ALARM 2A

Level 1	Level 2	Level 3	Level 4	Level 5	Screen No.	Screen Name
Setpoints	--					
	Pane Heater				2-6	PANE HTR
		Modus Scheibe			2-6-1	PANE HTR
		Sollwerte Scheibe			2-6-2	SETPOINTS
Clock					3	**CLOCK**
	Current Time				3-1	CLOCK
	Defrost timer				3-2	DERF. TIMER
	Setpoint altern.				3-3	TOGGLE
Messages					4	**MESSAGES**
	View				4-1	MESSAGES
	Acknowledge				4-2	
	Delete				4-3	MESSAGES
Archive					5	**ARCHIVE**
Configuration					6	**CONFIGURAT**
	Refriger. Point				6-1	REFR. PT.
	Controller				6-2	CONTROLLER
		Type and Version			6-2-1	VERSION
		Temp. Display			6-2-2	DISPLAY
		Alarm Delay			6-2-3	ALARMDELAY
		230V Inputs			6-2-4	230V INPUT
		Sensor Type			6-2-5	SENSORS
	Cooling				6-3	COOLING
	Language				6-4	LANGUAGE
	Alarm priorities				6-5	ALARMPRIOS
	Em.Powersupply				6-6	EM.POW.SUP

7.6.1 Menu 0 Main menu

REFR. PT. POS: XXXXX	
1 Actual Values	Move to Screen 1
2 Setpoints	Move to Screen 2
3 Clock	Move to Screen 3
4 Messages	Move to Screen 4
5 Archive	Move to Screen 5
6 Configuration	Move to Screen 6

7.6.2 Menu 1 Actual Values

ACT VALUES POS: XXXXX	
1 Temp. Sensor	Move to Screen 1-1
2 Cooling Zone 1	Move to Screen 1-2
3 Defrost Zone 1	Move to Screen 1-3
4	Not used with this controller type
5 Alarm	Move to Screen 1-5
6 Pane Heater	Move to Screen 1-6
7 Cooling Zone 2	Move to Screen 1-7 Only shown when two-zone operation is set (Screen 6-1)
8 Defrost Zone 2	Move to Screen 1-8 Only shown when two-zone operation is set (Screen 6-1)

- Screen 1-1 Temp. Sensor

TEMPERATUR Pos: XXXXX		
Temp. R2.1	xxx °C	Current supply air temperature Input Z11/ Z12
Temp. R4.1	xxx °C	Current return air temperature Input Z21/ Z22
Temp. R2.2	xxx °C	Current supply air temperature Input Z31/ Z32
Temp. R4.2	xxx °C	Current return air temperature Input Z41/ Z42
Temp. R2.3	xxx °C	Current supply air temperature Input Z51/ Z52
Temp. R4.3	xxx °C	Current return air temperature Input Z61/ Z62
Temp. R2.4	xxx °C	Current supply air temperature Input Z71/ Z72
Temp. R4.4	xxx °C	Current return air temperature Input Z81/ Z82

- Screen 1-2 Cooling Zone 1

COOLING 1 Pos: XXXXX		
Cooling	xxx	Current ON/OFF status of cooling
Run Time	xx %	Cooling relay on time during last day (00:00 - 24:00 hours)
Starts	0	Cooling relay actuations during last day
Temp. R2.1	xxx °C	Current supply air temperature Input Z11/Z12
Setpoint R2.1	xxx °C	Supply air temperature setpoint for comparison
Hystersis R2.1	xxx K	Supply air temperature hysteresis setpoint
Temp. R4.1	xxx °C	Current return air temperature Input Z21/Z22
Setpoint R4.1	xxx °C	Return air temperature setpoint for comparison
Hystersis R4.1	xxx K	Return air temperature hysteresis setpoint

- Screen 1-3 Defrost Zone 1

DEFROST 1 Pos: XXXXX		
Defrost	XXX	Current ON/OFF status of defrosting
Temp. R2.1	XXX °C	Current supply air temperature Input Z11/Z12
Temp. R2.2	XXX °C	Current supply air temperature Input Z31/Z32
Def. End. Tmp.	XXX °C	Defrost termination temperature for comparison
Wait Time	xx m	Waiting time setpoint
Drip Time	xx m	Drain time setpoint
Last Defrst	XX hh:mm	Day and time of last defrost cycle started

- Screen 1-4

Not used with this controller type.

- Screen 1-5 Alarm

ALARM Pos: XXXXX		
Alarm Relay	XXX	Current ON/OFF status of alarm output Terminal 15/16/18
Hi Temp Setp.1	XX °C	High temperature setpoint Zone 1
Lo Temp Setp.1	XX K	Low temperature setpoint Zone 1
Hi Temp Setp.2	XX °C	High temperature setpoint Zone 2; Only shown when two-zone operation is set (Screen 6-1)
Lo Temp Setp.2	XX K	Low temperature setpoint Zone 2; Only shown when two-zone operation is set (Screen 6-1)

- Screen 1-6 Pane Heater

PANE HTR XXXXX		
Pane Heater	xxx	Current OFF/ON status of *pane heater output Terminal 73/74*
Run Time	xxx %	Current on time of frame heater
Humidity	xxx %	Current ambient air humidity (transmitted via CAN bus from pack controller with fitted ambient humidity sensor)
Room temp	xx °C	Current ambient air temperature (transmitted via CAN bus from pack controller with fitted ambient temperature sensor

- Screen 1-7 Cooling Zone 2

COOLING 2	XXXXX	
Cooling	XXX	Current ON/OFF status of cooling
Run Time	XX %	Cooling relay on time during last day (00:00 - 24:00 hours)
Starts	0	Cooling relay actuations during last day
Temp. R2.3	XXX °C	Current supply air temperature Input Z51/Z52
Setpoint R2.3	XXX °C	Supply air temperature setpoint for comparison
Hystersis R2.3	XXX K	Supply air temperature hysteresis setpoint
Temp. R4.3	XXX °C	Current return air temperature Input Z61/Z62
Setpoint R4.3	XXX °C	Return air temperature setpoint for comparison
Hystersis R4.3	XXX K	Return air temperature hysteresis setpoint

- Screen 1-8 Defrost Zone 2

DEFROST 2 Pos: XXXXX	
Defrost XXX	Current ON/OFF status of defrosting
Temp. R2.3 XXX °C	Current supply air temperature Input Z51/Z52
Temp. R2.4 XXX °C	Current supply air temperature Input Z71/Z72
Def. End. Tmp. XXX °C	Defrost termination temperature for comparison
Wait Time xx m	Waiting time setpoint
Drip Time xx m	Drain time setpoint
Last Defrst XX hh:mm	Day and time of last defrost cycle started

7.6.3 Menu 2 Setpoints

SETPOINTS POS: XXXXX	
1 Cooling	Screen 2-1; Special case: Move to Screen 2-1-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
2 Defrost	Screen 2-2; Special case: Move to Screen 2-2-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
3	Not used with this controller type
4 Alarm	Screen 2-4; Special case: Move to Screen 2-4-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
5	Not used with this controller type
6 Pane Heater	Move to Screen 2-6

- Screen 2-1 Cooling

COOLING POS: XXXXX	
1 Zone 1	Screen 2-1-1
2 Zone 2	Screen 2-1-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-1-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-1-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-1-1 Zone 1

COOLING 1 POS: XXXXX			Entry	Default
Setpoint R2.1	XXX °C	Supply air temperature setpoint	-20..20	-4 °C
Hystersis R2.1	X K	Supply air temperature hysteresis setpoint	1..8	4 K
Setpoint R4.1	XXX °C	Return air temperature setpoint for comparison	-15..20	2 °C
Hystersis R4.1	X K	Return air temperature hysteresis setpoint	1..8	2 K
Humid. On Time	0m	Humidifier on time Only shown when single-zone operation is set (Screen 6-1)	--, 0..15	5 m

- Screen 2-1-2 Zone 2

COOLING 2 POS: XXXXX			Entry	Default
Setpoint R2.3	XXX °C	Supply air temperature setpoint	-20..20	-4 °C
Hystersis R2.3	X K	Supply air temperature hysteresis setpoint	1..8	4 K
Setpoint R4.3	XXX °C	Return air temperature setpoint for comparison	-15..20	2 °C
Hystersis R4.3	X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-1-3 Zone 1A Altern.

COOLING 1A POS: XXXXX			Entry	Default
Setpoint R2.1	XXX °C	Supply air temperature setpoint	-20..20	-2 °C
Hystersis R2.1	X K	Supply air temperature hysteresis setpoint	1..8	4 K
Setpoint R4.1	XXX °C	Return air temperature setpoint for comparison	-15..20	2 °C
Hystersis R4.1	X K	Return air temperature hysteresis setpoint	1..8	2 K
Humid. On Time	0m	Humidifier on time Only shown when single-zone operation is set (Screen 6-1)	--, 0..15	5 m

- Screen 2-1-4 Zone 2A Altern.

COOLING 2A POS: XXXXX			Entry	Default
Setpoint R2.3	XXX °C	Supply air temperature setpoint	-20..20	-2 °C
Hystersis R2.3	X K	Supply air temperature hysteresis setpoint	1..8	4 K
Setpoint R4.3	XXX °C	Return air temperature setpoint for comparison	-15..20	2 °C
Hystersis R4.3	X K	Return air temperature hysteresis setpoint	1..8	2 K

- Screen 2-2 Defrost

DEFROST POS: XXXXX	
1 Zone 1	Screen 2-2-1
2 Zone 2	Screen 2-2-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-2-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-2-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-2-1 Zone 1

DEFROST 1 POS: XXXXX			Entry	Default
Def. End. Tmp.	XX °C	Defrost termination temperature setpoint	--, 5..20	8 °C
Wait Time	xx m	Waiting time setpoint between cooling and defrosting	0..15	0 m
Drip Time	x m	Waiting time (drain time) setpoint between defrosting and cooling	0..15	0 m

- Screen 2-2-2 Zone 2

DEFROST 2 POS: XXXXX			Entry	Default
Def. End. Tmp.	XX °C	Defrost termination temperature setpoint	--, 5..20	8 °C
Wait Time	xx m	Waiting time setpoint between cooling and defrosting	0..15	0 m
Drip Time	x m	Waiting time (drain time) setpoint between defrosting and cooling	0..15	0 m

- Screen 2-2-3 Zone 1A Altern.

DEFROST 1A POS: XXXXX			Entry	Default
Def. End. Tmp.	XX °C	Defrost termination temperature setpoint	--, 5..20	5 °C
Wait Time	xx m	Waiting time setpoint between cooling and defrosting	0..15	0 m
Drip Time	x m	Waiting time (drain time) setpoint between defrosting and cooling	0..15	0 m

- Screen 2-2-4 Zone 2A Altern.

DEFROST 2A POS: XXXXX			Entry	Default
Def. End. Tmp.	XX °C	Defrost termination temperature setpoint	--, 5..20	5 °C
Wait Time	xx m	Waiting time setpoint between cooling and defrosting	0..15	0 m
Drip Time	x m	Waiting time (drain time) setpoint between defrosting and cooling	0..15	0 m

- Screen 2-3

Not used with this controller type.

- Screen 2-4 Alarm

ALARM POS: XXXXX	
1 Zone 1	Screen 2-4-1
2 Zone 2	Screen 2-4-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-4-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-4-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-4-1 Zone 1

ALARM 1 POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	-10..30	6 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-4-2 Zone 2

ALARM 2 POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	-10..30	6 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-4-3 Zone 1A Altern.

ALARM 1A POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	-10..30	6 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-4-4 Zone 2A Altern.

ALARM 2A POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	-10..30	6 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	4 K

- Screen 2-5

Not used with this controller type

- Screen 2-6 Pane Heater

PANE HTR POS: XXXXX	
1 Mode Pane	Move to Screen 2-6-1
2 Setpoint Pane	Move to Screen 2-6-2

- Screen 2-6-1 Modus Scheibe

Select between values. Checkmark shows current setting.

PANE HTR POS: XXXXX		Entry	Default
fixed run time √	Pane heater fixed on time	↵	√
enthalpy-ctrl rtm	Enthalpy control by ambient air temperature and humidity	↵	

- Screen 2-6-2 Sollwerte Scheibe

SETPOINTS POS: XXXXX		Entry	Default
Mod: xxxxxxxxxxxx	Set frame heater mode (Screen 2-6-1)		Fixed on time
Mod:fixed run time xx m	Pane heater on time after actuation of Digital Input 3 (Terminal D31 and D32)	0..120	60 m
Run Time XXX %	Fixed on time, Only shown when mode set to Fixed On Time (Screen 2-6-1)	--, 0..100	100 %
emerg.run time XXX %	On time in failure of ambient air humidity or temperature signal (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-6-1)	--, 0..100	100 %
enthalp. offs. XXX %	Offset to on time with activated enthalpy control (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-6-1)	-50..50	0 %

7.6.4 Menu 3 Clock

CLOCK POS: XXXXX	
1 Current Time	Move to Screen 3-1
2 Defrost timer	Move to Screen 3-2
3 Toggle Setpoints	Move to Screen 3-3
4 Automatic ON	Move to Screen 3-4

- Screen 3-1 Current Time

Time default is set by the time master (CI 3000, AL 300) when CAN bus is connected. Any entry made will then be overwritten by the default value.

CLOCK POS: XXXXX		Entry	Default
Date: XX dd.mm.yy	Display and enter current weekday, date	dd.mm.yy	
Time: hh.mm	Display and enter current time	hh.mm	
Daylight Saving X	Display and enter automatic daylight saving change (Y/N)	↑, ↓, (Y/N)	J

- Screen 3-2 Defrost timer

DERF. TIMER POS: XXXXX		Entry	Default
Defrost timer XXX	Defrost initiation via input D11/12 (EXT) or internal (INT)	↑, ↓, (EXT, INT)	INT
Safe Defr Time XXX m	Safe defrost time for maximum allowed duration of defrosting (used only for internal defrosting)	0..180	150 min
Defr. 1 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 03:00
...			
Defr. 14 xxxxx hh:mm			
Manual Defrost XXX	Status (OFF/ON) for supplementary manual defrosting *)	↑, ↓, (ON/OFF)	OFF

*) Parameter automatically set to ON for safe defrost time at first start.

- Screen 3-3 Toggle Setpoints

TOGGLE POS: XXXXX		Entry	Default
Status XXX	Setpoint toggle status (OFF/ON) of alternative set of setpoints (setpoint toggle)		
Toggle Setp. XXX	Setpoint toggle via input D21/22 (EXT), internal (INT) or disabled (--)	↑, ↓, (EXT, INT, --)	EXT
Alt ON: DD-DD hh:mm	Start time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 21:00
AltOFF: DD-DD hh:mm	End time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 05:00
Alt ON: DD-DD hh:mm	Start time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Su 05:00
AltOFF: DD-DD hh:mm	End time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Su 21:00
...	A total of 7 different ON and OFF toggle times can be defined. A toggle time will only be obeyed when a matched pair of on and off times is set as a parameter.		

- Screen 3-4 Automatic ON

Parameters are shown and can be adjusted when setpoint toggle is set to ”INT” or ”--” (Screen 3-3).

AUTOM. ON POS: XXXXX		Entry	Default
ON 1 DD-DD hh:mm	Automatic start 1	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo 06:00
ON 2 DD-DD hh:mm	Automatic start 2	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	----- -----
...	Automatic start 7 (7 times of Automatic ON are possible)		

7.6.5 Menu 4 Messages

MESSAGES POS: XXXXX	
1 View	Move to Screen 4-1: Show Message Log
2 Acknowledge	Messages in message log are cancelled. *"Alarms Cancelled!"* shown in display: Press ESC to go back.
3 Delete	Move to Screen 4-2: Delete Message Log (with prompt)

- Screen 4-1 View Messages

MESSAGES POS: XXXXX	
Error Message 1:	Fault 1 message text
dd.mm.yy hh:mm ON	Start of Fault 1
dd.mm.yy hh:mm OFF	End of Fault 1 (only when Fault 1 terminated)
...	
Error Message n:	Fault n message text
dd.mm.yy hh:mm ON	Start of Fault n
dd.mm.yy hh:mm OFF	End of Fault n (only when Fault n terminated)

- Screen 4-2 Acknowledge Messages

This displays the *"Alarms Cancelled!"* message.

- Screen 4-3 Delete Messages

MESSAGES POS: XXXXX		Entry
Delete! Are you sure ? No: ESC YES: ↵	Safety prompt for deleting messages Press ESC to go back after cancelling messages.	↵, ESC

7.6.6 Menu 5 Archive

ARCHIVE POS: XXXXX	
dd.mm.yy hh:mm	Time of archiving Record 1
Zone 1: abcdef x °C	Status and temperature of Zone 1, see Note
Zone 2: abcdef x °C	Status and temperature of Zone 2, see Note Only shown when two-zone operation is set (Screen 6-1)
...	
dd.mm.yy hh:mm	Time of archiving Record n
Zone 1: abcdef x °C	Status and temperature of Zone 1, see Note
Zone 2: abcdef x °C	Status and temperature of Zone 2, see Note Only shown when two-zone operation is set (Screen 6-1)

Status abcdef covers following states of the refrigeration point. Display will be " - " if state is not active.

	Single-zone operation	**Two-zone operation**
a	O = Operation	O = Operation
b	R = Refrigeration/Cooling	R = Refrigeration/Cooling
c	D = Defrost	R = Refrigeration/Cooling
d	G =Gate/Door (coldroom ctrlr. only)	D = Defrost
e	A = Alarm	G =Gate/Door (coldroom ctrlr. only)
f		A = Alarm

7.6.7 Menu 6 Configuration

CONFIGURAT POS: XXXXX	
1 Refriger. Point	Move to Screen 6-1
2 Controller	Move to Screen 6-2
3 Cooling	Move to Screen 6-3
4 Language	Move to Screen 6-4
5 Alarm priorities	Move to Screen 6-5
6 Em.Powersupply	Move to Screen 6-6

- Screen 6-1 Refriger. Point

REFR. PT. POS: XXXXX		Entry	Default
Refr. Pt. Name:	Text only		
xxxxxxxxxxxxxxx	Free text entry describing refrigeration point (see note)		Kühlstellen-regler
Item ID: XXXXX	Free text entry displayed in screens after ITEM ID (see note)		UA300
Priority: XX	Alarm priority in failure of refrigeration point or when global controller priority is set (Screen 6-5)	↑, ↓, or numbers (0..99)	1
Refr. Sys. No.: XX	No. of pack controller allocated to case/coldroom controller	↑, ↓, or numbers (--, 1..9)	1
Refr. Sys. Type XXX	Associated compressor pack. Parameter only required when linked to a VS 3000 BS having several zones. If a different type of pack controller is used, set this parameter blank (---)	↑, ↓, or numbers (---, Z1, Z2)	---
Temp. Zones X	Number of temperature zones Single-zone operation (tandem operation) Two-zone operation	↑, ↓, or numbers (1, 2)	2
No. Sensors XX	Number of temperature sensors connected. After entering ↵ sensor scan is performed to redetermine the number of sensorimm of sensors	↵	

A meaningful name that describes the refrigeration point in more detail should be entered, e.g. Cheese Counter 2 and CC2. The name is entered in the screens of the CI 3000 Store Computer or AL 300 Operator Terminal. Direct entry cannot be made in the UA 300 screens displayed on operator terminals. The name also cannot be entered with the BT 300 x Operator Interface.

The priority must be assigned between 0..2 by older versions of the CI 3000 Store Computer (see section 8 Alarms and Messages of UA 300).

- Screen 6-2 Controller

CONTROLLER POS: XXXXX	
1 Type and Version	Move to Screen 6-2-1
2 Temp. Display	Move to Screen 6-2-2
3 Alarm Delay	Move to Screen 6-2-3
4 230V Inputs	Move to Screen 6-2-4
5 Sensor Type	Move to Screen 6-2-5

- Screen 6-2-1 Type and Version

VERSION POS: XXXXX			Entry	Default
Ctrlr. Type	XXXXXXX	Controller type set by DIP Switch S3	--	UA141
Software Ver.:	XXXX	Software version of case/coldroom controller (EPROM))	--	x.yy
Serial No.:	XXXXXX	Device No. of case/coldroom controller (from EEPROM)	--	
Master/Sl. Mode	XXX	Synchronized defrosting in master-slave mode (ON/OFF)	--	

- Screen 6-2-2 Temp. Display

DISPLAY POS: XXXXX			Entry	Default
Offset	XX K	Offset for temperature display	-10..10	0K
Alarm symbol	X	Show alarm symbol on BT 30 Temperature Display	↑, ↓, (Y/N)	N

- Screen 6-2-3 Alarm Delay

ALARMDELAY POS: XXXXX			Entry	Default
Sensor Fault	XX m	Sensor break alarm delay	0..30	15 min
High/Low Temp.	XX m	High/low temperature alarm delay	0..120	90 min
No Defrost	XX h	No defrost alarm delay	--, 2..168	50 h
Selfholding	X	NO: Automatic reset of non- transient alarms. YES: Alarms must be reset manually.	↑, ↓, (Y/N)	N

- Screen 6-2-4 230V Inputs

Only trained personnel should be allowed to change inputs, as changes may affect other functions.

230V INPUT POS: XXXXX		Entry	Default
Input1: XXXXXXXXXX	Function of Digital Input 1 D11/D12	DERF. TIMER	DERF. TIMER
Input2: XXXXXXXXXX	Function of Digital Input 2 D21/D22	TOGGLE SETP / AUTO SWITCH	TOGGLE SETP
Input3: XXXXXXXXXX	Function of Digital Input 3 D31/D32	PANE HTR SW / MANUAL OFF	PANE HTR SW

- Screen 6-2-5 Sensor Type

Select between values. Checkmark shows current setting.

SENSORS POS: XXXXX		Entry	Default
L243 √	Temperature range -50..50°C	↵	√
K277	Temperature range -50..50°C	↵	
5K3A1	Temperature range 0..100°C	↵	

- Screen 6-3 Cooling

COOLING POS: XXXXX		Entry	Default
Min. On Time XX K	Minimum cooling ON time	0..15	2 m
Min. Off Time XX m	Minimum cooling OFF time	0..15	2 m
Cont Cool Mon. xx m	Duration of forced interruption of cooling in continuous running	--, 0..15	--- m
Emergency Op. xx m	In failure of required sensors, the solenoid valve is actuated to adjust to the set opening in %.	0..100	100%

- Screen 6-4 Language

LANGUAGE POS: XXXXX		Entry	Default
Deutsch D √		↵	√
English GB		↵	
Francais F		↵	
Espagnol E		↵	
Finnish FIN		↵	
Türkce TR		↵	
Cesky CZ		↵	

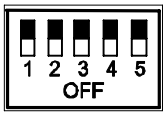
- Screen 6-5 Alarm priorities

ALARMPRIOS POS: XXXXX		Entry	Default
Prio.Refrig. Pt. X	Global alarm priority by refrigeration point priority (Screen 6-1) (Y)	↑, ↓, (Y,N)	J
Priority: XX	Show refrigeration point priority (Screen 6-1) Only shown when refrigeration point priority set to Y.		1
Following parameters are only shown when refrigeration point priority is set to N. Meaning of usable entries for alarm priority: *- = Event ignored* *0 = Message (entered only in message log)* *1 = Priority 1 alarm* *..* *99 = Priority 99 alarm*			
Low Temp.	Temperature below lower alarm limit Priority applies to following alarms: Low Temp. Zone1, Low Temp. Zone2	-, 0..99	1
High Temp.	Temperature above upper alarm limit Priority applies to following alarms: High Temp. Zone1, High Temp. Zone2	-, 0..99	1
Sensor Fault	Temperature sensor failure	-, 0..99	1
No Defrost	No defrost within alarm delay interval Priority applies to following alarm: No defrost	-, 0..99	1
Timer-Term.Defr.	Defrosting terminated by safe defrost time	-, 0..99	0
Power Failure	Start following power failure	-, 0..99	0
First Start	Controller startup (basic settings loaded!)	-, 0..99	1
Manual Shutoff	Manual switch Input D31/D32 set OFF	-, 0..99	0
Hardware Fault	Internal hardware fault Priority applies to following alarms: EEPROM Fault, RTC Fault, Flash Fault	-, 0..99	1
Setpoint Change	Message generated on changing setpoint	0..99	0
Refrig.Pt.Dis.	Cooling by pack controller via CAN bus interrupted	-, 0..99	0
Battery Voltage	Battery low	-, 0..99	0

- Maske 6-6 Em.Powersupply (Emergency Power supply)

EM.POW.SUP POS: XXXXX		Entry	Default
Cool.funct.OFF xxx	Functionality of the cooling switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N
Defr.funct.OFF xxx	Functionality of the defrosting switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N
Fan funct. OFF xxx	Functionality of the fan switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N

7.7 Controller type UR 141 NK (NT) - Menu tree



1: OFF
2: OFF
3: ON
4: ON/OFF = Master-/Slave-Mode ON/OFF
5: OFF

Level 1	Level 2	Level 3	Level 4	Level 5	Screen No.	Screen Name
Main menu					0	**REFR. PT.**
Actual Values					1	**ACT VALUES**
	Temp. Sensor				1-1	TEMPERATUR
	Cooling Zone 1				1-2	COOLING 1
	Defrost Zone 1				1-3	DEFROST 1
	Fans Zone 1				1-4	FANS 1
	Alarm				1-5	ALARM
	Frame Heater				1-6	MODE
	Cooling Zone 2				1-7	COOLING 2
	Defrost Zone 2				1-8	DEFROST 2
	Fans Zone 2				1-9	FANS 2
Setpoints					2	**SETPOINTS**
	Cooling				2-1	COOLING
		Zone 1			2-1-1	COOLING 1
		Zone 2			2-1-2	COOLING 2
		Zone 1A Altern.			2-1-3	COOLING 1A
		Zone 2A Altern.			2-1-4	COOLING 2A
	Defrost				2-2	DEFROST
		Zone 1			2-2-1	DEFROST 1
		Zone 2			2-2-2	DEFROST 2
		Zone 1A Altern.			2-2-3	DEFROST 1A
		Zone 2A Altern.			2-2-4	DEFROST 2A
	Fan				2-3	FANS
		Zone 1			2-3-1	FANS 1
		Zone 2			2-3-2	FANS 2
		Zone 1A Altern.			2-3-3	FANS 1A
		Zone 2A Altern.			2-3-4	FANS 2A

Level 1	Level 2	Level 3	Level 4	Level 5	Screen No.	Screen Name
Setpoints	Alarm				2-4	ALARM
		Zone 1			2-4-1	ALARM 1
		Zone 2			2-4-2	ALARM 2
		Zone 1A Altern.			2-4-3	ALARM 1A
		Zone 2A Altern.			2-4-4	ALARM 2A
	Frame Heater				2-5	FRAME HTR
		Mode altern.			2-5-1	MODE
		Setpoint frm htr			2-5-2	SETPOINTS
		Mode altern.			2-5-3	MODE ALT
		Setpoint altern.			2-5-4	MODE ALT
Clock					3	**CLOCK**
	Current Time				3-1	CLOCK
	Defrost timer				3-2	DERF. TIMER
	Setpoint altern.				3-3	TOGGLE
Messages					4	**MESSAGES**
	View				4-1	MESSAGES
	Acknowledge				4-2	
	Delete				4-3	MESSAGES
Archive					5	**ARCHIVE**
Configuration					6	**CONFIGURAT**
	Refriger. Point				6-1	REFR. PT.
	Controller				6-2	CONTROLLER
		Type and Version			6-2-1	VERSION
		Temp. Display			6-2-2	DISPLAY
		Alarm Delay			6-2-3	ALARMDELAY
		230V Inputs			6-2-4	230V INPUT
		Sensor Type			6-2-5	SENSORS
	Cooling				6-3	COOLING
	Language				6-4	LANGUAGE
	Alarm priorities				6-5	ALARMPRIOS
	Em.Powersupply				6-6	EM.POW.SUP

7.7.1 Menu 0 Main menu

REFR. PT. POS: XXXXX	
1 Actual Values	Move to Screen 1
2 Setpoints	Move to Screen 2
3 Clock	Move to Screen 3
4 Messages	Move to Screen 4
5 Archive	Move to Screen 5
6 Configuration	Move to Screen 6

7.7.2 Menu 1 Actual Values

ACT VALUES POS: XXXXX	
1 Temp. Sensor	Move to Screen 1-1
2 Cooling Zone 1	Move to Screen 1-2
3 Defrost Zone 1	Move to Screen 1-3
4 Evap. fan Zone 1	Move to Screen 1-4
5 Alarm	Move to Screen 1-5
6 Frame Heater	Move to Screen 1-6
7 Cooling Zone 2	Move to Screen 1-7 Only shown when two-zone operation is set (Screen 6-1)
8 Defrost Zone 2	Move to Screen 1-8 Only shown when two-zone operation is set (Screen 6-1)
9 FANS Zone 2	Move to Screen 1-9 Only shown when two-zone operation is set (Screen 6-1)

- Screen 1-1 Temp. Sensor

TEMPERATUR Pos: XXXXX		
Temp. R4.1	xxx °C	Current room air temperature Input Z21/ Z22
Temp. R1.1	xxx °C	Current evaporator defrost termination temperature Input Z31/ Z32
Temp. R4.2	xxx °C	Current room air temperature Input Z41/ Z42
Temp. R1.2	xxx °C	Current evaporator defrost termination temperature Input Z51/ Z52
Temp. R4.3	xxx °C	Current room air temperature Input Z71/ Z72
Temp. R1.3	xxx °C	Current evaporator defrost termination temperature Input Z81/ Z82
Temp. R4.4	xxx °C	Current room air temperature Input Z91/ Z92
Temp. R1.4	xxx °C	Current evaporator defrost termination temperature Input Z01/ Z02

- Screen 1-2 Cooling Zone 1

COOLING 1 Pos: XXXXX		
Cooling	xxx	Current ON/OFF status of cooling
Run Time	xx %	Cooling relay on time during last day (00:00 - 24:00 hours)
Starts	0	Cooling relay actuations during last day
Temp. R4.1	xxx °C	Current room air temperature Input Z21/Z22
Setpoint R4.1	xxx °C	Supply air temperature setpoint for comparison
Hystersis R4.1	xxx K	Supply air temperature hysteresis setpoint

- Screen 1-3 Defrost Zone 1

DEFROST 1 Pos: XXXXX		
Defrost		Current ON/OFF status of defrosting
Temp. R1.1	XXX °C	Current supply air temperature Input Z31/Z32
Temp. R1.2	XXX °C	Current supply air temperature Input Z51/Z52
Def. End. Tmp.	XXX °C	Defrost termination temperature for comparison
Wait Time	xx m	Waiting time setpoint
Drip Time	xx m	Drain time setpoint
Last Defrst	XX hh:mm	Day and time of last defrost cycle started

- Screen 1-4 Evap. fan Zone 1

FANS 1 Pos: XXXXX	
FANS	Fan ON/OFF
Temp. R1.1	Evaporator temperature Input Z31/Z32
Fan Overrun	Fan overrun
Overrun Time	Overrun time

- Screen 1-5 Alarm

ALARM Pos: XXXXX		
Alarm Relay	XXX	Current ON/OFF status of alarm output Terminal 15/16/18
Hi Temp Setp.1	XX °C	High temperature setpoint Zone 1
Lo Temp Setp.1	XX K	Low temperature setpoint Zone 1
Hi Temp Setp.2	XX °C	High temperature setpoint Zone 2; Only shown when two-zone operation is set (Screen 6-1)
Lo Temp Setp.2	XX K	Low temperature setpoint Zone 2; Only shown when two-zone operation is set (Screen 6-1)
Coldroom Door1	xxx	Coldroom door 1 CLS/OPN
Coldroom Door2	xxx	Coldroom door 2 CLS/OPN

- Screen 1-6 Frame Heater

MODE XXXXX		
Frame Heater	xxx	Current ON/OFF status of frame heater output Terminal 91/92/93
Run Time	xxx %	Current on time of frame heater
Humidity	xxx %	Current ambient air humidity (transmitted via CAN bus from pack controller with fitted ambient humidity sensor)
Room temp	xx °C	Current ambient air temperature (transmitted via CAN bus from pack controller with fitted ambient temperature sensor

- Screen 1-7 Cooling Zone 2

COOLING 2	XXXXX	
Cooling	XXX	Current ON/OFF status of cooling
Run Time	XX %	Cooling relay on time during last day (00:00 - 24:00 hours)
Starts	0	Cooling relay actuations during last day
Temp. R4.3	XXX °C	Current room air temperature Input Z71/Z72
Setpoint R4.3	XXX °C	Room air temperature setpoint for comparison
Hystersis R4.3	XXX K	Room air temperature hysteresis setpoint

- Screen 1-8 Defrost Zone 2

DEFROST 2 Pos: XXXXX	
Defrost	Current ON/OFF status of defrosting
Temp. R1.3 XXX °C	Current supply air temperature Input Z81/Z82
Temp. R1.4 XXX °C	Current supply air temperature Input Z01/Z02
Def. End. Tmp. XXX °C	Defrost termination temperature for comparison
Wait Time xx m	Waiting time setpoint
Drip Time xx m	Drain time setpoint
Last Defrst XX hh:mm	Day and time of last defrost cycle started

- Screen 1-9 Fans Zone 2

FANS 2 Pos: XXXXX	
Fans	Fan ON/OFF
Temp. R1.3	Evaporator temperature Input Z81/Z82
Fan Overrun	Fan overrun
Overrun Time	Overrun time

7.7.3 Menu 2 Setpoints

SETPOINTS POS: XXXXX	
1 Cooling	Screen 2-1; Special case: Move to Screen 2-1-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
2 Defrost	Screen 2-2; Special case: Move to Screen 2-2-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
3 FANS	Screen 2-3; Special case: Move to Screen 2-3-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
4 Alarm	Screen 2-4; Special case: Move to Screen 2-4-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
5 Frame Heater	Move to Screen 2-5

- Screen 2-1 Cooling

COOLING POS: XXXXX	
1 Zone 1	Screen 2-1-1
2 Zone 2	Screen 2-1-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-1-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-1-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-1-1 Zone 1

COOLING 1 POS: XXXXX			Entry	Default
Setpoint R4.1	XXX °C	Room air temperature setpoint	-10..30	5 °C
Hystersis R4.1	X K	Room air temperature hysteresis setpoint	1..8	2 K
HT. Cir. Setp.	XXX °C	Heating circuit setpoint, only shown when single-zone operation is set (Screen 6-1)	--, -10..30	5 °C
HT. Cir. Hyst.	X K	Heating circuit hysteresis, only shown when single-zone operation is set (Screen 6-1)	1..8	2 K

- Screen 2-1-2 Zone 2

COOLING 2 POS: XXXXX			Entry	Default
Setpoint R4.3	XXX °C	Room air temperature setpoint	-10..30	5 °C
Hystersis R4.3	X K	Room air temperature hysteresis setpoint	1..8	2 K

- Screen 2-1-3 Zone 1A Altern.

COOLING 1A POS: XXXXX			Entry	Default
Setpoint R4.1	XXX °C	Room air temperature setpoint	-10..30	3 °C
Hystersis R4.1	X K	Room air temperature hysteresis setpoint	1..8	1 K
HT. Cir. Setp.	XXX °C	Heating circuit setpoint, only shown when single-zone operation is set (Screen 6-1)	--, -10..30	3 °C
HT. Cir. Hyst.	X K	Heating circuit hysteresis, only shown when single-zone operation is set (Screen 6-1)	1..8	1 K

- Screen 2-1-4 Zone 2A Altern.

COOLING 2A POS: XXXXX			Entry	Default
Setpoint R4.3	XXX °C	Room air temperature setpoint	-10..30	3 °C
Hystersis R4.3	X K	Room air temperature hysteresis setpoint	1..8	1 K

- Screen 2-2 Defrost

DEFROST POS: XXXXX	
1 Zone 1	Screen 2-2-1
2 Zone 2	Screen 2-2-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-2-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-2-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-2-1 Zone 1

DEFROST 1 POS: XXXXX			Entry	Default
Def. End. Tmp.	XX °C	Defrost termination temperature setpoint	--, 0..30	5 °C
Wait Time	xx m	Waiting time setpoint between cooling and defrosting	0 .. 15	0 m
Drip Time	x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	0 m
2.Defrst Level	xx °C	Setpoint 2nd defrost stage	--, -20..30	-- °C

- Screen 2-2-2 Zone 2

DEFROST 2 POS: XXXXX			Entry	Default
Def. End. Tmp.	XX °C	Defrost termination temperature setpoint	--, 0..30	5 °C
Wait Time	xx m	Waiting time setpoint between cooling and defrosting	0 .. 15	0 m
Drip Time	x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	0 m

- Screen 2-2-3 Zone 1A Altern.

DEFROST 1A POS: XXXXX			Entry	Default
Def. End. Tmp.	XX °C	Defrost termination temperature setpoint	--, 0..30	5 °C
Wait Time	xx m	Waiting time setpoint between cooling and defrosting	0 .. 15	0 m
Drip Time	x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	0 m
2.Defrst Level	xx °C	Setpoint 2nd defrost stage	--, -20..30	-- °C

- Screen 2-2-4 Zone 2A Altern.

DEFROST 2A POS: XXXXX			Entry	Default
Def. End. Tmp.	XX °C	Defrost termination temperature setpoint	--, 0..30	5 °C
Wait Time	xx m	Waiting time setpoint between cooling and defrosting	0 .. 15	0 m
Drip Time	x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	0 m

- Screen 2-3 Fan

FANS POS: XXXXX	
1 Zone 1	Move to Screen 2-3-1
2 Zone 2	Move to Screen 2-3-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Move to Screen 2-3-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Move to Screen 2-3-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-3-1 Zone 1

FANS 1 POS: XXXXX		Entry	Default
Fan Overrun	Setpoint fan overrun	---, -10...20	3 °C
Overrun Time	Setpoint overrun time	0..100	5 m

- Screen 2-3-2 Zone 2

FANS 2 POS: XXXXX		Entry	Default
Fan Overrun	Setpoint fan overrun	---, -10...20	3 °C
Overrun Time	Setpoint overrun time	0..100	5 m

- Screen 2-3-1 Zone 1A Altern.

FANS 1A POS: XXXXX		Entry	Default
Fan Overrun	Setpoint fan overrun	---, -10...20	3 °C
Overrun Time	Setpoint overrun time	0..100	5 m

- Screen 2-3-1 Zone 2A Altern.

FANS 2A POS: XXXXX		Entry	Default
Fan Overrun	Setpoint fan overrun	---, -10...20	3 °C
Overrun Time	Setpoint overrun time	0..100	5 m

- Screen 2-4 Alarm

ALARM POS: XXXXX	
1 Zone 1	Screen 2-4-1
2 Zone 2	Screen 2-4-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-4-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-4-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-4-1 Zone 1

ALARM 1 POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	0..30	10 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	2 K

- Screen 2-4-2 Zone 2

ALARM 2 POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	0..30	10 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	2 K

- Screen 2-4-3 Zone 1A Altern.

ALARM 1A POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	0..30	8 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	2 K

- Screen 2-4-4 Zone 2A Altern.

ALARM 2A POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	0..30	8 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	2 K

- Screen 2-5 Frame Heater

FRAME HTR POS: XXXXX	
1 Mode altern.	Move to Screen 2-5-1
2 Setpoint frm htr	Move to Screen 2-5-2
3 Mode altern.	Move to Screen 2-5-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Setpoint altern.	Move to Screen 2-5-4 Not shown when setpoint toggle is disabled (Screen 3-3)

- Screen 2-5-1 Mode altern.

Select between values. Checkmark shows current setting.

MODE POS: XXXXX		Entry	Default
fixed run time √	Fixed frame heater on time	↵	√
enthalpy-ctrl rtm	Enthalpy control by ambient air temperature and humidity	↵	

- Screen 2-5-2 Setpoint frame heater

SETPOINTS POS: XXXXX		Entry	Default
Mod: xxxxxxxxxxxx	Displays set frame heater mode (Screen 2-5-1)		Fixed on time
Run Time XXX %	Fixed on time, Only shown when mode set to Fixed On Time (Screen 2-5-1)	--, 0..100	100 %
emerg.run time XXX %	On time in failure of ambient air humidity or temperature signal (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-1)	--, 0..100	100 %
enthalp. offs. XXX %	Offset to on time with activated enthalpy control (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-1)	-50..50	0 %

- Screen 2-5-3 Mode altern.

Select between values. Checkmark shows current setting.

MODE ALT POS: XXXXX		Entry	Default
fixed run time √	Fixed frame heater on time	↵	√
enthalpy-ctrl rtm	Enthalpy control by ambient air temperature and humidity	↵	

- Screen 2-5-4 Setpoint altern.

SOLLW. UM POS: XXXXX		Entry	Default
Mod: xxxxxxxxxxx	Displays set frame heater mode (Screen 2-5-3		Fixed on time
Run Time XXX %	Fixed on time, Only shown when mode set to Fixed On Time (Screen 2-5-3)	--, 0..100	100 %
emerg.run time XXX %	On time in failure of ambient air humidity or temperature signal (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-3)	--, 0..100	100 %
enthalp. offs. XXX %	Offset to on time with activated enthalpy control (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-3)	-50..50	0 %

7.7.4 Menu 3 Clock

CLOCK POS: XXXXX	
1 Current Time	Move to Screen 3-1
2 Defrost timer	Move to Screen 3-2
3 Toggle Setpoints	Move to Screen 3-3

- Screen 3-1 Current Time

Time default is set by the time master (CI 3000, AL 300) when CAN bus is connected. Any entry made will then be overwritten by the default value.

CLOCK POS: XXXXX		Entry	Default
Date: XX dd.mm.yy	Display and enter current weekday, date	dd.mm.yy	
Time: hh.mm	Display and enter current time	hh.mm	
Daylight Saving X	Display and enter automatic daylight saving change (Y/N)	↑, ↓, (Y/N)	J

- Screen 3-2 Defrost timer

DERF. TIMER POS: XXXXX		Entry	Default
Defrost timer XXX	Defrost initiation via input D11/12 (EXT) or internal (INT)	↑, ↓, (EXT, INT)	INT
Safe Defr Time XXX m	Safe defrost time for maximum allowed duration of defrosting (used only for internal defrosting)	0..180	90 min
Defr. 1 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 01:00
Defr. 2 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 06:00
Defr. 3 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 13:00
Defr. 4 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 21:00
...			
Defr. 14 xxxxx hh:mm	Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)		
Manual Defrost XXX	Status (OFF/ON) for supplementary manual defrosting *)	↑, ↓, (ON/OFF)	OFF

*) Parameter automatically set to ON for safe defrost time at first start.

- Screen 3-3 Toggle Setpoints

TOGGLE POS: XXXXX		Entry	Default
Status XXX	Setpoint toggle status (OFF/ON) of alternative set of setpoints (setpoint toggle)		
Toggle Setp. XXX	Setpoint toggle via input D21/22 (EXT), internal (INT) or disabled (--)	↑, ↓, (EXT, INT, --)	INT
Alt ON: DD-DD hh:mm	Start time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 21:00
AltOFF: DD-DD hh:mm	End time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 05:00
Alt ON: DD-DD hh:mm	Start time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Su 05:00
AltOFF: DD-DD hh:mm	End time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Su 21:00
...	A total of 7 different ON and OFF toggle times can be defined. A toggle time will only be obeyed when a matched pair of on and off times is set as a parameter.		

7.7.5 Menu 4 Messages

MESSAGES POS: XXXXX	
1 View	Move to Screen 4-1: Show Message Log
2 Acknowledge	Messages in message log are cancelled. *"Alarms Cancelled!"* shown in display: Press ESC to go back.
3 Delete	Move to Screen 4-2: Delete Message Log (with prompt)

- Screen 4-1 View Messages

MESSAGES POS: XXXXX	
Error Message 1:	Fault 1 message text
dd.mm.yy hh:mm ON	Start of Fault 1
dd.mm.yy hh:mm OFF	End of Fault 1 (only when Fault 1 terminated)
...	
Error Message n:	Fault n message text
dd.mm.yy hh:mm ON	Start of Fault n
dd.mm.yy hh:mm OFF	End of Fault n (only when Fault n terminated)

- Screen 4-2 Acknowledge Messages

This displays the *"Alarms Cancelled!"* message.

- Screen 4-3 Delete Messages

MESSAGES POS: XXXXX		Entry
Delete! Are you sure ? No: ESC YES: ↵	Safety prompt for deleting messages Press ESC to go back after cancelling messages.	↵, ESC

7.7.6 Menu 5 Archive

ARCHIVE POS: XXXXX	
dd.mm.yy hh:mm	Time of archiving Record 1
Zone 1: abcdef x °C	Status and temperature of Zone 1, see Note
Zone 2: abcdef x °C	Status and temperature of Zone 2, see Note Only shown when two-zone operation is set (Screen 6-1)
...	
dd.mm.yy hh:mm	Time of archiving Record n
Zone 1: abcdef x °C	Status and temperature of Zone 1, see Note
Zone 2: abcdef x °C	Status and temperature of Zone 2, see Note Only shown when two-zone operation is set (Screen 6-1)

Status abcdef covers following states of the refrigeration point. Display will be " - " if state is not active.

	Single-zone operation	**Two-zone operation**
a	O = Operation	O = Operation
b	R = Refrigeration/Cooling	R = Refrigeration/Cooling
c	D = Defrost	R = Refrigeration/Cooling
d	G =Gate/Door (coldroom ctrlr. only)	D = Defrost
e	A = Alarm	G =Gate/Door (coldroom ctrlr. only)
f		A = Alarm

7.7.7 Menu 6 Configuration

CONFIGURAT POS: XXXXX	
1 Refriger. Point	Move to Screen 6-1
2 Controller	Move to Screen 6-2
3 Cooling	Move to Screen 6-3
4 Language	Move to Screen 6-4
5 Alarm priorities	Move to Screen 6-5
6 Em.Powersupply	Move to Screen 6-6

- Screen 6-1 Refriger. Point

REFR. PT. POS: XXXXX		Entry	Default
Refr. Pt. Name:	Text only		
xxxxxxxxxxxxxx	Free text entry describing refrigeration point (see note)		Kühlstellen-regler
Item ID: XXXXX	Free text entry displayed in screens after ITEM ID (see note)		UA300
Priority: XX	Alarm priority in failure of refrigeration point or when global controller priority is set (Screen 6-5)	↑, ↓, or numbers (0..99)	1
Refr. Sys. No.: XX	No. of pack controller allocated to case/coldroom controller	↑, ↓, or numbers (--, 1..9)	1
Refr. Sys. Type XXX	Associated compressor pack. Parameter only required when linked to a VS 3000 BS having several zones. If a different type of pack controller is used, set this parameter blank (---)	↑, ↓, or numbers (---, Z1, Z2)	---
Temp. Zones X	Number of temperature zones Single-zone operation (tandem operation) Two-zone operation	↑, ↓, or numbers (1, 2)	2
No. Sensors XX	Number of temperature sensors connected. After entering ↵ sensor scan is performed to redetermine the number of sensorimm of sensors	↵	

A meaningful name that describes the refrigeration point in more detail should be entered, e.g. Cheese Counter 2 and CC2. The name is entered in the screens of the CI 3000 Store Computer or AL 300 Operator Terminal. Direct entry cannot be made in the UA 300 screens displayed on operator terminals. The name also cannot be entered with the BT 300 x Operator Interface.

The priority must be assigned between 0..2 by older versions of the CI 3000 Store Computer (see section 8 Alarms and Messages of UA 300).

- Screen 6-2 Controller

CONTROLLER POS: XXXXX	
1 Type and Version	Move to Screen 6-2-1
2 Temp. Display	Move to Screen 6-2-2
3 Alarm Delay	Move to Screen 6-2-3
4 230V Inputs	Move to Screen 6-2-4
5 Sensor Type	Move to Screen 6-2-5

- Screen 6-2-1 Type and Version

VERSION POS: XXXXX		Entry	Default
Ctrlr. Type XXXXXXX	Controller type set by DIP Switch S3	--	UR141NK
Software Ver.: XXXX	Software version of case/coldroom controller (EPROM))	--	x.yy
Serial No.: XXXXXX	Device No. of case/coldroom controller (from EEPROM)	--	
Master/Sl. Mode XXX	Synchronized defrosting in master-slave mode (ON/OFF)	--	

- Screen 6-2-2 Temp. Display

DISPLAY POS: XXXXX		Entry	Default
Offset XX K	Offset for temperature display	-10..10	0K
Alarm symbol X	Show alarm symbol on BT 30 Temperature Display	↑, ↓, (Y/N)	N

- Screen 6-2-3 Alarm Delay

ALARMDELAY POS: XXXXX		Entry	Default
Sensor Fault XX m	Sensor break alarm delay	0..30	15 min
High/Low Temp. XX m	High/low temperature alarm delay	0..150	90 min
Door open XX m	Coldroom door open alarm delay	0 .. 60	60 m
No Defrost XX h	No defrost alarm delay	--, 2..168	30 h
Selfholding X	NO: Automatic reset of non- transient alarms. YES: Alarms must be reset manually.	↑, ↓, (Y/N)	N

- Screen 6-2-4 230V Inputs

Only trained personnel should be allowed to change inputs, as changes may affect other functions.

230V INPUT POS: XXXXX		Entry	Default
Input1: XXXXXXXXXX	Function of Digital Input 1 D11/D12		DERF. TIMER
Input2: XXXXXXXXXX	Function of Digital Input 2 D21/D22	DOOR CON-TACT	DOOR CONTACT
Input3: XXXXXXXXXX	Function of Digital Input 3 D31/D32	DOOR CON-TACT	DOOR CONTACT

- Screen 6-2-5 Sensor Type

Select between values. Checkmark shows current setting.

SENSORS POS: XXXXX		Entry	Default
L243 √	Temperature range -50..50°C	↵	√
K277	Temperature range -50..50°C	↵	
5K3A1	Temperature range 0..100°C	↵	

- Screen 6-3 Cooling

COOLING POS: XXXXX		Entry	Default
Min. On Time XX K	Minimum cooling ON time	0..15	2 m
Min. Off Time XX m	Minimum cooling OFF time	0..15	2 m
Emergency Op. xx m	In failure of required sensors, the solenoid valve is actuated to adjust to the set opening in %.	0..100	30%

- Screen 6-4 Language

LANGUAGE POS: XXXXX		Entry	Default
Deutsch D √		↵	√
English GB		↵	
Francais F		↵	
Espagnol E		↵	
Finnish FIN		↵	
Türkce TR		↵	
Cesky CZ		↵	

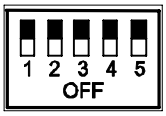
- Screen 6-5 Alarm priorities

ALARMPRIOS POS: XXXXX		Entry	Default
Prio.Refrig. Pt. X	Global alarm priority by refrigeration point priority (Screen 6-1) (Y)	↑, ↓, (Y,N)	J
Priority: XX	Show refrigeration point priority (Screen 6-1) Only shown when refrigeration point priority set to Y.		1
Following parameters are only shown when refrigeration point priority is set to N. Meaning of usable entries for alarm priority: *- = Event ignored* *0 = Message (entered only in message log)* *1 = Priority 1 alarm* *..* *99 = Priority 99 alarm*			
Low Temp.	Temperature below lower alarm limit Priority applies to following alarms: Low Temp. Zone1, Low Temp. Zone2	-, 0..99	1
High Temp.	Temperature above upper alarm limit Priority applies to following alarms: High Temp. Zone1, High Temp. Zone2	-, 0..99	1
Sensor Fault	Temperature sensor failure	-, 0..99	1
Door Open	Coldroom door open	-, 0..99	1
No Defrost	No defrost within alarm delay interval Priority applies to following alarm: No defrost	-, 0..99	1
Timer-Term.Defr.	Defrosting terminated by safe defrost time	-, 0..99	0
Power Failure	Start following power failure	-, 0..99	0
First Start	Controller startup (basic settings loaded!)	-, 0..99	1
Manual Shutoff	Manual switch Input D31/D32 set OFF	-, 0..99	0
Hardware Fault	Internal hardware fault Priority applies to following alarms: EEPROM Fault, RTC Fault, Flash Fault	-, 0..99	1
Setpoint Change	Message generated on changing setpoint	0..99	0
Refrig.Pt.Dis.	Cooling by pack controller via CAN bus interrupted	-, 0..99	0
Battery Voltage	Battery low	-, 0..99	0

- Maske 6-6 Em.Powersupply (Emergency Power supply)

EM.POW.SUP POS: XXXXX		Entry	Default
Cool.funct.OFF xxx	Functionality of the cooling switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N
Defr.funct.OFF xxx	Functionality of the defrosting switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N
Fan funct. OFF xxx	Functionality of the fan switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N

7.8 Controller type UR 141 TK (LT) - Menu tree



1: ON
2: OFF
3: ON
4: ON/OFF = Master-/Slave-Mode ON/OFF
5: OFF

Level 1	Level 2	Level 3	Level 4	Level 5	Screen No.	Screen Name
Main menu					0	**REFR. PT.**
Actual Values					1	**ACT VALUES**
	Temp. Sensor				1-1	TEMPERATUR
	Cooling Zone 1				1-2	COOLING 1
	Defrost Zone 1				1-3	DEFROST 1
	Fans Zone 1				1-4	FANS 1
	Alarm				1-5	ALARM
	Frame Heater				1-6	MODE
	Cooling Zone 2				1-7	COOLING 2
	Defrost Zone 2				1-8	DEFROST 2
	Fans Zone 2				1-9	FANS 2
Setpoints					2	**SETPOINTS**
	Cooling				2-1	COOLING
		Zone 1			2-1-1	COOLING 1
		Zone 2			2-1-2	COOLING 2
		Zone 1A Altern.			2-1-3	COOLING 1A
		Zone 2A Altern.			2-1-4	COOLING 2A
	Defrost				2-2	DEFROST
		Zone 1			2-2-1	DEFROST 1
		Zone 2			2-2-2	DEFROST 2
		Zone 1A Altern.			2-2-3	DEFROST 1A
		Zone 2A Altern.			2-2-4	DEFROST 2A
	Fan				2-3	FANS
		Zone 1			2-3-1	FANS 1
		Zone 2			2-3-2	FANS 2
		Zone 1A Altern.			2-3-3	FANS 1A
		Zone 2A Altern.			2-3-4	FANS 2A

Level 1	Level 2	Level 3	Level 4	Level 5	Screen No.	Screen Name
Setpoints	Alarm				2-4	ALARM
		Zone 1			2-4-1	ALARM 1
		Zone 2			2-4-2	ALARM 2
		Zone 1A Altern.			2-4-3	ALARM 1A
		Zone 2A Altern.			2-4-4	ALARM 2A
	Frame Heater				2-5	FRAME HTR
		Mode altern.			2-5-1	MODE
		Setpoint frm htr			2-5-2	SETPOINTS
		Mode altern.			2-5-3	MODE ALT
		Setpoint altern.			2-5-4	MODE ALT
Clock					3	**CLOCK**
	Current Time				3-1	CLOCK
	Defrost timer				3-2	DERF. TIMER
	Setpoint altern.				3-3	TOGGLE
Messages					4	**MESSAGES**
	View				4-1	MESSAGES
	Acknowledge				4-2	
	Delete				4-3	MESSAGES
Archive					5	**ARCHIVE**
Configuration					6	**CONFIGURAT**
	Refriger. Point				6-1	REFR. PT.
	Controller				6-2	CONTROLLER
		Type and Version			6-2-1	VERSION
		Temp. Display			6-2-2	DISPLAY
		Alarm Delay			6-2-3	ALARMDELAY
		230V Inputs			6-2-4	230V INPUT
		Sensor Type			6-2-5	SENSORS
	Cooling				6-3	COOLING
	Language				6-4	LANGUAGE
	Alarm priorities				6-5	ALARMPRIOS
	Em.Powersupply				6-6	EM.POW.SUP

7.8.1 Menu 0 Main menu

REFR. PT. POS: XXXXX	
1 Actual Values	Move to Screen 1
2 Setpoints	Move to Screen 2
3 Clock	Move to Screen 3
4 Messages	Move to Screen 4
5 Archive	Move to Screen 5
6 Configuration	Move to Screen 6

7.8.2 Menu 1 Actual Values

ACT VALUES POS: XXXXX	
1 Temp. Sensor	Move to Screen 1-1
2 Cooling Zone 1	Move to Screen 1-2
3 Defrost Zone 1	Move to Screen 1-3
4 Evap. fan Zone 1	Move to Screen 1-4
5 Alarm	Move to Screen 1-5
6 Frame Heater	Move to Screen 1-6
7 Cooling Zone 2	Move to Screen 1-7 Only shown when two-zone operation is set (Screen 6-1)
8 Defrost Zone 2	Move to Screen 1-8 Only shown when two-zone operation is set (Screen 6-1)
9 FANS Zone 2	Move to Screen 1-9 Only shown when two-zone operation is set (Screen 6-1)

- Screen 1-1 Temp. Sensor

TEMPERATUR Pos: XXXXX		
Temp. R4.1	xxx °C	Current room air temperature Input Z21/ Z22
Temp. R1.1	xxx °C	Current evaporator defrost termination temperature Input Z31/ Z32
Temp. R4.2	xxx °C	Current room air temperature Input Z41/ Z42
Temp. R1.2	xxx °C	Current evaporator defrost termination temperature Input Z51/ Z52
Temp. R4.3	xxx °C	Current room air temperature Input Z71/ Z72
Temp. R1.3	xxx °C	Current evaporator defrost termination temperature Input Z81/ Z82
Temp. R4.4	xxx °C	Current room air temperature Input Z91/ Z92
Temp. R1.4	xxx °C	Current evaporator defrost termination temperature Input Z01/ Z02

- Screen 1-2 Cooling Zone 1

COOLING 1 Pos: XXXXX		
Cooling	xxx	Current ON/OFF status of cooling
Run Time	xx %	Cooling relay on time during last day (00:00 - 24:00 hours)
Starts	0	Cooling relay actuations during last day
Temp. R4.1	xxx °C	Current room air temperature Input Z21/Z22
Setpoint R4.1	xxx °C	Supply air temperature setpoint for comparison
Hystersis R4.1	xxx K	Supply air temperature hysteresis setpoint

- Screen 1-3 Defrost Zone 1

DEFROST 1 Pos: XXXXX		
Counting Rate		Counting rate
Defrost Counter		Defrost counter
Defrost		Current ON/OFF status of defrosting
Temp. R1.1	XXX °C	Current supply air temperature Input Z31/Z32
Temp. R1.2	XXX °C	Current supply air temperature Input Z51/Z52
Def. End. Tmp.	XXX °C	Defrost termination temperature for comparison
Wait Time	xx m	Waiting time setpoint
Drip Time	xx m	Drain time setpoint
Last Defrst	XX hh:mm	Day and time of last defrost cycle started

- Screen 1-4 Evap. fan Zone 1

FANS 1 Pos: XXXXX	
FANS	Fan ON/OFF
Temp. R1.1	Evaporator temperature Input Z31/Z32
Fan Delay	Fan delay

- Screen 1-5 Alarm

ALARM Pos: XXXXX		
Alarm Relay	XXX	Current ON/OFF status of alarm output Terminal 15/16/18
Hi Temp Setp.1	XX °C	High temperature setpoint Zone 1
Lo Temp Setp.1	XX K	Low temperature setpoint Zone 1
Hi Temp Setp.2	XX °C	High temperature setpoint Zone 2; Only shown when two-zone operation is set (Screen 6-1)
Lo Temp Setp.2	XX K	Low temperature setpoint Zone 2; Only shown when two-zone operation is set (Screen 6-1)
Coldroom Door CLS1	xxx	Coldroom door 1 OPEN/CLOSED
Coldroom Door CLS2	xxx	Coldroom door 2 OPEN/CLOSED

- Screen 1-6 Frame Heater

MODE XXXXX		
Frame Heater	xxx	Current ON/OFF status of frame heater output Terminal 91/92/93
Run Time	xxx %	Current on time of frame heater
Humidity	xxx %	Current ambient air humidity (transmitted via CAN bus from pack controller with fitted ambient humidity sensor)
Room temp	xx °C	Current ambient air temperature (transmitted via CAN bus from pack controller with fitted ambient temperature sensor

- Screen 1-7 Cooling Zone 2

COOLING 2	XXXXX	
Cooling	XXX	Current ON/OFF status of cooling
Run Time	XX %	Cooling relay on time during last day (00:00 - 24:00 hours)
Starts	0	Cooling relay actuations during last day
Temp. R4.3	XXX °C	Current room air temperature Input Z71/Z72
Setpoint R4.3	XXX °C	Room air temperature setpoint for comparison
Hystersis R4.3	XXX K	Room air temperature hysteresis setpoint

- Screen 1-8 Defrost Zone 2

DEFROST 2 Pos: XXXXX	
Counting Rate	Counting rate
Defrost Counter	Defrost counter
Defrost	Current ON/OFF status of defrosting
Temp. R1.3 XXX °C	Current supply air temperature Input Z81/Z82
Temp. R1.4 XXX °C	Current supply air temperature Input Z01/Z02
Def. End. Tmp. XXX °C	Defrost termination temperature for comparison
Wait Time xx m	Waiting time setpoint
Drip Time xx m	Drain time setpoint
Last Defrst XX hh:mm	Day and time of last defrost cycle started

- Screen 1-9 Fans Zone 2

FANS 2 Pos: XXXXX	
FANS	Fan ON/OFF
Temp. R1.3	Evaporator temperature Input Z81/Z82
Fan Delay	Fan delay

7.8.3 Menu 2 Setpoints

SETPOINTS POS: XXXXX	
1 Cooling	Screen 2-1; Special case: Move to Screen 2-1-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
2 Defrost	Screen 2-2; Special case: Move to Screen 2-2-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
3 FANS	Move to Screen 2-3; Special case: Move to Screen 2-3-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
4 Alarm	Screen 2-4; Special case: Move to Screen 2-4-1 when single-zone operation is set (Screen 6-1) and setpoint toggle is disabled (Screen 3-3).
5 Frame Heater	Move to Screen 2-5

- Screen 2-1 Cooling

COOLING POS: XXXXX	
1 Zone 1	Screen 2-1-1
2 Zone 2	Screen 2-1-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-1-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-1-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-1-1 Zone 1

COOLING 1 POS: XXXXX			Entry	Default
Setpoint R4.1	XXX °C	Room air temperature setpoint	-45..30	-20 °C
Hystersis R4.1	X K	Room air temperature hysteresis setpoint	1..8	2 K
HT. Cir. Setp.	XXX °C	Heating circuit setpoint, only shown when single-zone operation is set (Screen 6-1)	--, -45..30	-20 °C
HT. Cir. Hyst.	X K	Heating circuit hysteresis setpoint, only shown when single-zone operation is set (Screen 6-1)	1..8	2 K

- Screen 2-1-2 Zone 2

COOLING 2 POS: XXXXX			Entry	Default
Setpoint R4.3	XXX °C	Room air temperature setpoint	-45..30	-20 °C
Hystersis R4.3	X K	Room air temperature hysteresis setpoint	1..8	2 K

- Screen 2-1-3 Zone 1A Altern.

COOLING 1A POS: XXXXX			Entry	Default
Setpoint R4.1	XXX °C	Room air temperature setpoint	-45..30	-24 °C
Hystersis R4.1	X K	Room air temperature hysteresis setpoint	1..8	2 K
HT. Cir. Setp.	XXX °C	Heating circuit setpoint, only shown when single-zone operation is set (Screen 6-1)	--, -45..30	-24 °C
HT. Cir. Hyst.	X K	Heating circuit hysteresis setpoint, only shown when single-zone operation is set (Screen 6-1)	1..8	1 K

- Screen 2-1-4 Zone 2A Altern.

COOLING 2A POS: XXXXX			Entry	Default
Setpoint R4.3	XXX °C	Room air temperature setpoint	-45..30	-24 °C
Hystersis R4.3	X K	Room air temperature hysteresis setpoint	1..8	2 K

- Screen 2-2 Defrost

DEFROST POS: XXXXX	
1 Zone 1	Screen 2-2-1
2 Zone 2	Screen 2-2-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-2-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-2-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-2-1 Zone 1

DEFROST 1 POS: XXXXX		Entry	Default
Counting Rate	Setpoint counting rate	0..15	0
Defrost Counter	Setpoint defrost counter	-	1
Def. End. Tmp. XX °C	Defrost termination temperature setpoint	--, 0..30	10 °C
Wait Time xx m	Waiting time setpoint between cooling and defrosting	0 .. 15	3 m
Drip Time x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	5 m
2.Defrst Level xx °C	Setpoint 2nd defrost stage	--, -20..30	-- °C

- Screen 2-2-2 Zone 2

DEFROST 2 POS: XXXXX		Entry	Default
Counting Rate	Setpoint counting rate	0..15	0
Defrost Counter	Setpoint defrost counter	-	1
Def. End. Tmp. XX °C	Defrost termination temperature setpoint	--, 0..30	10 °C
Wait Time xx m	Waiting time setpoint between cooling and defrosting	0 .. 15	3 m
Drip Time x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	5 m

- Screen 2-2-3 Zone 1A Altern.

DEFROST 1A POS: XXXXX		Entry	Default
Counting Rate	Setpoint counting rate	0..15	0
Defrost Counter	Setpoint defrost counter	-	1
Def. End. Tmp. XX °C	Defrost termination temperature setpoint	--, 0..30	10 °C
Wait Time xx m	Waiting time setpoint between cooling and defrosting	0 .. 15	3 m
Drip Time x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	5 m
2.Defrst Level xx °C	Setpoint 2nd defrost stage	--, -20..30	-- °C

- Screen 2-2-4 Zone 2A Altern.

DEFROST 2A POS: XXXXX		Entry	Default
Counting Rate	Setpoint counting rate	0..15	0
Defrost Counter	Setpoint defrost counter	-	1
Def. End. Tmp. XX °C	Defrost termination temperature setpoint	--, 0..30	10 °C
Wait Time xx m	Waiting time setpoint between cooling and defrosting	0 .. 15	3 m
Drip Time x m	Waiting time (drain time) setpoint between defrosting and cooling	0 .. 15	5 m

- Screen 2-3 Fan

FANS POS: XXXXX	
1 Zone 1	Move to Screen 2-3-1
2 Zone 2	Move to Screen 2-3-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Move to Screen 2-3-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Move to Screen 2-3-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-3-1 Zone 1

FANS 1 POS: XXXXX		Entry	Default
Fan Delay	Setpoint fan delay	---, -20...20	0 °C

- Screen 2-3-2 Zone 2

FANS 2 POS: XXXXX		Entry	Default
Fan Delay	Setpoint fan delay	---, -20...20	0 °C

- Screen 2-3-1 Zone 1A Altern.

FANS 1A POS: XXXXX		Entry	Default
Fan Delay	Setpoint fan delay	---, -20...20	0 °C

- Screen 2-3-1 Zone 2A Altern.

FANS 2A POS: XXXXX		Entry	Default
Fan Delay	Setpoint fan delay	---, -20...20	0 °C

- Screen 2-4 Alarm

ALARM POS: XXXXX	
1 Zone 1	Screen 2-4-1
2 Zone 2	Screen 2-4-2 Only shown when two-zone operation is set (Screen 6-1)
3 Zone 1A Altern.	Screen 2-4-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Zone 2A Altern.	Screen 2-4-4 Only shown when two-zone operation is set (Screen 6-1) and setpoint toggle is not disabled (Screen 3-3)

- Screen 2-4-1 Zone 1

ALARM 1 POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	-30..30	-12 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	2 K

- Screen 2-4-2 Zone 2

ALARM 2 POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	-30..30	-12 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	2 K

- Screen 2-4-3 Zone 1A Altern.

ALARM 1A POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	-30..30	-14 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	2 K

- Screen 2-4-4 Zone 2A Altern.

ALARM 2A POS: XXXXX		Entry	Default
High Temp Setp XX °C	High temperature setpoint at which *High Temperature* alarm is generated	-30..30	-14 °C
Low Temp Setp. XX K	Low temperature setpoint (difference below temperature control setpoint) at which *Low Temperature* alarm is generated	--, 0..6	2 K

- Screen 2-5 Frame Heater

FRAME HTR POS: XXXXX	
1 Mode altern.	Move to Screen 2-5-1
2 Setpoint frm htr	Move to Screen 2-5-2
3 Mode altern.	Move to Screen 2-5-3 Not shown when setpoint toggle is disabled (Screen 3-3)
4 Setpoint altern.	Move to Screen 2-5-4 Not shown when setpoint toggle is disabled (Screen 3-3)

- Screen 2-5-1 Mode altern.

Select between values. Checkmark shows current setting.

MODE POS: XXXXX		Entry	Default
fixed run time √	Fixed frame heater on time	↵	√
enthalpy-ctrl rtm	Enthalpy control by ambient air temperature and humidity	↵	

- Screen 2-5-2 Setpoint frame heater

SETPOINTS POS: XXXXX		Entry	Default
Mod: xxxxxxxxxxxx	Displays set frame heater mode (Screen 2-5-1)		Fixed on time
Run Time XXX %	Fixed on time, Only shown when mode set to Fixed On Time (Screen 2-5-1)	--, 0..100	100 %
emerg.run time XXX %	On time in failure of ambient air humidity or temperature signal (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-1)	--, 0..100	100 %
enthalp. offs. XXX %	Offset to on time with activated enthalpy control (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-1)	-50..50	0 %

- Screen 2-5-3 Mode altern.

Select between values. Checkmark shows current setting.

MODE ALT POS: XXXXX		Entry	Default
fixed run time √	Fixed frame heater on time	↵	√
enthalpy-ctrl rtm	Enthalpy control by ambient air temperature and humidity	↵	

- Screen 2-5-4 Setpoint altern.

SOLLW. UM POS: XXXXX		Entry	Default
Mod: xxxxxxxxxxx	Displays set frame heater mode (Screen 2-5-3)		Fixed on time
Run Time XXX %	Fixed on time, Only shown when mode set to Fixed On Time (Screen 2-5-3)	--, 0..100	100 %
emerg.run time XXX %	On time in failure of ambient air humidity or temperature signal (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-3)	--, 0..100	100 %
enthalp. offs. XXX %	Offset to on time with activated enthalpy control (via CAN bus) Only shown when mode set to Enthalpy Control (Screen 2-5-3)	-50..50	0 %

7.8.4 Menu 3 Clock

CLOCK POS: XXXXX	
1 Current Time	Move to Screen 3-1
2 Defrost timer	Move to Screen 3-2
3 Toggle Setpoints	Move to Screen 3-3

- Screen 3-1 Current Time

Time default is set by the time master (CI 3000, AL 300) when CAN bus is connected. Any entry made will then be overwritten by the default value.

CLOCK POS: XXXXX		Entry	Default
Date: XX dd.mm.yy	Display and enter current weekday, date	dd.mm.yy	
Time: hh.mm	Display and enter current time	hh.mm	
Daylight Saving X	Display and enter automatic daylight saving change (Y/N)	↑, ↓, (Y/N)	J

- Screen 3-2 Defrost timer

DERF. TIMER POS: XXXXX			Entry	Default
Defrost timer	XXX	Defrost initiation via input D11/12 (EXT) or internal (INT)	↑, ↓, (EXT, INT)	INT
Safe Defr Time	XXX m	Safe defrost time for maximum allowed duration of defrosting (used only for internal defrosting)	0..180	150 min
Defr. 1 xxxxx hh:mm		Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 07:00
Defr. 2 xxxxx hh:mm		Defrost start time with internal defrosting; Weekday, time; (used only for internal defrosting) (Screen 3-2)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 19:00
...				
Defr. 14 xxxxx hh:mm				
Manual Defrost	XXX	Status (OFF/ON) for supplementary manual defrosting *)	↑, ↓, (ON/OFF)	OFF

*) Parameter automatically set to ON for safe defrost time at first start.

- Screen 3-3 Toggle Setpoints

TOGGLE POS: XXXXX			Entry	Default
Status	XXX	Setpoint toggle status (OFF/ON) of alternative set of setpoints (setpoint toggle)		
Toggle Setp.	XXX	Setpoint toggle via input D21/22 (EXT), internal (INT) or disabled (--)	↑, ↓, (EXT, INT, --)	INT
Alt ON: DD-DD hh:mm		Start time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 21:00
AltOFF: DD-DD hh:mm		End time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Mo-Su 05:00
Alt ON: DD-DD hh:mm		Start time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3)	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Su 05:00
AltOFF: DD-DD hh:mm		End time for toggle to alternative set of setpoints Weekday from - to XXXXX, time hh:mm Only shown when internal setpoint toggle is activated (Screen 3-3	↑, ↓, (Mo-Su etc.) or numbers (hh:mm)	Su 21:00
...		A total of 7 different ON and OFF toggle times can be defined. A toggle time will only be obeyed when a matched pair of on and off times is set as a parameter.		

7.8.5 Menu 4 Messages

MESSAGES POS: XXXXX	
1 View	Move to Screen 4-1: Show Message Log
2 Acknowledge	Messages in message log are cancelled. *"Alarms Cancelled!"* shown in display: Press ESC to go back.
3 Delete	Move to Screen 4-2: Delete Message Log (with prompt)

- Screen 4-1 View Messages

MESSAGES POS: XXXXX	
Error Message 1:	Fault 1 message text
dd.mm.yy hh:mm ON	Start of Fault 1
dd.mm.yy hh:mm OFF	End of Fault 1 (only when Fault 1 terminated)
...	
Error Message n:	Fault n message text
dd.mm.yy hh:mm ON	Start of Fault n
dd.mm.yy hh:mm OFF	End of Fault n (only when Fault n terminated)

- Screen 4-2 Acknowledge Messages

This displays the *"Alarms Cancelled!"* message.

- Screen 4-3 Delete Messages

MESSAGES POS: XXXXX		Entry
Delete! Are you sure ? No: ESC YES: ↵	Safety prompt for deleting messages Press ESC to go back after cancelling messages.	↵, ESC

7.8.6 Menu 5 Archive

ARCHIVE POS: XXXXX	
dd.mm.yy hh:mm	Time of archiving Record 1
Zone 1: abcdef x °C	Status and temperature of Zone 1, see Note
Zone 2: abcdef x °C	Status and temperature of Zone 2, see Note Only shown when two-zone operation is set (Screen 6-1)
...	
dd.mm.yy hh:mm	Time of archiving Record n
Zone 1: abcdef x °C	Status and temperature of Zone 1, see Note
Zone 2: abcdef x °C	Status and temperature of Zone 2, see Note Only shown when two-zone operation is set (Screen 6-1)

Status abcdef covers following states of the refrigeration point. Display will be " - " if state is not active.

	Single-zone operation	**Two-zone operation**
a	O = Operation	O = Operation
b	R = Refrigeration/Cooling	R = Refrigeration/Cooling
c	D = Defrost	R = Refrigeration/Cooling
d	G =Gate/Door (coldroom ctrlr. only)	D = Defrost
e	A = Alarm	G =Gate/Door (coldroom ctrlr. only)
f		A = Alarm

7.8.7 Menu 6 Configuration

CONFIGURAT POS: XXXXX	
1 Refriger. Point	Move to Screen 6-1
2 Controller	Move to Screen 6-2
3 Cooling	Move to Screen 6-3
4 Language	Move to Screen 6-4
5 Alarm priorities	Move to Screen 6-5
6 Em.Powersupply	Move to Screen 6-6

- Screen 6-1 Refriger. Point

REFR. PT. POS: XXXXX		Entry	Default
Refr. Pt. Name:	Text only		
xxxxxxxxxxxxxxx	Free text entry describing refrigeration point (see note)		Kühlstellen-regler
Item ID: XXXXX	Free text entry displayed in screens after ITEM ID (see note)		UA300
Priority: XX	Alarm priority in failure of refrigeration point or when global controller priority is set (Screen 6-5)	↑, ↓, or numbers (0..99)	1
Refr. Sys. No.: XX	No. of pack controller allocated to case/coldroom controller	↑, ↓, or numbers (--, 1..9)	1
Refr. Sys. Type XXX	Associated compressor pack. Parameter only required when linked to a VS 3000 BS having several zones. If a different type of pack controller is used, set this parameter blank (---)	↑, ↓, or numbers (---, Z1, Z2)	Z2
Temp. Zones X	Number of temperature zones Single-zone operation (tandem operation) Two-zone operation	↑, ↓, or numbers (1, 2)	2
No. Sensors XX	Number of temperature sensors connected. After entering ↵ sensor scan is performed to redetermine the number of sensorimm of sensors	↵	

A meaningful name that describes the refrigeration point in more detail should be entered, e.g. Cheese Counter 2 and CC2. The name is entered in the screens of the CI 3000 Store Computer or AL 300 Operator Terminal. Direct entry cannot be made in the UA 300 screens displayed on operator terminals. The name also cannot be entered with the BT 300 x Operator Interface.

The priority must be assigned between 0..2 by older versions of the CI 3000 Store Computer (see section 8 Alarms and Messages of UA 300).

- Screen 6-2 Controller

CONTROLLER POS: XXXXX	
1 Type and Version	Move to Screen 6-2-1
2 Temp. Display	Move to Screen 6-2-2
3 Alarm Delay	Move to Screen 6-2-3
4 230V Inputs	Move to Screen 6-2-4
5 Sensor Type	Move to Screen 6-2-5

- Screen 6-2-1 Type and Version

VERSION POS: XXXXX		Entry	Default
Ctrlr. Type XXXXXXX	Controller type set by DIP Switch S3	--	UR141TK
Software Ver.: XXXX	Software version of case/coldroom controller (EPROM))	--	x.yy
Serial No.: XXXXXX	Device No. of case/coldroom controller (from EEPROM)	--	
Master/Sl. Mode XXX	Synchronized defrosting in master-slave mode (ON/OFF)	--	

- Screen 6-2-2 Temp. Display

DISPLAY POS: XXXXX		Entry	Default
Offset XX K	Offset for temperature display	-10..10	0K
Alarm symbol X	Show alarm symbol on BT 30 Temperature Display	↑, ↓, (Y/N)	N

- Screen 6-2-3 Alarm Delay

ALARMDELAY POS: XXXXX		Entry	Default
Sensor Fault XX m	Sensor break alarm delay	0..30	15 min
High/Low Temp. XX m	High/low temperature alarm delay	0..150	90 min
Door Open XX m	Coldroom door open alarm delay	0 .. 60	60 m
No Defrost XX h	No defrost alarm delay	--, 2..168	30 h
Selfholding X	NO: Automatic reset of non- transient alarms. YES: Alarms must be reset manually.	↑, ↓, (Y/N)	N

- Screen 6-2-4 230V Inputs

Only trained personnel should be allowed to change inputs, as changes may affect other functions.

230V INPUT POS: XXXXX		Entry	Default
Input1: XXXXXXXXXX	Function of Digital Input 1 D11/D12		DERF. TIMER
Input2: XXXXXXXXXX	Function of Digital Input 2 D21/D22	DOOR CON-TACT	DOOR CONTACT
Input3: XXXXXXXXXX	Function of Digital Input 3 D31/D32	DOOR CON-TACT	DOOR CONTACT

- Screen 6-2-5 Sensor Type

Select between values. Checkmark shows current setting.

SENSORS POS: XXXXX		Entry	Default
L243 √	Temperature range -50..50°C	↵	√
K277	Temperature range -50..50°C	↵	
5K3A1	Temperature range 0..100°C	↵	

- Screen 6-3 Cooling

COOLING POS: XXXXX		Entry	Default
Min. On Time XX K	Minimum cooling ON time	0..15	2 m
Min. Off Time XX m	Minimum cooling OFF time	0..15	2 m
Fan forerun xx m	Delay after fans start	0..100	3 m
Emergency Op. xx m	In failure of required sensors, the solenoid valve is actuated to adjust to the set opening in %.	0..100	100%

- Screen 6-4 Language

LANGUAGE POS: XXXXX		Entry	Default
Deutsch D √		↵	√
English GB		↵	
Francais F		↵	
Espagnol E		↵	
Finnish FIN		↵	
Türkce TR		↵	
Cesky CZ		↵	

- Screen 6-5 Alarm priorities

ALARMPRIOS POS: XXXXX		Entry	Default
Prio.Refrig. Pt. X	Global alarm priority by refrigeration point priority (Screen 6-1) (Y)	↑, ↓, (Y,N)	J
Priority: XX	Show refrigeration point priority (Screen 6-1) Only shown when refrigeration point priority set to Y.		1
Following parameters are only shown when refrigeration point priority is set to N. Meaning of usable entries for alarm priority: *- = Event ignored* *0 = Message (entered only in message log)* *1 = Priority 1 alarm* *..* *99 = Priority 99 alarm*			
Low Temp.	Temperature below lower alarm limit Priority applies to following alarms: Low Temp. Zone1, Low Temp. Zone2	-, 0..99	1
High Temp.	Temperature above upper alarm limit Priority applies to following alarms: High Temp. Zone1, High Temp. Zone2	-, 0..99	1
Sensor Fault	Temperature sensor failure	-, 0..99	1
Door Open	Coldroom door open alarm delay	-, 0..99	1
No Defrost	No defrost within alarm delay interval Priority applies to following alarm: No defrost	-, 0..99	0
Timer-Term.Defr.	Defrosting terminated by safe defrost time	-, 0..99	0
Power Failure	Start following power failure	-, 0..99	0
First Start	Controller startup (basic settings loaded!)	-, 0..99	1
Manual Shutoff	Manual switch Input D31/D32 set OFF	-, 0..99	0
Hardware Fault	Internal hardware fault Priority applies to following alarms: EEPROM Fault, RTC Fault, Flash Fault	-, 0..99	1
Setpoint Change	Message generated on changing setpoint	0..99	0
Refrig.Pt.Dis.	Cooling by pack controller via CAN bus interrupted	-, 0..99	0
Battery Voltage	Battery low	-, 0..99	0

- Maske 6-6 Em.Powersupply (Emergency Power supply)

EM.POW.SUP POS: XXXXX		Entry	Default
Cool.funct.OFF xxx	Functionality of the cooling switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N
Defr.funct.OFF xxx	Functionality of the defrosting switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N
Fan funct. OFF xxx	Functionality of the fan switched off during emergency power supply? (Y/N)	↑, ↓, (Y/N)	N

Notice:

8 Alarms and Messages of UA 300

The following table lists all fault reports that may be generated and their possible cause. Each fault is assigned a priority that can be set in the Alarm Priorities screen.

No.	Message	Cause	Correction
Hardware faults			
4	EEPROM Fault	Component for saving configuration defective or configuration data in EEPROM implausible.	Save parameters in LDSWin software, perform first start if necessary and load parameters from LDSWin. Contact Service Organization if fault recurs
6	Flash Fault	Flash memory module defective.	Please contact Service Organization - Replace device
8	RTC Fault	Real-time clock defective.	Please contact Service Organization - Replace device
10	Battery Voltage	Real-time clock and RAM backup battery dead	Replace battery (see Section 4 - Installation and Startup)
Messages			
50	First Start	Controller performed first start (basic settings loaded).	-
51	Power Failure	Controller performed restart after power outage.	-
120	Low Temp. Zone 1	Temperature below lower limit on monitored control sensors of Zone 1.	Check parameter setting, sensors, system
121	Low Temp. Zone 2	Temperature below lower limit on monitored control sensors of Zone 2.	Check parameter setting, sensors, system
122	High Temp. Zone 1	Temperature above upper limit on monitored control sensors of Zone 1.	Check parameter setting, sensors, system
123	High Temp. Zone 2	Temperature above upper limit on monitored control sensors of Zone 2.	Check parameter setting, sensors, system
124	Door1 Open	Coldroom door 1 open beyond alarm interval 1; coldroom controller UR 141 only.	Close door, check door switch or connecting cable
125	No Defrost	Defrosting not performed within alarm interval.	Check parameter settings: Internal/external defrost timer, defrost times, alarm delay
126	Timer-Term. Defrost	Defrosting terminated by safe defrost time. Heater defective, contactor defective, evaporator iced.  Defrosting is always terminated by safe defrost time on controllers working with off-cycle defrosting. Alarm may be displayed at intervals on these controllers without an actual fault occurring.	Check parameter settings: Defrost termination temperature too low, check evaporator for icing, check location of defrost sensor, set defrost termination temperature to “--”
127	Manual Shutoff	*Manual Shutdown* digital input actuated.	-

No.	Message	Cause	Correction
Messages			
128	Sensor Fault Fx	Sensor disconnected, short circuiting of sensor. Temperature on sensor outside set measuring range. Required or optional sensors are monitored when detected by controller through sensor scan.	Check connecting cable, check cable screening, replace sensors affected: F1 = Terminal Z11/Z12 ... F10 = Terminal Z01/Z02
189	Refrig. Pt. Disabl.	Refrigeration point enabling disabled.	-
240	Setpoint Change	Setpoint changed.	-

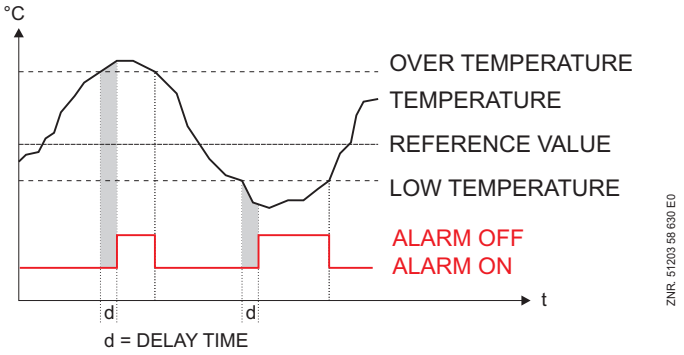
8.1 Alarms

Coldroom door open alarm (controller type UR 141 NK(NT), UR 141 TK(LT) only)

Alarm is generated if the coldroom door remains open beyond a definable time.
If the alarm delay is set to 0 minutes then the cooler and the evaporator fan are not switched off and the alarm is immediately dispatched.

High or low temperature alarm

High or low temperature is alarmed when temperature rises or falls to the alarm setpoint on a supply air or return air sensors and the set delay has expired.



The high temperature setpoint is entered in °C, whereas the low temperature setpoint is entered as a difference to the cooling setpoint in K. High and low temperature setpoints can be set separately for each temperature zone. The time delay applies to all.

With controller types UA 111/UA 111 D and UA 141, the return air sensors are monitored only for the low-temperature setpoint. With other controller types, no differentiation of sensor type is made as regards alarm. During a forced cooling the delay time for the low temperature alarm is reset in order to prevent a false alarm during the forced cooling operation.

This alarm is inactive during defrosting. Any delay that may have started is reset at the commencement of defrosting and restarts from the beginning on completion of defrosting.

No defrost alarm

Alarm is generated if defrosting does not take place during a definable interval, but not if defrosting is suppressed due to high temperature or by demand defrosting.

The delay for the No Defrost alarm should not be set too small so as to avoid false alarms (No Defrost parameter in Menu 6-2-3). If the maximum interval between set defrost times (Menu 3-2) is 48 hours, for example, the delay for No Defrost alarm must be set at least 1 hour longer, i.e. 49 hours.

Sensor break alarm

Alarm is generated after the set delay if the controller detects breakage or short circuit on a sensor.

Sensor break alarm is always generated for sensors vital to control functions. In the case of optional sensors, alarm is only generated when the sensors have not been removed from monitoring by sensor scan (Menu 6-1).

Suppression of sensor break alarm during defrosting

While defrosting is in progress, temperature sensors and particularly the evaporator sensors may becomeheated to a temperature above the limits of the case/coldroom controller's temperature detection range. Sensorbreak alarm is accordingly suppressed for the duration of defrosting so as to avoid signalling of falsealarms. The following conditions apply:

- Sensor break alarm effective prior to defrosting is NOT suppressed.
- Sensor break alarm takes place with the set delay during any drain time that may be defined.
- Sensor break occurring during defrosting and persisting beyond termination of defrosting is alarmed when the set delay expires.
- Sensor break alarm suppression is effective with all types of defrost (internal, external, discharge gas, manual and master/slave defrosting).
  With internal and manual defrosting, sensor break alarm is suppressed for the complete safe defrost time regardless of defrosting terminating before that.

In the most unfavorable instance, sensor break alarm is merely postponed. The longest possible delay would be $(2 * T_{\text{Sensor break delay}}) + T_{\text{Defrost}}$

Hardware fault alarm

Alarm is generated without delay if the controller detects hardware problems. Malfunction of the following components is detected:

- Temperature measurement
- General fault
- Loss of setpoint (memory problems)
- Time/date
- First start

Priority for transmitting the alarm is governed by the controller priority and type of alarm.

Individual assignment of priority

Version 2.44 and later of the UA 300 provides the option of assigned individual priority to the majority of alarms. This allows targeted reporting to alarm destinations and matching of alarms to individual requirements. Controller-side priority is used when the Case/Coldroom Controller Priority parameter is set to YES.

It is also used by the Store Computer for alarm in failure of the controller. The range of values for priority has been enlarged from 0 to 99, now allowing differentiation among a total of 99 alarm destinations. The respective alarms (except refrigeration point priority and setpoint change) can also be set to "-" and thus remove entirely from alarm transmission.

Individual priorities can be assigned when the Refrigeration Point Priority parameter is set to NO. When this parameter is set to YES, alarm priority is assigned by the value of the refrigeration point priority according to the previous scheme. This simplifies configuration for standard applications. Assignment of global priority results in the following allocations:

Global priority alarms	Priority zero alarms
Low temperature	No defrost (UR 141 TK (LT) only)
High temperature	Time termination of defrosting
Sensor break	Power failure
Coldroom door open (coldroom controllers only)	Manual shutdown
No defrost (all except UR 141 TK(LT))	Setpoint change
First start	Refrigeration point disabled
EEPROM defective	Battery low
RTC defective	
Flash memory defective	

Special feature: With the UR 141 TK(LT) the priority for No Defrost alarm is set to zero, whereas with all other controller types this value corresponds to the global controller priority.

When an alarm with controller priority greater than 0 is active and this priority is set to zero before the alarm has been tagged as sent, the controller has no means of resetting the alarm on the CI 3000 Store computer. Therefore it is recommended to restart the controller after changing alarm priority to zero or to make sure that the alarms that are changed are not active at the time of changing them.

When using the case/coldroom controller with a CI 3000 Store Computer that does not have extended priority assignment, priority may only be assigned between 0 and 2 or as ”--” (see the CI 3000 Store Computer documentation for assigning priority). If parameters are incorrectly set, the alarm characteristics of the Store Computer (in particular as regards allocation of priority to alarm destinations) will not be defined. This applies also to refrigeration point priority.

Alarm routes

- Alarm relay floating changeover contact)
- TTY interface (earlier LDS)
- CAN bus interface (LDS System, UA 300 Cx ONLY)
- Local BT 300 Operator Interface/BT 30 Display connected to display port (visual alarms on display)

Termination of alarm

The condition for termination of an alarm can be selected from two basic principles:

- Automatic reset of all alarms after correcting the cause
- Manual reset of all alarms after correcting the cause

Manual reset can be performed as follows:

- Via CAN bus interface
- By local BT 300 x Operator Interface connected to display port
- By manual shutdown input (230V input), also while alarm is still active
- By switching off the controller, also while alarm is still active.

Restart

During a restart old alarms are marked with a send time stamp.

8.2 Messages

States outside normal operating conditions but not constituting an alarm state are reported via the interfaces and entered in the message log.

Examples of messages

- Electric power failure
- Change of setpoint
- Manual shutdown
- Defrosting terminated by safe defrost time

8.3 Transient alarms and messages

Transient alarms are one-time event alarms and are not time stamped for send time. As a result, transient alarms are not deleted automatically after the event and must be cancelled manually. This applies regardless of the setting made for Selfholding (Menu 6-2-3).

The following are transient alarms

- Time-terminated defrosting
- Change of setpoint
- Electric power failure
- First start

8.4 Message log

IA maximum of 25 alarms and messages with receive and send date and time are entered in the message log.

The alarms and messages are stored in a ring buffer. When the ring buffer is full, the next new entry deletes the oldest entry.

Notice:

9 Specifications of UA 300

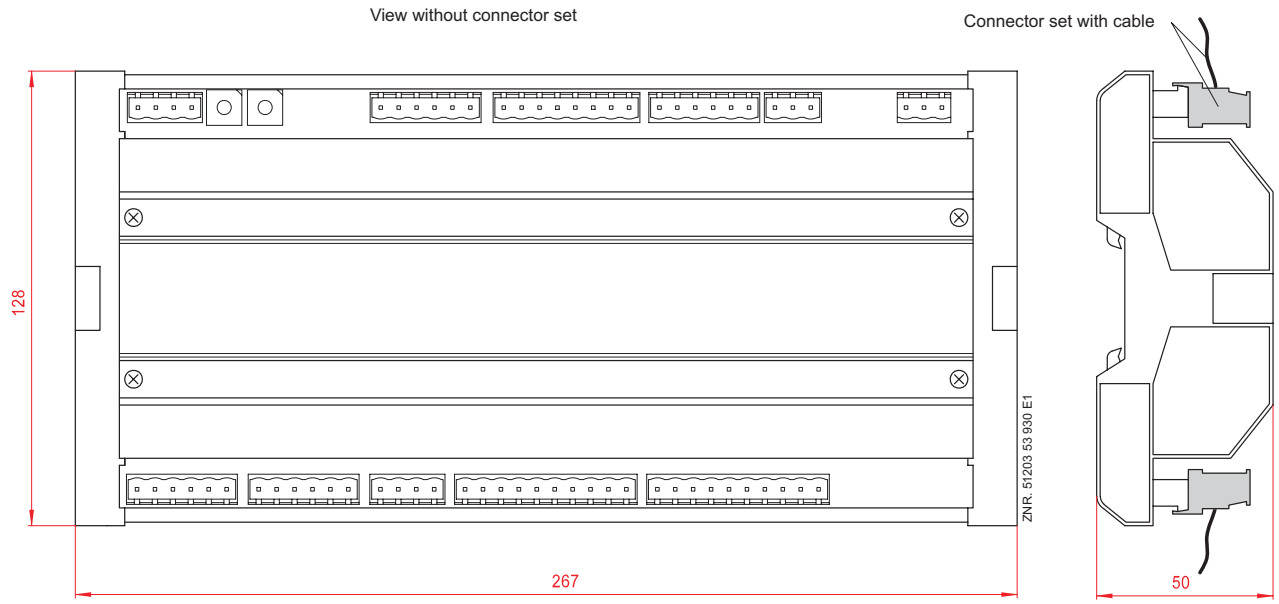
9.1 Electrical data

	UA 300 xC	UA 300 xS
Power supply	U_{Nom} = 230 V AC, 200 - 265 V AC, 50/60 Hz, (+/- 3 Hz)	
Rated power	10 VA	
Leakage current over PE	max. 1 mA	
Relay outputs	7 x 250 V AC, 6 A (4 N.O., 3 changeover), floating Transverse voltage between outputs max. 400 V AC	
Transistor outputs	2 x 24 V DC, pull down, switching transistor with internal current limiting to 50 mA for auxiliary alarm output and frame heater	
Lighting switch with external connection option	---	1 double-pole, floating
Digital inputs	3 x 230 V AC, floating Transverse voltage between inputs max. 400 V AC	
Analog inputs	10 temperature sensors, two-wire type for controller types L243(K243), K277, 5K3A1 (No shielding is required on sensor leads when installed exclusively inside the refrigerated display case and when external interference (for example from parallel power wires) is not to be expected)	
Analog outputs	---	
Fieldbus port	CAN bus, floating	
Data ports	For BT 300 x Operator Interface and one to four BT 30 Temperature Displays TTY (inverted)	
Other ports	---	
Archivspeicher	UA 300 AC/TC: Archiving 1 year	UA 300 AS/TS: Archiving 1 year
Monitoring function	Watchdog	
Real-time clock	For UA 300 AC/TC Battery-backed Lithium cell CR 2450N 3 V (shelf life 10 years) Accuracy typically 8 min/yr at 25°C	For UA 300 AS/TS Battery-backed Lithium cell CR 2450N 3 V (shelf life 10 years) Accuracy typically 8 min/yr at 25°C
Temperature range	Transport: -20°C .. +80°C Operation: 0°C .. +50°C	
Temperature change	Transport: max. 20 K/h Operation: max. 10 K/h	
Relative humidity (non-condensing)	Transport: 5% .. 85% Operation: 5% .. 85%	
Shock to DIN EN 60068-2-27	Transport and operation: 30 g	
Vibration 10 - 150 Hz to DIN EN 60082-2-6	Transport and operation: 2 g	
Atmospheric pressure	Transport: 660 hPa .. 1060 hPa Operation: 860 hPa .. 1060 hPa	
Weight	ca. 750 g	ca. 950 g
Enclosure	IP20	
CE conformity	Conforming to EU Directive 73/23/EEG (Low Voltage Directive) 89/336/EEG (EMC Directive)	

9.2 Mechanical data

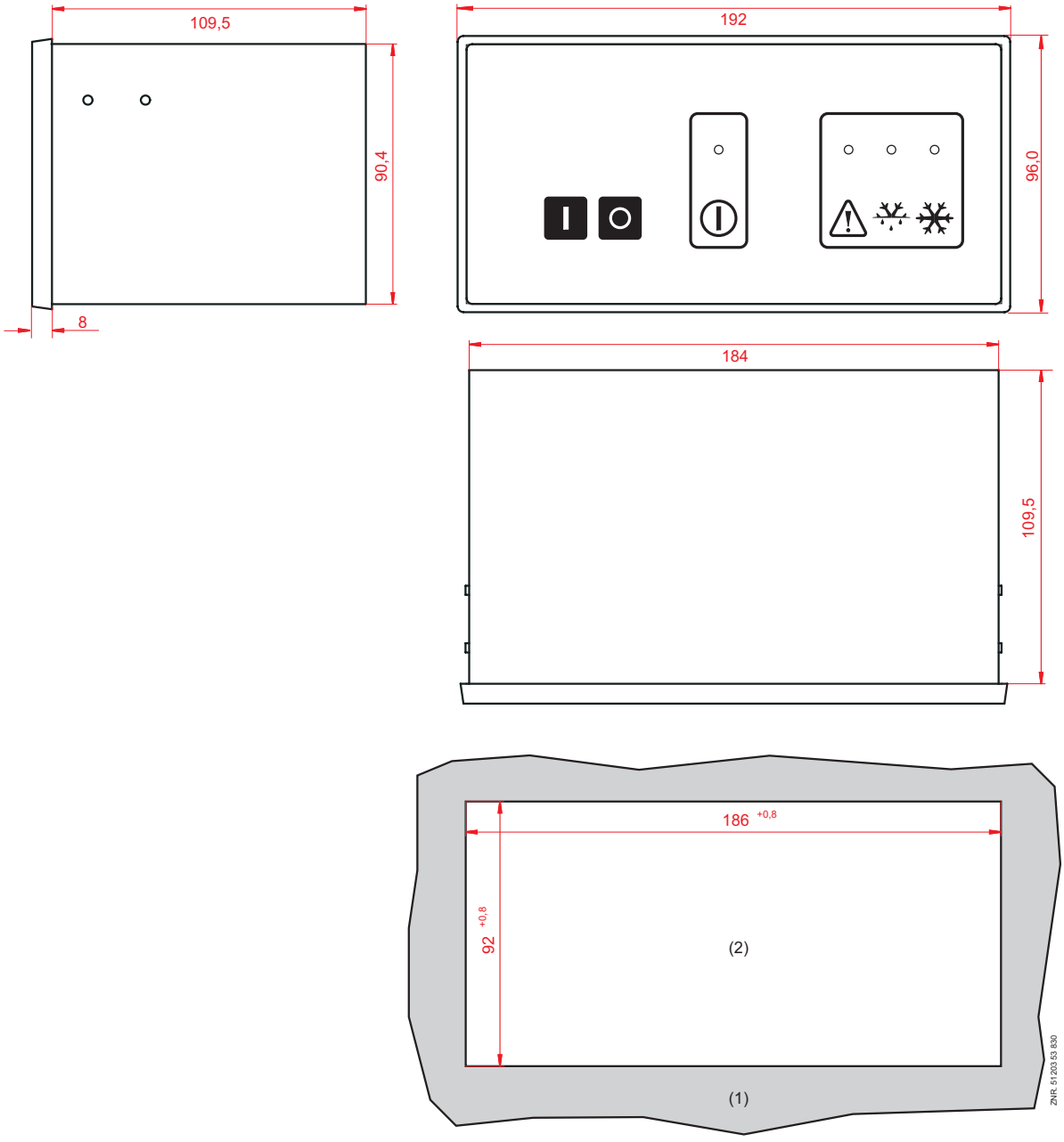
9.2.1 DIN rail mounting of UA 300 xC

C stands for *”In Cabinet”*, meaning DIN rail mounting.



S stands for ”*Switchbox”*, meaning control panel mounting

9.2.2 Panelmounting of UA 300 xS



(1): Control panel

(2): Panel cutout

Notice: