

Verkaufskühlmöbel „Gefrieren/Kühlen“ Refrigerated Display Cabinet „Freezing/Cooling“

PARIS 145 AD, VS Typ B823, B823B, B823N

PARIS 175 AD, VS Typ B824, B824B, B824N

PARIS 185 AD, VS Typ B824, B824B, B824N

PARIS 210 AD, VS Typ B829, B829B, B825N

PARIS 250 AD, VS Typ B826, B826B, B826N

ATHEN 175 AD, VS Typ B842, B842B, B842N

ATHEN 210 AD, VS Typ B844, B844B, B844N

ATHEN XL 175 AD, VS Typ B843, B843B, B843N

ATHEN XL 207-7 AD, VS Typ B846, B846B, B846N

ATHEN XL 210 AD, VS Typ B845, B845B, B845N

MALTA 145 AD, VS Typ B822, B822B, B822N

MALTA 185 AD, VS Typ B828, B828B, B828N

BOSTON 210 AD, VS Typ B848, B848B, B848N

LIST OF CONTENTS

1	General specifications	14
2	Ratings plate and serial number	14
3	Application	14
4	Unpacking and handling	14
5	Set up	14
6	Connecting to the electrical supply	15
6.1	Internal lighting	15
6.2	Power supply details	15
7	Using the cabinet for the first time and function	16
8	Operating the (-) AD cabinets	16
8.1	Electronic temperature control unit AHT x01 (°C, °F)	16
8.2	SECOP (DANFOSS) electronic temperature control unit	18
9	Temperature adjustment and control system	19
9.1	Warning device	20
10	Maintenance, defrosting and cleaning	20
10.1	Maintenance	20
10.2	Defrosting instructions	20
10.3	Cleaning	20
11	Replacing the tube	21
11.1	Appliances with fluorescent tubes	21
11.2	Appliances with LED strips	21
12	Taking the cabinet out of operation for a period of time	21
13	Disposal	21
14	Accessories	21
15	What to do, if	22
16	Circuit diagram	268 - 279
17	Declaration of conformity	280 - 288

Safety instructions

- Please read these operating and maintenance instructions through carefully and also pass them on to other people who are entrusted with handling and using this cabinet.
- Check the cabinet for transport damage immediately after delivery.
- The cabinet may only be used in the position in which it is to be operated (level, horizontal with the opening to the top). (Please observe the instructions for set up.)
- The cabinet is used for the storage of foods that have already been chilled or frozen. Therefore any other use is not considered as use as intended. Freezers may only be operated with the lid on.
- The cabinet starts to work as soon as the operating voltage is switched on. Observe the ratings on the rating plate and the relevant local regulations for electrical safety before you connect the cabinet to the power supply.
- In all effective refrigeration condensation water is precipitated or the moisture held in the air is frozen onto refrigerated surfaces. The operator must therefore defrost the cabinet regularly.
- Do not heat the cabinet over 70°C (158°F). Do not expose the cabinet to direct sunlight and do not use any heaters or sharp objects when defrosting. Do not spray high pressure cleaners or steam jet cleaners into the machine space.
- Sharp objects can scratch and as a consequence break the glass lid (single pane safety glass).
- Work on the electrical system and the refrigeration system may only be undertaken by qualified engineers. Before unscrewing the machine space cover, the mains plug must be disconnected.
- **ATTENTION:** Cabinets with interior lights have 2 mains cables. Before working on the electrical installation and the refrigeration system, both mains plugs must be disconnected.
- When disposing of the cabinet, please check your obligations according to the national WEEE regulations and take the cabinet to the local WEEE disposal service. Please ensure that the pipes are not damaged (do not drill into the cabinet).
- In order to maintain good food quality, it is recommended that frozen foods are only put into the freezers in the period from 8:00 to 20:00
- The operating staff must be instructed by the market manager.
- People (including children) who are not able to use this unit safely because of their physical, sensory or mental faculties, inexperience or lack of knowledge should only do so under the supervision or instructions of an accountable person. Children in particular should be supervised to ensure that they do not play with the unit.
- No canisters containing flammable gas propellants may be stored in the unit.
- No objects such as bottles etc. may be placed on top of the cooler.
- The unit must be regularly inspected and foreign bodies removed from the goods display area.
- If the appliance should be damaged e.g. by shopping trolleys, this damage must be corrected by the store operator. ATTENTION! Risk of injury!
- Defrosting water or leakage from bottles not properly sealed may escape from the appliance. These must be cleared up without delay.
Danger of slip
- **WARNING:** if there is a power failure, the goods stacked must be checked by the store supervisor!

1 General specifications

Before installing and using this cabinet for the first time, the locally applicable regulations stipulated by trade law are to be observed.

AHT cabinets are free from PCB, PCT, asbestos, formaldehyde, cadmium and substances that interfere with wetness.

The refrigerant R404A (44% R125, 4% R134a, 52% R143a) is covered by the Kyoto Protocol and has a global warming potential (GWP) of 3784.

Airborne sound emissions of the units < 70 dB(A)

In the event of loud noises and/or strong vibrations in the unit, contact a service technician.

The weights of the units are given in the datasheets. They can be obtained from AHT.

The design of the individual cabinet types may vary.

2 Ratings plate and serial number

The specifications on the "rating plate" are to be observed for installation and maintenance. This plate can be found on the back of the cabinet.

The serial number, cabinet type and refrigerant can be found either on the rating plate or on the sticker affixed inside on the plastic frame at the back.

3 Application

AHT units are designed for storing pre-packaged, frozen foods which have already been frozen to the appropriate temperature and pre-packaged frozen ice cream or frozen ice cream stored in suitable containers. The cabinets are not suitable for freezing fresh products.

ATTENTION: A use of the cabinet other than this or one which goes beyond this is considered as not as intended.

The storage of any type of bottles is considered to be improper use for freezers. There is a danger of injury from breakage. The flawless condition of the refrigeration unit and its proper use must be monitored regularly by the instructed operating staff. To that effect, the units must be checked to make sure that products that have been stored there by third parties (improperly) are removed.

ATTENTION: In all effective refrigeration, condensation water is precipitated or the moisture held in the air is frozen onto the refrigerated surfaces. This build-up of ice is automatically defrosted by the (-) AD cabinets in regular cycles.

The defrost water which accumulates is led via a drainage channel out of the inside of the cabinet into the machine space and evaporated.

The build-up of ice caused by any leaks in the defrosting drainage channel does not affect the function of the cabinet.

The function of the cabinets is not affected by bulges which may occur in operation.

The built-in bars are required for the cabinet to function and must not be removed. The bars are required to distance the food from the wall of the evaporator during the defrosting process.

ATTENTION: The models Barcelona, Boston and Berlin with double-glazed insulating glass (without capillary tube/ valve) must not be installed at an altitude in excess of 2,000 metres (6,560 feet) above sea level.

4 Unpacking and handling

ATTENTION: To protect the cooling unit from damage, the cabinet must only be transported and stored in the operating position. Non-observance results in the loss of the warranty.

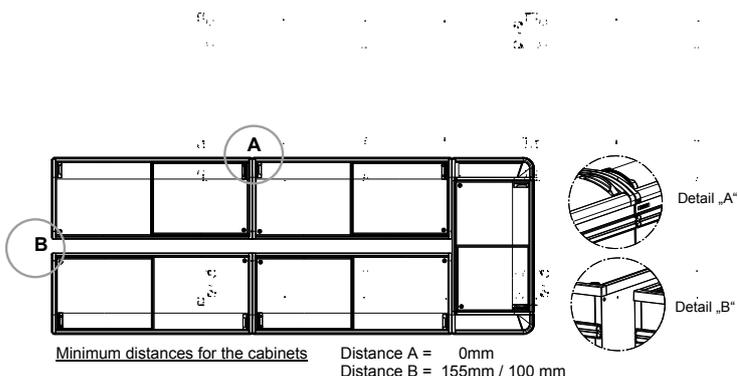
Before the cabinet is unpacked and while it is being unpacked, inspect visually to determine if there is any transport damage. Please look for loose parts, dents, scratches, visible fluid losses, etc.

Report any damage to AHT immediately. For the rest the AHT terms of business apply.

Before disposing of the packaging material, please check it for any parts of the cabinet which have come loose.

5 Set up

- Set the cabinet up in a well-ventilated place and so that it is level.
Refrigerating devices discharge the heat they have taken from the storage space into the ambient air. Therefore, the air circulation around the cabinets should not be hindered.
- Observe minimum distance when assembling in blocks. (See diagram.)
- The areas in between must not be covered (Exception AHT cover or with AHT approval)
- In the case of individual cabinets keep a min. distance of 50 mm all round to neighbouring surfaces (e.g.: walls).



- Only thin film advertising stickers can be used. Do not fix thick, insulating materials on the outer walls.
- Avoid draughts and greater heat absorption at the installation site. Do not place cabinets in front of heaters and under air outlets.
- Do not point spotlights into the cabinets. Avoid lighting with light bulbs as much as possible. Fluorescent lights give off less heat!
- Any heat radiation into the storage cabinet leads to increased operating costs and can influence the cabinet's performance.

ATTENTION: Do not expose cabinet to direct sunlight. The cabinet must not be heated over 70°C (158°F).

6 Connecting to the electrical supply

ATTENTION: If the mains cable or light flex becomes damaged it has to be replaced by AHT or AHT customer service.

- The cabinet is a plug-in compact cabinet.
- The power cable (white) is 175 m. long. With cabinets with an internal light the lighting cable (black or light grey, depending on the country) is 120 cm. long. Both cables are located at the back right of the cabinet and are marked when they are delivered (mains cable - lighting cable).
- Provide 16 A (slow-acting) fuses (see technical data on the rating plate).(for USA 15 A)
- Power cables should have a minimum cross-section of 2.5 mm² (corresponds to USA 14 AWG). It is essential to use three-core wires. The use of a five-core cable is prohibited.
- The use of extension leads or multiple sockets must be avoided as far as possible. If this cannot be avoided, the cables must have a minimum cross-section of 2.5 mm² (corresponds to USA 14 AWG).

Cabinets should only be connected to shockproof sockets with earth contact and their own mains circuit. No more than 2 cabinets should ever be connected to a circuit.

With cabinets with additional flex for interior lighting only a maximum of 8 light flexes may be connected to a fuse.

AHT recommends using a cable channel on the floor with sockets built into it or on top. The cable channel used must not be any higher than from the floor to the lower edge of the rear ventilation grid of the cabinet. Any other fixtures or superstructures (e.g. shelves with longitudinal supports above) that obstruct the dissipation of heat between the cabinets must be avoided. Should fittings between the cabinets be necessary anyway, written approval must be obtained from AHT for the relevant design.

The sensor connection on the back of the cabinet must only be connected to a safety extra low voltage connection (SELV).

ATTENTION: Mains voltage and mains frequency must match the ratings given on the cabinet's rating plate.

Work on electrical systems may only be undertaken by qualified electricians. The relevant local safety regulations must be observed.

6.1 Internal lighting

Lighting is already incorporated into the cabinets with AHT cabinets with an internal light. An additional light socket must be available for each chest. No more than 8 internal lights may be connected to one electrical circuit.

This information must be taken as a suggestion. The electrical supply company regulations and VDE regulations for the relevant region must be noted and observed. Electrical work must only be carried out by a qualified professional.

When using light fixtures these may sometimes be connected to each other using the sockets that are already integrated. In this case you will normally only need 1 - 2 additional sockets for the lighting.

With the LAK model no more than 12 light fittings can be connected to 1 fuse, with the LAL model no more than 18 light fittings and with the LA-A model no more than 8 light fittings. No other consumer loads may be connected to these sockets.

ATTENTION: You must ensure that no AHT cabinets are connected to the lighting circuit.

The connection cable for the lighting is marked with a sticker and is either black or grey (depending on the country). It is very sensible to mark the light sockets clearly to prevent them being confused with the cabinet connector plug (light grey cable). Otherwise there is the risk that the cabinets will be switched off when the supermarket lights are switched off.

6.2 Power supply details

An FI circuit breaker is provided to install AHT cabinets in the supermarket when the electrical installation is done. No more than 2 cabinets must be connected to a safety device like this. One safety device for each cabinet is preferable. 2 cabinets can be supplied for each safety device with a combination of a fuse and circuit breaker (LS/ FI circuit breaker).

AHT strongly recommends use of an LS/FI combination for each appliance (for USA a CB/GFI combination) with C characteristic, 10 A nominal current and 30 mA tripping current, Type G „surge current resistant“.

Should this suggestion not be acceptable, the following maximum specifications must be used:

Fuse

For AHT appliances, a circuit breaker with a 16 A (for USA 15 A) characteristic C fuse is to be provided.

No more than 2 cabinets are permitted on 1 fuse.

However, in order to achieve the highest possible operational safety, we suggest that each chest has its own fuse.

FI circuit breakers

It is strongly recommended that you use FI circuit breakers. You must ensure that the type G circuit breaker used is surge-protected.

We suggest that the circuit breaker has the following capacity:

Rated current Release current
40A 30mA no more than 2 cabinets to 1 FI

As prescribed by VDE100-410 in its current version (issue dated June 2007) the use of a residual current circuit breaker (RCCB) as „additional protection for external areas and sockets“ (411.3.3) is compulsory (as it already is in Austria and Switzerland).

A separate safety fuse is appropriate for the lighting for AHT cabinets.

Load dropping switches or cabinet cut off switches are not permitted because malfunctions could occur as a result. Should these safety guidelines not be observed claims under the guarantee and/or for damages will not be entertained.

7 Using the cabinet for the first time and function

Before being used for the first time (after installation – see section 5) the cabinet should have a minimum temperature of +16°C (60.8°F), otherwise the cabinet must be adjusted to normal room temperature.

ATTENTION: When the operating voltage is switched on (plug in mains plug – see section 6) the cooling unit starts to work straightaway.

After operating for roughly 1 to 2 hours the desired interior temperature is reached (see section 9 - Recommended storage temperatures). The pre-chilled chilled food can be put in.



ATTENTION: Do not stand on or put loads on the glass lid.

The glass lids are not intended as aids for reaching the upper shelves or for storing miscellaneous objects and are not equipped for such loads.

The (-) AD cabinets are set to a temperature of -19°C (-2°F) in the factory. How to change the temperature value is described in section 8.

The cabinet has automatic de-icing. The cabinet's de-icing times are pre-set in the control unit. De-icing is automatically initiated twice a week during the night. De-icing can also be initiated manually. Manual initiation of de-icing is described in section 8.

The cabinets have a real time clock, which ensures that de-icing starts correctly during the night. The time on the clock is pre-set in the AHT factory. If the cabinets are not operated for longer than 6 months, it is possible that the time on the clock needs to be re-set. (This is discernible if the cabinets defrost during shop opening hours.) This means that the frost or ice build-up in the inner container is defrosted and the ensuing water is fed away via the discharge channel.

Should you notice that your cabinet is defrosting during opening hours, please call a service engineer to re-set the clock on the control unit correctly.

The food does not come to any harm during de-icing. The temperatures stipulated by the standard are not exceeded. In order to maintain good food quality, it is recommended that frozen foods are only put into the freezers in the period from 8:00 to 20:00

The cabinets must only be loaded up to the stacking lines. The storage temperature set cannot be guaranteed above the stacking line.



ATTENTION: It is possible that defrosting water may escape from the unit. If this happens, it should be cleared up immediately to avoid the danger of a slippery floor.

ATTENTION: It is not permitted to operate the cabinets without a lid or with the lid open.

All cabinets are equipped with glass lids as standard. The lids are required for the correct operation of the cabinet. They should only be opened for loading and unloading the food.

8 Operating the (-) AD cabinets

Despite the automatic de-icing, it is recommended for hygiene reasons that the cabinet is completely defrosted once or twice a year so that any ice build-up can be removed and the cabinet interior can be cleaned.

8.1 Electronic temperature control unit AHT x01 (°C, °F)

The electronic temperature control unit AHT x01 is designed to control and regulate AHT refrigerators and freezers with automatic de-icing. The control unit can be used both for standalone operation and for block installations. If the cabinets are installed in a block, they must be linked via bus cables. Instructions on cabling and address assignment are given under section "Selecting the bus addresses".

Before operating for the first time, check correctness and contact of all cable connections and the voltage supply one more time.

Operation

The temperature is displayed by means of red LEDs in a 7 segment display, in which the value is displayed in 3 figures. There are 4 buttons available as controls, which are assigned as follows:

"+" button ... The button is used to select the enabled required values, to assign addresses and to select the parameter levels.

"-" button ... The button is used to select the enabled required values, to assign addresses and to select the parameter levels.

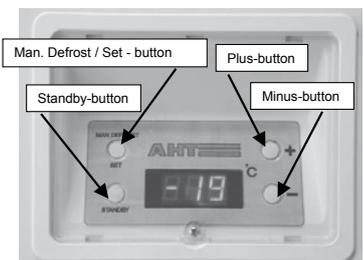


Fig. AHT x01 (°C, °F)

"MAN. DEFROST / SET" button ... To activate a manual defrost, after which a 24 hour block is set until the next deicing, i.e. after this is activated no further manual defrosting is possible for 24 hours.

"STANDBY" button ... The control unit can be switched on and off using this button. This switches the AHT x01 control unit only on to "Stand By".

General information on operating the buttons:

- Buttons must be pressed continuously for longer than 0.5 seconds to get a reaction
- If a button is not actuated for 10 seconds, the display goes back to “actual value”
- Set values are accepted immediately, if they are valid

Setting a required value

The temperature range in which the cabinet is to work can be selected by the following parameters.

Parameter	Function	Required temperature on LL
A1	Deep freezing (required value 1)	-18°C
A2	Deep freezing (required value 2)	-20°C
A3	Meat refrigeration	+1°C
A4	Plus cooling	+4°C
A5	Free parameter <i>(can be set by customer)</i> Setting range from -30°C to +15°C	-18°C

No temperature has to be set, just the control range A1, A2, A3, A4 or A5.

Depending on customer requirements, the different control ranges can be blocked or enabled.

When setting required values, selections can only be made within those control ranges that have been enabled.

If nothing different is requested by the customer, the following parameters are enabled:

- Freezer: A1
- Meat cabinet: A3
- Switchable cabinet: A1 and A3

Selecting the enabled required value

The control unit is delivered with the required values enabled according to the cabinet type. Another required value can be selected as follows:

- 1) Press the “+” or “-” button for at least 1 second.
- 2) Then “STP” appears (for about 0.5 seconds) and alternately the current required value e.g. “A1” (for 2 seconds).
- 3) If the “+” or “-” button is now pressed, the next enabled required value can be selected. The selection must be made within 10 seconds, otherwise the display automatically goes back to the actual value.

ATTENTION: with the (U) series: if a switch is made from A1 to A3 or from A3 to A1, the cabinet’s required temperature changes. Either from -18°C to +1°C or from +1°C to -18°C!

- 4) If A5 is selected, the required value can be freely set by the user. To be more precise, with the “MAN. DEFROST / SET” button held down, the required value can be freely set between -30°C and +15°C using “+” or “-”. The required setting corresponds to the product temperature at the loading limit when the cabinet is fully loaded.
- 5) The return to the actual temperature display / actual value happens after 10 seconds.
- 6) The value set is accepted immediately after the return to the actual value.

Selecting the bus address

The control unit is delivered with the bus address 0, which corresponds to a standalone cabinet.

In this condition (address 00) the cabinets and control units are not registered in the bus system.

To identify cabinets in the bus system the addresses, from 01 to a maximum of 48, must be assigned. Before assignment the cabinets must be networked with a 6-core cable (bus cable). The last one in the group must be fitted with a terminal resistance. Then we recommend that the addresses are entered in the sequence of the actual wiring order.

The address 01 is essential as energy management and control of the automatic de-icing takes place via this address.

Procedure for address assignment:

- 1) Press the buttons “+” and “-” at the same time for at least 5 seconds.
- 2) In the display “Adr.” appears (about 0.5 seconds) and alternately the current bus address e.g. “00” (for 2 seconds).
- 3) If the “+” button is now pressed (for at least 0.5 seconds), the next free address on the bus can be assigned. By pressing once and assigning the first address “01”, it would appear in the display. If too high an address was assigned, the current address can be reduced with the “-” button (for 0.5 seconds at least), e.g. from “02” to “01”.
- 4) After 10 seconds the value is accepted and changed to the actual value.
- 5) For the subsequent cabinets assign the addresses exactly as described in points 1 to 4, always selecting the next free address, e.g. “02”

De-icing

In addition to the automatic de-icing, a manual de-icing cycle can also be initiated.

To do this, the “MAN. DEFROST/SET” button must be pressed briefly. “- d -” appears in the display for about 2 seconds and then “dFr.” is displayed. De-icing is now active. It takes around 10 mins. until the ice on the inner wall of the container starts to melt, beginning at the top. After the de-icing cycle has run, the cabinet returns to normal operation. The display then changes from “dFr.” to the temperature display.

After every de-icing cycle the manual initiation of de-icing is blocked for 24 hours. De-icing cannot be manually initiated during this time. If the cabinet does not react to the "MAN. DEFROST/SET" button being pressed, the cabinet has probably been defrosted during the night on the time controller. While the button is being pressed "--" is displayed in the 7 segment display.

Despite the automatic de-icing, it is recommended for hygiene reasons that the cabinet is completely defrosted once or twice a year so that any ice build-up can be removed and the cabinet interior can be cleaned.

Defrost start times with networking via bus

Defrosting is performed according to the factory setting, beginning at 21:30. The defrosting day is allocated to a group depending on the bus address and automatically calculated by the control unit. This prevents all cabinets de-icing at the same time.

The de-icing cycles are scheduled at 3 day intervals.

Handling alarms and cancelling alarms

In the event of an error, the following is displayed in the 7 segment display. After an error has occurred, the actual value flashes alternately with the error message. In the case of excessive temperature, only the actual value flashes. After a few minutes only a dot below the actual value continues to flash. And every hour the current error message is displayed again. The error messages are listed below:

Actual value/Bus	Bus error, missing address
Actual value/Col.	Address collision
Actual value/F1	Sensor error, F1
Actual value/F2.	Sensor error, F2
Actual value/F3	Sensor error, F3
Actual value/d.Fr./F3	Defrosting system error
Actual value/Clock	Time/Date not valid
Actual value /EE	Data fault
Flashing actual value	Excessive temperature alarm

Once an error has been remedied, the error message goes out automatically. Switching on/off using the STANDBY button, (see section Switching the control unit on and off), can be used to cancel the error message. If the error is still active, the current error message is displayed again.

8.2 SECOP (DANFOSS) electronic temperature control unit

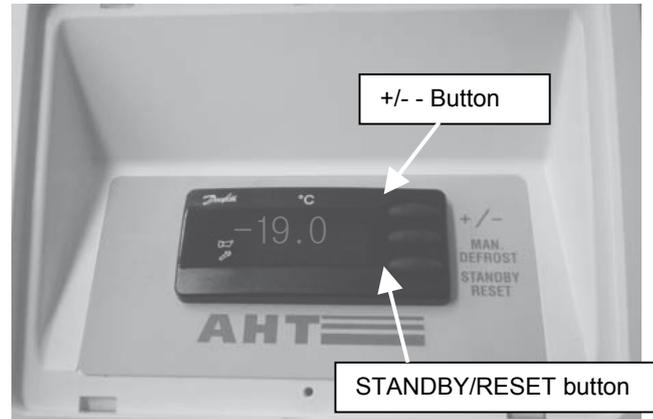
The DANFOSS electronic temperature control unit is designed to control and regulate AHT refrigerators and freezers with automatic de-icing. The control unit can be used both for standalone operation and for cabinets with bus networking. The start times for the automatic de-icing are set in the factory. De-icing takes place during the night.

Before operating for the first time, check correctness and contact of all cable connections and the voltage supply one more time.

Operation

Once the voltage has been switched on, the cabinet starts automatically. During normal operation the cabinet's average interior temperature is displayed in °C.

If you press the "Standby / Reset" button for at least 1 second the cabinet will switch to standby mode. The display shows: "--". If you press the "Standby / Reset" button once more the cabinet will switch on again and the internal temperature will be displayed. This procedure may take a few seconds.



"+/-" button ... Selection of the temperature range (parameter) and address assignment.

"MAN. DEFROST" button ... Manual initiation of the de-icing process.

"STANDBY/RESET" button ... Main switch for switching to "Stand By" (from normal operation) and for cancelling the alarm (when there is an alarm).

Setting a required value

The temperature range in which the cabinet is to work can be selected by the following parameters.

Parameter	Function	Required temperature on LL
A1	Deep freezing (required value 1)	-18°C (0°F)
A2	Deep freezing (required value 2)	-20°C (-4°F)
A3	Meat refrigeration	+1°C (+33.8°F)
A4	Plus cooling	+4°C (+39.4°F)
A5	Free parameter	-18°C (0°F)

(can be set by the customer)

Setting range from -30°C (-22°F) to +15°C (+59°F)

No temperature has to be set, just the control range A1, A2, A3 or A4.

Depending on customer requirements, the different control ranges can be blocked or enabled. When setting required values, selections can only be made within those control ranges which have been enabled.

If nothing different is requested by the customer, the following parameters are enabled:

- Freezer: A1
- Meat cabinet: A3
- Switchable cabinet: A1 and A3

Selecting the enabled required value

The required value can be selected by pressing the "+/-" button briefly. The currently set parameter appears (e. g. A1). Pressing the "+/-" button briefly again selects the next required value, e.g.: A2. When all enabled parameters have been gone through, A1 is displayed again. Setting automatically accepted 5 seconds after the last button depression.

ATTENTION: with the (U) series: if a switch is made from A1 to A3 or from A3 to A1, the cabinet's required temperature changes. Either from -18°C to +1°C or from +1°C to -18°C!

Selecting the bus address

The control units are delivered with the bus address 0. "OFF" is displayed as the bus address.

In this condition (OFF) the cabinets and control units are not registered in the bus system.

To identify cabinets in the bus system the addresses from 01 upwards must be assigned. Before assignment the cabinets must be networked with an appropriate bus cable. The last one in the group must be fitted with a terminal resistance. Then we recommend that the addresses are entered in the sequence of the actual wiring order.

Procedure for address assignment:

- 1) Press the "STAND BY/RESET" button. "- - -" appears in the display, cabinet is switched off.
- 2) Press the "+/-" button 3 times within 1.5 seconds. "Adr." display alternates with the address number. With the first cabinet "ADR" would now appear alternately with "OFF" in the display.
- 3) If the "+/-" button is now pressed, the next free address on the bus can be assigned. Press once and the next free address appears.
 - Brief press of the "+/-" button, single jump to the next higher bus address.
 - Long press of the "+/-" button, fast "continuous run through" of the bus addresses. Runs through the loop from OFF to the maximum address.
- 4) After 5 seconds the value is accepted and "- - -" appears in the display. The control unit must be switched on using the "STAND BY/RESET" button.
- 5) For the subsequent cabinets assign the addresses exactly as described in points 1 to 4, always selecting the next free address.

Alarm and Alarm Reset

An alarm is shown by the display of an error message. This error code is displayed alternately with the temperature (flashing display). In addition there is the option of emitting an acoustic signal from a buzzer (built-in as an extra).

One short press of the "Stand By / Reset" button.

A single press of the "Stand By / Reset" button cancels the acoustic alarm (if connected) and the error code is no longer displayed in the display. A red dot remains in front of the "Tool" symbol in the display.

ATTENTION: When there is no alarm, a brief press of the "Stand By / Reset" button switches the cabinet off (display "- - -").

Error code table:

F1, F2, (F3), F4	Sensor failure (floor=1, air=2, condenser sensor=4)
Clock	Battery dead
E20	Temperature alarm
E21	Excessive temperature on F4
E70	Electronic error
E75	Excessive electronic system temperature
E99	Compressor error and all other errors
Err	MMI (no communication with system)

De-icing

In addition to the automatic de-icing, a manual de-icing cycle can also be initiated. To do this, the "MAN. DEFROST" button must be pressed briefly. "DEF" appears in the display and the manual de-icing starts. It takes around 10 mins. until the ice on the inner wall of the container starts to melt, beginning at the top. After the de-icing cycle has run, the cabinet returns to normal operation. The display then changes from "DEF" to the temperature display.

After every de-icing cycle the manual initiation of de-icing is blocked for 24 hours. De-icing cannot be manually initiated during this time. If the "MAN. DEFROST" button were to be pressed during this time, then the display would change again to the operating display. If the cabinet does not react to the "MAN. DEFROST" button being pressed, the cabinet has probably been defrosted during the night on the time controller. Despite the automatic de-icing, it is recommended for hygiene reasons that the cabinet is completely defrosted once or twice a year so that any ice build-up can be removed and the cabinet interior can be cleaned.

9 Temperature adjustment and control system

ATTENTION: Observe the storage temperatures stipulated for your products!

Recommended storage temperatures are:

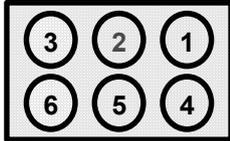
- Frozen foods: -18°C (0°F)
- Ice cream: -20°C (-4°F)
- Minced meat: +1°C (+33.8°F)
- Milk products: +6°C (+42.8°C)
- Fresh milk: +4°C (+39.2°F)
- Fruit/Vegetables: +6 / +12°C (+42.8°F / +53.6°F)

Please ensure that the products being stored are stored at the required temperature.

The temperature display shows a system temperature, which bears no direct relationship with the product temperature. The sensor is positioned on the floor of the cabinet under the floor panel. Depending on the turnover of goods, displays of as low as -25°C (-13°F) are possible. Even if colder temperatures are displayed, this does not mean that the cabinet is set at too cold a temperature, as the product temperature at the loading limit is clearly warmer than at floor level.

9.1 Warning device

As an option the cabinets are equipped with a socket connection so that an external warning device can be added on. This can be found on the back of the (-) AD cabinets. The potential-free contacts can be loaded with a protective extra low voltage of max. 24 V/2 A. If the permitted deviation from the required temperature set is exceeded (warmer), the contact pair 3 and 6 closes and the contact pair 3 and 5 opens.



Pin assignment of the socket for the warning device (view from the rear of the cabinet). A suitable plug can be obtained as an accessory.

You can get further information about additional remote monitoring options from your dealer.

10 Maintenance, defrosting and cleaning

10.1 Maintenance

ATTENTION: Do not heat cabinets over 70°C (158°F) and do not expose to excessive heat (radiant heaters, etc.)

- The cabinets are essentially maintenance-free.
- There is a discharge channel on the cabinet's inner container for the defrost water which accumulates during automatic de-icing. Any contamination of this discharge channel must always be cleared.

10.2 Defrosting instructions

For units with automatic defrost (AD): If water appears under the unit after defrosting, check the seal tightness of the defrosting tray.

(-) AD cabinets are fitted with an automatic defrosting system. This ensures that only a fine layer of ice can form above the drain channel. This is removed twice a week by the automatic defrosting system. However, should it be necessary to defrost the cabinet, this can be done by pressing the "▼/def" or „MAN. DEFROST" button. This will start the automatic defrosting cycle. When the cycle has ended the cabinet returns to normal operation.

After each defrosting cycle it is not possible to defrost manually for 24 hours. During this time the defrosting process cannot be started manually. If the cabinet does not respond to pressing the "▼/def" or "MAN. DEFROST" button it has probably undergone a scheduled defrost process during the night.

Although automatic defrosting is recommended, completely defrost the cabinet once or twice a year to remove the remaining ice build up and to clean the inside of the cabinet.

10.3 Cleaning

WARNING: when cleaning the appliance (except for the glass panes in the lid), do not use any commercial cleaning agents. The appliance is only to be cleaned with a dry cloth.

- Use a dry cloth to wipe down the outside of the casing from time to time
- Clean the panes of glass with a standard window cleaning agent

WARNING: since window-cleaning agents contain a proportion of solvent, contact with plastic surfaces should be avoided. It is of particular importance that no window-cleaning agent residues are left on any plastic components.

ATTENTION: Do not use sharp objects or tools to scratch or chip off the ice or frost layer! Risk of damaging the inner walls!

Do not spray high pressure cleaners (e.g. steam jet cleaners) into the machine space and storage space.

- Move food to other cabinets
- Switch the cabinet off by pressing the "▲/Aux" or "Standby/Reset" button for about 1 second
- Open or remove lid
- Let cabinet defrost
- Remove the bars out of the cabinet
- Clean the channel with a wet sponge or cloth and remove any particles of contamination

ATTENTION: The channel must not be cleaned with anything pointed or sharp.

- Suck out defrosted water using a wet vacuum cleaner or dry out using an absorbent cloth or sponge.
- Wipe cabinet dry, so cleaning inner chamber
- Switch the cabinet on by pressing the "▲/Aux" or "Standby/Reset" for about 1 second
- Close lid, leave cabinet to chill for 1 to 2 hours and put food back in again

To remove particles of contamination from the channel, it is also possible to remove dividers and side parts of the bars. Front wall and back wall can then be folded down into the centre of the cabinet, making the channel accessible for cleaning purposes. It is recommended that a manual de-icing is initiated before cleaning the channel.

- Wipe the outside housing from time to time using a dry cloth
- Clean the panes of glass using commercially available window cleaner

ATTENTION: The glass lids are made of special hardened and heat-reflecting vaporised glass. There is a special lubricant in the sliding frame. To keep the lids sliding properly, you should clean dirt and dust from the frame every now and again.

If the glass cover is very dirty:

- Unplug
- Remove the cover and clean the glass frame inside and out and in the corners and the cover handle with a steam cleaner.

- Dirt on and behind the water guard bar can be removed with a steam cleaner. If necessary the water guard bar can be removed with a Torx screwdriver.
- Remove dirt on the cover runners and kick plates with a steam cleaner too
- Dry the cabinet
- Plug in

ATTENTION: The ventilation grid on the side and the alarm unit on the front of the cabinet must under no circumstances come into contact with the steam cleaner. Danger of fire.

Cleaning activities on the unit must be performed exclusively by instructed operating staff. There is a danger of injury from sharp edges. When cleaning unit models (U) and (S), safety gloves must be used.

11 Replacing the tube

11.1 Appliances with fluorescent tubes



- Remove the lighting cable (black or light grey).
- Loosen the light cover (transparent part) from the housing by pressing together lightly and remove. (See pictures.)
- Remove defective fluorescent tube.
- Replace with a new special fluorescent tube of the same type according to the specifications given below.
- Replace the light cover.

ATTENTION: In case of lamp breakage, remove all traces of glass carefully from the goods display area and check over the goods for glass splinters.

Specification of the fluorescent tubes:

(The cabinet type can be seen from the rating plate)

PARIS 145	1 off	Ø 16 x 1149 mm	28W	T5
PARIS 175 / ATHEN 175 PARIS 185 / ATHEN XL 175	1 off	Ø 16 x 1449 mm	35W	T5
PARIS 210 / MALTA 145 ATHEN 210 / ATHEN XL 210 ATHEN XL 207 / ATHEN XL 207-7 BOSTON 210	2 off	Ø 16 x 849 mm	21W	T5
PARIS 250 / MALTA 185	2 off	Ø 16 x 1149 mm	28W	T5

11.2 Appliances with LED strips

The LED strips may only be replaced by an authorised specialist. Please contact our AHT customer service centre or our Coolpoint partner!

12 Taking the cabinet out of operation for a period of time

Remove all food.

Open lid, let cabinet come back to room temperature and clean.

Leave lid open at least a crack (approx. 2-3 cm). Ventilation prevents smells and mould building up in the inner chamber.

On no account expose cabinet to sunlight with the lid closed. (Risk of damage due to high inside temperature)

If the cabinets are not used for longer than 6 months, it is possible that the time on the clock needs to be re-set. This is the case if cabinets are defrosting during opening hours. Should you notice that your cabinet is defrosting during opening hours, please call a service engineer to re-set the clock on the control unit correctly.

The food does not come to any harm during de-icing. The temperatures stipulated by the standard are not exceeded. This has also been confirmed by the TÜV.

15 What to do, if ...

ATTENTION: Work on the electrical system and the refrigeration system may only be undertaken by qualified engineers.

The cabinet has been carefully tested for performance and safety in the AHT test centre. Should a fault occur despite this, please check the following first of all:

- Is the mains plug plugged in?
- Is there voltage to the socket?
- Has the "▲/Aux" or "Standby/Reset" button on the cabinet been pressed?

13 Disposal



WARNING: insulating material is polyurethane foam (PUR foam) with pentane!

Do not put the cabinet in the normal rubbish. Instead, please check your obligations according to the national WEEE regulations and take the cabinet to the local WEEE disposal service. Please ensure that the pipes are not damaged.

14 Accessories

There is a range of special accessories for the cabinets, such as e.g.

- lighting sets
- dividing walls, adjusting shelves
- impact and water protection bars

For further information, please contact your supplier or dealer.

- If the inside temperature is too warm:
 - ◆ Were the lids open for a long time?
 - ◆ Was warm food put in by mistake?
 - ◆ Has there previously been a longish interruption to the voltage supply?

If the fault is not caused by any of these, please call your customer service department.

If an error message occurs, please call your customer service department.