



# OPERATING MANUAL

Integral freezer and chiller cabinets. Ready to plug in.

- ATHEN
- BOSTON
- IBIZA
- MACAO
- MALTA
- MANHATTAN
- MIAMI
- PALMA
- PARIS
- SALZBURG
- SINGAPORE
- SYDNEY



**MODEL TYPES – OVERVIEW**

Model	Type				Dimensions [mm]
	R404A	R290			
<b>ATHEN</b>					
175, AD, VS	B 842	B 842N	B 852N	B 872N	1 752 x 853 x 910
210, AD, VS	B 844	B 844N	B 854N	B 874N	2 102 x 853 x 910
250, AD, VS	B 840	B 840N	B 850N		2 502 x 853 x 910
XL 175, AD, VS	B 843	B 843N	B 853N	B 873N	1 752 x 993 x 910
XL 185, AD, VS	B 841	B 841N	B 851N	B 871N	1 850 x 993 x 910
XL 193, AD, VS	B 841	B 841N	B 851N	B 871N	1 935 x 994 x 910
XL 207, AD, VS	B 846(B)	B 746BN	B 846(B)N	B 856N B 876N	2 080 x 994 x 910
XL 210, AD, VS	B 845(B)	B 745BN	B 845(B)N	B 855N B 875N	2 102 x 993 x 910
XL 250, AD, VS	B 840	B 840N	B 850(B)N	B 870N	2 502 x 993 x 910
<b>BOSTON</b>					
210, AD, VS	B 848	B 848N			2 102 x 854 x 1 178
<b>IBIZA</b>					
100, AD, VS	B 839B	B 739BN	B 839(B)N		1 000 x 851 x 925
145, AD, VS	B 839B	B 739BN	B 839(B)N		1 456 x 851 x 925
210, AD, VS		B 839N			2 100 x 851 x 925
<b>MACAO</b>					
100, AD, VS		B 839N			1 000 x 851 x 925
145, AD, VS		B 839N			1 456 x 851 x 925
210, AD, VS		B 839N			2 100 x 851 x 925
<b>MALTA</b>					
145, AD, VS	B 822(B)(M)	B 722(B)(M)N B 862N	B 822(B)(M)N		1 456 x 855 x 833
185, AD, VS	B 828(B)(M)	B 728 (B)(M)N B 868N	B 828(B)(M)N		1 851 x 855 x 833
<b>MANHATTAN</b>					
175, AD, VS	B 849(B)	B 749BN	B 849(B)N	B 879N	1 753 x 995 x 910
210, AD, VS	B 847(B)(M)	B 747BN	B 847(B)N	B 877N	2 103 x 995 x 910
<b>MIAMI</b>					
145, AD, VS	B 893B	B 793BN	B 893(B)N	B 993N	1 457 x 854 x 833
185, AD, VS	B 894B	B 794BN	B 894(B)N	B 994N	1 850 x 994 x 834
210, AD, VS	B 895B	B 795BN	B 895(B)N	B 995N	2 102 x 854 x 833
250, AD, VS	B 896B	B 796BN	B 896(B)N	B 996N	2 502 x 854 x 833

## MODEL TYPES – OVERVIEW


Model	Type		Dimensions [mm]
	R404A	R290	
<b>PALMA</b>			
185, AD, VS	B 821(F)	B 881N	1 851 x 853 x 833
<b>PARIS</b>			
145, AD, VS	B 823(B)(F)	B 723BN      B 823(B)N	1 457 x 853 x 833
175, AD, VS	B 824	B 824N	1 754 x 853 x 833
180, AD, VS	B 824	B 824N	1 799 x 853 x 833
185, AD, VS	B 824(M)(F) B 827(B)(M)	B 727(B)(M)N      B 824N B 827(B)(M)N      B 864N	1 854 x 853 x 833
210, AD, VS	B 825(B)(M)(F) B 829(F)	B 725(B)(M)N      B 825(B)(M)N B 865N	2 102 x 853 x 833
250, AD, VS	B 826(B)(F)	B 726BN      B 826(B)N B 866N	2 502 x 853 x 833
<b>SALZBURG</b>			
72/175	B 800(A)	B 700BN      B 800(B)N	1 750 x 800 x 720
72/210	B 801(A)	B 701BN      B 801(B)N	2 100 x 800 x 720
83/175	B 802(A)(F)	B 702BN      B 802(B)N	1 750 x 800 x 830
83/210	B 803(A)(F)	B 703BN      B 803(B)N	2 100 x 800 x 830
83/250	B 820		2 500 x 800 x 830
<b>SINGAPORE</b>			
185, AD, VS	B 841	B 841N      B 871N	1 850 x 993 x 911
210, AD, VS	B 844	B 844N      B 874N	2 102 x 853 x 910
250, AD, VS	B 840	B 840N      B 870N	2 502 x 853 x 910
<b>SYDNEY</b>			
175, AD, VS	B 922	B 750BN      B 922N	1 752 x 993 x 910
210, AD, VS	B 923	B 757BN      B 923N	2 102 x 993 x 910
213, AD, VS	B 924	B 751BN      B 924N	2 132 x 993 x 860
223, AD, VS	B 924	B 751BN      B 924N	2 232 x 993 x 860
230, AD, VS	B 925	B 752BN      B 925N	2 302 x 993 x 910
250, AD, VS	B 926	B 753BN      B 926N	2 502 x 993 x 910
XL 175, AD, VS	B 927	B 754BN      B 927N	1 752 x 1 043 x 910
XL 210, AD, VS	B 928	B 755BN      B 928N	2 102 x 1 043 x 910
XL 250, AD, VS	B 929	B 756BN      B 929N	2 502 x 1 043 x 910


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**LEGEND**


Signal words for warnings and safety notes in accordance with ANSI Z535.6 and ISO 3864.

 **WARNING** – Dangerous situation that may indirectly lead to a serious injury or death if it is not avoided.

 **CAUTION** – Dangerous situation that may lead to mild to moderate injuries if it is not avoided.

**NOTES** – Important collective notes or an individual note for avoiding material or property damage.

**NOTES AND SYMBOLS**

 General warning  
**“DANGER!” or “CAUTION!”**

 Warning  
**“RISK OF ELECTRIC SHOCK!”**

 Warning  
**“RISK OF FLAMMABLE SUBSTANCES IGNITING!”**

 Warning  
**“DANGER OF SLIPPING!”**

 Warning  
**“RISK OF HAND INJURY!”**

 Prohibition sign  
**“DO NOT ENTER!”**

 Mandatory sign  
**“USE PROTECTIVE GLOVES!”**

 Disposal information  
**“HAZARDOUS AND ELECTRONIC WASTE –**  
 Waste may only be disposed in line with the statutory disposal guidelines prevalent locally (e.g. WEEE in EU) “

**(AD)** The following text only applies to a cabinet with semi-automatic defrosting

## LEGAL NOTICES

- ➔ Please read through these operating instructions carefully before using the cabinet and also pass on these instructions to other people who are entrusted with operating and maintaining this cabinet!
- ➔ Ensure that those people who will be involved in operating and maintaining the cabinet have read and understood the operating instructions!
- ➔ Ensure that the operating instructions are available and made accessible on site!
- ➔ Only trained personnel are allowed to operate and clean the cabinet! Only qualified personnel who have been authorised by the manufacturer may perform maintenance and repair work!
- ➔ It is imperative to follow the industrial law and safety regulations applicable locally!

### Limitation of liability:

All information and notes in these instructions were compiled taking into account the standards and statutory requirements applicable at the time along with the experience gained by the manufacturer and the authorised service partners! The manufacturer is not liable for personal injuries or property damage (devices, products, etc.) caused as a result of:

- ➔ Failing to adhere to the instructions and the safety requirements contained therein
- ➔ Failing to adhere to the statutory safety requirements applicable locally
- ➔ Any improper use
- ➔ The employment of unauthorised and untrained operating and maintenance personnel
- ➔ Unauthorised cabinet modifications and technical amendments made by the customer themselves
- ➔ The use of spare parts not approved by the manufacturer
- ➔ Power failure or failure of electrical safety equipment

Failure to adhere to the aforementioned points will also void the user's warranty!

- ➔ The obligations stipulated in the agreement, the general sales and delivery conditions of "AHT Cooling Systems GmbH" (referred to hereinafter as "AHT" for short) and the statutory requirements applicable upon conclusion of the agreement shall be valid!
- ➔ The manufacturer reserves the right to make technical amendments when enhancing and developing the cabinet!

### NOTE

This chapter on safety is a collection of all the warnings and safety instructions for our cabinets and is available in printed format in 25 languages. However, it is not considered as a substitute for reading the complete operating instructions. The operating instructions are available in printed format in the languages German (D), English (GB), French (F), Italian (I), Spanish (E) and Portuguese (P) with the chapters on safety after the instruction part. All other language translations are only available in the PDF file on a CD attached to the printed operating instructions!

**GENERAL WARNING AND SAFETY INSTRUCTIONS****WARNING**

- ➔ Do not under any circumstances connect a damaged cabinet to the electric circuit. In this case, please contact the AHT customer services team immediately! Otherwise, there is the risk of electric shock or refrigerant leakage!
- ➔ Do not use any multiple socket outlet strips or extension cables. In the event of thermal overload, there is the risk of a smouldering fire and electric shock!
- ➔ Please adhere to the information on the rating plate, the electrical safety regulations applicable locally and the information in the operating instructions before connecting the cabinet to the power supply! Otherwise, there is the risk of electric shock and damage being caused to the cabinet!
- ➔ The cabinet must only be used when all stipulated safety equipment is available and fully operational! Otherwise, there is the risk of an injury or electric shock!
- ➔ Do not under any circumstances remove the safety guards or covers attached to the cabinet by the manufacturer! There is the risk that the rotating parts or parts supplied with voltage may cause an injury!
- ➔ Do not make any technical amendments to the cabinet! Otherwise, there is the risk of an injury or electric shock!
- ➔ Do not store any containers or cans with combustible blowing agents in the cabinet! Otherwise, there is a risk of inflammation!
- ➔ Work on the electrical system and refrigeration system of the cabinet may only be carried out by specialist personnel authorised by AHT! If the above is not adhered to, there is the risk of an electric shock or risk of inflammation from refrigerant leaking out!
- ➔ Damaged network connection cables must only be replaced by specialist personnel authorised by AHT! Otherwise, there is a risk of an electric shock!
- ➔ All power plugs (device and electricity network cables) must be pulled before work is carried out on the electrical system and on the refrigeration system to ensure that the cabinet does not have a voltage supply! Secure the cabinet against unintentional reactivation! Otherwise, there is a risk of an electric shock!
- ➔ Hot steam from steam cleaners and high-pressure water from high-pressure cleaners may damage the electrical insulation, installed electrical and electronic devices and the refrigeration cycle! A steam and high-pressure cleaner should therefore not be used for cleaning!

**GENERAL WARNING AND SAFETY INSTRUCTIONS****CAUTION**

- ➔ Do not climb on top of the glass lid or into the cabinet. There is the risk of injury due to material breakage!
- ➔ Double or triple sheet insulating glass may break when installed at heights above 2,000 m due to the difference in air pressure. There is the risk of injury due to glass breakage!
- ➔ Loading the cabinets with frozen products may result in frostbite to the hands. You should therefore use protective gloves!
- ➔ No objects should be placed on the cabinet! Otherwise, there is the risk of an injury as a result of falling objects!
- ➔ If the glass of the bottles stored for refrigeration breaks in the interior of the cabinet, the glass parts must be removed carefully from the product space! You should therefore use protective gloves!
- ➔ Condensation may leak from the cabinet and must be removed immediately. Be careful, there is the risk that you may slip!
- ➔ Sharp cabinet edges may cause cuts to your hands when cleaning. You should therefore use protective gloves!
- ➔ Mechanical damage to the cabinet caused by the trolley system, for example, which does not have a negative impact on the technical function, must be repaired by the store operator! In the event of damage to the refrigeration system or the electrical system, this damage must be reported to AHT customer service team immediately! Otherwise, there is the risk of personal injury!

**NOTES**

- The cabinet must only be transported or stored stably in a horizontal position of use on feet!
- The cabinet must only be operated in a position that is horizontal in all directions (width, length) and when stable on its feet. Please refer to the installation instructions in chapter 5!
- The cabinet must not be heated above +50 °C (+122 °F) during operation and above +70 °C (+158 °F) when it is not being operated (e.g. transport, storage)! Do not place the cabinet in direct sunlight and do not expose the cabinet to radiation from high-energy heat sources (spotlights)!
- Check the cabinet immediately after it is delivered for transport damage and that it is operating properly! If you determine any defects, you should make a complaint to AHT customer services immediately. You can find the contact address in chapter 17!
- When unpacking the cabinet, it is important to check whether there are any loose objects in the packaging! Before you dispose of these loose parts, please clarify beforehand whether these parts belong to the cabinet or cabinet accessories!



**GENERAL WARNING AND SAFETY INSTRUCTIONS****EN**

- Please ensure that cabinets with an interior light have two network connection cables (cabinet and light connection cables)!
- The cabinet can only be used for storing already refrigerated or frozen products. Any other use is therefore considered to be improper!
- The operating personnel (store personnel) must be trained by the store manager using the operating instructions!
- Extremely vulnerable people (including children under the age of 8) may only operate the cabinet under supervision and after receiving training as a result of their physical, sensory or mental capacity and are not allowed to carry out any maintenance or cleaning work! Children must not play with the cabinet!
- The cabinet must be operated in the climate class indicated on the rating plate. Please be advised that operating the cabinet at values exceeding those stipulated in the climate class will result in a drop in energy efficiency and if the values are exceeded significantly its functions are likely to be restricted!
- In order to ensure that the cabinet functions properly, the ambient temperature must not fall below 16 °C (61 °F) and should not exceed the temperature of the climate class that the cabinet has been designed for and which has been indicated on the rating plate!
- The cabinet must only be operated with a lid! Other types of operation must be agreed upon with AHT!
- Cabinets with a mechanical controller start to cool down immediately after the mains voltage has been applied. Cabinets with electronic control, by contrast, start to operate with a slight time delay!
- In the case of cabinets with semi-automatic defrosting (AD function), we recommend that the products are only stored in the period from 8:00 am to 8:00 pm in order to ensure that the product quality remains consistently high!
- The cabinet must be regularly monitored for foreign objects in the product space!
- In the event of a power failure, the stored products must be monitored by the store operator!
- Liquids that come from leaking bottles or product packaging must be removed!
- During each effective cooling procedure, condensation accrues or the moisture on the cooling surfaces contained in the air is frozen onto the cooling surfaces. The operator must therefore defrost the cabinet manually at regular intervals if semi-automatic defrosting is not in operation!
- Do not use any heaters or sharp objects for the defrosting procedure! This leads to the cabinet being damaged!
- Sharp objects may scratch the glass lid (safety glass) and subsequently destroy it!
- When it comes to disposing of the cabinet, please supply the cabinet to the local disposal partner taking into account the legal requirements applicable locally! Please ensure that the tubes are not damaged! Please refer to the information on the refrigerant displayed on the rating plate to ensure that the cabinet is disposed of correctly!

**SPECIAL WARNINGS AND SAFETY INSTRUCTIONS****EN****FOR REFRIGERATION APPLIANCES WITH THE REFRIGERANT R290 (PROPANE)**

- ➔ The refrigerant R290 (PROPANE) is classified in the refrigerant group A3 (combustible and explosive) in accordance with the DIN EN 378-1 standard. This refrigerant may cause an exothermic reaction with air and a corresponding ignition energy (source of ignition) in certain range limits!
- ➔ Keep the ventilation openings at the front and rear of the cabinets free and ensure that the minimum distances to the partitions and other cabinets are strictly adhered to in order to prevent the air circulation from being interfered with! Otherwise, an ignitable mixture of gas and air may form in the event of the refrigeration system leaking!
- ➔ Do not close the ventilation openings of the cabinet enclosure (accessory parts) as they overlap! Otherwise, an ignitable mixture of gas and air may form in the event of the refrigeration system leaking!
- ➔ Do not damage the refrigeration cycle of the cabinet. There is a risk that the mixture of gas and air may flow out and may ignite unintentionally!
- ➔ Only electrical devices that have been approved by the manufacturer may be used inside the cabinet's food storage compartment!
- ➔ Do not use mechanical means (e.g. scrapers) for accelerating the defrosting procedure except those recommended by the manufacturer!
- ➔ It is not authorised to use a non-explosion protected wet vacuum cleaner for absorbing the condensation or other non-explosion protected electronic devices in the product space in line with the EU applicable ATEX directive (dzt. 94/9/EC)! An ignitable mixture of gas and air may form, leading to risk of ignition!
- ➔ Work on the refrigeration system may only be carried out by service personnel that are authorised by AHT and who are trained in how to use the combustible and fluorinated refrigerant!
- ➔ The refrigeration cycle may only be initiated and the refrigerant may only be extracted in well-ventilated rooms or in the open air! The work required here may only be carried out by specialist service personnel who are trained in how to use the combustible and fluorinated refrigerant!
- ➔ When it comes to disposing of the cabinet correctly, please pay particular attention to ensuring that the combustible refrigerant R290 (propane) and the heat insulation material polyurethane foam with pentane are disposed of in a secure and environmentally friendly manner! Please ask the competent authorities beforehand about the safety and statutory disposal requirements applicable in this case!

## ORIGINAL OPERATING MANUAL

EN

### 1. GENERAL INFORMATION

AHT products meet the requirements of the EU directive 2011/65/EC (RoHS2) for preventing dangerous substances from entering electrical and electronic devices and the EU regulation 1907/2006 (REACH) on registering, assessing and approving chemicals.

When it came to designing the product, the manufacturer ensured that the devices were environmentally friendly and easy to dispose of. This was especially the case with the refrigerant propane (R290) and the insulating foam blowing agent pentane. The global warming potential (GWP) and the ozone depletion potential (ODP) of the refrigerant employed depending on the model is disclosed in the following table:

Refrigerant	GWP	ODP
R404A	3922	0
R290	3	0

The refrigerant R404A is a mixture of 44% R125, 4% R134a and 52% R143a and is recorded in the Kyoto Protocol. The airborne noise emission of the cabinets amounts to at most 45 dB(A) at a distance of 1 m. The design of the individual cabinet types may vary. Technical data can be viewed on the rating plate and in the brochure data sheets available from the AHT sales department. If you require any further information or have any questions regarding the operating instructions, please contact the AHT customer services team.

### 2. RATING PLATE AND SERIAL NUMBER

Please refer to the information on the rating plate when handling the cabinet. The rating plate can be found as a label on the rear of the cabinet and contains important technical data on the

- cabinet designation and cabinet type
- Serial number
- Climate class <sup>1</sup>:
- Nominal voltage and nominal frequency
- Nominal current and nominal power
- Refrigerant and amount employed
- Net volume
- Manufacturing date
- Stamp
- Technical data for interior lighting (optional)
- and other technical data

1. The climate classes are defined in ISO 23953-2 and indicate the maximum ambient temperature and the maximum relative atmospheric moisture in the environment which the relevant cabinet was designed for. Example: Climate class 3 (25°C, 60% rH) signifies an ambient temperature of 25°C with a relative air humidity of 60% (based on the maximum air humidity possible at 25°C)

A label has also been attached on the inside of the cabinet to the plastic frame in the lateral area with the following information

- Cabinet serial number
- Cabinet designation
- Refrigerant identification

### 3. APPLICATION

The AHT refrigeration or frozen food storage cabinet is a "plug-in-ready" compact device. The correct position of use is the horizontal position and upright on its feet. The products are accessed from above.



**CAUTION**  
**RISK OF INJURY**  
**DUE TO MATERIAL BREAKAGE!**

**Cuts to the body and damage to the cabinet.**

- ➔ Do not climb on top of or into the cabinet!

AHT refrigeration or frozen food storage cabinets of the **(-)** series are designed to store frozen, packaged frozen food products or dairy ice cream. AHT refrigeration or frozen food storage cabinets of the **(S)** series are designed to store pre-cooled, packaged meat products (e.g. minced meat). AHT refrigeration or frozen food storage cabinets of the **(V)** or **(U)** series, by contrast, are variable or universal devices that can be operated in many operating modes by being switched over. The cabinet series and the possible operating modes are described in chapter 9.2 depending on the type of controller.

#### NOTES

- **The cabinets are not suitable for freezing fresh products. Any other use or use of the cabinets that is beyond what is specified is deemed to be not for the intended purpose!**
- **Please ensure that the cabinet is at the correct temperature before storing products inside!**

The climate class permissible for the cabinet (maximum ambient temperature, maximum relative atmospheric humidity) and other important technical information can be found on the rating plate! There must be regular monitoring by trained operating personnel to ensure fault-free condition and correct usage of the cabinet. The cabinets must be monitored on a regular basis to ensure that products that have been stored incorrectly by third parties (e.g. by customers) are removed.

**CAUTION**  
**RISK OF INJURY DUE TO GLASS BREAKAGE!**

**Glass bottles with liquids may burst in the process of freezing and cause cuts.**

➔ It is prohibited to store any kinds of bottles in freezing cabinets!

**Double or triple sheet insulating glass may break due to the difference in air pressure.**

➔ Do not position the BOSTON, IBIZA and MA-CAO cabinet models in areas that are more than 2,000 m above sea level!

The supermarket cabinets are supplied in different designs (cabinet models). Depending on the design, the cabinet may have wall grilles as well as floor ducts and floor grilles. It is important to ensure that

- the **wall grilles** for AD cabinets and for refrigerating meat always remain in the cabinet.
- the floor ducts and floor grilles are required for refrigerating meat.

**NOTE**

**During each effective cooling procedure, condensation accrues and the moisture contained in the air is frozen onto the cooling surfaces. The operator must therefore defrost the cabinet manually at regular intervals!**

**(AD)**

In cabinets with an AD function, the ice that builds up during freezing mode is automatically defrosted in regular cycles. The condensation that accrues is led via a drainage channel from the cabinet interior to the machinery space and evaporated there. A complete defrosting and subsequent cleaning procedure should be carried out at least 1-2 times a year for hygiene reasons (see chapter 12). Ice build-up caused by potential leaks in the defrosting channel does not have a negative impact on the operation of the cabinet.

**4. UNPACKING AND HANDLING****NOTES**

- In order to prevent the cabinet from being damaged, it must only be transported and stored in the position of use! A visual inspection must be carried out before and during unpacking of the cabinet to determine any damage that may have occurred during transit.
- Please check for loose parts, dents, scratches, visible loss of liquid, etc.! Any damage must be reported to your competent AHT customer service representative immediately before commissioning the cabinet!
- Before disposing of the packaging material, this material should be checked for any loose functional parts!

**WARNING**  
**RISK OF ELECTRIC SHOCK!**

**A damaged cabinet may cause a short circuit or fault to frame.**

- ➔ Do not under any circumstances connect a damaged cabinet to the electric circuit.
- ➔ Please contact your competent AHT service partner or the central AHT customer service team immediately!

**NOTE**

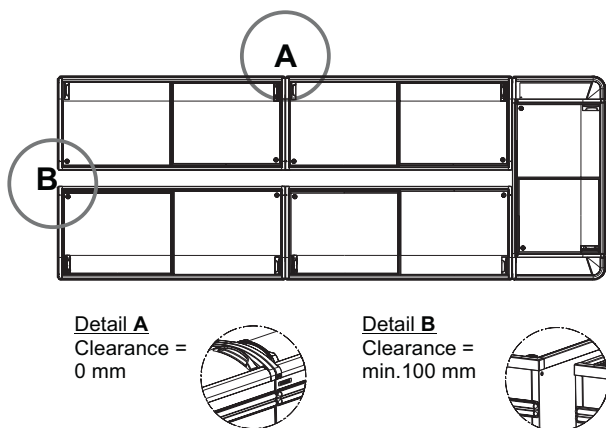
**The local AHT service partner must be contacted when reporting any damage. You can find his/her service number on a label found on the cabinet! If you are unable to find the service number, please contact the central AHT customer service team (see chapter 17 for contact address)!**

**5. ASSEMBLING****NOTES**

- The cabinet must not be exposed to direct sunlight and not be heated above +50 °C (+122 °F) during operation and above +70 °C (+158 °F) when it is not being operated (e.g. transport, storage)!
- The cabinet should be operated in an environment defined by the climate class (see rating plate)!

**The following points must be adhered to when assembling the cabinet:**

- The cabinet must be aligned on level ground in all directions (depth, length) and must be positioned stably!
- The ventilation openings (air grilles) of the cabinet must be kept free. Set up the cabinet in a well ventilated position!
- In the event of a single installation, please ensure that there is an all-round distance of at least 50 mm (1.97 inches) to the peripheral surfaces (e.g. walls, devices, shelves)!
- In the event of a block installation, please adhere to the minimum distances referred to in **Fig.1!**



**Fig. 1:** Distance between cabinets (depending on the model series) for a block installation

- Avoid draughts and increased heat radiation at the installation location. Do not place the cabinets in front of radiators, heating systems and in the vicinity of air outlets!
- Do not install heat sources or spotlights (e.g. light bulbs) in the cabinet. Any heat radiation in the cabinet leads to increased operating costs and may impair the performance of the cabinet!
- Block the two optional right castors after installation by using the parking brake!
- The cabinet must not travel up and down steps, otherwise it will get damaged!
- Advertising posters must only be stuck on as thin films. Ventilation openings (air grilles), temperature displays, safety information and the rating plate must not be covered!
- Do not attach any thick, insulating materials to the exterior walls!
- Ensure that the glass lid is in the right position. Lettering must be legible from above!
- The intermediate areas for the block installation must not be covered (exception: if it is an AHT cover or the cover has been approved by AHT)!
- Any additional structures and superstructures (e.g. shelf superstructures with longitudinal braces) which prevent heat dissipation between the cabinets must

be avoided! If structures are still required between the cabinets, written approval must be requested from AHT for the relevant design!

- In the case of cabinets with a condensation drain in the base trough (optional), it is essential to ensure that it is installed below the cabinet in a way that makes it constantly accessible and offers sufficient space for it to be positioned below a condensation collecting tray!
- It is not permissible to drill into the cabinet in order to attach the condensation trays, for example!

## 6. ELECTRICAL CONNECTION

### NOTES

- **It is imperative to adhere to and comply with the regionally applicable requirements of the local power supply company and the generally applicable national standards and safety requirements!**
- **The network voltage and network frequency must correspond with the nominal values displayed on the rating plate of the cabinet!**

### 6.1 Power supply



#### **WARNING** **RISK OF ELECTRIC SHOCK!**

**People may be careless and enter into contact with the electric circuit.**

- ➔ Work on the electrical system must only be carried out by AHT authorised specialist personnel!
- ➔ Damaged network connection cables must only be replaced by AHT authorised specialist personnel!
- ➔ Contact our AHT customer service team about this!



#### **WARNING** **RISK OF ELECTRIC SHOCK AND SMOULDERING FIRE!**

**A thermal overload of multiple socket outlet strips or extension cables may lead to short circuits and subsequently to smouldering fires.**

- ➔ Do not use any multiple socket outlet strips!
- ➔ Do not use any extension cables!

**NOTES**

The cabinet is a “plug-in-ready” compact device. When connecting the cabinet to the electricity network, the following points must be adhered to:

- Supply cables must have a minimum cross section of 2.5 mm<sup>2</sup> (corresponds with USA: AWG. 14). 3-pin cables must be used at all times. It is not permitted to use a 5-pin cable.
- Only connect cabinets to an earthed socket with earthing contact and its own mains circuit. No more than 2 cabinets should ever be connected to an electric circuit!
- The cable length is dependent on the order and mainly fluctuates between 120 and 300 cm. The network cable is always the colour “grey” as standard, while the light cable is either the colour “black” or “grey”. Both cables can be found on the bottom right of the cabinet!
- In the case of the country-specific IEC box (see Fig. 2) the plug-in cables for the cabinet (Colour: “Grey”) and for the light (Colour: “Black”) are either 200 cm or 250 cm long depending on the design!
- Labelling tags with the lamp symbol for the light symbol for the light connection and the snow star symbol for the cabinet connection are located at the end of the connection cables!
- It is necessary to ensure that the light socket and the device socket are not mixed up, as otherwise there is the risk that the cabinets may also switch off when switching off the store light!
- No other loads must be connected to these sockets!
- AHT recommends using a cable duct located on the ground with sockets installed or constructed therein. The employed cable duct may at most extend from the floor to the lower edge of the cabinet’s rear ventilation grille!
- The sensor connection on the rear of the cabinet (optional) may only be connected to a safety extra-low voltage (SELV)!

The cabinets may be optionally equipped with an IEC box (see Fig. 2) in conjunction with plug-in connection cables.

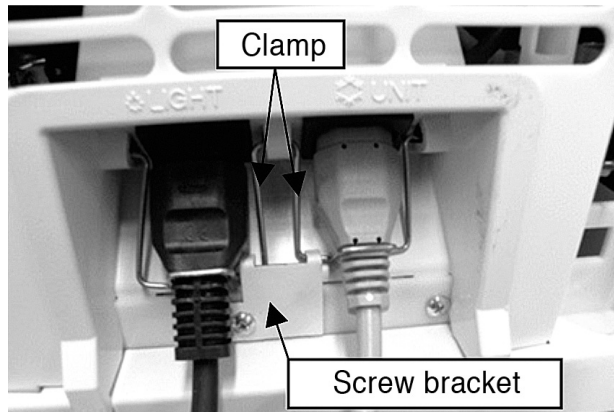





Fig. 2: Connection with IEC box (Symbol photo)

**NOTE**




It is important to ensure that the plug-in connection cables of cabinets are correctly plugged-in and the clip is properly fixed. The clip must be secured by the screw support (see Fig. 2)!

 |  **Light connection:**  
Light symbol:  
Allocated slot for the light connection cable  
Fig. 3: Light connection

 **Cabinet connection:**  
Star symbol:  
Allocated slot for cabinet connection socket  
Fig. 4: Refrigerator connection

**NOTE**

The connection cables must not be separated from the cabinet (see Fig. 5). Only the AHT customer service team is able to replace the faulty connection cables!

   
 **Fig. 5:**  
Symbol “Do not disconnect connection cables”

## 6.2 Circuit protection



### **WARNING** RISK OF ELECTRIC SHOCK!

**Electrical safety requirements that are not adhered to may lead to people entering the electric circuit unprotected.**

➔ It is imperative that the electrical safety requirements are adhered to. Ensure that you are sufficiently protected!

**The following circuit protection installations are possible:**

- **Cabinets:** Maximum of 2 cabinets for each fuse. AHT recommends 1 cabinet for each fuse to ensure maximum operational safety.
- **Interior light:** Maximum of 8 light connections for each fuse. Each cabinet must have its own light socket.

### 6.2.1 (MCB) circuit breaker

Circuit breakers (MCB) are provided as minimum circuit protection for the cabinet.

**NOTE**

**It is imperative to use the MCBs with 16 A (USA: 15A) and with the release characteristic "C"! In order to ensure maximum operating safety, we suggest using a single idle MCB as protection for each cabinet!**

### 6.2.2 Ground fault circuit interrupters (RCCB)

The use of a ground fault circuit interrupter as "additional protection for the exterior and for sockets" (411.3.3) is stipulated for new installations based on VDE 0100-410 (in its current version) (as has already happened in Germany, Austria and Switzerland).

Ground fault circuit interrupters are therefore stipulated for electrical installation of AHT refrigeration or frozen food storage cabinets in stores. It is deemed practical that the AHT refrigeration or frozen food storage cabinets have their own ground fault circuit interrupter protection for lighting.

When using ground fault circuit interrupters, it is important to ensure that the circuit interrupters being used are type "G" (surge current resistant). In order to enhance the performance of the ground fault circuit interrupter, we suggest the following:

Nominal current	40 A
Trip current	30 mA
Trip characteristic	C
<b>Cabinets for each ground faultmax. 2</b>	

It is preferable for each cabinet to have 1 ground fault circuit interrupter for individually protecting the cabinets! With a combination of a fuse and circuit breaker (ground fault circuit interrupter/miniature circuit breaker), a maximum of 2 cabinets can be supplied per circuit protection.

**NOTE**

**No more than 2 cabinets should ever be connected to a ground fault circuit interrupter (GB: RCCB) or a ground fault circuit interrupter/miniature circuit breaker combination (GB/USA: RCBO)!**

### 6.2.3 Ground fault circuit interrupter/miniature circuit breaker combination (RCBO)

The following types of ground fault circuit interrupter/miniature circuit breaker combinations can be used for 1 or 2 cabinets:

Number Cabinet	1	2
Characteristic	"C"	"C"
Trip current	10 A	16 A
Trip current	30 mA	30 mA
Type	"G"	"G"

**NOTES**


- AHT however recommends a ground fault circuit interrupter/miniature circuit breaker combination for each cabinet!
- Load shedding circuits or cabinet circuits are not permitted as interferences may occur!
- In the case of cabinets with an integrated internal light and separate light connection cable, each cabinet must have an additional light socket. A maximum of 8 light connection cables may be connected to a single fuse!

## 7. COMMISSIONING AND FUNCTION

The cabinet should have a minimum temperature of +16°C (60.8°F) before being commissioned. Depending on the design, the cabinet may have wall grilles as well as floor ducts and floor grilles. It is important to ensure that

- the **wall grilles** for AD cabinets and for refrigerating meat always remain in the cabinet.
- the **floor ducts** and **floor grilles** are in place for refrigerating meat.

All cabinets are equipped with a glass lid as standard. The lids are required to operate the cabinet correctly. They should only be opened for loading and product removal purposes. The bulging that may occur during operation does not have a negative impact on how the cabinets function.



**CAUTION**  
**RISK OF INJURY**  
**DUE TO MATERIAL BREAKAGE!**

**Cuts to the body and damage to the cabinet.**

➔ Do not climb on top of or into the cabinet!  
Do not place loads on the lid!

**NOTES**

- **After the cabinet is switched on, the refrigeration unit starts immediately – the unit starts to operate after a short delay with cabinets with electronic control (approx. 2 minutes)!**
- **The glass lid must not be exposed to any additional loads or be used as a storage space for various objects!**
- **It is not possible to operate the cabinets without a lid or with the lid open!**
- **During each effective cooling procedure, condensation accrues and the moisture contained in the air is frozen onto the cooling surfaces. The operator must therefore defrost the cabinet completely manually at regular intervals!**



**CAUTION**  
**RISK OF INJURY**  
**DUE TO SLIPPING!**

**Leaked condensation may lead to slipping.**

➔ Timely removal of the condensation that may leak from the cabinet!

## 8. TEMPERATURE SETTING AND MONITORING SYSTEM

**NOTE**

**Please adhere to the statutory storage temperature for your products!**

The temperature display shows a system temperature that does not correlate directly with the product temperature. The position of the temperature sensor can be found on the base of the cabinet below the base plate. Depending on the product being handled, temperatures up to -25°C (-13°F) can be displayed. The cabinet is not set at too low a temperature even in the event of the cabinet displaying very low temperature values, as the product temperature at the stacking limit is considerably warmer than on the ground.

### 8.1 Cabinet types

Depending on the area of application, different cabinet series are available:

Electronic controllers (EC)	
Series	Area of application/ Mode of operation
(-)	Freezing mode “-”
(S)	Meat mode “s”
(U)	Universal mode: It can be set to freezing mode “-”
(-)	
Mechanical controllers (MC)	
Series	Area of application/ Mode of operation
(-)	Freezing mode “-”
(V)	Variable mode It can be set to • freezing mode “-” and • refrigeration mode “+”



## 9. OPERATING THE TEMPERATURE CONTROLLER

The temperature controller (thermostat) is located at the front of the signal unit and can be used mechanically (see chapter 9.1) or electronically (see chapter 9.2).

**NOTE**  
**If required, the protective plexiglass cover must be detached before the controller is operated with a cross screwdriver and re-attached again afterwards!**

### 9.1 Mechanical temperature controller

The mechanical controllers (MR) can be used to set the setpoint for the internal temperature in the following areas depending on the mode of operation (freezing or refrigerating):

#### Cabinetseries (-)

<b>Operating mode</b>	<b>Freezing:</b>
<b>Adjustable setpoint for the internal temperature</b>	<b>-18°C (0°F) to -23°C (-9.4°F)</b>

#### Cabinet series (V)

<b>Operating mode</b>	<b>Freezing:</b>
<b>Adjustable setpoint for the internal temperature</b>	<b>-18°C (0°F) to -23°C (-9.4°F)</b>

<b>Operating mode</b>	<b>Refrigerating:</b>
<b>Adjustable setpoint for the internal temperature</b>	<b>+3°C (+37.4°F) to +15°C (+59°F)</b>

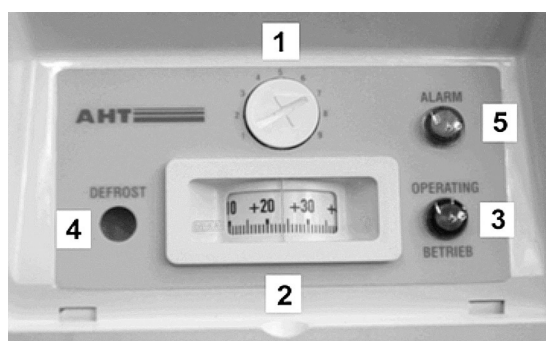


Fig. 6: Mechanical controller type MR 1 for (-) series with display and operating elements

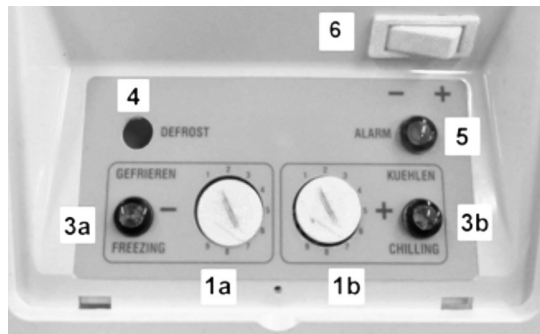


Fig. 7: Mechanical controller type MR 2 for (V) series with display and operating elements

**The mechanical temperature controller (Fig. 6–7) may contain the following display and operating elements:**

- **(1) (1a/1b) Thermostat rotary knob:**  
Interior temperature setting from Stage 1..Warm to 9..Cold
- **(2) Analogue temperature display:**  
Displaying the measured interior cabinet temperature
- **(3) (3a/3b) network indicator lamp (Green):**  
Cabinet in operation, Defrost key (4) has not been pressed
- **(4) Defrost key:**  
Cabinet switches off to defrost, network indicator lamp (3) goes out
- **(5) Optional warning lamp (Red):**  
Lights up if the interior temperature has become too warm
- **(6) Toggle switch for V cabinet:**  
For switching the operating mode from refrigeration mode "+" to freezing mode "-" and vice versa

#### Function of the operating elements:

- The thermostat **(1)** can be used to set the required interior temperature (setpoint)
- The analogue temperature display **(2)** displays the measured interior temperature (actual value)
- The network indicator lamp **(3)** lights up if the network voltage is connected to the cabinet and the defrost key has not been pressed
- The defrost key **(4)** interrupts the power supply to the compressor upon being activated. The network indicator lamp goes out at the same time **(3)**. Please note that only a single-phase disconnection is possible!
- The optional warning lamp **(5)** lights up if the interior temperature is too warm
- The optional toggle switch **(6)** can be used to switch the controller from the refrigeration mode "+" to freezing mode "-" and vice versa. The operating mode activated in this way is displayed by the green network indicator lamp **(3a, 3b)** lighting up.

**Thermostat setting:**

**Stage 1:** Warmest setting

**Stage 7:** Factory setting (customer-specific)

**Stage 9:** Coldest setting

Rotate the thermostat to set the required temperature (rotary knob or adjusting screw)

- in clockwise direction for colder temperatures
- in anticlockwise direction for warmer temperatures

**Defrosting:**

- **Press Defrost key:** Green network indicator lamp (3) goes out. Cabinet is defrosting.
- **Press Defrost key again:** Green network indicator lamp (3) lights up again. Cabinet starts to cool down.

**9.2 Electronic temperature controller**

Electronic temperature controllers (ER) can be used for both "stand-alone" operation and as a block installation. If the cabinets are arranged in a block, these cabinets can be connected using bus lines. Instructions on cabling and allocating addresses can be found in chapter 9.2.2.3 and 9.2.3.3 in the section "Selecting the bus address".

**When using the cabinet, the following must be adhered to:**

- ➔ The keys must be pressed continuously for more than 0.5 seconds to initiate a reaction!
- ➔ After a maximum of 10 seconds without pressing a key, the display moves back to the "actual value"!
- ➔ Set values are adopted immediately if they are valid!

The temperature of the interior can be read on the display of the electronic temperature controller.

**9.2.1 Setpoint setting**

The temperature setpoint that the cabinet will operate in can be selected through the following parameters:

Parameter	Function	Setpoint temperature
A1	Freezing	-18 °C(0 °F)
A2	Freezing	-20 °C(4 °F)
A3	Meat refrigeration	+1 °C(+33.8 °F)
A4	Positive refrigeration	+4 °C(+39.4 °F)

The parameters A1 to A4 can be selected by briefly pressing (approx. 1-2 seconds) the [ + ] or [ - ] keys or [ +/- ] key if said parameters have been approved at the customer's request. The display changes back to the actual display automatically after a short time. The following parameters can be approved or set in the factory depending on the cabinet series:

Cabinete-Series	Factory setting	Possible Parameters
(-) Freezing mode	A1	A1, A2
(S) Meat mode	A3	A3
(U) Operation with universal cabinet	A3	A1, A2, A3, A4

Please ensure that the cabinet series (U) is set to the parameter A3 (meat refrigeration) upon delivery unless otherwise requested by the customer.

**NOTE**

**Please be aware of the conversion period for a parameter amendment and wait until the correct storage temperature has been reached for the products before storing products inside! Caution, not adhering to the above may result in product damage in the cabinets being loaded!**

**Possible temperature controller set-ups are as follows:**

**9.2.2 Electronic controller type ER 1**

Depending on the type of display, four differently marked keys are provided as operating elements that are used as follows:

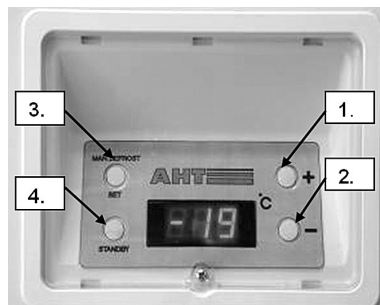


Fig. 8: Controller type ER 1 - Display A



Fig. 9: Controller type ER 1, - Display B (e.g. for the SYDNEY model)

No.	Display keys Type A/Type B	Function
1. [ + ]		Setpoint setting Address allocation
2. [ - ]		Setpoint setting Address allocation
3. [MAN. DEFROST/ SET]		(AD) Manual Start of the Defrosting
4. [STANDBY]		Switching on/off of the controller (Stand-by/ Operating switch)
		Access error code (if there is a "red dot" on the display in front of the actual temperature)

**NOTES**

- You can find a detailed table detailing the controller functions of controller type ER 1 in Appendix A!
- After rectifying an error, the error message disappears automatically.

**9.2.2.1 Change between stand-by/operating mode**

1. By pressing the **[STANDBY]** key (for at least 1 second), the cabinet will be switched to "stand-by". "--" appears on the display.
2. By pressing the **[STANDBY]** key again (for at least 1 second), the cabinet will switch on again and the internal temperature of the cabinet will be displayed. This procedure may last a few seconds.

**9.2.2.2 Selecting the setpoint**

The process of selecting another parameter for setting the setpoint is carried out as follows:

1. Press the key **[+]** or **[-]** for at least 1 second. Afterwards "StP" (approx. 0.5 seconds) and the current parameter will appear alternately, e.g. "A1" (for 2 seconds).
2. If the **[+]** or **[-]** key are pressed, the next approved parameter can be selected. The selection must be made within 10 seconds, otherwise it changes to the temperature display (actual value) automatically.
3. The temperature display returns after 10 seconds. The new set parameter is adopted as the new setpoint parameter immediately after returning.

**9.2.2.3 Selecting the bus address**

The controllers are supplied with the bus address as "00" which is the equivalent of a "stand-alone" cabinet.

"Stand-alone" means that the cabinets or controllers are not connected to a bus system.

In order to integrate the addresses into a bus system and for the purposes of identifying the cabinets as required, the addresses must be allocated from "01" to a maximum of "48". Before making the allocation, the cabinets must be networked with a 6-wire cable (bus cable). A terminator must be fitted for the last participant. We recommend that the addresses are input according to the actual wiring sequence. If more addresses are required, an additional bus must be set up. Contact the AHT customer service team about this!

**NOTES**

- The following applies to cabinets that are networked in a bus system: The bus address "01" is essential because energy management is conducted using this controller along with the semi-automatic defrosting procedure with a time delay for AD cabinets!
- Bus addresses must not be allocated twice!

**Procedure for allocating addresses:**

1. Press the **[+]** or **[-]** key simultaneously for at least 5 seconds.
2. "Adr." appears on the display (approx. 0.5 seconds) along with the current bus address alternately, e.g. "00" (for 2 seconds).
3. If the **[+]** key is pressed (for at least 0.5 seconds), the next free address can be allocated on the bus. "01" will appear on the display in the event of the key being pressed once and the first address being allocated. If too high an address has been allocated, the current address can be reduced by pressing the "-" key (for at least 0.5 seconds), e.g. from "02" to "01".
4. After 10 seconds, the value is assumed and a switch is made to the temperature display.
5. Allocate the address in the same way as in point 1 to 4 for the subsequent cabinets and in doing so always select the next free address, e.g. "02".

**9.2.2.4 Defrosting (AD)**

The semi-automatic defrosting **(AD)** is scheduled twice a week and starts at 12:00 pm for "stand-alone" cabinets. The defrosting is carried out automatically with a time delay for cabinets that are networked across the bus with the procedure starting between 9:30 pm and 1:00 am. The semi-automatic defrosting can also be initiated manually if required. However, after every defrosting (whether initiated manually or using the controller), the semi-automatic defrosting is blocked for 24 hours.

In order to initiate the defrosting manually, the **[MAN. DEFROST/SET]** key must be pressed briefly.

If "--" appears briefly on the display and then the temperature, the 24-hour block is active.

If "- d -" and then "dFr." appear on the display for approx. 2 seconds, the defrosting has been initiated.

It takes approx. 10 minutes for the ice on the interior container wall to start melting from the top. After the defrosting cycle has been completed (taking between 40 to 70 minutes depending on the factory setting), the cabinet returns to normal operation. The display then changes from "dFr." to the temperature display.

### 9.2.2.5 Alarm treatment and acknowledgement

In the event an error occurs, the temperature display will flash alternately with the error code on the display. After a few minutes, only a dot flashes below the actual value and the current error code will be displayed again at each full hour. It is now possible to access the error code by pressing the **[STANDBY]** key. In the event of a temperature rise, only the current actual value will flash.

**NOTE**  
 If there is no alarm present, the cabinet is switched off by briefly pressing the **[STANDBY]** key ("Stand-by" display "- - -")!  
**ATTENTION:**  
 Do not forget to switch on the cabinet again immediately after this by pressing the **[STANDBY]** key again. The interior temperature is then displayed again!

The error codes are listed in rows in the following table:

Error code *)	Meaning
Bus	Bus error, Missing address
Col.	Address clash
F1	Sensor error, F1
F2	Sensor error, F2
F3	Sensor error, F3
d.Fr./F3	Error Defrosting system
Clock	Time/ Date not valid
EE	Data error
Flashing actual value	Temperature rise alarm
FU1**)	Communication error Controller/ACC converter
FU2**)	Overload current at the fan output of the ACC converter
FU3**)	Startup error of the compressor
FU4**)	Compressor overload current
FU5**)	Temperature rise of the ACC converter

FU6**)	Internal error of the ACC converter
FU7**)	ACC supply voltage is outside the limits

\*) Error code is flashing alternately with the temperature value!  
 \*\*) Error code only for the speed-controlled compressor (VS)!

There is the option of outputting an acoustic signal through an additional buzzer that has been installed. After rectifying an error, the error message disappears automatically along with the optional acoustic signal.

### 9.2.3 Electronic controller type ER 2

Three keys are provided as operating elements that are used as follows:

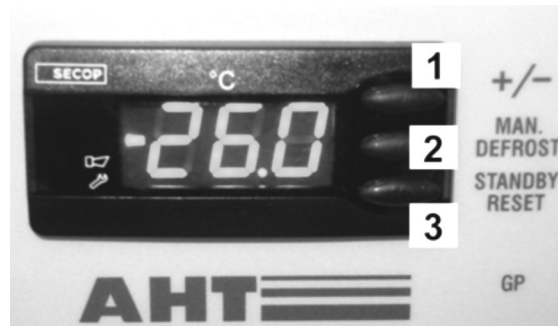


Fig. 10: Controller type ER 2 - Display (°C, °F)

No. Key	Function
1. [+/-]	<ul style="list-style-type: none"> <li>• Setpoint setting</li> <li>• Display address</li> <li>• Allocate next free address</li> </ul>
2. [MAN. DEFROST]	<ul style="list-style-type: none"> <li>• <b>(AD)</b> Manual start of the defrosting</li> </ul>
3. [STANDBY/ RESET]	<ul style="list-style-type: none"> <li>• Switching the controller on/off (Stand-by/Operating switch)</li> <li>• <b>Acknowledging (RESET) an error code/alarm</b></li> <li>• <b>Accessing an error code</b> (with the "red dot" on the display next to the horn symbol)                             <ul style="list-style-type: none"> <li>• Access address menu</li> <li>• Leave address menu</li> </ul> </li> </ul>

**NOTE**  
 You can find a detailed table detailing the controller functions of controller type ER 2 in Appendix B!

### 9.2.3.1 Change to stand-by/operating mode

1. By pressing the **[STANDBY/RESET]** key (for at least 1 second), the cabinet will be switched to "stand-by". " - - - " appears on the display.
2. By pressing the **[STANDBY/RESET]** key again (for at least 1 second), the cabinet will switch on again and the internal temperature of the cabinet will be displayed. This procedure may last a few seconds.

### 9.2.3.2 Selecting the setpoint

The process of selecting another parameter for setting the setpoint is carried out as follows:

1. By pressing the **[+/-]** key briefly, the current set parameter will appear for approx. 5 seconds (e.g. "A1").
2. By pressing the **[+/-]** key again briefly, the next parameter will be selected, e.g.: "A2"). After running through all the approved parameters, "A1" will be displayed again. The setting will be adopted automatically 5 seconds after the last key has been pressed.

### 9.2.3.3 Selecting the bus address

Before making the allocation, the cabinets must be networked with a corresponding cable. A terminator must be fitted for the last participant. The controllers are supplied with the bus address as "1" (the equivalent of a "stand-alone" cabinet) as standard.

In order to be able to identify multiple cabinets in the bus system, the bus addresses must be allocated starting with the number one.

We then recommend that the addresses are input according to the actual wiring sequence. A maximum of 247 addresses can be input.

**NOTE**  
**The bus address must not be allocated twice!**

#### Procedure for allocating addresses:

1. Press the **[STANDBY/RESET]** key for at least 1 second. " - - - " will appear on the display. The cabinet is now switched off.
2. The **[+/-]** key must then be pressed immediately three times in succession within 1.5 seconds. The "Adr." display changes every second with the address number "1".
3. If the **[+/-]** key is pressed briefly, the next bus address can be allocated.

#### Briefly pressing the **[+/-]** key:

Single jump to the next highest bus address.

#### Prolonged pressing of the **[+/-]** key:

Quick run-through of the loop from "1" to the maximum address "247".

4. After 5 seconds, the value will be assumed and " - - - " will appear again on the display. The controller must now be switched on again by pressing the **[STANDBY/RESET]** key.
5. Allocate the address in the same way as in points 1 to 4 for the subsequent cabinets and in doing so always set the next free address.

### 9.2.3.4 Defrosting **(AD)**

The semi-automatic defrosting **(AD)** is scheduled twice a week and starts between 12:00 pm and 2:00 am.

The semi-automatic defrosting can also be initiated manually if required. However, after every defrosting (whether initiated manually or using the controller), the semi-automatic defrosting is blocked for 24 hours.

In order to initiate the defrosting manually, the **[MAN. DEFROST/SET]** key must be pressed briefly. If the display does not react, the 24-hour block is active. If "DEF" appears on the display, the defrosting has been initiated.

It takes approx. 10 minutes for the ice on the interior container wall to start melting from the top. After the defrosting cycle has been completed (taking between 40 to 75 minutes depending on the factory setting), the cabinet returns to normal operation. After the cycle has been completed, the display changes from "DEF" to the temperature display.

### 9.2.3.5 Alarm treatment and acknowledgement

A alarm is displayed alternately with the temperature through an error code (flashing display). There is also the option of outputting an acoustic signal through an additional buzzer that has been installed.

1. By pressing the **[STANDBY/RESET]** key briefly, the error code and the associated acoustic alarm will be acknowledged (if connected). However, a red dot remains in the bottom left-hand corner of the display in front of the alarm symbol (horn).
2. The error code can be accessed again by briefly pressing the **[STANDBY/RESET]** key.

**NOTE**  
**If there is no alarm present, the cabinet is switched off by briefly pressing the **[STANDBY]** key ("Stand-by" display " - - - ")!**


**ATTENTION:**  
**Do not forget to switch on the cabinet again immediately after this by pressing the **[STANDBY/RESET]** key again. The interior temperature is then displayed again!**

Error code*)	Meaning
F1, F2, F4	Sensor failure (Floor = 1, Air = 2, Evaporator sensor = 4)
A90	Clock battery empty
E20	Temperature alarm – too high
E21	Rise in temperature at F4
E43	Temperature alarm – too low
E60	Temperature alarm – in cooling-down phases
E70	Electronic fault
E75	Rise in temperature of electronics
E80	Compressor fault
E92	Compressor fault due to E75
Err	MMI (no communication with the system)
tst	Electronics in test mode

\*) Error code is flashing alternately with the temperature value!

## 10. LOADING

The internal temperature must be monitored 4-5 hours after the cabinet is commissioned.



**CAUTION**

Loading cabinets into the frozen food section may cause frostbite to the hands! It is therefore absolutely imperative you use protective gloves!

Cabinets must only be loaded up to the load limit marking attached to the interior of the cabinet (see Fig. 11).



Fig. 11: Symbol for load limit marking

The set product storage temperature can no longer be guaranteed once the load limit marking is exceeded.

The upper load limit marking must be applied to the (U) cabinet series for the frozen food section and the lower load limit marking for the meat mode.

In the case of cabinets with semi-automatic defrosting, we recommend that products are only stored between the hours of 8:00 am and 8:00 pm, in order to ensure that product quality remains consistently high.

**NOTE**

Please wait until the required product storage temperature has been reached before storing products inside!

## 11. WARNING SYSTEM

The cabinets can be optionally equipped with a plug connection for establishing a connection to an external warning system. This is located on the rear of the cabinets.

The potential-free contacts can be loaded with a safety extra-low voltage of max. 24V/2A. If the permissible deviation from the adjusted setpoint temperature is exceeded (i.e. if it is warmer), the contact pair 3 and 5 will close and the contact pair 3 and 6 will open.

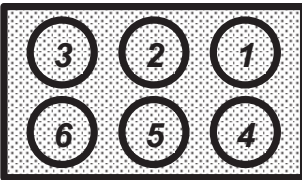


Fig. 12: Connection pin assignment of the socket for the warning system (View of the rear of the cabinet)

**NOTE**

An appropriate plug is available as an accessory from the AHT sales department. You can obtain further information on additional remote monitoring options from your AHT sales team!

## 12. MAINTENANCE, DEFROSTING, CLEANING

### 12.1 Maintenance

The cabinets are generally maintenance-free. However, as described in the subsequent chapters, they must be defrosted and cleaned.

### 12.2 Defrosting

- ➔ A significant build-up of ice on the interior container may lead to a reduction in performance and a differing temperature being displayed.
- ➔ Depending on the build-up of frost on the interior container, the layer of frost must be defrosted from time to time (from experience several times a year) if the front is more than approx. 10 mm thick.

- ➔ **Only applicable for cabinets without (AD):**  
The frost build-up (build-up of ice) is mainly dependent on the ambient conditions at the installation point (atmospheric humidity) and the handling of the cabinet (regular opening or lid left open). Thin layers of frost should be scraped off using the plastic ice scraper that has been provided!
- ➔ We recommend combining the complete defrosting with the cleaning procedure!
- ➔ In the case of cabinets with electronic control that are connected using a bus, do not disconnect the device from the power supply! When defrosting, do not pull the mains plug of the cabinet! An unplugged cabinet always leads to a fault in the entire bus system!
- ➔ Do not scrape off or chip off the layer of ice and frost with sharp objects or tools! Risk of damaging the interior walls!
- ➔ The semi-automatic defrosting can be inactive for **AD** cabinets which are operated in the positive range. These cabinets must be defrosted manually if required!
- ➔ In addition to the semi-automatic defrosting **(AD)** we recommend defrosting and cleaning the cabinet completely 1-2 times a year for hygiene reasons!
- ➔ After each change-over of the operating mode of **(U)** cabinets, excess condensation may form which causes the condensation tray in the cabinet to overflow. The **(U)** cabinet must therefore be defrosted completely manually before the change-over of these operating modes and then cleaned (see the procedure in chapter 12.2 and 12.3)!
- ➔ Please note that semi-automatic defrosting **(AD)** is not permitted for **(U)** cabinets in "(s) meat mode" for legal reasons (temperature tolerance of fresh meat -1° to +2°) and is therefore not possible. Exception: Specially configured AD cabinets which can be operated in the positive and (S) range. A manual defrosting procedure must therefore be undertaken at suitable intervals! The climatic conditions in the store and the time intervals between the manual defrosting cycles may result in a variable amount of ice build-up, which to a certain extent can no longer be completely caught in the condensation container. It is therefore necessary to close the condensation opening in the condensation channel, e.g. with a soft cloth or plug, beforehand and then defrost the cabinet completely manually! Only remove this cloth or plug once the condensation that has accrued inside the cabinet has been completely removed and the cabinet has been wiped dry!



**WARNING**  
**RISK OF IGNITION FROM SPARKS!**

**As a result of potential leaks in the refrigeration system of the R290 refrigerant, the sparks of a vacuum cleaner or another electrical device may cause the mixture of gas and air that may form to ignite accidentally!**

- ➔ Either remove the condensation from R290 cabinets with a dry towel or sponge ...
- ➔ or only use wet vacuum cleaners or electrical devices in the product space that are explosion protected in line with the ATEX directive 94/9/EC currently applicable in the EU!

The following table shows a step-by-step guide to the complete refrigeration process with a mechanical or electronic controller:

<b>Carrying out a complete defrosting procedure</b>	
<b>MECHANICAL CONTROLLER</b>	<b>ELECTRONIC CONTROLLER</b>
1. Relocating a product to other cabinets!	
2. Switch off the cabinet using <b>DEFROST</b> - by pressing the key Press green indicator disappears!	[ <b>STANDBY</b> ] or [ <b>STANDBY/RESET</b> ] lamp – Display "- - -" appears
3. Open or remove the lid so that the cabinet can defrost more effectively!	
4. Remove all loose installation and accessory parts (air ducts, floor grids, product grilles, etc.)!	
5. Remove condensation. Either with a wet vacuum cleaner ( <b>CAUTION: Adhere to the warning for the R290!</b> ) or by drying it up using a cloth or sponge. There is also the option of having a drain with a plastic plug (see <b>Fig. 13</b> ) for condensation in the base trough: In this case, place the collecting tray below the drain beforehand!	
6. Wipe the cabinet dry and clean the interior!	
7. Close the condensation drain again if there is one in place!	
8. Reintegrate the installation and accessory parts that have been removed beforehand!	
9. Reposition the lid correctly and close it!	

- |                                                                                                                                                                              |                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <p>10. Switching on the cabinet by pressing the <b>[DEFROST]</b> key<br/>Green indicator lamp lights up again!</p>                                                           | <p>Switching on by pressing the <b>[STANDBY]</b> or <b>[STANDBY/RESET]</b>-Button – Display shows Temperature-Actual value!</p> |
| <hr/>                                                                                                                                                                        |                                                                                                                                 |
| <p>11. Defrosting is complete! (Actual value cabinet display is active!)</p>                                                                                                 |                                                                                                                                 |
| <hr/>                                                                                                                                                                        |                                                                                                                                 |
| <p>12. Monitor the interior temperature until the required value (adjustment period: 4-5 hours for minced meat and 1-2 hours for all other products) is displayed again!</p> |                                                                                                                                 |
| <hr/>                                                                                                                                                                        |                                                                                                                                 |
| <p>13. Product can be stored again!</p>                                                                                                                                      |                                                                                                                                 |



**Fig. 13:** Plastic plug for condensation drain (the plug seals the tank from the inside)

**(AD)**

Cabinets with the marking **(AD)** are equipped with semi-automatic defrosting. These cabinets automatically defrost the ice that has built up during operation twice a week during the night-time hours. The defrosting times are pre-set in the controller.

The condensation that accrues is led via a drainage channel from the cabinet interior to the machinery space and evaporated. Despite the fact that the cabinet has a semi-automatic defrosting procedure, a small amount of ice may form above the drainage channel which must be removed manually.

The AD cabinets have a real-time clock that ensures the defrosting procedure starts at the right time during the night-time hours.

**NOTES (AD)**

- **The start time of the semi-automatic defrosting is pre-set at the AHT factory. If the cabinets are not put into operation for more than 6 months, it may be necessary to reset the clock. This is evident from the fact that the cabinets launch a semi-automatic defrosting procedure during business hours.**
- **If you notice that your cabinet is defrosting during business hours ("dFr." or "DEF" on the display), please call the AHT customer service team who will correctly reset the time on the controller!**

- **Ice build-up caused by potential leaks in the defrosting channel does not have a negative impact on the operation of the cabinet!**
- **If water appears under the cabinet after a semi-automatic defrosting procedure, the condensation tray must be monitored for leaks by the AHT service partner!**
- **The product will not be damaged during the semi-automatic defrosting procedure! The temperatures stipulated by the standard are not exceeded!**
- **The semi-automatic defrosting can also be initiated manually if required with all AD cabinets. You can find notes for this in the description of the temperature controller.**

**12.3 Cleaning**



**WARNING**  
**RISK CAUSED BY ELECTRIC SHOCK AND REFRIGERANT LEAKAGE!**

**The hot steam of a steam cleaner and the high water pressure of a high pressure cleaner may destroy electrical insulation and electronic devices and damage the refrigeration cycle.**

➔ Do not use any steam or high pressure cleaners for cleaning!



**CAUTION**  
**RISK OF INJURY DUE TO SHARP EDGES!**

**Sharp edges on the cabinet may cause cuts to the hands.**

➔ It is absolutely imperative for you to wear protective gloves!



**NOTES**

- In order to prevent the cabinet being damaged, please do not use any abrasive, chemically aggressive or flammable cleaning agents for cleaning!
- AHT recommends cleaning the cabinet surfaces using a clean cloth moistened with water or cleaning with slightly alkaline cleaning agents (e.g. neutral soap and water) for large amounts of dirt!
- Glass panels can be cleaned using ordinary window cleaning agents. However, contact with plastic surfaces should be avoided!
- A special lubricant is located in the sliding frame. In order to maintain the enhanced sliding property of the lid, you should remove the dirt and dust from the frame every now and then!
- The lubricant can be restored by using a lubricant pen that can be obtained as an accessory from AHT!
- Do not scrape off or chip off the layer of ice or frost with sharp objects or tools! There is a risk of damage to the interior walls and the defrosting channel!
- **(AD)** There is a drainage channel on the interior container of the cabinet for the condensation that accrues during the semi-automatic defrosting procedure. Any form of dirt must always be removed from this drainage channel!

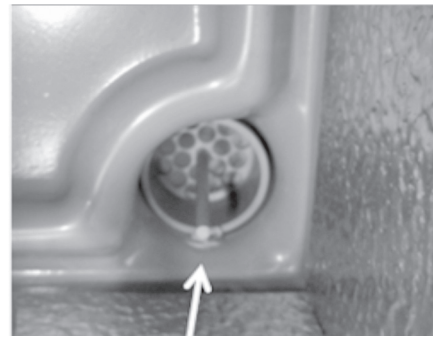


Fig. 14: Condensation drain with condensation strainer (AD)

8. Dry the condensation with a dry cloth or sponge.
9. Impact and water protective strips can be cleaned with an ordinary alkaline cleaning agent if they become heavily soiled.
10. The strip must be removed with a Torx screwdriver in order to be able to clean the rear of the water protective strip.
11. Wipe all cleaned parts and the cabinet dry with a dry, clean cloth.
12. Apply new lubricant to the guiding rails using a lubricant pin. This lubricant pin is available as an accessory from the AHT sales department.
13. Close the lid correctly again.
14. Switch on or plug in the cabinet again.
15. Let the cabinet cool down until the product has reached the required interior temperature again.
16. Then reposition the product in the storage position.

**The cleaning procedure is carried out as follows:**

1. Relocate the product to other cabinets!
2. Switch the cabinet to "STANDBY" (OFF) and allow the cabinet to defrost.
3. Remove the glass lid and clean it with an ordinary window cleaning fluid and a soft cloth.
4. Clean the lid guide rails with a damp cloth.
5. Remove all grilles and floor ducts from the cabinet and wipe with a moist cloth.
6. Clean the defrosting channel with a wet sponge or cloth and remove the dirt particles.
7. In order to prevent the condensation drain (Fig. 13) of AD cabinets from becoming blocked, the condensation strainer must also be (Fig. 14) cleaned on a regular basis. The condensation strainer is available as a plastic or stainless steel model.

**12.4 Glass cleaning**

**12.4.1 Non-coated glass surfaces**

**Time of cleaning:**

The exterior (not facing the chiller cabinet) and non-coated glass surfaces can also be cleaned while the cabinets are in operation.

**NOTE**

**Please ensure that vast quantities of water and cleaning agent are not applied to the glass surfaces to be cleaned and that the cleaned surface is then dried thoroughly again!**

**Cleaning agents:**

- ➔ Use clean water and/or neutral or slightly alkaline cleaning agents for slight soiling.

- ➔ Glass cleaner with an almost neutral pH (pH of 5 to 7 is recommended) can be used for heavy soiling.
- ➔ Abrasive or chemically aggressive cleaning agents or cleaning agents with a strongly acidic pH value (below 4) or highly alkaline pH value (above 8) must not be used.
- ➔ Please ensure that no residue from the cleaning agent remains on the plastic surfaces of the glass enclosure or seals after cleaning. This residue may destroy the surface over time and reduce its functional capability. After cleaning the glass, these areas must be cleaned with clean water and suitable cleaning appliances and then dried thoroughly.

**Cleaning appliances:**

**NOTE**  
**The cleaning appliances and the water used for the cleaning procedure must be clean before cleaning the glass!**

**The following cleaning appliances are recommended:**

- ➔ Soft cotton cloth
- ➔ Soft and highly absorbent sponge cloth (e.g. products from VILEDA)
- ➔ Glass squeegee (wiper with rubber lip) or a soft, dry cotton cloth for wiping surfaces dry

**The following cleaning appliances should generally not be used for cleaning glass:**

- ➔ Microfibre cloth (not recommended due to the aggressive surface)
- ➔ Hard or sharp metal objects (e.g. glass plane, glass blade, steel wool, etc.) which destroy the sensitive glass surface or coatings
- ➔ Steam cleaner or high-pressure cleaner. As a result of the high temperatures or pressures prevalent here, glass surfaces are destroyed by glass corrosion along with the surfaces of plastic enclosures and seals.

**12.4.2 Coated glass surfaces**

The following points must be adhered to for coated, interior glass surfaces with high heat reflectivity and low emissivity (Low-E):

**Time of cleaning:**

The cabinet may only be cleaned either in a completely deactivated state or at least in defrost mode (cooling temporarily unavailable).

**NOTE**  
**These interior coated glass surfaces facing the cold side must not be cleaned while the cabinets are in low-temperature mode! There is a risk here of the freezer cabinet icing up!**

**Cleaning agents:**

The sensitive surface layers may only be cleaned with a cotton cloth that is completely clean and lightly moistened with pH neutral water!

**NOTE**  
**The use of any glass cleaners or other cleaning agents available in stores is not permitted as they destroy the sensitive coating!**

**Cleaning appliance:**



Only a soft and completely clean cotton cloth may be used to clean the coated glass surface!

**NOTE**  
**The use of abrasive microfibre cloths, glass squeegees (wiper with rubber lips) and absorbent sponge cloths or sponges is prohibited for cleaning sensitive coatings!**

**13. INTERIOR LIGHTING**

**13.1 Cabinet with luminescent lamps**

**NOTE**  
**Only specialist personnel trained in electrical technology are allowed to change the luminescent lamps!**

**CAUTION**  
**RISK OF INJURY CAUSED BY FRAGMENTS OF GLASS!**

**Glass parts and fragments of glass from broken fluorescent lamps may cause cuts to the hands.**

➔ It is imperative for you to wear protective gloves when removing the shades of glass!

**The following procedure must be taken when changing the fluorescent lamp**

1. Either unplug the separate light cable (variation 1) or unplug the combined cabinet/light cable (variation 2) and safeguard the cable against unintentional start-up.

**NOTE**  
**The refrigeration procedure is interrupted in the event that the combined cabinet/light cable (variation 2) is unplugged. It is therefore necessary to make the switch rapidly!**

2. Detach and pull out the lamp cover (transparent part) by pressing the housing together slightly (see Fig. 15).

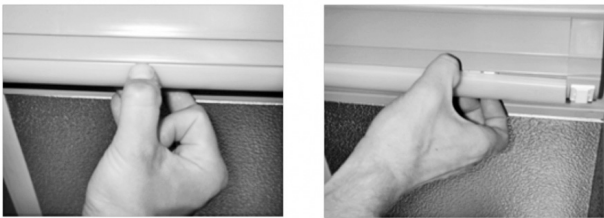


Fig. 15: Lamp cover

3. Remove the faulty fluorescent lamp and dispose of it in the correct manner.



**CAUTION**

**Remove fragments of glass from the cabinet and remove any damaged products completely!**

4. Use a new special fluorescent lamp of the same type in line with the information on the rating plate. This lamp can be obtained from AHT customer services.
5. Reattach the lamp cover securely.
6. Plug in the separate light cable (variant 1) or the combined cabinet/light cable (variant 2) again.

**Description of the fluorescent lamps:**

AHT uses two different luminous colours for lighting up the stored product in the best way possible:

**Luminous colour 840:** For frozen products

**Luminous colour 076:** For meat products

Further information on the fluorescent lamp can be found on the rating plate.

**13.2 Cabinet with LED bars**

**NOTE**  
**Only the authorised AHT customer service team are allowed to change the LED bars!**

**14. PROLONGED DECOMMISSIONING OF THE CABINET**

If the cabinet is decommissioned for an extended period of time, the following procedure should be taken:

1. Remove all products.
2. Switch off the cabinet. In the case of a mechanical controller, the cabinet can simply be unplugged. In the case of an electronic temperature controller, the cabinet must be removed from the bus system beforehand (contact the bus system administrator!)

**NOTE**  
**Please note that removing the mains plug of cabinets with an electronic temperature controller results in faults to the bus system!**

3. Open the lid and adjust the cabinet to room temperature. The cabinet can then be cleaned.
4. Leave the lid slightly ajar (approx. 2-3 cm). The ventilation prevents the formation of odours and spores in the interior.

**NOTE**  
**The cabinet must not be exposed to direct sunlight when the lid is open! The cabinet may be damaged by high internal temperatures!**

**15. DISPOSAL**



**CAUTION**



**Dispose of the cabinet properly in accordance with the applicable national disposal provisions (e.g. WEEE within the EU) and the provisions of the local disposal partner!**

- ➔ Please pay particular attention to ensuring that the refrigerant and the heat insulation material (polyurethane foam with pentane) are disposed of in a secure and environmentally friendly manner!
- ➔ Please ensure that the tubes in the cabinet are not damaged when being disposed of!

## 16. ACCESSORIES

There are a number of specific accessory parts available for the cabinets, such as e.g.:

- Lighting attachments
- Partitions, adjustable racks
- Impact and water protective strips
- Accessories for bus cables

Please contact your AHT sales partner for more information!

## 17. WHAT TO DO IF ...



### **WARNING** **RISK OF ELECTRIC SHOCK AND IGNITION OF COMBUSTIBLE REFRIGERANTS!**

**Untrained and unauthorised personnel are not allowed to carry out work on the electrical and refrigeration system!**

- ➔ Only authorised AHT customer service personnel are allowed to carry out work on the electrical and refrigeration system!

The cabinet was checked carefully at the AHT test centre in terms of its performance and safety aspects.

**If a fault occurs in spite of this, please check the following first of all:**

- Is the power supply plugged in?
- Is there voltage in the socket?
- Does the green network indicator light light up on the operating panel for cabinets with a mechanical temperature controller?
- Is the display active for cabinets with an electronic temperature controller?
- Has the "STANDBY/RESET" key been pressed on the cabinet?**If the internal temperature is too warm:**
- Were the lids open for a long time?
- Were warm products stored inside by mistake?
- Has there been power outage for an extended period of time?

### **NOTE**

**If the reason for the fault is not one of the aforementioned causes, please call the AHT customer service team and inform them of the serial number of the cabinet (see rating plate) and the type of fault!**

An error message may appear on the display for cabinets with an electronic temperature controller. This is evident with a flashing display or a red dot on the left-hand side of the display (see chapter 9.2.2.5 and 9.2.3.5).

### **NOTES**

- **Contact AHT customer services if loud noises and/or extreme vibrations occur with the cabinet!**
- **AHT customer services have all the technical and latest information required for a service (e.g. spare part and equipment lists, circuit diagrams and refrigeration circuit diagrams) at their disposal!**

Please contact the competent member of AHT customer services in your region regarding questions relating to customer services (e.g. service and maintenance, repairs, etc.). If you are not sure who this is, please contact the central AHS customer service team using the following contact address:

**Central**  
**AHT customer services**  
**Tel. +43 3614 / 2451-0**  
**E-mail: [service@aht.at](mailto:service@aht.at)**

## 18. SPARE PART DRAWINGS AND LISTS

The authorised AHT service partners are in possession of these documents.

## 19. CIRCUIT DIAGRAMS

The authorised AHT service partners are in possession of these documents.

**APPENDIX A:  
TABLE OF FUNCTIONS OF ELECTRONIC CONTROLLER TYPE ER 1**

Key symbol comparison between display type A and display type B

 is equivalent to **[+]**                       is equivalent to **[-]**

 is equivalent to **[MAN.DEFROST/SET]**                       is equivalent to **[STANDBY]**

	<b>FUNCTION</b>	<b>OPERATING SEQUENCE</b>	<b>DISPLAY (EXAMPLE)</b>
<b>SETPOINT</b>	Display the currently set setpoint	<b>[+]</b> OR <b>[-]</b>	<b>"StP" ↔ "A1"</b> (current setpoint)
	Display the next enabled setpoint	<b>[+]</b> , <b>[+]</b> ,... (n times) OR <b>[-]</b> , <b>[-]</b> ,... (n times)	<b>"A2"</b> , <b>"A3"</b> ,... ↑ (counting up)  <b>"A3"</b> , <b>"A2"</b> ,... ↓ (counting down)
	Assume setpoint	Wait for <.....t=10 sec.....>	Temperature/Actual value
<b>MODE</b>	Change to stand-by mode	<b>[STANDBY]</b> For at least <t=1s>	<b>"- - -"</b> (Display stand-by mode)
	Change to operating mode	<b>[STANDBY]</b> For at least <t=1s>	Temperature/Actual value
<b>ADDRESSES</b>	Access address menu and display address	<b>[+]</b> and <b>[-]</b> simultaneously for at least <t=5s>	<b>"Address" ↔ "00"</b> (e.g. set bus address)
	Change bus address	<b>[+]</b> ...for at least <t=0.5s> <b>[-]</b> ...for at least <t=0.5s>	<b>"Address" ↑</b> (counting up), e.g. <b>"00" → "01"</b> <b>"Address" ↓</b> (counting down), e.g. <b>"01" → "00"</b>
	Transfer bus address and leave address menu	Wait for <.....t=10 sec.....>	Temperature/Actual value
<b>ALARM</b>	Acknowledge (RESET) an alarm	<b>Not possible!</b>	Error code disappears automatically after 10 minutes and a flashing <b>"•"</b> appears in front of the temperature/actual value (The error code is displayed again for a few minutes every full hour)
	Trigger an alarm	<b>[STANDBY]</b>	<u>Before accessing a signal:</u> Flashing <b>"•"</b> in front of temperature/actual value <u>After accessing a signal:</u> Error code, e.g. <b>"F1" ↔</b> Temperature/Actual value OR in the event of a temperature rise: Temperature/Actual value flashes
<b>DEFROST</b>	Manual start of the defrosting cycle (only for <b>(AD)</b> ) <b>INFORMATION:</b> The key function is inactive for cabinets without <b>(AD)</b> !	<b>[MAN.DEFROST] →</b> Manual start of the defrosting cycle <t=40–70 min> (cycle time pre-set at the factory) <b>INFORMATION:</b> If <b>[MAN.DEFROST/SET]</b> is pressed during the active defrost blockage, <b>"- - -"</b> appears briefly and then the Temperature/Actual value appears on the display again!	<b>"- d -"</b> for <t=2s> <b>"dFr."</b> for<t=30 min> → Temperature/Actual value AND Defrost blockage for <t=24h>

**APPENDIX B:  
TABLE OF FUNCTIONS OF ELECTRONIC CONTROLLER TYPE ER 2**

	<b>FUNCTION</b>	<b>OPERATING SEQUENCE</b>	<b>DISPLAY (EXAMPLE)</b>
<b>SETPOINT</b>	Display the currently set set-point	[+/-]	"A1" (Display for t=5 seconds)
	Display the next enabled set-point	[+/-], [+/-],... (n times)	"A2", "A3",... ↑ (counting up)
	Assume setpoint	Wait for <.....t=5 sec.....>	Temperature/Actual value or "..."
<b>MODE</b>	Change to stand-by mode	[STANDBY/RESET] For at least <t=1s>	"..." (Display stand-by mode)
	Change to operating mode	[STANDBY/RESET] For at least <t=1s>	Temperature/Actual value
<b>ADDRESSES</b>	Access address menu	[STANDBY/RESET] For at least <t=1s>	"..."
	Display addresses (Press [STANDBY/RESET])	[+/-], [+/-], [+/-] < t=1.5 sec > CAUTION: Press 3 times briefly immediately afterwards [+/-] within 1.5 s)	"Address" ↔ "01" (Display changes every 1-second)
	Allocate next free address	[+/-], [+/-],... (n times) Leave [+/-] open for quick run-through	"Address" ↔ "02", "03",... ↑ (Selects next free address. 1–247 possible)
	Assign address	Wait for <.....t=5 sec.....>	"..."
	Leave address menu	[STANDBY/RESET] For at least <t=1s>	Temperature/Actual value
<b>ALARM</b>	Acknowledge (RESET) an alarm	[STANDBY/RESET]	Before RESET: Error code display, e.g. "E80" ↔ alternates with: Temperature/Actual value display AND "•" Alarm symbol After RESET: Temperature/Actual value display AND "•" Alarm symbol
	Trigger an alarm	[STANDBY/RESET]	Before triggering an alarm: Temperature/Actual value display AND "•" Alarm symbol After triggering an alarm: Display error code, e.g. "E80" ↔ Temperature/Actual value AND "•" Alarm symbol
<b>DEFROST</b>	Manual start of the defrosting cycle (only for (AD)) <b>INFORMATION:</b> The key function is inactive for cabinets without AD!	[MAN.DEFROST] → Manual start of the defrosting cycle <t=40–70 min> (adjustable cycle time)	"DEF" <t=40–70 min> → Waiting... <t=30 min> → Temperature/Actual value AND Defrost blockage for <t=24h>

**CONFORMITY DECLARATION****EN****THE MANUFACTURER**

AHT Cooling Systems GmbH  
Werksgasse 57  
A-8786 Rottenmann, Austria

hereby declares that the model types of the series "**SUPERMARKET CABINETS**" it has delivered corresponds with the current provisions of **EU directives 2006/42/EC (machinery)** and **2004/108/EC (EMC)**.

The model type list for the series can be found on page 1. The serial numbers, important technical data and stamp are indicated on the rating plate of each individual cabinet.

Harmonised standards applied for EU directive 2006/42/EC:

**EN ISO 12100; EN 60335-1; EN 378-2**

Harmonised standards applied for EU directive 2008/104/EC:

**EN 55014-1; EN 55014-2; EN 55015; EN 61000-3-2; EN 61000-3-3; EN 61000-3-11**

Other standards applied to the construction procedure and the construction of products:

**EN 378-1; EN ISO 23953-1; EN ISO 23953-2; EN 60079-15 (only for R290 cabinets); EN 60335-2-89; EN 62233**

In the event that a technical modification is made to the aforementioned model types from this series that is not agreed with us, this declaration becomes invalid.

**CE AUTHORISED REPRESENTATIVE:**

Dipl. Ing. Reinhold Resch  
AHT Cooling Systems GmbH  
Werksgasse 57, A-8786 Rottenmann



Bereichsleiter Entwicklung  
Head of Research and Development

Responsable recherche et développement

Rottenmann, 25 August 2013

**AHT Cooling Systems GmbH**

8786 Rottenmann · Werksgasse 57 · Austria  
T +43 3614 2451 0 · Fax +43 3614 2451 8 · Email office@aht.at

**AHT Cooling Systems Brasil Ltda.**

Rua Onorio Bortolato, nº 1065 · 88375-000 Navegantes – SC · Brasil  
T +55 (0) 11 4702 / 30 99 · Email info@br.aht.at

**AHT Cooling Systems (Changshu) Co., Ltd.**

215500 Changshu · 88 Yangguang Avenue  
Jiangsu Province · P. R. China  
T +86 512 5236 7100 · Email office@cn.aht.at

www.aht.at