AMK B8R

AIRMASTER
DEHUMIDIFIERS

cdh industries nv

Bedrijfsstraat 14, B-3500 Hasselt
T +32 (0)11 26 95 90 - F +32 (0)11/23 11 76
info@cdh.be - www.cdh.be

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INSTALLATION MANUAL

DUCT UNITS
WITH STANDARD BUILT-IN
8-ROWS WARM WATER HEATING COIL

The dehumidifier
has been designed and produced
to give many years of faultless operation,
but like every mechanical system
a correct installation and
regular maintenance are vital.

Contents

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COMPOSITION

HOUSING

FRAMEWORK

Anodised chamfered aluminium profile and blunted corners.

PANELS

Zinc panels painted in epoxy RAL 7011, internal plates in varnished zinc.
The maintenance panels – behind which the air filters are installed – are fitted with swivel handles, which should be rotated 90° to gain access to the unit. These panels can be fully removed.
All other panels are secured with Parker screws and sanitary washers.
Sound-absorbing and flame extinguishing, 20 mm thick insulation (DIN EN 13 501-1).

IDENTIFICATION LABEL

Each unit bears a self-adhesive identification label on the side panel.
This label mentions besides the type of unit, its serial number and technical data.

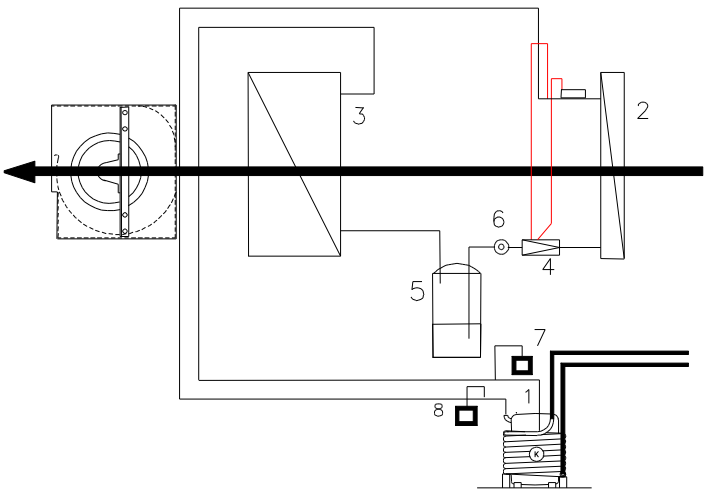
NEVER REMOVE THE IDENTIFICATION LABEL:
THE GUARANTEE WILL EXPIRE.

COOLING CIRCUIT

- Hermetically sealed compressor with R454C, vibration-free fitted and cooled with suction gas
- Evaporator and condenser with copper pipes (3/8") with pressed-on aluminium fins, coated with epoxy varnish
- ABS condensation tray
- Expansion valve with distribution head for several injections.
- Combi-dryer: combination of filter, dryer, liquid reservoir and sight-glass
- High and low pressure thermostat
- Electronic control with shut-off at LP, HP, TC and TF *

* LP = low pressure HP = high pressure TC = thermal contact compressor TF = thermal contact fan

The diagram below shows the composition of the cooling circuit and OPTIONAL swimming pool condenser (K), indicating the different components.



(1) Compressor
(2) Evaporator
(3) Condenser
(4) Expansion valve
(5) Combi dryer
(6) Sight-glass
(7) HP pressure gauge
(8) LP pressure gauge
(K) Swimming pool condenser

SAFETY PRECAUTIONS R454C – A2L

WARNING: LOW FLAMMABLE. THE REFRIGERANT IN THIS UNIT IS LOW FLAMMABLE
WARNING: DO NOT DRILL OR BURN ANY REFRIGERANT CYCLE PARTS.
WARNING: REMEMBER THAT THE REFRIGERANT IN THESE UNITS ARE ODORLESS.

PRACTICAL LIMIT
Any gas in a room will displace oxygen, this also applies to refrigerants. The degree to which the oxygen

is expelled varies per gas. The practical limit indicates how many kg of refrigerant there are per m^3
departure contents may be present. The practical limit of a refrigerant represents less than half of the concentration of a refrigerant in a room which can lead to asphyxiation due to the displacement of oxygen.

Below is an overview of the practical limit of R454C:

Refrigerant	GWP	Safety Class	Practical Limit
R454C	148	A2L	0,059 kg/m^3

When determining the practical limit, it must be assumed that the entire refrigerant content of the system will enter the room in question if, for example, a leak occurs in that room.

If the practical limit cannot be met, additional measures must be taken, such as refrigerant detection, to comply with the standard.

To clarify this, the maximum system filling is determined in the overview below, for example a smaller pool area of 36 m^2 with a height of 2.7 m. Refrigerant Maximum refrigerant charge for a room of 36m^2 (97.2m^3)
R454C = 5.73kg

Coolant content of appliances (without swimming pool condenser option):

Unit	AMK40	AMK65	AMK102M/AMK100	AMK142M/AMK140	AMK202M/200
Coolant Content(kg)	1.05	1,55	2,0	2,3	3.9

IF THE MAXIMUM REFRIGERANT CONTENT IS EXCEEDED, THE CONTRACTOR MUST ADD ADDITIONAL COUNTERMEASURES AS DESCRIBED IN THE APPLICABLE LEGISLATION

FILTERS

One Z dust filter in the suction-side

COMPOSITION

Synthetic fibres stiffed with supporting wire gauze, in a galvanized frame.
Class EU5
Gravimetric efficiency 92 %
Atmospheric efficiency 50-55 %

FILTER DIMENSIONS PER TYPE

Unit type	Filter dimensions
65 → 142M	625 x 447 x 25
…/20	840 x 595 x 22

FANS

EC Radial fan with plastic blade and housing, unilateral connection and backwards curved blade.

Type of unit	Fan	Air flow rate	Supply height	Current
65	K3G250-RE07-07	1000 m³/h	150 Pa	1,41 A
100-92M	K3G280-RR03-H2	1200 m³/h	150 Pa	0,77 A
140-142M		1400 m³/h	150 Pa	0,88 A
…/20	K3G400-RT02-12	2000 m³/h	380 Pa	0,80 A

SWITCHBOARD CABINET

The switchboard cabinet is built inside the unit, behind the side panel.
Completely pre-wired according CE standards.

WEIGHTS

Weights = weights of units with standard built-in 8-row heating coil..
Weight of options are not added.

Type of unit	Weights in kg
40	138
65	142
65/20	174
100/102M	148
100/102M/20	184
140-142M	175
140-142M/20	217
200-202M/20	238

OPTIONS & ACCESSORIES

OPTIONS

REPLACEMENT FILTER

Air filter to replace soiled or worn filter

TRANSITION PARTS ☐ NAAR ○

The units are standard executed with rectangular branches to be connected to PIT ducts.
When to be connected onto round ducts there are transition parts available.

SOCLE

SET ALU-FEET

OUTDOOR EXECUTION

BUILT-IN THREE-WAY VALVE

SWIMMING POOL CONDENSER

ACCESSORIES

HYGROSTAT

Wall mounted model
Control of the dehumidifier

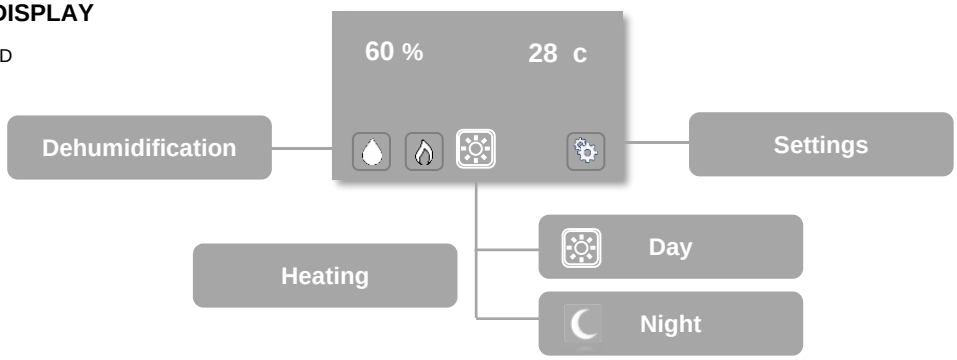
HYGROTHERMOSTAT

Wall mounted model
Control of dehumidifiers with heating

REMOTE DISPLAY

MOUNTED

BUILT-IN



CONDENSATION PUMP

If the air dryer is placed lower than the sewage level.
Synthetic collector tank fitted with float and pump (2 l/min, 3 m lift)

TUBE FAN EC125

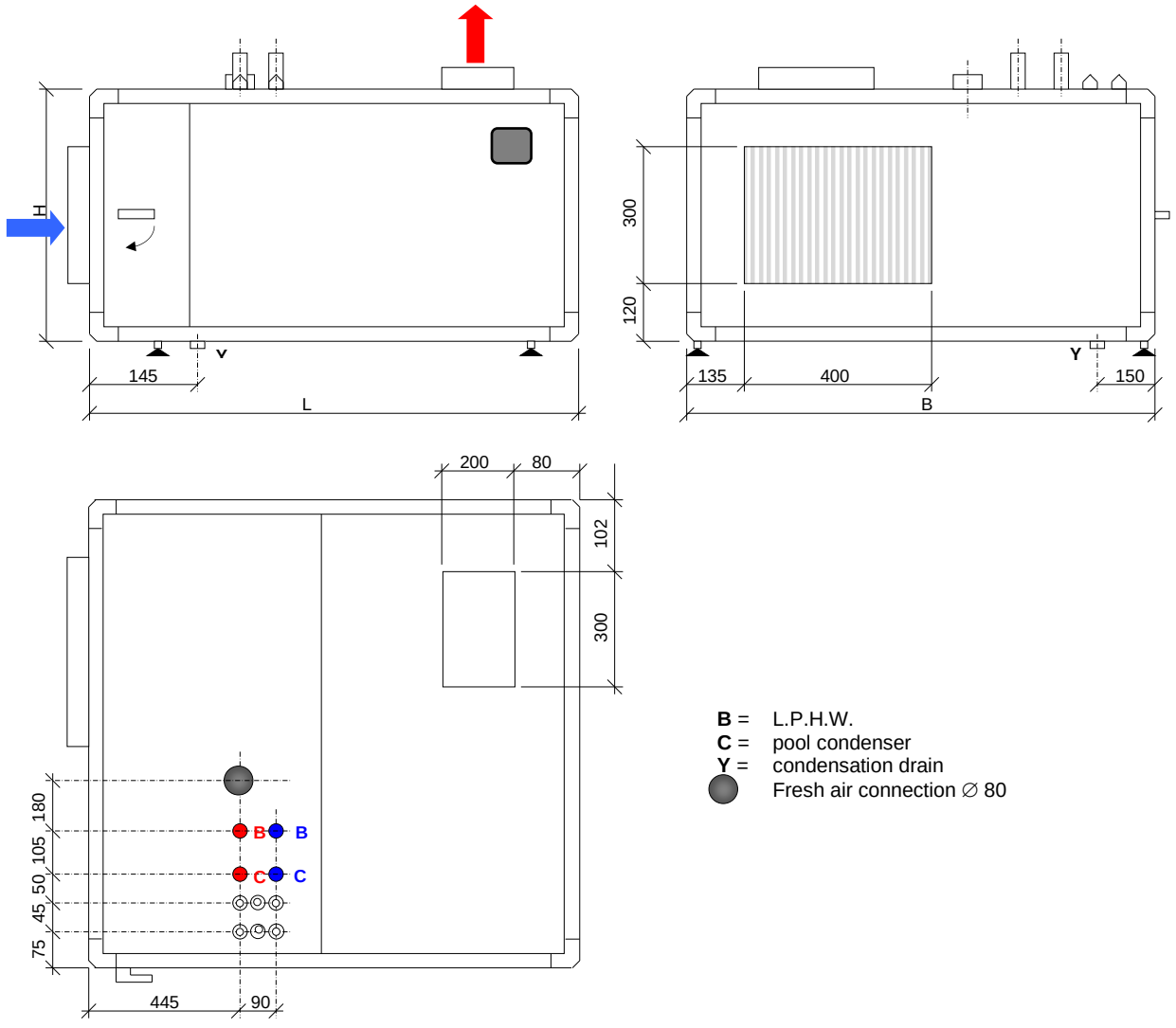
INCLUSIVE CONTROL + GRAVITATION VALVE (*)
(*) *Mechanical valve which will close the tube fan duct automatically when the tube fan is not working.*

To be applied as outlet fan on the suction duct in order to obtain under-pressure in de swimming pool area.
Can only be applied when the fresh air connection is connected.

DIMENSIONS

HORIZONTAL EXECUTION AMKB8R 65 - 142M

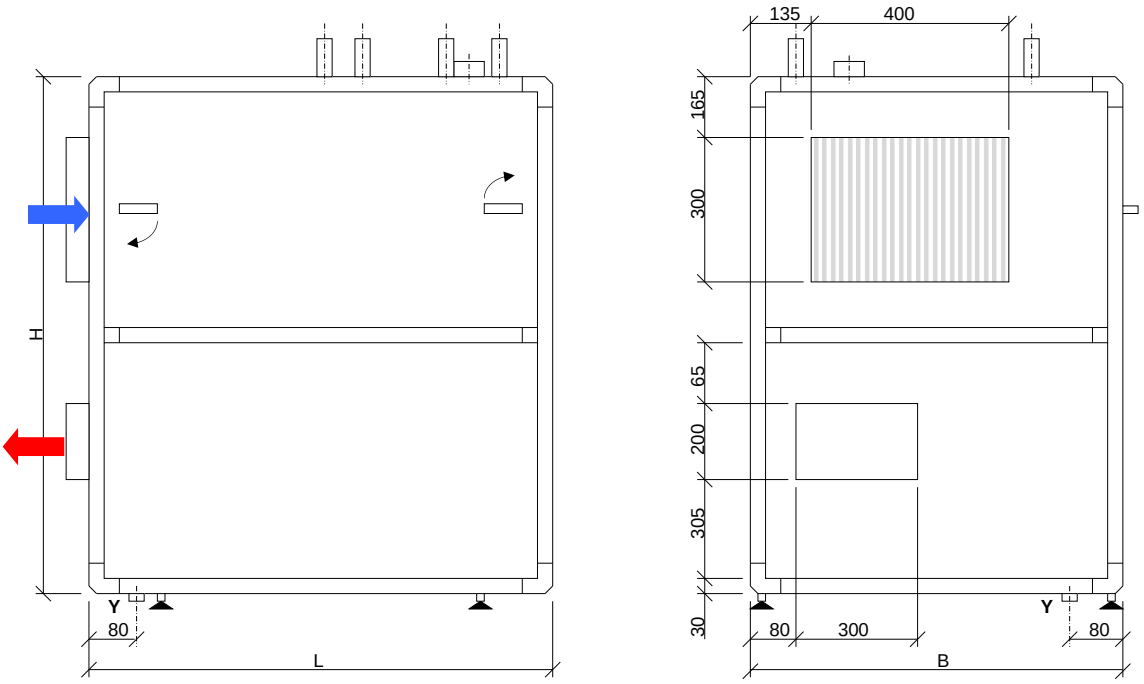
L (mm)	D (mm)	H (mm)	B	C	Y
1160	950	610	1 “ M	½ “ M	∅25

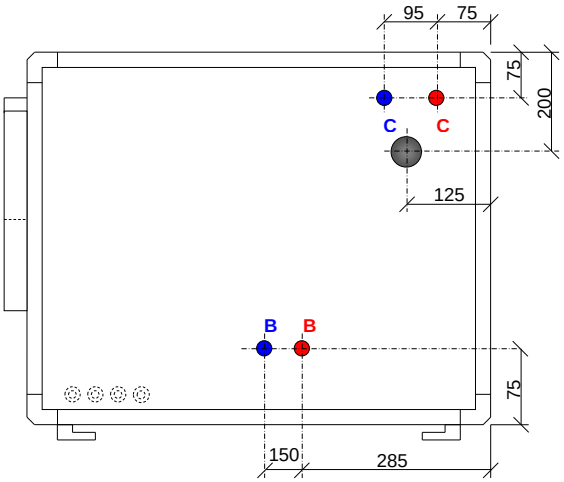


B = L.P.H.W.
C = pool condenser
Y = condensation drain
Fresh air connection ∅ 80

VERTICAL EXECUTION AMKB8R 65-142M “V”

L (mm)	D (mm)	H (mm)	**B**	**C**	**Y**
900	760	1230	1 “ M	½ “ M	∅19



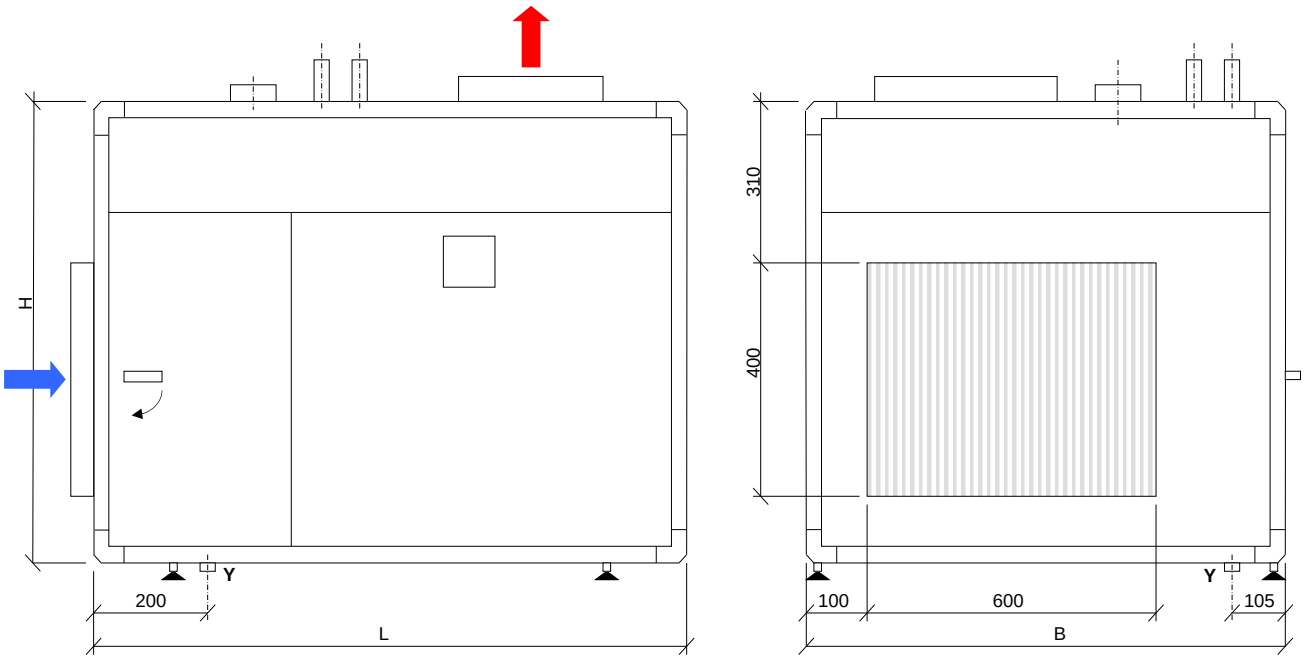


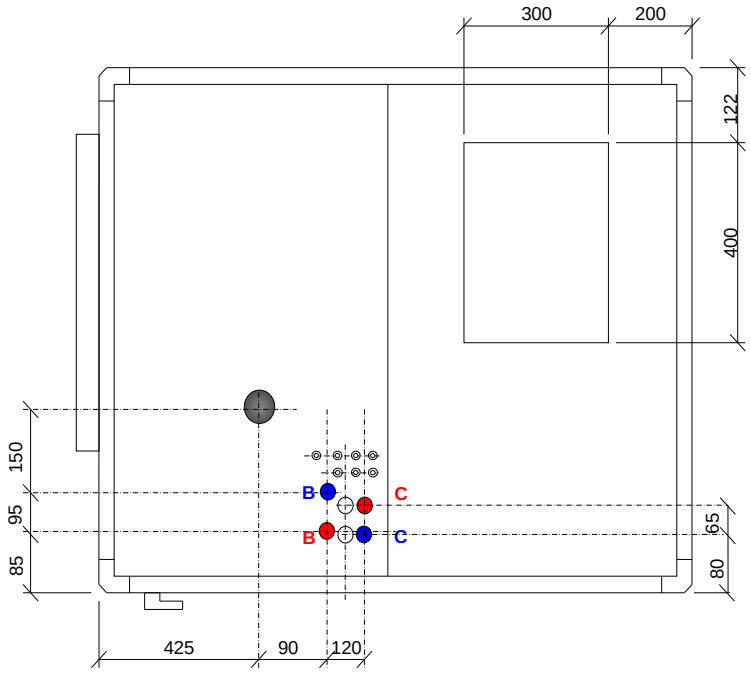
B = L.P.H.W.
C = pool condenser
Y = condensation drain
Fresh air connection ∅ 80

HORIZONTAL EXECUTION AMKB8R …/20

L (mm)	D (mm)	H (mm)	**B**	**C ***	**Y**
1340	950	860	1 ¼ " M	½ " M	∅25

*** C** AMKB8R 200/20 = ¾ " M



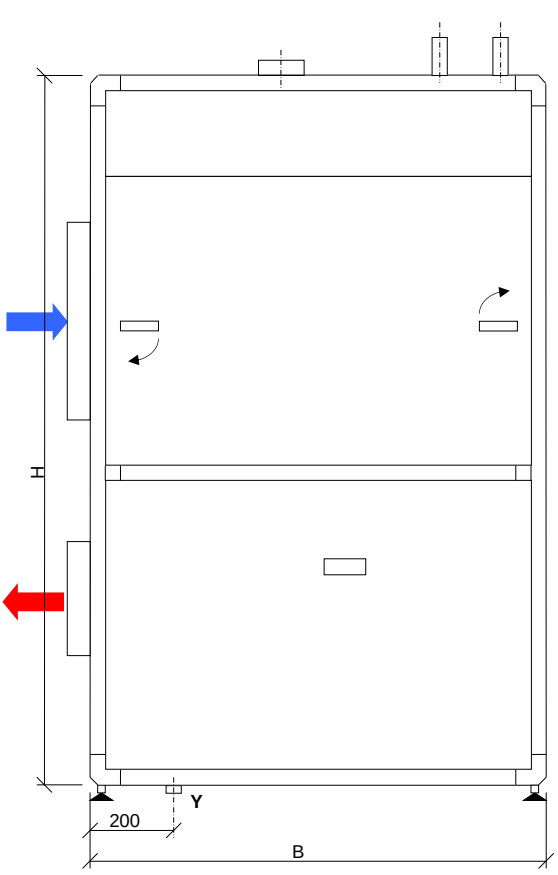


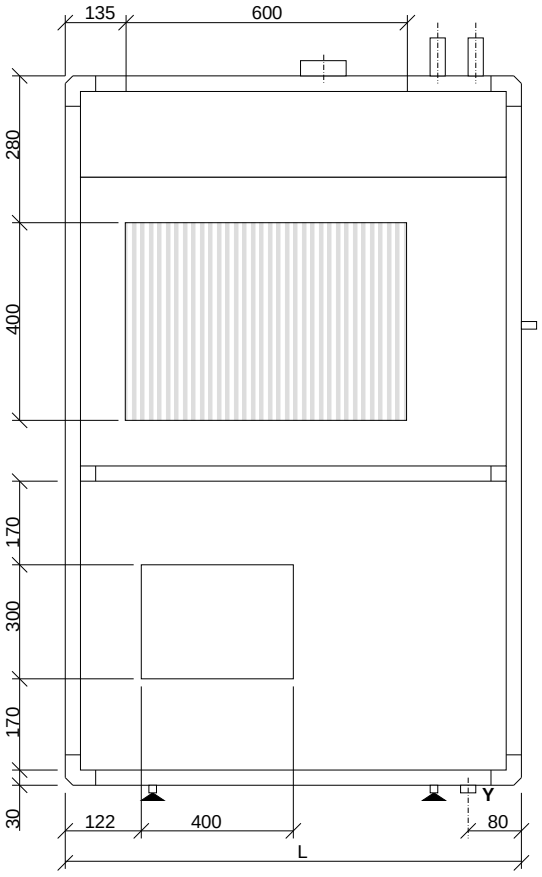
B = L.P.H.W.
C = pool condensor
Y = condensation drain
Fresh air connection ∅ 100

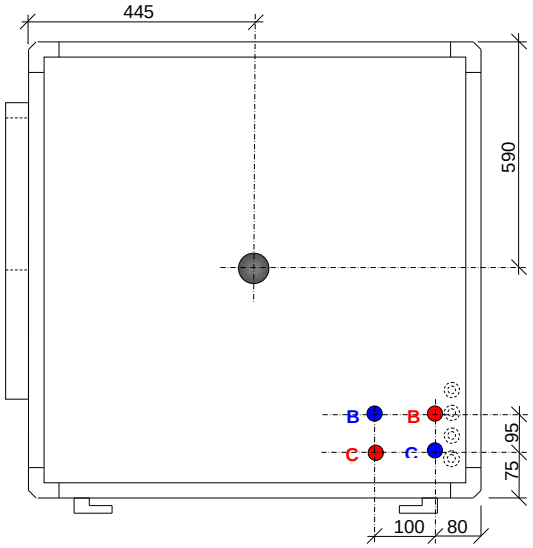
VERTICAL EXECUTION “V” AMKB8R …/20

L (mm)	D (mm)	H (mm)	**B**	**C***	**Y**
950	950	1530	1 ¼ “ M	½ “ M	∅25

*** C** AMK 200/20 V = ¾ “ M







B = L.P.H.W.
C = pool condenser
Y = condensation drain
Fresh air connection ∅ 100

TRANSPORT AND UNPACKING

GENERAL

The units are separately packed in a cardboard box, on one pallet tied with tape.
To prevent damage to the unit, it is recommended that the unit is transported to its final destination **IN** its packing.
When the unit is stored temporarily, it must be stored in a dry place until transport to its final destination

TRANSPORT

Using a forklift is highly recommended.

The units are always supplied on a pallet: please leave this in place until the final destination.

The units should always be transported the right way up. Although under some circumstances they have to be transported flat, e.g. to clear a narrow passage, they should never be placed flat for transport in trucks or for long term storage (> 12 hours).

If the units must be moved in another way, other precautions must be taken to prevent damage to the housing.

IGNORING THESE GUIDELINES CAN CAUSE DAMAGE

UPON RECEIPT OF THE UNIT,
ENSURE THAT NO TRANSPORT DAMAGE HAS OCCURRED.
THE CARRIER MUST BE INFORMED OF ANY DAMAGE IMMEDIATELY IN WRITING

UNPACKING

ALWAYS DETERMINE WHERE THE UNIT IS TO BE INSTALLED.
ENSURE THAT THE UNIT WILL LATER BE EASILY ACCESSIBLE FOR MAINTENANCE
(SEE WORKING SPACE).

When the equipment has reached its final destination, it can be removed from the pallet.
No specific instructions can be given here, as this action depends on the size of the unit and the room.

INSTALLATION DIRECTIONS

POSITION OF SUCTION AND OUTLET

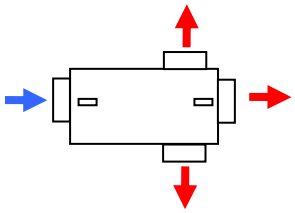
HORIZONTAL EXECUTION

SUCTION
ALWAYS ON THE HEAD. - CAN N E V E R BE DISPLACED

OUTLET
FACTORY ASSEMBLY ALWAYS ON TOP

It is possible to displace the outlet in flow-through with the suction to the right (seen from the air flow direction), or at the bottom. The big advantage here is, that less curves have to be foreseen in the outlet duct, which results in less pressure loss in the duct system.

POSSIBLE POSITIONS IN FRONT VIEW



DISPLACEMENT OF THE SUCTION HAS TO BE EXECUTED BY THE INSTALLER (NEVER FACTORY ASSEMBLED) BY DISPLACING THE FAN PLATE:

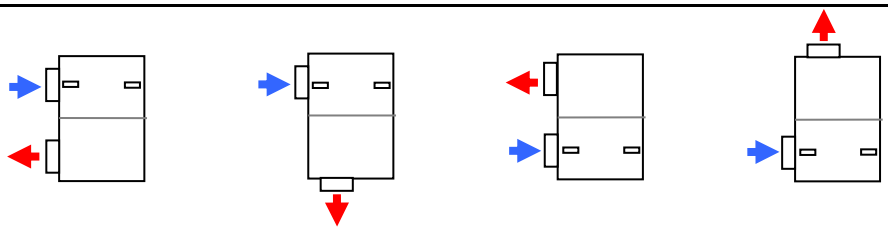
FOR SAFETY: FIRST DISCONNECT THE POWER TO THE UNIT.

VERTICAL EXECUTION "V"

POSITION SUCTION AND OUTLET TO BE COMMUNICATED UPON ORDERING

OUTLET IN FLOW WITH THE INTAKE IS IMPOSSIBLE

POSSIBLE POSITIONS IN FRONT VIEW



GENERAL

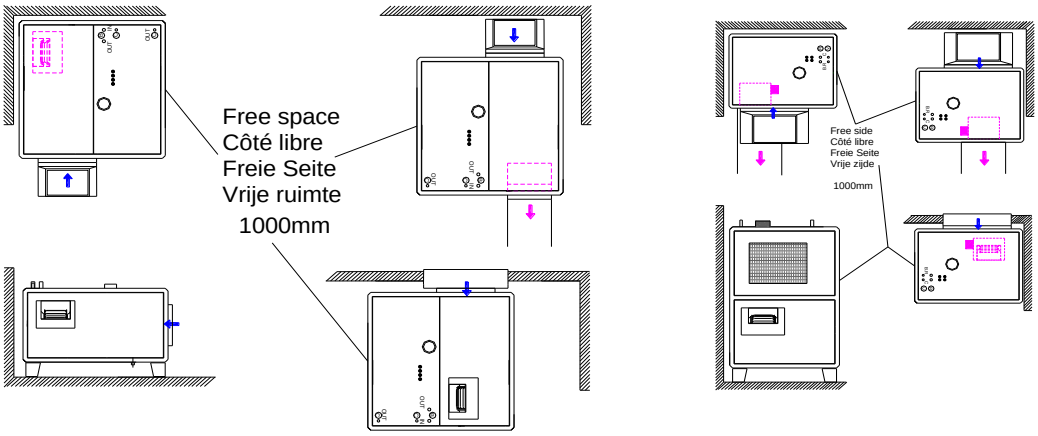
- Fitting or attaching the unit to wooden floors or walls is not recommended. This requires special precautions (anti-rumble materials).
- The units must always be levelled. When support bases (aluminium feet) are used, the adjusting screws can be used for levelling.

IGNORING THESE GUIDELINES CAN CAUSE DAMAGE AND NOISE

WORKING AREA

On installation of the unit, ensure there is sufficient space to allow practical and safe maintenance to the unit. The marked front side must be easily accessible: most components can be accessed from here..

TAKE MINIMUM 100 CM FREE WORKING SPACE INTO ACCOUNT



CONDENSATION DRAIN

THE CONDENSATION DRAIN MUST BE POSITIONED FROST-FREE.

The condensation drain is connected via the bottom of the unit.

The condensation outlet is a ∅ 25 mm PVC-tube - *vertical execution: ∅15 mm Cu-tube connected to a supple outlet pipe of 19 mm - which* must be connected to a PVC outlet pipe ∅ 32 mm, ideally fitted with an odour trap (siphon).

To prevent water splashing into the unit and any undesirable odours, the connection must be made airtight to prevent the intake of air via the outlet.

THE OUTLET SHOULD BE LAID RUNNING DOWNWARD TO THE DRAIN

If the unit is placed below the drain level, the condensation pump may be used with a receiving bin and float to evacuate the water: flow 2 l/min and 3 m conveying height.

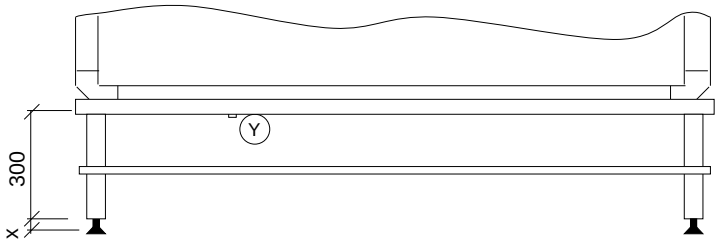
INSTALLATION ON THE FLOOR

The unit can be put directly on the floor.
Standard equipped with adjusting screws, adjustable between 25 and 50 mm.

In order to ensure the required free clearance between the unit and the floor, which will make it also easier to connect the condensation outlet, following options are available:

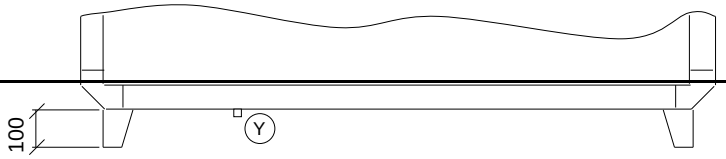
SOCLE

Anti-corrosion treated and painted steel framework (H = 300 mm), equipped with adjusting screws (adjustable from 25 to 50 mm = x) and vibration isolating materiel.
The adjusting screws under the framework of the unit must be removed before placing the unit on the socle.



ALU-FEET

Aluminium feet (H = 100 mm)
1 set = 4 pieces

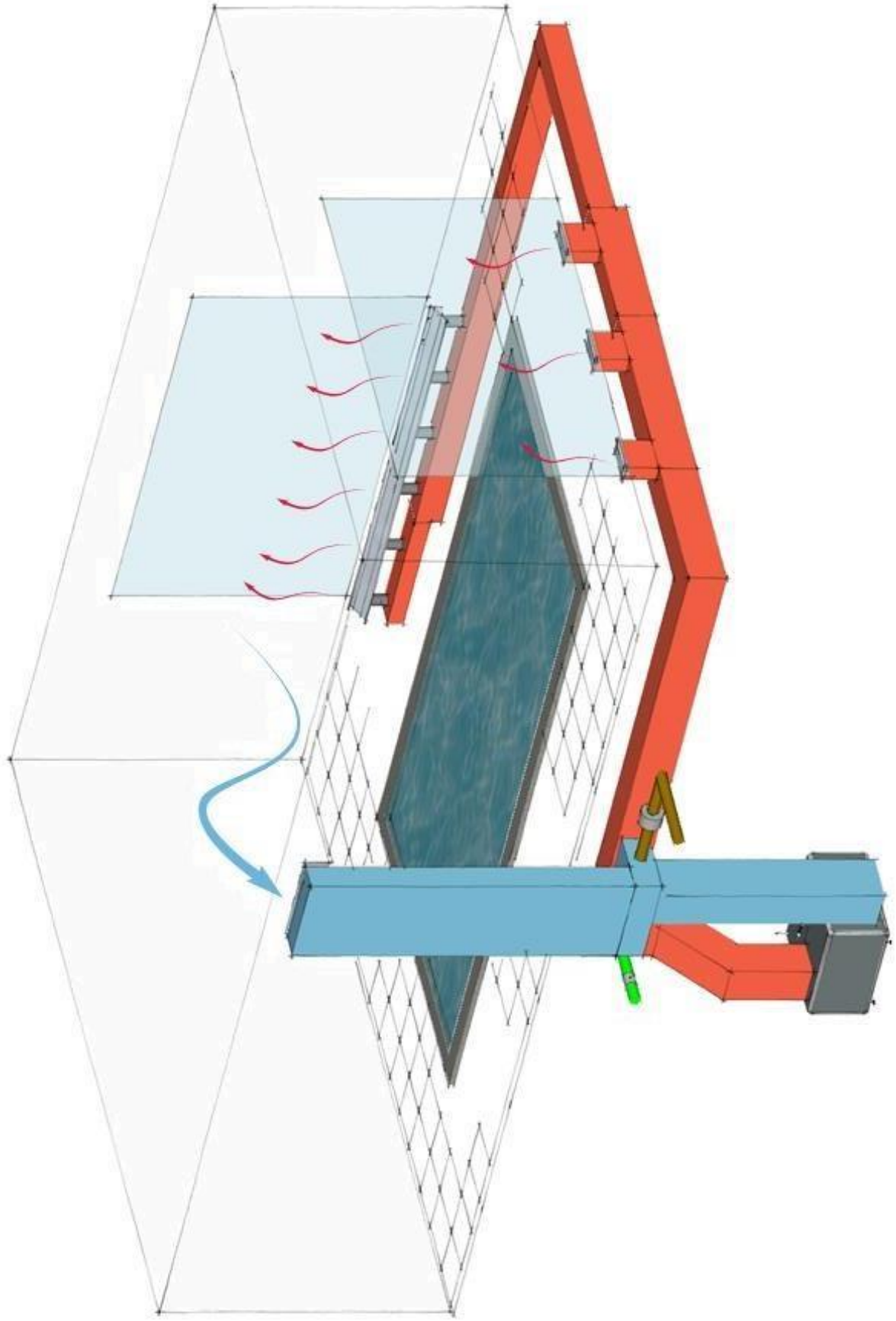


REINFORCED ALU-FEET

FOR AMKB8R …/20

Seeled **REINFORCED** stainless steel feet (H = 100 mm)
1 set = 4 pieces

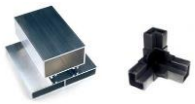
INSTALLATION EXAMPLE



OUTDOOR EXECUTION

FRAMEWORK

Rectangular thermal profiles and corners for preventing condensation by cold bridges.



PANELS

The outer panels are double insulated: flame extinguishing and sound absorbent 40mm thick insulation.
Fastening with stainless-steel parker screws, covered with a plastic cap.
The roof panels are extra heightened and chamfered and insulated with flame extinguishing and sound absorbent 60 mm thick insulation (DIN EN 13 501-1).

POSITION OF SUCTION AND OUTLET

SUCTION
ALWAYS ON THE HEAD. - CAN N E V E R BE DISPLACED

POSITION OUTLET TO BE COMMUNICATED UPON ORDERING

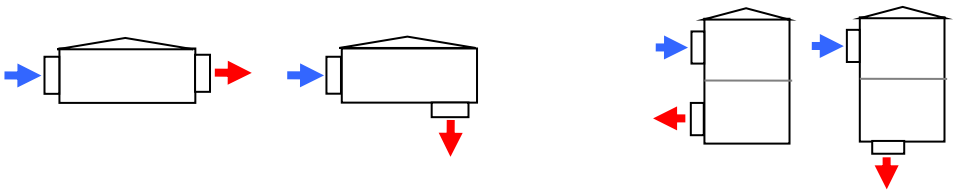
OUTLET ON TOP IS NOT POSSIBLE (WATER INFILTRATION).

POSSIBLE POSITIONS IN FRONT VIEW

DIMENSIONS

70 mm (= extra thickness thermal profile) to be added to the standard dimensions.

L (mm)	D (mm)	H (mm)
+ 70	+ 70	+ 70



EXCEPT THE MAINTENANCE PANEL, ALL JOINTS HAVE TO BE SEALED WITH SUPPLIED WITH SILICONES BY THE INSTALLER AFTER INSTALLATION IN ORDER TO AVOID ANY WATER INFILTRATION INSIDE THE UNIT

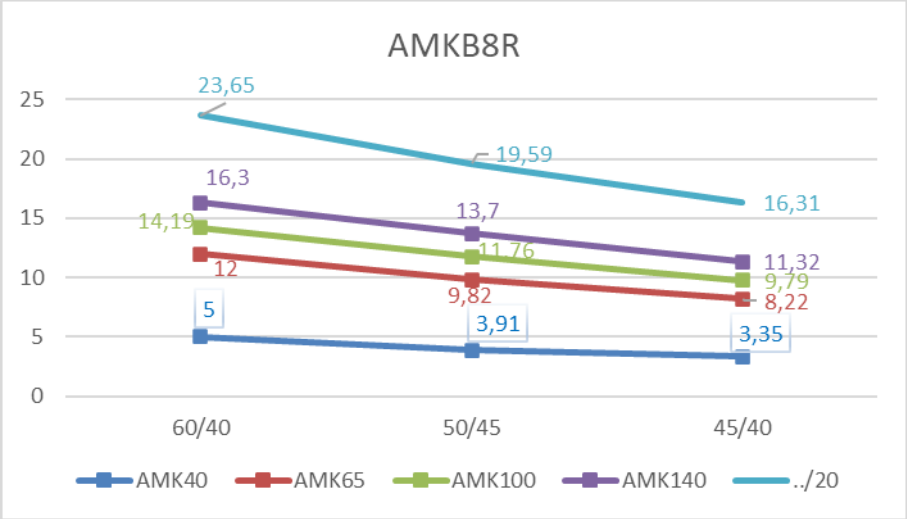
ATTENTION
AMKB8R 100 AND 140 UNITS ARE EQUIPPED WITH A CARTER HEATING
UNIT MUST BE LIVE 24 HOURS BEFORE STARTING UP

HOT WATER BATTERY

GENERAL

Used to keep the ambient area to temperature or bring this to temperature when a low boiler regime is applied (e.g.. regime condensation boiler 60/40 or heatpumps 50/45).

Effective heating capacities at different water regimes:



The standard built-in 8-rows (B8R) hot water battery (LPHW) is fitted on the outlet side of the unit.
The connection of the LPHW is on the top of the unit.

The LPHW must be connected to the CH boiler by a registered installer. The unit is not fitted with a circulating pump. This must be fitted by the CH fitter and adapted to the capacity of the LPHW. The incorporated control can be used to control the circulating pump and/or the CH boiler.

The unit can also OPTIONALLY be equipped with a:

BUILT-IN THREE WAY VALVE
In order to prevent hot water flowing through when the swimming pool area is on temperature.
On heat demand, the three-way valve opens and water flows directly through the LPHW, immediately providing heat.

HYDRAULIC CONNECTIONS

With ♂ screw thread on pressed fitting on Cu-tube towards the LPHW.

The connections are marked as **LPHW IN** and **LPHW OUT**

DO NEVER WELD IN THE PROXIMITY OF PRESSED FITTINGS.
THE EPDM SEAM IS NOT SUSCEPTIBLE AGAINST WELDING TEMPERATURES.

CONTROL

ELECTRICAL CONNECTIONS/ SEE DIAGRAM

The LPHW is controlled independently of the CH via the built-in 24V = control. When the dehumidifier functions, the fan also moves air over the LPHW.

The hygrothermostat (HYTH) or remote display commands the unit control to provide heat. The fan and circulation pump are controlled by the PCB. A non-return valve should be fitted in the hydraulic circuit.

SWIMMING POOL CONDENSER

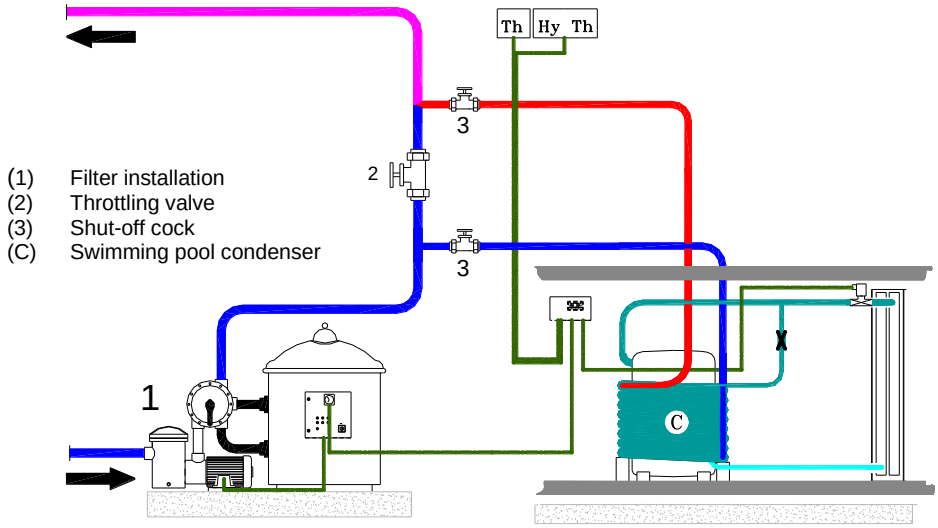
GENERAL

Ensures that the unit will keep working at a higher ambient temperature than the standard value – see technical specifications.
At excess temperature (> 32°C) the unit control (PCB) orders to give off the excess heat to the pool water. The temperature of the blown out air is equal to that of the sucked in air.

HYDRAULIC CONNECTIONS

Via a bypass or a separate pump to the return circuit line from the filter installation.

CONNECTION OF THE POOL CONDENSER HAS TO BE EXECUTED B E F O R E CONNECTION TO THE WATER TREATMENT INSTALLATION



The **IN** and **OUT** are marked **COAX IN** and **COAX OUT**.
The throttling valve must be turned such that the temperature difference between **IN** and **OUT** is ± 8°C.

WE RECOMMEND USING A HEAT- AND PRESSURE-RESISTANT LINE FOR THE FIRST 3 M (E.G.: PEX) NEVER COPPER.

Type of unit		65	100-102M	140-142M	200-202M
Capacity	kW	3,62	4,66	6,63	7,8
Air flow	L/h	400	550	660	900
Pressure loss	kPa	5	15	21	16
Diameter	Ø	20	20	20	26
*Connexion **IN/OUT***		*½" M*	*½" M*	*½" M*	*¾ "" M*

CONTROL

ELECTRICAL CONNECTIONS/ SEE DIAGRAM

At excess temperature (> 32°C) the unit control (PCB) orders to give off the excess heat to the pool water..

DUCTS

IT GOES WITHOUT SAYING THAT THE AIR DUCTS PROVIDED SHOULD BE ADAPTED TO THE AIR FLOW RATE OF THE UNIT.

AIR FLOW RATE

The selection of the air ducts (dimensions) and the grids (dimensions and number) must be made as a function of the necessary air flow in relation to the pursued air speed in the ducts of 3 to 4 m/s and at the grids of 2 m/s. The air flow is the quantity of air that is being displaced within a certain time unit, at CDH expressed in m³/h.

The following formula represents the relation between air flow and the surface of the air duct::

$$Q\ (m^3/h) = (V * 3600) * S$$

V *= Air speed (m/s)*
S *= Surface air duct (m²)*

The indicated free discharge head – pressure loss in ducts and at grids – may not be exceeded.
When the air speed **V** – frictions of the air – increases, the pressure losses will exceed exponentially.
Increasing the air speed with factor 2 implies that the pressure losses increase with factor 4.
Simultaneously the output of the fan decreases.

	Type unit	65	100-102M	140-142M	…/20
Air flow	m³/h	1000	1200	1400	2000
Free discharge head	Pa	115	105	115	380

FRESH AIR CONNEXION

Each basic unit is foreseen with a fresh air connexion, which is closed with isolation material.
This isolation must be removed when the fresh air connexion is being used/applied.

ATTENTION
THE POOL AREA WILL THUS BE PUT IN OVERPRESSURE
APPLICATION OF A TUBE FAN IS MOST CERTAINLY ADVISED
IN ORDER TO PUT THE POOL AREA IN UNDERPRESSURE AGAIN.

DUCT FAN

To be connected as outlet fan on the suction duct in order to put the pool area in underpressure again.

SELECTION TABLE

THE FOLLOWING TABLE IN ONLY AN INDICATION TO DETERMINE AIR DUCTS AND GRIDS.

AIR DUCTS

The indicated rectangular air ducts are XAL-PIR air ducts with a sheet thickness of 2 cm and the indicated dimensions are those that approach the most an air speed of 3 m/s.

GRIDS

The grids have a free passage of 70 % - gap grids 100 % - and the indicated dimensions are those that approach the most an air speed of 2 m/s

TYPE	65	100	140	…/20
Airflow m³/s	1000	1200	1400	2000

DUCTS				
	Minimum departure dimension			
SUCTION / OUTLET	34 x 34 cm	34 x 44 cm	34 x 44 cm	34 x 64 cm
FRESH AIR	ø 100 mm	ø 125 mm	ø 125 mm	ø 160 mm

GRIDS				
SUCTION				
	Number of grids			
DIMENSIONS				
30 x 40 cm	2	2	3	4
40 x 60 cm	1	1	2	2
50 x 60 cm	-	-	1	2
OUTLET				
	Number of grids (*)			
DIMENSIONS				
10 x 20 cm	10	12	14	20
10 x 30 cm	7	8	9	13
10 x 40 cm	5	6	7	10
	(*) ~ Number of current meter gap grid			
GAP WIDTH				
1 x 16 mm	9,0	10,5	12,5	17,5
1 x 20 mm	7,0	8,5	10,0	14,0
2 x 16 mm	4,5	5,5	6,5	9,0

ELECTRICAL DATA AND SUPPLIES

POWER SUPPLY

GENERAL

All units are equipped with an electric switchboard cabinet with control circuit board, compressor relay and connection terminals. All controls are 24VDC and thus of the ultra-low safety voltage type.
The units are fully pre-wired and constructed to CE standard.

CIRCUIT BREAKERS

A multipolar automatic unit with at least 3 mm contact opening is placed on the supply. This must be adapted to the maximum current strength of the unit.

Type of unit		65	100	102M	140	142M	200/20	202M/20
Voltage	V	230	3 x 400 + N	230	3 x 400 + N	230	3 x 400 + N	230
Nominal	A	6	4,1	9,9	3,4	10,1	5,7	17,1
Maximum	A	5	3,3	5,98	4,1	8,5	7,3	16,6
				To be foreseen				
Fuses *	A	2P 20A	4P 20A	2P 20A	4P 20A	2P 20A	4P 20A	2P 32A

***** Always use slow fuses. Three-phase fuses must always be a four pole automatic type.

SWITCHBOARD CABINET

GENERAL

The switchboard cabinet is built-in the unit and located on the side of the maintenance panel. Cables must always be lead via the cable inlets into the bottom or through the top panel. Ensure that the cables form a loop before they enter the switchboard cabinet so that the lowest point of the cable sits below the cable openings of the switchboard cabinet.

**NEVER RUN THE CABLES THROUGH THE TOP OF THE SWITCH CABINET:
DATA PRIVACY IP24 WILL THUS BE CANCELLED.**

CONNECTION DIAGRAM

Each installation manual and each switchboard cabinet contains a specific connection diagram for the supply and a connection diagram for options and controls

- Diagrams are drawn in quiescent condition
- All PCB are equipped with a fast glass fuse of 6,3 A for transformer supply and 230V exits

CONNECTION TERMINALS

The supply must be connected to the connection terminals as given on the diagram supplied.

**ATTENTION
NEVER CONNECT 230VAC TO THE LOW VOLTAGE BOARD TERMINALS.
THIS WILL INEVITABLY LEAD TO A FAULT IN THE ELECTRONIC CONTROL**

**CONNECTIONS MUST BE MADE ACCORDING TO THE RULES OF THE ART,
IN ACCORDANCE WITH THE CE STANDARDS AND EXECUTED BY A REGISTERED INSTALLER
THEY ARE THEREFORE NEVER OUR RESPONSIBILITY.**

COMPONENTS

All components used – except the PCB (CDH product) - are standard electrical components.
They can be replaced easily thanks to their mounting on DIN rails.
Equivalent types must replace the relays used.

REGULATORS

HYGROSTAT AND HYGROTHERMOSTAT

- 120 cm above the floor
- Preferably in a dead corner and against a smooth wall, in such a way that they are not affected by:
  - Nor the air blown out of the units (i.e. not immediately next to or opposite the outlet)
  - Nor by draughts or other hot or cold air displacements.
- As far as possible from the unit in other cases.
- Always check if wall ducts and tubes behind thermostats and hygrostats are properly sealed: the here out following draught can affect the operation of the units.

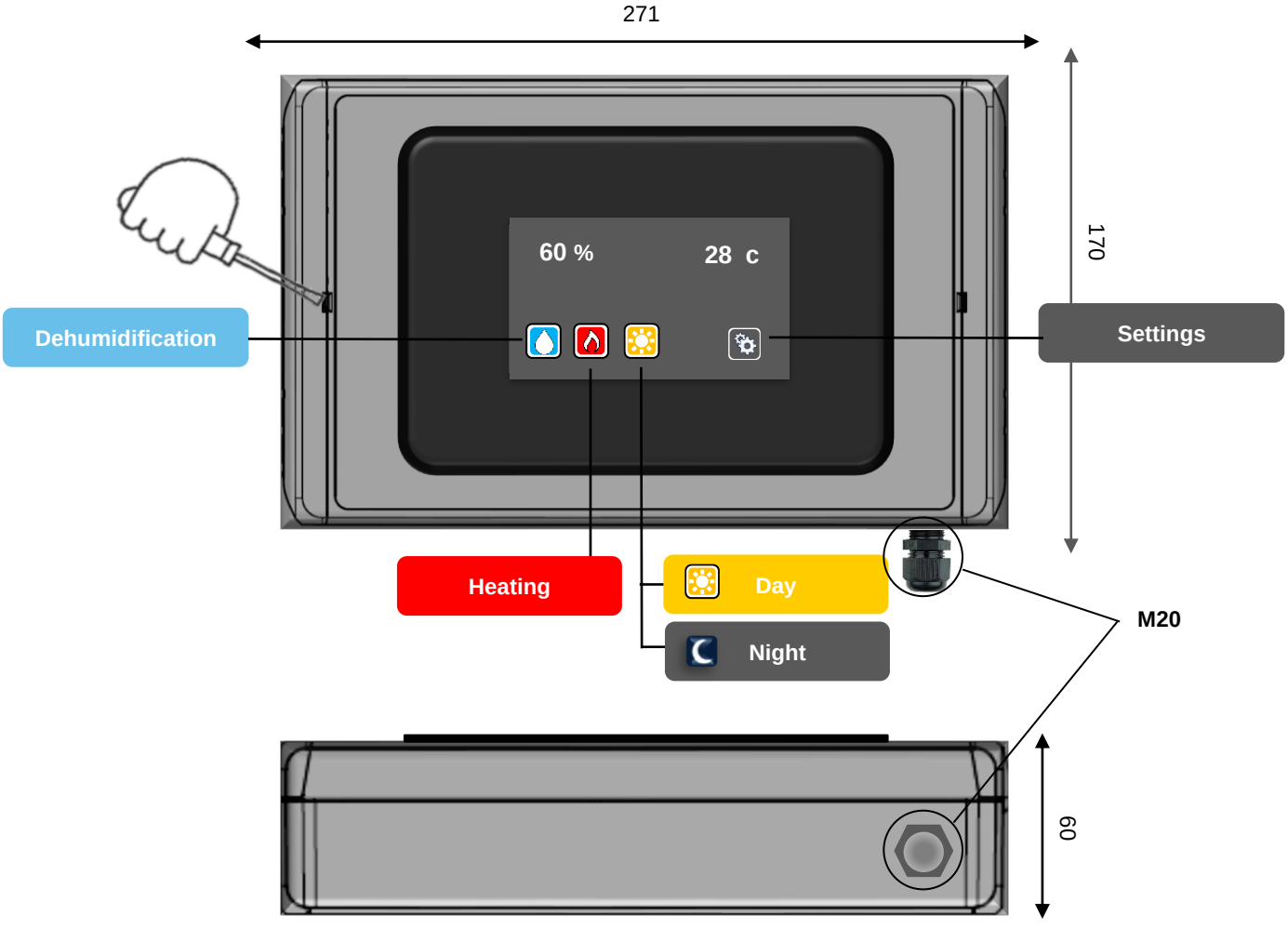
DISREGARDING THESE DIRECTIONS CAN LEAD TO BAD OPERATION

REMOTE DISPLAY

SETTING OF RH% AND T° VIA DISPLAY
READOUT OF ERROR MESSAGES

MOUNTED

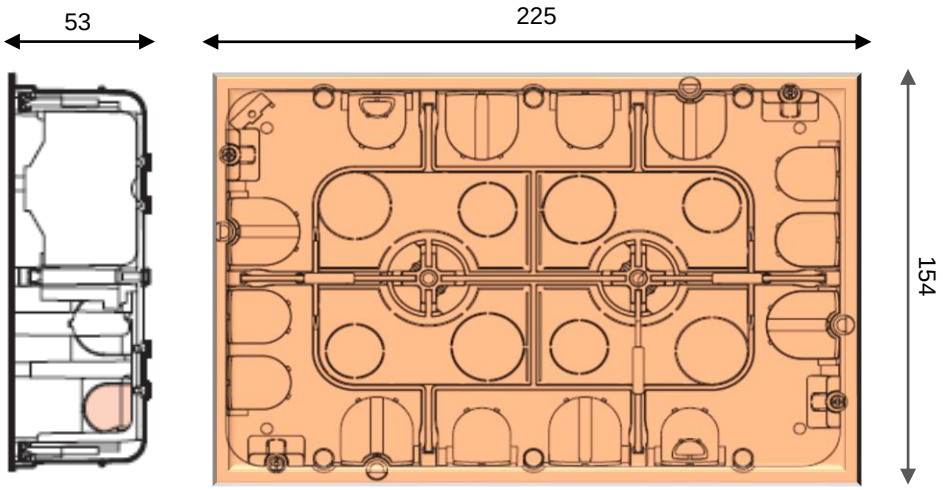
- To be foreseen in a corridor, technical room, closet …
- Granite-grey RAL 7024 ABS-housing
- 5 m UTP Cable Cat 5 - standard co-supplied – to be lead through the M20 swivel
- RJ45 pin to be plugged into respectively display input and RS485 output PCB



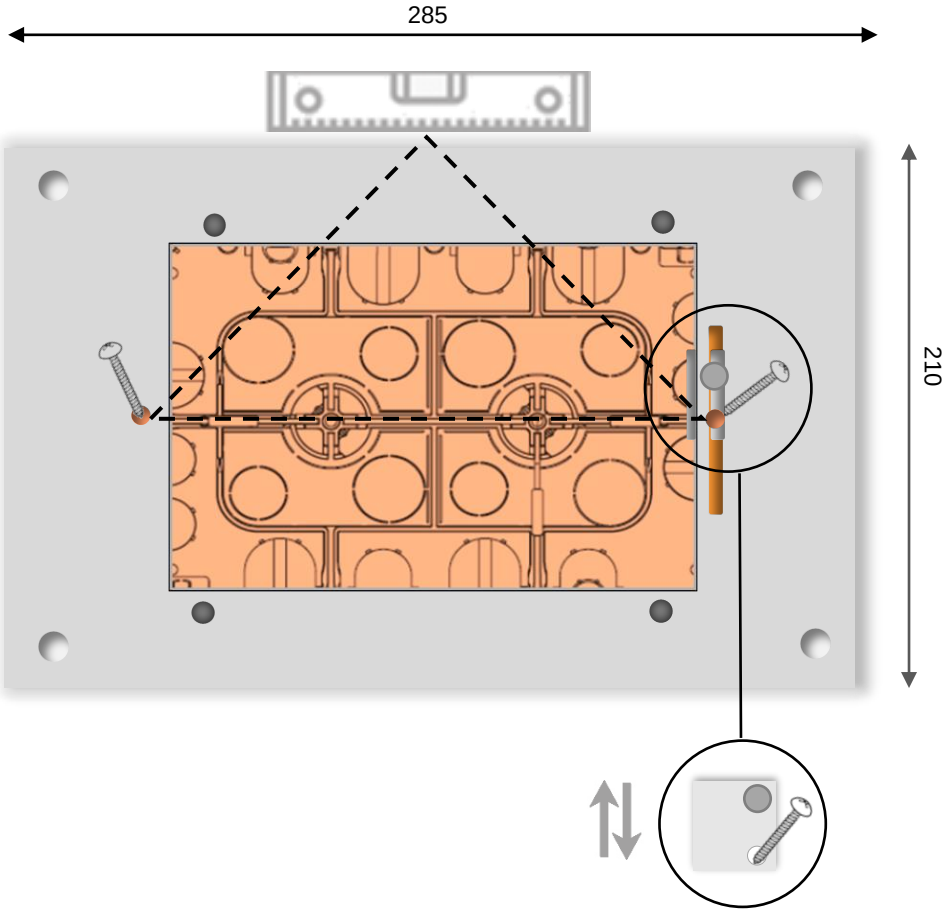
BUILT-IN

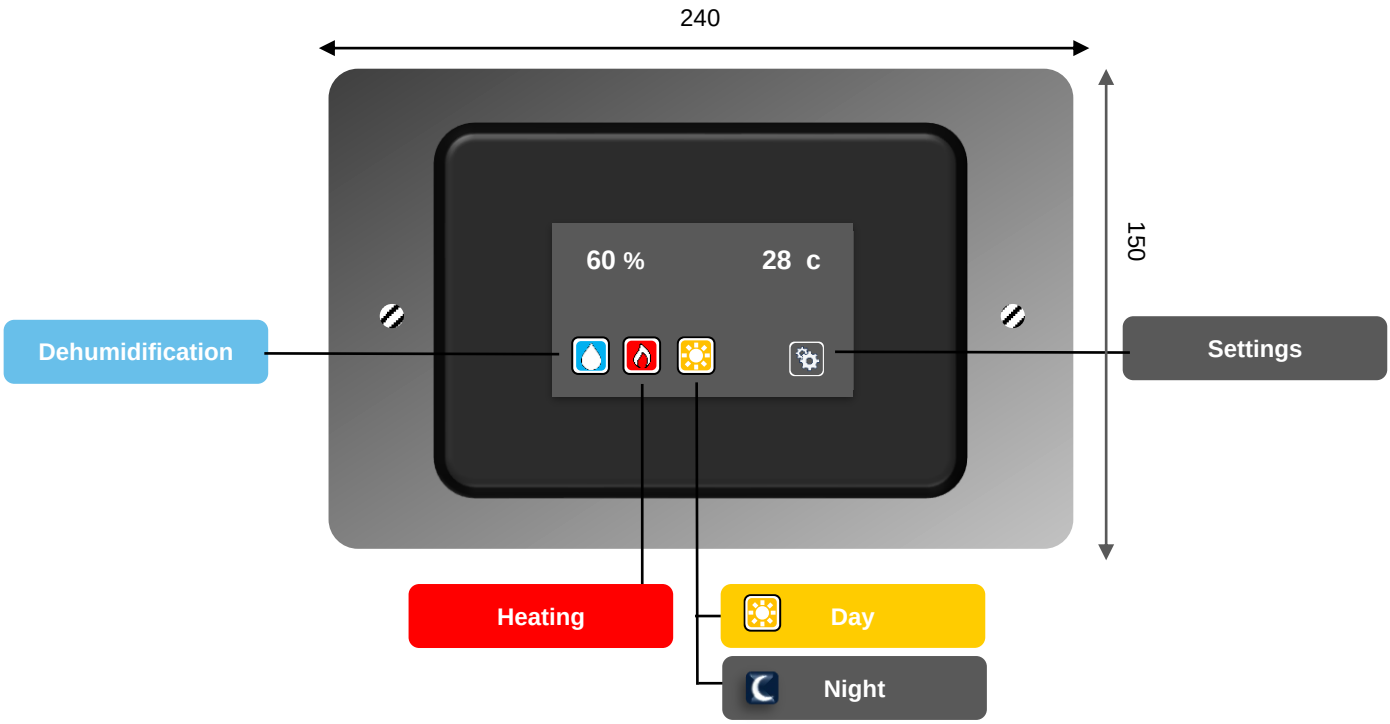
- To be foreseen in a corridor, swimming pool area…
- Orange installation box with pre-mounted galvanized frame – to be plastered whilst finishing.
- UTP Cable - minimum Cat 5 - with RJ45 pins to be lead through – NOT co-supplied
- Connect the RJ45 pins on the UTP Cable: pins to be plugged into respectively display input and RS485 output PCB
- Bolt the frame with the 2 co-supplied stainless steel M4 30 mm socket screws.

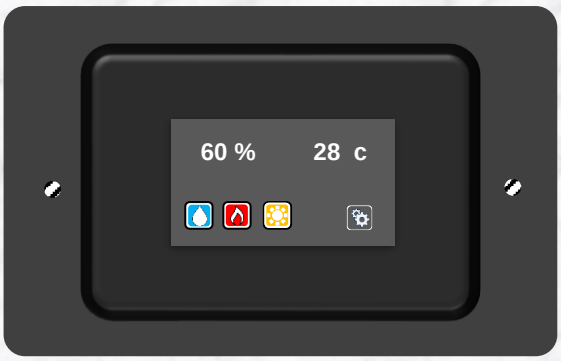
DIMENSIONS INSTALLATION BOX



FITTING WITH GALVANISED FRAME




240
150
60 %
28 c
Dehumidification
Settings
Heating
Day
Night


60 %
28 c

MAINTENANCE AND SAFETY REGULATIONS

MAINTENANCE

FILTERS

All types are equipped with air filters. On start up a lot of building dust can be drawn in, so it is recommended that after a few weeks from starting up a new installation, the filters be checked and cleaned if necessary.
After a time, the period between two checks can be extended but it is still recommended to check the filters at least twice a year.

ALWAYS DISCONNECT THE UNIT BEFORE REPLACING THE FILTER

HOUSING

The housing can be cleaned regularly with a detergent without aggressive agents.

SAFETY REGULATIONS

FROST

The unit must be protected against frost. When current less, the LPHW can freeze.

INTAKE AND OUTLET

The intake and outlet grids should always be clear. Blocked grids can lead to a reduction in air flow which causes the unit to switch into safety mode where it can only be restarted after manual reset.

CONTROL BY HYTH

START-UP

As soon as the unit is installed according to the guidelines, the power can be connected.

Connect the unit manually by turning the HYGROSTAT to the minimum value of 35%.
The so-called “normal value” is 60%. The unit will dehumidify automatically when the set value is exceeded.

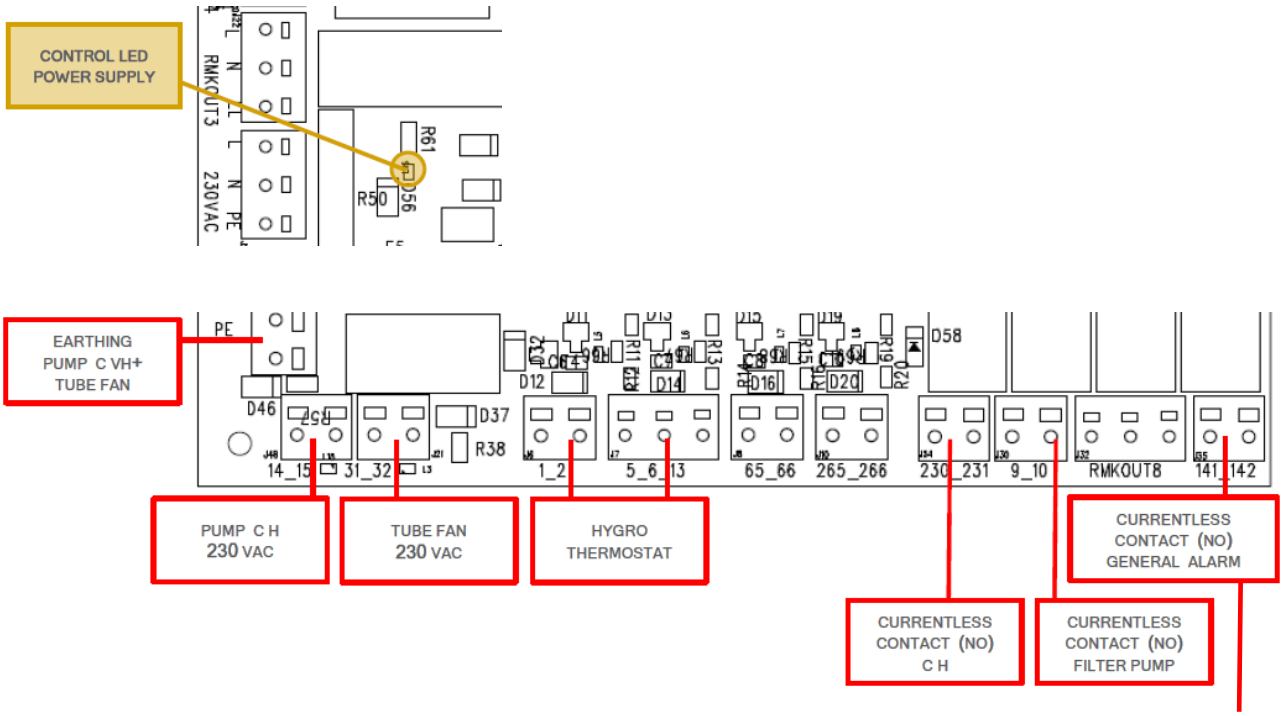
ON/OFF SWITCH MUST BE SET ON 1 (= ON)

For units with built-in heating, the THERMOSTAT must be set to the required temperature: always keep in mind that the ambient temperature is at least equal to or – recommended – 2°C higher than the water temperature.

**A DELAY TIME OF 10 MINUTES PREVENTS THE COMPRESSOR FROM RESTARTING.
THE DELAY TIME STARTS EVERY TIME THE COMPRESSOR SWITCHES OFF.
COMPRESSOR CAN RESTART MAXIMUM 6 TIMES PER HOUR.**

CONNECTION

D I R E C T CONNECTION ON THE P C B

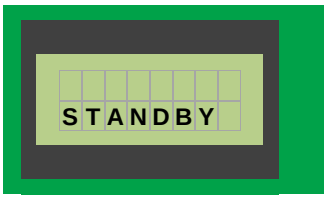


Closes when the unit breaks down
Can be applied in a domotic system to indicate a failure

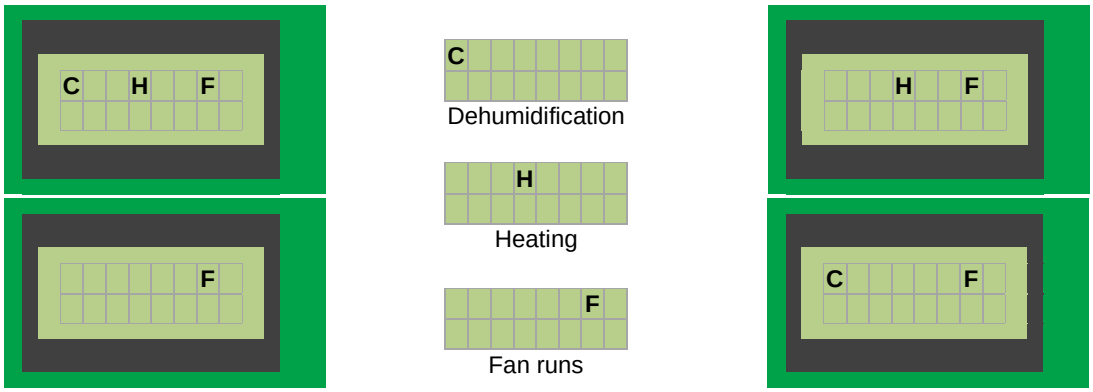
READ OUT

GENERAL

NO ACTIONS

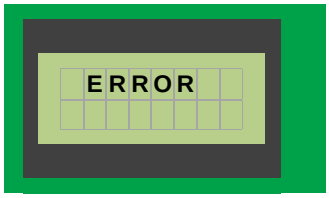


ACTIONS DISPLAY



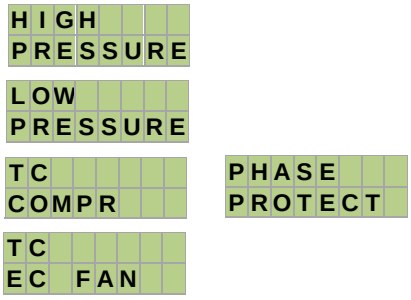
FAILURE MESSAGES

- The message **ERROR** appears:

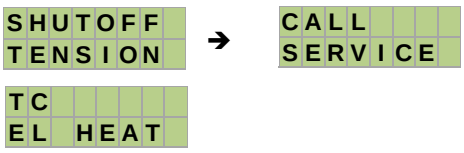


- Next the nature of the failure:

GENERAL



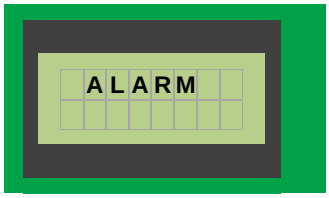
ELEKTRICAL HEATING



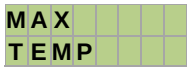
- Failure messages disappear only after eliminating the problem – see FAILURE MESSAGES**.**
- RESET unit manually.

ALARM MESSAGES

- The message **ALARM** appears



- Nest the nature of the alarm:



- Alarm messages are only messages of an active action which stops by itself or that an action should be taken iin order to solve a problem – see ALARM MESSAGES..

MANUAL RESET

RESETTING THE UNIT
= SWITCHING OFF THE SUPPLY VOLTAGE AND SWITCHING IT BACK ON AFTER 0,5 MIN.

FAILURES

FAILURE MESSAGES

HIGH PRESSURE	▪ Decrease ambient temperature if this exceeds the maximum working range (see ID label). ▪ Check if the grids are free and/or the fan is not blocked. ▪ Check the filter on clogging: replace if necessary. Reset unit. When the unit does not restart: *notify technical service..*
LOW DRUK	▪ Check if the grids are free and/or the fan is not blocked ▪ Possible leak in the cooling circuit (shortage of refrigerant). Reset unit. When the unit does not restart: *notify technical service.*
TC COMPR PHASE PROTECT	▪ For three-phase unit check that all three phases conduct. ▪ For three-phase unit check that all three phases conduct Reset unit. When the unit does not restart: *notify technical service.*
TC EC FAN	▪ Check if the grids are free and/or the fan is not blocked. ▪ Check the filter on pollution: replace if necessary ▪ Check evaporator on pollution Reset unit. When the unit does not restart: *notify technical service.*
TC EL HEAT	▪ Check if the grids are free and/or the fan is not blocked. ▪ Check the filter on pollution: replace if necessary Reset unit. When the unit does not restart: *notify technical service.*
SHUTOFF TENSION CALL SERVICE	▪ Protection of the RH% and T° control ▪ Shut off tension of the (separate) power supply of the electrical heating. *Notify tecnical service.*

ALARM MESSAGES

MAX TEMP	▪ Maximum ambient temperature exceeded. ▪ Lower ambient temperature.
DEFROST SENSOR SENSOR DEFECT	▪ Defrost sensor defective. ▪ Sensor needs to be replaced. *Notify tecnical service*
ROOM T SENSOR SENSOR DEFECT	▪ Ambient temperature sensor defective. ▪ Sensor needs to be replaced. *Notify tecnical service*
OUTLET SENSOR SENSOR DEFECT	▪ Air outlet temperature sensor defective. ▪ Sensor needs to be replaced. *Notify tecnical service*
RH % SENSOR SENSOR DEFECT	▪ RH% sensor defective. ▪ Sensor needs to be replaced. *Notify tecnical service*

UNIT DOESN'T WORK

Hygro(thermos)stat set too high	▪ Set the hygro(thermostat) to normal value (60%).
Hygro(thermos)stat defective	▪ Check the operation. When defective, replace HY(TH).
6,3 A Glass fuse defective	▪ Before replacing the fuse, first determine the cause. ▪ Replace by a fuse of the same value. ▪ Check 230V exit on the PCB relay. When not possible to re-engage the fuse: *notify technical service.*.
Unit gets no voltage	▪ Check supply cable.

UNIT RUNS CONTINUOUSLY

Hygro(thermos)stat set too low	▪ Set the hygro(thermostat) to normal value (60%).
Hygro(thermos)stat defective	▪ Check the operation. When defective, replace HY(TH).

OTHER

Unit loses water.	• Check if the unit is levelled and adjust if necessary. • Check if the condensation drain is laid running downward to the drain • Check if there is an obstruction either in the condensation tank or in the drain. Unblock the drain.
Unit makes noise.	▪ The unit does not rest on all support points or is not levelled due to an uneven floor. Check support points and fill up if necessary.

CONTROL BY REMOTE DISPLAY

START-UP

As soon as the unit is installed according to the guidelines, the power can be connected.
Plug in the RJ45 pin.

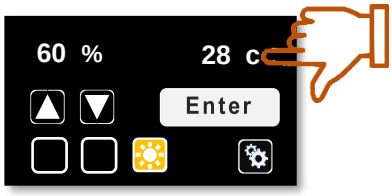
Factory-wise:

- Is the RH% set at the so-called “normal value” of 60%
- Is the day temperature – pool cover open – set at 28°C
- Is the night temperature – pool cover closed – set at 24°C *(recommended ΔT of 4°C *)*.

If desired, these values can be adapted – whilst always keeping in mind that the ambient temperature is at least equal to or – recommended – 2°C higher than the water temperature.

TEMPERATURE °C

➔ Press 2 sec on the T° value

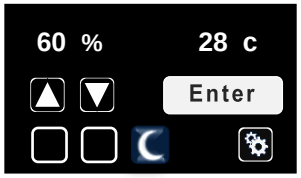


➔ Icon day T° appears

➔ Adapt the value with the key or

➔ Save with **Enter**

➔ Icon night T° appears

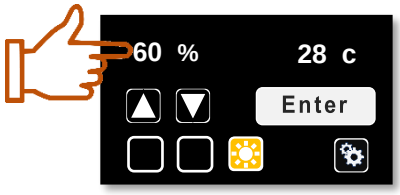


➔ Adapt the value with the key or – *see also * **

➔ Save with **Enter**

HUMIDITY PERCENTAGE RH%

➔ Press 2 sec on the RH% value



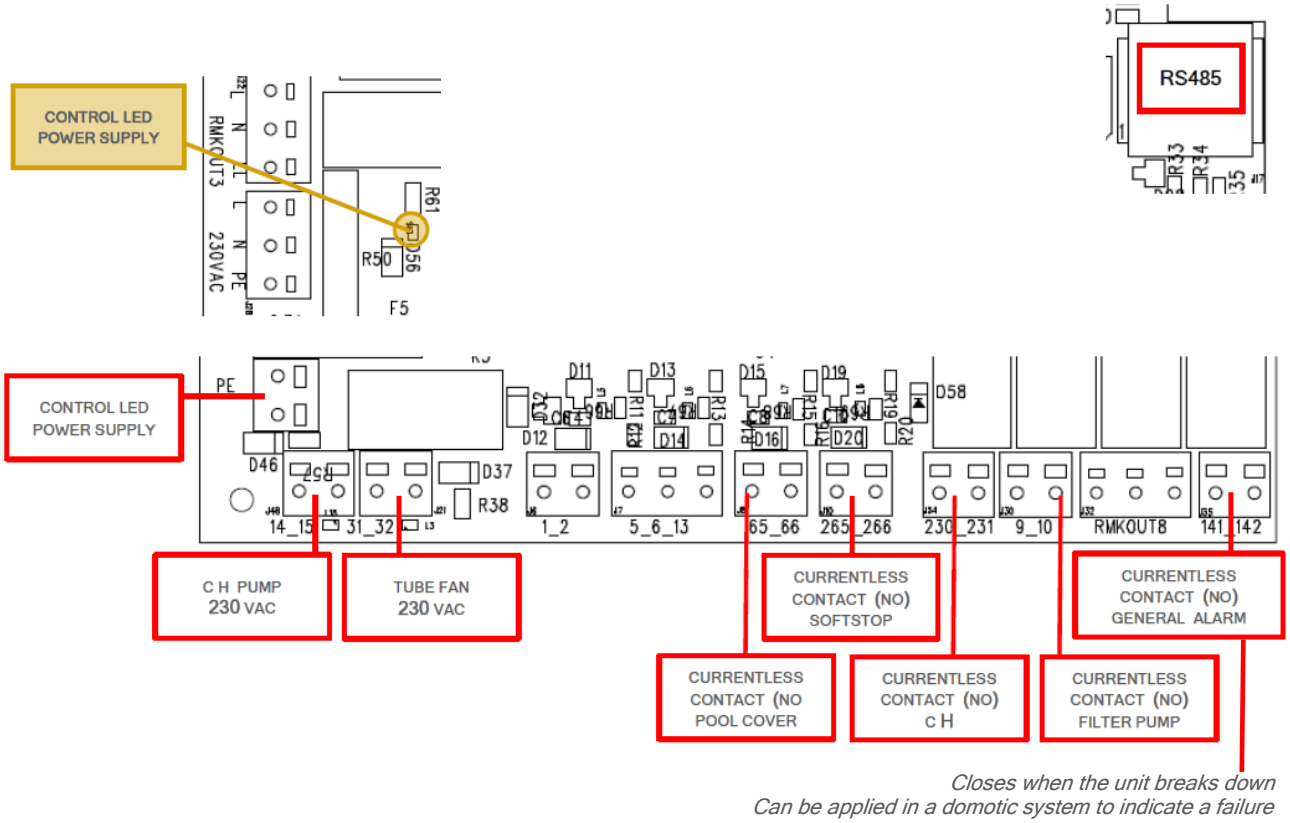
➔ Adapt the value with the key or

➔ Save with **Enter**

**A DELAY TIME OF 10 MINUTES PREVENTS THE COMPRESSOR FROM RESTARTING.
THE DELAY TIME STARTS EVERY TIME THE COMPRESSOR SWITCHES OFF.
COMPRESSOR CAN RESTART MAXIMUM 6 TIMES PER HOUR.**

CONNECTION

D I R E C T CONNECTION ON THE P C B

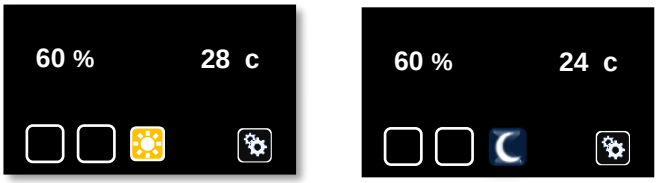


Closes when the unit breaks down
Can be applied in a domotic system to indicate a failure

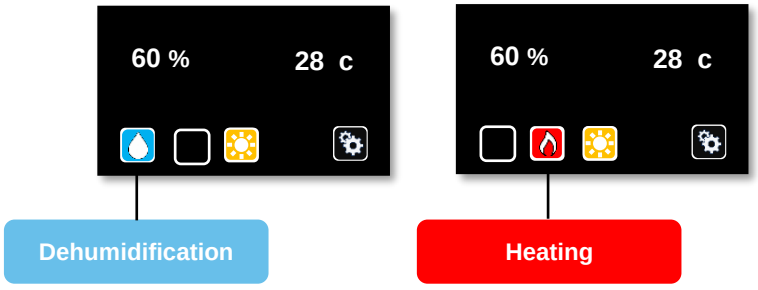
READ OUT

GENERAL

NO ACTIONS

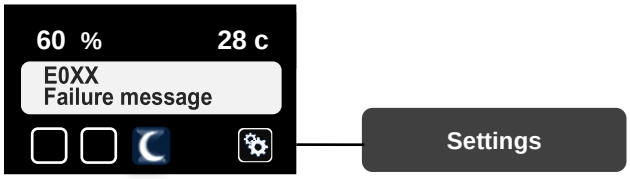


ACTION DISPLAY



FAILURE MESSAGES

- Failure message appears



- Next the nature of the failure

GENERAL HEATING

E000
High pressure protection

E001
Low pressure protection

E002
Thermal contact compressor or phase protection

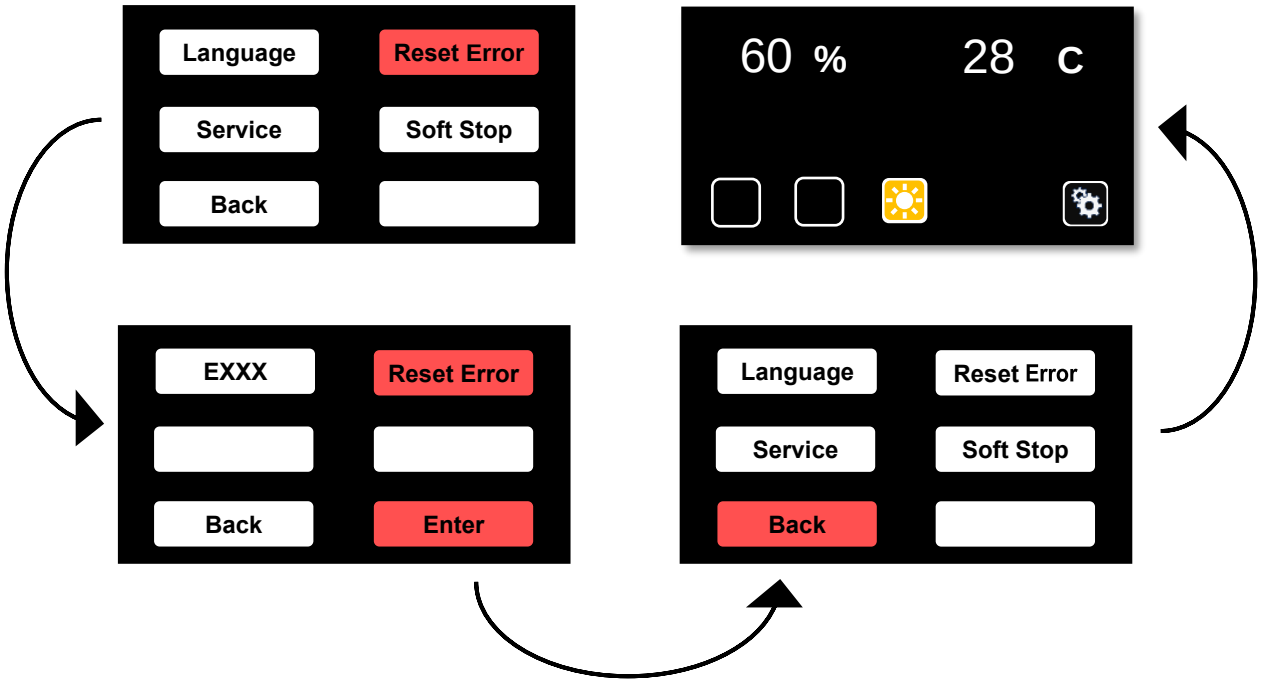
E013
Thermal contact EC fan

ELECTRICAL

E060
SHUT OFF TENSION
Set-up protection T° and RH%

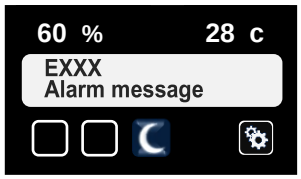
E032
Thermal contact electrical heating

- Failure messages disappear only after eliminating the problem – see Failure messages
- RESET unit via display
  - Press 3 sec on  Settings
  - Perform the following actions AFTER the failure is repaired – till return to the initial screen:



ALARM MESSAGES

- Alarm message appears



- Alarm messages are only messages of an action that is active and stops by itself, or an action that has to be undertaken in order to solve the problem – see ALARM MESSAGES.

- Possible alarm messages:

ACTIVE ACTION	ACTIONS THAT HAVE TO BE UNDERTAKEN
E800 **Soft Stop**	**E888** **Maximum ambient temperature exceeded**
	E900 **Defrost sensor defective**
	E901 **Ambient temperature sensor defective**
	E902 **Air outlet temperature sensor defective**
	E903 **Room humidity sensor defective**
	E904 **Communication problem**

RESET VIA DISPLAY

See FAILURE MESSAGES.

Manual RESET is also possible

FAILURES

FAILURE MESSAGES

E000 **High pressure protection**	▪ Decrease ambient temperature if this exceeds the maximum working range (see ID label). ▪ Check if the grids are free and/or the fan is not blocked. ▪ Check the filter on clogging: replace if necessary. Reset unit. When the unit does not restart: *notify technical service..*
E001 **Low pressure protection**	▪ Check if the grids are free and/or the fan is not blocked ▪ Possible leak in the cooling circuit (shortage of refrigerant). Reset unit. When the unit does not restart: *notify technical service.*
E002 **Thermal contact compressor or phase protection**	▪ For three-phase unit check that all three phases conduct. ▪ Possibly the compressor valves are defective Reset unit. When the unit does not restart: *notify technical service.*
E013 **Thermal contact EC fan**	▪ Check if the grids are free and/or the fan is not blocked. ▪ Check the filter on pollution: replace if necessary ▪ Check evaporator on pollution Reset unit. When the unit does not restart: *notify technical service.*

ALARM MESSAGES

E800 **Soft Stop**	▪ Soft stop active
E888 **Maximum ambient temperature exceeded**	▪ Maximum ambient temperature exceeded. ▪ Lower ambient temperature.
E900 **Defrost sensor defective**	▪ Defrost sensor defective. ▪ Sensor needs to be replaced. *Notify tecnical service*
E901 **Ambient temperature sensor defective**	▪ Ambient temperature sensor defective. ▪ Sensor needs to be replaced. *Notify tecnical service*
E902 **Air outlet temperature sensor defective**	▪ Air outlet temperature sensor defective. ▪ Sensor needs to be replaced. *Notify tecnical service*
E903 **Room humidity sensor defective**	▪ RH% sensor defective. ▪ Sensor needs to be replaced. *Notify tecnical service*
E904 **Communication problem**	▪ No communication with PCB *Notify tecnical service*

UNIT DOESN'T WORK

Hygro(thermos)stat set too high	▪ Set the hygro(thermostat) to normal value (60%).
Hygro(thermos)stat defective	▪ Check the operation. When defective, replace HY(TH).
6,3 A Glass fuse defective	▪ Before replacing the fuse, first determine the cause. ▪ Replace by a fuse of the same value. ▪ Check 230V exit on the PCB relay. When not possible to re-engage the fuse: *notify technical service.*.
Unit gets no voltage	▪ .Check supply cable.

UNIT RUNS CONTINUOUSLY

Hygro(thermos)stat set too low	▪ Set the hygro(thermostat) to normal value (60%).
Hygro(thermos)stat defective	▪ Check the operation. When defective, replace HY(TH).

OTHER

Unit loses water.	• Check if the unit is levelled and adjust if necessary. • Check if the condensation drain is laid running downward to the drain • Check if there is an obstruction either in the condensation tank or in the drain. Unblock the drain.
Unit makes noise.	▪ The unit does not rest on all support points or is not levelled due to an uneven floor. Check support points and fill up if necessary.